Metro Inner Development Assessment Panel Agenda

Meeting Date and Time: Wednesday, 14 October 2026; 9:30am
Meeting Number: MIDAP/159
Meeting Venue: 140 William Street, Perth

A live stream will be available at the time of the meeting, via the following link:
MIDAP/159 - 14 October 2026 - City of Melville - City of Stirling

PART A – INTRODUCTION

1. Opening of Meeting, Welcome and Acknowledgement
2. Apologies
3. Noting of Minutes

PART B – CITY OF MELVILLE

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
4. Form 2 DAP Applications
   - 4.1 101 (No. 532) Canning Highway, Attadale - Additions and alterations to motor vehicle sales & Motor vehicle repair premises - Amendment to DAP-2022-7/C - Modifications to Minor Showroom (basement parking and increasing size of minor showroom) – DAP/22/02314
5. Section 31 SAT Reconsiderations

PART C – CITY OF STIRLING

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
   - 3.1 Lot 110 (No. 366) and 78 (No. 360) Grand Promenade & Lot 70 (No. 160) Alexander Drive, Dianella - Proposed Relocation of Coles Supermarket – DAP/26/03081
4. Form 2 DAP Applications
5. Section 31 SAT Reconsiderations

PART D – OTHER BUSINESS

1. State Administrative Tribunal Applications and Supreme Court Appeals
2. Meeting Closure

Please note, presentations for each item will be invited prior to the items noted on the agenda and the presentation details will be contained within the related information documentation

DAP Members
Karen Hyde (Presiding Member)
Francesca Lefante (Deputy Presiding Member)
Mike Mouritz
Cr Glynis Barber (Part B – City of Melville)
Cr Soo Hong (Part B – City of Melville)
Cr Suzanne Migdale (Part C – City of Stirling)
Cr Rob Paparde (Part C – City of Stirling)

DAP Secretariat
Kristen Gray
Ashlee Kelly

PART A – INTRODUCTION

1. **Opening of Meeting, Welcome and Acknowledgement**
2. **Apologies**
3. **Noting of Minutes**

PART B – CITY OF MELVILLE

1. Declarations of Due Consideration

2. Disclosure of Interests

3. Form 1 DAP Applications

Nil

4. Form 2 DAP Applications

4.1 101 (No. 532) Canning Highway, Attadale - Additions and alterations to motor vehicle sales & Motor vehicle repair premises - Amendment to DAP-2022-7/C - Modifications to Minor Showroom (basement parking and increasing size of minor showroom) – DAP/22/02314

5. Section 31 SAT Reconsiderations

Nil

GOVERNMENT OF WESTERN AUSTRALIA

DAP Development Assessment Panels

OFFICIAL

Part B – Item 4.1
LOT NO. 101 (NO. 532) CANNING HIGHWAY, ATTADALE

RESPONSIBLE AUTHORITY REPORT – FORM 2	
DAP File No:	DAP/22/02314
LG Reference:	DAP-2022-7/D
Approved Development	Motor Vehicle Sales and Motor Vehicle Repairs Premises
Proposed Amendments:	Amendment to DAP-2022-7/C - Modifications to Minor Showroom (basement parking and increasing size of minor showroom)
Owner:	Regalsea Investments Pty Ltd
Applicant:	Planning Solutions (Aust) Pty Ltd
Local Government Area:	City of Melville
Responsible Authority:	City of Melville
Authorising Officer:	Gavin Ponton
Date of Original DAP decision:	24/05/2023
Date(s) of previous amendments:	DAP-2022-7/A – 24/05/2023 DAP-2022-7/B – 08/08/2025 DAP-2022-7/C – 22/01/2026
Application Acceptance Date:	21 July 2026

LOCATION PLAN



Figure 1: Aerial image of subject site marked in red

GOVERNMENT OF WESTERN AUSTRALIA

DAP Development Assessment Panels

RESPONSIBLE AUTHORITY RECOMMENDATION

That the Metro Inner Development Panel resolves to:

A. **Accept** that the DAP Application reference DAP/22/02314 as detailed on the DAP Form 2 dated 21 July 2026 is appropriate for consideration in accordance with regulation 17 of the *Planning and Development (Development Assessment Panels) Regulations 2011*; and

B. **Approve** to amend DAP Application reference DAP/22/02314 for Additions and Alterations to Motor Vehicle Sales and Motor Vehicle Repair Premises at No. 532 (Lot 101) Canning Highway, Attadale WA 6156 in accordance with regulation 17 of the *Planning and Development (Development Assessment Panels) Regulations 2011*, by way of:

The following new condition being added

32. Prior to construction commencing, a noise management plan (NMP) prepared (by a suitably qualified acoustic consultant) is to be submitted to and approved by the City detailing measures that will be undertaken to ensure that noise levels generated by the development/use are kept within levels prescribed in the Environmental Protection (Noise) Regulations 1997. The NMP is to detail:
    a. Predicted maximum noise levels during operation;
    b. Sound proofing measures used in the design and construction of the development;
    c. Control measures to be undertaken (including monitoring procedures); and
    d. A complaint response procedure.

    All noise attenuation measures, identified by the NMP are to be implemented prior to occupation of the development and adhered to at all times for the duration of the development's operation to the ongoing satisfaction of the City.

New Advice Note

c) In relation to condition 11, the CMP is required to be prepared having regard to the provisions of Local Planning Policy 1.22 - Construction Management Plans (LPP1.22) and it is recommended to be submitted at least 30 days prior to the lodgement of a Building or Demolition Permit to avoid delays in the processing of the Permit/s. As the Construction Management practices may impact construction methodology, staging and other matters related to demolition, the permit will not be issued until such time as the CMP is approved by the City.

    Please note that no noisy works may be conducted outside the hours of 7am to 7pm, Monday to Saturday, unless a separate application with an out-of-hours noise management plan addressing particular criteria has been submitted to, and approved by the City.

PROPOSAL:

The subject application relates to proposed modifications to an existing Motor Vehicle, Boat or Caravan Sales and Motor Vehicle Repairs development at Lot 101 (No. 532) Canning Highway, Attadale. The proposed modifications to the design and land use of

the development subject to this application are as follows below and as shown in Figure 2:

1. Modifications to the basement parking level, comprising a 1,028m² extension along the eastern lot boundary beneath the minor showroom building. The extension will provide an additional 45 vehicle bays for storage purposes;
2. The proposal includes demolition of the existing minor showroom located in the south-eastern corner of the site and construction of a replacement minor showroom building;
3. The replacement minor showroom will have a maximum building height of 7.5 meters, representing an increase of 2.5 meters, and a gross floor area of 790m², representing an increase of 451m²;
4. The building is proposed to be setback 2.1m from the street boundary, reduced by 11m from the previous arrangement, with a 9.5m setback to the main showroom building and a nil setback to the eastern boundary, consistent with the existing development; and
5. Associated works include new stairs and a ramp to the rear of the building, together with modifications to surrounding paving and landscaping.

The City has considered the relevant guidance in relation to DAP application amendments and the proposed development has been found appropriate for consideration as a minor amendment.

SUBJECT SITE AND SURROUNDS:

The subject site is zoned Centre C4 and afforded R60 density code under the City of Melville Local Planning Scheme No 6 (LPS6) as per Figure 3 below. The lot size is 11,641m^2. There is no existing vegetation on site, with some verge trees and pedestrian footpath along Canning Highway.

The subject site is located on a corner lot, with the frontage facing the primary regional road of Canning Highway, and the secondary street as Hislop Road. The site abuts the Residential zone to the north and east, with a portion abutting public open space (Mick Jahn Reserve).



Figure 2: Alterations to 'Minor Showroom' (highlighted in yellow)

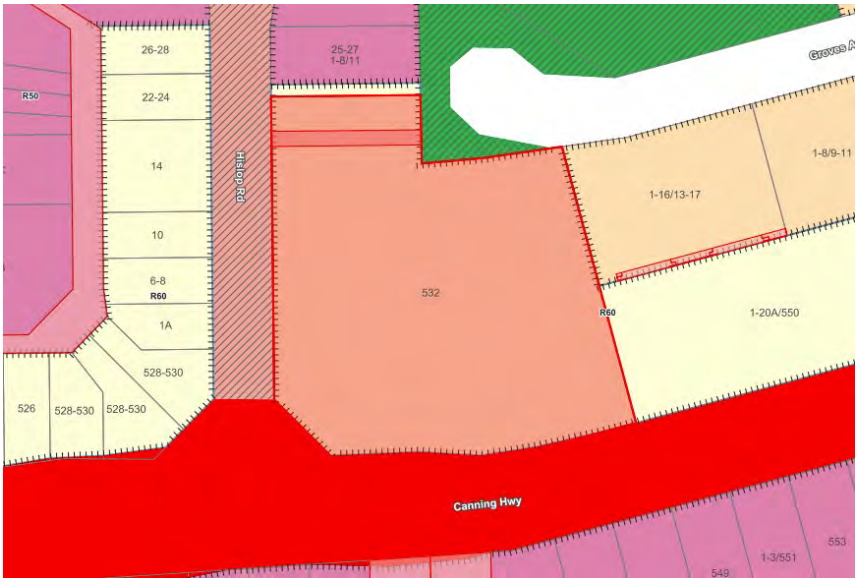


Figure 3: Local Planning Scheme 6 zoning layer of the subject site marked in red

BACKGROUND:

The subject site is the largest landholding within the Hislop Road Activity Centre, with an area of approximately 11,641m², underscoring its importance as a key development site and a catalyst for future redevelopment within the centre. The site benefits from strong access to the regional road network, including direct access from Canning Highway. It is also well serviced by public transport, with Canning Highway designated as a high-frequency bus route and several bus stops located within a 250-metre catchment of the site.

Lot 101 (532) Canning Highway, Attadale (subject site) is zoned Centre C4 under the provisions of City of Melville Local Planning Scheme No. 6. The subject site is situated within the Hislop Road Neighbourhood Centre. The development controls for the

subject site are largely contained in Local Planning Policy 2.1 – Non-Residential Development (LPP2.1) and local planning scheme6.

The development site is adjacent to a pedestrian access way (PAW) to the north, a mixed-use development to the north of the PAW and a small portion of Mick John Reserve. Residential strata units are located to the north within the mixed-use development. Residential strata units are also located to the east of the site within the R50 residential development. Offices, consulting rooms and medical uses are situated to the south-east properties facing Canning Highway.

The site has frontage to Hislop Road, opposite a petrol station and a range of smaller-scale land uses typically associated with a Neighbourhood Centre, including hairdressers, cafés/restaurants and a liquor store. The site also has frontage to Canning Highway with Mixed Use (R50) zoned properties opposite the site to the south on Canning Highway that accommodate uses such as child-minding services, consulting rooms and residential dwellings.

A motor vehicle sales and repair premises has operated on the site since the 1960s and has undergone a number of additions and alterations over time.

In 2021, a development application was submitted for additions and alterations to the existing showroom buildings, which was approved by the DAP (reference DAP/21/02079) at its meeting on 7 December 2021, subject to conditions. In 2022, a further application was lodged to amend the 2021 approval, proposing several changes to the approved showroom development. This amendment application was also approved by the DAP at its meeting on 17 October 2022, subject to conditions.

In 2023, a new application was lodged proposing additions & alterations to existing motor vehicle sales & motor vehicle repair buildings and land uses at the premises. This new application was approved by the DAP (reference DAP/22/02314) at its meeting on 22 May 2023, subject to conditions.

In 2025, an amendment application was lodged to amend the 2023 approval proposing several minor facade changes to the approved motor vehicle sales and motor vehicle repairs at the premises. This application was approved by the City of Melville under delegation in accordance with regulation 17A of the *Planning and Development (Development Assessment Panels) Regulations 2011.*

In November 2025, an amendment application was lodged to amend the above-mentioned 2025 approval by proposing an additional private car washing facility, utilities, plant room and associated landscaping located to the north of the subject site. This application was approved by the DAP (see Attachment 2) at its meeting held on 22 January 2026.

The proposed amendment subject to this application is a further amendment to the original 2023 DAP approval. The development is currently under construction as of January 2026 in accordance with the above listed development approvals.

ACCEPTANCE AS A FORM 2 APPLICATION

The City notes that the application has been lodged pursuant to regulation 17 of the *Planning and Development (Development Assessment Panels) Regulations 2011*.

These provisions allow for an existing DAP approval to be amended where the proposed modifications do not substantially change the form, function or intent of the development as previously approved.

Having regard to the nature, scale and extent of the proposed amendments, the City is satisfied that the application remains appropriately characterised as an amendment to the existing approval, rather than a new development proposal. The proposed modifications are considered to be generally consistent with the approved development and may therefore be appropriately considered under the regulation 17 amendment pathway.

LEGISLATION AND POLICY

LEGISLATION

- Planning & Development Act 2005
- Metropolitan Region Scheme
- Planning & Development (Local Planning Schemes) Regulations 2015
- City of Melville Local Planning Scheme No. 6

STATE GOVERNMENT POLICIES

- SPP4.2: Activity Centres for Perth and Peel
- SPP7.0: Design of the Built Environment

STRUCTURE PLANS/ACTIVITY CENTRE PLANS

N/A

LOCAL POLICIES

- LPP1.1: Planning Process and Decision Making
- LPP1.3: Waste and Recyclables Collection for Multiple Dwellings, Mixed Use and Non-Residential Developments
- LPP 1.4: Provision of Public Art in Development Proposals
- LPP1.6: Car Parking and Access
- LPP2.1: Non-Residential Development
- LPP2.2: Outdoor Advertising and Signage Policy

PLANNING ASSESSMENT:

PLANNING FRAMEWORK	
Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	City of Melville Local Planning Scheme No.6 (LPS6)
Local Planning Scheme - Zone/Reserve	Centre C4, Hislop Road Neighbourhood Centre
Structure Plan/Precinct Plan	N/A
Structure Plan/Precinct Plan - Land Use Designation	N/A

Lot Size:	11,641m2
Existing Land Use:	Motor Vehicle, Boat or Caravan Sales Motor Vehicle Repairs
Heritage Status	N/A
Bushfire Prone Area	No

Clause 67 of the *Planning and Development (Local Planning Schemes) Regulations 2015* lists a range of matters that require the decision maker to have due regard for when considering an application for development approval. This includes requirements set out in the local planning scheme, any local planning policy and structure plan. For this development, the provisions contained with LPS6, LPP1.6 (Car Parking and Access) and LPP2.1 (Non-Residential Development) provide the substantive built form provisions for the purpose of assessing this development.

STATE PLANNING FRAMEWORK

State Planning Policy 5.4 – Road and Rail Noise

The subject site is located within the noise exposure forecast area associated with Canning Highway, which is identified as a primary regional road. Accordingly, State Planning Policy 5.4 – Road and Rail Noise (SPP5.4) is a relevant consideration for the assessment of the application, particularly in relation to the interface between the existing development, the adjoining transport corridor and nearby sensitive land uses.

Given the site's frontage to Canning Highway, acoustic matters were considered as part of the original DAP approval (DAP-2022-7). An acoustic report was prepared to assess the potential noise environment and relevant noise impacts associated with the approved Motor Vehicle Sales and Motor Vehicle Repair land uses, having regard to the surrounding road environment and the applicable noise requirements.

The current application proposes additions and alterations to the existing approved development and does not introduce a new noise-sensitive land use. Rather, the proposal retains the established commercial land use within the Centre zone. The application is also supported by an acoustic report prepared by Lloyd George Acoustics (Attachment 5), which concludes that the development will comply with the assigned noise levels under the *Environmental Protection (Noise) Regulations 1997*.

Notwithstanding the acoustic conclusion, the report identifies a number of recommended noise control measures to assist in managing operational noise and maintaining compliance. Having regard to the scope of the proposed amendment, and noting that the acoustic matters were considered as part of the original approval, the City considers that noise impacts can be appropriately managed through the recommended new condition as part of this report, Condition 32. This will ensure that the relevant mitigation measures are confirmed and implemented prior to construction and operation, consistent with the intent of SPP5.4 and the requirements of the *Environmental Protection (Noise) Regulations 1997*.

State Planning Policy 7.0 – Design of the Built Environment

The 10 key design principles contained within *State Planning Policy 7.0 – Design of the Built Environment* (SPP7.0) set a framework for urban development to address design quality and built form. The additions are considered to appropriately address the relevant design outcomes as follows:

Design Principle	Development Context
Context and character	The minor showroom additions respond appropriately to the existing development and surrounding context, maintaining the established character, built form and presentation of the site without introducing an incongruous or visually dominant element.
Landscape quality	The additions are contained within the existing developed site and do not result in any significant alteration to the established landscaping or broader landscape character. Existing landscape treatments will continue to provide an appropriate setting for the development.
Built form and scale	The scale and form of the showroom additions are minor and proportionate to the existing building, maintaining an appropriate relationship with the established built form and avoiding any undue visual bulk or dominance. The proposed amendment increases the minor showroom display area from 556m^2 to 640m^2. This increase represents approximately 0.01% of the total 11,641m^2 site area and is therefore considered minor. The resulting 640m^2 display area comprises approximately 5.5% of the overall site and remains ancillary in scale. The amended design is compatible with the approved substantive showroom and provides an improved interface with the streetscape through a cohesive, high-quality built form that responds appropriately to the established character of Canning Highway and the surrounding development.
Functionality and build quality	The additions provide a functional extension to the existing showroom and integrate with the operation and layout of the established development. The design and construction will complement the existing building and provide an appropriate standard of built quality.
Sustainability	The minor nature of the additions limits their environmental impact, while their integration with the existing building and site makes efficient use of established infrastructure and development areas. The proposal does not introduce any significant additional sustainability impacts beyond the existing development.
Amenity	The additions are designed to integrate with the existing development and are not expected to result in any significant additional impacts on the amenity of adjoining properties or the surrounding locality in terms of visual impact, noise, privacy or other amenity considerations. The basement parking extension forms a logical continuation of the existing approved basement structure and, being located below ground, would not be readily visible from the public realm or result in any discernible change to the presentation of the development from Canning Highway.

Legibility	The additions remain clearly associated with the existing showroom and do not alter the established site layout or access arrangements. The relationship between the building, access, parking and surrounding site elements will remain readily understandable.
Safety	The proposal maintains the existing safe access, circulation and operational arrangements of the site. The minor additions do not introduce any significant new safety risks and can be appropriately integrated with the existing development.
Community	The additions support the continued use and functionality of an established development, without materially changing its relationship with the surrounding area. The proposal therefore maintains an appropriate interface with the broader community and surrounding land uses.
Aesthetics	The design and appearance of the minor showroom additions are compatible with the existing building, with the additions intended to read as an integrated component of the established development rather than a visually separate or dominant structure. Overall, the proposal will maintain an appropriate visual presentation of the site.

Overall, the minor showroom additions are considered to appropriately address the ten design principles of SPP 7.0 and are compatible with the established development and surrounding context.

CITY OF MELVILLE PLANNING FRAMEWORK

City of Melville Local Planning Scheme No.6

Table 3 (Zoning Table) within LPS6 affords land use permissibility for each zone contained within the City's planning scheme. Under the provisions of the City of Melville LPS6, the site is zoned 'Centre C4' with a density code of R60. The objectives of the Centre C4 are discussed below in this report given the existing land use of motor vehicle sales and motor vehicle repairs is subject to non-conforming land use rights as the existing land uses are 'X' uses under LPS6.

Land Use Permissibility

The suitability of the proposed modifications subject of this application, to the design and land use of the 'motor vehicle sales and motor vehicle repairs' land use therefore requires a performance assessment against the City's LPS6 Centre zone objectives. On balance, the amended nature of the proposed use is consistent with the respective Centre C4 zone objectives as discussed below:

Centre (C4) Zone Objectives	Assessment
• *To designate land for future development as a city centre or activity centre.*	The proposal involves minor additions and alterations to an existing showroom and does not prejudice the future development of the land as an activity centre. The works represent an appropriate upgrade to the existing

	development while retaining the established use and built form.
• *To provide a basis for future detailed planning in accordance with the structure planning provisions of this Scheme or the Activity Centres State Planning policy.*	The minor nature of the proposal does not undermine future detailed planning for the locality. The development retains the existing showroom function and does not introduce a new or intensified land use that would constrain future planning outcomes.
• *To provide for a wide variety of active uses on street level which are compatible with residential and other non-active uses on upper levels.*	The proposal maintains an existing street-level showroom use, which is consistent with the objective of providing active and varied uses within activity centres. The minor upgrade improves the presentation and functionality of the existing premises without introducing an incompatible or intensified activity.
• *To allow for the development of a mix of varied but compatible land uses such as housing, offices, showrooms, shops, amusement centres, and eating establishments which do not generate nuisances detrimental to the amenity of the district or to the health, welfare and safety of its residents.*	The proposal supports the objective by retaining and upgrading an established showroom use, which is specifically contemplated by the C4 objectives. The works are minor in nature and do not change or intensify the existing non-conforming motor vehicle sales and repair use, or introduce additional land use impacts or nuisances.
• *C4 – All Neighbourhood and Local Centres: to provide for Neighbourhood and Local Centres to focus on the main daily to weekly household shopping and community needs and focus for medium density housing.*	While the existing use is non-conforming, the proposal is limited to minor additions and alterations to the existing minor showroom and does not seek to expand or intensify the established motor vehicle sales and repair use. The works therefore do not compromise the intended future role of the centre and allow the existing development to be appropriately maintained and upgraded in the interim.
• *To ensure that development is not detrimental to the amenity of adjoining owners or residential properties in the locality.*	The minor scale of the proposed works, together with the continuation of the existing use, is not expected to result in additional impacts on adjoining properties or residential amenity. The proposal does not intensify the use or introduce a new source of amenity impacts.
• *To ensure the design and landscaping of development provides a high standard of safety, convenience and amenity and contributes towards a sense of place and community.*	The proposed showroom upgrades will improve the functionality, presentation and amenity of the existing development. The minor works provide an opportunity to improve the site while maintaining the established use, contributing to a safer,

	more convenient and appropriately presented development.

On balance, the proposed development is incidental to the existing approved motor vehicle sales and motor vehicle repairs land use and is considered to satisfy the objectives of the Centre 'C4' zone.

Non-Conforming Use

Clause's 22 and 23 of LPS6 provides the ability for a development application to be lodged to alter and/or extend a non-conforming use of land.

The proposed additions and alterations to the minor showroom, as outlined earlier in this report, are a continuation of the existing non-conforming land use and do not detrimentally impact the amenity of the locality. Whilst a movement of the land use closer to that intended by the zone remains the preferred planning outcome, it is recognised that on this occasion the proposed additions are minor, the existing use is unchanged and further discretion from the City is not required.

The City has assessed the proposal against the purpose and objectives of LPS6 (as outlined above) and the additions and alterations to the minor showroom are not expected to result in any additional adverse impacts or loss of amenity within the locality and is therefore considered supportable on this basis.

The proposed modifications do not introduce a new land use, alter the nature of the approved activities or expand the operational function of the site. Rather, the application is limited to physical alterations associated with the existing approved development, including the replacement minor showroom and reconfiguration of parking and display areas.

Given the limited extent of the works and the absence of any land-use intensification, the amendment will not materially entrench or extend the non-conforming uses beyond the circumstances contemplated by the existing approvals.

Local Planning Policy 1.6 – Car Parking and Access

The development proposes a further reduction of eight (8) bays to DAP-2022-7/C, relative to the parking requirements set out in LPP1.6, giving rise to a shortfall now of fifteen (15) parking bays in total (requires 132 car bays and 117 car bays provided).

On balance, the proposed shortfall in parking bays represents a minor reduction from the original approval and can be supported for the following reasons:

- The original development was approved with a shortfall of 24 customer and service parking bays;
- Since the original approval, amendments approved under DAP-2022-7/C resulted in a reduction in employee numbers, such that the development proposed a shortfall of 6 parking bays (providing 112 bays in lieu of 118 bays required);

- While the amended proposal seeks a further reduction of car spaces on site, the original development was approved with an increased shortfall, showing that the amendment remains a better planning outcome than the original approval, with a shortfall of only 15 bays;
- The proposal indicates a shortfall of 15 bays under LPP 1.6 which is minor in the context of the overall development and does not represent additional parking demand generated by the proposal. LPP1.6 applies the parking requirements to modifications where there is an increase in NLA/PFA or additional parking demand. Given the proposal is a minor showroom alteration, the shortfall should be considered in the context of the existing operation rather than as a significant expansion of the use; and
- While vehicle storage areas are not counted as formal car parking bays for the purpose of LPP1.6, the extensive on-site vehicle storage/display areas provide substantial capacity for vehicles associated with the operation of the land use. The development proposes 64 storage bays on ground, and 84 storage bays at the basement level, totalling 148 storage bays. This in turn can reduce reliance on formal customer parking areas, accordingly, the numerical parking shortfall should be considered in the context of the actual operational characteristics of a motor vehicle sales premises.

CONSULTATION:

PUBLIC CONSULTATION

In accordance with *Local Planning Policy 1.1 – Planning Process and Decision Making* (LPP1.1), public consultation was undertaken with the owners and occupiers of the adjoining eastern properties. Consultation was undertaken in relation to the proposed land use, noting that the development proposed to intensify a non-conforming land use. The application was advertised from 28 July 2026 to 13 August 2026. One submission was received (summarised below) and not specifically objecting to the proposal.

Issue Raised	**Officer's comments**
Questions around any works happening beneath the boundary of 550 Canning Highway and if dilapidation (condition) survey will be undertaken to neighbouring properties.	Under the standard Construction Management Plan (CMP) condition and requirements of Local Planning Policy 1.22 (Construction Management Plans), dilapidation reports may be undertaken by the builder. CMP condition exists already as part of original approval (condition number 11). An additional advice note has been recommended as part of this application regarding the CMP.

REFERRALS/CONSULTATION WITH GOVERNMENT/SERVICE AGENCIES

This application was referred to Main Roads Western Australia (MRWA) on 23/07/2026 with a formal response received on 25/08/2026. The application was referred to MRWA

given the subject site's frontage to Canning Highway, which is classified as a Primary Regional Road under the Metropolitan Region Scheme.

Refer to Attachment 3 for MRWA's formal response, including the conditions recommended that have already been incorporated into the original DAP determination (Attachment 4).

The previous approval was referred to MRWA for review and general comment, noting that there is an area set aside for road widening on the southernmost portion of the subject site. MRWA had no objection to the previous approval subject to conditions. The proposed modifications satisfy these conditions and do not propose any change to access arrangements.

DESIGN REVIEW PANEL ADVICE

The proposed additions and alterations are limited in scope and consistent with the form and function of the originally approved development. On this basis, referral to the City's Design Review Group was not undertaken.

OTHER ADVICE

The application was referred to relevant internal teams for technical review including Waste, Engineering, Parks and Natural Areas, Traffic and Road Safety, Environmental Health, Building, Arts and Culture and Strategic Planning. The following comments provided are relevant to the City's final recommendation for this application:

Environmental Health

An acoustic report (Attachment 5) was provided by the applicant and completed by Lloyd George Acoustics as part of the previous approval. This acoustic note was internally referred to the City's Environmental Health department whose assessment concluded that, based on the modelling undertaken, noise levels are expected to comply with the *Environmental Protection (Noise) Regulations 1997* during operational hours.

Notwithstanding the above acoustic note compliance, the City has recommended that a new condition 32 be imposed to ensure that the Noise Management Plan is provided prior to construction commencing. This is to ensure that the additions and alterations to the minor showroom comply with the requirements under the *Environmental Protection (Noise) Regulations 1997*.

CONCLUSION:

The proposed additions and alterations of the existing motor vehicle sales and motor vehicle repairs and associated buildings to the original approval have been considered against the objectives of the City's LPS6 and local planning policies.

Having regard to these requirements, the development is consistent with the existing approved land use and works, and the minor additions provide functional and operational enhancements to the existing land uses. On this basis, the development should be supported.

Overall, the proposed additions and alterations represent a minor upgrade to an existing showroom associated with an established non-conforming land use. The proposal does not seek to change or intensify the existing motor vehicle sales and repair use, and is limited to improving the existing premises. Accordingly, the development is considered consistent with the intent of the C4 zoning objectives by maintaining an established showroom use, improving the presentation and functionality of the site, and avoiding additional impacts on surrounding amenity while not prejudicing the future planning and development of the activity centre.

Attachments

1. Development Plans
2. DAP-2022-7/C (DAP Ref: DAP/22/02314) Determination
3. Main Roads Western Australia Referral Response
4. Original DAP (DAP-2022-7) Determination
5. Acoustic Report



EXISTING AERIAL DIAGRAM

SCALE: 1 : 1000

PRELIMINARY

meyer shircore architects

PROPOSED ADDITIONAL CAR SHOWROOM

ADDRESS: 532 CANNING HIGHWAY, ATTADALE, WA (6156)

FOR: MELVILLE MOTORS PTY. LTD

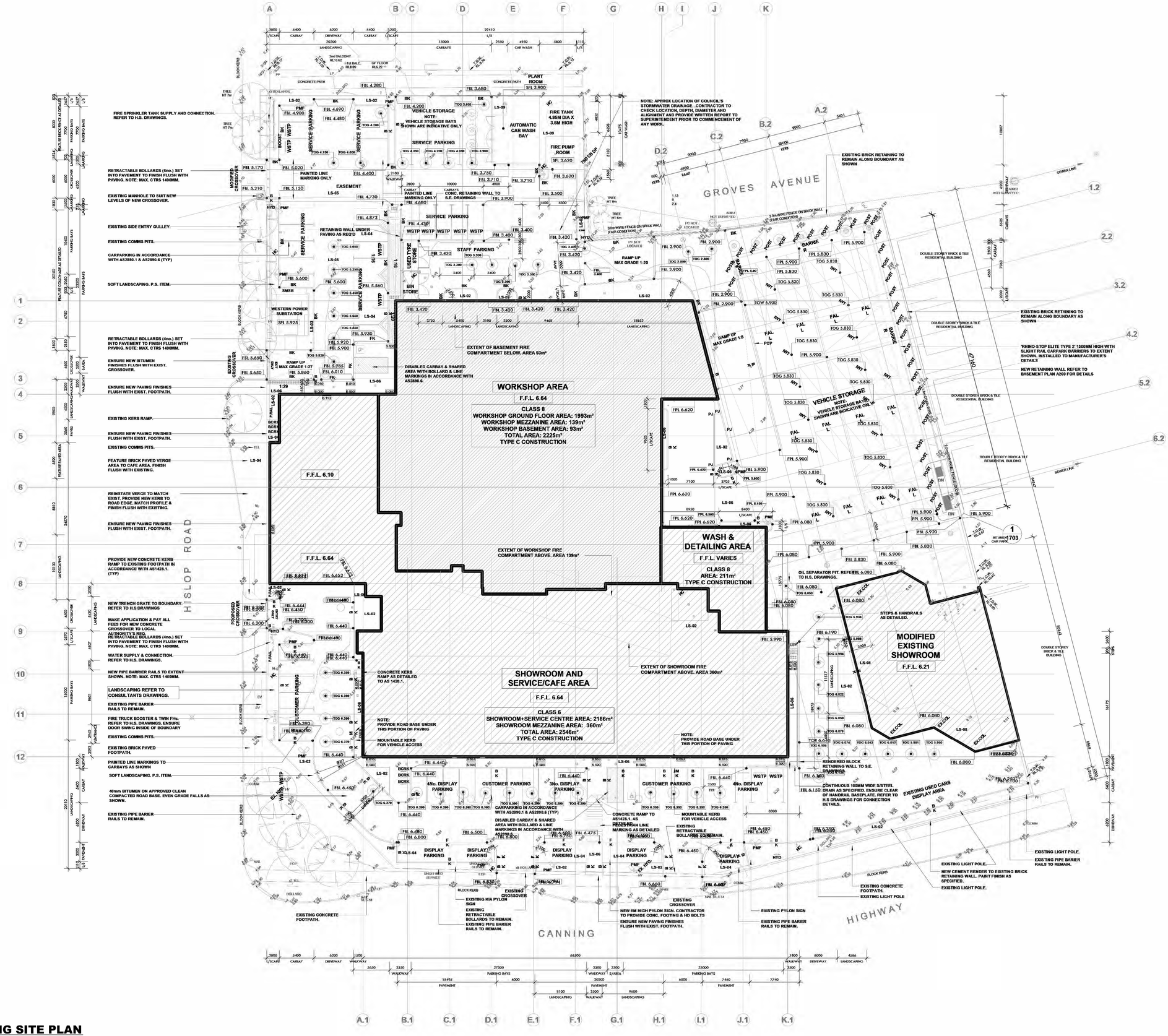
Document Set ID: 7489884
Version: 2, Version Date: 28/08/2026

Member Australian Institute of Architects

DATE: JUN 2026
REVISION: SK001
DWG No: A001
SCALE: 1 : 1000 @B1

PROJECT NUMBER
P26-9806

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EXISTING SITE PLAN

SCALE:1 : 250

PRELIMINARY

meyer shircore architects

PROPOSED ADDITIONAL CAR SHOWROOM

ADDRESS: 532 CANNING HIGHWAY, ATTADALE, WA (6156)

FOR: MELVILLE MOTORS PTY. LTD

Document Set ID: 7488884
Version: 2, Version Date: 29/08/2026

DATE: JUN 2026
REVISION: SK001
DWG No: A002
SCALE: 1 : 250 @B1

PROJECT NUMBER
P26-9806

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SITE CRITERIA

1. Site Area
- a. Site Area — **11,641m²**

2. Gross Floor Areas (GFA)
- a. Workshop — 1,993m²
- b. Service Centre & Cafeteria — 516m²
- c. Wash & Detailing — 212m²
- c. Main Showroom (KIA, Suzuki & GWM) — 1,670m²
- d. Minor Showroom (Geely & GAC) — 790m²

TOTAL GROSS FLOOR AREA — 5,181m²

3. Car Display Areas
- a. KIA - Existing Internal Display — 280m²
- b. Suzuki - Existing Internal Display — 210m²
- c. GWM - Existing Internal Display — 210m²
- d. Geely - Proposed Internal Display — 210m²
- e. GAC - Proposed Internal Display — 210m²
- f. External Display (Existing Shared) — 220m²

TOTAL CAR DISPLAY AREA — 1,340m²

4. Car Parking Requirements
- a. Display @ 1/100m² — 13.4 Cars
- b. Employees @ 0.5/Employee — 21.5 Cars
- c. Workshop @ 3/Bay — 90 Cars

TOTAL CARS REQUIRED — 124.9 Cars

4. Car Parking Provided
- a. Employee — 25 Cars
- b. Customer — 102 Cars

TOTAL CARS PROVIDED — 127 Cars

LEGEND

- BUILDING FOOTPRINT - PROPOSED CAR SHOWROOM
- BUILDING FOOTPRINT - EXISTING BUILDING
- EXTENT OF BITUMEN PAVING
- EXTENT OF ROADBASE HARDSTAND
- EXTENT OF CONCRETE HARDSTAND
- EXTENT OF BRICK PAVING / CONCRETE PAVING
- EXTENT OF WASHED AGGREGATE PAVING
- EXTENT OF WASHED AGGREGATE PAVING

LANDSCAPE LEGEND

SYMBOL	DESCRIPTION
	GROUND COVERS & LOW SHRUBS
	GROUND COVERS & LOW SHRUBS
	ORNAMENTAL TREE
	SHADE TREE
	VERGE TREE

LANDSCAPING

A. HARD LANDSCAPING
DEFINED AS PAVED WALKWAYS EITHER OPEN OR COVERED.
B. SOFT LANDSCAPING
DEFINED AS VEGETATIVE LANDSCAPING.

NETT FLOOR AREA : NFA

A. NETT FLOOR AREA OF A TENANCY ON THIS PLAN IS DEFINED AS THE AREA BETWEEN EXTERNAL OR TENANCY DIVIDING WALLS.
B. THIS AREA IS INCLUSIVE OF TOILETS IF THE TOILETS ARE EXCLUSIVE TO THE TENANCY.

GROSS FLOOR AREA : GFA

A. ALL FLOOR AREAS ON THIS PLAN ARE SHOWN AS GROSS FLOOR AREA.
UNLESS OTHERWISE NOTED AS NETT FLOOR AREA
B. DEFINITION OF GROSS FLOOR AREA IS DEFINED AS:
I/ GROSS FLOOR AREA OF TENANCY:
GROSS FLOOR AREA OF AN INDIVIDUAL TENANCY IS DEFINED AS THE AREA CONTAINED BETWEEN THE CENTRE LINE OF COMMON TENANCY WALLS AND THE OUTSIDE EDGE OF EXTERNAL WALLS.
II/ GROSS FLOOR AREA OF A BUILDING:
GROSS FLOOR AREA OF A BUILDING IS DEFINED AS THE TOTAL AREA CONTAINED BETWEEN THE OUTSIDE EDGE OF EXTERNAL WALLS

PROPOSED SITE PLAN

SCALE:1 : 250

PRELIMINARY

meyer shircore architects

PROPOSED ADDITIONAL CAR SHOWROOM

ADDRESS: 532 CANNING HIGHWAY, ATTADALE, WA (6156)
FOR: MELVILLE MOTORS PTY. LTD

Document Set ID: 7483084
Version: 2, Version Date: 28/08/2026

DATE: JUN 2026
REVISION: SK001
DWG No: A003
SCALE: As indicated@B1

PROJECT NUMBER
P26-9806

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Suite 2, Ground Floor, 437 Roberts Road, Subiaco WA 6008
PO Box 1294 Subiaco WA 6904
t: 08 9381 8511
e: msa@meyershircore.com.au
ACN 115 189 216
ABN 32 872 749 643



PROPOSED GA BASEMENT PLAN

SCALE: 1 : 200

PRELIMINARY

meyer shircore architects

PROPOSED ADDITIONAL CAR SHOWROOM

ADDRESS: 532 CANNING HIGHWAY, ATTADALE, WA (6156)

FOR: MELVILLE MOTORS PTY. LTD

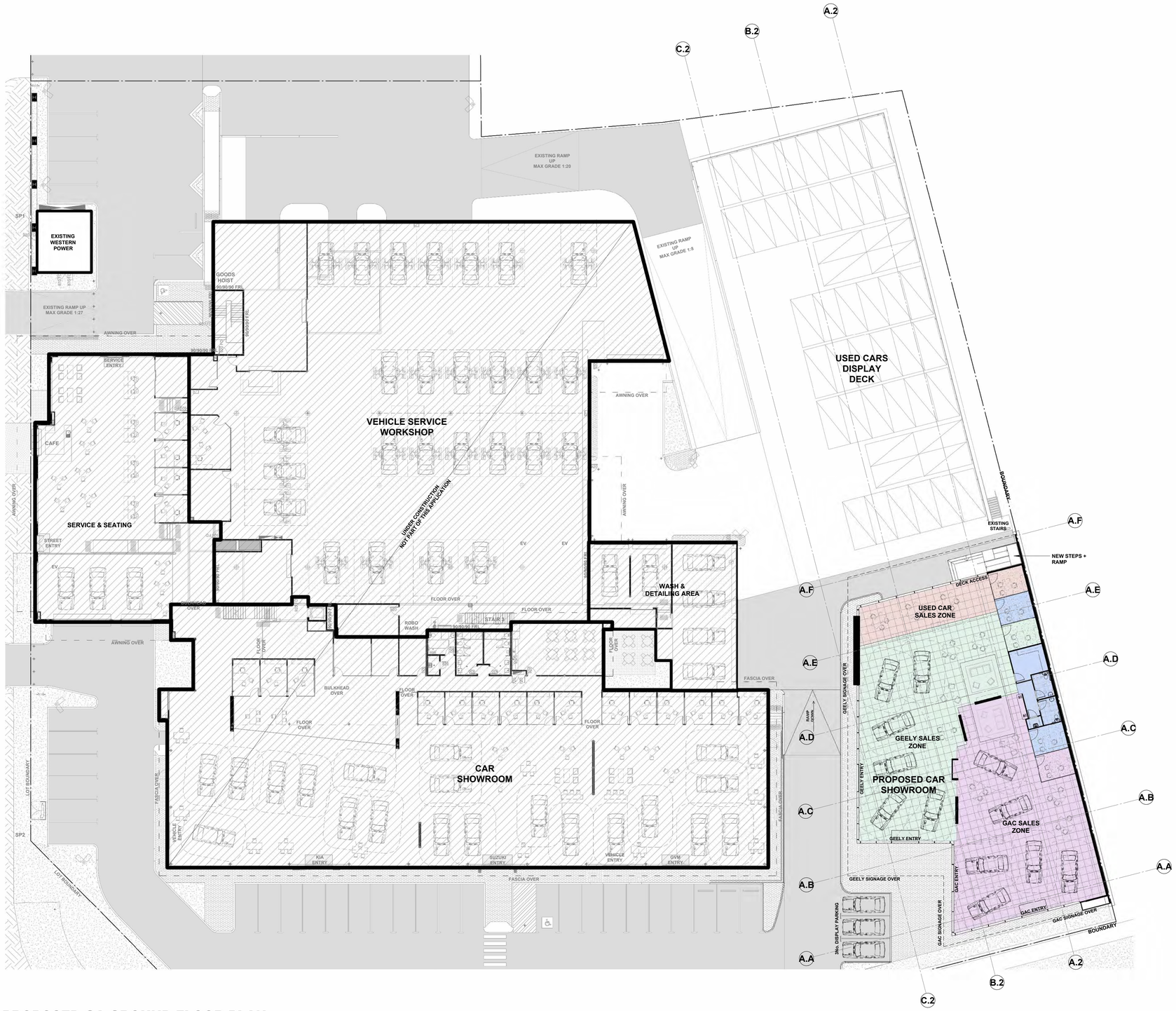
Document Set ID: 7483984
Version: 2, Version Date: 28/08/2026

Member Australian Institute of Architects

DATE: JUN 2026
REVISION: SK001
DWG No: A005
SCALE: 1 : 200 @B1

PROJECT NUMBER
P26-9806

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PROPOSED GA GROUND FLOOR PLAN

SCALE: 1 : 200

PRELIMINARY

meyer shircore architects

PROPOSED ADDITIONAL CAR SHOWROOM

ADDRESS: 532 CANNING HIGHWAY, ATTADALE, WA (6156)

FOR: MELVILLE MOTORS PTY. LTD

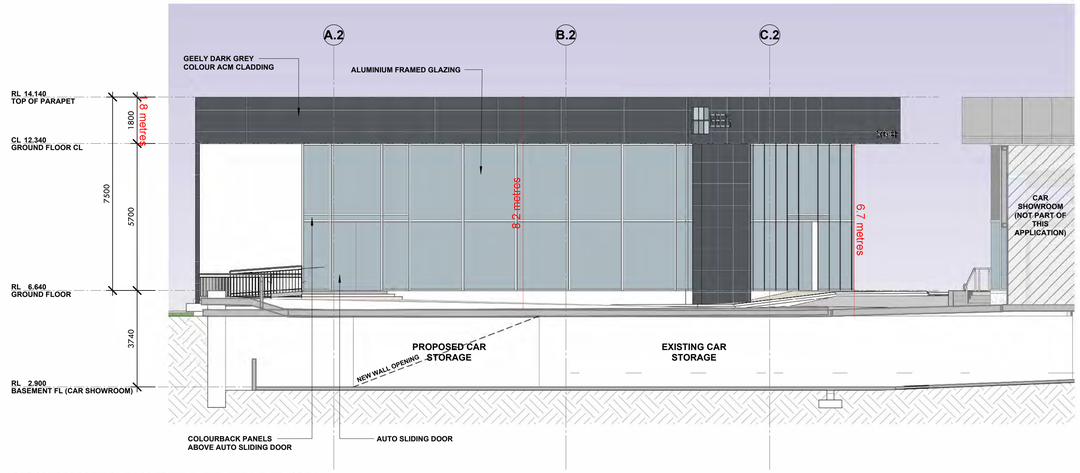
Document Set ID: 7483984
Version: 2, Version Date: 28/08/2026

Member Australian Institute of Architects

DATE: JUN 2026
REVISION: SK001
DWG No: A006
SCALE: 1 : 200 @B1

PROJECT NUMBER
P26-9806

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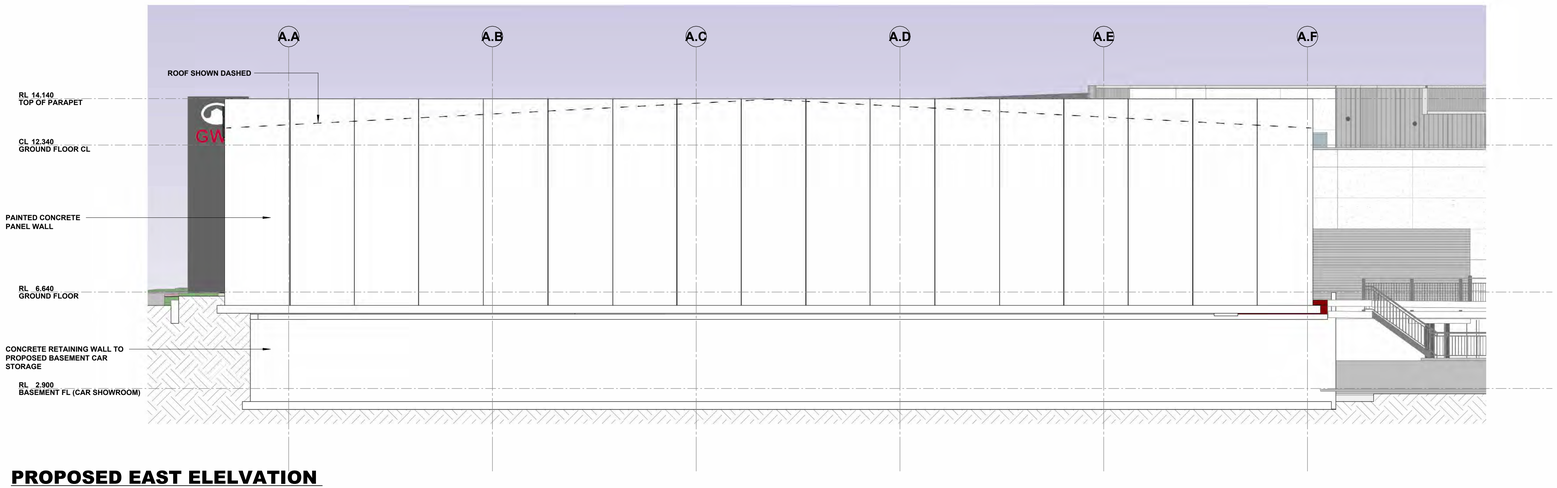
PROPOSED NORTH ELEVATION

SCALE: 1 : 100



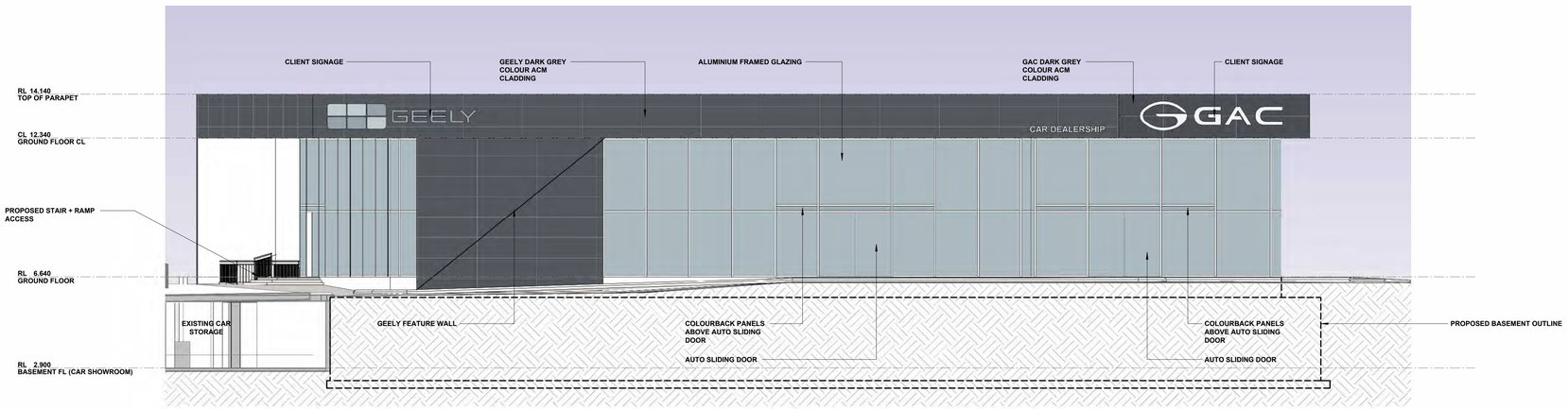
PROPOSED SOUTH ELEVATION

SCALE: 1 : 100



PROPOSED EAST ELELVATION

SCALE: 1 : 100



PROPOSED WEST ELEVATION

SCALE: 1 : 100

PRELIMINARY

meyer shircore architects

PROPOSED ADDITIONAL CAR SHOWROOM

ADDRESS: 532 CANNING HIGHWAY, ATTADALE, WA (6156)

FOR: MELVILLE MOTORS PTY. LTD

Document Set ID: 7489884
Version: 2, Version Date: 28/08/2026

Member Australian Institute of Architects

DATE: JUN 2026
REVISION: SK001
DWG No: A009
SCALE: 1 : 100 @B1

PROJECT NUMBER
P26-9806

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ACN 115 189 216
ABN 32 872 749 643

LG Ref: DAP-2022-7
DAP Ref: DAP/22/02314
Enquiries: (08) 6551 9919

Joshua Carmody
Planning Solutions
GPO Box 2709
Cloisters Square 6850

Dear Joshua,

METRO INNER DAP - CITY OF MELVILLE - DAP APPLICATION - DAP-2022-7 - DETERMINATION

Property Location:	Canning Highway, No. 532 (Lot No. 101) Attadale 6156
Application Details:	Additions and alterations to motor vehicle sales & Motor vehicle repair premises
Amendment Details:	Form 2.1 - Amendment to development approval for the addition of a car wash facility, utilities and plant room, and associated landscaping

Thank you for your Form 2.1 Development Assessment Panel (DAP) application and plans submitted to the City of Melville on 17 November 2025 for the above-mentioned development.

The application was considered by the Metro Inner DAP at its meeting held on 22 January 2026, where in accordance with the provisions of the City of Melville Local Planning Scheme No 6, it was resolved to **approve** the application as per the attached notice of determination.

Should the applicant not be satisfied by this decision, an application may be made to amend or cancel this planning approval in accordance with regulation 17 and 17A of the *Planning and Development (Development Assessment Panels) Regulations 2011*.

Please also be advised that there is a right of review by the State Administrative Tribunal in accordance with Part 14 of the *Planning and Development Act 2005*. Such an application must be made within 28 days of the determination, in accordance with the *State Administrative Tribunal Act 2004*.

Should you have any queries with respect to the conditions of approval, please contact Matt Byrne-McLean on behalf of the City of Melville on 08 9364 3387.

Yours sincerely,

DAP executive director

3 February 2026

Encl. DAP Determination Notice

Cc: Matt Byrne-McLean
City of Melville

Document Set ID: 7274717
Version: 1, Version Date: 03/02/2026

Planning and Development Act 2005

City of Melville Local Planning Scheme No 6

Metro Inner Development Assessment Panel

Determination on Development Assessment Panel Application for Planning Approval

Property Location: Canning Highway, No. 532 (Lot No. 101) Attadale 6156
Application Details: Additions and alterations to motor vehicle sales & Motor vehicle repair premises
Amendment Details: Form 2.1 - Amendment to development approval for the addition of a car wash facility, utilities and plant room, and associated landscaping

In accordance with regulation 8 of the *Planning and Development (Development Assessment Panels) Regulations 2011*, the above application for planning approval was **granted** on 22 January 2026, subject to the following:

1. **Accept** DAP Application reference DAP/22/02314 and accompanying plans (Attachment 1) is appropriate for consideration as Minor Amendments to the Additions and Alterations to existing Motor Vehicle Sales & Motor Vehicle Repair Premises in accordance with clause 16 of the City of Melville Local Planning Scheme No. 6;

2. **Approve** DAP Application reference DAP/22/02314 and accompanying plans (Attachment 1) in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions of Clause No. 23 and No. 24 of the City of Melville Local Planning Scheme No. 6, for the proposed amendment to the approved Additions and Alterations to Motor Vehicle Sales and Motor Vehicle Repair Premises at No. 532 (Lot 101) Canning Highway, Attadale WA 6156, subject to the following conditions;

New Condition

Add the following new condition 30 to the original approval issued by the Metro Inner-South Joint Development Assessment Panel (JDAP) dated 23 May 2023 (DAP/22/02314) as follows:

30. Prior to occupation, the motor vehicle wash component of the development is required to be constructed in accordance with the specifications and recommendations set out in the approved Acoustic Note (Lloyd George Acoustics, Ref: 22087499-02 Car Wash and dated 5 November 2025) and thereafter operate in accordance with the recommendations, to the satisfaction of the City.

31. The operation hours of the car wash facility to be limited to:

    - 7.00am – 7.00pm – Monday to Friday, and
    - 7.00am – 5.00pm – Saturday
    - Nil - Sunday

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Version: 1, Version Date: 03/02/2026

Amended Conditions

Amend the following conditions imposed as part of the original approval issued by the Metro Inner-South Joint Development Assessment Panel (JDAP) dated 23 May 2023 (DAP/22/02314) as follows:

4. All stormwater generated on site is to be retained on site in accordance with a plan approved in writing by the City, incorporating management of wastewater from the car wash facility. Prior to the commencement of development, a stormwater design plan is to be submitted (an ARI of 1 in 100 year for a 24 hour storm duration is recommended) for the approval of the City. Prior to initial occupation of the development a Certificate of Compliance certifying that the development has been constructed in accordance with the approved plan is to be submitted to the City.

7. Prior to the initial occupation of the development, all parking bays, manoeuvring areas, driveway[s] and points of ingress and egress shall be provided in accordance with the approved plans and the relevant Australian Standards to the satisfaction of the City, and thereafter be maintained for the life of the development.

10. Where a driveway meets the street, walls or fencing within sight line areas are to meet the requirements contained under Local Planning Policy LPP1.6 Parking and Access, to the satisfaction of the City.

14. Prior to the commencement of development, a signage strategy is to be submitted to and approved in writing by the City taking into account the provisions of Local Planning Policy 2.2 Outdoor Advertising and Signage. The strategy is to demonstrate how the future signage requirements for all uses are to be accommodated. Once approved, signage is to be installed in accordance with the approved strategy unless further development approval is obtained to the satisfaction of the City.

15. Prior to occupation of the development, an amended detailed landscaping and reticulation plan for the subject site and/or the road verge(s) adjacent to the site is to be submitted to and approved in writing by the City which is consistent with the latest approved plans which form part of this approval. The landscaping plan is to include proposed details of (but is not limited to):

    a. The location, number and type of proposed trees and shrubs including planter size and planting density;
    b. Any lawns to be established;
    c. Any existing vegetation and/or landscaped areas to be retained; and
    d. Any verge treatments.

    The approved landscaping and reticulation plan shall be fully implemented within the first available planting season after the initial occupation of the development and maintained thereafter, to the satisfaction of the City.

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New Advice Note

Add the following new advice note to the original approval issued by the Metro Inner-South Joint Development Assessment Panel (JDAP) dated 23 May 2023 (DAP/22/02314) as follows:

b) In relation to condition 7, the applicant is advised that the two car bays (1 storage and 1 service bay) directly adjacent to the west of the car wash facility plant room are to remain free of obstruction. This may be achieved with amended plant room doors that do not swing out into these two car bays.

All other conditions, footnotes and advice notes remain as per the DAPs' original decision dated 1 December 2022.

Where an approval has so lapsed, no development shall be carried out without further approval having first been sought and obtained, unless the applicant has applied and obtained Development Assessment Panel approval to extend the approval term under regulation 17(1)(a) or local government approval under regulation 17A of the *Planning and Development (Development Assessment Panels) Regulations 2011*.

Document Set ID: 7274717
Version: 1, Version Date: 03/02/2026

DEVELOPMENT ASSESSMENT PANEL

APPROVED

22-Jan-2026



SITE CRITERIA

1. Site Area
   a. Land Area: 11,944m²

2. Gross Floor Areas
   a. Workshop - Underconstruction: 1,999m²
   b. Showroom Extension - Underconstruction: 615m²
   c. Wash & Detail- Underconstruction: 210m²
   d. Main Showroom - Underconstruction: 1,674m²
   e. Minor Showroom - Underconstruction: 339m²

3. Car Display Areas
   a. Internal - N/A: 525m²
   b. Internal - SUZUKI: 293m²
   c. Internal - GWM: 387m²
   d. Internal - Used Cars: 216m²
   e. External Display: 588m²
   Total: 2,029m²

4. Carparking Required
   a. Display - 1/100m²: 5.96 Cars
   b. Employees - 0.5/employee: 21.50 Cars
   c. Workshop - 3/Bay: 90.00 Cars
   Total Car required: 117.55 Cars

4. Carparking Provided
   a. Employee: 22 Cars
   b. Staff/Customer: 97 Cars
   Total Car provided: 119 Cars

N

PROPOSED AUTO CAR WASH AND PLANT ROOM

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156
FOR:MELVILLE MOTORS

SK024
MAY 2025
S3 A1
As indicated @ A1

8532

meyer shircore 35 YEARS

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Suite 2, Ground Floor, 437 Roberts Road Subiaco WA 6008
PO Box 1294 Subiaco WA 6904
t. 08 9381 8511 e. mail@meyershircore.com.au

Document Set ID: 7274717
Version: 1, Version Date: 03/02/2026

DEVELOPMENT
ASSESSMENT PANEL

APPROVED

22-Jan-2026



N

BASEMENT FLOOR PLAN

PROPOSED AUTO CAR WASH AND PLANT ROOM
LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156
FOR:MELVILLE MOTORS

SK024
MAY 2025
S3-A2
1 : 250 @ A1

8532

meyer shircore architects 55 YEARS 1963|2018

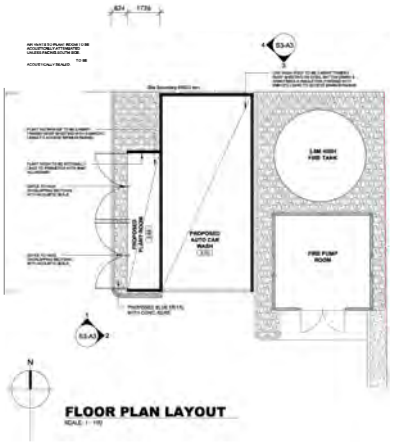
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DEVELOPMENT ASSESSMENT PANEL

APPROVED

22-Jan-2026



FLOOR PLAN LAYOUT



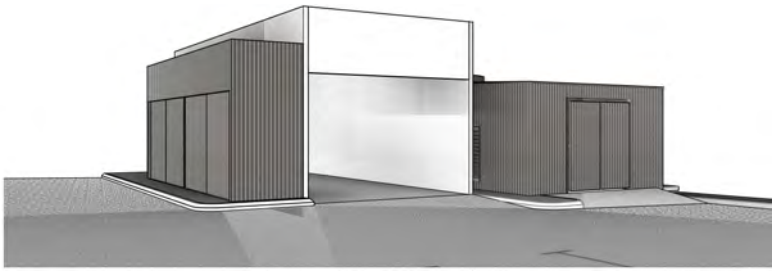
NORTH ELEVATION



HISLOP ROAD (WEST) ELEVATION



EAST ELEVATION



meyer shircore architects

PROPOSED AUTO CAR WASH AND PLANT ROOM

LOCATION : 532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR : MELVILLE MOTORS

NOV 2025 PROJECT NUMBER 8532

S3-A3

1 : 100 @ A1

Document Set ID: 7274717
Version: 1, Version Date: 03/02/2026

Enquiries: Silvia Collasius-Basson on (08) 9323 5862
Our Ref: 18/9775 (D26#975256)
Your Ref: DAP-2021-10/B

25 August 2026

Chief Executive Officer
City of Melville
Locked Bag 1
BOORAGOON WA 6954

Email: pb.planning@melville.wa.gov.au (via email)

Dear Sir/Madam,

DEVELOPMENT ASSESSMENT PANEL APPLICATION – AMENDED DEVELOPMENT APPLICATION – ADDITIONS AND ALTERATIONS TO MOTOR VEHICLE SALES – LOT 101 (532) CANNING HIGHWAY, ATTADALE – DAP-2021-10/B

In response to correspondence received on 23 July 2026, and amended development plans received on 10 August 2026, please be advised Main Roads supports the amended development proposal subject to the imposition of the original conditions, being:

Conditions

1. The land required for the widening of Canning Highway, as shown on the attached extract from Land Requirement Plan 1.5105/2, is to be set aside as a separate lot for acquisition pending future road widening requirements.

2. No development or car parking, other than landscaping and signage is permitted on the land required for future road purposes, as depicted on the attached extract from Land Requirement Plan 1.5105/2.

3. In the event where private infrastructure, including any signs and existing vehicle crossovers, is contained within the widened road reservation/land requirement as detailed in the attached extracted from Land Requirement Plan 1.5105/2, upon receipt of a notice from Main Roads the infrastructure is to be removed and the verge made good at the applicant's expense.

4. The redundant vehicle crossover on Hislop Road must be removed and the kerbing, verge, and footpath reinstated to the satisfaction and specifications of the City of Melville.

5. Stormwater must not be discharged into the Canning Highway road reservation or the widened road reservation.

6. No waste collection is permitted from the Canning Highway road reservation.

Advice

a. In reference to Condition No.'s 1, 2, and 3, the landowner/applicant is advised that signage and any other private infrastructure, including vehicle crossovers affected by Land Requirement Plan 1.5101/2 will need to be removed at the landowner/applicant's cost when the land is acquired.

b. The upgrading/widening of Canning Highway is not in Main Roads current 4-year forward estimated construction program and all projects not listed are subject to change without notice, and Main Roads assumes no liability for the information provided.

c. No works are permitted within the Canning Highway Road Reservation unless Main Roads has issued a Working on Roads permit.

d. The applicant is required to submit an application form to undertake works within the road reserve prior to undertaking any works within the road reserve. Application forms and supporting information about the procedure can be found on the Main Roads website > Technical & Commercial > Working on Roads

Main Roads encourages local government in liaising with applicants to promote and capitalise on our pre-lodgement consultation service, prior to lodgement of planning proposals, especially where development plans involve land adjacent to or have the potential to impact on the state road network.

Further information on the pre-lodgement consultation process can be found on Main Roads website at mainroads.wa.gov.au > Technical & Commercial > Planning & Development.

Should the City disagree with the above conditions or require further information please do not hesitate to contact Silvia Collasius-Basson on (08) 9323 5862 prior to the submission of the City's Responsible Authority Report.

Please ensure a copy of the DAP's final determination is sent to planninginfo@mainroads.wa.gov.au.

Yours sincerely

CFudge

Chris Fudge
Road Access and Planning Manager

Encl. Extract of Land Requirement Plan 1.5105/2

Document Set ID: 7478841
Version: 1, Version Date: 26/08/2026

mainroads WESTERN AUSTRALIA

Extract of Land Requirement Plan 1.5105/2



Document Set ID: 7478841
Version: 1, Version Date: 26/08/2026

Government of **Western Australia**
Development Assessment Panels

LG Ref: DAP-2022-7
DAP Ref: DAP/22/02314

Enquiries: (08) 6551 9919

State Administrative Tribunal
565 Hay Street
PERTH WA 6000

Dear Sir/Madam

STATE ADMINISTRATIVE TRIBUNAL REVIEW OUTCOME – 220/2022

Property Location:	No.532 (Lot No.101) Canning Highway, Attadale
Application Details:	Additions & Alterations to Motor Vehicle Sales & Motor Vehicle Repair Premises

Please be advised that the Metro Inner-South Joint Development Assessment Panel reconsidered the above-mentioned development application, SAT ref 220/2022, pursuant to section 31 of the *State Administrative Tribunal Act 2004* on 22 May 2023.

The Notice of Determination is attached.

Yours sincerely,

DAP Secretariat

24 May 2023

Encl: Amended DAP Determination Notice

Cc: Jarrad Nightingale
REGALSEA INVESTMENTS PTY LTD

State Solicitor's Office

Mr Tom Geddes
City of Melville

Planning Appeals

Document Set ID: 6304682
Version: 1, Version Date: 24/05/2023

Government of **Western Australia**
Development Assessment Panels

Planning and Development Act 2005

City of Melville Local Planning Scheme No 6

Metro Inner-South Joint Development Assessment Panel

Determination on Development Assessment Panel Application for Planning Approval

Property Location: No.532 (Lot No.101) Canning Highway, Attadale
Application Details: Additions & Alterations to Motor Vehicle Sales & Motor Vehicle Repair Premises

Pursuant to section 31 of the *State Administrative Tribunal Act 2004*, the Metro Inner-South JDAP, at its meeting on 22 May 2023, has reconsidered its decision dated 1 December 2022 in respect to the above application, SAT Ref. 220/2022 and has resolved to:

SET ASIDE the decision and substitute a new decision for DAP Application reference DAP/22/02314 and amended plans (Attachment 2) in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions of Clauses No. 23 and No. 24 of the City of Melville Local Planning Scheme No. 6, subject to the following conditions:

Conditions

1. Pursuant to clause 26 of the Metropolitan Region Scheme, this approval is deemed to be an approval under clause 24(1) of the Metropolitan Region Scheme.

2. This decision constitutes planning approval only and is valid for a period of 4 years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.
3. The development the subject of this approval must comply with the approved plans at all times unless otherwise approved in writing by the City of Melville or the Joint Development Assessment Panel.

4. All stormwater generated on site is to be retained on site in accordance with a plan approved in writing by the City. Prior to the commencement of development, a stormwater design plan is to be submitted (an ARI of 1 in 100 year for a 24 hour storm duration is recommended) for the approval of the City. Prior to initial occupation of the development a Certificate of Compliance certifying that the development has been constructed in accordance with the approved plan is to be submitted to the City.

5. The removal of, or permanent covering of shopfront windows and openings and the use of reflective or heavily tinted glazing at ground floor is not permitted.

Document Set ID: 6304682
Version: 1, Version Date: 24/05/2023

6. Visual permeability between the showroom and the street shall be maintained to the satisfaction of the City. The installation of shop fittings and fixtures on the inside of showroom windows is not permitted.

7. Prior to the initial occupation of the development, all vehicle parking bays, manoeuvring areas and points of ingress and egress shall be provided in accordance with the approved plans to the satisfaction of the City and shall be retained for the life of the development.

8. The exterior colours, materials and finishes of the development shall align with the details shown on the approved Development Plans unless otherwise approved in writing by the City.

9. Any roof mounted or freestanding plant or equipment shall be located and/or screened so as not to be visible from the surrounding streets prior to the initial occupation of the development to the satisfaction of the City.

10. Where a driveway meets the street, walls or fencing within sight line areas are to meet the requirements contained under clause 8.7 of Local Planning Policy LPP2.1 Non-Residential Development, to the satisfaction of the City.

11. A minimum of 30 days prior to the lodgement of an application for Building approval, the applicant shall submit a Construction Management Plan (CMP) to the City of Melville for approval. The CMP shall be prepared having regard to the provisions of Local Planning Policy 1.22 Construction Management Plans. Once approved in writing by the City, the development is to be carried out in accordance with the CMP to the satisfaction of the City. Any modifications to the CMP are to be approved by the City in writing.

12. In accordance with Local Planning Policy LPP1.4 Provision of Art in Development Proposals, prior to the commencement of development, a public art proposal shall be submitted to and approved in writing by the City in consultation with the City's Public Art Panel. Once approved, the public art shall be installed prior to the initial occupation of the development and thereafter be maintained for the life of the development to the satisfaction of the City. In lieu of provision of art on site, a cash in lieu contribution may be made as per LPP 1.4.

13. Unless otherwise approved in writing by the City, all trees located on the verge adjacent to the land on which the development is to take place shall be protected throughout construction of the development via the installation of a Tree Protection Zone (TPZ). Each TPZ shall be installed prior to commencement of development, in accordance with the following criteria:
    - A free-standing mesh fence erected around each street tree with a minimum height of 1.8m and a 2m minimum radius measured from the outside of the trunk of each tree.
    - If an approved crossover, front fence, footpath, road or similar is located within the 2m radius of the TPZ, the TPZ fencing shall be located the minimum distance from the approved works that is required to complete the works.
    - Fixed signs are to be provided on all visible sides of the TPZ fencing clearly stating 'Tree Protection Zone – No Entry'.
    - The following actions shall not be undertaken within any TPZ:
        - Storage of materials, equipment, fuel, oil dumps or chemicals;
        - Servicing or refuelling of equipment or vehicles;

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Version: 1, Version Date: 24/05/2023

- Attachment of any device to any tree (including signage, temporary service wires, nails, screws, winches or any other fixing device);
- Open-cut trenching or excavation works (whether or not for laying of services);
- Changes to the natural ground level of the verge;
- Location of any temporary buildings including portable toilets; or
- The parking of vehicles or machinery.

14. Prior to the commencement of development, a signage strategy shall be submitted to and approved in writing by the City taking into account the provisions of Local Planning Policy 2.2 Outdoor Advertising and Signage. The strategy shall demonstrate how the future signage requirements for all uses are to be accommodated. Once approved, the signage strategy will inform the future assessment of applications for signage on the development.

15. Prior to commencement of development, a detailed landscaping and reticulation plan for the subject site and the road verge(s) adjacent to the site shall be submitted to and approved in writing by the City. The landscaping plan is to include proposed details of (but is not limited to):

    (a) The location, number and type of proposed trees and shrubs including planter size and planting density;
    (b) Any lawns to be established;
    (c) Any existing vegetation and/or landscaped areas to be retained; and
    (d) Any verge treatments

    The approved landscaping and reticulation plan shall be fully implemented within the first available planting season after the initial occupation of the development and maintained thereafter, to the satisfaction of the City.

16. Prior to the initial occupation of the development, a Waste Management Plan shall be prepared in accordance with the City's Waste Management Guideline for New Developments and submitted in writing for the approval of the City. Once approved, the development is to be constructed and operated in accordance with the Waste Management Plan, to the satisfaction of the City.

17. The outdoor lighting is to be provided to all car parking areas in accordance with Australian Standard AS 1158.3.1 (Cat. P). The outdoor lighting is to be designed, baffled and located to prevent any increase in light spill onto the adjoining properties to the satisfaction of the City.

18. Unless otherwise agreed, temporary structures, such as prefabricated or demountable offices, portable toilets and skip bins necessary to facilitate storage, administration and construction activities are permitted to be installed within the property boundaries of the subject site(s) for the duration of the construction period. These structures are to be located so not to obstruct vehicle sight lines of the subject site, the adjacent road network or of adjoining properties to the satisfaction of the City and are to be removed within 60 days of the full occupation of the development.

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19. Prior to the initial occupation of the development, bicycle parking facilities for 2 bicycles shall be provided in accordance with Australian Standard AS 2890.3, to the satisfaction of the City. The facilities shall thereafter be retained for the life of the development.

20. Prior to the commencement of construction, the applicant shall provide an Environmental Sustainable Development (ESD) report, prepared by a suitably qualified consultant to the satisfaction if the City, detailing the following:
    - How the development will achieve and exceed ESD outcomes as follows:
        - Landscaping initiatives
        - The installation of a solar photovoltaic array
        - The installation of electric vehicle chargers.

    The development shall be carried out in accordance with the approved ESD report, to the satisfaction of the City of Melville.

21. Prior to the commencement of development, a Transport Impact Assessment prepared by a qualified traffic consultant consistent with the requirements of the Department of Planning, Lands and Heritage Transport Impact Assessment guidelines is to be prepared and submitted to the satisfaction of the City of Melville. Any recommendations contained in the Transport Impact Assessment shall be thereafter implemented and maintained for the duration of the development.

22. Prior to the commencement of development, the applicant/owner is to submit a Hislop Road line marking plan to the City for approval. The plan is to demonstrate the painting of new line marking to the Hislop Road median area. The works shown on the approved plan shall be installed at the cost of the applicant/owner prior to the occupation of the development, to the satisfaction of the City.

Main Roads WA Conditions

23. The land required for the widening of Canning Highway, as shown on the attached extract from Land Requirement Plan 1.5105/2, is to be set aside as a separate lot for acquisition pending future road widening requirements.

24. No development or car parking, other than landscaping and signage is permitted on the land required for future road purposes, as depicted on the attached extract from Land Requirement Plan 1.5105/2.

25. In the event where private infrastructure, including any signs and existing vehicle crossovers, is contained within the widened road reservation/land requirement as detailed in the attached extracted from Land Requirement Plan 1.5105/2, upon receipt of a notice from Main Roads the infrastructure is to be removed and the verge made good at the applicant's expense.

26. The redundant vehicle crossover on Hislop Road must be removed and the kerbing, verge, and footpath reinstated to the satisfaction and specifications of the City of Melville.

27. Stormwater must not be discharged into the Canning Highway reservation or the widened road reservation.

28. No waste collection is permitted from the Canning Highway road reservation.

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Advice note

a) With regard to condition 22, the applicant is advised to liaise with the City's Traffic Engineers regarding the scope of changes to the Hislop Road median.

Main Roads WA Advice Notes

b) In reference to Condition Nos 23-25, the landowner/applicant is advised that signage and any other private infrastructure, including vehicle crossovers affected by Land Requirement Plan 1.5101/2 will need to be removed at the landowner/applicant's cost when the land is acquired.

c) The applicant is required to submit an Application form to undertake works within the road reserve prior to undertaking any works within the road reserve. Application forms and supporting information about the procedure can be found on the Main Roads website > Technical & Commercial > Working on Roads.

d) The upgrading/widening of Canning Highway is not in Main Roads current four-year forward estimated construction program and all projects not listed are considered long term. Please be aware that timing information is subject to change and that Main Roads assumes no liability for the information provided.

e) No works are permitted within the Canning Highway road reservation unless Main Roads has issued a Working on Roads permit.

Where an approval has so lapsed, no development shall be carried out without further approval having first been sought and obtained, unless the applicant has applied and obtained Development Assessment Panel approval to extend the approval term under regulation 17(1)(a) or local government approval under regulation 17A of the Planning *and Development (Development Assessment Panels) Regulations 2011*.

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PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

DEVELOPMENT
ASSESSMENT PANEL

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22-May-2023



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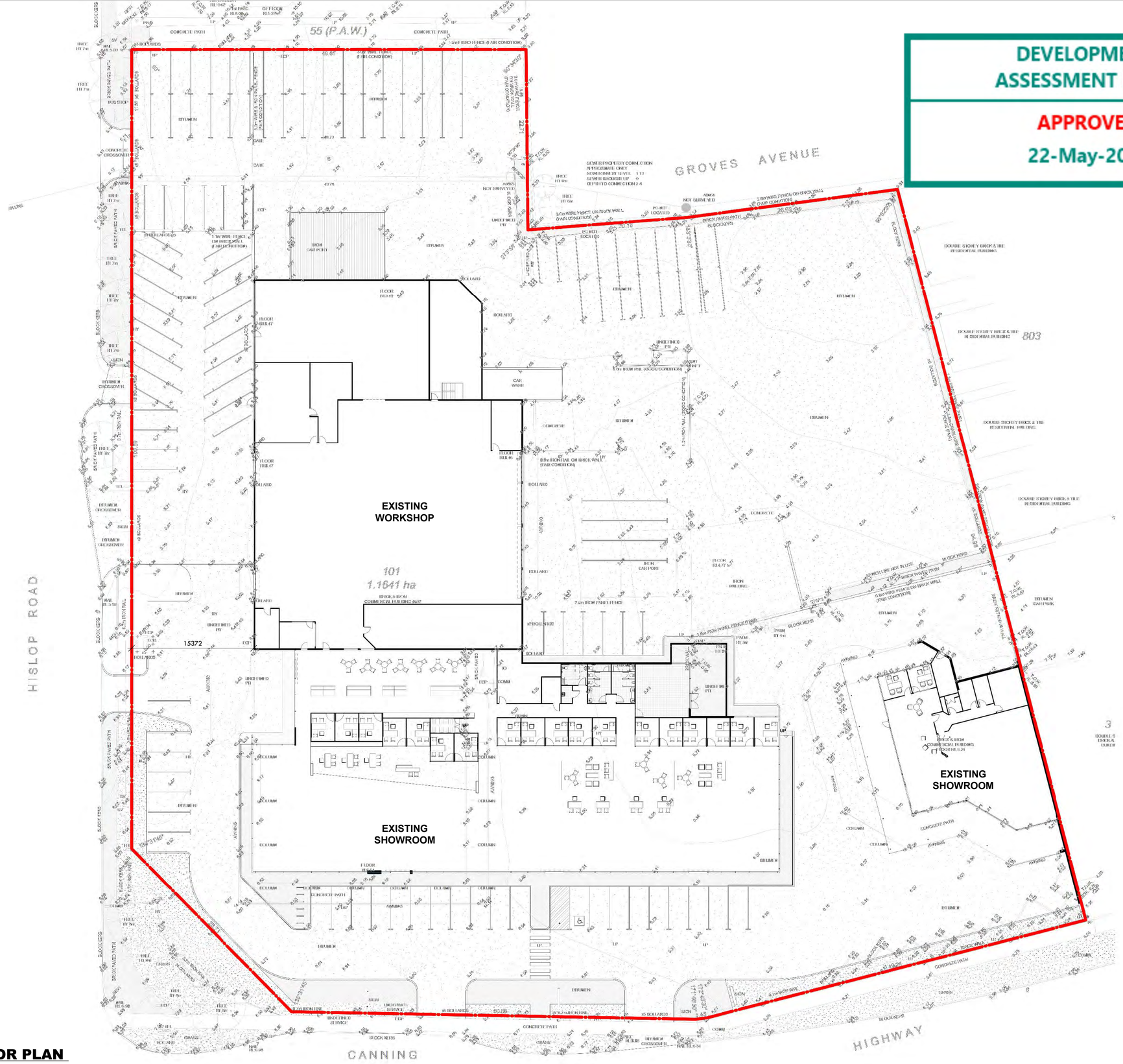
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EXISTING - SITE & GROUND FLOOR PLAN

SCALE:1 : 250

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

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BASEMENT FLOOR PLAN

SCALE: 1 : 250

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

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3. Car Display Areas

a. Internal - KIA	525m²
b. Internal - SUZUKI	293m²
c. Internal - GWM	397m²
d. Internal - Used Cars	216m²
e. External Display	598m²
Total	**2,029m²**

4. Carparking Required

a. Display - 1/100m²	5.98 Cars
b. Employees - 0.5/employee	21.50 Cars
c. Workshop - 3/Bay	90.00 Cars
Total Car required	**117.98 Cars**

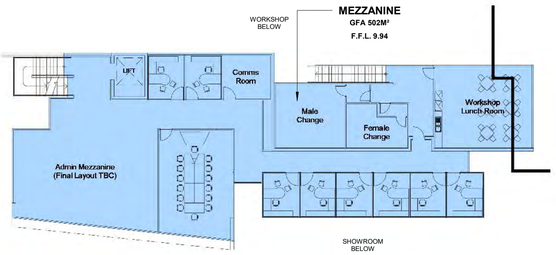
4. Carparking Provided

a. Service	90 Cars
b. Employee	22 Cars
c. Customer	16 Cars
Total Car provided	**128 Cars**

Landscaping
A. Hard Landscaping
Defined as paved walkways either open or covered.
B. Soft Landscaping
Defined as vegetative landscaping.

Gross Floor Area : GFA
A. All Floor Areas on this plan are shown as GROSS FLOOR AREA.
Unless otherwise noted as Nett Floor Area
B. Definition of Gross Floor Area is defined as:
i/ GROSS FLOOR AREA OF TENANCY:
Gross Floor Area of an individual Tenancy is defined as the area contained between the centre line of common tenancy walls and the outside edge of external walls.
ii/ GROSS FLOOR AREA OF A BUILDING
Gross Floor Area of a Building is defined as the total area contained between the outside edge of external walls

Nett Floor Area : NFA
A. Nett Floor Area of a Tenancy on this plan is defined as the area between external or tenancy dividing walls.
B. This area is inclusive of toilets if the toilets are exclusive to the Tenancy.



MEZZANINE FLOOR PLAN

SCALE:1 : 250

LANDSCAPE LEGEND

SYMBOL	DESCRIPTION	SPACING	PLANTING SIZE	MINIMUM SIZE
	Groundcovers & Low Shrubs	3 per sqm	140mm	
	Groundcovers & Low Shrubs	3 per sqm	140mm	
	Ornamental Tree	As shown	1.5m High	3.0m High
	Shade Tree	As shown	2.0m High	4.0m High
	New Verge Tree			
	Existing Verge Tree			

PROPOSED - SITE & GROUND FLOOR PLAN

SCALE:1 : 250

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

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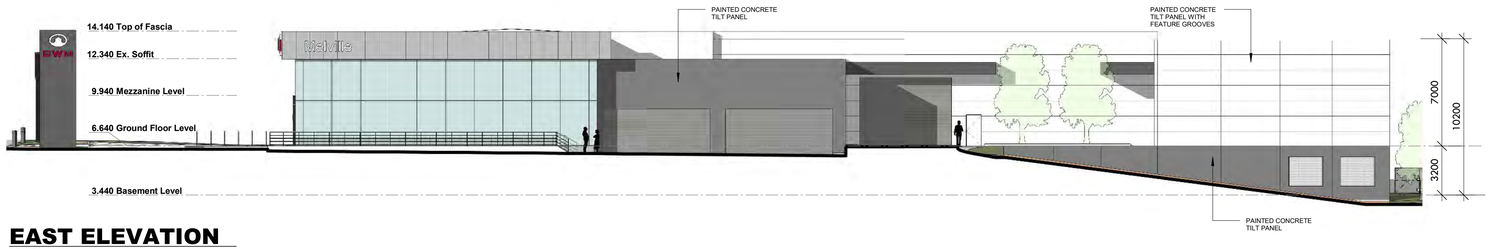
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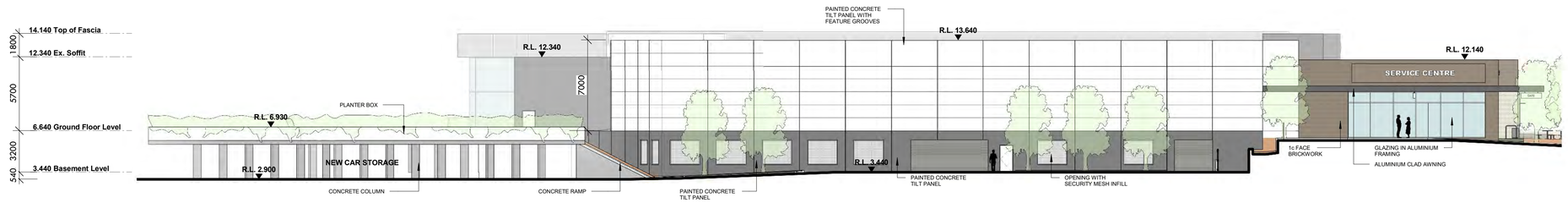
SOUTH ELEVATION - SHOWROOM

SCALE: 1 : 200



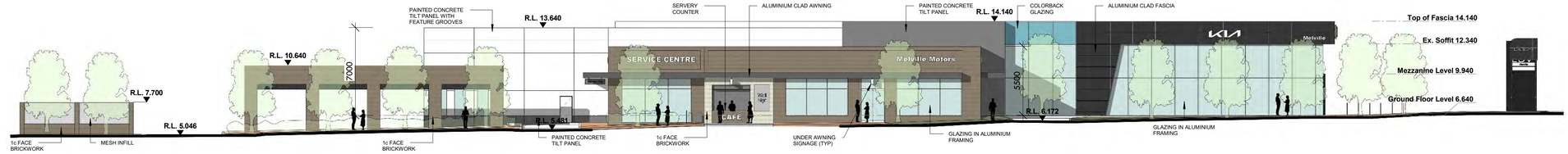
EAST ELEVATION

SCALE: 1 : 200



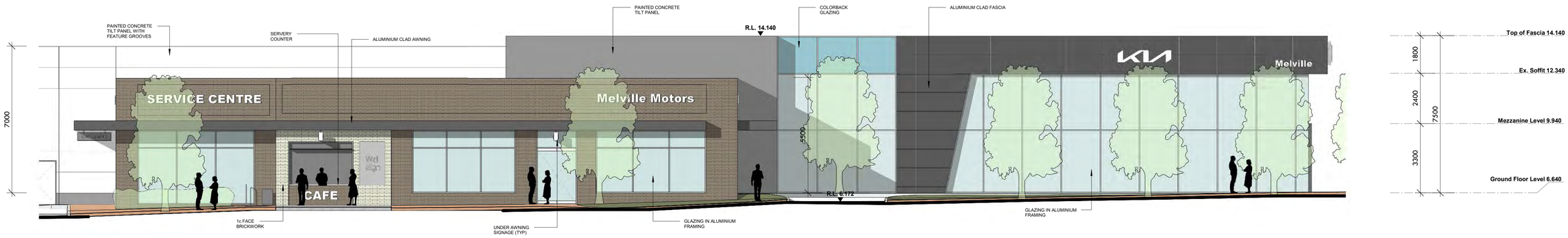
NORTH ELEVATION

SCALE: 1 : 200



HISLOP ROAD (WEST) ELEVATION

SCALE: 1 : 200



PART HISLOP ROAD (WEST) ELEVATION

SCALE: 1 : 100

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PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

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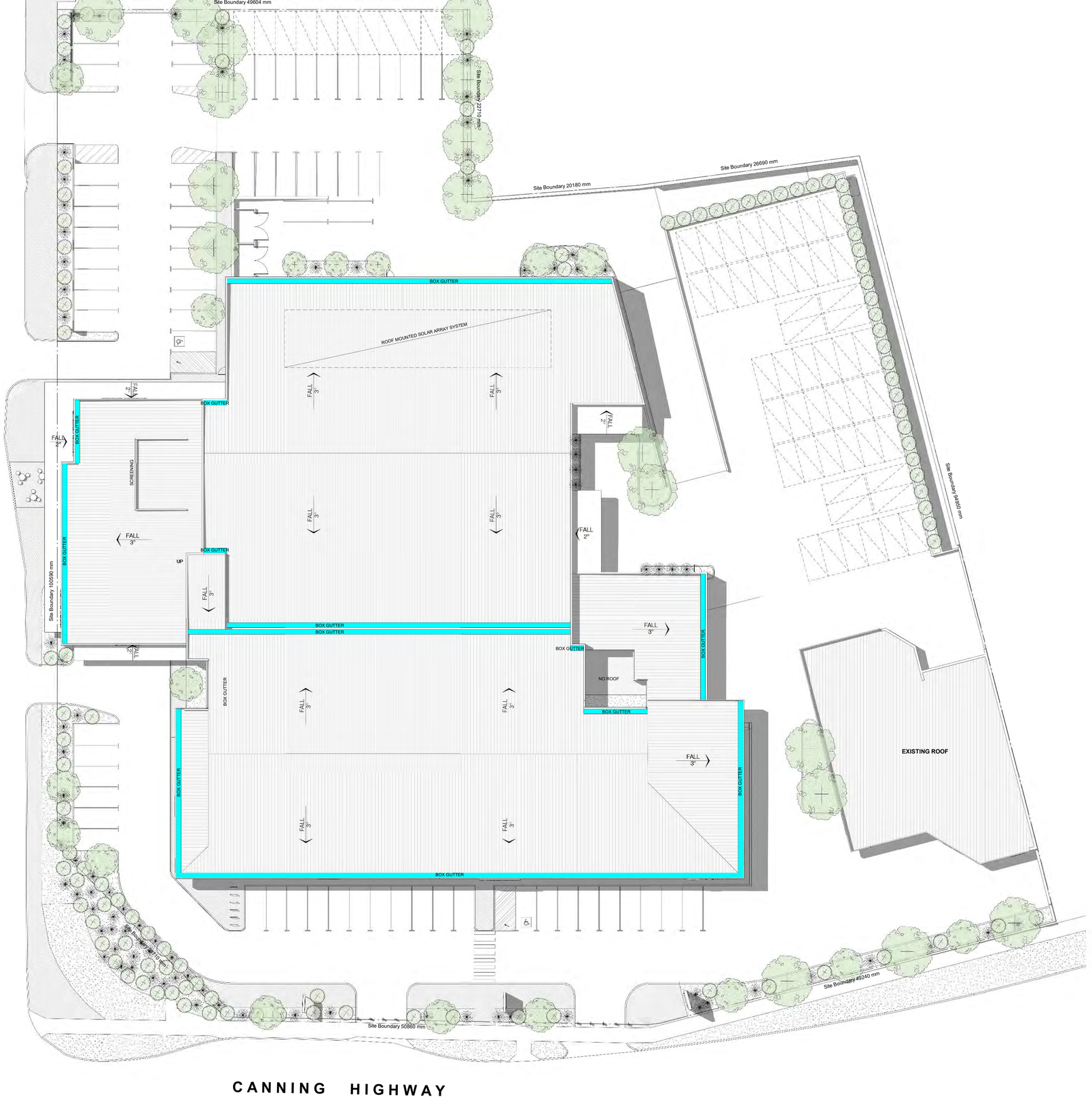
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OVERALL ROOF PLAN

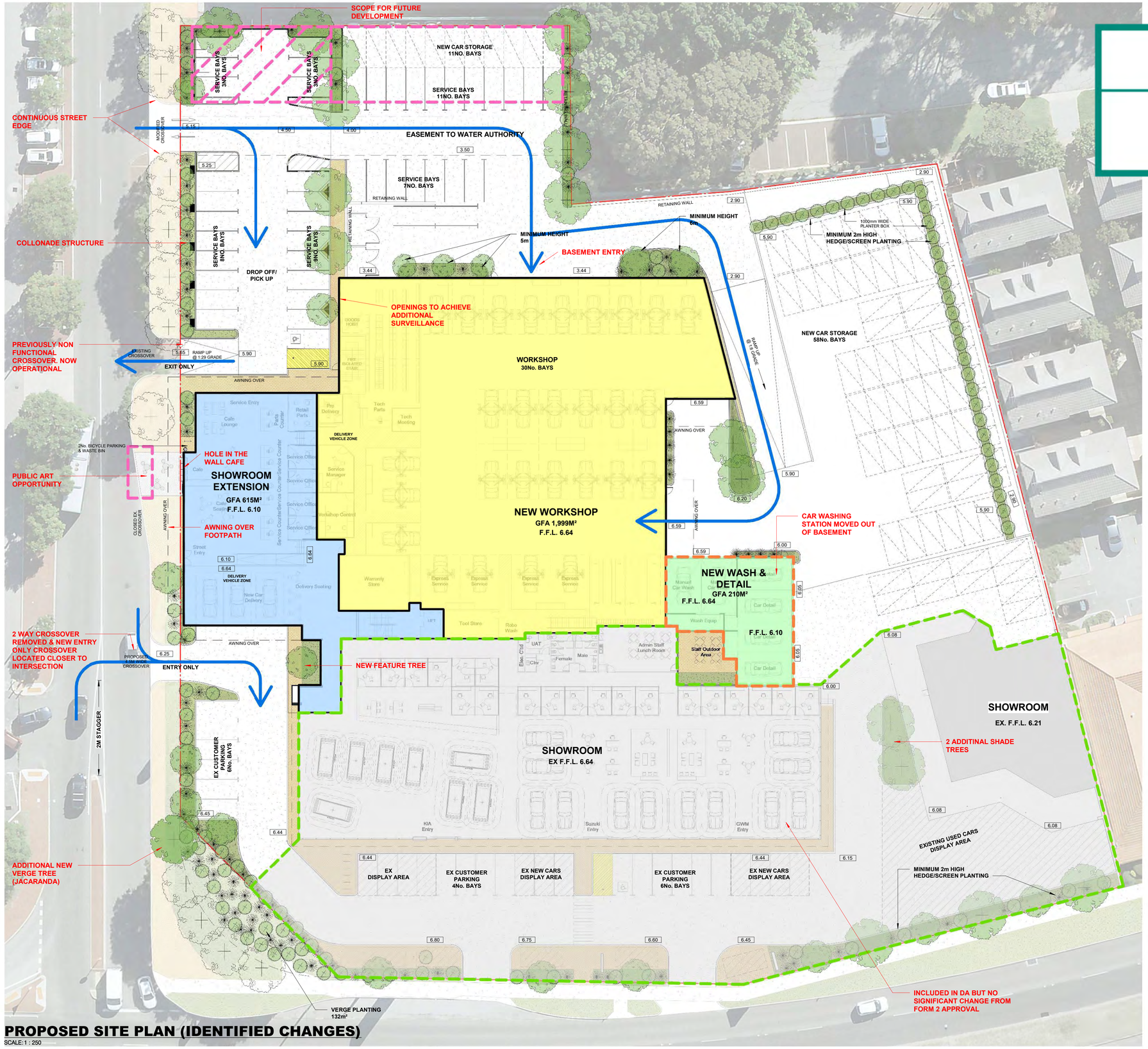
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PROPOSED SITE PLAN (IDENTIFIED CHANGES)

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d. Main Showroom - Proposed	1,674m²
e. Minor Showroom - Modified	339m²
3. Car Display Areas	
a. Internal - KIA	525m²
b. Internal - SUZUKI	293m²
c. Internal - GWM	397m²
d. Internal - Used Cars	216m²
e. External Display	598m²
Total	**2,029m²**
4. Carparking Required	
a. Display - 1/100m²	5.98 Cars
b. Employees - 0.5/employee	21.50 Cars
c. Workshop - 3/Bay	90.00 Cars
Total Car required	**117.98 Cars**
4. Carparking Provided	
a. Service	90 Cars
b. Employee	22 Cars
c. Customer	16 Cars
Total Car provided	**128 Cars +10**

LANDSCAPE LEGEND

SYMBOL	DESCRIPTION	SPACING	PLANTING SIZE	MINIMUM SIZE
	Groundcovers & Low Shrubs	3 per sqm	140mm	
	Groundcovers & Low Shrubs	3 per sqm	140mm	
	Ornamental Tree	As shown	1.5m High	3.0m High
	Shade Tree	As shown	2.0m High	4.0m High
	New Verge Tree			
	Existing Verge Tree			

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

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Environmental Noise Assessment

532 Canning Highway, Attadale

Melville Motors Service Centre Expansion

Reference: 22087499-01

Prepared for:
Melville Motors Pty Ltd

Document Set ID: 5942937
Version: 2, Version Date: 05/09/2022

Report: 22087499-01

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Date:	Rev	Description	Prepared By	Verified
25-Aug-22	0	Issued to Client	Matt Moyle	Terry George

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1 INTRODUCTION

It is proposed to expand an existing motor vehicle sales and service centre at 532 Canning Highway, Attadale (Refer *Figure 1-1*). The expansion that forms part of this Development Application is related to the service workshop only, which will be increased in scale with additional vehicle service and storage capacity, including a basement parking area. While the centre has been in operation for some time, the additional scale and nature of the proposal and the proximity to noise sensitive premises, warrants a noise impact assessment. The nearest noise sensitive premises are located to the north, south and east of the subject site. Mixed use and commercial premises are also noted close to the site.

Noise sources considered were those determined to be most critical being associated with the mechanical plant, carpark noise and operation of the workshop, as emitted via the proposed roller doors. Noise from these items was assessed against the prescribed standards of the *Environmental Protection (Noise) Regulations 1997* by way of noise modelling.



Figure 1-1 Site Locality

The service centre component is proposed to operate Monday to Friday 7.30am – 5.00pm & Saturday 8.00am – 12.00pm. The site layout of the development is depicted in *Figure 1-2*.

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Figure 1-2 Development Site & Ground Floor Plan

Site drawings used in this assessment are included in *Appendix A*.

Appendix C contains a description of some of the terminology used throughout this report.

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2 CRITERIA

Environmental noise in Western Australia is governed by the *Environmental Protection Act 1986*, through the *Environmental Protection (Noise) Regulations 1997* (the Regulations).

Regulation 7 defines the prescribed standard for noise emissions as follows:

"7. (1) Noise emitted from any premises or public place when received at other premises –

a) must not cause or significantly contribute to, a level of noise which exceeds the assigned level in respect of noise received at premises of that kind; and

b) Must be free of:

i. Tonality;

ii. Impulsiveness; and

iii. Modulation".

A "…noise emission is taken to *significantly contribute to* a level of noise if the noise emission exceeds a value which is 5 dB below the assigned level…"

Tonality, impulsiveness and modulation are defined in Regulation 9. Noise is to be taken to be free of these characteristics if:

a) The characteristics cannot be reasonably and practicably removed by techniques other than attenuating the overall level of noise emission; and

b) The noise emission complies with the standard after the adjustments of *Table 2-1* are made to the noise emission as measured at the point of reception.

Table 2-1 Adjustments for Intrusive Characteristics

Tonality	Modulation	Impulsiveness
+ 5 dB	+ 5 dB	+ 10 dB

Note: The above are cumulative to a maximum of 15dB.

The baseline assigned levels (prescribed standards) are specified in Regulation 8 and are shown in *Table 2-2*.

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Table 2-2 Baseline Assigned Noise Levels

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: highly sensitive area	0700 to 1900 hours Monday to Saturday (Day)	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sunday and public holidays (Sunday)	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days (Evening)	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	35 + influencing factor	45 + influencing factor	55 + influencing factor
Commercial	All hours	60	75	80

1. ***highly sensitive area*** means that area (if any) of noise sensitive premises comprising —
   (a) a building, or a part of a building, on the premises that is used for a noise sensitive purpose; and
   (b) any other part of the premises within 15 metres of that building or that part of the building;

The influencing factor was calculated for the nearest noise sensitive premises. As per the relevant Planning Scheme map, the subject site is amongst "Centre" zoning noted to be within a commercial precinct with nearby mixed-use lots to the immediate west across Hislop Road and Canning Highway, with some being residential (refer *Appendix B*).

The Regulations consider a major road to have more than 15,000 vehicles per day and therefore Canning Highway is considered a major road (39,902 weekday vehicles per day - 2019 traffic count site #0645).

The combined traffic and land use influencing factors for all residences has been calculated with the residences grouped into A (North), B (South) and C (East) as shown in *Table 2-3* to *Table 2-5.*

Table 2-3 Influencing Factor Calculation – Group A (North) Residences

Description	Within 100 metre Radius	Within 450 metre Radius	Total
Commercial Land	41% / 2.1 dB	8% / 0.4 dB	2.5 dB
Major Road	-	Canning Hwy	2 dB
Total			**5 dB**

Table 2-4 Influencing Factor Calculation – Group B (South) Residences

Description	Within 100 metre Radius	Within 450 metre Radius	Total
Commercial Land	38% / 1.9 dB	8% / 0.4 dB	2.3 dB
Major Road	Canning Hwy	Canning Hwy	6 dB
Total			**8 dB**

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Table 2-5 Influencing Factor Calculation – Group C (East) Residences

Description	Within 100 metre Radius	Within 450 metre Radius	Total
Commercial Land	46% / 2.3 dB	8% / 0.4 dB	2.7 dB
Major Road	Canning Hwy	Canning Hwy	6 dB
Total			**9 dB**

Table 2-6 shows the relevant L_{A10}, L_{A1} and L_{Amax} assigned levels (including the influencing factors).

Table 2-6 Assigned Noise Levels

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Group A (North) 11 Hislop Road	0700 to 1900 hours Monday to Saturday (Day)	50	60	70
	0900 to 1900 hours Sunday and public holidays (Sunday)	45	55	70
	1900 to 2200 hours all days (Evening)	45	55	60
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	40	50	60
Group B (South) 543 & 547 Canning Hwy	0700 to 1900 hours Monday to Saturday (Day)	53	63	73
	0900 to 1900 hours Sunday and public holidays (Sunday)	48	58	73
	1900 to 2200 hours all days (Evening)	48	58	63
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	43	53	63
Group C (East) 13-17 Groves Avenue Apts	0700 to 1900 hours Monday to Saturday (Day)	54	64	74
	0900 to 1900 hours Sunday and public holidays (Sunday)	49	59	74
	1900 to 2200 hours all days (Evening)	49	59	64
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays (Night)	44	54	64
Commercial	All hours	60	75	80

It is noted the assigned noise levels are statistical levels and therefore the period over which they are determined is important. The Regulations define the Representative Assessment Period (RAP) as *a period of time of not less than 15 minutes, and not exceeding 4 hours*, which is determined by an *inspector* or *authorised person* to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission. An *inspector* or *authorised person* is a person appointed

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under Sections 87 & 88 of the *Environmental Protection Act 1986* and include Local Government Environmental Health Officers and Officers from the Department of Environment Regulation. Acoustic consultants or other environmental consultants are not appointed as an *inspector* or *authorised person*. Therefore, whilst this assessment is based on a 4 hours RAP, which is assumed to be appropriate given the nature of the operations, this is to be used for guidance only.

2.1 Vehicles on Site

The majority of the expansion car park will be for vehicle storage and therefore is considered low impact given the infrequent use of bays. Some car door closing noise is assessed in the most critical locations.

3 METHODOLOGY

Computer modelling was undertaken, using the software *SoundPLAN 8.2* with the ISO 9613 algorithms (ISO 17354 compliant) selected. These algorithms have been selected as they include the influence of wind. Input data required in the model are:

- Meteorological Information;
- Topographical data;
- Ground Absorption; and
- Source sound power levels.

3.1 Meteorological Information

Meteorological information utilised is provided in *Table 3-1* and is considered to represent worst-case conditions for noise propagation. At wind speeds greater than those shown, sound propagation may be further enhanced, however background noise from the wind itself and from local vegetation is likely to be elevated and dominate the ambient noise levels.

Table 3-1 Modelling Meteorological Conditions

Parameter	Day (0700-1900)	Night (1900-0700)
Temperature (°C)	20	15
Humidity (%)	50	50
Wind Speed (m/s)	Up to 5m/s	Up to 5m/s
Wind Direction*	All	All

* Note that the modelling package used allows for all wind directions to be modelled simultaneously.

It is generally considered that compliance with the assigned noise levels needs to be demonstrated for 98% of the time, during the day and night periods, for the month of the year in which the worst-case weather conditions prevail. In most cases, the above conditions occur for more than 2% of the time and therefore must be satisfied.

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3.2 Topographical Data

Topographical data was adapted from *Google*, Streetview images and proposed plans. Existing buildings have also been included as these can provide barrier attenuation when located between a source and receiver, much the same as a hill, as well as also providing reflection paths. A wall of varying heights has been included along the east boundary.

3.3 Ground Absorption

Ground absorption varies from a value of 0 to 1, with 0 being for an acoustically reflective ground (e.g. water or bitumen) and 1 for acoustically absorbent ground (e.g. grass). A value of 0.1 has been used for road and commercial areas, and 0.6 has been used for the remaining areas.

3.4 Source Sound Levels

Note that as the development is at DA stage, the source levels assumed are based on measurements and assessments of similar projects. The sound power levels used in the modelling are provided in *Table 3-2*.

Table 3-2 Source Sound Power Levels, dB

Description	Octave Band Centre Frequency (Hz)								Overall dB(A)
	63	125	250	500	1k	2k	4k	8k	
Roller Door 6m x 4.5m Workshop Noise, L_{10}	61	68	68	72	73	72	69	60	**78**
Roller Door 6m x 4.5m Hammering/Impact tool Noise, L_{Max}	89	85	81	81	83	91	91	86	**96**
Evap Air Rooftop Unit	-	81	75	76	73	70	63	-	**78**
Car Door Closing, L_{Max}	71	74	77	81	80	78	72	61	**84**

With regards to the above, please note the following:

- The model assumes all roller doors are open as a conservative scenario;
- Noise levels are based on measured levels of similar workshop operations. The L_{A10} source includes typical workshop noise elements for car service centres, while the L_{Amax} source includes intermittent use of high impact tools.
- Two evaporative air conditioning units are assumed at 1m above roof level, centrally located.

Two assessment scenarios are considered as follows:

1. L_{A10} Noise – Roller Doors open on workshop and plant source levels per *Table 3-2*.
2. L_{Amax} Noise – Car door noise in critical bays and Roller Doors open on workshop with maximum source levels per *Table 3-2*.

An image of the noise model overview is shown in *Figure 3-1*.

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Figure 3-1 2D Image of Noise Model

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4 RESULTS AND ASSESSMENT

4.1 Scenario 1 – L_{A10}

Table 4-1 provides the results for the L_{A10} scenario with the service centre operating with air conditioners in use and all roller doors open – which is considered conservative. *Figure 4-1* provides the noise contour plots for the scenario at first floor level. Given the proposed hours of operation, only the daytime assigned level is relevant for assessment.

Table 4-1 Predicted Noise Levels, Scenario 1: L_{A10} dB

Location	Mechanical Plant	Via Roller Doors		Combined	Day Assigned Level	Exceedence
		East	West			
Mixed Use - 11 Hislop Rd (GF)	26	11	34	**35**	60	*Complies*
Mixed Use - 11 Hislop Rd (1F)	29	11	35	**36**	50	*Complies*
Mixed Use - 11 Hislop Rd (2F)	30	10	35	**36**	50	*Complies*
543 Canning Hwy	27	16	17	**28**	53	*Complies*
547 Canning Hwy	26	30	8	**32**	53	*Complies*
Residential East 1 (1F)	26	20	18	**27**	54	*Complies*
Residential East 1 (1F)	27	26	6	**30**	54	*Complies*
Residential East 2 (1F)	18	18	4	**21**	54	*Complies*
Residential East 2 (1F)	20	25	4	**26**	54	*Complies*
Residential East 3 (1F)	30	38	7	**38**	54	*Complies*
Residential East 4 (1F)	29	37	7	**37**	54	*Complies*
Residential East 4 (1F)	30	37	6	**38**	54	*Complies*
Commercial East	29	35	8	**36**	60	*Complies*
Commercial West	31	7	39	**40**	60	*Complies*

The most critical receiving premises is at 11 Hislop Road, where the first and second storeys are residential premises, with a predicted level of 36 dB L_{A10}. No intrusive characteristics are considered applicable for this source type, being an average level recorded over a long period of vehicle service tasks and also considering the surrounding existing traffic and commercial noise during the day. Therefore, the predicted level is compliant at the worst-case noise sensitive receptors. Compliance is also achieved at nearest commercial boundaries.

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Figure 4-1 Workshop Noise First Floor (4.2m AGL), dB L_{A10}



Predicted Noise level

- = 40
- = 45
- = 50
- = 55
- = 60

Legend

- Receiver
- Roller Door
- Mech Source

N

Scale 1:1100

0 5 10 20 30 m

Project No: 22087499
Consultant: MM
Date: 24/08/2022
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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4.2 Scenario 2 – L_{Amax}

Table 4-2 provides the results for the L_{Amax} scenario, being representative of short-term noise events of higher relative magnitude such as use of impact and ratchet tools, hammering and the like. This scenario also includes car door noise in the nearest service and storage bays. *Figure 4-2* displays the noise contour plot for this scenario at first floor level, being most critical. Given the proposed hours of operation, only the daytime assigned level is relevant, once again.

Table 4-2 Predicted Noise Levels, Scenario 2: L_{Amax} dB

Location	High Impact Events Via Roller Doors	Car Door Closing Noise	Maximum Adjusted Level	Day Assigned Level	Calculated Exceedence
Mixed Use - 11 Hislop Rd (GF)	52	56	**66**	80	*Complies*
Mixed Use - 11 Hislop Rd (1F)	53	55	**65**	70	*Complies*
Mixed Use - 11 Hislop Rd (2F)	53	53	**63**	70	*Complies*
543 Canning Hwy	35	29	**45**	73	*Complies*
547 Canning Hwy	48	28	**58**	73	*Complies*
Residential East 1 (1F)	36	54	**64**	74	*Complies*
Residential East 1 (1F)	41	52	**62**	74	*Complies*
Residential East 2 (1F)	35	53	**63**	74	*Complies*
Residential East 2 (1F)	40	50	**50**	74	*Complies*
Residential East 3 (1F)	55	50	**65**	74	*Complies*
Residential East 4 (1F)	54	49	**64**	74	*Complies*
Residential East 4 (1F)	54	54	**64**	74	*Complies*
Commercial East	53	42	**63**	80	*Complies*
Commercial West	57	46	**67**	80	*Complies*

It is considered reasonable that car door closures and impact noises from the workshop may be impulsive at times, therefore the levels have been adjusted by +10 dB in accordance with the Regulations.

The assessment demonstrates that compliance is readily achieved at all nearest noise sensitive and commercial receivers.

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Figure 4-2 Workshop Intermittent Noise, First Floor (4.2m AGL), dB L_{Amax}



Predicted Noise level

- = 50
- = 55
- = 60
- = 65
- = 70

Legend

- Receiver
- Roller Door
- Mech Source

N

Scale 1:1100

0 5 10 20 30 m

Project No: 22087499
Consultant: MM
Date: 24/08/2022
Algorithm: ISO 9613
SoundPLAN Version: 8.2

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5 CONCLUSION

The proposed service centre expansion at Melville Motors, 532 Canning Highway, Attadale is predicted to comply with assigned noise levels, determined in accordance with the *Environmental Protection (Noise) Regulations 1997*, during the proposed hours of operation.

Noise control measures are not necessary for compliance, however management should aim to maintain compliance by encouraging quiet work practices. The following general advice should be considered by management:

- It would be considered good practice to incorporate a perforated *Anticon* type insulation to the underside of the workshop roof sheeting. Such *Anticon* insulation will provide thermal benefits and selecting one with a perforated foil finish (rather than solid foil finish) will also minimise the reverberant levels within the workshop and assist in minimising environmental noise emissions.
- Fabrication work using loud power tools such as angle grinders and hammers should always occur inside the workshop.
- Idling of engines at high revs should be done within the workshop where practical.
- Where possible, if work needs to occur outside of the workshop, it should be restricted to the western side of the shed to shield residences to the east. Whilst compliance is probably more critical to the neighbouring commercial, the chance of complaint is considered low.
- The surface of the undercroft/basement parking area should be brushed concrete to avoid tyre squeal.
- Where the concrete is to be sealed within the service workshop, a product such as Aquron 1000 by Markham is understood be suitable and no contribute to tyre squeal.
- External workshop speakers or radios should not be permitted unless they are required for emergency systems.
- Drainage grates to be plastic or metal with rubber gasket and secured to avoid excess banging.
- Adopting a “buy-quiet” approach to purchasing service equipment such as lifts, hoists and power tools.

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Appendix A

Site Plans

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N

PROPOSED - LOCATION PLAN

SCALE: 1 : 300

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

SK015
AUG 2022
S2-A3
1 : 300 @ A1

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EXISTING - SITE & GROUND FLOOR PLAN

SCALE:1 : 250

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

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AUG 2022
S2-A4
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N

BASEMENT FLOOR PLAN

SCALE: 1 : 250

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

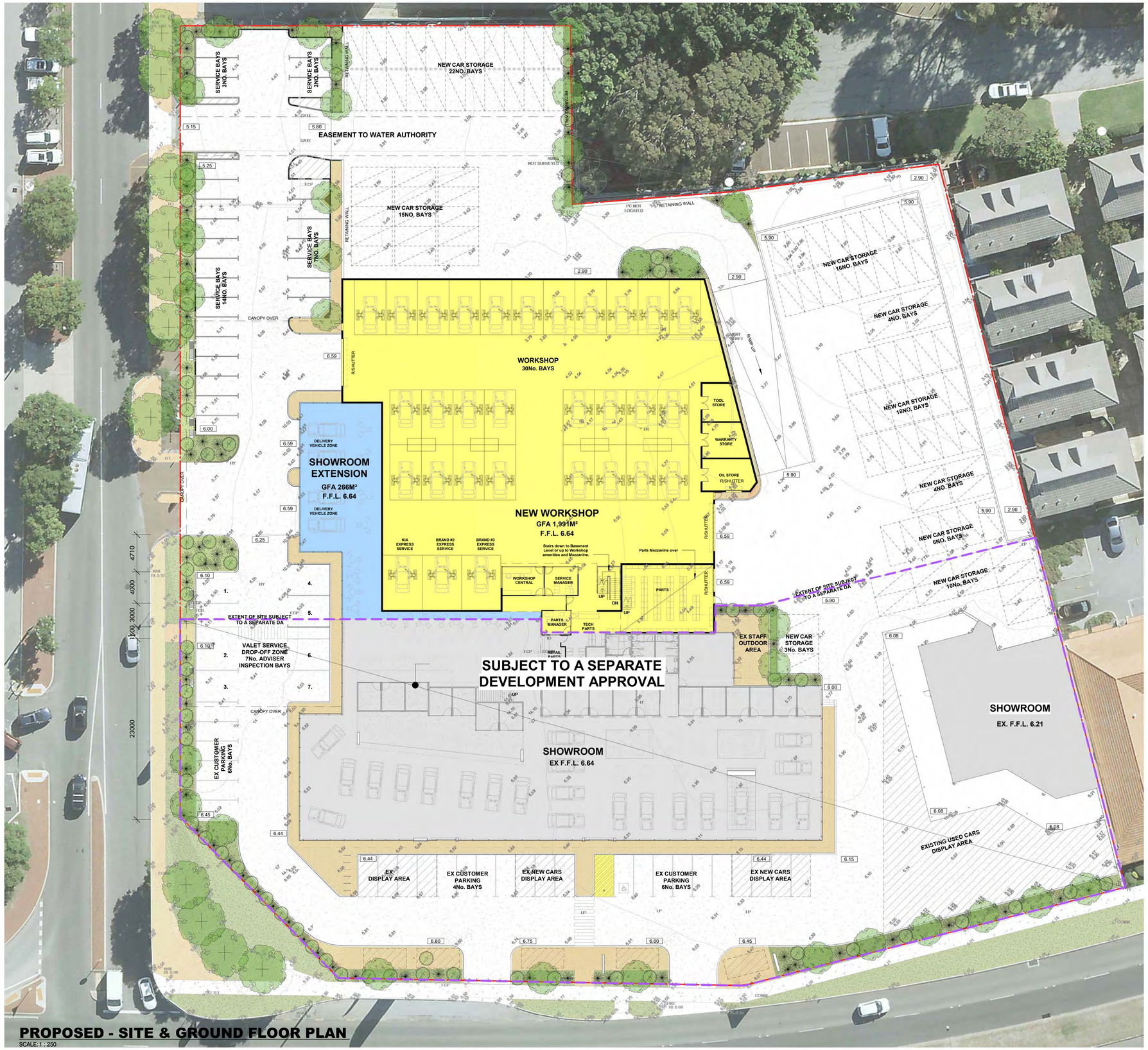
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PROPOSED - SITE & GROUND FLOOR PLAN

SCALE:1 : 250

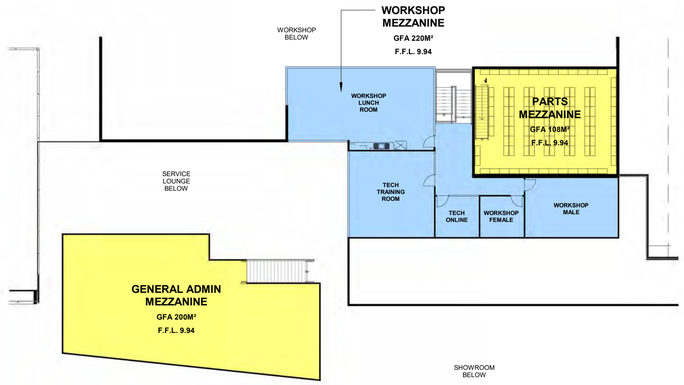
SITE CRITERIA

1. Site Area	
a. Land Area	**11,641m²**
2. Gross Floor Areas	
a. Workshop - Proposed	1,991m²
b. Showroom Extension - Proposed	226m²
c. Main Showroom - Proposed	1,674m²
d. Minor Showroom - Modified	339m²
3. Car Display Areas	
a. Internal - KIA	525m²
b. Internal - Brand#2	293m²
c. Internal - Nissan	397m²
d. Internal - Used Cars	216m²
e. External Display	598m²
Total	**2,029m²**
4. Carparking Required	
a. Display - 1/100m²	5.98 Cars
b. Employees - 0.5/employee	21.50 Cars
c. Workshop - 3/Bay	90.00 Cars
Total Car required	**117.98 Cars**
4. Carparking Provided	
Total Car provided	**91 Cars**

Landscaping
A. Hard Landscaping
Defined as paved walkways either open or covered.
B. Soft Landscaping
Defined as vegetative landscaping.

Gross Floor Area : GFA
A. All Floor Areas on this plan are shown as GROSS FLOOR AREA.
Unless otherwise noted as Nett Floor Area
B. Definition of Gross Floor Area is defined as:
i/ GROSS FLOOR AREA OF TENANCY:
Gross Floor Area of an individual Tenancy is defined as the area contained between the centre line of common tenancy walls and the outside edge of external walls.
ii/ GROSS FLOOR AREA OF A BUILDING:
Gross Floor Area of a Building is defined as the total area contained between the outside edge of external walls

Nett Floor Area : NFA
A. Nett Floor Area of a Tenancy on this plan is defined as the area between external or tenancy dividing walls.
B. This area is inclusive of toilets if the toilets are exclusive to the Tenancy.



MEZZANINE FLOOR PLAN

SCALE:1 : 250

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

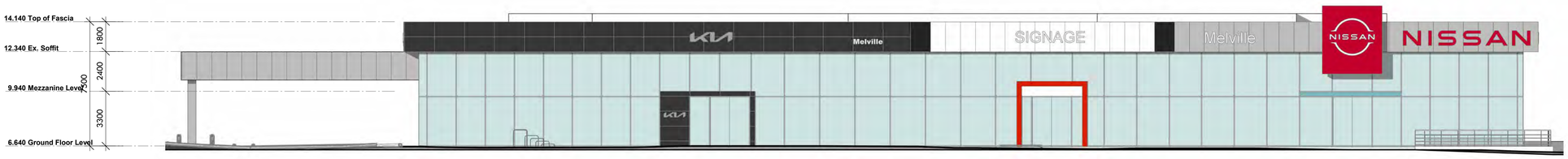
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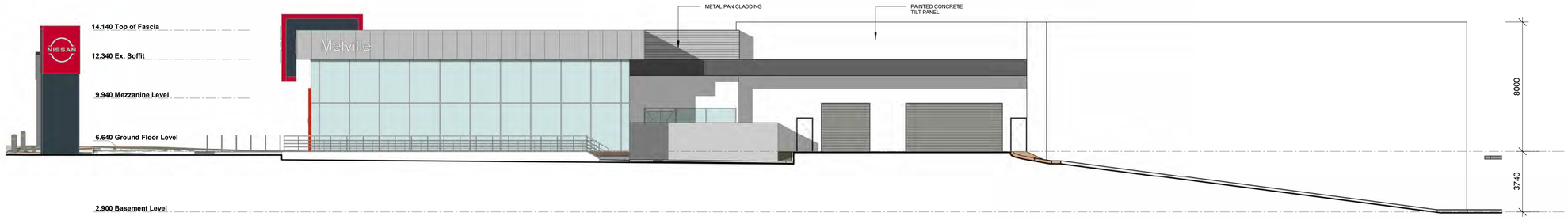
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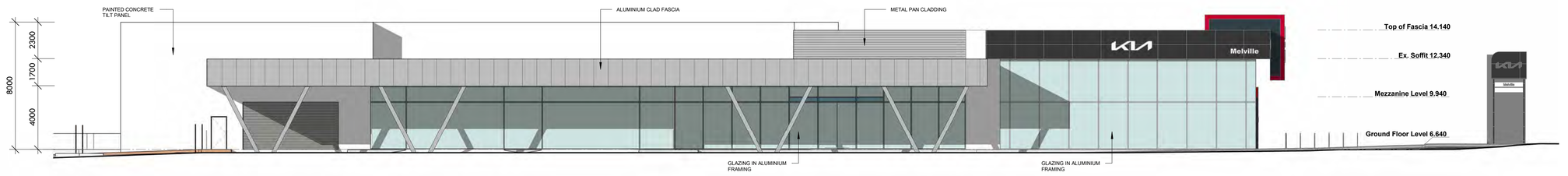
SOUTH ELEVATION - SHOWROOM

SCALE:1 : 150



EAST ELEVATION

SCALE:1 : 150



HISLOP ROAD (WEST) ELEVATION

SCALE:1 : 150

PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

LOCATION:532, CANNING HIGHWAY, ATTADALE, WA 6156

FOR:MELVILLE MOTORS

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PROPOSED MELVILLE MOTORS SHOWROOM EXPANSION

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FOR:MELVILLE MOTORS

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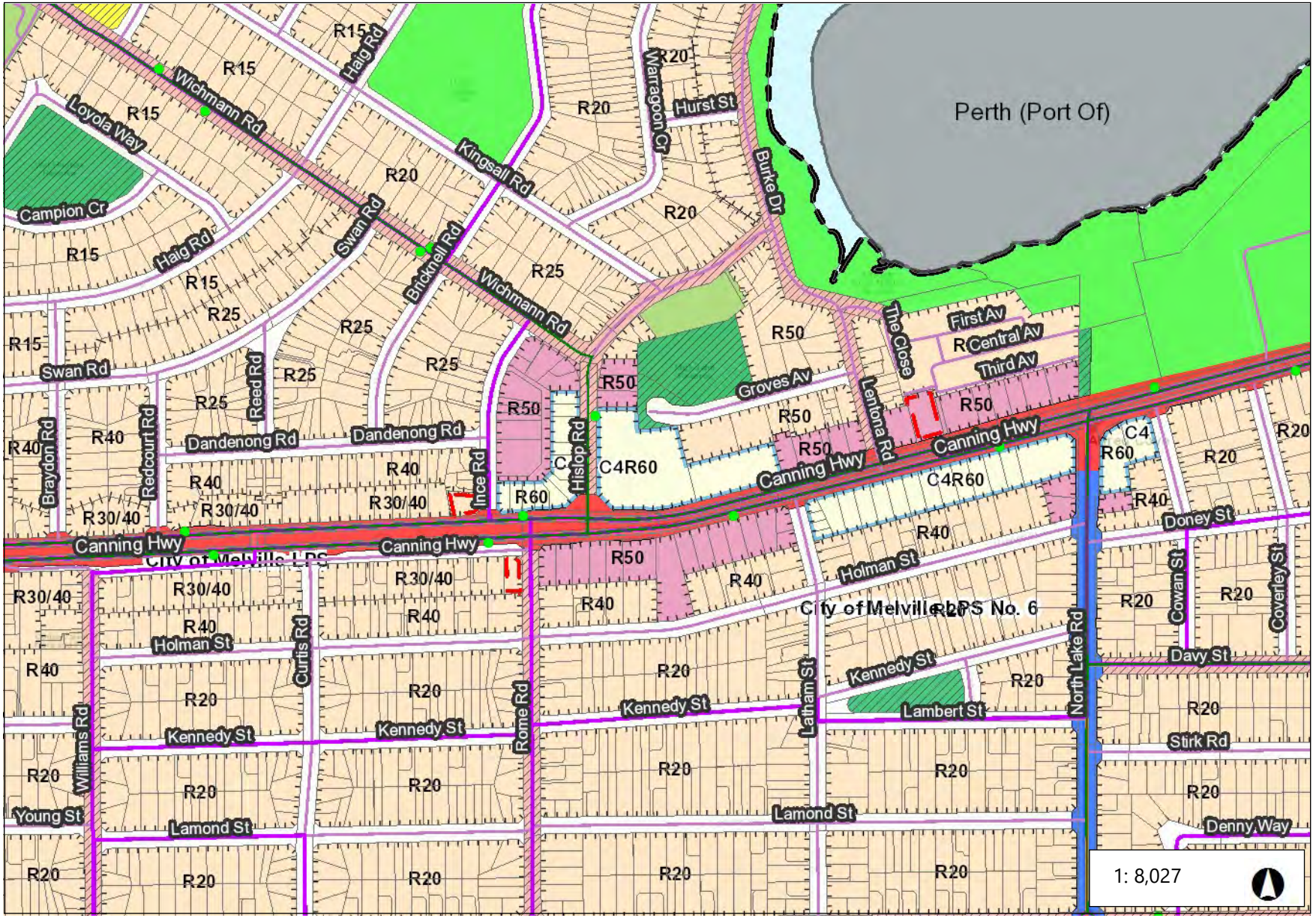
Appendix B

Zoning Map

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Version: 2, Version Date: 05/09/2022

Department of Planning, Lands and Heritage

Local Planning Scheme No. 6



1: 8,027

0.4 0 0.20 0.4 Kilometers

Date produced: 23-Aug-2022

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

Legend

- Cadastre
- Local Planning Scheme Boundary
- R-Code Boundary

Local Planning Scheme Zones

- Centre
- Local distributor road
- Local road
- Mixed use
- Private clubs, institutions and place of worship
- Public open space
- Public purposes
- Residential

Region Scheme Reserves

- Other regional roads
- Parks and recreation
- Primary regional roads
- Waterways

- Public Transport Authority Stops (PTA-001)
- Public Transport Authority Service Routes (PTA-002)
- School Bus Services Routes (PTA-004)

Freeways & Highways

- StateHighway, Sealed

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Notes

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Appendix C

Terminology

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The following is an explanation of the terminology used throughout this report.

Decibel (dB)
The decibel is the unit that describes the sound pressure and sound power levels of a noise source. It is a logarithmic scale referenced to the threshold of hearing.

A-Weighting
An A-weighted noise level has been filtered in such a way as to represent the way in which the human ear perceives sound. This weighting reflects the fact that the human ear is not as sensitive to lower frequencies as it is to higher frequencies. An A-weighted sound level is described as L_A dB.

Sound Power Level (L_w)
Under normal conditions, a given sound source will radiate the same amount of energy, irrespective of its surroundings, being the sound power level. This is similar to a 1kW electric heater always radiating 1kW of heat. The sound power level of a noise source cannot be directly measured using a sound level meter but is calculated based on measured sound pressure levels at known distances. Noise modelling incorporates source sound power levels as part of the input data.

Sound Pressure Level (L_p)
The sound pressure level of a noise source is dependent upon its surroundings, being influenced by distance, ground absorption, topography, meteorological conditions etc and is what the human ear actually hears. Using the electric heater analogy above, the heat will vary depending upon where the heater is located, just as the sound pressure level will vary depending on the surroundings. Noise modelling predicts the sound pressure level from the sound power levels taking into account ground absorption, barrier effects, distance etc.

L_{ASlow}
This is the noise level in decibels, obtained using the A frequency weighting and the S time weighting as specified in AS1259.1-1990. Unless assessing modulation, all measurements use the slow time weighting characteristic.

L_{AFast}
This is the noise level in decibels, obtained using the A frequency weighting and the F time weighting as specified in AS1259.1-1990. This is used when assessing the presence of modulation only.

L_{APeak}
This is the maximum reading in decibels using the A frequency weighting and P time weighting AS1259.1-1990.

L_{Amax}
An L_{Amax} level is the maximum A-weighted noise level during a particular measurement.

L_{A1}
An L_{A1} level is the A-weighted noise level which is exceeded for one percent of the measurement period and is considered to represent the average of the maximum noise levels measured.

L_{A10}
An L_{A10} level is the A-weighted noise level which is exceeded for 10 percent of the measurement period and is considered to represent the "*intrusive*" noise level.

L_{Aeq}
The equivalent steady state A-weighted sound level ("equal energy") in decibels which, in a specified time period, contains the same acoustic energy as the time-varying level during the same period. It is considered to represent the "average" noise level.

L_{A90}
An L_{A90} level is the A-weighted noise level which is exceeded for 90 percent of the measurement period and is considered to represent the "*background*" noise level.

One-Third-Octave Band
Means a band of frequencies spanning one-third of an octave and having a centre frequency between 25 Hz and 20 000 Hz inclusive.

L_{Amax} assigned level
Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded at any time.

L_{A1} assigned level
Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded for more than 1% of the representative assessment period.

L_{A10} assigned level
Means an assigned level which, measured as a $L_{A\ Slow}$ value, is not to be exceeded for more than 10% of the representative assessment period.

Tonal Noise
A tonal noise source can be described as a source that has a distinctive noise emission in one or more frequencies. An example would be whining or droning. The quantitative definition of tonality is:

the presence in the noise emission of tonal characteristics where the difference between -

(a) the A-weighted sound pressure level in any one-third octave band; and

(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

This is relatively common in most noise sources.

Modulating Noise
A modulating source is regular, cyclic and audible and is present for at least 10% of the measurement period. The quantitative definition of modulation is:

a variation in the emission of noise that —

(a) is more than 3 dB $L_{A\ Fast}$ or is more than 3 dB $L_{A\ Fast}$ in any one-third octave band;

(b) is present for at least 10% of the representative.

Impulsive Noise
An impulsive noise source has a short-term banging, clunking or explosive sound. The quantitative definition of impulsiveness is:

a variation in the emission of a noise where the difference between $L_{A\ peak}$ and $L_{A\ Max\ slow}$ is more than 15 dB when determined for a single representative event;

Major Road
Is a road with an estimated average daily traffic count of more than 15,000 vehicles.

Secondary / Minor Road
Is a road with an estimated average daily traffic count of between 6,000 and 15,000 vehicles.

Influencing Factor (IF)

$$= \frac{1}{10}(\%\ \text{Type}\ A_{100} + \%\ \text{Type}\ A_{450}) + \frac{1}{20}(\%\ \text{Type}\ B_{100} + \%\ \text{Type}\ B_{450})$$

where :

$\%\ \text{Type}\ A_{100}$ = the percentage of industrial land within a100m radius of the premises receiving the noise

$\%\text{Type}A_{450}$ = the percentage of industrial land within a 450m radius of the premises receiving the noise

$\%\ \text{Type}\ B_{100}$ = the percentage of commercial land within a100m radius of the premises receiving the noise

$\%\text{Type}B_{450}$ = the percentage of commercial land within a 450m radius of the premises receiving the noise

+ Traffic Factor (maximum of 6 dB)

= 2 for each secondary road within 100m

= 2 for each major road within 450m

= 6 for each major road within 100m

Representative Assessment Period
Means a period of time not less than 15 minutes, and not exceeding four hours, determined by an inspector or authorised person to be appropriate for the assessment of a noise emission, having regard to the type and nature of the noise emission.

Background Noise
Background noise or residual noise is the noise level from sources other than the source of concern. When measuring environmental noise, residual sound is often a problem. One reason is that regulations often require that the noise from different types of sources be dealt with separately. This separation, e.g. of traffic noise from industrial noise, is often difficult to accomplish in practice. Another reason is that the measurements are normally carried out outdoors. Wind-induced noise, directly on the microphone and indirectly on trees, buildings, etc., may also affect the result. The character of these noise sources can make it difficult or even impossible to carry out any corrections.

Ambient Noise
Means the level of noise from all sources, including background noise from near and far and the source of interest.

Specific Noise
Relates to the component of the ambient noise that is of interest. This can be referred to as the noise of concern or the noise of interest.

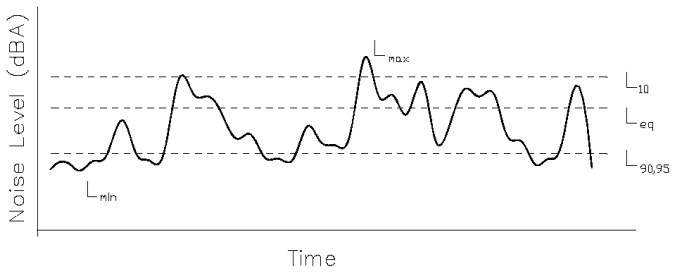
Peak Component Particle Velocity (PCPV)
The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and in one of the three orthogonal directions (x, y or z) measured as a peak response. Peak velocity is normally used for the assessment of structural damage from vibration.

Peak Particle Velocity (PPV)
The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and is the vector sum of the PCPV for the x, y and z directions measured as a peak response. Peak velocity is normally used for the assessment of structural damage from vibration.

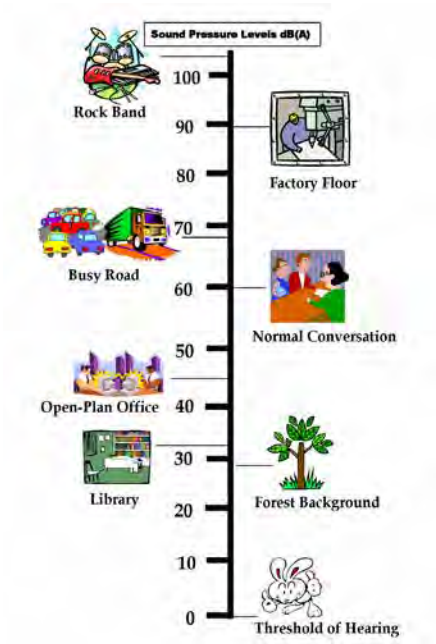
RMS Component Particle Velocity (PCPV)
The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and in one of the three orthogonal directions (x, y or z) measured as a root mean square (rms) response. RMS velocity is normally used for the assessment of human annoyance from vibration.

Peak Particle Velocity (PPV)
The maximum instantaneous velocity in mm/s of a particle at a point during a given time interval and is the vector sum of the PCPV for the x, y and z directions measured as a root mean square (rms) response. RMS velocity is normally used for the assessment of human annoyance from vibration.

Chart of Noise Level Descriptors



Typical Noise Levels



PART C – CITY OF STIRLING

1. Declarations of Due Consideration

2. Disclosure of Interests

3. Form 1 DAP Applications

3.1 Lot 110 (No. 366) and 78 (No. 360) Grand Promenade & Lot 70 (No. 160) Alexander Drive, Dianella - Proposed Relocation of Coles Supermarket – DAP/26/03081

4. Form 2 DAP Applications

Nil

5. Section 31 SAT Reconsiderations

Nil

Part C – Item 3.1
Lot 110 (No.366) and 78 (No.360) Grand Promenade and Lot 70 (No.160) Alexander Drive, Dianella

RESPONSIBLE AUTHORITY REPORT – FORM 1	
DAP Name:	Metro Inner Development Assessment Panel
DAP File No:	DAP/26/03081
LG Reference:	DA26/0339
Proposed Development:	Proposed Relocation of Coles Supermarket
Value of Development:	$35 million
Owner:	Dianella Plaza Asset Co Pty Ltd
Applicant:	Simon Shub, Urbis
Local Government Area:	City of Stirling
Responsible Authority:	City of Stirling
Authorising Officer:	Giovanna Lumbaca, Acting Director Planning and Development
Application Acceptance Date:	Friday, 27 March 2026

LOCATION PLAN



Figure 1: Location Plan

RESPONSIBLE AUTHORITY RECOMMENDATION

That the Metro Inner DAP resolves to **APPROVE** DAP Application reference DAP/26/03081 for proposed relocation of Shop and associated works at Lot 110 (No.366) and 78 (No.360) Grand Promenade and Lot 70 (No.160) Alexander Drive, Dianella, in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the Planning and Development (Local Planning Schemes) Regulations 2015, and the provisions of the City of Stirling Local Planning Scheme No. 3, subject to the following conditions:

1. The development is to be undertaken in accordance with the approved plans and documents attached to this approval, as listed below, except where amended by subsequent conditions:

Plan/ Document Name	Reference	Date
Existing Site Plan	DA301	3 March 2026
Existing Roof Plan	DA302	3 March 2026
Ground Floor Demolition Plan	DA303	3 March 2026
Roof Demolition Plan	DA304	3 March 2026
Proposed Site Plan	DA305	1 September 2026
Staging Plan	DA306	3 March 2026
Overall Ground Floor Plan	DA307	3 March 2026
Overall Ground Floor Plan	DA308	3 March 2026
Overall Roof Plan	DA309	3 March 2026
Mezzanine Level	DA310	3 March 2026
Roof Plan	DA311	3 March 2026
Elevation Plan	DA400	3 March 2026
Elevation Plan	DA401	3 March 2026
Building Sections	DA402	3 March 2026
Typical Sections	DA403	3 March 2026
Landscape Concept	N/A	30 June 2026
Acoustic Report	N/A	3 March 2026
Waste Management Plan	N/A	3 March 2026
Geotechnical Report	N/A	3 March 2026

2. This decision constitutes planning approval only and is valid for a period of four years from the date of approval, being 14 October 2026. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.

Building Design

3. The colours, materials and finishes of the development shall be in accordance with the details and annotations as specified on the approved plans unless alternatives are otherwise accepted by the City of Stirling.

4. All awnings are to have a minimum clearance of 1.0 metre to all public road pavement edges.

Construction Management

5. Prior to lodgement of the Building Permit application, a Construction Management Plan (CMP) shall be submitted to, and approved by, the City of Stirling in consultation with any relevant referral agencies. The CMP shall include specific details on the management of aspects including but not limited to; dust, noise, vibration, waste management, parking, traffic, street tree protection zones, storage of materials, site safety / security and any relevant matters to the satisfaction of the City of Stirling. The CMP shall be implemented upon commencement of development and shall be complied with for the duration of construction, to the satisfaction of the City of Stirling.

Landscaping

6. Prior to the commencement of works, a detailed Landscaping Plan is to be provided for the City of Stirling's approval, that is generally in accordance with the landscape concept prepared by Plan E – Landscape Architects dated June 2026.

7. Prior to occupation of the development, all trees provided in the approved detailed Landscaping Plan must be planted on site in the area indicated on the approved plan to the satisfaction of the City of Stirling and be thereafter maintained for the duration of the development. The trees must be provided with the approved deep soil area at ground level free of intrusions, to the satisfaction of the City of Stirling. The landscaping areas shall include:

    a. The planting of the following trees with deep soil areas:
        - Nine large trees
        - 86 medium trees
        - 94 small trees
        - Three street trees
    b. A minimum mulch depth of 100mm within all deep soil areas; and
    c. Installation of waterwise reticulation systems.

Off-site engineering

8. For all proposed works within the road reserve relating to the subject development, a separate written approval is required from the City of Stirling. Detailed civil engineering construction plans must be submitted by a suitably qualified person. Written approval must be obtained from the City of Stirling, prior to any work occurring within the road reserve.

9. Prior to the commencement of works, detailed civil engineering construction drawings for the works within Grand Promenade shall be submitted to, and approved by, the City of Stirling. These drawings shall include the closure of the existing median opening opposite the loading dock access, modifications to the central median islands, and any associated roadway, verge, line marking and signage works required to implement the approved vehicle access arrangements. Detailed civil engineering construction plans must be submitted by a suitably qualified person. Written approval must be obtained from the City of Stirling, prior to any work occurring within the road reserve.

10. Prior to submission of the building permit a Design Stage Road Safety Audit is required to be submitted to the City of Stirling for the consideration of the access arrangement, proposed modifications to the access way (Lowick Street) and Grand Promenade.

11. Prior to the submission of the building permit findings of the Road Safety Audit shall be demonstrated and implemented, in accordance with the Road Safety Audit to the satisfaction of the City of Stirling.

12. Prior to the occupation of the development, the approved civil engineering works for Grand Promenade shall be undertaken at the owner's cost, in accordance with the design approved by the City of Stirling.

13. Prior to the occupation of the development, the approved civil engineering works for Grand Promenade shall be undertaken at the owner's cost, in accordance with the design approved by the City of Stirling.

    The design of the works will be subject to the following requirements:

    a. The modifications to the central median island on Grand Promenade associated with the vehicle access to and from the site must maintain vehicle access.
    b. All drainage affected by the proposed road modification works within Grand Promenade are to be modified to the satisfaction of the City of Stirling

14. Prior to the lodgement of building permit application, written notification shall be provided to the owner and operator of the adjoining Ampol Service Station detailing the proposed loading dock access arrangements, associated servicing operations and any proposed modifications to vehicle access and circulation within the shared access area. Evidence of this notification shall be submitted to the satisfaction of the City.

Legal

15. Prior to the occupation of any part of the development the subject of this application, the owner of the land constituting the proposed commercial development, shall grant an easement in gross pursuant to Section 136C of the Transfer of Land Act 1893 for the benefit of Lot 78 (No.360) Grand Promenade, Dianella over that portion of the land designated for Air and Water Station, for the purposes of providing unrestricted access, to the satisfaction of the City of Stirling.

16. Prior to the occupation of any part of the development the subject of this application, reciprocal rights of access pursuant to Section 136C of the Transfer of Land Act 1893 shall be granted and registered between Lot 110 (No. 366) Grand Promenade and Lot 70 (No. 160) Alexander Drive, Dianella and Lot 78 (No. 360) Grand Promenade, Dianella over those portions of land required for the approved vehicle access, loading dock and servicing arrangements, to ensure the ongoing operation and access for both properties, to the satisfaction of the City of Stirling.

Lighting and Security

17. Details of any outside lighting shall be submitted at the Building Permit application stage demonstrating:

    a. Lighting to all public spaces including under awnings, parking areas, service areas, entry and exit points; and
    b. Compliance with Australian/New Zealand Standard 4282:2023 - Control of the obtrusive effects of outdoor lighting (AS/NZS 4282).

    External lighting shall thereafter be installed prior to occupation so as not to adversely affect the amenity of the locality in accordance with AS/NZS 4282, and thereafter maintained for the life of the development.

Parking and Vehicle Access

18. Prior to the occupation of the approved development, a Service Loading and Delivery Management Plan shall be submitted to and approved by the City of Stirling. The approved plan shall thereafter be implemented and maintained for the life of the development to the satisfaction of the City. The Plan shall address, but not be limited to, the following:

    a. Identification of all servicing, loading, unloading and delivery activities associated with the development.
    b. Details of the expected frequency, timing and duration of service and delivery vehicle movements to minimise conflicts between vehicles waiting to exit and vehicles entering the loading dock access to ensure that vehicles are not forced to wait in Grand Promenade until the access clears .
    c. Identification of the types and sizes of vehicles anticipated to access the site, including rigid trucks, articulated vehicles, waste collection vehicles and courier vehicles.
    d. Address pedestrian safety issues created by Coles trucks entering and reversing out of the Ampol Service Station forecourt.
    e. Address the management of operational impacts created by the Coles trucks entering the Ampol Service Station forecourt area, in consultation of the Ampol Service Station owner and operator.
    f. Details of access restrictions to prevent vehicles exiting the Ampol Service Station forecourt into the loading dock access.
    g. Detail proposed access restrictions that accommodate tanker access to and from the Ampol Service Station site.

19. The number and allocation of car and bicycle parking bays on-site shall be provided as follows:

    a. A minimum of 167 commercial car parking bays; and
    b. A minimum 16 bicycle spaces

    These parking bays and spaces shall be available during the operating hours of the development, to the satisfaction of the City.

20. Prior to occupation of the development all parking bays, manoeuvring and circulation areas shall be sealed/paved, drained and shall comply with Australian/New Zealand Standard 2890.1-2004 - Off-street car parking. The

accessible parking bay indicated on the approved plans shall comply with Australian Standard 2890.6:2022 - Off-street Parking for People with Disabilities. The parking bays and manoeuvring areas shall be maintained for the life of the development, to the satisfaction of the City of Stirling.

21. The design and construction of the bicycle parking spaces shall be in accordance with Australian Standard 2890.3-2015 – Bicycle Parking.

22. Prior to the occupation or use of the development, any redundant crossover(s) shall be removed and the kerbing and road verge reinstated at the owners cost in accordance with the City of Stirling's Local Planning Policy 6.7 - Parking and Access.

23. Unless otherwise approved, no walls, fences, or other structures above 0.75 metres in height to be constructed within the 1.5 metre width x 1.5 metre depth triangular area of where:

    a. Walls, letterboxes or fences adjoin vehicular access points to the site, or
    b. A driveway meets a public or private street, or
    c. Two street intersect,
    unless the further approval of the City of Stirling is obtained

Public Art

24. Prior to occupation of the development, a public art proposal for the subject development to the value of 1% of the construction value shall be submitted to, and approved by, the City of Stirling. The approved public art proposal shall be completed and installed by the developer prior to occupation and thereafter maintained by the landowner for the life of the development, to the satisfaction of the City of Stirling.

Universal Design

25. Prior to occupation of the development, pedestrian pathways providing wheelchair accessibility from all entries to buildings to public footpath and car parking areas shall comply with Australian Standard 1428.1:2021 - Design for access and mobility, Part 1: General requirements for access – New building work, to the satisfaction of the City of Stirling.

Utilities, Facilities and External Fixtures

26. All proposed external fixtures, building services, roof equipment (including air-conditioning) and utilities of the development are to be integrated into the building and/or screened for the life of the development, to the satisfaction of the City of Stirling.

Acoustic

27. Recommendations contained within the Acoustic Report, titled Dianella Plaza, 366 Grand Promenade Acoustic Report – Development Application, dated 2

February 2026, prepared by E-LAB Consulting shall be implemented in full, to the satisfaction of the City.

28. Prior to the use of the development, certification by a suitably qualified acoustic expert is to be provided, to the satisfaction of the City, that the noise from all mechanical services and equipment, complies with the prescribed standards detailed in the Environmental Protection (Noise) Regulations 1997.

Waste Management

29. The development shall be consistent with the approved Waste Management Plan (WMP) prepared by Talis Consultants, dated 11 February 2026. The WMP shall be implemented and thereafter complied with by the landowner for the life of the development, to the satisfaction of the City of Stirling.

Water Management

30. Any Additional stormwater from all roofed and paved areas shall be collected and contained on site. Stormwater shall not affect or be allowed to flow onto or into any other property or road reserve. There shall be no new connection to the City's drainage infrastructure without the written consent of the City of Stirling.

Advice Notes

1. Where an approval has so lapsed, no development shall be carried out without the further approval of the Development Assessment Panel or City of Stirling.

2. If an Applicant is aggrieved by this determination there is a right of appeal under Part 14 of the *Planning and Development Act 2005*. An appeal must be lodged within 28 days of the determination with the State Administrative Tribunal.

3. This is a Development Approval issued under the City of Stirling Local Planning Scheme and related policies. It is not a Building Permit or an approval to commence or carry out development under any other law. It is the responsibility of the Applicant to obtain any other necessary approvals, consents and licenses required under any other law, and to commence and carry out development in accordance with all relevant laws.

4. This approval is not an authority to ignore any constraint to development on the land, which may exist through statute, regulation, contract or on title, such as an easement or restrictive covenant. It is the responsibility of the Applicant and not the Development Assessment Panel or City of Stirling to investigate any such constraints before commencing development. This approval will not necessarily have regard to any such constraint to development, regardless of whether or not it has been drawn to the Development Assessment Panel or City of Stirling's attention.

5. The Applicant is responsible for ensuring all lot boundaries as shown on the approved plans are correct.

6. Development shall comply in all respects with the attached approved plans and any requisite amended plans required by a condition of this approval which have been stamped accordingly.

7. Where, in the opinion of the City of Stirling, achieving compliance with the conditions of approval requires significant modifications to the approved plans, a Form 2 application shall be required for consideration in accordance with *Clause 17 or 17A of the Planning and Development (Development Assessment Panels) Regulations 2011.*

8. The landowner is advised that any future strata title or community title subdivision of the property must be consistent with this approval and the lot sizes demonstrated in the application.

Contaminated sites

10. Due to the presence of hydrocarbon impacted soil and groundwater beneath the site, a site-specific health and safety plan is recommended to address the risks to the health of any workers undertaking intrusive works.

11. Acid sulfate soils (ASS) risk mapping indicates that the site is located within an Area identified as representing a low to moderate risk of ASS occurring within 3 metres of the natural soil surface. Please refer to department of water and Environmental regulation's acid sulfate soil guidelines for information to assist with the management of ground and/or groundwater disturbing works. https://www.wa.gov.au/government/document-collections/acid-sulfate-soils-publications

Food premises

12. All food premises activities are to comply with the *Food Act 2008*, Australian New Zealand food standards code and City of Stirling food business guide design construction operation.

13. A completed 'food business notification form' and detailed fit out plans, including elevations, are to be submitted to the city following development approval showing all fixtures, fittings and finishes. Please contact the city's environmental health services on 9205 8555 or visit the City's website for a 'food business notification and registration form'

Engineering

14. In relation to the civil engineering works condition, prior to commencement of civil engineering works within Grand Promenade, the owner shall pay the City of Stirling a bond to be calculated by the City of Stirling based upon the approved civil engineering construction plans, which will be returned once all works within the road reserve have been completed in accordance with the approved civil engineering construction plans, to the satisfaction of the City of Stirling.

15. In relation to the civil engineering works condition, prior to occupation of the development, a payment to the City of an inspection fee for the construction

works within the road reserve is required, in accordance with the approved civil engineering construction plans and based on the following:

- Where the person has not engaged a consulting engineer to design and supervise the construction, the amount is to be 3% of the cost of the construction as estimated by the City's Engineer Subdivisions and Development Works.

- Where the person has engaged a consulting engineer to design and supervise the construction, the amount is to be 1½% of the cost of the construction as estimated by the City's Engineer Subdivisions and Development Works.

16. In relation to civil engineering works condition, prior to occupation of the development, Payment to the City of a 12 months defects liability period retention bond of 5% of the tendered cost of construction works within the road reserve is required.

17. In relation to the Design Stage Road Safety Audit condition, the proposed right turn out and median break at the internal access road (Lowick Street) and Grand Promenade is not approved and requires a separate application and approval from the City of Stirling demonstrating that the access can be accommodated safely, provides appropriate level of service and design in compliance with relevant Austroads Guidelines and to the satisfaction of City.

18. In relation to the Design Stage Road Safety Audit condition, the City requests that this Audit be undertaken with the following considerations:
    - be in accordance with the IPWEA/ Main Roads WA requirements;
    - the Audit team contains a member from Local Government or Main Roads WA (in this regard the City can provide assistance in finding a suitable team member if required); and
    - the completed Road Safety Audit be registered on the IPWEA / Main Roads WA Road Safety Audit Portal and a copy submitted to the City.

19. In relation to all road works within Grand Promenade conditions, a sign and pavement marking plan is to be submitted to the City and to Main Roads WA standards and approvals for works within Grand Promenade. The applicant/owner is required to pay for the installation of sign and pavement markings installed by Main Roads WA.

20. In relation to all road works within Grand Promenade conditions, a Traffic Management Plan (TMP) is required to be submitted to the City and a Site Access Authority (SAA) permit must be obtained with the associated fees paid prior to any works. Further details can be found on the City's website: https://www.stirling.wa.gov.au/residential-services/services-in-your-street/traffic-management

Noise

21. In relation to the Acoustic Report dated 2 February 2026 prepared by E-LAB Consulting, the recommendation to install an acoustic screen around the

mechanical plant on the roof (3.1.8) must be shown on the plans at building permit stage.

22. The location, installation and operation of all fixed plant and equipment shall ensure that noise emissions will comply with the assigned levels of the *environmental protection (noise) regulations 1997.*

23. All construction works shall comply with the requirements of the *environmental protection act 1986* and the *environmental protection (noise) regulations 1997*. Noisy construction work outside the period 7:00am to 7:00pm Monday to Saturday and at any time on Sundays and public holidays is not permitted unless an approved noise management plan for the construction site has been approved in writing by the City of Stirling.

Public Art

24. In relation to the public art condition, please refer to the City of Stirling developer's guide to public art, the City of Stirling public art masterplan and City of Stirling Local Planning Policy 6.12 - public art on private land. Based on the estimated cost of development identified on the development application forms ($35 million), the 1% up to $50 million and 0.5% greater than $50 million public art contribution will equate to $350 000.

Waste management

25. The bin enclosures shall comply with the requirements of the city of Stirling's *Waste Management Local Law 2010.*

PROPOSAL:

- Partial demolition of the existing shopping centre and standalone buildings located to the south and west of the main centre.
- The construction and relocation of the Coles tenancy to a new building attached to the existing shopping centre located at the southern portion of the site adjacent to Grand Promenade.
- Creation of new servicing arrangements to service relocated Coles Supermarket via Grand Promenade, including the closure of the existing median opening opposite the loading dock access, associated modifications to the central median island, and the creation of a new median opening and right-turn movement at the internal access way known as Lowick Street.
- Creation of new retail tenancies within the main shopping centre.
- Associated external works, including landscaping, public art installations, parking reconfiguration and improvements throughout the site.
- Installation of below ground services and resurfacing of lands adjacent to Pads 1 to 4 located on Lot 70 Alexander Drive.
- Retention of the approved access arrangements and internal vehicle circulation network.

SUBJECT SITE AND SURROUNDS:

The proposed development extends across Lot 110 (No.366) and Lot 78 (No.360) Grand Promenade and Lot 70 (No.160) Alexander Drive, Dianella (subject sites). The subject sites are zoned Urban under the Metropolitan Region Scheme (MRS) and the following under the City of Stirling Local Planning Scheme No. 3 (LPS3):

- Lot 110 (No.366) Grand Promenade, Dianella is zoned District Centre;
- Lot 78 (No.360) Grand Promenade, Dianella is zoned Service Station;
- Lot 70 (No.160) Alexander Drive, Dianella is zoned Hotel.

Lot 110 is occupied by the existing Dianella Plaza Shopping Centre, comprising a single-storey retail complex accommodating Coles, Woolworths and a range of retail and food and beverage tenancies. The balance of the site contains at-grade car parking, internal vehicle accessways, landscaping and several mature trees. Lot 78 is occupied by Ampol Service Station and Lot 70 contains at-grade car parking bays.

The subject site is bounded by Alexander Drive, an Other Regional Road reservation under the MRS to the west, Grand Promenade, a District Distributor A road to the south, and Waverley Street, a Local Distributor Road to the east, under the City's Functional Road Hierarchy. Vehicle, pedestrian and cyclist access is provided from each of these roads. Additionally, the site is serviced by an internal access way ‘Lowrick Street’ which is not identified as a public road.

The surrounding locality comprises a mix of community and residential land uses. Community uses, including a primary school, library and community centre, in addition to land zoned Residential R-AC2 to the southeast of the site. The broader surrounding area is predominantly characterised by low-density residential development consisting of single and two-storey dwellings and local parks.

BACKGROUND:

Dianella Plaza is identified as a District Centre (DC1) under the City of Stirling Local Planning Strategy and is an established shopping centre that services the day to day retail and commercial needs of the nearby local community. The current application seeks approval for Stage 1 of a broader redevelopment for the centre. The redevelopment is intended to improve the functionality, presentation and long-term viability of Dianella Plaza, while establishing a contemporary retail environment and creating a foundation for future redevelopment opportunities.

A Precinct Structure Plan (PSP) prepared by Urbis was lodge 18 August 2026 for the wider Dianella Plaza precinct aimed at establishing a long-term planning framework (Figure 2). In accordance with this staged redevelopment approach, future components of the precinct's redevelopment are anticipated to progress through separate development applications as required. The current proposal therefore represents the first stage in the planned revitalisation of Dianella Plaza. It’s noted the PSP is still in the early stages of the planning process and has not yet been endorsed, accordingly the appropriate level of weight has been afforded to it.



Figure 2: Precinct Structure Plan Area as indicated in Urbis prepared PSP

PLANNING ASSESSMENT:

PLANNING FRAMEWORK	
Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	City of Stirling Local Planning Scheme
Local Planning Scheme - Zone	District Centre, Service Station and Hotel
Lot Size	Lot 110 – 51,753m² Lot 78 – 3,462m² Lot 70 – 18,210m²
Existing Land Use	Shop, Car Park and Service Station
Heritage Status	☒ N/A ☐ State Register of Heritage Places ☐ Local Heritage List ☐ Local Heritage Area
Bushfire Prone Area	No

Legislation and Policy:

Legislation

- Planning and Development Act 2005
- Planning and Development (Development Assessment Panels) Regulations 2011
- Planning and Development (Local Planning Schemes) Regulations 2015
- Metropolitan Region Scheme (MRS)
- City of Stirling Local Planning Scheme No. 3 (LPS3)

State Planning Policies

- State Planning Policy 4.2 – Activity Centres (SPP4.2)
- State Planning Policy 5.4 – Road and Rail Noise (SPP 5.4)
- State Planning Policy 7.0 – Design of the Built Environment (SPP7.0)

Local Planning Policies

- Local Planning Policy 4.2 - Mixed Use Design Guidelines (LPP4.2)
- Local Planning Policy 4.3 - Bin Storage Areas (LPP4.3)
- Local Planning Policy 6.6 - Trees and Landscaping – Non-Residential (LPP6.6)
- Local Planning Policy 6.7 – Parking and Access (LPP6.7)
- Local Planning Policy 6.12 – Public Art on Private Land (LPP6.12)
- Local Planning Policy 6.18 – Public Consultation (LPP6.18)

PLANNING ASSESSMENT:

The development has been assessed against the relevant planning framework including LPS3, State Planning Policies and Local Planning Policies. The following matters have been identified as the relevant key considerations in the assessment of this application:

- Land Use
- Built Form
- Streetscape Presentation and Activation
- Traffic, Access and Servicing
- Consultation
- Design Review Panel

LAND USE

The table below summarises the permissibility of the proposed land uses, as stated in Table 1: Zoning Table of LPS3.

Table 1 Zoning Table		
Land Use	**Use Class**	
Shop	'P' use	A 'P' means that the use is permitted by the Scheme providing the use complies with the relevant development standards and the requirements of the Scheme; Condition 2 further requires that Multiple Dwellings are not permitted on the ground floor fronting a road reserve greater than 10m in width.
Car Park	'D'	A 'D' use means that the use is not permitted unless the Council has exercised its discretion by granting planning approval.

Lot 70 (No. 160) Alexander Drive contains an existing at-grade car park. While a Car Park is classified as a 'D' (discretionary) use within the Hotel zone under Table 1 of LPS3, the current application does not seek approval for a new or change of land use. The proposed works are limited to the resurfacing of the existing car park and the installation of servicing infrastructure to facilitate the broader redevelopment of Dianella Plaza. Accordingly, the assessment has focused on the proposed works, with the permissibility of the existing car park use not being reconsidered as part of this application.

A separate development application for the redevelopment of Lot 70 (No. 160 Alexander Drive) was accepted on 18 September 2026. The proposed land use and development outcomes for that site will be considered separately and assessed on their merits against the relevant planning framework.

BUILT FORM

A summary of the proposed development in relation to the primary built form controls of LPP 4.2 and the relevant planning framework is provided below.

Built Form Controls		
Provision	**Requirement**	**Proposal**
Building Height	Buildings on land zoned District Centre shall comply with the following requirements: 1. Floor to ceiling height of the ground floor shall be a minimum of 3.5m. 2. Building Height measured from the natural ground level of the lot boundary	Proposed Minimum 3.9m. Proposed 10.9m from natural ground level - pitched roof

Built Form Controls		
Provision	**Requirement**	**Proposal**
	fronting Alexander Drive, Grand Promenade and Waverly Street shall be a minimum of: • 15m - to the top of pitched roof, • 11m - to the top of external wall (concealed roof), and • 9.5m - to the top of external wall	
Setback	LPP 4.2 Street setbacks: • Nil setback required to primary and secondary streets. Where adjoining residential land, setbacks should respond to the adjoining residential development. Side/rear setback: • Nil side and rear setbacks permitted, except where adjoining residential land, where an appropriate setback is required.	Grand Promenade: Proposed 1m setback – Discretion Sought Alexander Drive: Proposed 18.4m setback – Discretion Sought Waverley Street**:** Proposed 38m setback - Discretion Sought Side setbacks: Proposed nil to 5m. Adjoining properties are commercial in nature, with residential land separated from the site by Alexander Drive, Waverley Street and Lowick Street.
Car Parking	Local Planning Policy 6.7 – Parking and Access Table 1: Activity Cere Car Parking Ratios • 1 bay per 25sqm GFA • Approximately 19,960sqm GFA	Proposed 938 bays

Built Form Controls		
Provision	**Requirement**	**Proposal**
	therefore 799 bays required	

STREETSCAPE PRESENTATION AND ACTIVATION

The proposed interface with the public realm, particularly along Grand Promenade, has been a key consideration in the City's assessment. While the development does not provide a traditional active frontage along the entirety of Grand Promenade, the proposal incorporates a range of design measures that improve the centre's streetscape presentation and pedestrian experience when compared to the existing development. Notwithstanding this, the proposal still seeks to mitigate these impacts through façade modulation, increased landscape treatments, public realm improvements and the softening of built form interfaces.

A key consideration in the City's assessment has been informed by the Applicant's broader vision for the redevelopment of Dianella Plaza. The Applicant has identified the internal access way 'Lowick Street' as the future mixed-use focus of the precinct, envisaged as an internal main street that will support increased pedestrian activity, community interaction and future redevelopment opportunities. In this context, the proposed Stage 1 works are intended to establish the foundations for that longer-term vision by delivering immediate improvements to the centre while facilitating its future evolution. The proposal improves pedestrian permeability through the site, enhances wayfinding and delivers significant public realm upgrades, all of which contribute to the gradual transition of Dianella Plaza towards a more active, connected and pedestrian-oriented District Centre. The City also acknowledges that Grand Promenade and Alexander Drive function primarily as major transport corridors and are not currently environments that are particularly hospitable to active pedestrian uses or prolonged street-level activity. Accordingly, the focus on creating a more active and pedestrian-oriented environment within the internal Lowick Street is considered an appropriate response to the existing context.

The City considers the proposal to be generally consistent with the objectives of LPP4.2, particularly those relating to improving the public realm, enhancing pedestrian connectivity, creating attractive and legible streetscapes, and integrating landscaping with built form. While future redevelopment stages may provide additional opportunities for activation, the proposed Stage 1 works represent a significant improvement to the existing centre through upgraded public realm outcomes, improved pedestrian movement, enhanced wayfinding and a stronger streetscape presence. Accordingly, the proposal is considered to provide an appropriate foundation for the long-term revitalisation of Dianella Plaza as a more connected and contemporary District Centre.

TRAFFIC, ACCESS AND SERVICING

The proposal includes the relocation of the Coles and associated service access and loading dock to the Grand Promenade frontage. During the assessment of the application, the City identified critical concerns regarding truck manoeuvring, potential conflicts with the adjoining Ampol Service Station, impacts on Grand Promenade, pedestrian safety and the overall functionality of the servicing arrangement. As a result,

additional traffic considerations were requested from the Applicant to sufficiently address these matters.

In response, the Applicant submitted a supplementary Traffic Technical Note prepared by PJA. The assessment confirms that the existing Grand Promenade crossover will operate as a controlled servicing access for Coles deliveries while continuing to accommodate fuel deliveries to the adjoining Ampol Service Station only. The removal of general customer vehicle movements from this crossover is expected to reduce potential conflict points and simplify the operation of the access arrangement. The proposal also includes the closure of the existing median opening opposite the loading dock access and associated modifications to prohibit right-turn movements (refer to Figure 3). A condition of approval is recommended to ensure these works are actioned prior to occupation of the development.

The supplementary assessment concludes that the primary access arrangements to the Ampol Service Station will remain unchanged and that any interaction between Coles delivery vehicles and service station operations will be infrequent and temporary. On this basis, the Applicant's traffic consultant considers that the proposal will not materially impact the operation or accessibility of the existing service station.

Updated swept path analysis has also been provided demonstrating that service vehicles, including 19-metre semi-trailers, can safely access and manoeuvre within the loading dock area. The adopted layout was selected following consideration of alternative options by the Applicant. The assessment demonstrates that the pedestrian crossing will be temporarily occupied during reversing manoeuvres, preventing pedestrian access through the crossing while these movements occur (refer to Figure 3). Additional warning signage is proposed to reinforce pedestrian safety which is also in the recommended conditions of approval.



Figure 3: Median closure and swept path analysis as demonstrated in Applicant's Traffic Technical Note prepared by PJA

The proposal seeks a new median opening at the internal access way known as 'Lowick Street' to facilitate a new right turn movements west bound along Grand Promenade at the existing access (refer to Figure 4). The proposed access arrangement has formed part of the Stage 1 redevelopment scope of works, intended to provide vehicle access to and from the relocated Coles supermarket upon commencement of operation.

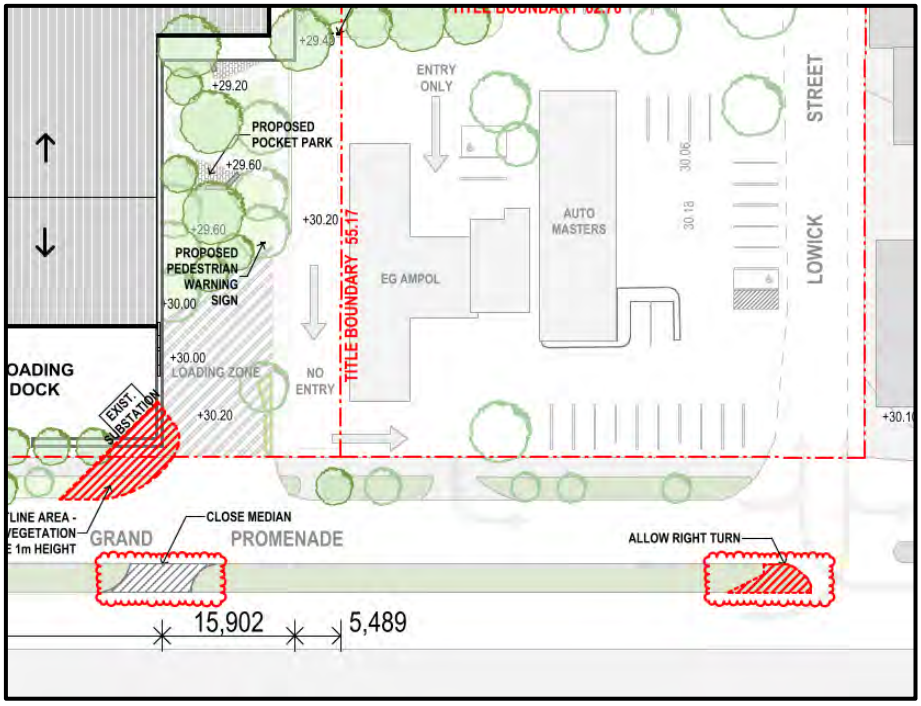


Figure 4: Median opening from internal access way 'Lowick Street'

A supplementary Traffic Technical Note was prepared by PJA supporting the amended proposed median opening, which was received at the concluding stages of the assessment process. The Traffic Technical Note resolved the proposed median opening is capable of operating satisfactorily from both capacity and sight distance perspectives, although the introduction of a new right-turn movement on a four-lane District Distributor Road warrants further assessment from a road safety perspective prior to the approval.

Notwithstanding, the City has reviewed the supporting information and has no in-principle objection to the proposed access arrangement. However, it is recommended that a condition of approval require the preparation of an independent Road Safety Audit (RSA). The RSA should consider matters including the proposed right-turn movement, median storage requirements, vehicle suitability and swept path movements associated with the staged right-turn manoeuvre, potential encroachment into adjacent traffic lanes, interactions with pedestrians, cyclists and nearby bus stops, and any implications arising from future development staging.

Any recommendations identified by the RSA should be accompanied by a formal written response from the Applicant outlining how the recommendations will be addressed.

It is noted that any works within the road reserve do not form part of this development approval and will be subject to a separate approval process, with the detailed design and outcome of the RSA to inform the City's assessment of those works.

While future redevelopment of the precinct is anticipated through the proposed Precinct Structure Plan, the recommended RSA is intended to assess the safety and functionality of the proposed median opening having regard to the current application and Stage 1 works only. Future access arrangements associated with subsequent redevelopment stages will be considered on their merits through separate planning and engineering assessments.

Following review of the supplementary traffic information, the City is satisfied that the proposed loading dock and servicing arrangements can operate without resulting in unacceptable impacts on Grand Promenade, the adjoining Ampol Service Station or internal site circulation. While the proposal is considered acceptable, it is appropriate that several matters be addressed through the following recommended conditions of approval to ensure the ongoing functionality and operation of the development:

- The preparation and ongoing implementation of a service loading and delivery management plan to manage servicing operations and minimise potential conflicts between service vehicles, pedestrians and surrounding land uses.
- The creation of an easement burdening Lot 110 and benefiting Lot 78 for the purposes of providing ongoing access to, and maintenance of, the relocated air and water station associated with the adjoining Ampol Service Station.
- The landowner of Lot 110 providing written notice to the owner and/or occupiers of Lot 78, prior to lodgement of building permit application, detailing any changes to vehicle access, circulation or operational arrangements affecting the Ampol Service Station arising from the development, and maintaining the ongoing operation of the service station during construction.

Conditions and advice notes of approval are recommended to address the required traffic, access and servicing arrangements

The recommended conditions have a clear nexus to the development and arise directly from the proposed loading dock and servicing arrangements. While the submitted traffic information demonstrates that the proposal can operate satisfactorily, the conditions are necessary to ensure the safe and efficient management of servicing activities, maintain access to adjoining properties, and minimise impacts on pedestrians and the surrounding road network. The conditions are therefore considered reasonable and necessary to address the planning impacts generated by the development.

CONSULTATION

Public Consultation

The proposed development was advertised for a period of 28 days in accordance with the 'Complex Application' requirements of *Local Planning Policy 6.18* (LPP6.18) and *Clause 64(3)* and *(6)(a)* of *the Planning and Development (Local Planning Schemes) Regulations 2015*. The consultation period commenced on 2 May

2026 and concluded on 30 May 2026. In response, a total of 14 submissions were received, comprising 13 support and one 'other'. The submissions received during the consultation period and their relative locations are tabled below.

Submissions Received	Within 100m Radius of Proposed Site	Within 200m Radius of Proposed Site	Within the City of Stirling	Outside of the City of Stirling
SUPPORT	7 (50%)	5 (36%)	1 (7%)	0 (0%)
OBJECT	0 (0%)	0 (0%)	0 (0%)	0 (0%)
CHANGES REQUESTED	0 (0%)	0 (0%)	0 (0%)	0 (0%)
OTHER (Comment)	1(7%)	0 (0%)	(0%)	0 (0%)

All matters raised in submissions received during the advertising period have been summarised in the table below, also provided is the number of submissions in which the matter was raised, and the City's response to the matter.

Public Consultation Submissions		
Number of Submission to Raise Matters	**Summary of Matters Raised**	**Officer Response**
13	General support for the redevelopment of Dianella Plaza, including improved presentation, retail offerings and public amenity.	Noted.
6	Requests for additional family and community-focused amenities, including play areas, gathering spaces, shaded seating and outdoor dining opportunities.	The application has been assessed on its merits. While such facilities are not required under the applicable planning framework, the proposal includes landscaping, seating areas, public realm improvements and enhanced pedestrian connectivity.
5	Support for increased landscaping, tree planting, public art and streetscape improvements.	Noted. Landscaping and public realm enhancements form a key component of the proposal and will improve the appearance and amenity of the centre.
4	Concerns regarding traffic movements and access	The City has reviewed the application and the

Public Consultation Submissions		
Number of Submission to Raise Matters	**Summary of Matters Raised**	**Officer Response**
	arrangements, particularly at nearby intersections.	accompanying Traffic Impact Assessment and is satisfied that the proposal can be accommodated within the surrounding road network, subject to the recommended conditions of approval.
4	Requests for additional restaurants, cafés, bars and other hospitality uses to improve activation and vibrancy.	The application relates to the relocation of the Coles supermarket and associated redevelopment works. Future tenancy mix and additional land uses will be considered through separate approvals where required.
3	Requests for improved pedestrian and cycling connections, including links to schools, bus stops and community facilities.	The proposal includes upgraded pedestrian connections and improved integration with surrounding streets. These matters have been considered as part of the City's assessment.
2	Concerns regarding maintaining access to public transport infrastructure and nearby bus stops during and after construction.	Existing public transport infrastructure will be retained. Any temporary impacts during construction can be addressed through the relevant construction management processes.
1	Student safety, pedestrian access via Lowick Street, staff parking and continued access to centre parking.	Noted. Pedestrian connectivity and vehicle access arrangements have been considered through the assessment process. Existing access arrangements are retained, and any construction related impacts can be managed through appropriate management measures.
1	Concerns regarding proposed drive-through food outlets and the ongoing TAB tenancy.	Drive-through food outlets and existing approved tenancies are not the subject of this application

Public Consultation Submissions		
Number of Submission to Raise Matters	**Summary of Matters Raised**	**Officer Response**
		and are therefore not relevant considerations in the assessment of the proposal.
1	Request for further information regarding waste collection and servicing arrangements.	Waste management has been addressed through the supporting documentation. A condition is recommended requiring the development to operate in accordance with an approved Waste Management Plan.

Referrals/Consultation with Government/Service Agencies

The application was referred to the Department of Planning, Lands and Heritage (DPLH), Department of Water and Environmental Regulation (DWER) and Water Corporation. Responses were received between 9 June and 25 June 2026 and have been considered as part of the City's assessment.

Department of Planning, Lands and Heritage

DPLH noted that Alexander Drive is an Other Regional Road under the MRS and acknowledged that no new vehicular access points are proposed, with all existing access arrangements to be retained. DPLH reviewed the submitted Transport Impact Assessment and notwithstanding, the existing operation of the Alexander Drive/Grand Promenade intersection, considered the traffic generated by the proposal to be minor. DPLH raised no objection to the proposed development.

Department of Water and Environmental Regulation

DWER advised that portions of the site are classified as Remediated for Restricted Use as a result of historical service station and dry-cleaning activities. Notwithstanding, DWER considers the site suitable for the proposed commercial land use and raised no objection to the development. DWER recommended the inclusion of advice notes relating to the management of contaminated soil and groundwater during construction works and the site's low to moderate acid sulphate soil risk.

Water Corporation

The Water Corporation advised that the existing water network has sufficient capacity to accommodate Stage 1 of the redevelopment and that the proposal is not expected to place significant additional demand on the sewer network. The Water Corporation raised no objection to the development and noted that separate servicing approvals may be required as part of future building works

DESIGN REVIEW PANEL ADVICE

The proposal was considered by the City's Design Review Panel (DRP) on 12 September 2024 and 21 November 2024. The DRP generally supported the broader redevelopment vision, including the retention and reuse of the existing roof structure, improved pedestrian connections and the revitalisation of Dianella Plaza as a District Centre.

The key issues raised by the DRP related to the activation of the Grand Promenade frontage, the treatment of blank walls, the loading dock interface, landscaping and public realm outcomes. Following the initial review, the Applicant amended the proposal to incorporate increased setbacks, additional landscaping, improved façade articulation, public art opportunities and enhanced pedestrian connections.

While some concerns remained at the second review, the proposal was not referred back to the DRP as the key matters raised have been addressed through subsequent design revisions and have been assessed by the City as part of this report.

CONCLUSION

The proposal seeks approval for Stage 1 of the redevelopment of Dianella Plaza Shopping Centre, comprising the relocation of the Coles supermarket, new retail tenancies, associated public realm improvements and enabling works to support the future redevelopment of the centre.

Having regard to MRS, LPS3, relevant Local Planning Policies and other applicable planning considerations, the proposal is an appropriate redevelopment outcome for the site. The development will modernise and improve the functionality of Dianella Plaza, enhance pedestrian amenity and public realm outcomes, and provide the foundation for the centre's future revitalisation.

The City is satisfied that the key matters raised during the assessment process, including streetscape presentation, traffic and servicing arrangements, have been adequately addressed through the submitted plans, supporting technical documentation and recommended conditions of approval. Accordingly, the application is recommended for approval, subject to the recommended conditions.

ATTACHMENTS

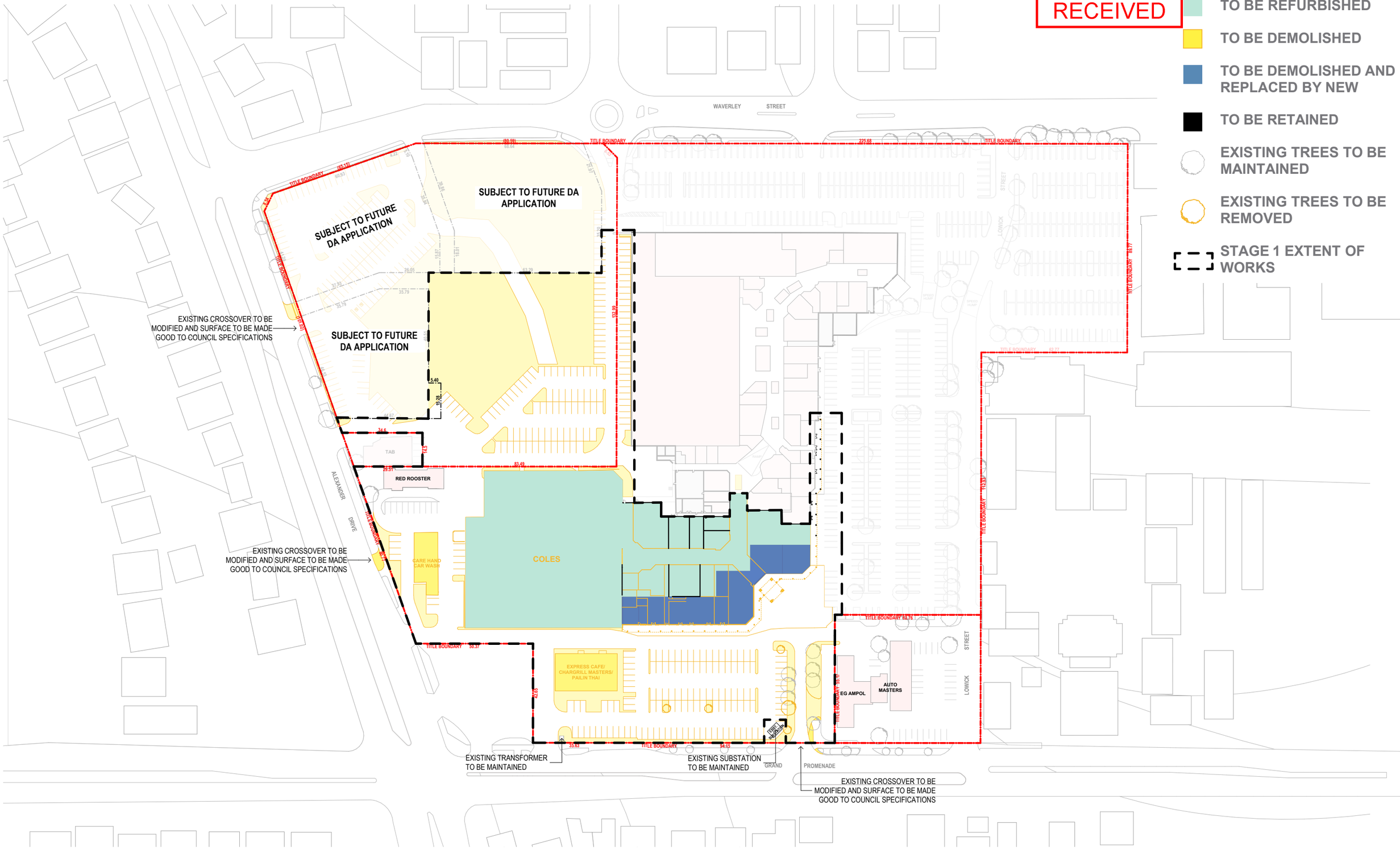
1. Development Plans as listed in Condition 1
2. Aerial Location plan
3. Metropolitan Region Scheme Zoning Map
4. City of Stirling Local Planning Scheme Map
5. Applicants Original Report received 3 March 2026
6. City of Stirling Planning Assessment
7. Applicants Final Submission
    a. Applicant’s Response to Request for Further Information received 30 June 2026
    b. Waste Management Plan
    c. Landscape Concept Plan
    d. Acoustic Report

    e. Transport Impact Assessment
        i. Technical Traffic Note received 1 September 2026
    f. Geotechnical Report
    g. Stormwater Management Plan
    h. Sustainability Report
8. External Referral Responses
    a. Department of Planning, Lands and Heritage
    b. Department of Water and Environmental Regulation
    c. Water Corporation
9. Design Review Report
    a. 12 September 2024
    b. 21 November 2024

| Existing Site Plan

City of Stirling
3 March 2026
RECEIVED

- EXISTING RETAIL LOTS
- TO BE REFURBISHED
- TO BE DEMOLISHED
- TO BE DEMOLISHED AND REPLACED BY NEW
- TO BE RETAINED
- EXISTING TREES TO BE MAINTAINED
- EXISTING TREES TO BE REMOVED
- STAGE 1 EXTENT OF WORKS



DEVELOPMENT APPLICATION

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Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:1500@A3 / 1:750@A1
Drawing Name	Existing Site Plan
Drawing Number	**DA301**
Revision	**A**

| Existing Roof Plan

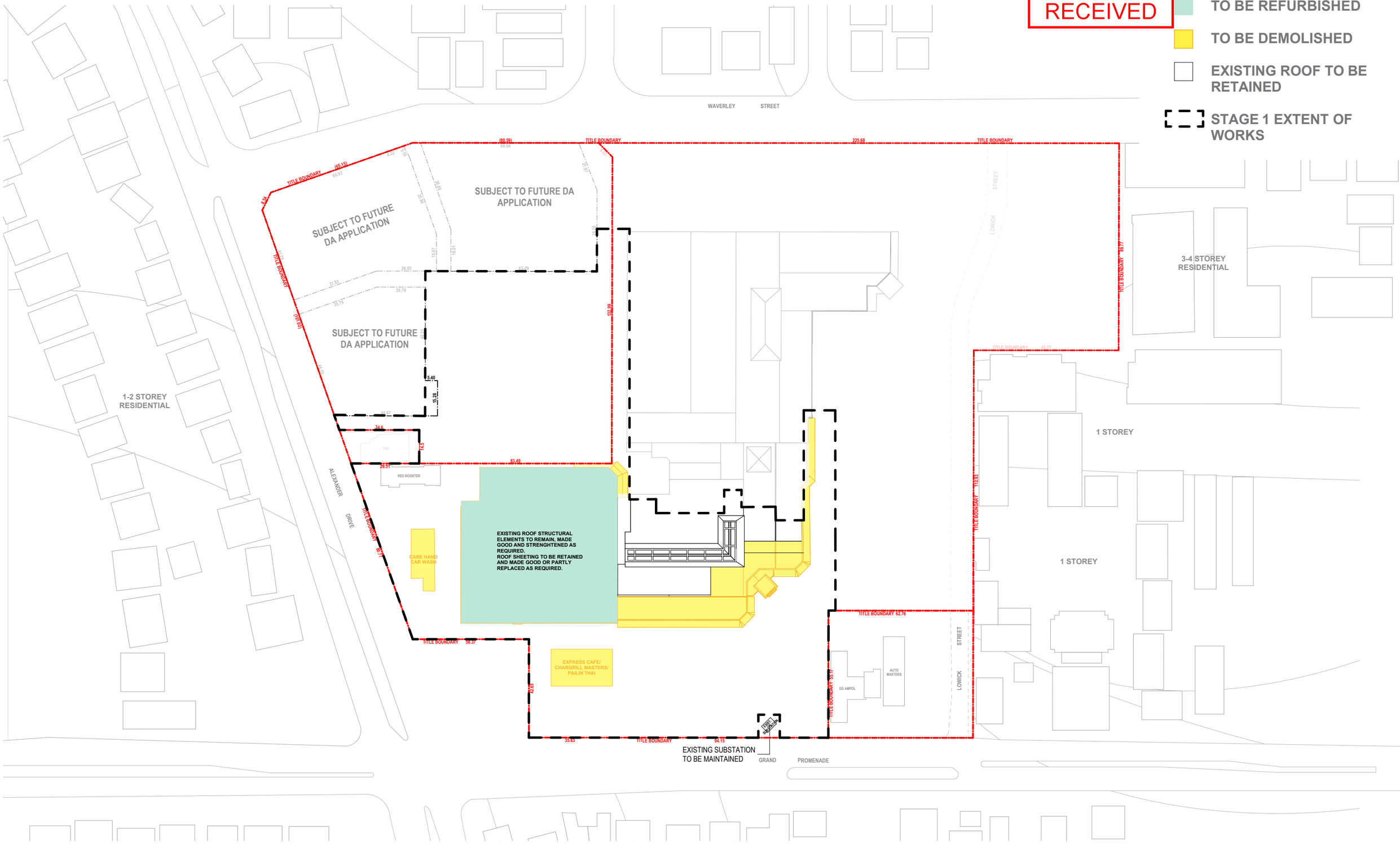
City of Stirling
3 March 2026
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TO BE REFURBISHED

TO BE DEMOLISHED

EXISTING ROOF TO BE RETAINED

STAGE 1 EXTENT OF WORKS



DEVELOPMENT APPLICATION

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Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:1500@A3 / 1:750@A1
Drawing Name	Existing Roof Plan
Drawing Number	**DA302**
Revision	**A**

| Ground Demolition Plan

EXISTING RETAIL LOTS

TO BE DEMOLISHED

TO BE RETAINED

EXISTING TREES TO BE MAINTAINED

EXISTING TREES TO BE REMOVED

83.49

RAMP

COLES

EXPRESS CAFE/
CHARGRILL MASTERS/
PAILIN THAI

AUTO

TITLE BOUNDARY 62.70

OUNDARY 50.37

42.65

IDARY 55.17

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3 March 2026
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Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:500@A3 / 1:250@A1
Drawing Name	Ground Demolition Plan
Drawing Number	DA303
Revision	A

| Roof Demolition Plan (1:500) (OM

TO BE DEMOLISHED

City of Stirling
3 March 2026
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83.49

EXISTING ROOF STRUCTURAL ELEMENTS TO REMAIN, MADE GOOD AND STRENGHTENED AS REQUIRED.
ROOF SHEETING TO BE RETAINED AND MADE GOOD OR PARTLY REPLACED AS REQUIRED.

TITLE BOUNDARY 62.7(

OUNDARY 50.37

42.65

EXPRESS CAFE/
CHARGRILL MASTERS/
PAILIN THAI

IDARY 55.17

CALTEX

AUTO
MASTERS

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Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:500@A3 / 1:250@A1
Drawing Name	Roof Demolition Plan (1:500) (OMITTED FROM DWG LIST)
Drawing Number	DA304
Revision	A

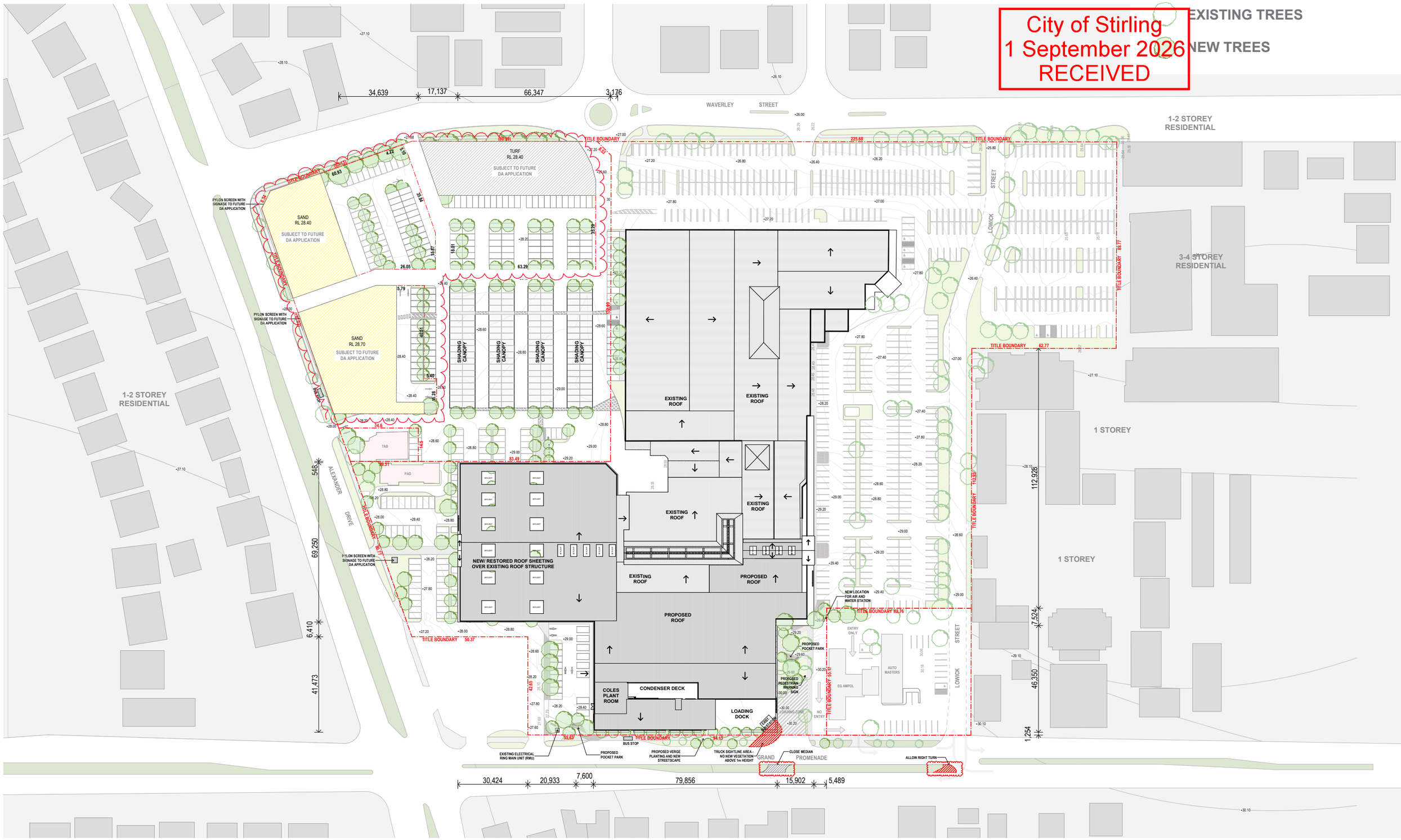
| Proposed Site Plan

EXISTING RETAIL LOTS

EXISTING TREES

NEW TREES

City of Stirling
1 September 2026
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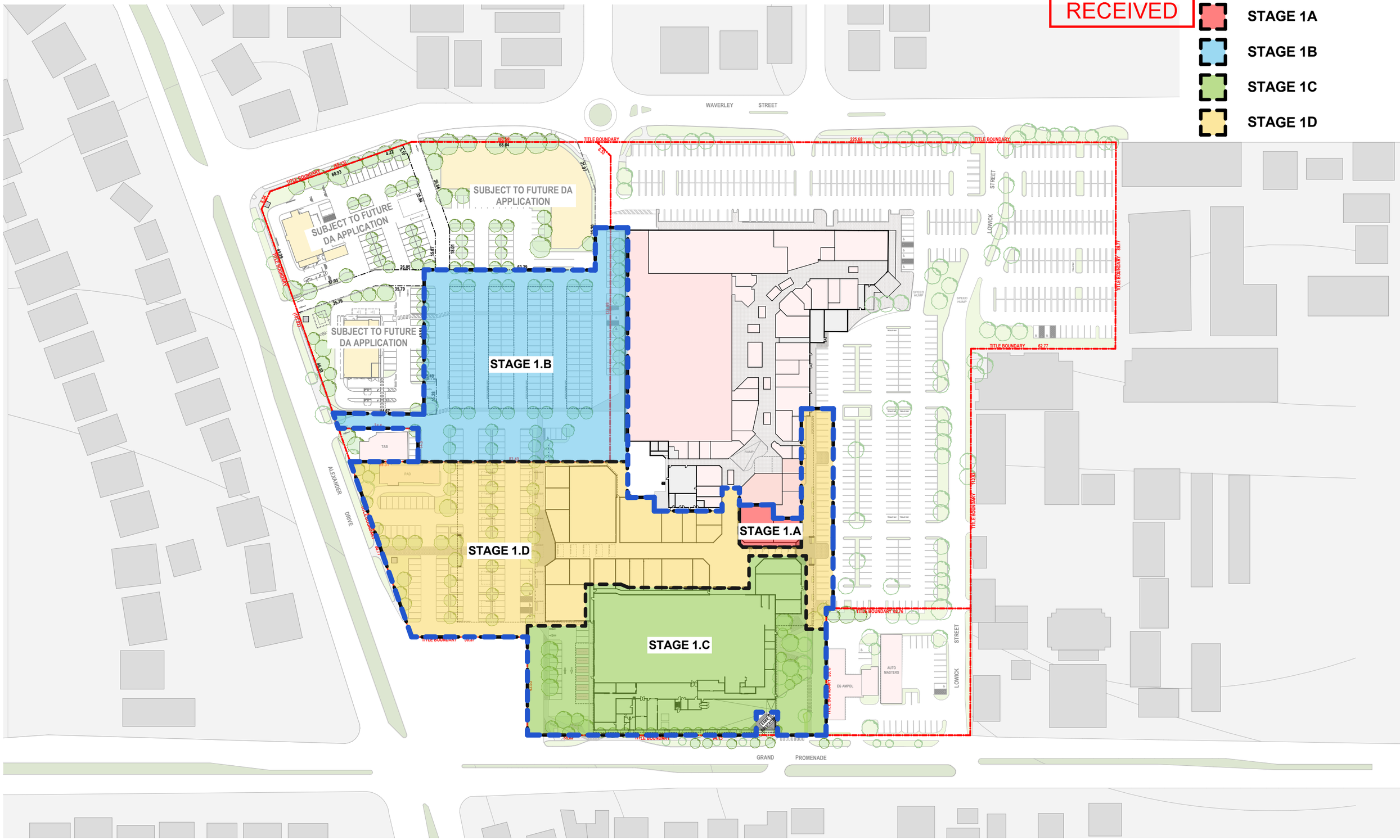
Rev	Date	By	Chk	Description
E	19/08/2026	NM	DC	INFORMATION ONLY
C	16/07/2026	NG		INFORMATION ONLY
B	27/05/2026	NG		INFORMATION ONLY
A	24/02/2026	NG		INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	19/08/2026
Scale	1:1500@A3 / 1:750@A1
Drawing Name	Proposed Site Plan
Drawing Number	**DA305**
Revision	**E**

| Staging Plan

City of Stirling
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STAGE 1 EXTENT
STAGE 1A
STAGE 1B
STAGE 1C
STAGE 1D



DEVELOPMENT APPLICATION

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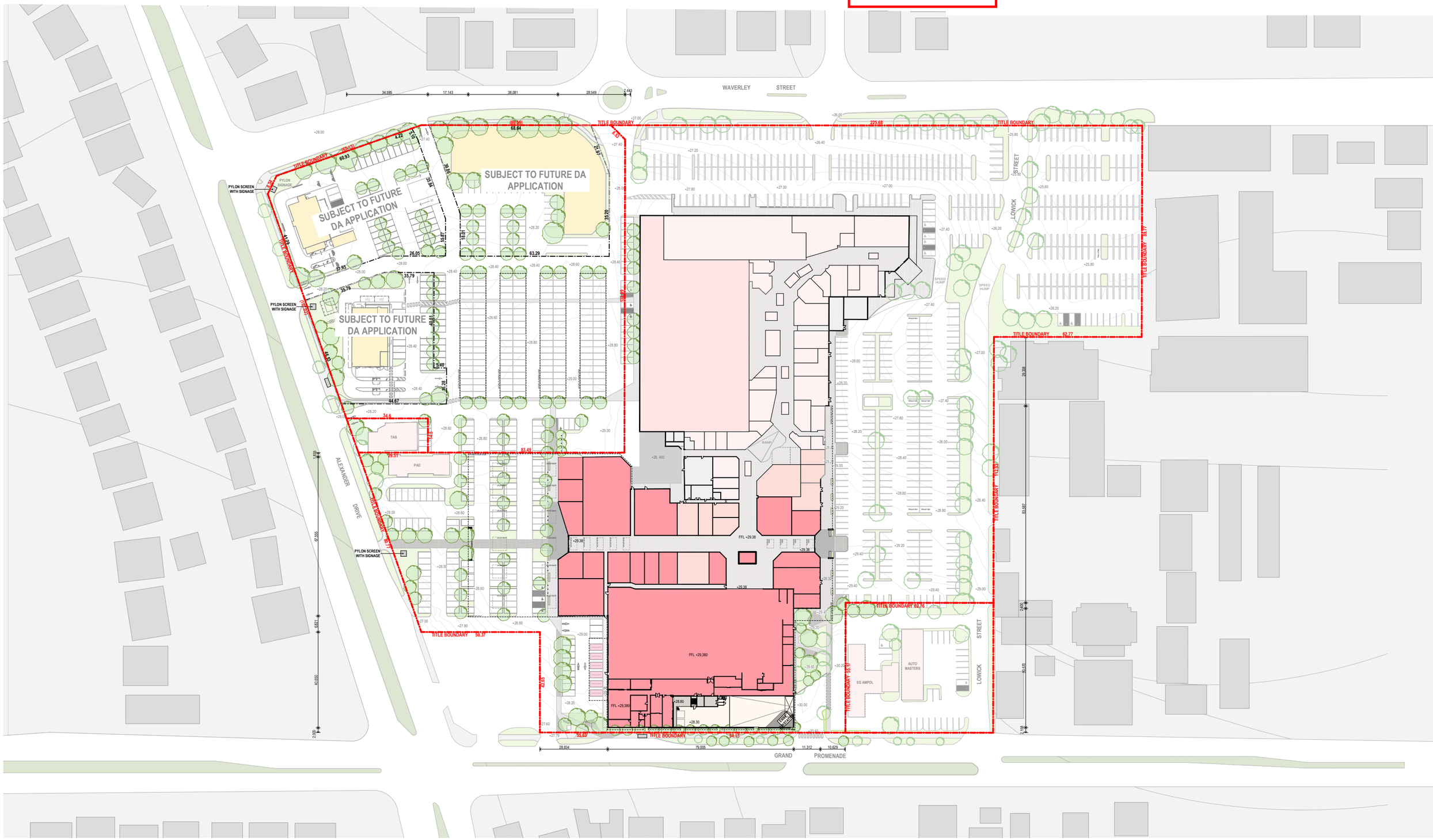
Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:1500@A3 / 1:750@A1
Drawing Name	Staging Plan
Drawing Number	DA306
Revision	A

| Overall Ground Floor Plan

City of Stirling
3 March 2026
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EXISTING TREES
NEW TREES
EXISTING RETAIL LOTS
NEW RETAIL LOTS



DEVELOPMENT APPLICATION

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Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:1500@A3 / 1:750@A1
Drawing Name	Overall Ground Floor Plan
Drawing Number	**DA307**
Revision	**A**

| Overall Ground Floor Plan (1:1000)

EXISTING TREES
NEW TREES
EXISTING RETAIL LOTS
NEW RETAIL LOTS

SUBJECT TO FUTURE DA APPLICATION
SUBJECT TO FUTURE DA APPLICATION
SUBJECT TO FUTURE DA APPLICATION
PYLON SIGNAGE
PYLON SCREEN WITH SIGNAGE
PYLON SCREEN WITH SIGNAGE
TITLE BOUNDARY
TITLE BOUNDARY 80.17
TITLE BOUNDARY 50.37
TITLE BOUNDARY 94.15
TITLE BOUNDARY 62.77
TITLE BOUNDARY 55.17
TITLE BOUNDARY 112.93
TITLE BOUNDARY 69.77
ALEXANDER DRIVE
LOWICK
LOWICK STREET
SPEED HUMP
SPEED HUMP
TAB
PAD
RAMP
TROLLEY BAY
AUTO MASTERS
EG AMPOL
GRAND PROMENADE
FFL +29,380
FFL +29,380
FFL +29.38
+28, 400
+28.00
+27.00
+27.79
+29.38
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2.600
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2.000
29.338
83.587
50.570
2.400
2.158
20.00
11.312
10.629
79.005
28.834
35.63
EXISTING RETAIL LOTS
NEW RETAIL LOTS

City of Stirling
3 March 2026
RECEIVED

DEVELOPMENT APPLICATION

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Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:1000@A3 / 1:500@A1

Drawing Name	Overall Ground Floor Plan (1:1000)
Drawing Number	**DA308**
Revision	**A**

| Overall Roof Plan

City of Stirling
3 March 2026
RECEIVED

EXTENT OF PROPOSED PV PANELS
EXISTING MECHANICAL EQUIPMENT
EXISTING RETAIL LOTS

SUBJECT TO FUTURE DA APPLICATION
SUBJECT TO FUTURE DA APPLICATION
SUBJECT TO FUTURE DA APPLICATION
SHADING CANOPY
SHADING CANOPY
SHADING CANOPY
SHADING CANOPY
EXISTING ROOF
EXISTING ROOF
EXISTING ROOF
EXISTING ROOF
NEW/ RESTORED ROOF SHEETING OVER EXISTING ROOF STRUCTURE
PROPOSED ROOF
PROPOSED ROOF
CONDENSER DECK
COLES PLANT ROOM
LOADING DOCK
SKYLIGHT
TAB
PAD
ALEXANDER DRIVE
LOWICK
STREET
1 STOREY
1 STOREY
EG AMPOL
AUTO MASTERS
TITLE BOUNDARY
TITLE BOUNDARY 80.77
TITLE BOUNDARY 50.37
TITLE BOUNDARY 62.77
TITLE BOUNDARY 62.76
TITLE BOUNDARY 55.17
TITLE BOUNDARY 35.63
TITLE BOUNDARY 94.15
TITLE BOUNDARY 69.77
TITLE BOUNDARY 112.93
132.99
83.49
63.29
46.53
44.67
42.65
41.29
37.93
35.79
35.79
35.20
26.05
18.01
15.87
15.28
14.5
5.40
40.51
34.6
29.51
21.97
8.53
8.54
35.94
38.96
(101.02)
A
B
1
2
4
5
6
7

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GRAND PROMENADE

DEVELOPMENT APPLICATION

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:1000@A3 / 1:500@A1
Drawing Name	Overall Roof Plan
Drawing Number	DA309
Revision	A

| Mezzanine Level

83.49

EXTENT OF PROPOSED PV PANELS

EXISTING MECHANICAL EQUIPMENT

EXISTING RETAIL LOTS

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RECEIVED

SKYLIGHT

RESTORED/ NEW ROOF SHEETING OVER EXISTING ROOF STRUCTURE

+35.76

EXISTING ROOF

EXISTING ROOF

EXISTING ROOF

+39.28

+34.79

PROPOSED COLES ROOF

+33.76

+35.87

A

A

1

2

3

4

5

6

7

B

C

E BOUNDARY 50.37

42.65

PLANT ROOM DOOR WITH LIFTING BEAM

COLES PLANT ROOM
184 m²
+32.78

+33.98
CONDENSER DECK
215 m²

LOADING DOCK

EXIST. SUBSTATION

35.63

TITLE BOUNDARY

94.15

TITLE BOUNDARY 55.17

TITLE BOUNDARY 62

EG AMPOL

AUTO MASTER

DEVELOPMENT APPLICATION

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Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:500@A3 / 1:250@A1
Drawing Name	Mezzanine Level Plan
Drawing Number	DA310
Revision	A

| Roof Plan

EXTENT OF PROPOSED PV PANELS

EXISTING MECHANICAL EQUIP.

EXISTING RETAIL LOTS

PROPOSED PARAPET

PROPOSED CANOPY

City of Stirling
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+33.97

SKYLIGHT

PROPOSED SKYLIGHTS AND LIGHT COLOURED PAINT APPLIED TO NEW AND EXISTING ROOF SHEETING.

EXTENT OF PROPOSED ROOF MOUNTED PV PANELS
REFER TO ESD REPORT FOR LAYOUT

+35.76

+39.63

RESTORED/ NEW ROOF SHEETING OVER EXISTING ROOF STRUCTURE

+33.76

+33.97

EXTENT OF EXISTING MECHANICAL EQUIPMENT

EXISTING ROOF

+39.28

+33.76

+33.99

PROPOSED ROOF

PROPOSED COLES ROOF

+35.87

1

2

3

4

5

6

7

B

CLICK & COLLECT ROOF

+33.28

+36.36

COLES PLANT ROOM

CONDENSER DECK

+35.32

+37.05

+35.33

LOADING DOCK

EXIST. SUBSTATION

+34.86

PROPOSED PARAPET

PROPOSED PARAPET

E BOUNDARY 50.37

42.65

35.63

TITLE BOUNDARY

94.15

TITLE BOUNDARY 55.17

TITLE BOUNDARY 62

EG AMPOL

AUTO MASTER

DEVELOPMENT APPLICATION

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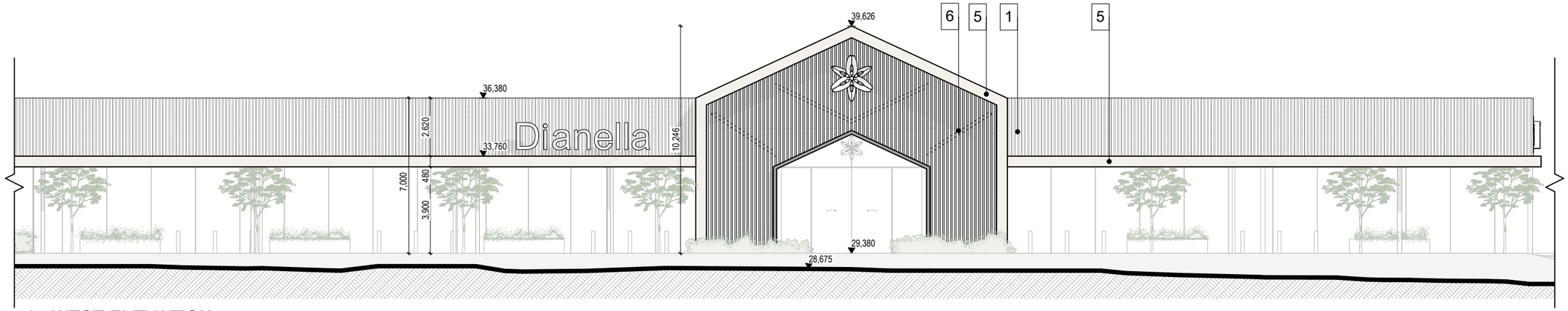
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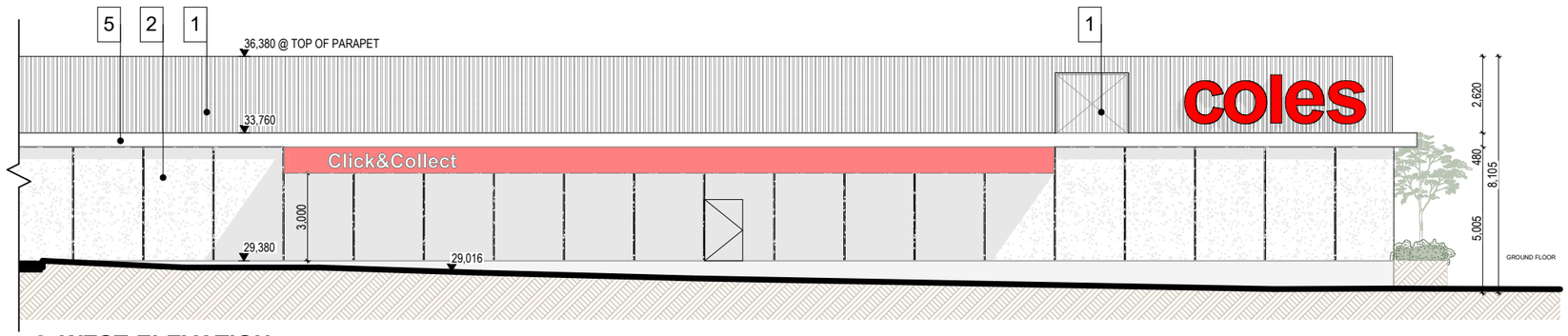
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Project Number	00013448
Date	26/02/2026
Scale	1:500@A3 / 1:250@A1
Drawing Name	Roof Plan
Drawing Number	DA311
Revision	A

| W & N Elevations

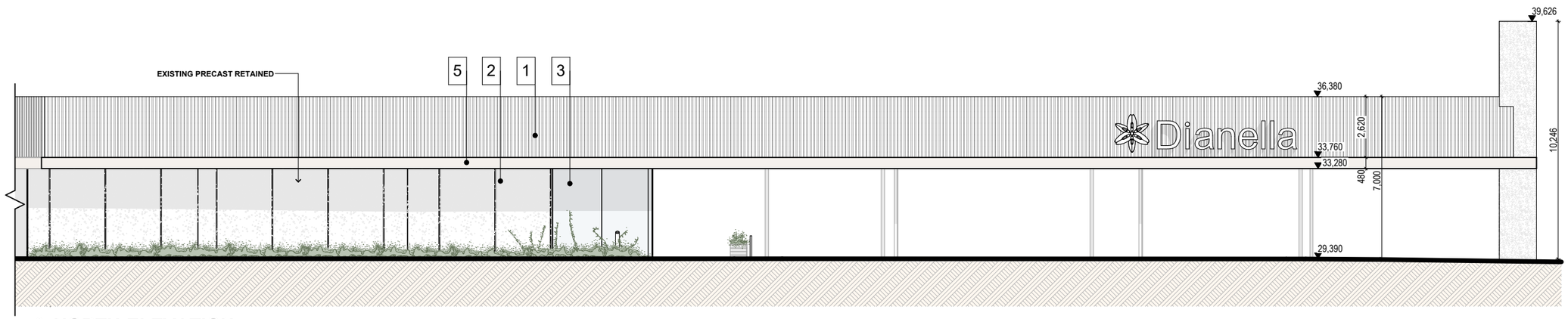
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1. WEST ELEVATION



2. WEST ELEVATION



3. NORTH ELEVATION



MATERIALS LEGEND


1. LIGHT WEIGHT CLADDING


2. GREY PRE-CAST PANEL


3. GLASS


4. CHARCOAL METAL


5. LIGHT GREY TEXTURE


6. LIGHT WEIGHT BATTENS

DEVELOPMENT APPLICATION

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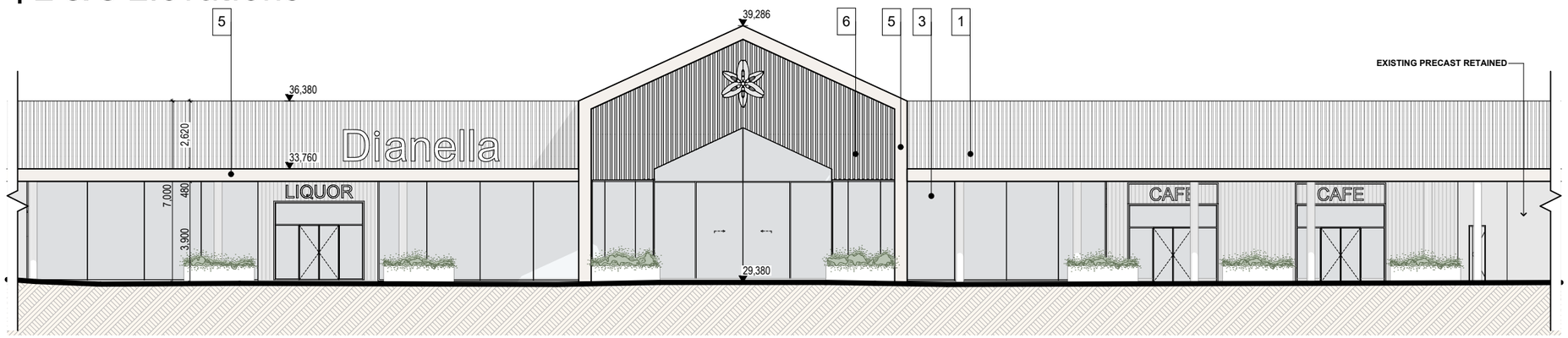
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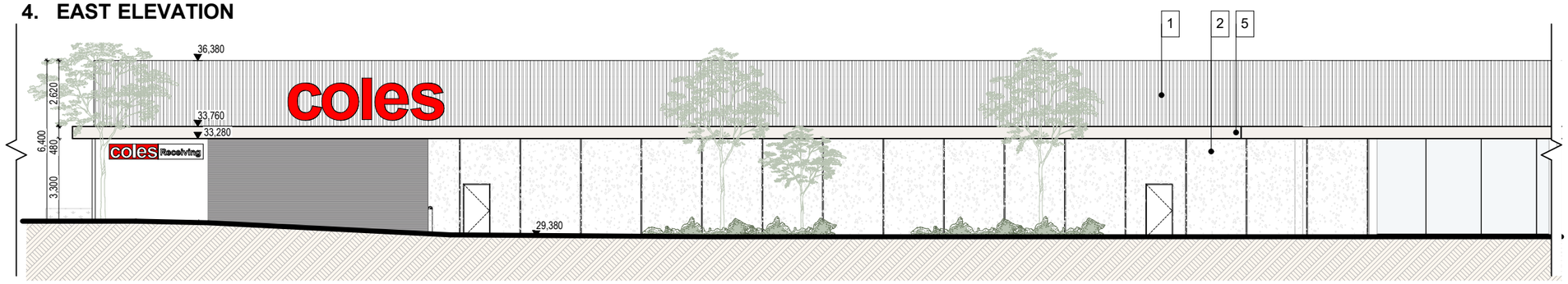
Rev	Date	By	Chk	Description
A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:200@A3
Drawing Name	W & N Elevations
Drawing Number	**DA400**
Revision	**A**

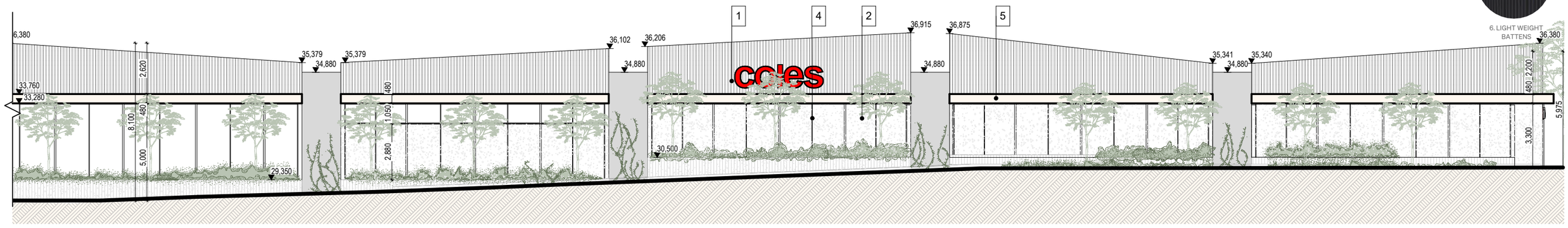
| E & S Elevations



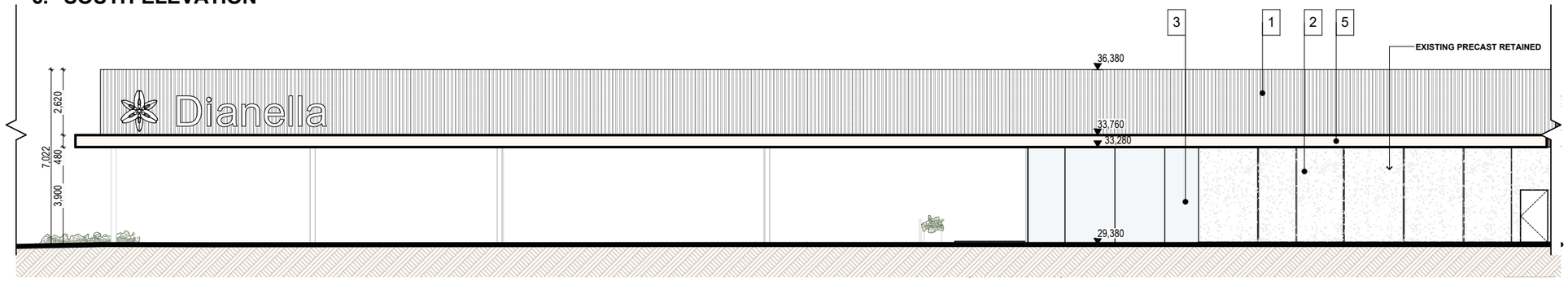
4. EAST ELEVATION



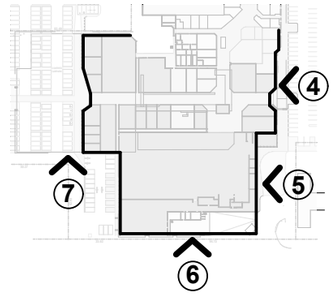
5. EAST ELEVATION



6. SOUTH ELEVATION



7. SOUTH ELEVATION



City of Stirling
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MATERIALS LEGEND

1. LIGHT WEIGHT CLADDING
2. GREY PRE-CAST PANEL
3. GLASS
4. CHARCOAL METAL
5. LIGHT GREY TEXTURE
6. LIGHT WEIGHT BATTENS

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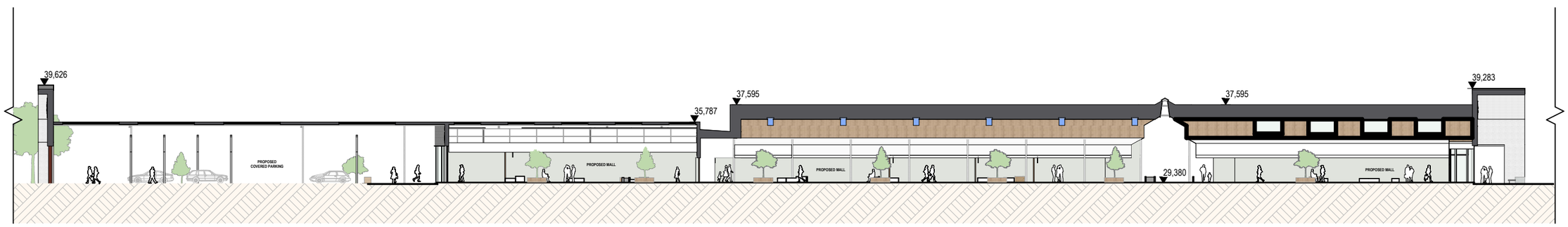
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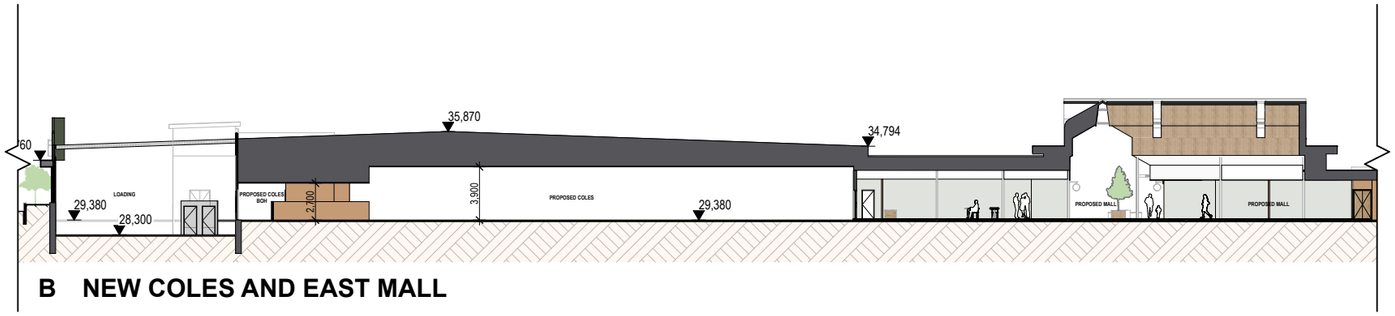
Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:200@A3
Drawing Name	E & S Elevations
Drawing Number	**DA401**
Revision	**A**

| Building Sections

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A NORTH SOUTH MALL



B NEW COLES AND EAST MALL

MATERIALS LEGEND



1. LIGHT WEIGHT CLADDING



2. GREY PRE-CAST PANEL



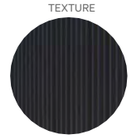
3. GLASS



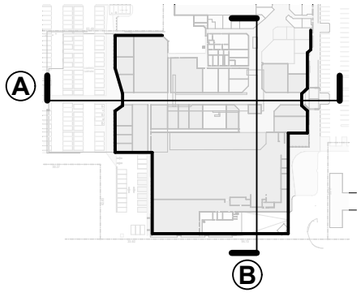
4. CHARCOAL METAL



5. LIGHT GREY TEXTURE



6. LIGHT WEIGHT BATTENS



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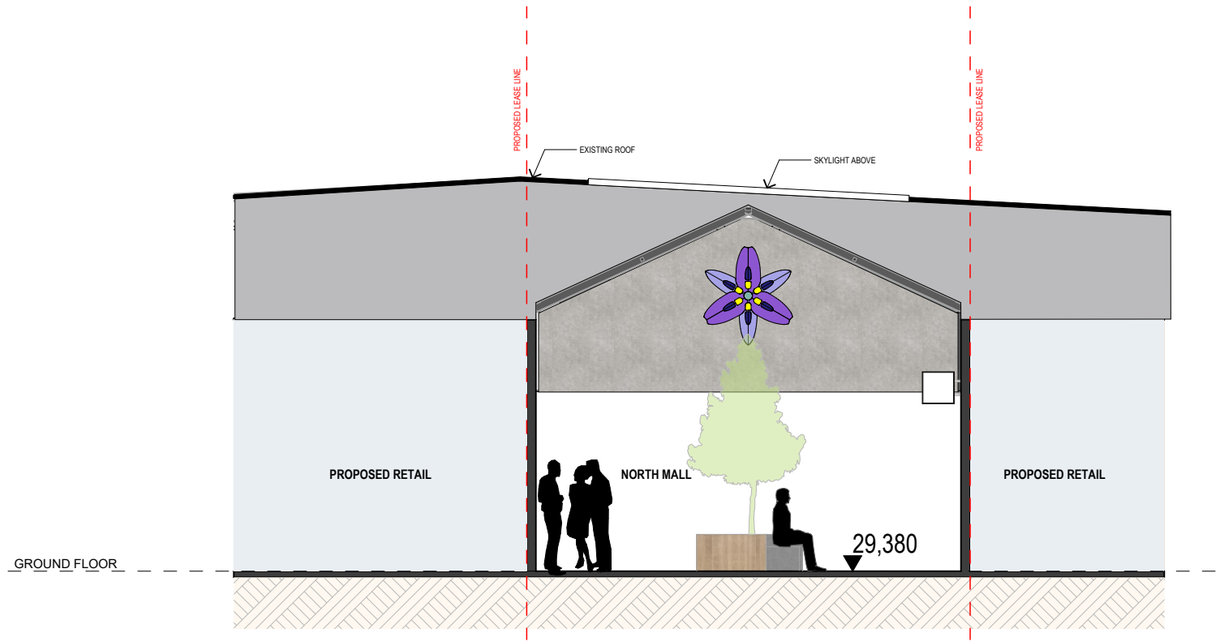
Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:450@A3
Drawing Name	Building Sections
Drawing Number	**DA402**
Revision	**A**

| Typical Sections

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C NORTH EAST UNDERCROFT ENTRY



D INTERNAL NORTH MALL

MATERIALS LEGEND


1. LIGHT WEIGHT CLADDING

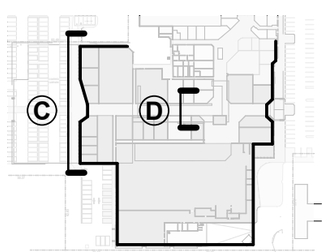

2. GREY PRE-CAST PANEL


3. GLASS


4. CHARCOAL METAL


5. LIGHT GREY TEXTURE


6. LIGHT WEIGHT BATTENS



DEVELOPMENT APPLICATION

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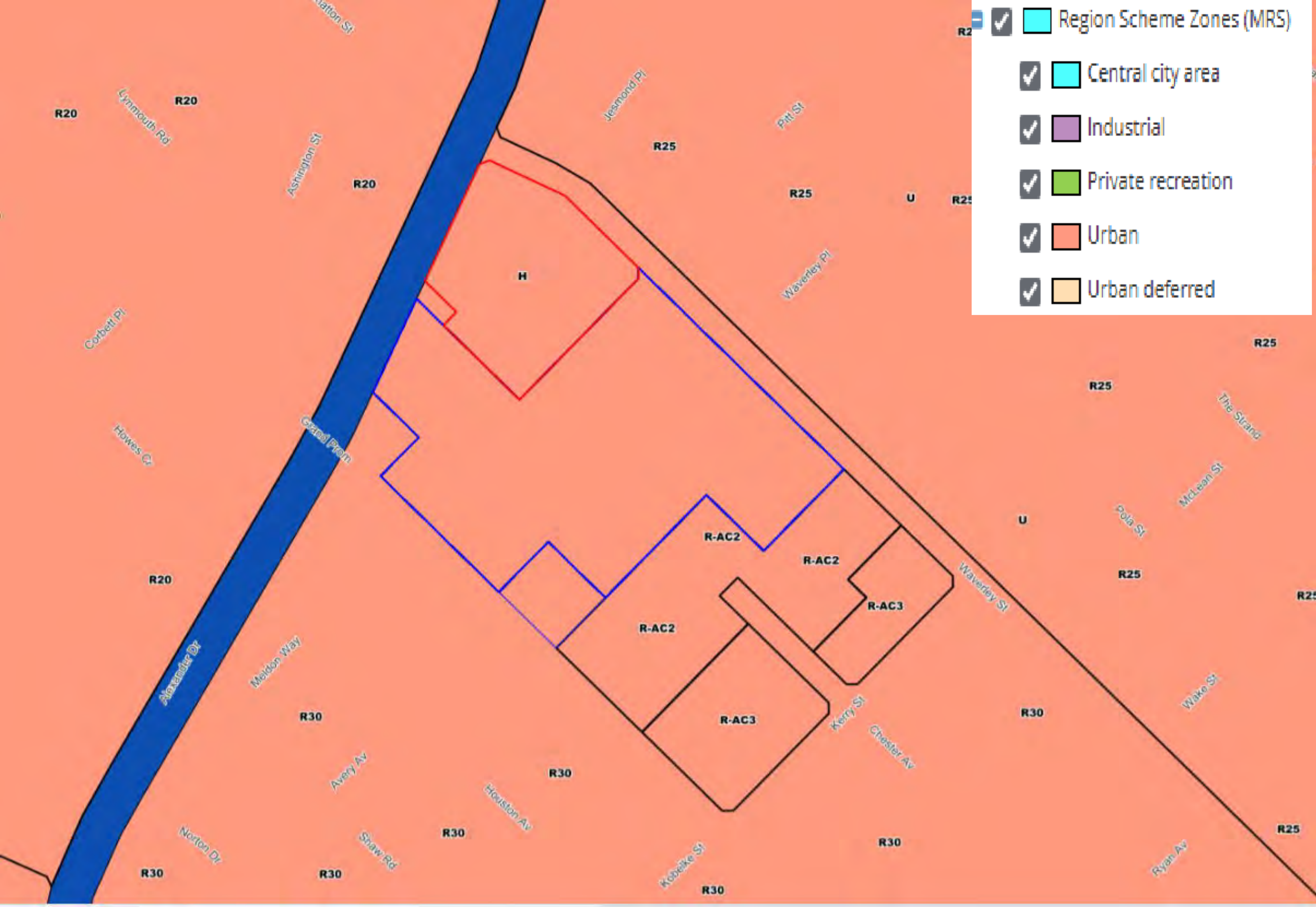
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A	24/02/2026	NG	DC	INFORMATION ONLY

Project Name	Dianella Shopping Centre
Project Number	00013448
Date	26/02/2026
Scale	1:200, 1:100@A3
Drawing Name	Typical Sections
Drawing Number	**DA403**
Revision	**A**

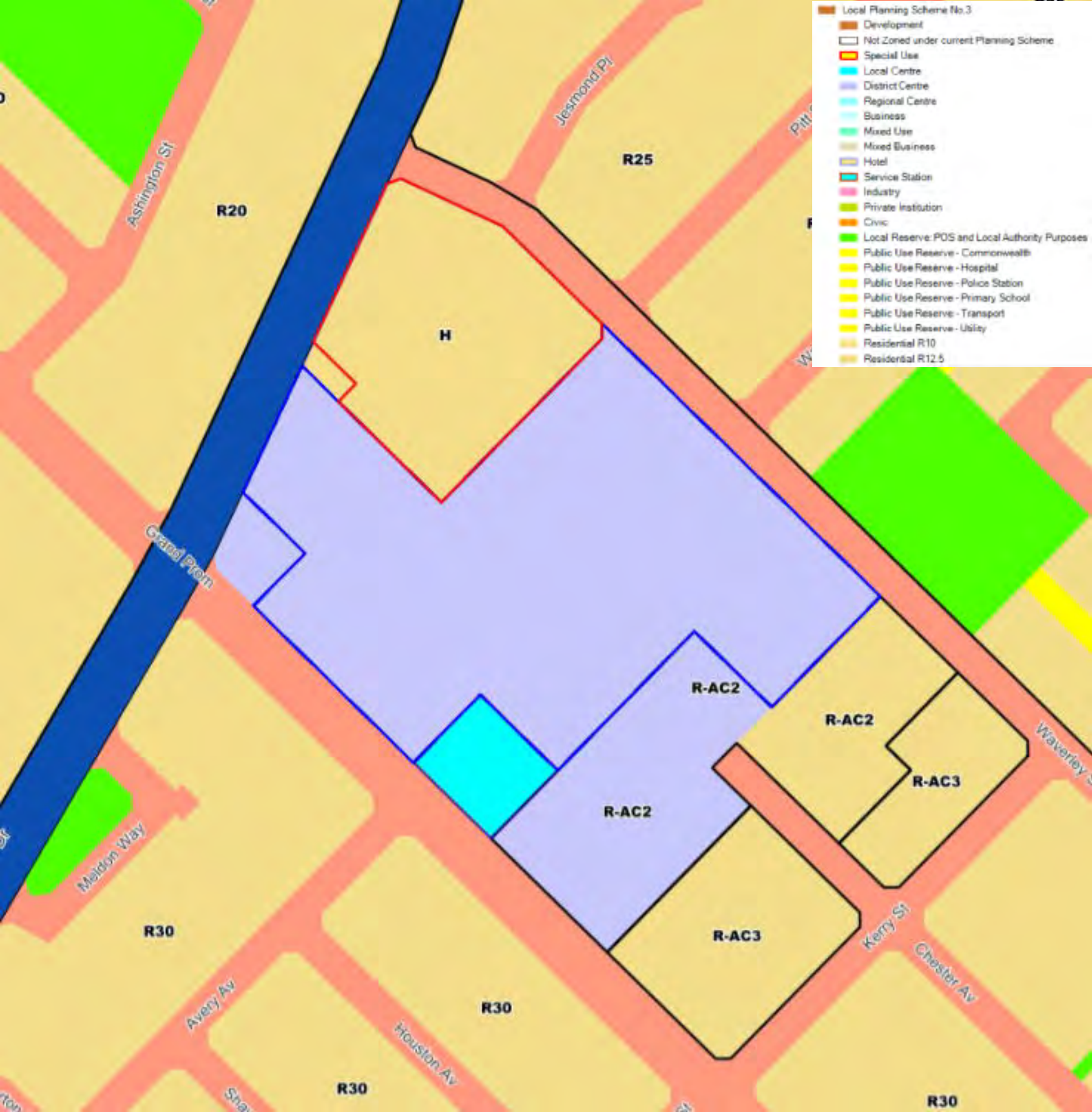
Attachment 2 - Aerial Location Plan


Waverley St
Pitt St
Waverley Pl
Waverley St
Alexander Dr
Alexander Dr After Grand Prom
Grand Prom
Grand Prom After Alexander Dr
Grand Prom After Avery Av
Grand Prom Before Kerry St
Lowick Rd
Lowick Rd
Avery Ave
Meldon Way
Kerry St
Dianella Park
160
158
366
360
356
382
383
147
390
388
151B
149A
149
155
159
161
163
165
167
169
171
18
16
14
12
10
8A
6
4
1
11
9
2
4
7
9A
5B
1
6B
4
5
3
1
8
10
12
13
11
9
7
14A
22
20
18
16
12
10
8
4
2
64
123
38
366
366
366
44
44
40
36
61
59
57
22
20
18
16
14
61
43
39
37
35
33
12
8A
10
28
15
145
143
41
22
371
367
365A
363A
361
51
45
20
18A
18
16
14
12
10B
8
6
43
41
39
37A
35
33
31A
2
50
48
46
44
353
349
347
344
342
340
356

Attachment 3 - Metropolitan Region Scheme Zoning Map


Region Scheme Zones (MRS)
Central city area
Industrial
Private recreation
Urban
Urban deferred
R20
R25
R30
U
H
R-AC2
R-AC3
Lynmouth Rd
Ashington St
Jesmond Pl
Pitt St
Waverley Pl
Corbett Pl
Howes Cr
Grand Prom
Alexander Dr
Melton Way
Avery Av
Houston Av
Norton Dr
Shaw Rd
Kobelke St
Kerry St
Chester Av
Waverley St
Cola St
McLean St
Wake St
Ryan Av
The Strand

Attachment 4 - City of Stirling Local Planning Scheme No.3 Zoning Map


Local Planning Scheme No.3
Development
Not Zoned under current Planning Scheme
Special Use
Local Centre
District Centre
Regional Centre
Business
Mixed Use
Mixed Business
Hotel
Service Station
Industry
Private Institution
Civic
Local Reserve: POS and Local Authority Purposes
Public Use Reserve - Commonwealth
Public Use Reserve - Hospital
Public Use Reserve - Police Station
Public Use Reserve - Primary School
Public Use Reserve - Transport
Public Use Reserve - Utility
Residential R10
Residential R12.5
Ashington St
Jesmond Pl
R20
R25
H
Grand Prom
R-AC2
R-AC2
R-AC3
R-AC2
R-AC3
Waverley
Meldon Way
R30
Kerry St
Chester Av
Avery Av
Houston Av
R30
R30
R30

Dianella Plaza Redevelopment – Stage 1

Development Application Report

February 2026
Prepared for: Greenpool Capital



Urbis staff responsible for this report were:

Director	Megan Gammon
Associate Director	Rebecca Travaglione
Senior Consultant	Simon Shub
Assistant Planner	Max Mistilis
Project Code	P0056259
Report Number	Rev 1

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We recognise that First Nations sovereignty was never ceded and respect First Nations peoples continuing connection to these lands, waterways and ecosystems for over 60,000 years.
We pay our respects to First Nations Elders, past and present.

Urbis is committed to incorporating our respect for First Nations cultures, peoples and storytelling in our work across the Country. We are proud to have partnered with Darug Nation artist, **Hayley Pigram**, and to profile her artwork - **Sacred River Dreaming**.



The river is the symbol of the Dreaming and the journey of life. The circles and lines represent people meeting and connections across time and space. When we are working in different places, we can still be connected and work towards the same goal.

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Project Team

GREENPOOL CAPITAL	URBIS
DKO	PLAN E
CUNDALL	BG&E
Galt	

Introduction

This planning report has been prepared by Urbis, on behalf of Greenpool Capital (**the Proponent**) and a leading technical consultant team. The site is located at Lot 70 (No. 160) Alexander Drive, Lot 78 (No. 360 Grand Promenade), and 110 (No. 366) Grande Promenade, Dianella (**the subject site**).

This development application seeks approval for Stage 1 of the redevelopment of the Dianella Plaza Shopping Centre. Stage 1 will include the following key works:

- Demolition of a portion of the main shopping centre, as well as the standalone buildings to the south and west of the main centre. Importantly, part of the roof structure of the shopping centre will be retained and re-purposed as part of the redevelopment;
- Relocation of the Coles tenancy to south of the main centre, adjacent to Grand Promenade;
- Creation of new retail tenancies lots within the main centre; and
- Supporting external works, including landscaping of areas, public art initiatives and parking throughout the site.

The works are the first stage of a substantial redevelopment of the Dianella Plaza Shopping Centre, which represents a significant investment into modernising the centre.

This application outlines the rationale and merit for the proposal and specifically presents:

- An overview of the key merits of the proposal.
- A contextual description of the site including its immediate, local and broader context.
- A description of the key benefits of the proposal, including design and architectural merits and assessment against the 10 principles of good design.
- A description of the technical elements of the proposal and compliance with relevant standards, including traffic and waste management.
- An assessment against the relevant State, regional and local planning framework.

The planning assessment within this report demonstrates that the proposed development is consistent with principles of sustainable design and orderly planning, representing an appropriate and desired outcome for the site. **We look forward to working with the City of Stirling to successfully deliver this proposal.**



Project Vision

Stage 1 of the Dianella Shopping Centre redevelopment aspires to deliver a high-quality redevelopment of the centre that will support the revitalisation and modernisation of the Dianella Plaza Precinct.

By refreshing the anchor fresh food precinct, Dianella Plaza will be become a destination that will grow and evolve with the needs of the community by helping to deliver the revitalisation of the Dianella Plaza Precinct.

The current entrance experience for the Dianella Shopping Centre is inward focussed, with minimal interaction with the surrounding streetscapes. Specifically, the main entrance of the building is on the south-east corner of the centre, only interfacing with the adjacent car parking area. By contrast, Alexander Drive, creates a poor urban edge, dominated by the blank wall of the Coles back of house area, with no street presence or legibility to this major commercial frontage.

The relocation of the Coles tenancy creates the opportunity to repurpose this section of the site and redefine the movement patterns and wayfinding connections into the shopping centre. This redevelopment reconfigures the Alexander Drive western frontage from a 'back of house' area to a well identified, architecturally designed main shopping centre entrance.

The Coles supermarket will be relocated south towards the frontage of Grand Promenade. This relocation will allow for greater pedestrian movement throughout Dianella Plaza that will contribute towards broader goals of the precinct's revitalisation as a key District Centre.

As part of the refurbishment works, the roof structure from the current Coles building will be retained and repurposed as undercroft car parking. In addition to creating shade for parking, this repurposing of this structure significantly reduces the embodied carbon and waste generation from the redevelopment. The reuse of this roof structure also reinforces the wayfinding cues, reinforcing the entrance experience for the centre.

This presents a modern approach to shopping centre design, which emphasises greater permeability, more direct routes and improved interaction with external spaces. This development will allow the Dianella Plaza to be a District Centre destination that reinvigorates the site and can serve the needs of the community more effectively.

Separate to this application, a Precinct Structure Plan (**PSP**) process is scheduled to commence in the first quarter of 2026. The PSP will guide the broader redevelopment of the site, building on the Dianella Centre Plan (adopted August 2012) to enhance the centre's street presence and functionality. This Stage 1 proposal is consistent with the current Dianella Centre Plan and represents a logical, early improvement that can proceed ahead of the PSP process.

1 Site Context

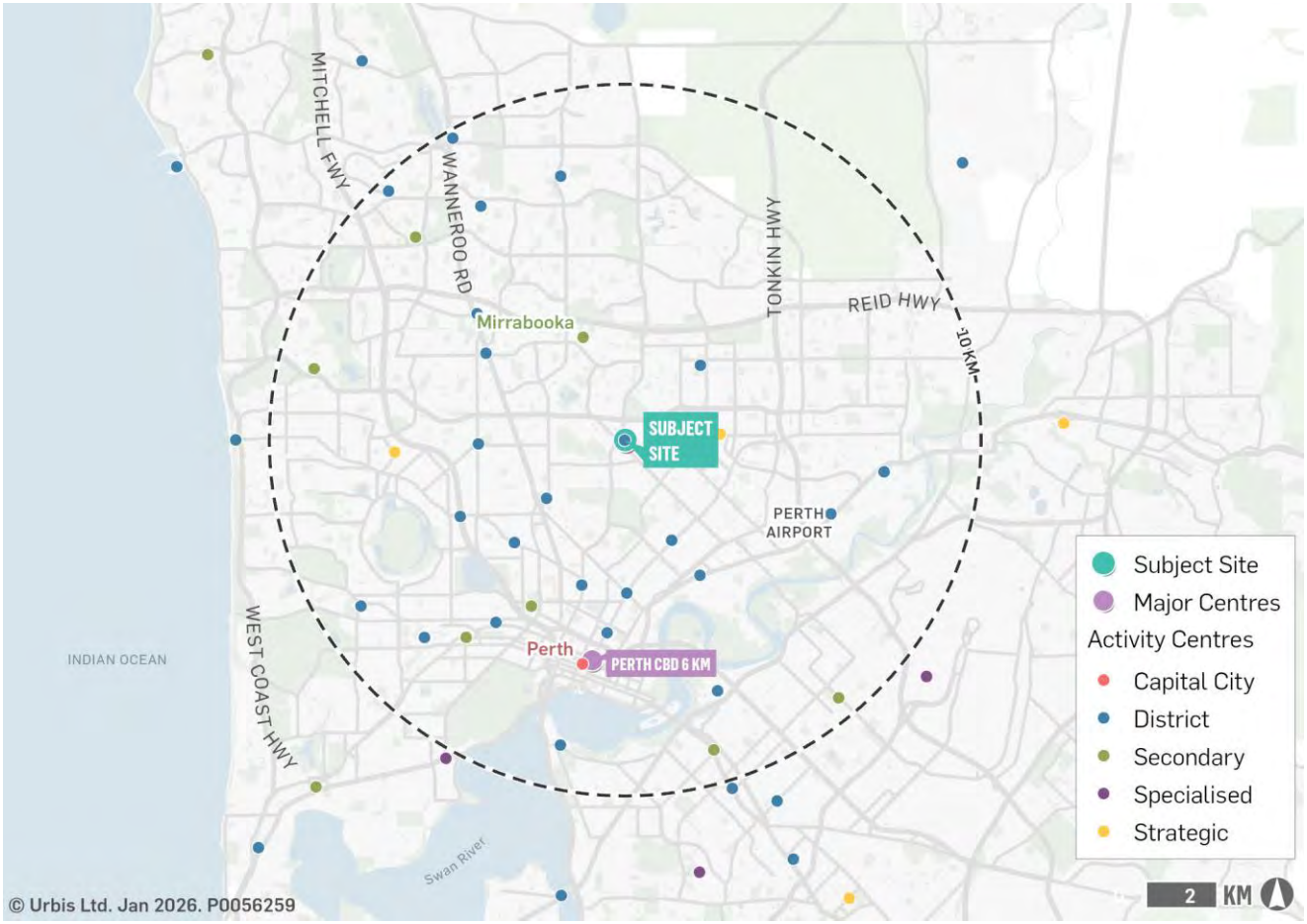
1 Site Context

1.1 Regional Context

The subject site is located approximately 6.6km north of the Perth Central Business District (**CBD**) within the suburb of Dianella and the City of Stirling Local Government Area (**LGA**). The subject site is approximately located 3km south of Reid Highway and 4.3km west of Tonkin Highway which are the nearest major vehicle routes.

The subject site serves the daily needs of the residents of Dianella as a smaller shopping centre. The nearest major shopping centres from the subject site are notably the Morley Galleria (2.35km east of the subject site) and The Square Mirrabooka (2.7km north of the subject site) which serves the broader needs of the wider community through offering larger scale shops. The regional context of the site is illustrated at **Figure 1.**

Figure 1 - Regional Context

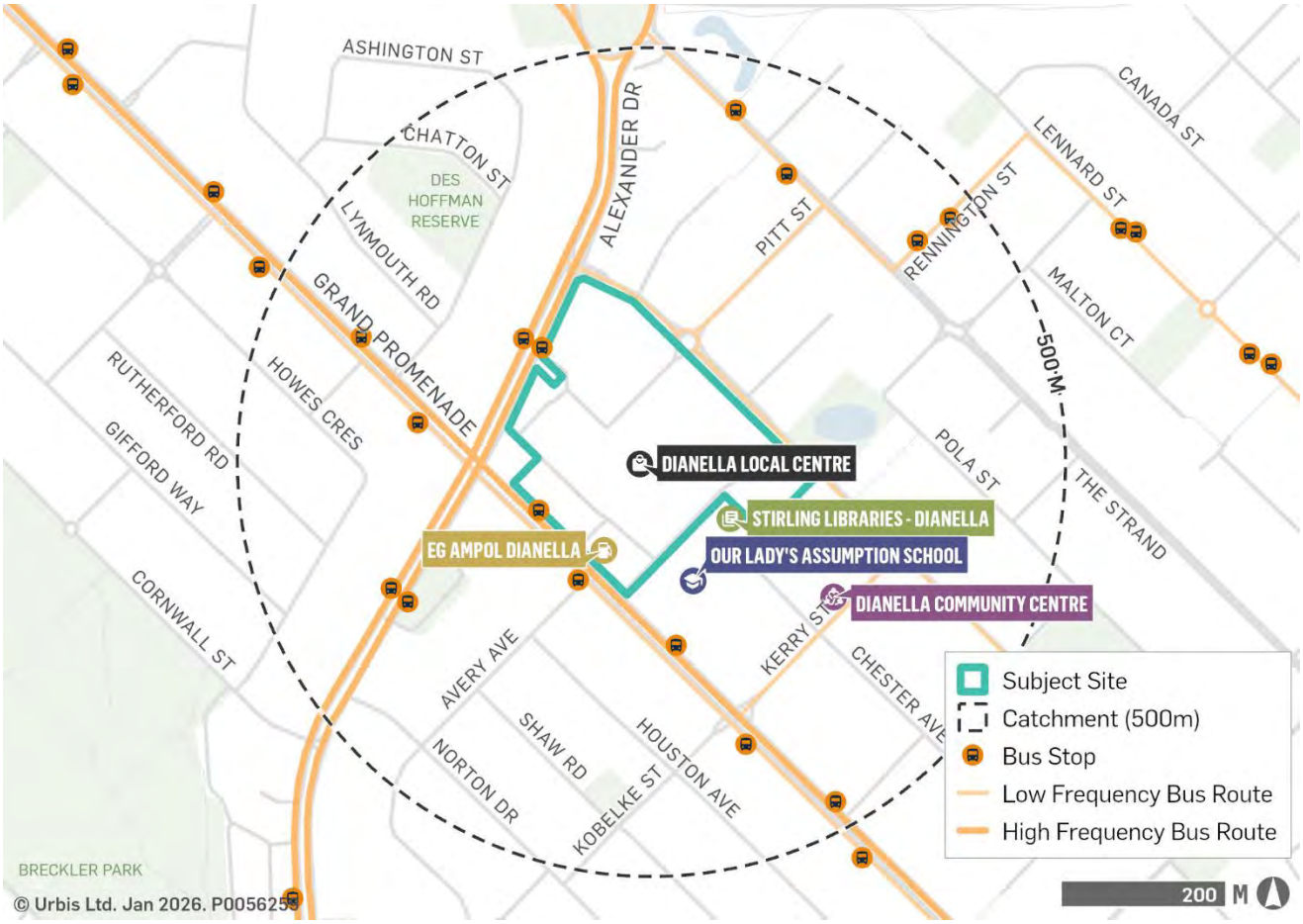


1.2 Local Context

The subject site has frontage to Alexander Drive, Grand Promenade, Waverley Street and Lowick Street. The site is surrounded by a mix of other uses including primary school, library and community centre to the south of the site, whilst to the north there is a fast-food shop, betting agency and a large vacant lot on the corner of Alexander Drive and Waverley Street. Beyond the Dianella Plaza Shopping Centre, the majority of land use surrounding the subject site is residential, predominately single/double story detached dwellings as well as a handful of parks and a public use utility open cut drain east of the site.

The subject site is serviced well by several nearby bus stops that operate on both high and low frequency routes. The 960 route particularly, operates along Alexander Drive as a major route that terminates at Mirrabooka Bus Station in the north, travels through the Perth CBD and terminates at Curtin University in the south. Other routes that operate in this area include 20, 67, 68, 360, 998 and 999. The local context of the site is shown at **Figure 2.**

Figure 2 - Location Plan



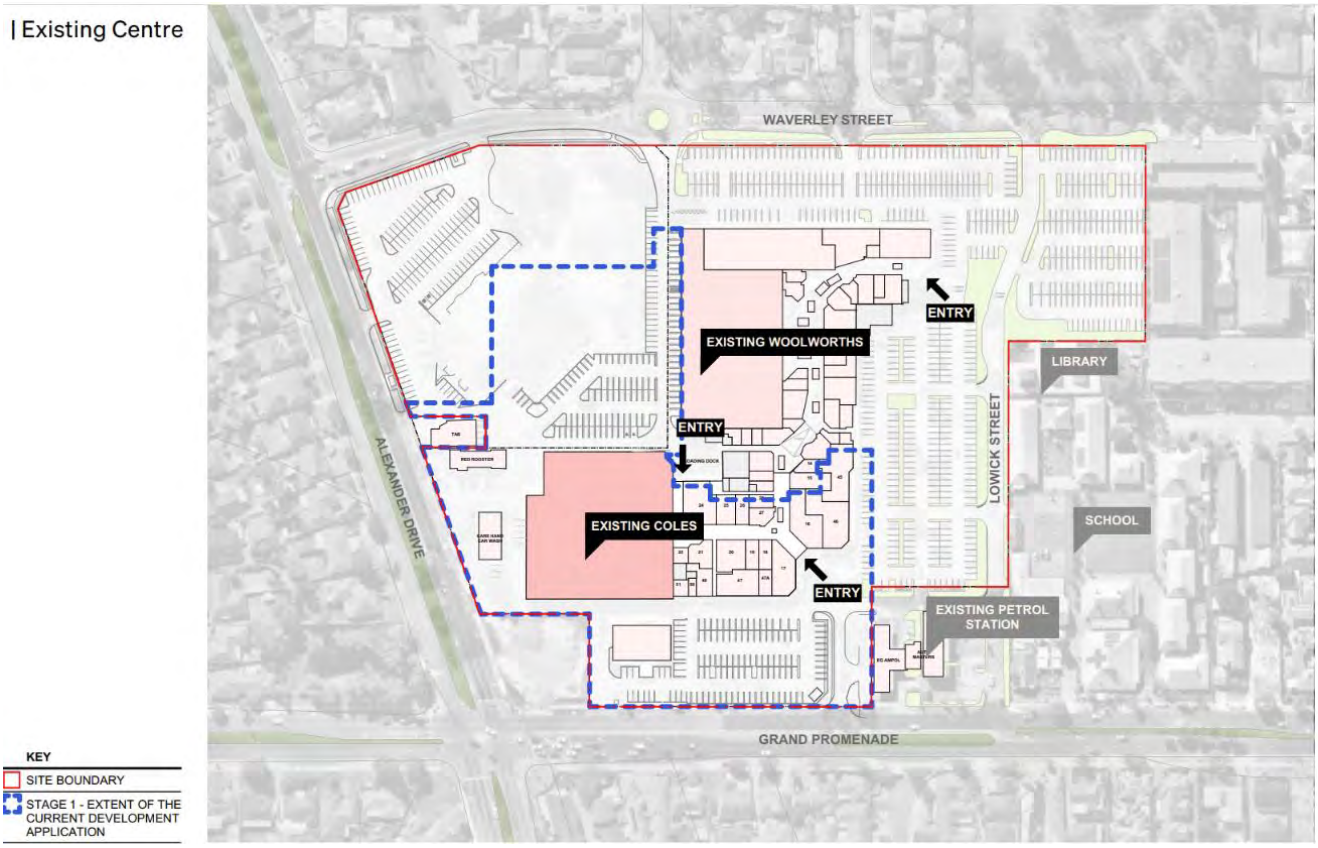
1.3 Site Description

The subject site is currently occupied by the Dianella Plaza Shopping Centre; current tenants include Coles, Woolworths and a range of other retail and dining tenants. The shopping centre is single storey, and access is predominantly from the south and east of the site. At-grade car parking areas make up the remainder of the site which also includes some mature trees. Access to the site is available from Alexander Drive, Grand Promenade, Waverley Street and Lowick Street via motor vehicle, cycling and by foot. A site aerial is provided at **Figure 3,** with the existing layout shown at **Figure 4.**

Figure 3 - Site Plan



Figure 4 - Existing layout (source DKO Architecture)



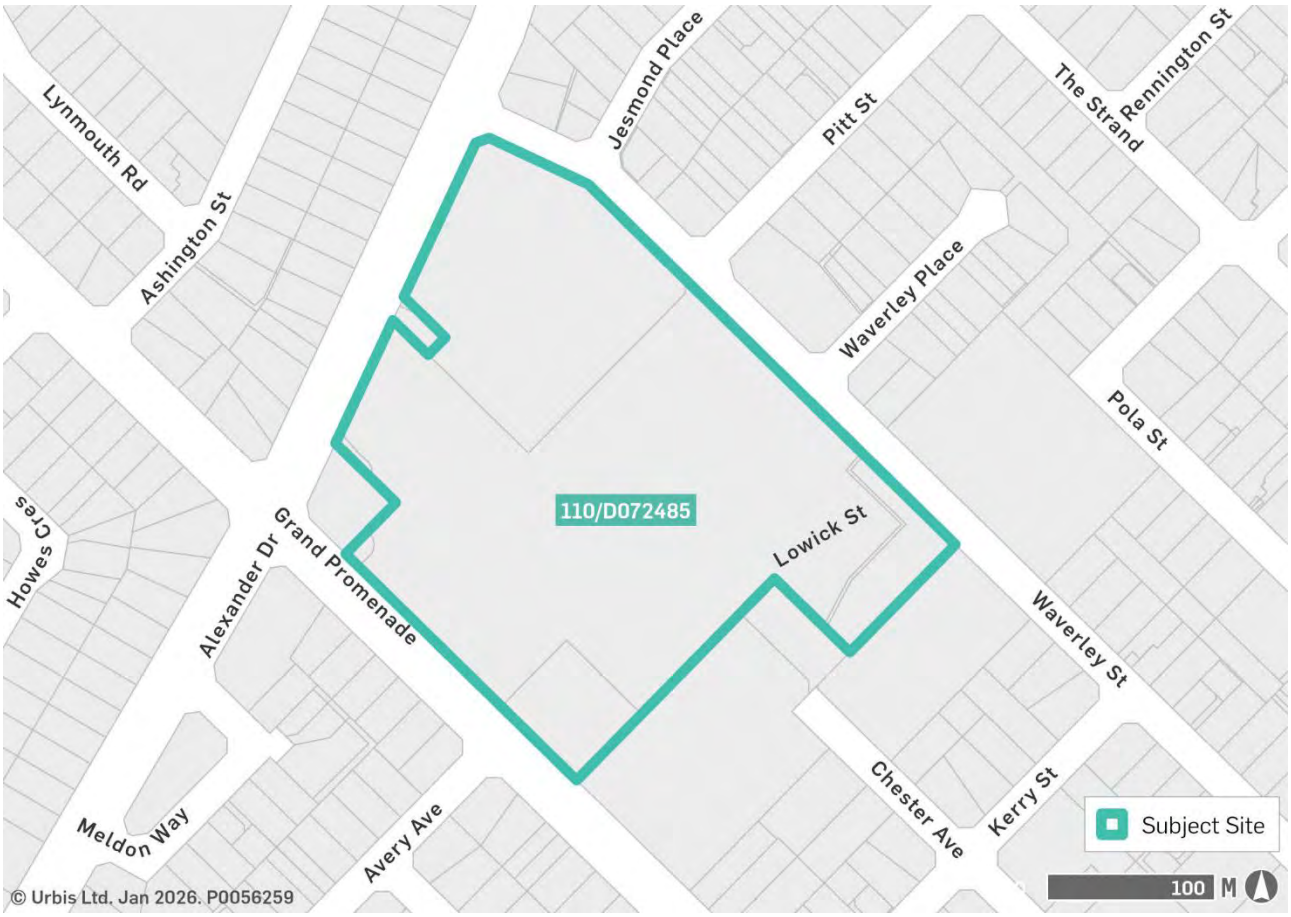
1.4 Lot Details

The lot particulars are identified in Table 1 and shown in **Figure 5.**

Table 1 Lot Particulars

Lot	Plan	Volume	Folio	Street Address	Area (approx.)	Proprietor
110	72485	1818	586	366 Grande Promenade	5.175ha	Dianella Plaza Asset Co Pty Ltd
70	70832	1747	918	160 Alexander Drive	1.774ha	Dianella Plaza Asset Co Pty Ltd
78	46369	1396	233	360 Grand Promenade	0.3642ha	Dianella Plaza Asset Co Pty Ltd

Figure 5 - Cadastral Plan



2 The Proposal

2 The Proposal

2.1 Development Overview

This application seeks Development Approval for the Stage 1 redevelopment of the Dianella Plaza Shopping Centre.

This Stage 1 development application seeks to reconfigure the existing shopping centre layout to establish an interface with Grand Prominade and more direct and logical wayfinding pathways for pedestrians in the site. The relocation of the Coles tenancy is an important aspect of this, as it enables a direct north-west to south-east connection through the site, connecting Alexander Drive to Lowick Street and the lady of Assumption School.

Service vehicle access to the relocated Coles tenancy loading area is primarily via the existing access to the west of the EG Ampol along Grand Promenade. Access to the existing loading area for Woolworths will remain via the roundabout at Waverley Street / Pitt Street. Swept paths have been checked and confirmed that semi-trailers up to 19m can access the loading bays.

This application is summarised in **Table 2**.

Table 2 Development Summary

Item	Proposed
Extent of Demolition	7,201sq.m of retail floor area
Extent of Redevelopment	4,813sq.m NLA for Major Tenant (Coles) 3,597sq.m NLA for other speciality retail tenancies 1,359sq.m NLA for all other tenancies **Net Increase of 2,568sq.m following Stage 1 redevelopment**
Setback	1 meter to Grand Promenade
	18.415 meters to Alexander Drive (from the south western corner)
	51.118 meters to Lowick Street
Landscaping	2330m^2 of irrigated garden bed 9 trees retained 5 trees removed
Parking	Increase of 23 car parking bays 938 total
Vehicle Access	All access points retained.
Pedestrian Access	New Enty points from the eastern and western side of the development
Loading Areas	Relocation of existing loading area from northern end of the site (adjacent to Waverley Street) to the southern side (adjacent to Grand Promenade)
Reuse of Structure	Approx. 6,048m2 of existing roof structural elements to remain, roof sheeting to be removed and made new.
	Care hand car wash & Express Café/Chargrill Masters/Pailin Thai to be demolished in entirety.

3 Technical Considerations

3 Technical Considerations

The proposed development is supported by a suite of technical reports as outlined below.

3.1 Landscape Plan

A Landscape Concept Plan has been prepared by Plan E for the Dianella Plaza Shopping Centre. This full report is provided at **Appendix C**.

Several landscape nodes have been identified for the Dianella Plaza Precinct which includes;

- Entry Corridor: a defined entry with feature paving and planting to guide users into the shopping centre.
- Street Landscape: Low native groundcovers, groves of small upright trees along Grand Promenade.
- Pocket Park: Native tree and groundcover planting and integrated seating located to the east of the proposal.

These nodes within the carpark and the Plaza surroundings will include high quality paving materials used to create a legible pedestrian hierarchy at entries.

Tree, shrub and bush planting species will be selected from a mixture of 'white trunked' species that require low maintenance and water use to complement the existing retained tree canopy. All new planting will be permanently irrigated with organic mulch, tree stakes and structural soil to trees within car park areas.

3.2 Traffic Impact Assessment

A Traffic Impact Assessment (**TIA**) has been prepared by PJA Australia for the proposed development. This full report is provided at **Appendix D.**

The TIA considered the existing traffic demand, traffic movements and road safety issues can be accommodated within the existing and future road network with manageable impacts. The TIA concluded that:

- The development is anticipated to generate approximately 47 additional vehicle movements during peak hours, a substantial portion of which will be pass-by trips. The critical intersection of Alexander Drive / Grand Promenade is expected to fail by 2036 in the Thursday PM peak. However, this is caused by the assumed 1% background traffic growth on the existing road network and not the development impact. The additional vehicle movements generated by the Stage 1 works is less than 3% of the existing traffic flows.
- The proposal results in a surplus of 147 bays, when assessed in accordance with Local Planning Policy 6.7.
- Currently, the site has limited active travel connectivity; however, future enhancements along Alexander Drive under the Long-Term Cycle Network (LTCN) will improve accessibility. Public transport access is robust, with high-frequency bus services (routes 960 and 998) operating near the site.

The proposed development is likely to add approximately 40 additional vehicle movements in each direction per hour to this intersection which equates to approximately 3% of the total traffic currently using this intersection in one direction in peak periods. This demonstrates that the Stage 1 redevelopment has minimal impact on the road network. Whilst some intersections are expected to fail by 2036, this is attributed to background growth in the broader road network, and not a result of the Stage 1 redevelopment.

3.3 Acoustic Report

An acoustic report has been prepared by E-Lab Consulting to demonstrate compliance with the *Environmental Protection (Noise) Regulations 1997* (WA EPNR). This full report is available at **Appendix F.**

The acoustic assessment considered Loading dock and truck movement, car activities at Click and Collect and the Mechanical Plant associated with the proposed redevelopment of the Coles supermarket as noise emitting sources. E-Lab Consulting found the following as the nearest noise receivers:

- The adjacent properties on Grand Promenade **(361 to 371 Grand Promenade & 22 Meldon Way.)**
- Our Lady's Assumption Catholic Church south of the site. **(356 Grand Promenade)**

The predicted noise levels from the subject site will be compliant with the *WA EPNR* as shown in **Table 3.**

Table 3 – Predicted Noise Receivers

Noise Sensitive Receiver	Highest Predicted Noise Emission dB(A)	Criteria dB(A)			Compliance
		Day	Evening	Night	
361 to 371 Grand Promenade, Dianella	56	73	63	63	YES
22 Meldon Way, Dianella	54	73	63	63	YES
356 Grand Promenade, Dianella (Church)	47	73	63	N/A	YES

Noise emissions from the above-mentioned noise sources of the project are predicted to comply with their respective assessment criteria. The report concludes that the development will be able to comply with the WA EPNR.

3.4 Waste Management Plan

Talis Consultants has prepared a Waste Management Plan (**WMP**) for the relocation of the Dianella Coles development application. This WMP is available in full at **Appendix E**.

The WMP identifies how waste is to be stored and collected from the proposal in order to satisfy the requirements from the City of Stirling.

Talis Consultants has outlined that the proposal can sufficiently manage the collection of refuse and recyclables based on the estimated waste generation volumes through the adequately designed Loading dock, which will accommodate one 3.0 m³ steel bin, one 4.5 m³ steel bin, two plastic bag cages, and one refuse compactor. Bulk or specialty waste will be removed once sufficient volumes are reached, with disposal arranged by centre management, who will also oversee the maintenance of bins and waste systems, ensure tenant awareness of the Waste Management Plan, and monitor practices to identify opportunities for waste reduction.

3.5 Geotechnical Study

A Geotechnical Study has been prepared by Galt Geotechnics in April 2024 for the proposed Dianella Plaza Shopping Centre redevelopment. The study is available in full at **Appendix I**.

The study found that the groundwater on site was recorded at depth ranging from 6.5m to 7.7m, whilst geology mapping discovered that the site is underlain by Bassendean Sand to the maximum investigated depth of 8m, further outlined in **Table 4.**

Table 4 - Summary of Soil Findings

Material Type	Location	Description
Loose SAND	Within the upper 2m of soil profile, typically toward the north of the site	Fine to medium grained, grey, brown, yellow.
Medium Dense SAND	Typically, between RL 27 m AHD and RL 23m AHD.	Near surface FILL typically comprises gravelly SAND, fine to medium grained, fine to medium sized gravel.
Dense SAND	At the surface and typically below RL 24 m AHD.	

Galt Geotechnics considers the site geotechnically suitable for the relocation of Dianella Coles. Galt Geotechnics comments that Approved Fill for this site is to comprise Permeable Sand, whilst all natural and existing fill sand may be assumed to be Permeable Sand also.

3.6 Sustainability Report

A Sustainability Report has been prepared by Cundall on behalf of Greenpool Capital for the Dianella Plaza Redevelopment. The report is available in full at **Appendix G**. This report demonstrates that the project will satisfy the NCC2022 Section J energy efficiency requirements, and is being benchmarked against a 4 Star Green Star Building rating tool (although not seeking formal certification).

The report outlines the Ecological Sustainable Design (ESD) strategy and how the proposed development aligns with the relevant sustainability credentials in the City of Stirling, including;

- Local Planning Scheme No. 3, specifically Schedule 13 (Dianella Special Control Area)
- Federal government – legislated commitment to net zero
- State government – Western Australian Climate Policy (2020)

Table 5 below demonstrates how the proposed development responds to the requirements and outlines which sections of the sustainability report are relevant for each requirement.

As outlined in earlier sections of the report, the reuse of existing structure is also a notable component of the projects sustainability strategy. Specifically, the extensive reuse of the existing Coles roof structure and repurposing as under croft parking will result in notable reduction in the projects embodied carbon.

Table 5 Dianella Centre Special Control Area Objectives

Outcome	Development must demonstrate that:	Response
Local Planning Scheme No.3, Amd. 7 Dianella Centre Special Control Area (6.12)		
Objectives		
✓	To ensure a diversity of uses and services which encourage reduced car travel, shorter trips and better social interaction	*The site is close to a range of high and low transport options on Grand Promenade and Alexander Dr. The proposed development is investigating the provision of future elective vehicle charging and improvement of accessibility and connection (Section 6.0).* *The development also seeks to improve pedestrian accessibility and connectivity between the streetscape and centre. Most notably, this includes creating a clear and direct link between the centre main entrance and existing bus stop on Alexander Drive.*
✓	To ensure the development of multiple functions benefitting the community through appropriate social services and business mix	N/A
✓	To ensure the integration of intensive building form and land uses with public transport infrastructure	*The site is close to a range of high and low transport options on Grand Promenade and Alexander Dr. The proposed development is investigating the provision of future elective vehicle charging. (Section 6.0)*
✓	To ensure building forms provide for a long-life span and adaptability for use changing with time	*To minimised embodied carbon for the redevelopment, initiatives are currently present or being investigate for the design*:

		• *Resue of existing structure and roofing* • *Reuse of demolished materials for hardscaping and other features* • *Use of responsibly sourced, lower carbon steel and concrete* • *Use of locally available path, paving and construction materials for landscaping.* *(Section 2.1)*
✓	To apply the activity centre standards of the Residential Design Codes, to encourage consolidated housing forms and diversity.	N/A
✓	To apply minimum development standards to achieve the desired intensive building form and land use mix.	N/A
Federal Net Zero Commitment		
✓	Legislated federal target of net-zero by 2050, and emissions reduction target of 43% by 2030	*The project will deliver a renewable-powered, highly efficient building built with reused and low carbon materials contributing to net-zero targets. (Section 2.2)*
Western Australian Climate Policy (2020)		
✓	1. Better integration of large-scale renewable and distributed energy resources and reduced carbon emissions (pg. 18) 2. Reduced emissions and increased carbon sequestration (pg. 20) 3. Increased uptake of low- and zero-emissions vehicles, fuels, and transport technologies. Improved public transport, freight transport and active transport options (pg. 22). The Policy also contains a target to: 1. Achieve our aspiration of net zero emissions by 2050.	Embodied carbon reductions are targeted for the project (Section 2.1.) Development will minimise energy use and generate renewable energy (Section 2.2.) Electric vehicle bays and public transport will all be available for building occupants and visitors (Section 6.0)

3.7 Stormwater Management Plan

BG&E was engaged by Greenpool Capital to provide civil design service for the Dianella Plaza Shopping Centre Redevelopment and to examine the stormwater drainage methodology of the existing and proposed development. The report is available in full at **Appendix J**.

An existing stormwater drainage pit and pipe system is located within the existing Shopping Centre. Most of the existing drainage will not be impacted by the redevelopment, however, the existing drainage system impacted by the proposed Coles building will be modified to suit the proposed redevelopment. These proposed drainage works will be designed according to the Australian Rainfall and Runoff (2019) and Part 5A of Austroads Guide to Road Design (2013).

4 Design Assessment

4 Design Assessment

4.1 10 Principles of Good Design

The following section provides analysis of how the proposed development delivers the relocation of Dianella Coles through exemplary design development against the 10 Design Principles contained in State Planning Policy 7.0 – Design of the Built Environment (**SPP 7.0**).

4.1.1 Principle 1 – Context and Character

Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place

The proposal is part of the broader redevelopment of Dianella Plaza, which will enhance the characteristics of the local area through revitalising the subject site, which is currently an aging and underutilised shopping centre, with minimal street presence. The relocation of the Coles supermarket will allow for the creation of new access corridors and connections which will further activate the site to provide new retail uses. The redevelopment of the subject site allows it to more effectively serve the community as a part of its role as a District Centre.

4.1.2 Principle 2 – Landscape Quality

Good design recognises that together, landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.

Landscape is integral to the design, as it enhances several components of the proposal. The landscape plan identifies a series of landscape nodes throughout the site and customises a landscape outcome to suit the function and requirements of this space. This includes the following:

- **Alexander Drive - Entry Corridor**: Feature planting and legible linear tree planting assists in identifying the new building entrance and creates a clear pedestrian connection to Alexander Drive. This pedestrian connection is in a direct line to the reconfigured building entrance and internal shopping centre corridor.
- **Grand Promenade** - Landscape Streetscape: A landscape frontage to Grand Promenade assists in softening the relocated Coles building when viewed from Grand Promenade. Species selection incorporates low native groundcovers, with small groups of trees. This approach ensures the frontage is softened, but landscaping will not become unwieldy or compromise the delivery of potential public art on this frontage.
- **Pocket Parks** – 3 internal pocket parks; 2 located on the north-eastern side and another on the south-western side of the new Coles tenancy provides small informal and external places for customers and staff and contributes positively to the centres overall amenity.

Landscaped entry corridors help define access points in and out of the Plaza through feature paving of robust materials and the planting of legible tree species. Pocket parks will feature native tree species that will enhance the ecological value of the subject site. In addition, the inclusion of integrated seating will make these spaces user friendly. Retained and proposed trees will also be included in parking areas to provide shading and ecological value across the whole subject site.

4.1.3 Principle 3 – Built Form and Scale

Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.

The proposed development has been designed so that its massing, height, and overall form are appropriate to the site's setting and respond sensitively to both the existing built form and the intended future character of the area.

A clear connection to Lowick Street is established through a strong architectural street presence that reinforces the building's role in the local streetscape. Legible entry points and defined pedestrian access ensure the development is easy to navigate and welcoming, while loading zones are consolidated and located away from public vehicle areas to minimise visual and functional impacts on the street frontage.

The Coles plan has been further refined to maximise an active edge along key public interfaces, screening loading areas internally, enhancing street vitality and supporting a pedestrian-friendly environment. These design moves ensure the building's scale and massing contribute positively to the public realm, while providing a clear transition between the surrounding context and the area's planned future character.

4.1.4 Principle 4 – Functionality and Build Quality

Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life cycle.

The proposed design meets the needs of users efficiently and effectively, balancing functional requirements to ensure the development performs well and delivers long-term benefits. All existing crossovers will be retained as vehicle access points, supporting efficient traffic movement and minimising disruption to established patterns. Pedestrian access at the north and south entries has been designed with architectural elements that enhance visibility and safety, with the northern entry intentionally angled to provide a clear line of sight for approaching users. Loading zones are consolidated and concealed from public view, reducing visual impact and maintaining an attractive streetscape.

The surrounding area is characterised by predominantly one to two-storey residential buildings, and Stage 1 of the development includes single-storey retail consistent with the existing centre. The western façade has been designed to break up building bulk, ensuring a scale and rhythm that aligns with nearby residences. Along the street and building edges, a green buffer is introduced to soften the streetscape, improve visual amenity, and enhance the pedestrian experience. Collectively, these measures ensure the development functions effectively for all users, integrates sensitively with its context, and provides enduring value over its full life cycle.

4.1.5 Principle 5 – Sustainability

Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.

The proposed design optimises the sustainability of the built environment, delivering positive environmental, social, and economic outcomes. Embodied and operational carbon impacts are reduced through the reuse of the existing structure and roofing, the incorporation of materials salvaged from demolition, and the selection of lower-carbon, locally sourced materials. Operational energy efficiency is embedded in the design to minimise ongoing environmental impact.

Indoor environment quality is prioritised, with measures to ensure thermal and acoustic comfort, the use of low-VOC materials, and the provision of appropriate artificial lighting, ventilation, and access to fresh air. Water efficiency is achieved through low-flow fittings and fixtures, water-wise landscaping, and integrated stormwater management systems. Waste management strategies aim to divert as much material from landfill as possible, with clear separation of recyclable waste streams.

The development supports sustainable transport by providing convenient access to local amenities and public transport, as well as infrastructure for electric vehicles. Urban ecology is enhanced through landscaping that increases ecological value, the use of light-coloured façade and roof materials to minimise the urban heat island effect, and design measures to reduce light pollution. Social impact is addressed by ensuring the site is accessible for people of all abilities and by incorporating natural spaces that provide community benefit. Collectively, these initiatives ensure the project delivers enduring sustainability outcomes across environmental, social, and economic dimensions.

4.1.6 Principle 6 – Amenity

Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.

The proposed design delivers a successful place that offers a variety of uses and activities while optimising internal and external amenity for occupants, visitors, and neighbours. The built form has been improved through greater externalisation, with active frontages, outward-facing uses, and landscaped edges that engage directly with surrounding streets and public spaces. This approach supports diversification by accommodating a broader mix of retail, service, and community functions, enhancing vibrancy and adaptability over time. A click-and-collect/direct-to-boot service is incorporated to provide convenience and efficiency for customers, while family-friendly parking and amenities ensure the centre is welcoming and accessible to all ages.

Public transport access paths are designed to be legible and pedestrian-friendly, supporting safe and intuitive movement to and from the site. The relocation of Coles within the development unlocks a future connection to the next stage of the precinct's evolution, ensuring long-term integration and flexibility. Sightlines throughout the site are carefully managed to provide a clear line of sight to key destinations, enhancing safety, wayfinding, and the overall user experience.

Collectively, these measures create a comfortable, productive, and healthy environment that supports a mix of activities, encourages community use, and delivers enduring amenity for all users.

4.1.7 Principle 7 – Legibility

Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.

The proposed design ensures the development is highly legible, with clear connections and identifiable elements that help people find their way around. Compared to the existing centre, which has less defined entry points and limited visual cues, the new design introduces clearly articulated entrances that provide easy and intuitive pedestrian access, while enhancing the building's street presence and reinforcing its role as a focal point within the precinct.

Key views from Alexander Drive and Grand Promenade have been carefully considered, establishing strong visual links to the centre that are more direct and prominent than in the current layout. These improved sightlines guide visitors towards the main entry points and create a recognisable identity for the development within its broader urban context. Together, these measures deliver a step change in legibility, making the building and its surroundings easier to navigate, more welcoming, and better connected to the surrounding street network.

4.1.8 Principle 8 – Safety

Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.

The provision of clearly controlled entry and exit points into Dianella Plaza, combined with strong passive surveillance, will contribute to a high safety outcome. Public interfaces with the adjacent car parks and Grand Promenade will be permeable, well-lit, and supported by clearly defined pedestrian walkways integrated into the landscape design. These walkways will provide direct and safe connections, including from the nearby bus stop, and will link to a pocket park that enhances amenity and encourages active use of public spaces.

4.1.9 Principle 9 – Community

Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.

Currently, the surrounding shops, school, and community centre operate as independent destinations with limited physical or visual connection between them. The inward looking design of the existing Dianella Plaza

building is a significant contributor to this separation, lacking opportunities for public and private spaces to interact.

The Stage 1 redevelopment is there first step in re-connecting the Dianella Plaza shopping centre to all the nearby community assets and facilities. Specifically, Stage 1 creates a clear and legible east-west connection through the site, inviting connections to the school and library on Lowick Street. This responds to local community needs and the wider social context by transforming this fragmented arrangement into a fully integrated precinct that connects and supports a diverse range of uses.

Stage 1 focuses on landscape integration and improved connectivity to surrounding amenities, ensuring the centre is physically and visually linked to its context from the outset. These connections are reinforced by high-quality public realm treatments that encourage movement between the centre and nearby destinations, while also providing spaces for informal gatherings and outdoor engagement.

Future expansions will introduce a carefully curated mix of retail, food and beverage, professional services, community services, health and wellness facilities, and leisure hubs — meeting daily needs, fostering social interaction, and strengthening the centre's role as a vibrant, connected community hub. The intent for these future stages is to establish a built form which encompasses the surrounding community assets, creating seamless interaction between public and private spaces.

4.1.10 Principle 10 – Aesthetics

Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.

The proposed design is the product of a skilled and judicious process, resulting in an attractive and inviting centre that engages the senses and builds upon the site's existing character. The current centre's precast exterior and enclosed entrances will be replaced with a pitched exterior and re-designed entry points that visually and physically connect the internal and external environments. This change will preserve the centre's unique internal character while enhancing its street presence and accessibility.

Key architectural features, such as the skylight and gable roof form, will be carefully incorporated to maintain familiarity and continuity for users, while elevating the overall aesthetic quality of the space. The pitched roof forms and horizontal banding draw inspiration from the surrounding context, ensuring the building integrates harmoniously with its neighbourhood while retaining its distinctive identity.

These elements, combined with new materials, finishes, and public realm improvements, will create a centre that is visually engaging, welcoming, and contextually appropriate — recognisable yet refreshed.

4.2 Design Review Panel Assessment

The City of Stirling Design Review Panel (**DRP**) provided feedback on the proposal in September (DR1) and November (DR2) 2024, this feedback is provided in full alongside our response in **Appendix H**.

A key theme which emerged from the DRP feedback was the redevelopments response to the Grand Promenade frontage. Specifically, the location of the Coles tenancy along this frontage was viewed as interrupting the larger context of the Grand Promenade by introducing significant built form elements within an otherwise landscaped streetscape and does not in turn provide enough benefit to the community in return.

The DRP minutes acknowledge an overall improvement in the interface with Grand Promenade through the delivery of improve modulation, increased setback and improved soft and hard landscaping. Further design measures have been implemented since DR2, including further landscape design including planter/ seating walls with low mixed planting and sculptural trees to soften building edge.

Our position remains that relocating the Coles tenancy on the Grand Promenade frontage remains the best site planning outcome for the site. This is best evidence through the following:

- Rigorous design testing has been completed on all alternative site planning options for the relocation of the Coles, which is presented in the architectural pack. This testing demonstrates the Grand Promenade

frontage is the best site planning outcome in terms of legibility, safety, interface to the future Lowick Street activated street and interface with surrounding built form.

- Grand Promenade is a high vehicle frontage, with minimal pedestrian amenity. We therefore respectfully disagree that active uses (such as retail tenancies sleeving the Coles tenancy) are the optimal location to concentrate these active uses. With Dianella Plaza comprising a relatively small activity centre, active uses must be strategically located in the areas of greatest benefit within the site.
- The project team is currently preparing a Precinct Structure Plan for the Dianella site. Whilst still in early stages, a key principle of this Precinct Structure Plan will be establishing an active inter-block link through Lowick Street.
- Whilst outdated, the current Dianella Centre Plan does not identify Grand Promenade as a pedestrian frontage or a desirable location for active uses.

Overall, when viewing the Dianella Plaza site wholistically including all future redevelopment opportunities, the project team firmly believes that sleeving the Grand Promenade frontage with retail tenancies is not the most strategic placement of active uses on the site.

5 State & Regional Planning Framework

5 State & Regional Planning Framework

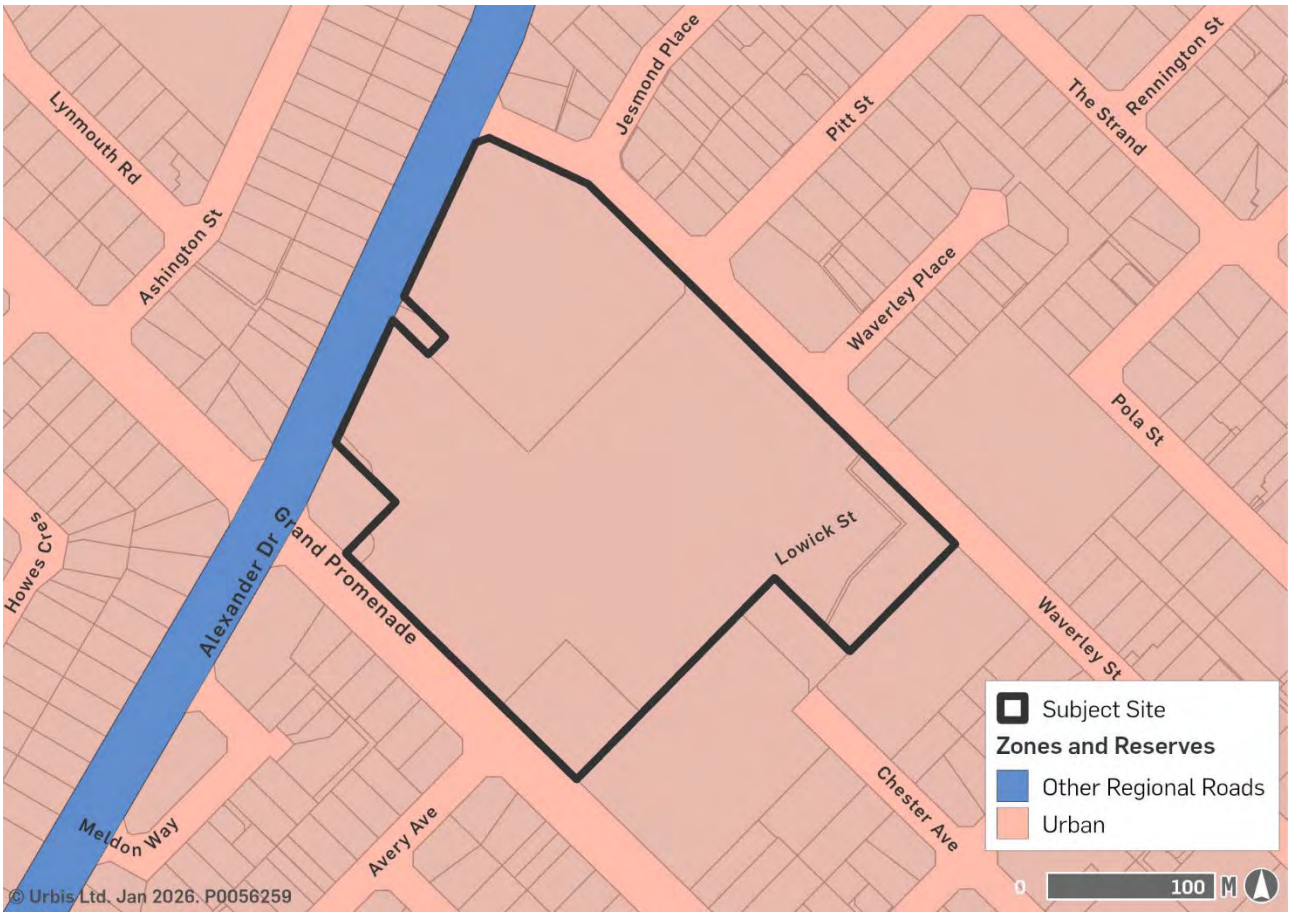
5.1 Metropolitan Region Scheme

The Metropolitan Region Scheme (**MRS**) is the highest-level statutory planning framework which divides land within Metropolitan Perth into broad zones and reservations. The subject site is zoned 'Urban' which comprises land in which a range of activities are undertaken, including residential, commercial, recreational, and light industry.

The site abuts Alexander Drive Road which is identified as a 'Other Regional Road' under the MRS. Other Regional Roads are the second most important of the roads of regional significance in the planned road network and are under the care and control of the Department of Planning, Lands and Heritage (**DPLH**).

Other nearby roads are zoned 'Urban' as they are lower order roads in the road hierarchy and are under the care and control of the City of Stirling as well as the other remaining urban zoned lots as visible in **Figure 6.**

Figure 6 - Metropolitan Region Scheme



5.2 Perth and Peel @3.5 Million

Perth and Peel @ 3.5million is an overarching document that builds on the objectives of Directions 2031 and Beyond. It provides a common link between the four sub-regional planning frameworks. The subject site is zoned 'Activity Centre' under the Perth and Peel @ 3.5million spatial plan.

Activity Centres are described as follows:

> *Hubs that attract people for a variety of activities, such as shopping, working, studying and living. These centres mainly consist of a concentration of commercial uses combined with a varying proportion of other land uses such as residential, schools and open space. The role and function of these centres and the diversity of activities within them varies depending on their catchment*

5.2.1 Central Sub-Regional Planning Framework

The Framework identifies the subject site as an activity centre in a network of approximately 50 activity centres across the Central sub-region. It also identifies Alexander Drive as an important urban transport corridor with a high frequency public transport service.

5.3 State Planning Policies

5.3.1 State Planning Policy 4.2 – Activity Centres

State Planning Policy 4.2 - Activity Centres (SPP 4.2) and the associated Implementation Guidelines (Guidelines) apply to the preparation and assessment of the relevant components of planning instruments that relate to activity centres within the Metropolitan (Perth), Peel and Greater Bunbury Region Scheme Areas. The policy seeks to ensure planning and development adequately considers the distribution, function and broad land use considerations for activity centres.

In 2012, the City of Stirling adopted the Dianella Centre Plan (see **Figure 7**) to guide the future development of the Dianella District Centre in a way that enhances the shopping centre's operation, improves amenity, and broadens the range of activities and services available to the community. This application is consistent with both the objectives of the Centre Plan and the intent of SPP 4.2, by supporting the centre's role as a vibrant, well-functioning District Centre.

As outline in Table 2 of this report, the Stage 1 redevelopment results in a net increase of 2,568sq.m NLA from the existing shopping centre. Proposed development does not constitute a 'Major Development' (greater then 5,000sq.m NLA for a District Centre) and therefore does not require the implementation of a Precinct Structure Plan. The project team have commenced the preparation of a Precinct Structure Plan to guide future redevelopment stages.

Figure 7 - Dianella Centre Plan (2012)



5.3.2 State Planning Policy 5.4 – Road and Rail Noise

The subject site is located within the 200m trigger distance as defined by State Planning Policy 5.4 – Road and Rail Noise (SPP 5.4) and shown in **Figure 8**. The proposed development does not include any noise-sensitive land uses and therefore the requirements of SPP 5.4 do not apply.

Figure 8 - SPP5.4 200m trigger distance map



5.3.3 State Planning Policy 7.0 – Design of the Built Environment

State Planning Policy 7.0 – Design of the Built Environment (SPP 7.0) addresses design quality and built form outcomes in Western Australia. It seeks to deliver the broad economic, environmental, social and cultural benefits that derive from good design outcomes and supports consistent and robust design review and assessment processes across the State. SPP7.0 outlines that 10 principles of good design in which proposals are assessed by in Design Review Panels. Refer to detailed discussion in Section 4 and **Appendix H.**

5.3.4 State Planning Policy 7.2 – Precinct Design

State Planning Policy 7.2 – Precinct Design (SPP 7.2) seeks to provide guidance on the design, planning assessment and implementation of precinct structure plans, local development plans, subdivision and development in areas identified as precincts. The subject site does not have an endorsed Precinct Structure Plan; however, a PSP is being prepared for the subject site which will address the objectives, measures and outcomes of SPP 7.2.

6 Local Planning Framework

6 Local Planning Framework

6.1 City of Stirling Local Planning Strategy

The City of Stirling Local Planning Strategy (**the Strategy**) published in October 2019, sets the vision and long-term planning for the City over a 10-year period and beyond. The Strategy provides guidance for:

- Decisions and amendments relating to the City's Local Planning Scheme.
- Undertaking a future Local Planning Scheme review.
- Strategic Planning Projects: and
- Infrastructure investment priorities

The Strategy identifies the subject site (**DC1**) as one of nine district centres within the City of Stirling. The Dianella district centre includes a church and a primary school at the eastern end of the centre as well as the City of Stirling library and community centre. It acknowledges a recent development approval granted by the Joint Development Assessment Panel for 163 Multiple Dwellings in the south-east vicinity of the precinct.

The Strategy supports and encourages the growth and evolution of Activity Centres within the City where there is a proven demand, and it will not impact on the viability of other Activity Centres. Accordingly, the LPS supports the preparation of a PSP consistent with SPP 4.2 prior to any significant development occurring.

The Dianella Shopping Centre Redevelopment will contribute to the projected shop floor space increase to 18,359m² by 2031 within DC1, with the relocated Coles in particular helping serving the daily and weekly needs of the community, which is a desired function of District Centres in the Strategy.

6.2 City of Stirling Local Planning Scheme No. 3

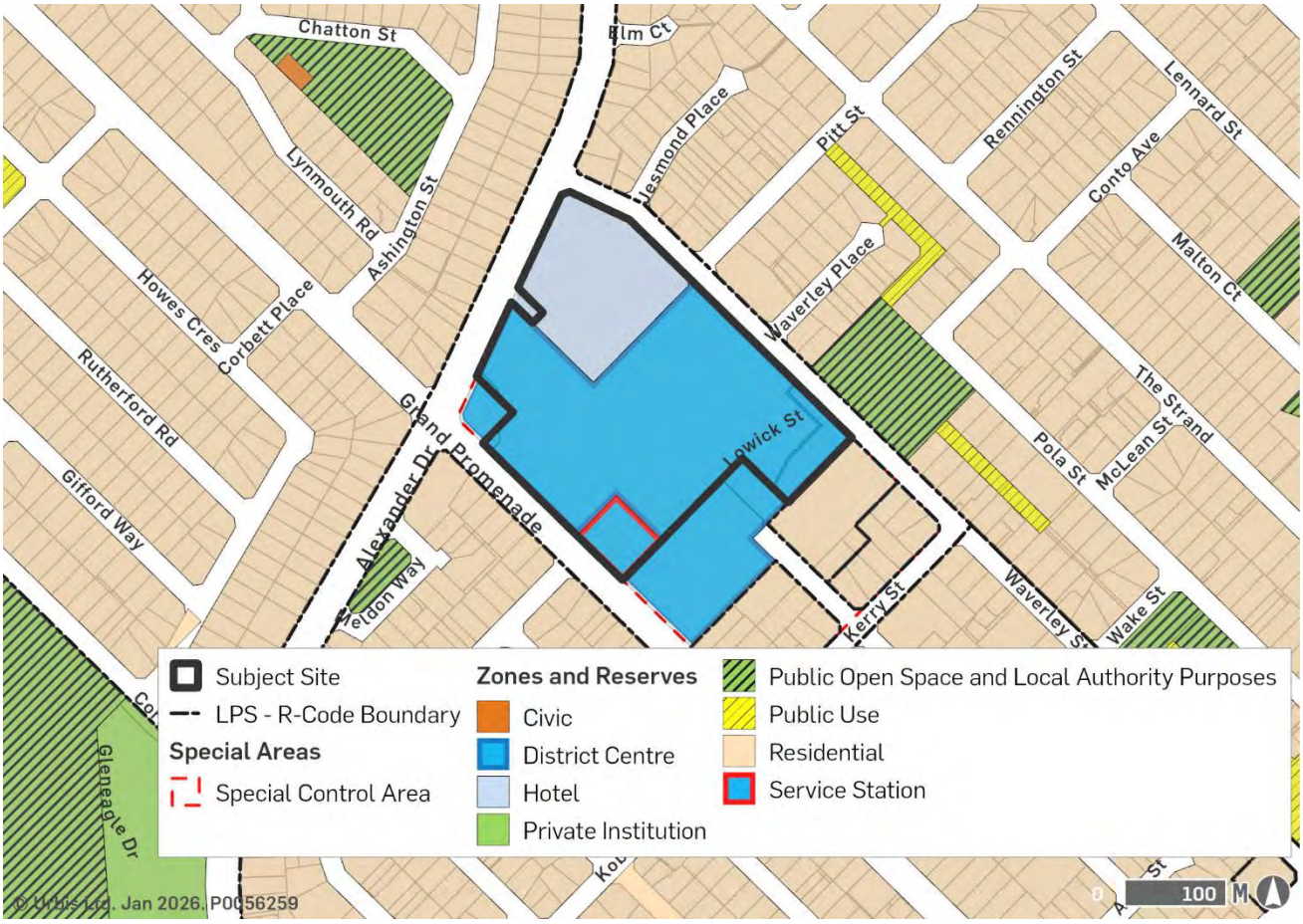
6.2.1 Zoning

The Local Planning Scheme No. 3 (**LPS3**) establishes land use and development controls and guidance within the City of Stirling. Under LPS3, the subject site is zoned 'District Centre', Hotel' and 'Service Station'. It is noted that the 'Hotel' zoning is historical and the City is seeking to amend this to a broader 'Centre' zone as part of Draft LPS4, ensuring a consistent zoning over the entire centre. The proposed development satisfies the objectives of this zone as described in **Table 6**.

Table 6 - Assessment against Zone Objectives

Objective		Comment
a)	To provide an extended range of shopping, commercial and community services to meet the weekly needs of the catchment neighborhoods and contribute towards the employment needs of the local workforce	The proposed development will provide an improved range of shopping services to meet the weekly needs of the community and provide local employment opportunities.
b)	To ensure the design and siting of development provides a high standard of safety and amenity and contributes towards a sense of place and community	The design and siting proposed development in stages 1 – 4 will contribute to an improved sense of place within the Dianella Plaza.

Figure 9 -LPS3 Zoning Map



6.2.2 Land Use Permissibility

The proposed development fits the LPS 3 definition of 'Shop' (reproduced below) which is a Permitted 'P' land use in the District Centre zone.

"Means premises used to sell goods by retail, or hire goods, but does not include a showroom or fast food outlet."

6.2.3 Special Control Area

The subject site is located within the 'Dianella Shopping Centre' Special Control Area., which includes bespoke objectives and development requirements. The proposal is consistent with the relevant objectives and satisfies the relevant development requirements, as described in **Table 7** and **Table 8.**

Table 7- Assessment against SCA Objectives

Objective		Comment
a)	To ensure a diversity of uses and services which encourage reduced car travel, shorter trips and better social interaction	The proposed development maintains the existing quantity of car parking bays. Its location provides users with the choice to visit the site via high frequency bus routes.
c)	To ensure integration of intensive building form and land uses with public transport infrastructure	The proposed development makes use of its proximity to existing high frequency bus routes.

d)	To ensure building forms provide for a long-life span and adaptability for use, changing with time	The proposed development seeks to extend the lifespan of Dianella Plaza and in doing so, meeting the contemporary needs of the community.

Some further General Development Requirements for the subject site is defined within the Dianella Centre Special Control Area outlined in **Table 6**, below.

Table 8 - Dianella Centre Special Control Area Development Requirements

Development Requirement	Provision	Design Response
Building Height	Minimum floor to ceiling height: 3.5m	Compliant = 4.098 metres
Streetscape Provisions – Non-Residential Development	All buildings to be designed to have external facing uses.	Compliant = back of house area interacts with Grand Promenade frontage through glazing.

6.3 Draft Local Planning Scheme No. 4

The City of Stirling is currently progressing a new planning scheme to replace LPS 3. Draft Local Planning Scheme No. 4 (Draft LPS 4) was supported by Council for advertising in December 2023 and subsequently received WAPC approval to advertise in September 2024. Advertising formally began on 18 October 2024 and closed on 24 January 2025. Accordingly, LPS 4 can be considered as a seriously entertained planning instrument. Once LSP4 is approved by WAPC and published in the Government Gazette, zoning and land use provisions will apply to the subject site and these are discussed below.

6.3.1 Zoning

The subject site, as shown in **Figure 10**, is proposed to be zoned entirely 'Centre' removing the Hotel zoning from LPS 3, and the proposed development is consistent with the objectives of the 'Centre' zone under the Draft LPS4, for the reasons described in **Table 9.**

Figure 10 - Draft LPS 4 Zoning Map



Table 9 - LPS 4 objectives of the Centre Zone

Objective	Comment
To provide a focal point for a broad range of land uses to meet the community's district and/or sub-regional needs, consistent with the centre's level in the activity centre hierarchy.	The proposal enhances Dianella Plaza's role as a District Centre by upgrading the Coles anchor tenancy, improving pedestrian connectivity, and integrating with public transport. It supports a mix of retail, food and beverage, and community uses, meeting local and sub-regional needs consistent with the centre's position in the activity centre hierarchy.
To facilitate a range of employment to contribute towards the sub-region's employment self-sufficiency.	The proposed development is the first step in a staged refurbishment of the Dianella Plaza. Once complete, the proposal will contribute towards the sub-region's employment self-sufficiency.
To provide a basis for future detailed planning in accordance with the structure planning provisions of this Scheme or the Activity Centres State Planning Policy.	Refer to discussion in section 5.3.4.

6.3.2 Land Use Permissibility

The proposed development is consistent with the 'Shop' Land use definition from LPS 4 (reproduced below), which is a Permitted 'P' land use.

"Premises other than a bulky goods showroom, a liquor store large or a liquor store - small used to sell goods by retail, to hire goods, or to provide services of a personal nature, including hairdressing or beauty therapy services."

6.4 Matters for consideration

Schedule 2, part 9, clause 67(2) of the *Planning and Development (Local Planning Schemes) Regulations 2015* (Deemed Provisions) sets out matters to be considered in the assessment of development applications. An assessment against the relevant matters is contained in **Table 10**.

Table 10 - Relevant Matters for consideration

Clause	Matter	Comment
67(2)(a)	*The aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area*	The proposal is consistent with the aims of the scheme as outlined in Section 6.2 of this report.
67(2)(b)	*The requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving;*	The proposal is consistent with the advertised LPS4 as outlined in Section 6.3 of this report.
67(2)(c)	*Any approved State planning policy*	The proposal is consistent with State Planning Policies as outlined in Section 5.3 of this report

67(2)(fa)	*Any local planning strategy for this Scheme endorsed by the Commission*	The proposal is consistent with the City of Stirling Local Planning Strategy as outlined in Section 6.1 of this report.
67(2)(g)	*Any local planning policy for the Scheme Area*	The proposal is consistent with relevant City of Stirling Local Planning Policies as discussed in Section 6.5 of this report.
67(2)(m)	*The compatibility of the development with its setting, including-* *i. the compatibility of the development with the desired future character of its setting;* *ii. the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development;*	The proposed development is consistent with the expectations of a District Centre and represents an improved user experience. The built form of the development respects the commercial nature of the Dianella Plaza and is consistent with the pattern of commercial development that surrounds the site.
67(2)(n)	*The amenity of the locality including the following –* *i. environmental impacts of the development;* *i. the character of the locality;* *ii. social impacts of the development;*	The proposal poses no significant environmental effects. The proposal enhances the character of Dianella through the redevelopment of Dianella Plaza, which is currently dilapidated. The proposal will contribute to redevelopment of the Subject site which fulfill its desired functions as a District Centre which will provide several social benefits by serving the daily and weekly needs of the community.
67(2)(p)	*Whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;*	The proposed development seeks to retain existing trees where possible. Refer to section 3.1 and **Appendix C.**
67(2)(s)	*The adequacy of –* *i. the proposed means of access to and egress from the site; and* *ii. arrangements for the loading, unloading manoeuvring and parking of vehicles;*	The proposed development ensures satisfactory access to and egress from the subject site via existing crossovers on Alexander Drive, Waverley Street and Grand Promenade. Refer to **Appendix D.** Service vehicle access to the relocated Coles' loading area is primarily expected to be via the existing access to the west of the EG Ampol along Grand Promenade. Access to the existing

		loading area for Woolworths will remain via the roundabout at Waverley Street / Pitt Street. Swept paths have been checked and confirmed that semi-trailers up to 19m can access the loading bays.
67(2)(t)	*The amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety*	The traffic associated with the proposed development will not overwhelm the local road network. Refer to section 3.2 and **Appendix D.**
67(2)(u)	*The availability and adequacy for the development of the following —* *(i) public transport services;* *(ii) public utility services;* *(iii) storage, management and collection of waste;* *(iv) access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities);* *(v) access by older people and people with disability*	The subject site is located in close proximity to high frequency bus routes. Waste will be managed in accordance with the Waste Management Plan. The subject site includes provision for secure bicycle storage. End-of-trip facilities are not provided as the proposal includes marginal increase in floorspace, and such facilities are typically intended for longer-distance or employment-focused cycling trips rather than short-duration retail visits.

6.5 Local Planning Policies

The relevant Local planning policies (**LPP's**) are discussed under the headings below.

6.5.1 Local Planning Policy 6.1 'Advertising Signs'

Local Planning Policy 6.1 'Advertising Signs' (LPP 6.1) aims to ensure advertising signs are consistent with the scale and form of the buildings they relate to and don't cause an adverse impact on the streetscape or surrounding land.

The proposed elevations include indicative signage locations for the Coles tenancy and these signs have been assessed against section 4.1 of LPP 6.1 which provides 'Acceptable Development Standards' for all signs within the City.

An assessment against the relevant acceptable standards is provided in **Table 11**.

Table 11 - Assessment against LPP 6.1

Acceptable Development Standards		
	Provisions	**Design Response**
Safety	Signs are to: a) not obstruct any access or manoeuvring areas for vehicle or pedestrian; b) not be located within 1.5 m of any part of a street truncation, unless	a) **Complies –** The proposed signage does not obstruct any access areas for vehicles or pedestrians. b) **Complies** -The proposed signage is not located within 1.5 m of any street truncation.

	attached flush to an authorised building or solid fence; c) maintain clear vehicle & pedestrian sightlines within a 2 metres (along the street boundary) x 2.5 metres (into the property) truncation where vehicle access points meet the lot boundary, unless attached flush to an authorised building or solid fence; d) not interfere with or imitate traffic control signals or signage; & e) have a minimum ground clearance of 2.75 metres where projecting over or encroaching on a public thoroughfare, unless attached flush to an authorised structure.	c) **Complies** – The proposed signage does not obstruct any vehicle and vehicle sightlines in any street truncation d) **Complies –** the proposed signage does not interfere with or imitate traffic control signals or signage.
Design & Context	Signs must: a) not conceal architectural features of a building located in the Heritage Protection Area, the City's Heritage List or the State Heritage Register; b) not extend beyond any boundary of a lot unless otherwise stated in the 'Specific Sign Type Standards' requirements; c) not advertise services or products other than those available on the lot; d) comply with the Australian Association of National Advertisers Code of Ethics in respect to content of the advertising sign; & e) not contain any discriminatory, offensive, obscene or vulgar material, including but not limited to adult-only related industries.	a) Not Applicable – The subject site does not contain any heritage significance. b) **Complies -** The Proposed signage does not extend beyond any boundary of the Subject Site lot. c) **Complies –** The proposed signage identifies the Coles supermarket. d) **Complies –** The Proposed signage complies with the Australian Association of National Advertisers Code of Ethics. e) **Complies –** The proposed signage does not contain any discriminatory, offensive, obscene or vulgar material.

Section 4.3 provides standards for specific signs, set out in 4 tables. In this instance, the proposal signage meets the definition of a 'Wall sign 'and an assessment of the Specific standards for this sign type is provided in **Table 12**

Table 12- Assessment against LPP6.1

Acceptable Standard	Design Response
Wall Signs to extend more than 0.3m beyond the edges of a wall	**Complies -** The proposed signage doesn't extend more than 0.3m beyond the edges of the wall
Wall Signs are: i. limited to a maximum 2 signs per tenancy on a lot; and	There are 4 signs associated with the Coles tenancy, however, there are only one sign per façade of the store.
ii. not to cover more than 30% of the visible area of any one façade per tenancy, excluding glazed portions and awnings	**Complies** the proposed signage do not exceed more than 30% of the visible area of any façade

The proposed wall sign requires consideration against the objectives of LPP 6.1. An assessment is provided in **Table 13.**

Table 13 - Objectives of LPP 6.1

Objective		Comment
a)	To ensure advertising signs do not pose a safety threat and do not prevent passive surveillance;	The wall signs do not contain illumination and will not pose a threat to safety and are located at least 4m above ground level, which does not restrict passive surveillance.
b)	To ensure businesses can display advertising signs without, in certain circumstances, the need to obtain development approval;	Not applicable.
c)	To ensure that the display of advertising signs does not adversely impact on the amenity of surrounding land and streetscapes;	The wall signs are proportionate to the building scale, consistent with existing centre signage, and integrated into the building design, ensuring no adverse impact on amenity.
d)	To ensure advertising signs are appropriately scaled for their setting	The signage is consistent with the existing signage on the subject site.
e)	To avoid the proliferation of advertising signs on individual sites and buildings to minimise visual clutter	The wall signs are appropriately distributed along the subject sites frontage and will not result in visual clutter.
f)	To encourage the incorporation of advertising signs into the design consideration of buildings and avoid obscuring or detracting from prominent architectural features	The wall signs will be located on new elements of the proposed development and will not obscure or detract from prominent architectural elements.
g)	To ensure advertising signs only relate to services and products available on the site	The signs will assist patrons located Coles and the 'click and collect' area within the development.
h)	To ensure the content of advertising signs meets community expectations and is not discriminatory or offensive	The signs are associated with an established, national business and are not discriminatory or offensive

For the reasons described in Tables 9 and 11, the wall signage will not adversely impact the amenity of the locality.

6.5.2 Local Planning Policy 6.3 'Bin Storage Areas'

Local Planning Policy 6.3 'Bin Storage Areas' (LPP 6.3) seeks to ensures that there is sufficient space for the storage of bulk refuse bins and that bins are screened from the street and are in harmony with the materials and finishes if the building.

The proposed development complies with the requirements of LPP 6.3 as described in **Table 14.**

Table 14- Assessment against LPP6.3

Requirement	**Comment**
Bin Storage Size Bin storage areas in non-residential zones shall have the following minimum sizes: Size 10m²; and width 3.5m	The bin storage and loading area complies with the minimum storage areas for non-residential zones.
Location of Bin Storage Area • shall be located behind the building setback line; and • shall ensure that adequate space is available for the bulk refuse truck to access the bin area and manoeuvre.	This area is behind any building setback line and has adequate space for a bulk refusal truck to access this area
Design of Bin Storage Area • shall be screened from view to a minimum height of 1.8m so that it is not visible from the street; • materials shall match with the building; • shall be sealed and regularly cleaned and maintained; and • stormwater and effluent drainage facilities shall be contained within this area.	This area is sealed, and its materials match the rest of the building within the rest of the redevelopment.

6.5.3 Local Planning Policy 6.6 'Trees and Landscaping – Non-Residential'

Local Planning Policy 6.6 'Trees and Landscaping – Non-Residential' (LPP 6.6) applies to the proposed development as the development costs exceed $100,000, and there is a minor increase in the building footprint.

Section 5 of LPP 6.6 set out requirements for the quantity of trees and landscaping, landscaping areas, tree sizes and deep soil area and an assessment is provided in **Table 15.**

Table 15 – LPP .6.6 requirements

Requirement		**Comment**
Quantity of Trees and Landscaping	Landscape Area Requirement • A minimum 10% of the site area is to be provided as landscaping in deep soil area. • Landscaping areas are to have a minimum dimension of 750mm	• The subject site comprises of approximately 2,300m² of deep soil area, which is 8.9% of the total stage 1 redevelopment area. Refer to **Table 16** for assessment against LPP objectives. • **Complies** - All landscaping areas exceed the minimum dimension of 750mm.
	Trees & Deep Soil Area Rate Requirement	**Complies** - 93 trees have been proposed which meets the

	1 tree per 500m^2 of the site area (or part thereof) unless, existing trees are being retained and credited to the development	required 52 trees for this development. However, only 68 of these are compliant with the City of Stirling Deep Soil Requirements. Importantly, trees are delivered in areas which are being redeveloped, creating a substantial improvement to the existing conditions of the site.
	Tree Size Requirement The minimum tree size is to be 'Medium' with 1 in 4 trees to be 'Large'.	Tree sizes will be confirmed in the final landscape design, provided as a condition of approval.
	Car Parking Area Requirements • 1 tree is to be located between every 6 uncovered car parking bays (or part thereof). • The DSA is required to meet the minimum size and dimensions for the relevant tree size.	To be confirmed via a condition of approval.
	Required Landscaping Strips along lot boundary 1.5m wide landscaping strips are to be provided along lot boundaries that are adjacent to a residential property, where the building is setback from the boundary.	**Not applicable**
Landscaping Areas	All development applications subject to this Policy are to ensure that Landscaping and deep soil areas include the following: A diverse range of shrubs and ground cover, to the satisfaction of the City. Species of trees and undergrowth vegetation should be chosen to suit the climate, environment, location and required function, whilst taking into consideration surrounding landscapes.	**Complies –** The landscaping concept plan includes a variety of carefully selected shrubs and ground cover. Refer to **Appendix C.**
	A sufficient quantity of shrubs and/or ground covers (subject to the species growth expectation) to fill landscaping areas.)	**Complies -** Planting will be predominantly Australian Native species that enhance the broader landscape themes of the shopping precinct. Species selected will aim to reinforce the existing landscape character of Dianella and strengthen

		placemaking elements of the new landscape design. A mix of leaf typologies and growth characteristics will be used to create a textured natural palette. All planting to be permanently irrigated with organic mulch**.**
	Waterwise designs including waterwise irrigation/reticulation systems shall be used, and this may include the use of greywater. The use of landscape design specialists with waterwise-accreditation from Watercorp for irrigation, landscaping design and installation is encouraged. Planting of native species and hydrozoning (grouping of plants with similar water requirements) are encouraged to reduce water and fertiliser use.	Noted. Can be incorporated into the landscaping plan.
	A minimum 100mm of mulch in soil areas. A coarse chunky mulch is preferrable as a more waterwise measure.	Noted. Can be incorporated into the landscaping plan.
	The extent of permeable paving or decking within a deep soil area does not exceed 20% of its area and does not inhibit the planting and growth of trees	**Complies** – paving is less then 20% of the required landscape area.
	Shrubs and ground covers to a maximum height of 750mm, where located within vehicle and pedestrian sight lines	May be addressed at detailed design through a condition of approval.
	Lawn/turf should be minimised in landscaped areas, unless it is for a particular purpose (i.e. break out areas	**Complies -** Planting will be predominantly Australian Native tree and shrub species with a minimum of lawn provided
Tre sizes and Deep Soil Area	Tree planting should consist of species identified in the guidelines associated with this Policy (or other species accepted by the City), which under typical growing conditions will grow to both a minimum height and canopy width as indicated at section 5.1 c) Table 1	**Complies** – proposed tree species in Landscaping report are identified in the Guidelines associated with this policy.
	Deep soil areas are to be provided in accordance with Table 1 unless a retained tree is supported with a smaller Tree Protection Zone as referred	The subject site comprises of approximately 2,300m^2 of deep soil area.

to under clause 6.2 (not including kerbing/barriers).	
Where the required 10% deep soil areas cannot be provided due to site restrictions (e.g. bedrock), planting on structure with an area equivalent to two times the shortfall may be considered. Planting on structure requires expert technical advice for design and specifications of the planting elements and systems. If extensive planting on structure is proposed the use of an alternative water source, such as rainwater or recycled greywater should be considered.	Not applicable.
Planting on structure shall provide minimum soil standards to align with the Residential Design Codes Volume 2 and as shown in Table 2 below:	To be confirmed via a condition of approval.
Deep soil areas are to comprise of uncompacted, good quality soil, free of structures and material detrimental to the tree/plant health. Deep soil areas may include the use of alternative solutions (such as structural soil cells and permeable paving) that are justified by an Arborist Report and supported by the City.	**Complies –** deep soil areas will comprise of uncompacted, good quality soils irrigated with organic mulch and soil conditioner comprising of only coarse hardwood.
Trees required by this Policy are to be a minimum 2 years of age and with a root ball of 90 litres at the time of planting.	Noted.
Tree Protection Zones and deep soil areas are to be maintained to the satisfaction of the City. Should trees die or be removed, an equivalent replacement tree will be required to be planted (and conditioned as such	Noted.

Tree size	Min. Soil Depth	Min. Soil Area	Min Soil Dimension
Large	1.2m	64m^2	7m
Medium	1m	36m^2	5m

The proposal satisfies the objectives of LPP 6.6 as described in **Table 16.**

Table 16 – Objectives of LPP 6.6

Objective	Comment

a)	To improve the amenity of areas by providing suitable landscaping for development sites;	The amenity of the Subject Site is improved through incorporating landscaping that is site responsive and compliments the overall redevelopment of Dianella Plaza, this includes: • **The Entry Corridor** in the west of the site, which will guide users to and from the entry into the shopping centre through feature paving and planting, legible tree species and robust materials. • **Street landscaping** along Grand Promenade that will contain low native groundcover and grove of small upright trees • **Pocket Parks** on the north-east and south-western side of the Coles will feature native tree and groundcover planting and integrated seating.
b)	To protect existing trees, and ensure new trees are planted to contribute to tree canopy coverage;	A total of 93 trees are proposed in the landscaping plan of the development. All tree species are compliant with those identified in the LPP6.6 Guidelines that will ensure tree canopy coverage is achieved.
c)	To provide shade coverage to car parking areas;	Existing and new trees have been proposed in car parking to provide shade.
d)	To ensure development provides optimal growing conditions to enable existing trees, new trees and landscape planting to reach maturity	The subject site will comprise approximately 2,300m^2 of deep soil area, which will be uncompacted, and contain good quality soils irrigated with organic mulch and hardwood soil conditioner to allow for optimal growing conditions.
e)	To provide a diversity of plant and tree species that are resilient to climatic, soil and site conditions	All tree species are compliant with those identified in the LPP6.6 Guidelines, whilst all plant species have been selected a variety of light conditions that all species are resilient to climate soil and site conditions.
f)	To encourage waterwise landscaping through appropriate species selection, reduced water demand, and improved stormwater utilisation.	Species have been selected for low water demand once established, whilst Water Sensitive Urban Design strategies are included in car parking and perimeter landscaping areas.

6.5.4 Local Planning Policy 6.7 'Parking and Access'

Local Planning Policy 6.7 'Parking and Access' (LPP 6.7) outlines car parking requirements for developments within the City. Table 1 of LPP 6.7 provides a parking ratio of 1 bay per 25m^2 Gross Floor Area (GFA) for Dianella Plaza. The proposal includes 19,960m^2 of GFA.

Car parking reductions can be applied to developments based on a range of factors including proximity to public transport, activity centre status, heritage listing and provisions of bicycle facilities and parking. The following reductions are applicable to this development;

- A reduction of 15% is applicable to this development as it is within 200m of a stop on a high frequency bus route (Route 960)
- A further reduction of 10% is applicable is within a District Centre as detailed in the City's Local Planning Strategy

A summary of requirements is provided in **Table 16**

Table 16- Assessment against LPP6.7

Requirement	Proposed GFA	Required bays/ facilities	Proposed
Car parking Ratio (As reduced by section 5.4)	19,960m^2	789	**Complies** - 938 bays proposed.
Bicycle Parking	19,960m^2	99 required parking spaces	18 spaces provided

The proposal satisfies the objectives of LPP 6.7 as described in Table 17

Table 17 - Assessment against LPP6.7 Objectives

Objective	Comment
a) To ensure development provides an appropriate level of car parking, reflecting supply and demand so that a major parking problem is unlikely to occur;	As discussed in Table 16, the proposal meets the requirement for 789 car parking spaces, which ensures that a major parking problem will not be a problem and that demand for parking will be met.
b) To ensure safe, convenient, and efficient access for pedestrians, cyclists, and motorists;	Well defined areas for walking allow for safe access and usage for pedestrians upon the Subject Site. Multiple crossovers on each of the edges of site will allow for efficient movement for motorists and cyclists.
c) To prioritise access by public transport, walking and cycling;	Currently, the site has limited active travel connectivity; however, future enhancements along Alexander Drive under the Long-Term Cycle Network (LTCN) will improve accessibility. Public transport access is robust, with high-frequency bus services (routes 960 and 998) operating near the site.
d) To facilitate the provision of adequate bicycle parking and end of trip facilities;	18 cycling parking spaces have been provided to ensure cyclists can adequately access the site. End-of-trip facilities are not provided as the proposal includes marginal increase in floorspace, and such facilities are typically

		intended for longer-distance or employment-focused cycling trips rather than short-duration retail visits.
e)	To provide a balanced parking supply that does not exceed the capacity of the road network, with sufficient publicly accessible parking;	The additional vehicle movements generated by the Stage 1 works is anticipated to be less than 3% of the existing traffic flows, not exceeding neighbouring road capacity.
f)	To ensure that an oversupply of parking does not occur that discourages alternative forms of transport; and	An abundance of cycling parking has been provided within this proposal which in combination with future enhancements along Alexander Drive under the Long-Term Cycle Network (LTCN), as well the subject site's proximity to high-frequency bus routes ensures that users can access the site via alternative forms of transport.
g)	To ensure the amount of parking is not detrimental to the urban design and character of the locality.	Areas of parking have been complimented by comprehensive landscaping areas that provide amenity to site in an urban design sense and improve user experience.

In accordance with section 10, a Transport Impact Statement has been submitted in support of this application. Refer to section 3.2 and **Appendix D.**

6.5.5 Local Planning Policy 6.12 'Public Art on Private Land'

Local Planning Policy 6.12 'Public Art on Private Land' (LPP 6.12) applies to the proposed development, as the development cost exceeds $2 million.

An indicative location for public art is shown on the plans – see **Appendix A**. We expect that this will be enforced by a condition of approval.

7 Conclusion

7 Conclusion

This Development Application demonstrates that the proposed relocation and redevelopment of the Coles supermarket within Dianella Plaza is a high-quality, well-considered project that will deliver significant benefits to the precinct and the wider community.

The proposal has been designed to:

- Establish the first stage of a broader revitalisation of the Dianella Plaza Shopping Centre, setting a strong foundation for future mixed-use and public realm improvements.
- Provide a contemporary, pedestrian-friendly anchor tenancy that integrates with high-frequency public transport routes and improves connectivity across the site, including new north–south links and activation of Lowick Street.
- Deliver a built form that responds sensitively to the distinctive character of the centre and surrounding residential area, while introducing improved articulation, glazing, public art, and landscaping along Grand Promenade to enhance street presence and amenity.
- Incorporate a coordinated architectural and landscape approach, supported by a comprehensive technical suite including acoustic, waste, sustainability, geotechnical, and stormwater management reports.
- Achieve close compliance with the applicable State, regional, and local planning frameworks, including the City of Stirling Local Planning Scheme No. 3, the seriously entertained Draft Local Planning Scheme No. 4, and relevant Local Planning Policies.

The design has evolved in response to feedback from the City's Design Review Panel, with refinements to the Grand Promenade interface, materials palette, landscaping strategy, and public realm elements. These changes strengthen activation, improve pedestrian connections, and enhance the overall presentation of the development to the public realm.

In summary, the proposal represents an appropriate and desirable outcome for a District Centre, consistent with the strategic vision for Dianella Plaza and the City of Stirling's planning objectives. It will reinvigorate the site, improve the shopping experience, and contribute to the long-term vitality of the precinct.

Urbis looks forward to continuing to work collaboratively with the City of Stirling to progress this application and deliver a project that meets the needs of the community now and into the future.

Disclaimer

This report is dated 10 February 2026 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Greenpool Capital **(Instructing Party)** for the purpose of development application **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

Appendix A: Development Plans

Appendix B – Certificate of Title

Appendix C – Landscape Report

Appendix D – Traffic Impact Statement

Appendix E – Waste Management Plan

Appendix F – Acoustic Report

Appendix G – Sustainability Report

Appendix H– Design Review Panel

Principle	DRP Comments	Response
1 – Context and Character *Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*	The Panel is generally supportive of the masterplan vision and its integration with the broader context but recommends further planning and design development work is required.	Noted. Further design development has occurred since this DRP meeting, particularly in relation to the Grand Prominade interface, materials palette and landscaping strategy.
	The Panel advised that the location of Coles in close proximity to the street, without sleeved retail or real active uses, is not an optimal outcome and encourages the applicant to further explore other viable master planning options to relieve the design tension.	The broader redevelopment of the subject site will promote new access corridors, particularly a north-south connection and the activation of Lowick Street which is designed to provide retail and active uses. This option is preferred over providing active uses fronting Grand Promenade, which is not particularly pedestrian friendly or has any other active uses nearby.
	The northwest and southeast facing elevations to Coles will be dominant to the street (particularly from vehicles) and warrant significant design attention. This should be provided to the Panel at the next meeting. These should be of a high quality and consider all relevant comments in this report.	Elevations refined with increased articulation, glazing, and material variation to improve presentation and reduce bulk.
	The Panel continues to encourage the applicant to reconsider the loading dock location to ensure that legibility and amenity for pedestrians is preserved for the pedestrian experience from Grand Promenade through to the pocket park and new south-east main shopping centre entry. This could also have the benefit of unlocking sleeving with retail, the preferred design option. Truck access is not activation. To maximise pedestrian benefit, and to obtain maximum benefit from the retention of existing trees, minimise any truck movements through rigorous design including turning circle analysis.	The current location of the loading dock is preferred as it allows for the creation of the new access corridors, particularly a north-south connection and the activation of Lowick Street within the Subject Site. The updated design includes an active street interface and public art along the Grande Promenade Street frontage which does not have any other active uses nearby and is not pedestrian friendly.
	Acknowledging Grand Promenade as a hostile environment, the Panel encouraged targeted improvements, including activating bus stops and integrating pedestrian connections from nearby side streets to create a safer, more engaging public realm.	The design has progressed to address the frontage with Grand Promenade through further activation of the development's edge by integrating more glazing, highlight windows, public art, more planting to soften the buildings appearance and an articulated pedestrian connection to the bus stop.
	The Panel noted that while improvements have been made, a more sophisticated approach to materials and forms is needed to better align with the site's potential and character.	Noted. Refer to **Appendix A.**
	Benefit might be found in acknowledging the level changes across the site and how these are being effectively integrated into the design.	Noted.
	It was suggested by the Panel the street hierarchy and vision for the future should be demonstrated in the next DRP.	Noted. Street hierarchy and vision provided in updated plans and supporting attachments.
2 – Landscape Quality *Good design recognises that together, landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*	Additional landscaping in the public realm is recommended to enhance the design's relationship with surrounding areas, support discretion being sought, and strengthen public infrastructure	A Landscaping Plan has been prepared, refer to **Appendix C**, outlines the landscaping response across the site and its relationship to surrounding areas.
	While the imagery provided is compelling, the current landscape gestures remain peripheral. A stronger, more integrated landscaping strategy is required to establish a cohesive relationship between the built form and public spaces.	Noted. The Landscaping strategy has strengthened to integrate built form and public spaces, including non-peripheral planting.
	The inclusion of water-sensitive urban design (WSUD) measures, such as improved ground preparation and irrigation, should be considered to ensure the longevity of the proposed tree planting strategy	The proposed design includes low flow water fittings and fixtures, waterwise landscaping and stormwater management.
	It was reiterated by the Panel the importance of retaining existing trees where possible. A tree retention strategy across the site is recommended.	The landscaping plan, refer to **Appendix** C, addresses tree retention and proposed planting.

	The Panel noted the commitment for tree planting at every 3-6 car bays and raised the importance of soil and ground preparation to ensure survival rates.	Noted, refer to **Appendix C**.
	It was recommended by the Panel the SRI (solar reflective index) on the hard materials should be double checked.	Noted.
	Additional work including coordination between Architect and Landscape Architect is required to bolster the design around the Coles building fronting Grand Promenade. Noting the improvements brought to DRP2 of brickwork retaining walls, additional work is required which might include denser and more mature planting regime (including to the verge), better and higher quality public realm elements that significantly enhance the outcome for community - including activating bus stops and integrating pedestrian connections from nearby side streets to create a safer, more engaging public realm.	Noted. Refer to **Appendix A and Appendix C.**
3 – Built Form and Scale *Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*	Greater coordination between the architecture and landscape design is needed to ensure a cohesive public realm experience, particularly along the Grand Promenade frontage.	These concerns have been addressed by breaking up the building mass and extending the awning to provide an overhang and shading along Grand Promenade.
	The Panel recommended significant refinements to the built form facing Grand Promenade including all elevations, as the current design lacks depth, overhangs, and meaningful articulation. Refer Principle 1. The Applicant was encouraged to further examine and provide resolution to address the bulk and scale impacting the public realm	The interface with Grand Promenade has been refined through the inclusion of window fenestrations, buildings breaks, screening and opportunities for public art that will create depth and meaningful articulation. The awning has also been extended as an overhang to provide shading.
4 – Functionality and Build Quality *Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life cycle.*	The Panel noted that the preliminary selection of materials is promising in terms of durability, however further details will be needed as the design develops. The applicant is encouraged to further explore fine-grain finishes	Noted. Refer to **Appendix A**.
	The proposed internal layout was identified as an area requiring further improvement, particularly regarding active uses facing Grand Promenade and the functional integration of service areas. There is additional opportunity to breakdown the facades to create more meaningful and useful landscaped spaces	The increased glazing and highlight windows facing out towards Grand Promenade allows for greater passive surveillance and street activation. Lighting and security cameras will also be seamlessly integrated into the building façade for increased urban surveillance.
5 – Sustainability *Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*	Photovoltaic panels (PVs) on the roof are recommended to further enhance the project's energy efficiency and sustainability credentials.	Noted.
	The Panel questioned whether sustainability could be pushed further targeting 5-star buildings (as built) considering the opportunity to further reduce operation and maintenance cost	Refer to **Appendix G.**
6 – Amenity *Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*	The Panel is supportive of the pedestrian network in principle and suggested further investigation or the opportunity to incorporate public space infrastructure, which would positively contribute to the overall design and improve amenity of the centre.	A new awning over the pedestrian access way along the western side of the shopping centre facing Lowick Street has been incorporated as public space infrastructure.
	The blank walls fronting Grand Promenade remains unresolved. Alternative designs to enhance activation and public realm engagement are required	The concern has been addressed by increasing the glazing and adding highlight windows facing out towards Grand Promenade allows for greater passive surveillance and street activation. Lighting and security cameras will also be seamlessly integrated into the building façade for increased urban surveillance.
	Nighttime loading operations were raised as a concern, with potential impacts on residents across the road. The Panel encouraged further analysis of lighting and noise mitigation measures.	The loading operations will comply with the *Environmental Protection (Noise) Regulations 1997.*

7 – Legibility *Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*	The Panel acknowledged the vision for Lowick Street as a future activated street and green link but raised concerns about how this activation will be achieved. The Panel queried whether discussions have taken place with neighbouring properties, such as the school and library, and emphasized the importance of a clear strategy for greening and activating this space.	The entrance of the shopping centre facing Lowick Street is clearly defined which provides easy pedestrian access, enhanced street presence and allowing Lowick Street to develop as an activated street.
	While the pedestrian footpath from Grand Promenade to the entry pocket park is recognized as a positive element of the design, the Panel noted that it requires further strengthening and refinement to ensure functionality and user safety.	Noted.
	The Panel expressed concern that the legibility of the entrance could be diminished once trees are introduced, recommending additional design work to maintain its prominence and accessibility	Noted. The tree placement has been reviewed to preserve sightlines to entrances.
8 – Safety *Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*	It was stated by the Panel that the south side of the development along Grand Promenade is problematic due to the inactive blank wall. Street activation and potential setback should be further considered and investigated.	The increased glazing and highlight windows facing out towards Grand Promenade allows for greater passive surveillance and street activation. Lighting and security cameras will also be seamlessly integrated into the building façade for increased urban surveillance.
	Pedestrian and truck access points remain unclear and require clearer delineation to ensure safety for all users.	Noted. Access points clarified in updated plans; separation of pedestrian and service vehicle routes.
	The Panel noted that incorporating wall recesses to break down the scale will be a positive approach but advised caution to ensure that such features do not introduce potential safety concerns.	Noted. Recesses have been designed with CPTED principles to avoid concealment risks.
9 – Community *Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*	The Panel observed that the current designs for the Coles fail to deliver an adequate level of community benefit through its urban interface with Grand Promenade, particularly given the level of discretion being sought. The Panel recommended further consideration be given to enhancing the design to better respond to and engage with the community.	The interface with Grand Promenade will act as an opportunity for public art visible from the street to improve community benefit.
10 – Aesthetics *Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*	The Panel acknowledges the work carried out since DRP1 to improve the interface with the Grand Promenade context which includes improved façade modulation, an increased setback, improved soft and hard landscaping, new openings into blank walls, and the introduction of integrated public art. The outcome however is not yet supported by the Panel. Should the applicant pursue this non-favoured site planning option The Grand Promenade façades require significant further development to improve presentation to the public realm. This includes reconsidering the supermarket box design and incorporating finer grain architectural detailing and colours.	The redevelopment of the Dianella Plaza will incorporate and celebrate the pitch roof design found throughout many surrounding dwellings and the existing shopping centre. The Grand Promenade façade has undergone further development to improve presentation to the public realm via the introduction of glazing to increase public surveillance and the extension of the awning to provide shading for pedestrians.
	A good indication in terms of the preliminary selection of durable materials and finishes was provided by the Applicant. This could be developed further upon resolution of the planning and design as stated in DRP 1	Refer to proposed materials contained in **Appendix A**.
	The Panel strongly encouraged the Applicant to continue to explore fine grain variation and colours to further assist with the aesthetics.	Refer to proposed materials contained in **Appendix A**.
	It was suggested by the Panel that signage could be investigated further to achieve an integrated and coherent outcome as this can impact the aesthetics of the development.	The proposed signage complies with LPP 6.1 – refer to Section 6.5.1 of this report.

Appendix I – Geotechnical Report

Appendix J – Stormwater Management

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Attachment 6 – City of Stirling Planning Assessment

Attachment 6 – City of Stirling Planning Assessment

PLANNING ASSESSMENT

The Responsible Authority Report identifies the key considerations for this application. This attachment outlines the other planning considerations relevant to the assessment of this application.

PLANNING SCHEMES

Planning and Development (Local Planning Schemes) Regulations 2015

The proposed development is required to be considered against the relevant matters listed under Clause 67 (2) of the Schedule 2 Deemed Provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Commentary on the relevant considerations is provided below:

Deemed Provisions Clause 67(2) – Consideration of Application by Local Government	
Provision	**Officer Comment**
(a) the aims and provisions of this Scheme (including any planning codes that are read, with or without modifications, into this Scheme) and any other local planning scheme operating within the Scheme area;	The City's assessment concludes that the approval of this application is consistent with the aims of provisions of Local Planning Scheme No. 3. There are no planning codes that apply to the assessment of this application.
(b) the requirements of orderly and proper planning including scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving;	The City's assessment concludes that the approval of this application is consistent with orderly and proper planning principles. Comments on draft Local Planning Scheme No. 4. are outlined in this Attachment.
(c) any approved State planning policy;	The City's assessment has had due regard to State Planning Policies applicable to this development, that being SPP4.2, SPP5.4 and SPP7.0, as outlined in the Responsible Authority Report and its attachments.
(fa) any local planning strategy for this Scheme endorsed by the Commission;	The City's Local Planning Strategy identifies that the subject site is located within the District Centre and abuts a Class 1 Corridor Road – Alexander Drive and a Class 2 Corridor Road – Grand Promenade.
(g) any local planning policy for the Scheme area;	The City's assessment has had due regard to the City's local planning policies applicable to this development, as outlined in this Responsible Authority Report and its attachments.

(h) any structure plan or local development plan that relates to the development;	In assessing the proposal, the City has given regard to the Dianella Centre Plan, noting that it is a general planning study that provides strategic guidance for the area. Additionally, the City has also considered the recently lodged Precinct Structure Plan. Given that the Precinct Structure Plan is still in the early stages of the planning process and has not yet been endorsed, limited weight has been afforded to it. Further discussion regarding the consideration and weighting of the Precinct Structure Plan is provided in the Responsible Authority Report.
(i) any report of the review of the local planning scheme that has been published under the Planning and Development (Local Planning Schemes) Regulations 2015;	Given the City had prepared and advertised draft LPS4, the City's 2024 Report of Review was prepared primarily as a 'health check' of the City's Local Planning Strategy. The report complements the preparation of the draft LPS4 and identifies the changes required to the City's local planning framework to align with LPS4 once it is gazetted.
(m) the compatibility of the development with its setting, including – *(i) the compatibility of the development with the desired future character of its setting; and* *(ii) the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development.*	The subject site is in a commercial area, and the built form of the development is complementary to the existing streetscape. The subject site is separated from the lower density residential area across the road from Alexander Drive, Waverly Street and Grand Promenade. The built form of the development does not pose adverse amenity impacts to neighbouring properties.
(n) the amenity of the locality including the following – *(i) environmental impacts of the development;* *(ii) the character of the locality;* *(iii) social impacts of the development;*	The proposed development will enhance the amenity of the locality through improved landscaping, public realm outcomes and pedestrian connectivity. The relocation and reconfiguration of existing tenancies, together with additional retail floorspace, will improve the functionality and presentation of the centre.
(o) the likely effect of the development on the natural environment or water resources and any means that are proposed to protect or to mitigate impacts on the natural environment or the water resource;	The proposed development is not considered to adversely affect the natural environment or water resources. Portions of the site are classified as *Remediated for Restricted Use*; however, the Department of Water and Environmental Regulation has confirmed the site is suitable for the proposed commercial use and raised no objection to the development. Appropriate

	advice notes relating to the management of contaminated soil, groundwater and acid sulphate soils during construction have been recommended to mitigate potential environmental impacts.
(p) whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;	The proposed landscaping is shown in the submitted Landscape Concept Plan. The City has assessed the application using the City's landscaping policy, LPP6.6 – the provision of landscaping is supported, being consistent with the objectives of LPP6.6.
(q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;	The site is suitable to construct this development. The existing groundwater contamination in the area does not affect the development.
(r) the suitability of the land for the development taking into account the possible risk to human health or safety;	The site is suitable to construct this development. The existing groundwater contamination in the area does not affect the development.
(s) the adequacy of – *(i) the proposed means of access to and egress from the site; and* *(ii) arrangements for the loading, unloading, manoeuvring and parking of vehicles;*	The proposed access, servicing and parking arrangements are considered adequate for the development. The existing primary access arrangements are largely retained, with the relocated loading dock and servicing area demonstrated to operate satisfactorily through the submitted traffic assessment. The development provides sufficient on-site parking, loading and manoeuvring areas, with conditions recommended to ensure the ongoing management and operation of servicing activities.
(t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;	The City's assessment has given due regard to the traffic and safety impacts of the proposal. The submitted Transport Impact Assessment and subsequent referral response by the Department of Planning, Lands and Heritage concluded that the development is expected to generate a negligible increase in traffic and can be accommodated within the existing road network without adversely affecting traffic flow or safety. Accordingly, the proposal is not expected to have an unacceptable impact on the capacity or operation of the surrounding road system.
(u) the availability and adequacy for the development of the following – *(i) public transport services;* *(ii) public utility services;*	The proposed development is adequately serviced by existing public transport and utility infrastructure. Existing pedestrian and cyclist access arrangements are

(iii) storage, management and collection of waste; *(iv) access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities);* *(v) access by older people and people with disability;*	retained and enhanced through upgraded pathways, improved connectivity and the provision of bicycle parking. The development incorporates accessible, step-free connections throughout the site and includes accessible parking bays to support access by older people and people with disability. Waste storage and collection have been addressed through the submitted Waste Management Plan, and the Water Corporation has confirmed that existing water and sewer infrastructure has sufficient capacity to accommodate the development.
(v) the potential loss of any community service or benefit resulting from the development other than potential loss that may result from economic competition between new and existing businesses;	The subject site is located within a District Centre. This development does not require a net benefit test to be provided as it is not considered a major development under SPP4.2.
(y) any submissions received on the application;	The proposed development was advertised for a period of 28 days in accordance with the 'Complex Application' requirements of Schedule 2 Clause 64(3) and (6)(a) of the *Planning and Development (Local Planning Schemes) Regulations 2015*. The City's assessment has had due regard to the submissions received, comments relating to submissions is outlined in the Responsible Authority Report.
(za) the comments or submissions received from any authority consulted under clause 66;	The City's assessment has given due regard to the submissions received from external agencies, as outlined in the Responsible Authority Report.

Draft Local Planning Scheme No. 4 (LPS4)

The City has prepared new Local Planning Scheme No.4 (LPS4) to replace Local Planning Scheme No.3 (LPS3). On 10 June 2025 at its Ordinary Meeting, Council considered a report on the outcomes of advertising of draft LPS4 and resolved to support it, subject to modifications. On 18 June 2025, draft LPS4 has been accepted by the Department of Planning, Lands and Heritage for final assessment and determination. Draft LPS4 was considered by the Statutory Planning Committee of the Western Australian Planning Commission on 27 May 2026. The resolution is confidential.

In relation to draft LPS4, a decision-maker can give due regard to a seriously entertained planning proposal when determining an application, in accordance with Schedule 2 Clause 67(2)(b) of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

For contextual purposes, in summary under draft LPS4, the development site is proposed to be in the Centre zone.

The Clause 6.12 Dianella Centre Special Control Area provisions of LPS3 are not included in draft LPS4.

The objectives of the Centre zone are proposed to be:

- To provide a focal point for a broad range of land uses to meet the community's district and/or sub-regional needs, consistent with the centre's level in the activity centre hierarchy.
- To facilitate a range of employment to contribute towards the sub-region's employment self-sufficiency.
- To provide a basis for future detailed planning in accordance with the structure planning provisions of this Scheme or the Activity Centres State Planning Policy



STATE PLANNING POLICIES

State Planning Policy 4.2 – Activity Centres (SPP4.2)

The subject site is within the City's District Centre, which is the third tier in the City of Stirling Centres Hierarchy. The proposed development is not classified as a 'major development' under the policy. A 'Net Benefit Test' is not required for the proposed development under the policy.

State Planning Policy 5.4 – Road and Rail Noise (SPP 5.4)

The subject site abuts Alexander Drive and Grand Promenade which are identified as a 'Other Significant Freight/Traffic Route' in accordance with State Planning Policy 5.4 – Road and Rail Noise (SPP 5.4). As no noise sensitive land uses are proposed, the requirements of SPP 5.4 do not apply to the proposed development.

State Planning Policy 7.0 – Design of the Built Environment (SPP 7.0)

SPP 7.0 applies to all development in Western Australia. The purpose of SPP 7.0 is to inform and guide landowners, proponents, designers, reviewers and decision-makers to achieve good design outcomes in the built environment.

The City's summary of the proposed development against SPP 7.0 is as follow:

Attachment 6 – City of Stirling Planning Assessment

SPP7.0 Design of the Built Environment	
Design Principle	**Officer Comment**
1. Context and Character *Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*	The proposal responds appropriately to its role within the Dianella District Centre by improving the presentation, functionality and long-term viability of the existing shopping centre. The development enhances the centre's relationship with the surrounding locality through upgraded public realm outcomes, landscaping and improved pedestrian connectivity, while supporting the broader revitalisation of Dianella Plaza.
2. Landscape Quality *Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*	The proposal incorporates a substantial increase in landscaping, including new trees, garden beds and public realm improvements integrated with the built form. The landscaping softens building interfaces and car parking areas, improves visual amenity and contributes to a more attractive and pedestrian-friendly environment.
3. Built form and scale *Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*	The scale and form of the development are appropriate within the established commercial context of Dianella Plaza. The proposed building design incorporates façade articulation, landscaping and varied materials to reduce visual bulk and improve streetscape presentation, particularly along Grand Promenade.
4. Functionality and build quality *Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life cycle.*	The proposal improves the functionality of the existing shopping centre through the relocation of the Coles supermarket, creation of additional retail tenancies, improved servicing arrangements and enhanced internal circulation. The development is designed to support the ongoing operation and future redevelopment of the centre.
5. Sustainability *Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*	The proposal promotes sustainable development outcomes through the retention and adaptation of existing infrastructure, increased landscaping, improved pedestrian connectivity and the delivery of a more efficient and contemporary commercial environment. The development supports the ongoing economic viability of the District Centre and provides positive social and economic outcomes for the community.
6. Amenity *Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours,*	The proposal enhances amenity through significant public realm upgrades, additional landscaping, improved wayfinding and enhanced pedestrian connectivity. The development will improve the overall presentation, accessibility and user

SPP7.0 Design of the Built Environment	
Design Principle	**Officer Comment**
providing environments that are comfortable, productive and healthy.	experience of Dianella Plaza for visitors, customers and employees.
7. Legibility *Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*	The proposal improves legibility through clearer pedestrian connections, enhanced wayfinding opportunities and improved site permeability. The arrangement of buildings, pathways and public spaces supports intuitive movement throughout the centre.
8. Safety *Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*	The development incorporates safety considerations through improved pedestrian pathways, passive surveillance opportunities, lighting and clearly defined access and circulation areas. Traffic and servicing arrangements have been assessed and are considered capable of operating safely subject to the recommended conditions of approval.
9. Community *Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*	The proposal supports the ongoing role of Dianella Plaza as a community focal point and District Centre. Through improved public spaces, landscaping, pedestrian connectivity and retail offerings, the development will contribute positively to community interaction and activity within the centre.
10. Aesthetics *Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*	The proposal achieves an improved visual outcome through contemporary building design, façade articulation, landscaping and public realm enhancements. The development will significantly improve the appearance of the existing centre and establish a strong foundation for future revitalisation.

Operational Policy 1.12 Proposals Adjoining Regional Roads (OP 1.12)

OP 1.12 has been considered in the assessment of the application, noting that the subject site adjoins Alexander Drive, an Other Regional Road under the MRS.

No new vehicular access to Alexander Drive is proposed. The application was referred to the DPLH, which reviewed the proposal and accompanying Transport Impact Assessment and raised no objection to the development.

LOCAL PLANNING POLICIES

Local Planning Policy 4.2 – Mixed Use Design Guidelines (LPP 4.2)

LPP 4.2 only applies to the extent the City's "Mixed Use and Commercial Centre Design Guidelines" is referenced in the LDP. The below list identifies where discretion is sought to the applicable development standards of LPP 4.2.

- Clause 4.1 Built form appearance

  - Buildings shall have a Nil setback to primary and secondary streets.
  - Parking and vehicle entries should not present as a dominant element when viewed from the street. Appropriate and innovative screening and screen planting should be incorporated where necessary.

- Clause 4.2 Steet relationship
  - The design of the building facade does not meet the minimum of 50% clear glazed of the surfaces area of that storey.

- Clause 4.4 – The submission does not detail the external lighting layout and accordingly it cannot be confirmed the provision of lighting requirement is achieved from the information provided, though this matter can be suitable addressed by condition setting.

The development addresses the Objectives of LPP 4.2 and is supported. An assessment against the Objectives of LPP 4.2 is provided below.

Policy Objectives – Clause 2 of LPP 4.2	
Policy Objectives	**Officer Comment**
Objective 1: Building Setbacks - *To ensure that building setbacks provide streetscape continuity and a suitable transition between land uses.*	The proposed built form responds to the existing shopping centre context and broader redevelopment objectives for the site. The setback treatment allows for landscaping, pedestrian connections and public realm improvements while maintaining an appropriate relationship with adjoining roads and surrounding development. The proposed setbacks are not considered to result in unreasonable impacts on the amenity of adjoining properties or the streetscape.
Objective 2: Landscaping and Fencing - *To improve the visual appeal of development and provide landscaping to increase tree canopy cover.*	Landscaping is assessed in accordance with the provisions of the LDP and LPP 6.6.
Objective 3: Building Height - *To ensure the height of buildings does not adversely impact on the street-scape and amenity of adjoining residents by minimising building bulk and maintaining daylight and solar access.*	Building height is assessed in accordance with the provisions of the LDP.
Objective 4: Car Parking (Design, Location and Screening) - *To ensure car parking areas do not detract from the amenity of the streetscape.*	The development retains and reconfigures existing parking areas as part of the broader redevelopment. Landscaping, building elements and public realm improvements assist in reducing the visual prominence of parking areas when viewed from the public domain. The overall outcome represents an improvement to the presentation of the site when compared to the existing development.
Objective 5: Service Access and Waste Facilities	The proposal includes dedicated servicing, loading and waste management areas designed to accommodate the operational

Policy Objectives – Clause 2 of LPP 4.2	
Policy Objectives	**Officer Comment**
- *To ensure sufficient space is provided for the delivery of goods and the removal of waste materials. These areas are to be located to minimise the impacts of service and waste areas on residential properties.*	requirements of the development. Supporting traffic information demonstrates that service vehicles can access and manoeuvre within the site. The servicing arrangements are appropriately separated from surrounding residential areas by roads, distance and the commercial nature of the development.
Objective 6: Safety and Lighting - *To ensure outdoor public spaces are safe, secure and enable community interaction and reduce opportunities for concealment or entrapment.*	Passive surveillance opportunities are provided between the building, the streetscape and the outdoor pedestrian space. The development facilitates community interaction, noting the uses proposed and resultant number of people estimated to attend the development. It is expected. that the outdoor spaces will be lit at night. The design of the public areas avoids opportunities for concealment or entrapment by having no substantive visual obstructions to passive surveillance sightlines and by avoiding the creation of dead ends
Objective 7: Ground Floor Frontage, Activity and Weather Protection - *To ensure that buildings provide an active, safe and sheltered frontage / facade.*	While the proposal does not provide active frontages along all interfaces, it incorporates architectural articulation, pedestrian entry points, glazing, landscaping and public realm improvements that improve the site's presentation and pedestrian experience. The proposal also contributes to the longer-term vision of creating a more active and pedestrian-focused environment within the centre. Weather protection is provided in key pedestrian areas through the use of awnings and building overhangs.
Objective 8: Building Façade, Parapets and Balconies - *To ensure buildings provide architectural interest and positively contribute to streetscapes.*	The proposed building incorporates variation in materials, colours, built form elements and façade treatments which assist in reducing building bulk and improving visual interest. The redevelopment provides a contemporary architectural outcome that contributes positively to the ongoing renewal of the centre and improves the presentation of the site to surrounding streets.

Local Planning Policy 5.8 – Stirling City Centre Parking (LPP 5.8)

The below list identifies where discretion is sought to the development standards of LPP 5.8.

- Clauses 6.2 and 6.3 – Submission of a Parking Management Plan.
- Clause 9 – Minimum provision of motorcycle / scooter parking bays.

The development addresses the Objectives of LPP 5.8 and is supported. An assessment against the Objectives of LPP 5.8 is provided below.

Policy Objectives – LPP 5.8	
Policy Objectives	**Officer Comment**
• *To facilitate the provision of adequate car, bicycle and motorcycle parking facilities within the policy area.*	The provision of car and bicycle parking and end of journey facilities is compliant. There are spaces set aside for motorcycle and scooter parking on the roof-top car parking and is sufficient to accommodate the likely demand. There are no complex issues with the proposed design and provision of parking that necessitate the provision of a parking management plan.
• *To prioritise access to the city centre by public transport, walking and cycling.*	The provision of car parking is compliant with minimum and maximum requirements. The provision of bicycle parking and end of journey facilities is compliant.
• *To ensure that parking is provided for various services, facilities and developments at a rate that is appropriate for an inner city environment, and to efficiently manage parking supply and demand.*	Clause 6.11 of LPS3 specifies minimum and maximum parking rates and the provision of car parking is compliant.
• *To ensure that the number of parking bays and the resultant traffic does not exceed the capacity of the road network.*	The provision of car parking bays does not exceed the maximum permitted by LPP 5.8 and by Clause 6.11 of LPS3.
• *To assist in the funding of the necessary upgrade of the parking facilities and public transport network associated with the redevelopment of Stirling City Centre*	The required car parking is provided on the subject site and cash-in-lieu payments for off-site public parking is not required.

Local Planning Policy 6.6 – Trees and Landscaping – Non-Residential (LPP 6.6)

The below list identifies where discretion is sought to the development standards of LPP 6.6.

- Clause 4.1 a) – Minimum provision of landscaped area.
- Clause 4.1 c) – Minimum provision of 'medium' and 'large' trees and associated deep soil area.

The development addresses the Objectives of LPP 6.6 and is supported. An assessment against the Objectives of LPP 6.6 is provided below.

Policy Objectives – Clause 2 of LPP 6.6	
Policy Objectives	**Officer Comment**
The objectives of this Policy are:	
a) To improve the amenity of areas by providing suitable landscaping for development sites;	The development incorporates a comprehensive landscaping strategy throughout the site, including new tree planting, landscaped garden beds, verge treatments and public realm enhancements. Collectively, these measures will improve the visual amenity of the centre, soften built form and extensive paved areas, and contribute positively to

Policy Objectives – Clause 2 of LPP 6.6	
Policy Objectives	**Officer Comment**
	the streetscape and pedestrian environment.
b) To protect existing trees, and ensure new trees are planted to contribute to tree canopy coverage;	The proposal will result in the removal of a limited number of existing trees associated with the redevelopment works. Notwithstanding, the landscaping concept provides for the planting of a substantial number of new trees across the site, including large, medium and small tree species. While discretion is sought to the policy requirements relating to tree provision, the proposal will deliver a significant increase in canopy coverage over time and establishes an appropriate framework for future landscape outcomes
c) To provide shade coverage to car parking areas;	Landscaping and tree planting have been integrated throughout the at-grade car parking areas where practical, providing shade opportunities and improving user amenity. The overall site design includes a mix of at-grade and structured parking arrangements, which inherently limits opportunities for tree planting in some locations. Notwithstanding these constraints, landscaping has been incorporated where appropriate to contribute to shade and visual relief.
d) To ensure development provides optimal growing conditions to enable existing trees, new trees and landscape planting to reach maturity;	The proposal includes the provision of deep soil planting areas capable of supporting the establishment and long-term growth of trees and landscape planting. While some areas of the site are constrained by buildings, parking areas, servicing requirements and underground infrastructure, the proposed planting areas are generally located to maximise growing conditions and support the ongoing health and maturity of the landscaping.
e) To provide a diversity of plant and tree species that are resilient to climatic, soil and site conditions; and	The landscape concept incorporates a variety of tree and planting species suitable to the local environment and intended to deliver diversity, visual interest and resilience. Detailed species selection will be further refined through the detailed landscape plan required by condition of approval.
f) To encourage waterwise landscaping through appropriate species selection, reduced water demand, and improved stormwater utilisation.	The landscaping approach is generally consistent with waterwise design principles through the use of appropriate planting areas and irrigation measures. Further detail relating to species selection, irrigation and landscape establishment will

Policy Objectives – Clause 2 of LPP 6.6	
Policy Objectives	**Officer Comment**
	be provided through the detailed landscaping plan required by condition of approval, ensuring the landscaping is capable of being sustainably maintained over the long term.

Local Planning Policy 6.7 – Parking and Access (LPP 6.7)

The below list identifies where discretion is sought to the development standards of LPP 6.7.

- Motorcycle parking ratio

The development addresses the Objectives of LPP 6.7 and is supported. An assessment against the Objectives of LPP 6.7 is provided below.

Policy Objectives – Clause 2 of LPP 6.7	
Policy Objectives	**Officer Comment**
The objectives of Local Planning Policy 6.7 are:	
a) To ensure development provides an appropriate level of car parking, reflecting supply and demand so that a major parking problem is unlikely to occur;	The proposal provides parking in excess of the minimum policy requirements. Having regard to the scale and nature of the development, the parking provision is considered capable of accommodating the anticipated demand generated by the development.
b) To ensure safe, convenient, and efficient access for pedestrians, cyclists, and motorists;	The proposal retains the established access arrangements and internal circulation network, with modifications to servicing and loading arrangements supported by traffic assessment. Subject to the recommended conditions, the access arrangements are considered capable of operating safely and efficiently.
c) To prioritise access by public transport, walking and cycling;	The site is located within an established District Centre that is accessible by public transport and connected to the surrounding pedestrian network. The proposal includes improvements to pedestrian connectivity and provides facilities for cyclists.
d) To facilitate the provision of adequate bicycle parking and end of trip facilities;	Bicycle parking is provided as part of the development. The provision is considered adequate having regard to the nature of the development and the requirements of the policy.
e) To provide a balanced parking supply that does not exceed the capacity of the road network, with sufficient publicly accessible parking;	The submitted traffic information indicates that the surrounding road network can accommodate the traffic generated by the proposal. Sufficient parking is provided on-site to service the development.

Policy Objectives – Clause 2 of LPP 6.7	
Policy Objectives	**Officer Comment**
f) To ensure that an oversupply of parking does not occur that discourages alternative forms of transport; and	While the proposal provides parking in excess of the minimum policy requirements, the development also includes bicycle parking and improvements to pedestrian access. In this instance, the parking provision is not considered to materially undermine alternative transport opportunities.
g) To ensure the amount of parking is not detrimental to the urban design and character of the locality.	The parking areas form part of an existing shopping centre environment and are integrated with landscaping and public realm improvements proposed throughout the site. The parking provision is not considered to result in an unreasonable impact on the character or presentation of the locality.

Local Planning Policy 6.12 – Public Art on Private Land (LPP 6.12)

LPP 6.12 applies to all development with a cost of $2 million and above. The minimum contribution cost provided as public art is 1% up to $50 million development cost and an additional 0.5% of the development cost exceeding $50 million thereafter. The cost of the development is $35 million which will result in a $350,000 public art contribution.

The applicant has indicated the public art proposal will be incorporated fronting Grand Promenade. Compliance with the policy provisions and objectives can adequately addressed via condition setting.

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30 June 2026

Meron Nega
City of Stirling
Via email

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To Meron,

Response to Request for Information - Dianella Plaza Stage 1

The following response provides additional information to address the comments received from the City of Stirling dated 4 June 2026, regarding the Stage 1 redevelopment of Dianella Plaza.

In support of this response, we have included the following supporting information:

- Transport memo, addressing the comments received from Engineering Services (**Appendix A**)
- Landscape plans, addressing the comments on trees and landscaping (**Appendix B**)
- Concept designs relating to the Dianella Precinct Structure Plan (**Appendix C**)

The following letter provides a direct response to each comment received, demonstrating how the comment has been addressed in this supporting information.

Local Planning Policy 4.2 – Mixed Use Guidelines

***Comment 1:* While the site constraints and the proposal's design responses arising from Design Review Panel 1 and 2 are acknowledged, further justification is required to clearly demonstrate the overall development strategy for the site. It is understood that the vision for the centre is for the internal 'Lowick Street' to function as the primary activated street; however, further information is required to demonstrate how this outcome will be achieved in practice.**

This comment is correct that the intent is for Lowick Street to function as the 'main street' in the transformation of the Dianella Plaza. We have provided a copy of material previously presented to the City, which includes a draft concept plan for the proposed Precinct Structure Plan (PSP) – see **Appendix C**.

This demonstrates the following vision for the centre:

- Lowick Street North is located within the 'Living and Lifestyle' precinct. This precinct will be designed as a mixed use area with main street principles, with active uses at ground level fronting Lowick Street,

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and residential uses above. This will also include a 'town square' within the landscape design, which seeks to better integrate the existing library.

Consolidating active uses this 'Living and Lifestyle' precinct is important because it supports the creation of lively, legible and well-functioning places. From a design perspective, clustering residential uses with small scale shops, services, hospitality and community uses helps generate consistent foot traffic, which in turn supports business viability and improves passive surveillance. This makes public spaces feel safer and more welcoming throughout the day and into the evening.

- Land fronting Grand Promenade, including the Stage 1 redevelopment and Coles relocation, will form a 'Daily Needs' precinct. The focus for this precinct is to maintain the primary shopping centre function, but improve the functionality of the centre, including delivering a more logical, direct and permeable movement through the site and shopping centre. This area will continue to provide an attractive frontage to Grand Promenade, but is not intended to incorporate main street design principles.

The comments received in the DRP1 & 2 meeting requested the sleeving of the Stage 1 works with active uses fronting Grand Promenade. But this is not consistent with the vision of the PSP, which seeks to concentrate these active uses within the 'Living and Lifestyle' precinct, to support the success of this area.

The alternative design response for the Grand Promenade frontage is delivering a combination of the following:

- Streetscape Landscape: Green buffer between the Coles building and Grand Promenade, containing planting to soften and screen the building, and a seating wall to encourage use and activity in this space.
- Pocket Park: this parklet is located west of the Coles building, adjacent to a key entrance to the site, and connecting to the main shopping centre entrance. This pocket park serves the role of softening the building from this key corner, whilst also directing pedestrian movement to the landscape node.
- Public Art Opportunities identified for this location, along the south east and south west frontage of the Coles building. Pubic art in this location will create visual interest and break down the scale of larger buildings, making the Coles building feel more approachable and human in scale.

This approach both softens the appearance of the building, and ensures this frontage remains inviting to pedestrians, and achieving the outcomes sought by the DRP.

***Comment 2:* The proposed car parking areas are located within the street setback areas, and further consideration is required to demonstrate how these areas will be effectively screened and is not presenting as a dominant element when viewed from the street.**

As demonstrated in the landscape plans, all at-grade parking areas within the street setback areas are softened through the delivery of landscape areas fronting the street. These landscape areas have been sized to accommodate verge planting and street trees to soften the appearance of parking areas. The majority of these parking areas are also existing, with no major works proposed as part of this Stage 1 development application.

***Comment 3:* Further information is required to demonstrate how shopping trolleys will be managed both on site and within the surrounding areas. A Shopping Trolley Management Plan should be provided**

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addressing matters including on-site trolley storage, trolley collection procedures, and the management of trolleys from surrounding streets and adjoining land.

Given the shopping trolley management plan relates to ongoing operation, and will not impact the design of the development, this can be addressed as a condition of approval.

Local Planning Policy 6.1 – Advertising Signage

Comment 1: The City recommends that a Signage Strategy be submitted to guide any current and future signage associated with the development. This strategy should outline the proposed signage types, locations, design elements, and compliance with LPP 6.1. Should any exercise of discretion be sought, these matters can be appropriately identified and assessed as part of the Signage Strategy at this stage.

We agree that a Signage Strategy should be prepared. The intent is to deliver a single Signage Strategy for the entire 'Daily Needs' precinct, which ensures signage is delivered in a consistent and cohesive manner across the site. Given the tenancy negotiations are ongoing, we request this is delivered as a condition of approval requiring a whole of site signage strategy.

Local Planning Policy 6.6 - Trees and Landscaping

Comment 1: A detailed landscaping plan is required to enable the City to assess the proposal against this provision. The plan should clearly identify all proposed landscaping areas, including deep soil zones, dimensions, and any existing vegetation to be retained or removed, to demonstrate compliance with the LPP 6.6.

Comment 2: In addition to the above, the landscaping plan should also identify the location of all proposed trees and demonstrate that proposed trees are supported by a deep soil area that meets the minimum size and dimension requirements applicable to the relevant tree size.

Updated landscape plans including deep soil areas have been provided at **Appendix B.**

This confirms that the proposed redevelopment will result in the retention of 9 existing trees. 22 existing trees will require removal as a result of the works. The majority of existing trees on site are located in median islands within the car parking or driveway areas.

The proposed landscape plans identify the opportunity to plant the following trees within areas which deep soil zones:

- 9 large trees within landscape areas of minimum dimension of 5m;
- 25 medium trees within landscape areas of minimum dimension of 3m; and
- 8 small trees within landscape area of minimum dimension of 2m.

In addition to these trees in deep soil zones, the landscape plans also identify the opportunity for up to 147 medium or small trees within non-deep soil areas, primarily throughout the car parking layout in diamond planters.

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Overall this demonstrates that the proposed redevelopment will substantially increase the total number of trees on site, including within planned deep soil areas, as well as softening car parking areas with vegetation.

Local Planning Policy 6.7 – Parking and Access

Comment: The information submitted does not clearly demonstrate how the proposal is consistent with LPP 6.7. A Parking Management Plan outlining the provision and allocation of all parking types, including car parking, motorcycle parking, bicycle parking, and any other relevant provisions. Where discretions are sought, these should be identified and appropriately justified.

Car Parking

Section 6.5.4 of the development application report provides an assessment against LPP6.7, and confirms a surplus of parking bays on site. All parking bays will remain open to use by staff and customers of Dianella Plaza. A parking management plan is not considered to be required for the Stage 1 redevelopment, given this is an existing operating shopping centre under single ownership. The scale of Stage 1 redevelopment is also relatively minor (only a net increase of 2,568sq.m of NLA), so does not propose major changes to established parking systems on site.

The Stage 1 development utilises existing crossovers with only minor modifications. All other areas of the parking and access design complies with LPP6.7, which are largely standard requirements. These may be enforced as conditions of approval if required.

Motorcycle Parking

Dedicated motorcycle bays have not been included within the Stage 1 redevelopment plans. This position is due to the low demand for motorcycle bays at the centre, and the surplus of standard parking bays on site. In practice, the demand for standard parking bays will far outweigh the demand for dedicated motorcycle bays, so this is viewed as a more pragmatic approach to meeting parking needs. The centre will continue to enable motorcyclists to park in any of the surplus parking bays provided on site.

Bicycle Parking

The landscape plan provided at **Appendix B** now identifies suitable locations for bike racks, located in proximity to the main retail entry. This identifies space for 4 racks (8 parking spaces) adjacent to the new main entrance fronting Alexander Drive, and 4 racks (8 spaces) within the pocket park. These are identified as the areas of greatest benefit, located close to the entries without compromising pedestrian movements.

As outlined in **Appendix C**, future stages of redevelopment for the Dianella Plaza will be more focussed on delivering main street style development within the Lowick North street precinct. This form of development is more conducive to bicycle transport, and as a result parking bays are best delivered within this precinct. The landscape design for this precinct will also provide more opportunities to integrate parking within the landscape design without compromising key movement areas.

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LPP6.12 – Public Art on Private Land

Comment: The proposed development is consistent with the requirements of LPP 6.12, subject to a condition requiring the allocation of a budget of $350,000 towards the provision of public art.

Noted and agree that this can be delivered as a condition of approval, noting that indicative locations for public art have been identified in the development plans.

Engineering Services – Traffic Impact Assessment

Comment: The TIA does not sufficiently address the operational and safety implications associated with truck movements to and from the proposed Coles loading dock via the existing Grand Promenade access.

In particular, the design introduces potential conflicts arising from truck manoeuvring within and across the shared access, interaction with vehicles accessing the Ampol Service Station, and turning movements to and from Grand Promenade, which is classified as a District Distributor "A" road.

The proposal also includes reversing movements in proximity to pedestrian areas, potential obstruction of sightlines, and the likelihood of vehicle queuing extending into the Grand Promenade, all of which have not been addressed. In addition, the impacts of the proposed access and servicing arrangements on the adjoining Ampol Service Station have not been sufficiently assessed. Given the reliance on a shared access, further consideration is required to ensure that the ongoing operation, access and safety of the service station are not adversely affected.

The traffic memo at **Appendix A** identifies measures to address potential conflict. A key point raised through this memo is that the Stage 1 redevelopment will remove parking and through movement within this area of the site, significantly reduce the number of general public vehicles utilising this crossover.

This memo also outlines two potential design options for the Coles loading dock area, including swept paths. The preferred approach is the current design with minor modifications, given the alternative option will result in the loss of mature trees. This is not considered to be the best urban design outcome for the site.

As a project team, we are open to modifications to improve safety outcomes for the current design ,which could include:

- Line markings and signage to identify the land as service vehicle priority area. This includes signage at pedestrian pathways to notify pedestrians that they are crossing a truck movement area.
- Modifications to the crossovers to enable vehicles exiting Ampol to manoeuvre to Grand Promenade from a separate crossover. This removes the need for customer vehicles to move through the truck priority areas.

These measures will eliminate any potential conflicts between pedestrians, Ampol customers and service vehicles. **We request feedback from the City to confirm that the current option, subject to the modifications outlined above, would be an acceptable outcome for the site.**

Yours sincerely,

Rebecca Travaglione
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APPENDIX A – Transport Memo

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APPENDIX B – Landscape Plans

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Appendix C – Concept designs for Dianella Precinct Structure Plan

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Waste Management Plan

Dianella Shopping Centre – Stage 1

Prepared for Greenpool Management Co Pty Ltd c/- DKO

11 February 2026

Project Number: WMP25110

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DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
1.0	First Approved Release	11/02/2026	JL	AB	AB

Approval for Release

Name	Position	File Reference
Ann Brouwer	Project Manager – WMP Lead (WA)	WMP25110-02_Waste Management Plan_1.0
Signature	Ann Brouwer	Digitally signed by Ann Brouwer Date: 2026.02.11 10:15:17 +08'00'

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Executive Summary

Greenpool Management Co Pty Ltd is seeking development approval for the Stage 1 additions at Dianella Plaza on the corner of Alexander Drive and Waverley Street (the Proposal).

To satisfy the conditions of the development application the City of Stirling (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The anticipated volumes of waste generated from the additional tenancies can be stored and effectively collected from the Proposal in line with current operations.

The private contractor will continue to service the Proposal onsite, in line with current servicing arrangements. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Waverley Street/Alexander Drive/Grand Promenade.

Centre Management will oversee the relevant aspects of waste management at the Proposal.

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Figure 1: Locality Plan

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1 Introduction

Greenpool Management Co Pty Ltd is seeking development approval for the Stage 1 works at Dianella Plaza on the corner of Alexander Drive and Waverley Street (the Proposal).

To satisfy the conditions of the development application the City of Stirling (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The Proposal is bordered by Alexander Drive to the north, commercial developments to the east, Grand Promenade to the south and Alexander Drive to the west, as shown in Figure 1.

1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse and recyclables) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide an adequately sized Bin Storage Area, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Waste Generation;
- Section 3: Waste Storage;
- Section 4: Waste Collection;
- Section 5: Waste Management; and
- Section 6: Conclusion.

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2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

2.1 Proposed Tenancies

The anticipated volume of refuse and recyclables is based on the floor area (m^2) of the commercial tenancies, as well as existing knowledge of Coles waste requirements. The Proposal consists of the following:

Existing Tenancy/Woolworths Loading Dock:

- Retail 17 – 129.11m^2;
- Retail 18 – 173.05m^2;
- Retail K5 – 29.79m^2;
- Retail 19 – 93.78m^2;
- Retail 21 – 105.73m^2;
- Retail 22 – 84.35m^2;
- Retail 23 – 83.73m^2;
- Retail 47 – 129.82m^2;
- Retail 48 – 259.27m^2;
- Retail 52 – 124.62m^2;
- Retail 51 – 53.65m^2;
- Retail 50 – 53.65m^2;
- Retail 49 – 56.3m^2;
- Retail 46 – 122.39m^2;
- Retail 16 – 240.58m^2;
- Retail 24 – 341.65m^2;
- MM01 – 629.97m^2;
- Retail 53 – 83.58m^2;
- Retail 54 – 109.47m^2; and
- Retail 55 – 146.95m^2.

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Coles Loading Dock:

- Coles – 3,891.46m^2.

Note, the new Coles Supermarket will have their own back of house and manage waste through their own internal processes governed by national waste collections contracts, and therefore has not been included in Section 2.2 and Section 2.3.

2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the additional retail tenancies at the Proposal, consideration was given to the Western Australian Local Government Association's (WALGA) *Commercial and Industrial Waste Management Plan Guidelines* (2014).

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

Table 2-1: Waste Generation Rates

Commercial Tenancy	WALGA Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Retail Tenancies	Retail Shops (>100m^2)	50L/100m^2/day	50L/100m^2/day

2.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

Additional retail tenancy waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-2. It is estimated that the additional retail tenancies at the Proposal will generate 10,680L of refuse and 10,680L of recyclables each week.

Table 2-2: Estimated Waste Generation

Retail Tenancies	Floor Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse	3,051	50	10,680
Recyclables	3,051	50	10,680
		TOTAL	**21,360**

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3 Waste Storage

Waste materials generated from the additional tenancies and the new Coles Supermarket at the Proposal will be collected in the bins/waste equipment located in the existing Tenancy/Woolworths Loading Lock and the new Coles Loading Dock, as shown in The existing Loading Dock and servicing arrangement has allowance for increased collection frequencies and additional bins to accommodate the waste generated from the additional retail tenancies, if required.

The size and location of the Existing tenancy/Woolworths Loading Dock is shown in Diagram 1.

Diagram 1 and Diagram 2, and discussed in the following sub-sections.

Note: the waste generation volumes are best practice estimates and the number of bins to be utilised represents the maximum requirements once the Proposal is fully operational. Bin requirements may be impacted as the development becomes operational, and the nature of the tenants and waste management requirements are known.

3.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, internal bins will be available throughout the Proposal for the source separation of refuse and recyclables.

These internal bins will be collected by the staff/cleaners and transferred to the respective Loading Dock for consolidation into the appropriate bins, as required. These internal bins will be transferred through the Proposal utilising the dedicated service corridors. This internal servicing method may be conducted outside of main operational hours to mitigate disturbances to staff/visitors.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist visitors, staff and cleaners to dispose of their separate waste materials in the correct bins.

3.2 Bin Sizes

Table 3-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

Table 3-1: Typical Bin Dimensions

Dimensions	Waste Equipment/Bins					
	240L	660L	1,100L	3.0m³	4.5m³	30m³
Depth (mm)	730	780	1,070	1,505	1,600	10,900
Width (mm)	585	1,260	1,240	1,805	2,050	2,400
Height (mm)	1,060	1,200	1,300	1,225	1,520	2,600
Area (mm²)	427	983	1,327	2,716	3,280	50,000

Reference: SULO and Veolia Bin Specification Data Sheets

3.3 Existing Tenancy/Woolworths Loading Dock Size

To ensure sufficient area is available for storage of additional waste generated from the additional retail tenancies, the amount of bins/volume (L) required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 3-1 and based on collection of all waste in line with existing waste services outlined in Table 3-2.

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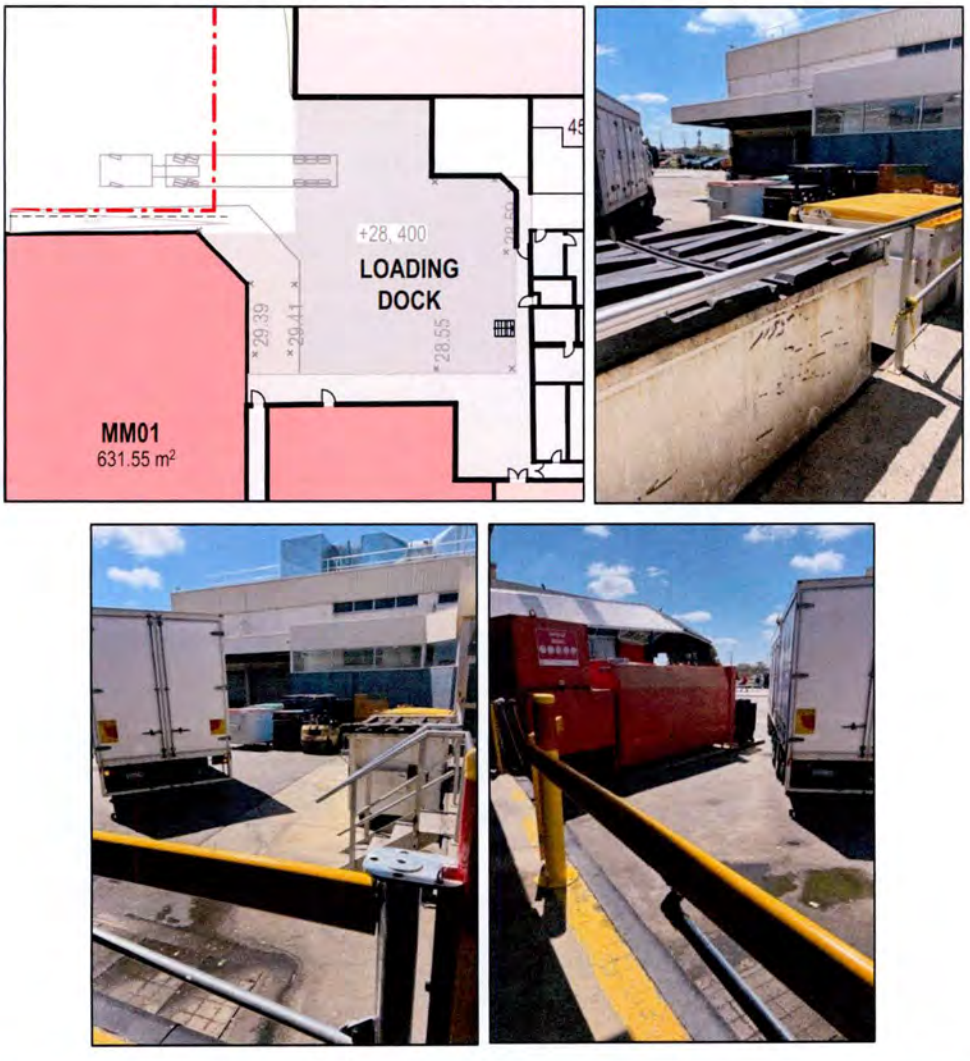
Table 3-2: Existing Tenancy/Woolworths Loading Dock Waste Equipment

Waste Stream	Waste Equipment/Bins	Number of Waste Equipment/Bins	Collection Frequency	Collection Vehicle
Refuse	23m³	One	Ad Hoc	Hook Lift
	3m³	One	Seven times each week	Rear Lift
Cardboard Recycling	30m³	One	Ad Hoc	Hook Lift
Organic/Food Waste	3m³	One	Twice each week	Front Lift
Commingled Recycling	3m³	One	Three times each week	Front Lift
	1,100L	Two		Rear Lift
Clinical/Medical	240L	One	Ad Hoc	Rear Lift
Clear LDPE	Bag/Frame	One	Once each fortnight	Rear Lift

The existing Loading Dock and servicing arrangement has allowance for increased collection frequencies and additional bins to accommodate the waste generated from the additional retail tenancies, if required.

The size and location of the Existing tenancy/Woolworths Loading Dock is shown in Diagram 1.

Diagram 1: Existing Tenancy/Woolworths Loading Dock



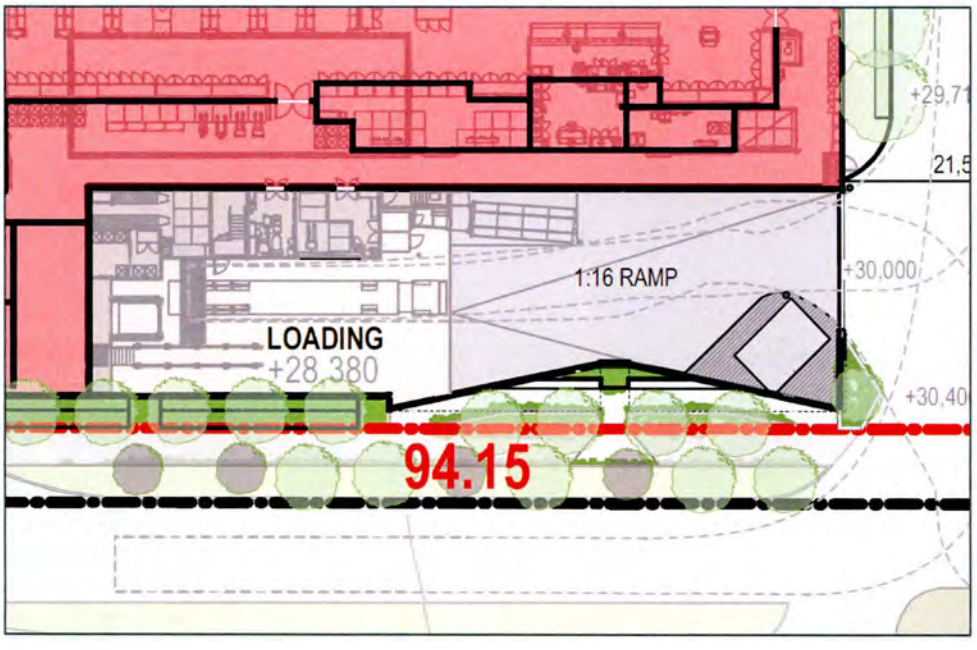
3.4 Coles Loading Dock Requirements

Based on Coles existing waste requirements/contracts and tenant knowledge, space will be provided for the following waste equipment within the new Coles Loading Dock:

- One 3.0m^3 and one 4.5m^3 steel bin;
- Two plastic bag cages; and
- One refuse compactor (Wastech Model S1500, S1250 or ST1000).

The size and location of the Coles Loading Dock is shown in Diagram 2.

Diagram 2: Coles Loading Dock



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4 Waste Collection

Private waste contractors will continue to service the proposal onsite, in line with current operations at the Existing Tenancy/Woolworths Loading Dock and for the additional new Coles Loading Dock, as discussed within this WMP.

A private contractor will collect refuse, recyclables, food organics and paper/cardboard from the respective Loading Dock, as shown in Diagram 1 and Diagram 2.

The private contractor's waste collection vehicles will enter in forward gear and service equipment/bins directly from the Loading Docks, at the required collection frequencies. Private contractor's waste collection staff will transfer waste equipment/bins to and from the collection vehicle and the Loading Dock during servicing, if required. Once servicing is complete the private contractor's waste collection vehicle will exit the Loading Dock in forward gear via Waverley Street/Alexander Drive/Grand Promenade.

The private contractor will be provided with key/PIN code access to the Loading Docks and any security access gates to facilitate servicing, if required.

The above servicing method will preserve the amenity of the area by removing the requirement for waste equipment/bins to be presented to the street on collection days. In addition, servicing of bins onsite will reduce the noise generated in the area during collection. Noise from waste vehicles will comply with the Environmental Protection (Noise) Regulations.

The ability for the private contractor's waste collection vehicles to access the Proposal in a safe manner has been assessed by PJA and will be included within their traffic impact assessment.

4.1 Bulk and Speciality Waste

Bulk and speciality waste materials will be removed from the Centre as they are generated on an 'as required' basis.

Adequate space will be available throughout the Centre and in the Loading Docks for the ad hoc use of skip bins for removal of bulk wastes. Dedicated containers will also be located throughout the Centre for collection of specialty wastes such as printer cartridges, secure document disposal, e-wastes, cleaning chemicals and commercial light globes.

Bulk/specialty wastes will be removed from the Centre once sufficient volumes have been accumulated to warrant disposal. Centre management will organise to discard bulk/specialty wastes, as required.

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5 Waste Management

A centre manager will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Loading Docks;
- Monitoring and maintenance of waste systems and equipment;
- Cleaning of bins and Loading Docks, when required;
- Ensure all tenants at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor tenant/staff/cleaner behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with tenants/staff/cleaners to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the private contractors to ensure efficient and effective waste service is maintained.

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6 Conclusion

As demonstrated within this WMP, the Proposal provides sufficiently sized Loading Docks for the storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that adequately designed Loading Docks have been provided, and collection of refuse and recyclables can be completed from the Proposal.

The private contractor will continue to service the Proposal onsite, in line with current servicing arrangements. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Waverley Street/Alexander Drive/Grand Promenade.

Centre Management will oversee the relevant aspects of waste management at the Proposal.

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Figures

Figure 1: Locality Plan

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LEGEND

- Site Boundary

Cadastre

- Crown Allotment
- Freehold
- Road
- Strata Plan or Lot
- Easement
- Reserve

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LOCALITY

Dianella Plaza
366 Grand Promenade, Dianella
WA 6059

Greenpool Management Co Pty Ltd

0 20 40 60 80 m
Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:2,000

Prepared:	M Henschel	Date:	8/10/2025
Reviewed:	A Brouwer	Revision:	A
Project:	WMP25110		

talis consultants

Figure 01

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Assets | Engineering | Environment | Noise | Spatial | Waste

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Nowra, NSW 2541

Newcastle
58 Cleary Street,
Hamilton, NSW 2303

QLD OFFICE
Brisbane
35 Boundary Street,
South Brisbane, QLD 4101

P: 1300 251 070 | E: enquiries@talisconsultants.com.au

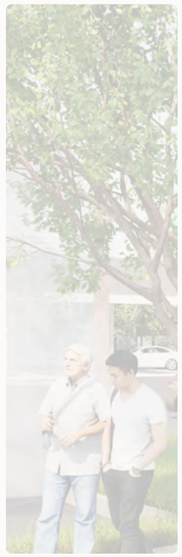
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DIANELLA PLAZA

Landscape Concept | June 2026 [J]





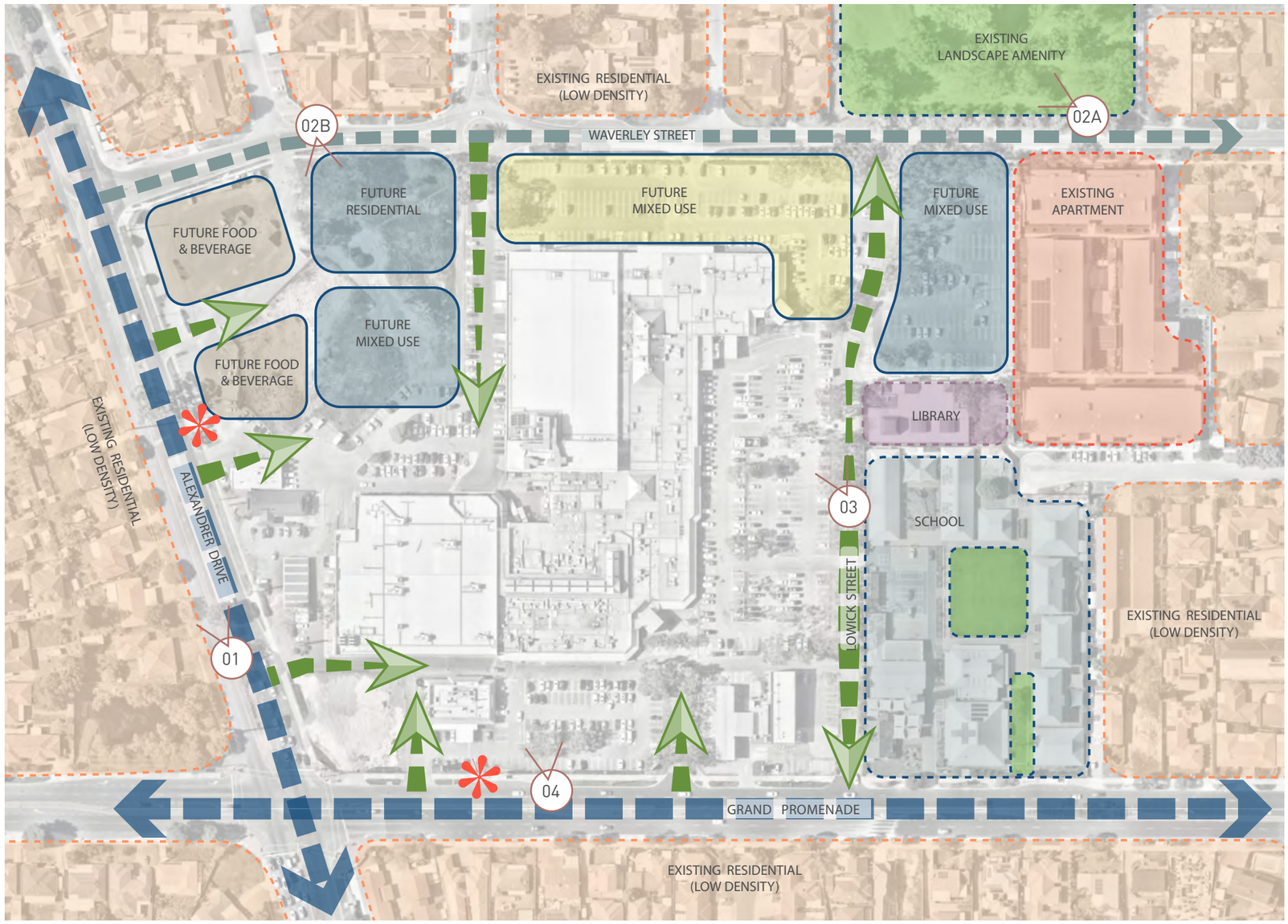
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01 | SITE CONTEXT AND LANDSCAPE CHARACTER

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EXISTING BUS STOP / PUBLIC TRANSPORT LOCATION

EXISTING PRIMARY VEHICLE ACCESS AND PEDESTRIAN CONNECTION TO WEST AND SOUTH OF SITE

EXISTING SECONDARY VEHICLE ACCESS AND PEDESTRIAN CONNECTION TO NORTH OF SITE

EXISTING AND PROPOSED VEHICLE AND PEDESTRIAN ENTRIES INTO SITE (LEGIBILITY)



ALEXANDER DRIVE existing Landscape Character - Callistemon 'Kings Park Special' | Jacaranda | Tall, upright white trunked Eucalyptus sp. | Lomandra and Grass sp.





Waverley Street existing Landscape Character - Corymbia and Eucalyptus sp. | Jacaranda | Agonis flexuosa (Peppermint Trees) | Upright white-trunked Eucalyptus sp.



Lowick Street carpark existing Landscape Character - Screening shrubs to eastern boundary | Tall, upright white-trunked Eucalyptus sp. | Mulch only carpark islands



Grand Promenade existing Lanscape Character - Tall, upright white-trunked Eucalyptus sp. | Pyrus species | Callistemon hedge | Grevillea groundcover

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02 | SITE CONTEXT AND LANDSCAPE CHARACTER - TRIBUTARIES















ALEXANDER DRIVE

CLEAR SIGHTLINES
POWERLINES | SERVICES
LOW SHRUBS + GRASSES
PEDESTRIAN CROSSINGS

WAVERLEY STREET

WIDE TREE VERGE
CLEAR SIGHTLINES
BARRIER HEDGE
SPATIAL DEFINITION
TREE AVENUE
OPPORTUNITY

GRAND PROMENADE

PAVED MEDIAN
MINIMAL SHADE
SHRUB BUFFER EDGE

LOWICK STREET

CLEAR SIGHTLINES
MOTTLED SHADE WITH CANOPY COVER
VEHICLE CONNECTION













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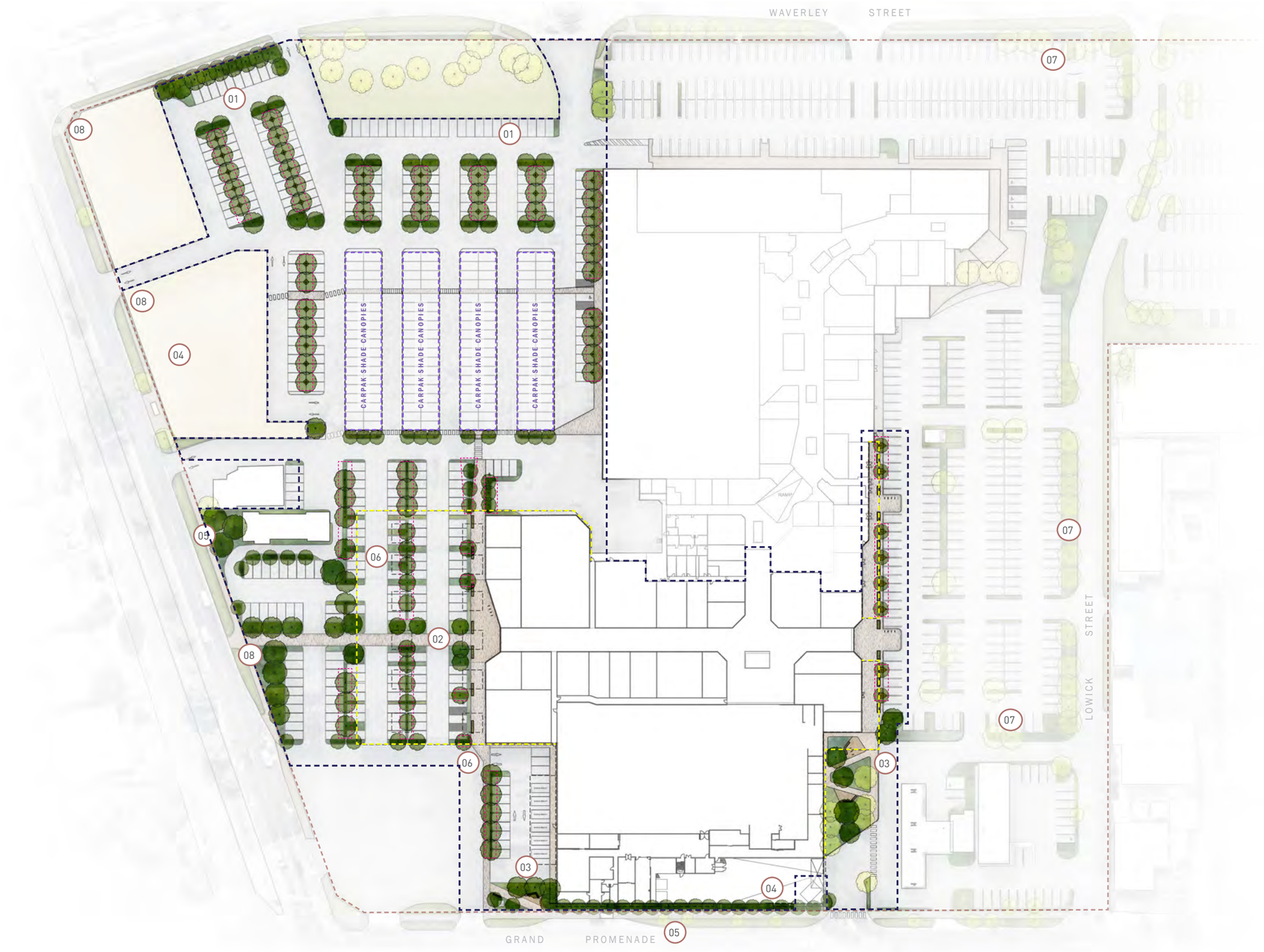
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03 | LANDSCAPE MASTER PLAN - STAGE 01



LEGEND

- Site Boundary
- Stage 01 works boundary
- 01 Car parking area and future development area for food and beverage opportunities
- 02 Alexander Drive Gateway Entry experience: defined and landscaped pedestrian walkway to western entry
- 03 Pocket park with seating opportunities
- 04 New streetscape and verge landscaping to enhance existing 'tree canopy' character of site
- 05 Proposed verge planting and new street trees
- 06 Car parking area with tree and shrub landscaping (permanent)
- 07 Existing trees and garden beds / verges to Eastern side of shopping centre
- 08 Proposed Pylon Sign
- Structural soil to new tree planting (proposed extent)
- Building overhang
- Shade canopy
- Existing trees to be retained where possible
- New Significant Tree planting (irrigated)

NOTES

Planting will be predominantly Australian Native species that enhance the broader landscape themes of the shopping precinct. A mix of leaf typologies and growth characteristics will be used to create a textured natural palette providing deep shade for users. All planting to be permanently irrigated with organic mulch.

Soil conditioner to all garden beds and tree planting, organic mulch to be coarse hardwood only.

Organic soil (minimum 600mm depth) to tree wells below mulch.

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04 | LANDSCAPE NODES

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WAVERLEY STREET

FUTURE RESIDENTIAL
Potential for permeable parking and temporary landscaped spaces



FUTURE FOOD & BEVERAGE
All tree planting in root control bags to temporary carpark area; Potential for permeable paving

FUTURE MIXED USE
Potential for permeable parking and temporary landscaped spaces







LOWICK STREET



POCKET PARK
With feature native tree and groundcover planting, and integrated seating

ENTRY CORRIDOR
Defined entry with feature paving and planting, Legible tree species and robust materials

STREETSCAPE LANDSCAPE
Low native groundcovers, groves of small upright trees, 'Shades of Green' to southern facade and streetscape edge.

GRAND PROMENADE

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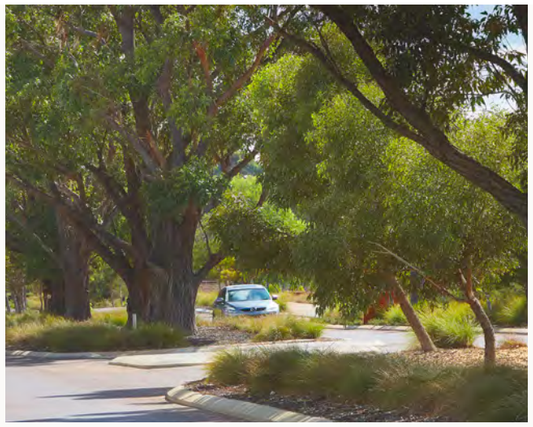
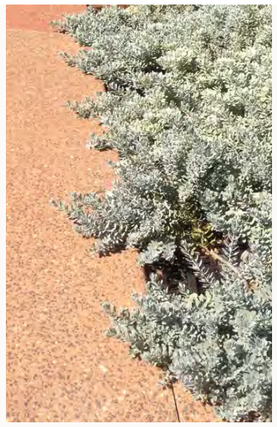
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05 | LANDSCAPE CHARACTER THEME / MATERIALS - CARPARK + SURROUNDS

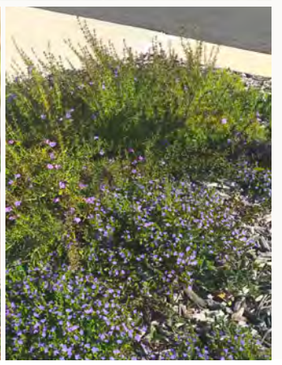














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High quality paving materials are used to create a legible pedestrian hierarchy at entries, where pedestrian movement is encouraged. Materials which draw on the colours and textures of the surrounding suburban fabric will complement the lushness of the planting palette and the architectural materiality of the built form.

Water Sensitive Urban Design strategies are to be explored within parking and perimeter landscape areas.



Location Map

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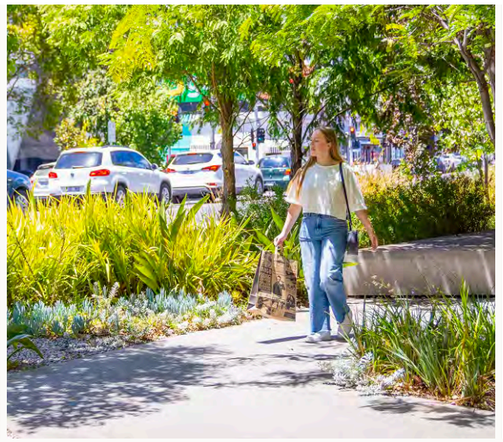
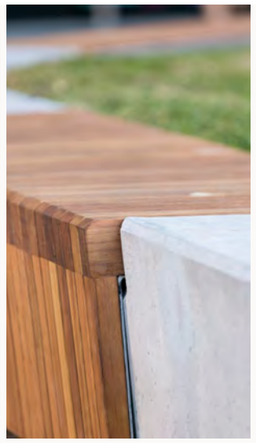
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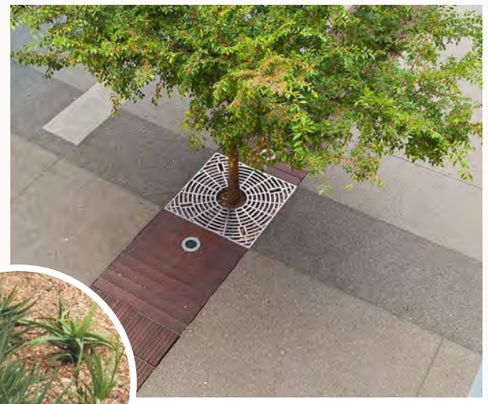
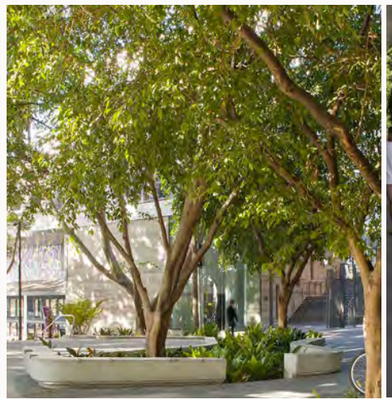
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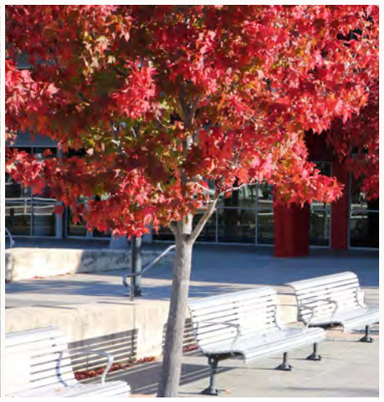
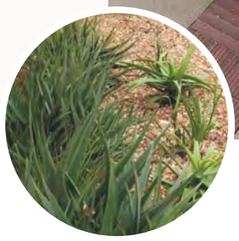
06 | LANDSCAPE CHARACTER THEME / MATERIALS - ENTRIES



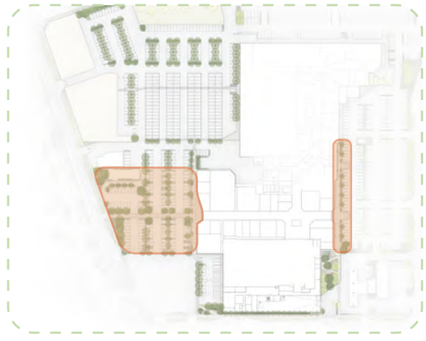






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Location Map

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LEGEND

01 Landscape opportunities (pocket parks) to Alexander Drive verge enhance the entry experience into the Shopping precinct, with existing trees retained wherever possible, enhanced with new tree and shrub planting.

02 Alexander Drive bus stop connected to Shopping Centre precinct with clear, legible path connections and native tree planting.

03 Significant landscape opportunity to widened verge areas to enhance existing retained trees and strengthen the 'green canopy connection' to the surrounding suburb.

04 Permanent parking area with potential for permeable paving and WSUD principles within landscape areas.

05 Pedestrian connection - highly visible coloured concrete / paving to define pedestrian movement through parking space.

06 'Greenhouse' Character to Undercroft Precinct - Species will be selected to handle a variety of light conditions with a mix of textures, shades and structures. All planting to be permanently irrigated with organic mulch.

07 High quality exposed aggregate paving to Plaza Entry, raised planters with a combination of lush upright feature plant and cascading species to separate pedestrian movement from vehicular traffic.

08 Carpark Islands and verge areas with low maintenance groundcover planting suitable for WSUD.

09 Tree planting in structural and amended soil with permanent irrigation (refer back to structural soil extent on overall site plan.

10 Carpark connectivity – pedestrian areas well defined and highly legible leading to Plaza Entry.

11 Significant Shade Opportunity – Landscaped carpark islands with native tree and groundcover species, organic mulch and irrigation to mitigate heat loading and provide 'cooling' reprieve to parking space. Integrated signage within islands.

12 Proposed location for Pylon Sign.

Stage 01 works boundary.

Existing trees to be retained where possible.

Structural Soil to new tree planting (proposed extent).

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LEGEND

13 Significant Landscape Node - Pedestrian Site Entry from Alexander Drive.

14 Existing trees to Grand Promenade verge – retained where possible and enhanced with additional new native tree and low shrub planting.

15 Feature decidious trees to Pedestrian Entry from Alexander Drive to define entrance.

16 Trees in car bay diamonds to provide shade and greening.

17 Future Landscape Node - 'Green space' opportunity with significant tree planting, low shrubs and integrated street furniture.

18 High quality exposed aggregate paving to Plaza Entry, raised planters with a combination of lush upright feature plant and cascading species to separate pedestrian movement from vehicular traffic, bollards, exotic trees with seasonal colour in mulch only tree wells.

19 'Greenhouse' Character to Eastern Entry with feature shrubs and climbers. All planting to be permanently irrigated with organic mulch. Integrated seating and seating walls where convenient, upright trees maximum 4.0m wide canopy.

20 Proposed location for Pylon Sign.

21 Bike racks incorporated into street furniture palette, located in proximity to retail entries.

Stage 01 works boundary.

Existing trees to be retained where possible.

Structural Soil to new tree planting (proposed extent).

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09 | LANDSCAPE EXPERIENCE - GRAND PROMENADE

ACCESS INTO PLAZA





PEDESTRIAN ACCESS ROUTE
Clear and defined pedestrian routes with identified road crossing locations and clear sightlines







POCKET PARK
With feature native tree and groundcover planting, integrated seating and respite opportunities





STREETSCAPE LANDSCAPE
Low native groundcovers, avenue of small upright trees, 'Shades of Green' to southern facade and streetscape edge.

ACCESS INTO PLAZA





POCKET PARK
With feature native tree and groundcover planting, integrated seating and respite opportunities







PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

PEDESTRIAN ROUTE

GRAND PROMENADE

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0 4 8 12 20m

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LANDSCAPE CONCEPT PLAN - PART C GRAND PROMENADE



LEGEND

1. Western entry - pedestrian connection through car park defined with coloured concrete (highly legible).
2. Tree avenue with low planting to direct pedestrian movement towards Western Entry.
3. Pedestrian connection to car park/ built form edge - concrete pathway.
4. 'Parklet' Opportunity with integrated seating and materiality reflecting Parklet to East of Coles.
5. Amended soils beneath car park trees.
6. Green buffer to built form: planter/ seating walls with low mixed planting and sculptural trees to soften building edge.
7. 'Parklet' Opportunity with seating respite, shade and cooling opportunities with integrated furniture & art opportunity to enhance community amenity & cultural history. Existing trees to be retained where possible.
8. Existing trees to Grand Promenade verge (retained where possible) & enhanced with new trees & groundcover planting.
9. 'Greenhouse' character to eastern forecourt with low planting and trees to maximize tree canopy opportunities.
10. High quality paving to visually connect eastern path connection to landscape node & main plaza entry.
11. Trees in car bay triangles to provide shade and greening.
12. Bike racks incorporated into street furniture palette, located in proximity to retail entries.

Stage 01 works boundary.

Existing trees to be retained where possible.

Structural Soil to new tree planting (proposed extent).

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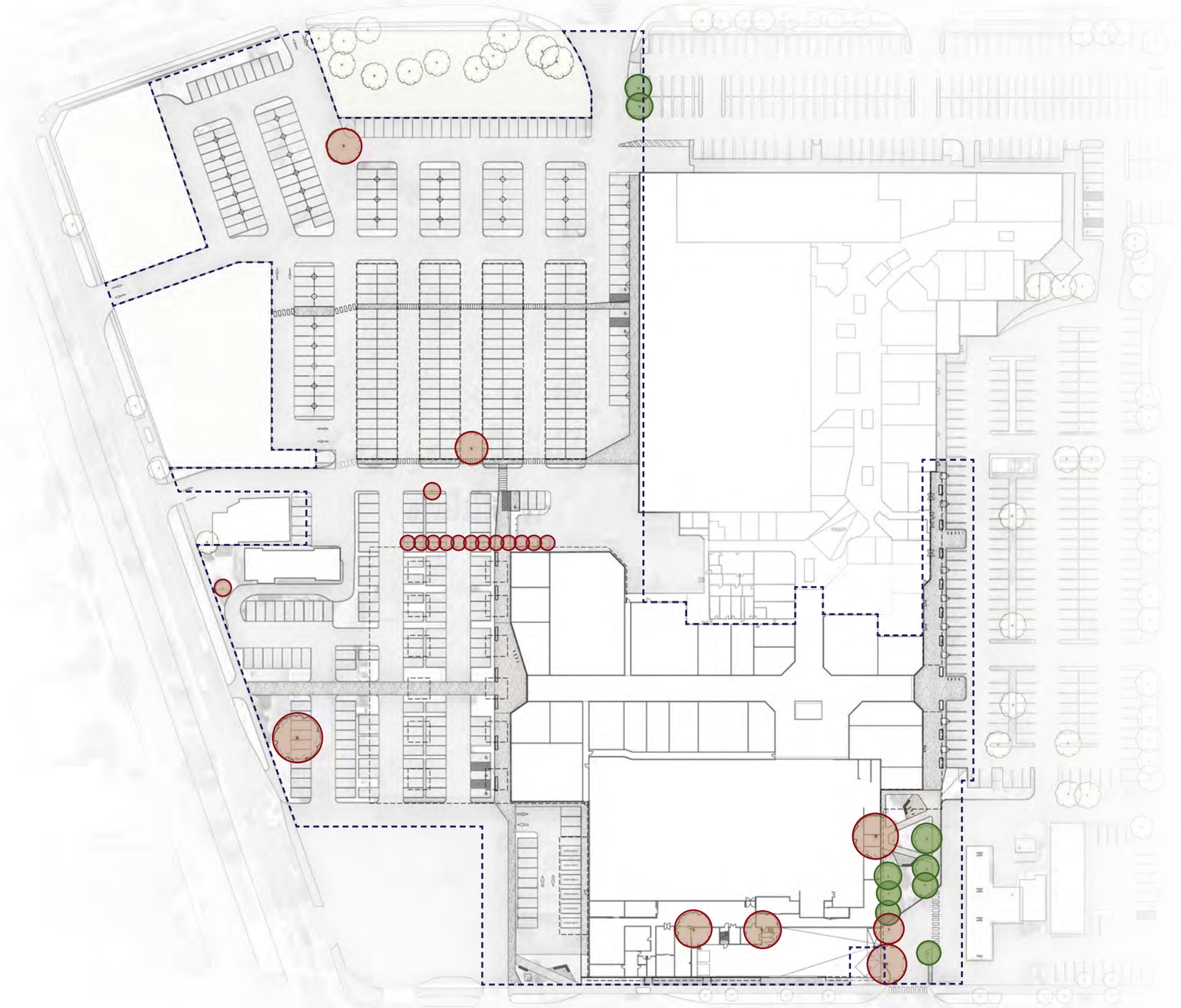
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LEGEND

- STAGE 01 BOUNDARY
- EXISTING TREES TO BE RETAINED WHERE POSSIBLE - 9 NO.
- STAGE 01 - EXISTING TREES TO BE REMOVED - 22 NO.

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DEEP SOIL & TREE PLANTING OPPORTUNITIES - STAGE 01



LEGEND

- STAGE 01 WORKS BOUNDARY
- 'IN GROUND' GARDEN BED 2315 SQM
- PRE - FABRICATED RAISED UNIT PLANTER 35.5 SQM
- EXISTING TREES TO BE RETAINED WHERE POSSIBLE - 9 NO.
- POTENTIAL LARGE TREE LOCATIONS (MIN 5.0 M DIAMETER AT MATURITY) 9 NO.
- POTENTIAL MEDIUM TREE LOCATIONS (MIN 3.0 M DIAMETER AT MATURITY) 25 NO.
- MEDIUM TREE OPPORTUNITY (RESTRICTED) 61 NO.
- POTENTIAL SMALL TREE LOCATIONS (MIN 2.0 M DIAMETER AT MATURITY) 8 NO.
- SMALL TREE OPPORTUNITY (RESTRICTED) 86 NO.

TREE SIZE / CONDITION	SPECIES
LARGE TREE 9 NO.	*Corymbia maculata*
MEDIUM TREE 25 NO.	*Agonis flexuosa* *Melaleuca leucadendra* *Eucalyptus victrix* *Corymbia maculata*
MEDIUM TREE 61 NO. (RESTRICTED SPACE WITH STRUCTURAL SOILS)	*Cupaniopsis anacardioides* *Tristaniopsis laurina 'Luscious'*
SMALL TREE 8 NO.	*Eucalyptus citriodora dwarf 'Scentuous'* *Waterhousea floribunda* *Ulmus 'Inspire'* *Melaleuca viridiflora* *Callistemon 'Kings Park Special'*
SMALL TREE 86 NO. (RESTRICTED SPACE WITH STRUCTURAL SOILS)	*Ulmus 'Inspire'*

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LEGEND

- STAGE 01 WORKS BOUNDARY
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- PRE - FABRICATED RAISED UNIT PLANTER 35.5 SQM
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LEGEND

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Agonis flexuosa
300L pot



Callistemon 'Kings Park Special'
150/ 200L pot



Corymbia maculata
150/ 200L pot



Cupaniopsis anacardioides
300L pot



Eucalyptus sideroxylon rosea
150/ 200L pot



Eucalyptus citriodora dwarf
150/ 200L pot



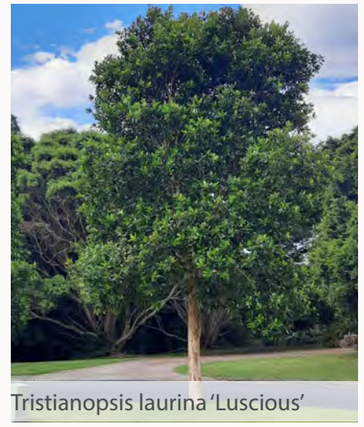
Eucalyptus victrix
150/ 200L pot



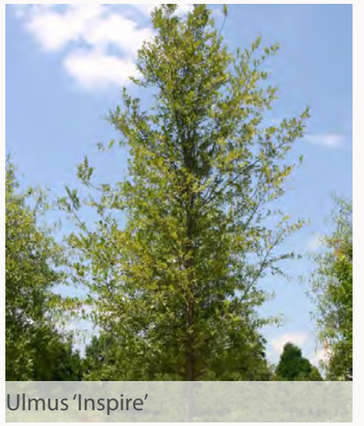
Melaleuca leucadendra
150/ 200L pot



Melaleuca viridiflora
150/ 200L pot



Tristianopsis laurina 'Luscious'
300L pot



Ulmus 'Inspire'
500L pot



Waterhousea floribunda
300L pot

Planting species will be selected with a mixture of textures and shades while also being low maintenance and low water use. To enhance the existing Dianella Landscape Character, the tree palette includes 'white-trunked' tree species to compliment the existing retained tree canopy within, and around the site. All planting to be permanently irrigated with organic mulch, tree stakes, and structural soil to trees within carpark areas.

NOTE:
ALL SPECIES PROPOSED ARE NOT CURRENTLY IDENTIFIED AS HIGH/ MODERATE RISK REPRODUCTIVE HOSTS FOR POLYPHAGOUS SHOT-HOLE BORER

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Acacia lasiocarpa 'prostrate'
140mm pots @ 900mm spacing



Acacia 'Honey Bun'
5L pots @ 700mm spacing



Adenanthos sericeus 'Compact'
5L pots @ 900mm spacing



Banksia ashbyii 'Dwarf'
5L pots @ 700mm spacing



Callistemon 'Better John'
5L pots @ 700mm spacing



Conostylis candicans
140mm pots @ 500mm spacing



Calothamnus quadrifidus prostrate
140mm pots @ 900mm spacing



Darwinia citriodora prostrate
140mm pots @ 900mm spacing



Dianella 'Streetscape'
140mm pots @ 500mm spacing



Eremophila 'Kalbarri Carpet'
140mm pots @ 900mm spacing



Ficinia nodosa (WSUD)
140mm pots @ 500mm spacing



Grevillea 'GinGin Gem'
140mm pots @ 900mm spacing



Grevillea thelemanniana 'Green Gem'
140mm pots @ 900mm spacing



Hemiandra pungens
140mm pots @ 900mm spacing



Lomandra 'Katrinus Delux'
5L pots @ 700mm spacing



Lomandra 'Lime Turf'
140mm pots @ 500mm spacing



Westringia 'Low Horizon'
140mm pots @ 900mm spacing

Planting will be predominantly Australian Native species that enhance the broader landscape themes of the shopping precinct.

Species selected will aim to reinforce the existing landscape character of Dianella, and strengthen placemaking elements of the new landscape design.

A mix of leaf typologies and growth characteristics will be used to create a textured natural palette. All planting to be permanently irrigated with organic mulch.

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Arthropodium 'Te Puna'
170mm pots @ 650mm spacing



Asplenium nidus
8L pots @ individual feature plant locations



Blechnum 'Silver Lady'
8L pots @ individual feature plant locations



Callistemon 'Great Balls of Fire'
5L pots @ 900mm spacing



Dianella 'Tasred'
140mm pots @ 600mm spacing



Hibbertia scandens
140mm pots @ 900mm spacing



Hymenosporum 'Gold Nugget'
5L pots @ 700mm spacing



Liriope 'Just Right'
140mm pots @ 500mm spacing



Lomandra 'Lime Turf'
140mm pots @ 500mm spacing



Myoporum parvifolia 'Yareena'
140mm pots @ 900mm spacing



Philidendron 'Xanadu'
170mm pots @ 500mm spacing



Pittosporum 'Miss Muffet'
5L pots @ 700mm spacing



Rhaphiolepis 'Snow Maiden'
5L pots @ 700mm spacing



Trachelospermum jasminoides
170mm pots @ 600mm spacing



Zamia furfuracea
12L pots @ individual feature plant locations



Ficus lyrata
12L pots @ individual feature plant locations



Viola hederacea
140mm pots @ 600mm spacing

Species will be selected to handle a variety of light conditions with a mix of textures, shades and structures. All planting to be permanently irrigated with organic mulch.

Raised planters with upright feature plants and cascading species to further enhance and define the public realm.

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Aluminium woodgrain timber furniture, steel powdercoat frames





In-ground garden beds (soil conditioner,mulch,irrigation) with insitu exposed aggregate pavement









Exposed aggregate concrete to shop perimeter - colour and texture to reflect site context

Plain grey broom finish concrete path



Trough planter boxes linear upright - Grey





Powdercoat 'monument' colour bollards



Trafficable road surface pedestrian crossing

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Dianella Plaza, 366 Grand Promenade

Acoustic Report – Development Application

Project No.	P02779
Revision	002
Issued	2 February 2026
Client	The App Group

E-LAB Consulting

Where science and engineering inspire design.

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Document QA and Revisions

ISSUE	DATE	COMMENTS	ENGINEER	REVIEWER
1	24/11/2025	Draft Issue	Imran Khan	Teresa D Ngyuen
2	02/02/2026	Issue for Submission	Imran Khan	Teresa D Ngyuen

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Authorised by:

Engineering Lab NSW Pty Ltd



Imran Khan | National Technical Director

Acoustics & Vibration

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1 INTRODUCTION

1.1 DOCUMENT PURPOSE

E-Lab consulting was commissioned by The App Group to undertake an acoustic assessment for the proposed development of Coles Supermarket within the Dianella Plaza, located at 366 Grand Promenade, Dianella WA 6059. The development comprises the relocation and construction of a Coles supermarket, features with Click & Collect facility and an enclosed loading dock.

This Acoustic report has been prepared as part of Development Application for the proposed development at 366 Grand Promenade, Dianella WA 6059. The following acoustic assessment has been undertaken, and recommendations are made to achieve compliance with:

- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

The following noise emitting sources were considered in the assessment:

- Loading dock and truck movements
- Car activities at Click & Collect
- Mechanical Plant

1.2 RELEVANT DOCUMENTS

The following standards, regulations and guidelines have been used to establish the project specific acoustic design requirements for the development.

- Western Australian Environmental Protection (Noise) Regulations 1997 (WA EPNR)
- DKO Architects architectural documentation dated 31st October 2025

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1.3 PROJECT DESCRIPTION

1.3.1 Site Location

The proposed project site is located at 366 Grand Promenade, Dianella WA 6059, near the intersection of Grand Promenade and Alexander Drive. The site comprises a portion of the existing Coles tenancy and adjoining car park on the western side of Dianella Plaza, positioned east of Grand Promenade and north of the main plaza building facing Alexander Drive.

The surrounding area comprises a mix of commercial and residential land uses. To the east and northeast, Dianella Plaza contains the Woolworths supermarket and a range of specialty retail tenancies. To the west and north, across Grand Promenade and Alexander Drive, the land use shows established low-density residential dwellings. Nearby community facilities include Our Lady's Assumption Catholic Church & School and the Stirling Libraries Dianella. Figure 1 presents the project location and the nearest noise-sensitive receivers.

Figure 1: Project Location and the nearest noise-sensitive receivers



Source: Google maps

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2 ACOUSTIC CRITERIA

2.1 WA ENVIRONMENTAL PROTECTION(NOISE) REGULATIONS 1997

Environmental noise emissions resulting from the development are addressed through the *Environmental Protection Act 1986* with the prescribed standards detailed in the *Environmental Protection (Noise) Regulations 1997* (WA EPNR). The regulations are based on maximum allowable noise levels termed the 'assigned noise level".

According to the EPNR, noise emissions from any premises are deemed not to significantly impact the receiver if the emissions are 5 dB or less below the assigned levels. In summary, assigned noise levels are set by evaluating the presence of commercial and industrial zones, major transport routes, and sporting venues around noise-sensitive premises.

The assigned levels apply at premises receiving the noise (noise sensitive receiver) and not to areas within the project site or lot. In addition, the Environmental Protection (Noise) Regulations 1997 identify the following in Schedule 3, clause 2A.

- *"If the land within either of the circles is categorised on the land use map as land in respect of which mixed uses are permitted, the use of that land that results in the highest influencing factor is to be used in the determination of the influencing factor."*

City of Stirling online mapping system (Local Planning Scheme No. 4) has been used to ascertain land use. Based on these maps the influencing factor at the nearest noise sensitive receivers has been calculated,

The nearest noise sensitive receivers have been identified as detailed below and shown in Figure 1.

- 356 and 361 to 371 Grand Promenade, Dianella WA 6059
- 22 Meldon Way, Dianella WA 6059

Traffic data for roads surrounding the nearest noise sensitive receiver were obtained from Main Roads Western Australia (MRWA). Table 1 presents the traffic data of the nearby roads.

Table 1: Traffic Data (Main Roads WA)

ROAD	WA EPNR CLASSIFICATION	ANNUAL AVERAGE DAILY TRAFFIC VOLUMES / YEAR
Grand Promenade (North of Alexander Dr)	Major Road	16,346 (2021 -22)
Alexander Dr (South of Reid Hwy)	Major Road	34,672 (2024 -25)

The corresponding influencing factor for results from identifying major/secondary roads, commercial and industrial areas for the nearest noise sensitive receivers is detailed in Table 2. The zoning maps used for the calculation of influencing factor showing the land use types has been presented in Figure 2 to 5.

Table 2: Influencing factor (IF) at noise sensitive receiver

NOISE SENSITIVE RECIEVERS	COMMERCIAL	INDUSTRIAL	Roads	INFLUENCING FACTOR
361 to 371 Grand Promenade	20 % within 100m radius 11 % within 450m radius	0 % within 100m radius 0 % within 450m radius	Grand Promenade within 100m	8 dB

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Figure 2: Zoning map for the project and surrounding areas



Source: City of Stirling Intramaps

2.1.1 Assigned Noise Levels – Noise Sensitive Receivers

Table 3 summarises the assigned levels at the nearest noise sensitive receivers. All noise emissions from the development are below the assigned level criteria for all defined periods of the day and at the lot boundary of the receiver or 15m from any associated building.

Table 3: Assigned levels

TYPE OF PREMISES RECEIVING NOISE	TIME OF DAY	ASSIGNED LEVEL (DB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: Highly sensitive area	0700 to 1900 hours Monday to Saturday	53	63	73
	0900 to 1900 hours Sunday & public holidays	48	58	73
	1900 to 2200 hours all days	48	58	63
	2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays	43	53	63

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The assigned noise levels for the commercial receivers are presented in Table 4.

Table 4: Assigned levels – Commercial receivers

TYPE OF PREMISES RECEIVING NOISE	TIME OF DAY	ASSIGNED LEVEL (DB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: any area other than highly sensitive areas	All Hours	60	75	80
Commercial premises	All Hours	60	75	80
Industrial and utility premises	All Hours	65	80	90

2.1.1 Noise Character Adjustments

Regulation 7 of WA EPNR 1997, states that the noise character must be "free" of annoying characteristics, namely

- Tonality, e.g. whining, droning;
- Modulation, e.g. like a siren; and
- Impulsiveness, e.g. banging, thumping.

Regulation 9 (1) establishes the methodology for determining noise characteristics. If these characteristics cannot be reasonably and practicably removed, a series of adjustments to the measured levels are required, indicated in Table 3.

Table 3: Noise character adjustment

ADJUSTMENT WHERE NOISE EMISSION IS NOT MUSIC THESE ADJUSTMENTS ARE CUMULATIVE TO A MAXIMUM OF 15 DB			ADJUSTMENT WHERE NOISE EMISSION IS MUSIC	
Where tonality is present	Where modulation is present	Where impulsiveness is present	Where impulsiveness is not present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB	+ 10 dB	+ 15 dB

Should music noise from the project become audible at the receiving locations, a +10/15 dB adjustment will be required, likely resulting in non-compliance to the EPNR.

2.1.2 Mechanical Services Noise Emissions

Mechanical equipment serving the project is required to meet the assigned levels of the EPNR at the nearest sensitive receivers. It is important that noise emissions from the site do not present any form of tonality, modulation or impulsiveness (as defined by the EPNR).

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3 NOISE EMISSIONS

The noise emitting sources from this development are:

- Loading dock and truck movements
- Car activities at Click & Collect
- Mechanical Plant

3.1 Modelling Parameters

Sound Plan9.0 has been used to develop a 3D model of the project site and the surrounding receivers to predict noise emissions from the project. Latest architectural drawings provided by DKO Architects were used to ascertain the layout and built form of the project in developing the acoustic model.

3.1.1 Algorithm and Meteorological Conditions

The CONCAWE algorithm was adopted to model the meteorological conditions outlined below in Table 4. The selected parameters represent conservative, worst-case scenarios that favour sound propagation, in line with the *Draft Guideline: Environmental Noise for Prescribed Premises, WA Department of Environment Regulation, 2016.*

Table 4: CONCAWE model input parameters for meteorological conditions

METEOROLOGICAL CONDITIONS	DAYTIME (0700-2200)	NIGHTTIME (2200-0700)
Wind Speed	4 m/s	3 m/s
Wind Direction	Source to Receiver	Source to Receiver
Temperature	20°C	15°C
Relative Humidity	50	50
Pasquill Stability Class	E	F

3.1.2 Topography

Terrain contours were sourced from *Geoscience Australia, Digital Elevation Model (DEM) 1 Metre Grid of Australia derived from LiDAR, 2015.*

A ground absorption condition of 0.6 has been applied in the modelling to represent typical suburban conditions. This value reflects a mix of ground surfaces, positioned between soft, absorptive ground (represented by 1.0) and hard, reflective ground (represented by 0.0).

3.1.3 Receivers

All noise receivers were located at 1.2m above ground level at each floor and 1m away from buildings associated with highly sensitive uses.

3.1.4 Assessment Criteria

Assessment of each noise source against the WA EPNR criteria (L_{A10}, L_{A1}, or L_{Amax}) is proportional to the period of the day, and the combined frequency and duration of each noise event. L_{A10} represents the assessment criteria for noise emissions which lasts for 10% or greater of the representative assessment period.

Noise levels referred to in this assessment are statistical in nature, meaning the time period used to determine them is an important factor. The WA EPNR defines the Representative Assessment Period as a 15-minute to 4-hour interval selected by an authorised officer, based on the type and nature of the noise. Such officers,

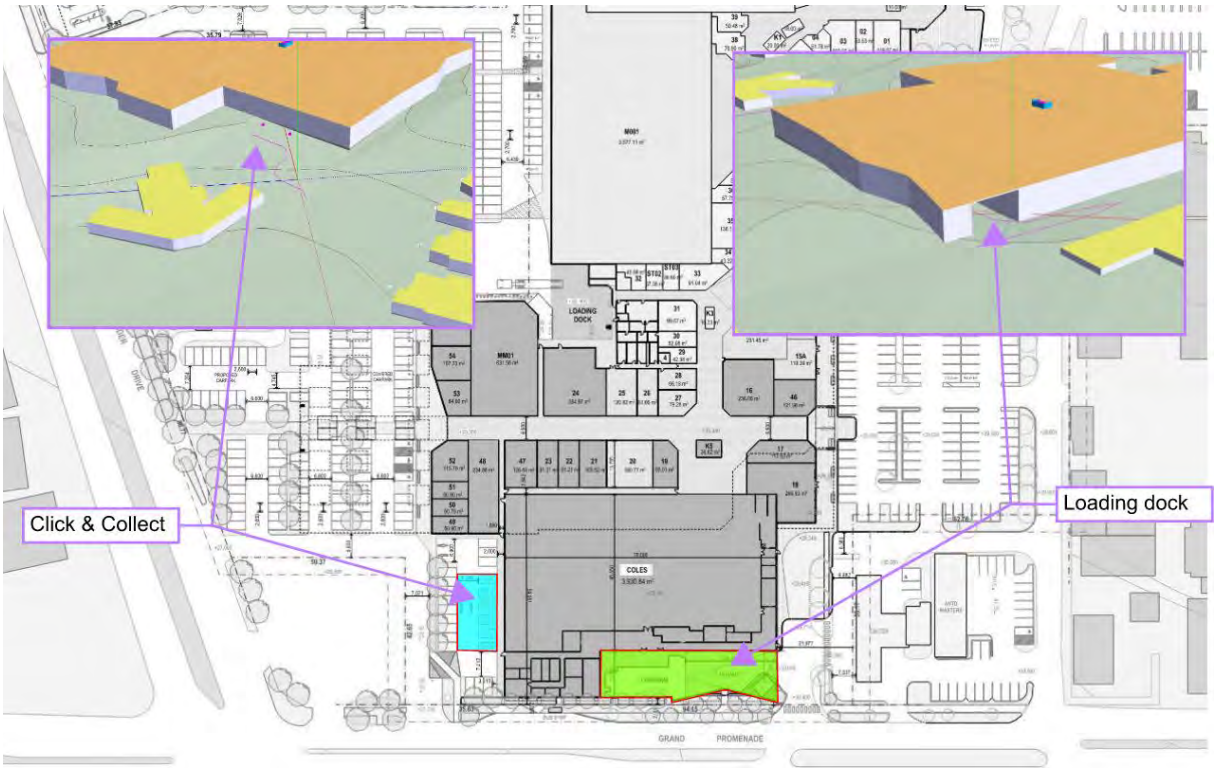
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appointed under the Environmental Protection Act 1986 (Sections 87-88), include Environmental Health Officers and Department of Environment Regulation staff. Accordingly, this assessment applies a 4-hour representative assessment period considered appropriate for the operations associated to this development due to intermittent nature of noise emissions.

3.1.5 Loading Dock

Noise emissions from the loading dock are required to be compliant to the assigned levels outlined in the EPNR. The project has an enclosed loading dock, located at the southern boundary of the site, opposite to the existing fuel station. The location of loading dock on the architectural plan is presented in Figure 3.

Figure 3: Architectural plan and 3D model showing loading dock and Click & Collect



Source – DKO Architects

Noise emissions associated with the loading dock primarily arise from truck manoeuvring, loading and unloading activities, and waste compactor operations. A conservative assessment approach has been adopted, with loading dock noise emissions evaluated against the L_{A10} criterion to represent typical operational conditions. The acoustic model incorporates a large 19 m articulated truck and the waste compactor as the representative noise sources serving the loading dock.

3.1.6 Click & Collect

The Click & Collect facility is located at the southwestern boundary facing Alexander Drive, as shown in Figure 3. For the Click & Collect, vehicle noise such as car movements and car idling is expected to occur more frequently, representing approximately 10% of the representative period. Therefore, emissions from this activity have been assessed using the L_{A10} criterion.

Car door closing is a single noise event and expected from the cars parked in the designated parking bays of the Click & Collect. Considering the low probability of occurrence and nature of this noise event, car door closing has been assessed to L_{Amax} criteria.

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3.1.7 Operational Schedule

The working hours and delivery schedules of the trucks for the loading bay are yet to be confirmed. The following operating schedule listed below have been assumed for the assessment.

- Loading Dock – Monday to Sunday, 24/7
- Click & Collect – Monday to Friday, 8:00am-09:00pm; Saturday and Sunday, 8:00am-05:00pm

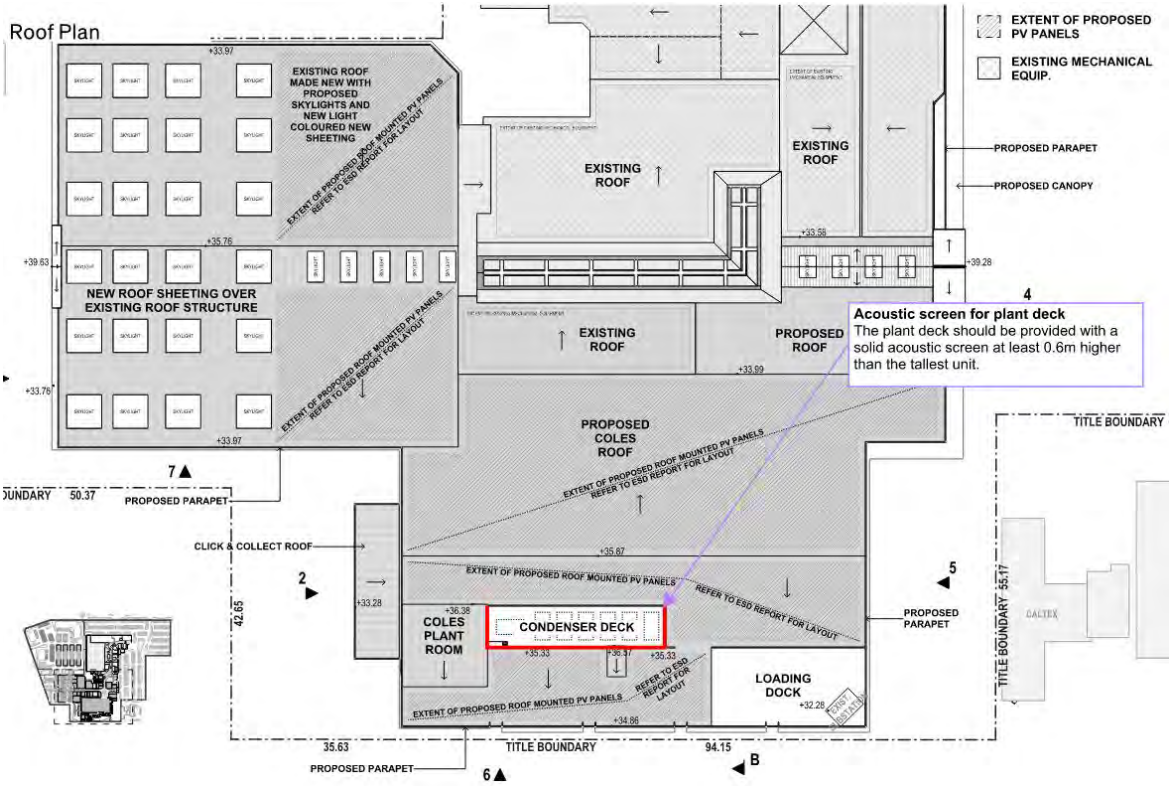
3.1.8 Mechanical Plant

The mechanical plant associated with the project comprises the outdoor air-conditioning units and refrigeration condensers, which have been modelled on the roof-top of the building. In the acoustic model, the plant has been assumed to be enclosed by acoustic screening on three sides, as presented in Figure 4.

The acoustic screen is required to be solid, continuous, minimum 14 kg/m^2 surface mass, and extend to a height of at least 0.6 m above the tallest unit on the plant deck.

Figure 4 presents the roof plan markup, showing the extent of the acoustic screening and the anticipated locations of the mechanical plant equipment.

Figure 4: Architectural plan showing required acoustic screening for mechanical plant



Source – DKO Architects

The noise emissions from the mechanical plant in this project primarily include contributions from outdoor air conditioning units and refrigeration condensers. These sources are expected to operate on a frequent basis, representing approximately 10% of the representative assessment period. Accordingly, noise emissions from these activities have been assessed against the L_{A10} criterion.

It is noted that, as the final equipment selection and control strategy for the refrigeration systems are yet to be confirmed, and the current assessment is based on typical sound power levels from E-LAB's technical library for supermarket refrigeration systems, following assumptions have been made in the assessment:

- Day & Evening - Equipment operational at full load
- Night – Equipment operates at 50% duty due to reduced demand

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3.1.9 Sound Level Data

Sound power level data of the selected noise sources used in the model are presented in Table 5. It should be noted that the sound power levels for the mechanical equipment are based on preliminary equipment selections and information sourced from the E-LAB's technical library.

Noise generated by truck movements and related operations in loading docks typically consists of a mix of continuous and intermittent noise events, including:

- Engine noise (such as ignition, idling, acceleration, and deceleration), reversing alarms, brake squeals, and compression release noises.
- Unloading activities involving forklifts and pallet trucks.
- Noise from hydraulic lifts.

Table 5: Sound power levels

NOISE SOURCE	SOUND POWER LEVEL, dB(A)
Large trucks (19m) – arrival or departure movements	102
Large trucks (19m) – Unloading activities	95
Waste compactor	89
Car idling (Click &Collect)	79
Car movements (Click &Collect)	90
Car door closing (Click &Collect)	85
Outdoor AC condenser units x2[1]	79
Refrigeration condenser units x4[1]	86

1. Assumed data as mechanical equipment details unavailable at DA stage

3.2 Predicted Noise Emissions

The predicted noise levels from the L_{A10} assessment that includes loading dock, mechanical plant, Click & Collect noise sources, are presented in Table 6. Appendix A presents the coloured noise contours for the L_{A10} assessment.

Table 6: Predicted noise emissions – Loading Dock, Mechanical Plant and Click & Collect

NOISE SENSITIVE RECEIVER	HIGHEST PREDICTED NOISE EMISSION L_{A10} dB(A)	CRITERIA L_{A10} dB(A)			COMPLIANCE
		DAY	EVENING	NIGHT	
361 to 371 Grand Promenade, Dianella	43	53	48	43	YES
22 Meldon Way, Dianella	32	53	48	43	YES
356 Grand Promenade, Dianella (Church)	47	53	48	N/A	YES

1. Inclusive of 5 dB penalty for tonality associated with the mechanical units.

Table 7 presents the predicted noise levels for L_{Amax} assessment that include all the noise emitting sources including car door closing.

Table 7: Predicted noise emissions – Car door closing, LAmax assessment

NOISE SENSITIVE RECEIVER	HIGHEST PREDICTED NOISE EMISSION L_{Amax} dB(A)	CRITERIA L_{Amax} dB(A)			COMPLIANCE
		DAY	EVENING	NIGHT	
361 to 371 Grand Promenade, Dianella	53	73	63	63	YES
22 Meldon Way, Dianella	51	73	63	63	YES
356 Grand Promenade, Dianella (Church)	55	73	63	N/A	YES

1. Inclusive of a 10 dB penalty for impulsiveness.

3.2.1 Discussion

The predicted noise emissions from all assessed sources, evaluated against their respective criteria, are expected to comply with the requirements of WA EPNR during all assessment periods, i.e. daytime, evening, and night-time.

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4 CONCLUSION

E-Lab consulting was commissioned by The App Group to undertake an acoustic assessment for the proposed development of Coles Supermarket within the Dianella Plaza, located at 366 Grand Promenade, Dianella WA 6059. The development comprises the relocation and construction of a Coles supermarket, features with Click & Collect facility and an enclosed loading dock.

This Acoustic report has been prepared as part of Development Application for the proposed development at 366 Grand Promenade, Dianella WA 6059. The following acoustic assessment has been undertaken, and recommendations are made to achieve compliance with:

- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

The following noise emitting sources were considered in the assessment:

- Loading dock and truck movements
- Car activities at Click & Collect
- Mechanical Plant

Sound Plan9.0 along with CONCAWE algorithm has been used to develop a 3D model of the project site and the surrounding receivers to predict noise emissions from the project.

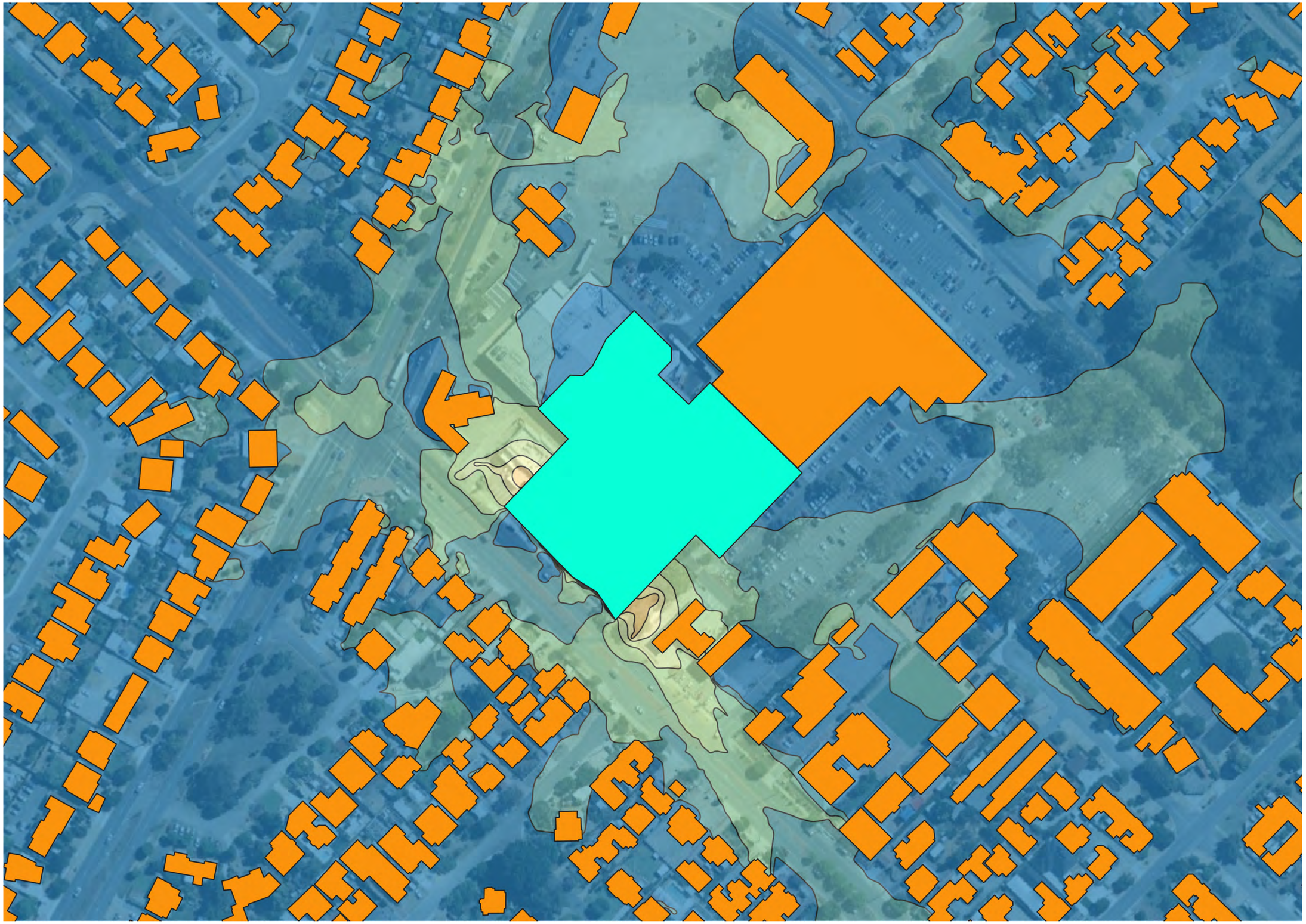
Noise emissions from the above-mentioned noise sources of the project are predicted to comply with their respective assessment criteria.

In summary, in view of the available information and assumptions adopted in the report, it is considered that the development will be able to comply with the WA Environmental Protection (Noise) Regulations 1997.

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Appendix A **Noise Contours**

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E-LAB CONSULTING

ISSUE	DATE	STATUS
1	02/02/2026	For Information

LEGEND

Noise Level - L_{A10} dB(A)

- 33
- 38
- 43
- 48
- 53
- 58
- 63
- 68
- 73
- 78

Surrounding Buildings

Project Building

PROJECT
DIANELLA PLAZA

PROJECT NO.
P02779

ARCHITECT
DKO ARCHITECTS

CLIENT
THE APP GROUP

SCALE
NTS

STATUS
ISSUE FOR INFORMATION

DRAWING
GRID NOISE MAP - LA10 ASSESSMENT (LOADING DOCK + MECHANICAL PLANT + CLICK & COLLECT)

DISCIPLINE
ACOUSTICS

DRAWING NUMBER
AC-DWG-100-01-01

REVISION
001

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PJA

Green Pool Capital

Dianella Plaza Stage 1

Transport Impact Assessment

February 2026

Project Code: 8052

Document Reference: R_01

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Version Control and Approval

Version	Date	Main Contributor	Issued by	Approved by
A - Draft	16 December 2025	Gary Soo	Rodney Ding	Simon Davies
B – Final Address comments	03 February 2026	Rodney Ding	Rodney Ding	Rodney Ding
C – Final Address comments	06 February 2026	Rodney Ding	Rodney Ding	Rodney Ding
D – Final Final edits	10 February 2026	Rodney Ding	Rodney Ding	Rodney Ding
E – Final Update two figures	26 February 2026	Rodney Ding	Rodney Ding	Rodney Ding

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Appendices

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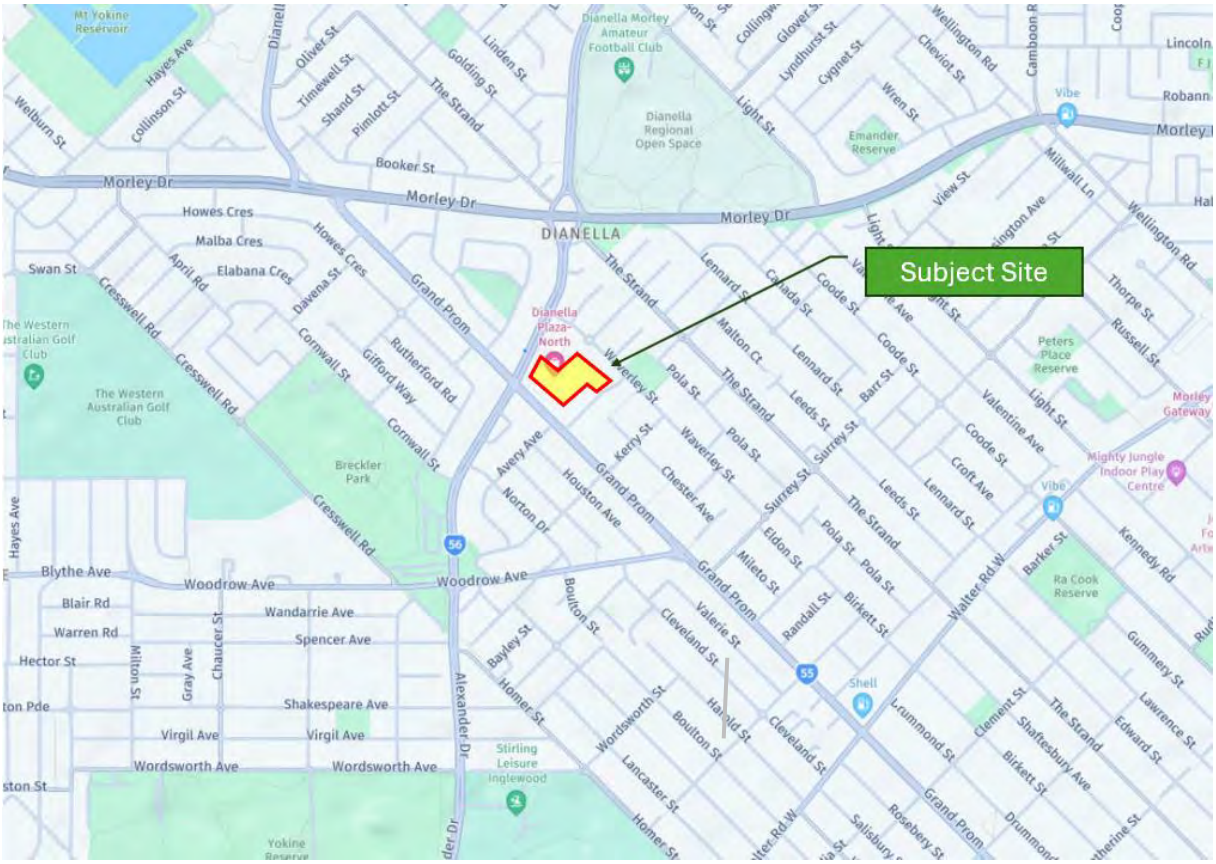
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1 Introduction

1.1 Background

PJA Australia has been commissioned by Green Pool Capital to prepare this Transport Impact Assessment (TIA) in relation to the proposed Stage 1 relocation of the Coles store at the south of the Dianella Plaza (Site), Dianella, WA. The location of the Site in relation to the wider and the immediate surrounding road network is shown in **Figure 1-1.**

Figure 1-1: Site Location



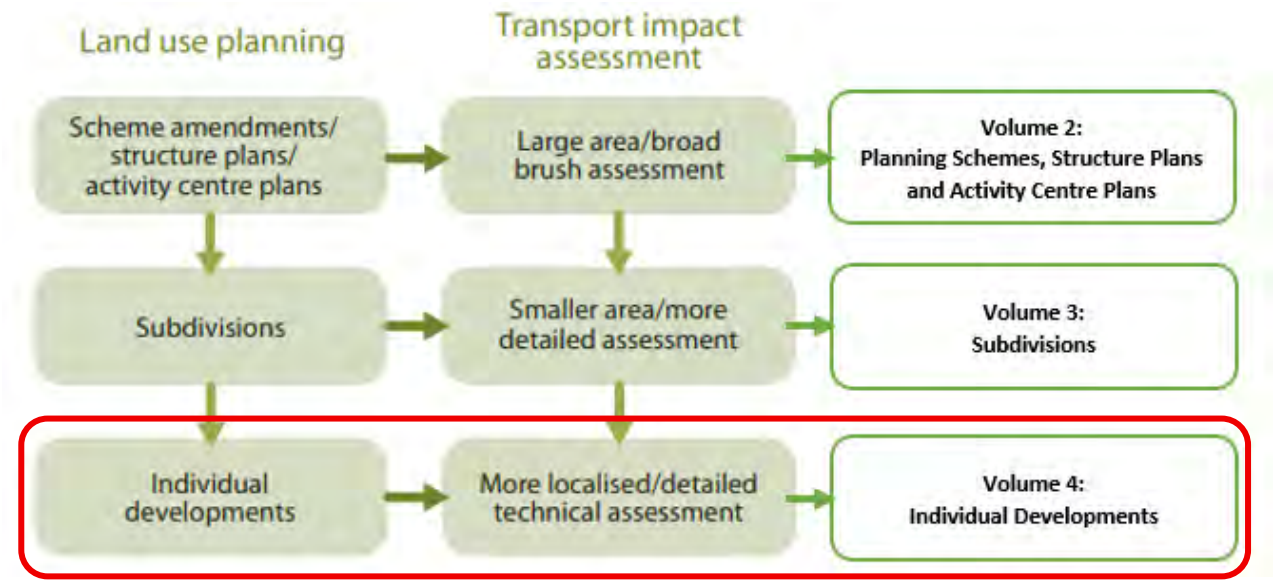
Source: Nearmap

1.2 Purpose of a Transport Impact Assessment

The planning system in Western Australia stipulates that all developments go through a process of stages to ensure that the statutory planning is consistent with the strategic planning. A more detailed assessment of the transport networks for developments is required within the land use planning stages. The Western Australian Planning Commission (WAPC) guidelines for a TIA shows the level of detail required at each stage as shown in **Figure 1-2.**

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Figure 1-2: WAPC Land Use / Transport Planning Process



Source: Western Australian Planning Commission (WAPC)

The proposed Coles store relocation forms part of a Development Application (DA) and would fall under *Volume 4* of the WAPC Guidelines. This means that the level of detail required at this stage allows for a *more localised/detailed technical* assessment of the existing and proposed transport networks to be undertaken.

The intent of this TIA is to "*demonstrate that the proposal is consistent with the overall structure and subdivision planning; provide a greater level of technical detail on the development and its immediate surrounds; and provide details of any transport issues specific to the development not covered in the subdivision assessment*".

The key components and extent of the analysis required of a TIA for an individual development are to "*assess the proposed access arrangements for all modes, that is, vehicle, public transport, pedestrian and cyclists; assess the level of transport integration between the development and the surrounding land uses; determine the impacts of the traffic generated by the development on the surrounding land uses; determine the impacts of the traffic generated by the development on the surrounding transport networks*".

The level of assessment required is dependent upon the number of vehicle trips the proposed development is considered to generate within the peak hour of the development. As detailed further in **Section 0**, the store relocation is considered to generate less than 100 additional vehicle trips within the peak hour where it is expected to have moderate impact only.

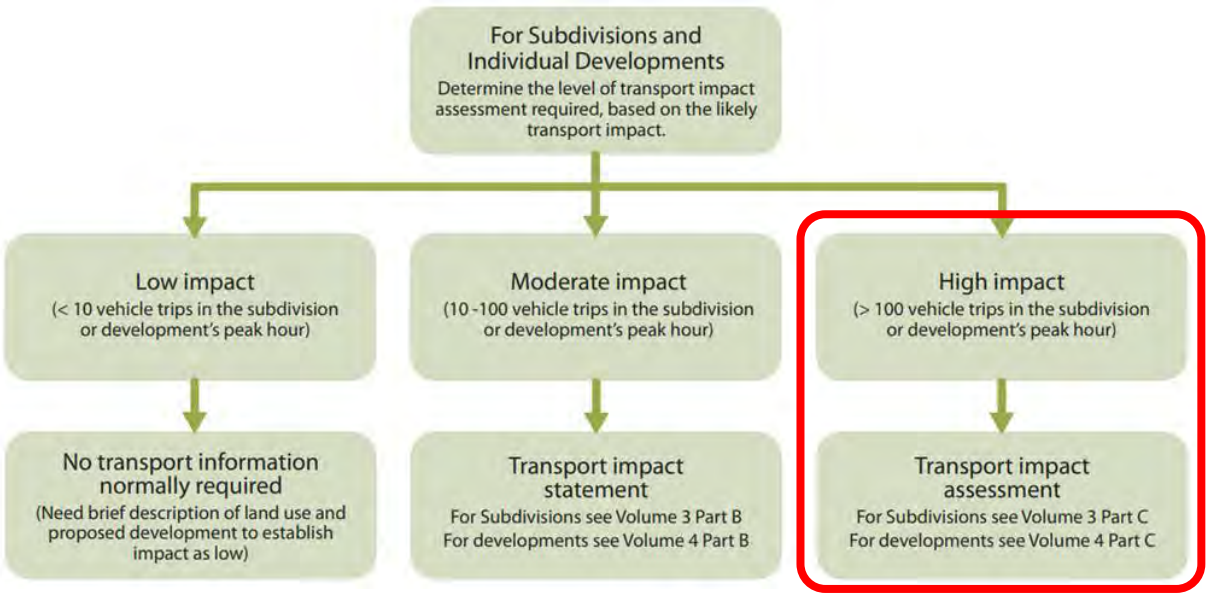
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However, the relocation will modify the internal road and car park layout. This will also impact the access into/out from the site. Therefore, the development requires a level of assessment associated with a high impact on the transport network as shown in **Figure 1-3**. Hence this TIA will follow *Part C* of the WAPC TIA Guidelines *Volume 4*, which outlines the area to be covered within this TIA as a minimum:

- *All sections of road where the development traffic would be likely to increase traffic on any lane by more than 100 vehicles per hour.*
- *All intersections where flows on any leg would increase by 10%, or any movement by 20%.*
- *Existing and proposed public transport routes.*
- *Pedestrian routes to the nearest bus stop (for all bus routes passing within 400 metres of the development).*
- *Pedestrian routes to the nearest train station(s), (if within 800 metres of the development).*
- *Pedestrian routes to any major attractors within 400 metres, (five-minute walk), of the development.*
- *Cycle routes to any major attractors within 1,200 metres, (five-minute cycle), of the development*.

The appropriate WAPC TIA checklist is provided in **Appendix A**.

Figure 1-3: Level of Transport Impact Assessment Required



Source: Western Australian Planning Commission (WAPC)

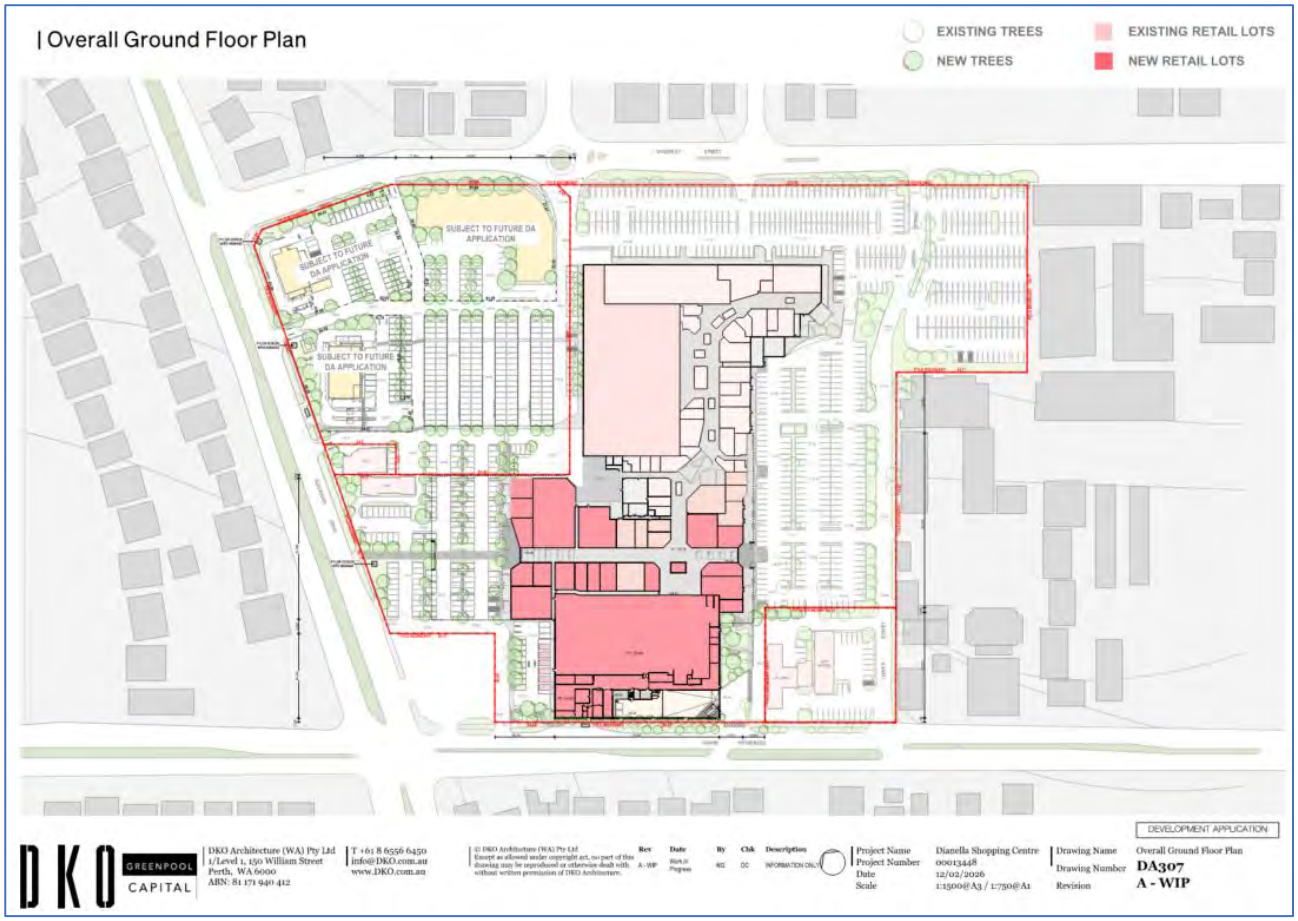
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1.3 Proposed Coles Store Relocation

The existing Coles store is currently residing at the western portion of the Dianella Plaza. It is proposed to be relocated to the southern portion of the centre, fronting Grand Promenade. The existing site is currently operational as a car park and restaurant pad site. Further details of the existing scale of facilities are provided in **Section 3** of this report.

This TIA report undertakes an analysis of the impact of the proposed relocation of Coles store, specifically the impact of the combined additional generated traffic on the immediate and surrounding road network and also the car park circulation.

Figure 1-4: Proposed Development Site Layout



Source: DKO

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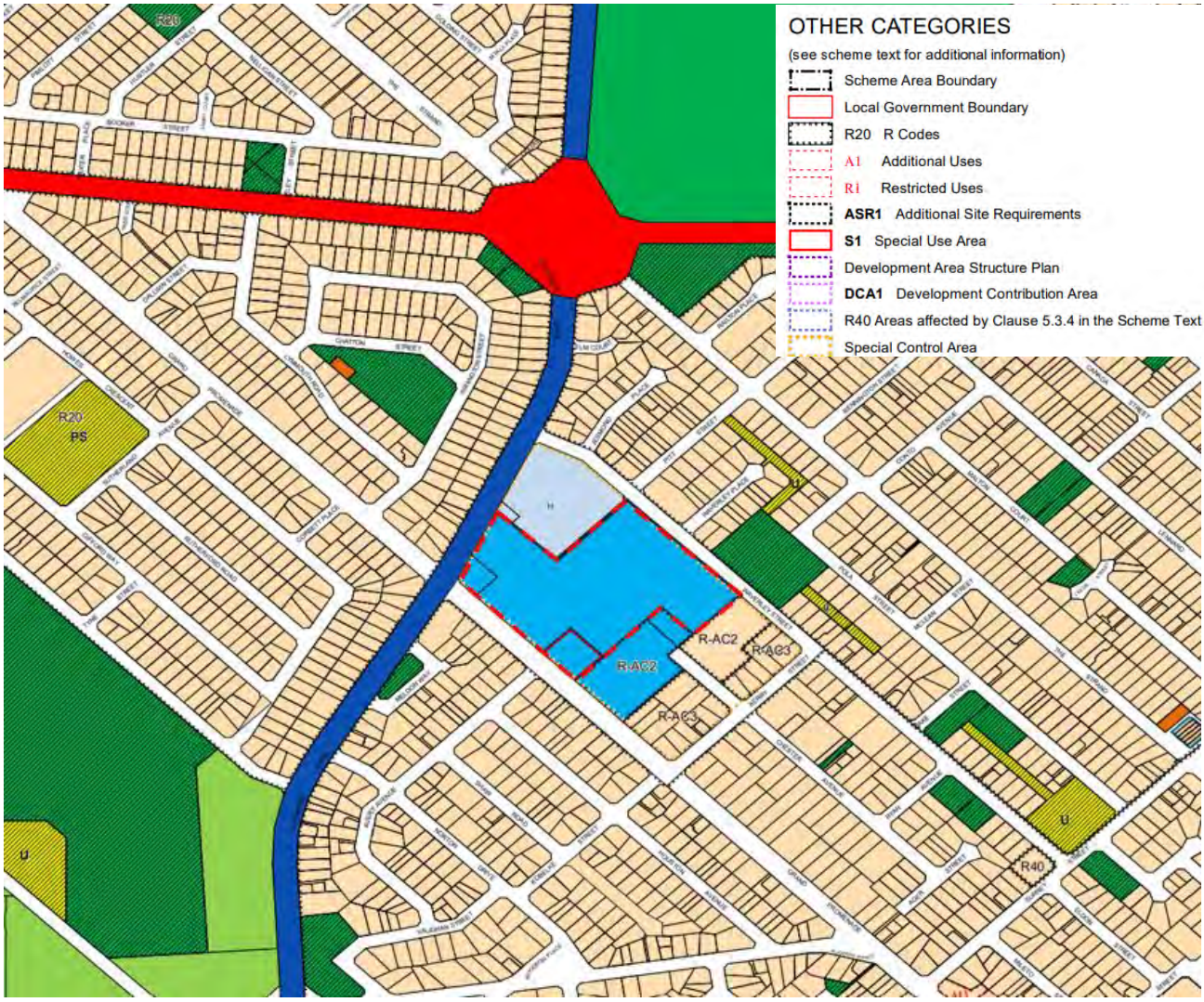
1.4 Planning Framework

1.4.1 Metropolitan Region Scheme

The Metropolitan Region Scheme (MRS) is the statutory land use planning scheme for the Perth Metropolitan Region. The principal functions are to reserve and zone land and control development. The MRS reflects the agreed strategic direction for land within the Metropolitan Region and is a catalyst for changes to planning controls at the local level and subsequent local area planning.

The Dianella District Centre is zoned as a 'Special Control Area' under the MRS, with the northwest corner zoned as 'Hotel'. Alexander Drive is reserved as 'Other Regional Roads' and nearby Morley Drive is a 'Primary Regional Road'.

Figure 1-5: Metropolitan Region Scheme – Dianella Locality South



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1.4.2 Directions 2031 and Beyond

Directions 2031 and Beyond: Metropolitan Planning Beyond the Horizon (Directions 2031), is a high level spatial framework and strategic plan for the Perth and Peel regions. It provides a framework for the detailed planning and delivery of housing, infrastructure and services necessary to accommodate growth up until 2031 and beyond.

Within the hierarchy of activity centres established by Directions 2031, Dianella is identified as a 'District Centre'. These centres are described in the following terms: "District town centres generally serve the main weekly household shopping, service and community needs of the district. They are predominantly retail focused but may also include a limited mix of other uses such as office, medical and professional services, hospitality and entertainment and housing. Some also include or are associated with civic, community and recreational facilities." This is also a very good description of the land uses presently in and around the Dianella Plaza Precinct.

1.4.3 Local Planning Scheme

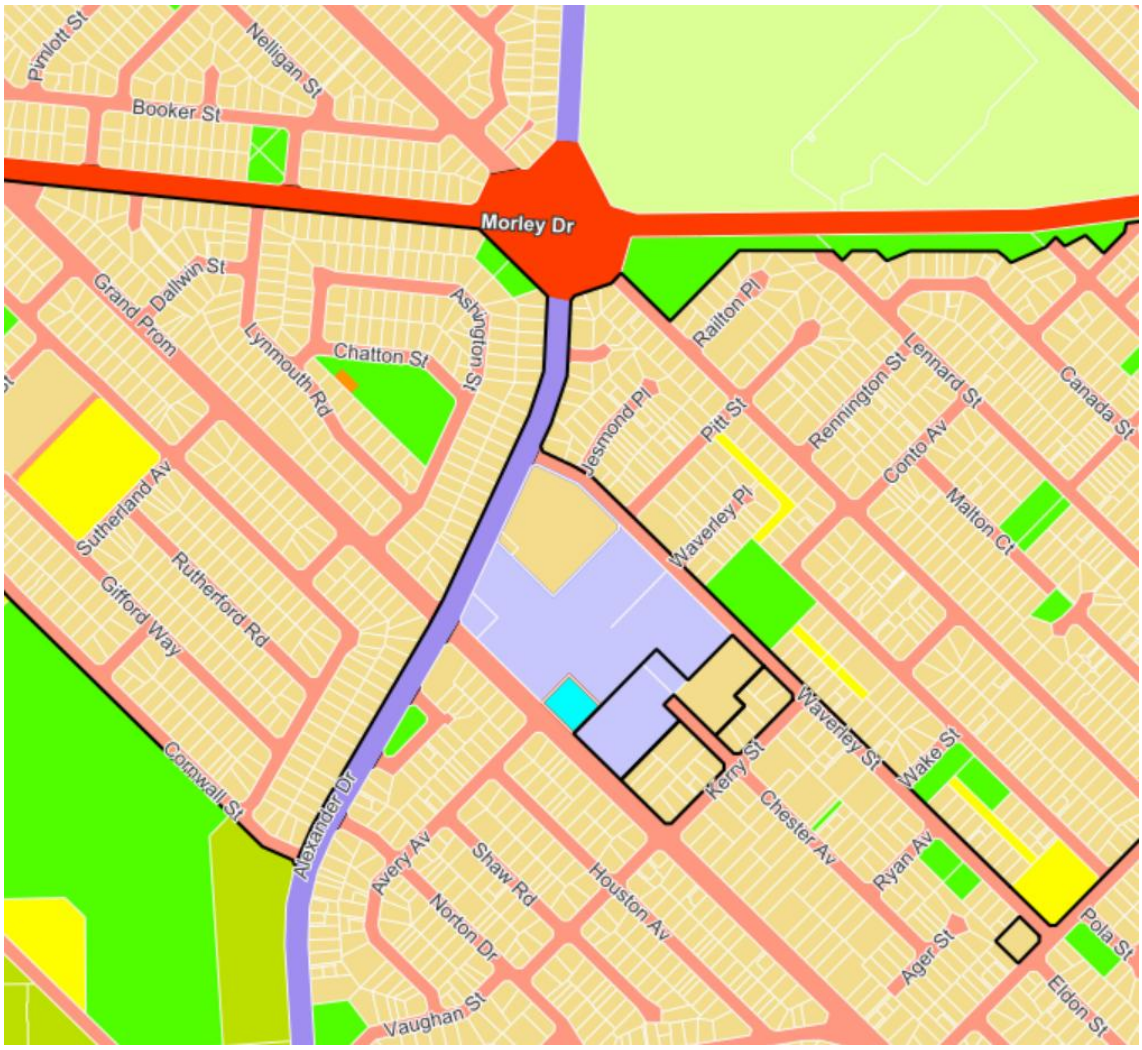
The City of Stirling Local Planning Scheme No. 3 (LPS3) zones the majority of the Dianella district centre as 'District Centre', within which a wide variety of appropriate land uses may be considered for approval. There are however, some significant sites within the centre that have quite restricted zoning, which may limit their ability to be redeveloped if necessary for the best arrangement and type of land uses to achieve a pleasant, diverse and legible centre. These are:

- The hotel site on the corner of Alexander Drive and Waverley Street. The 'Hotel' zone limits the range of uses permissible on this land.
- Service station adjacent to Our Lady's Assumption school, on Grand Promenade. This is zoned 'Service Station', which is a restricted use. Interestingly, the previous service station site on the corner of Alexander Drive and Grand Promenade is zoned 'District Centre'.
- Dianella Library, off Chester Avenue, and the Dianella Community Centre in Kerry Street are both designated Local Reserves for 'Civic' purposes. This would limit alternative uses of the land. Our Lady's Assumption school and church are zoned as 'Private Institution'. A limited range of uses may be considered within such a zone.

The surrounding residential area is Residential R30, R20 and R25. Figure 4 shows the zoning under the Local Planning Scheme. The implications of the applicable zones are the subject of further discussion in later sections of this report.

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Figure 1-6: City of Stirling Local Planning Scheme No. 3 – Site Zoning



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2 Existing Situation

2.1 Existing Site Context and Land Uses

The proposed Coles store relocation is located on car park to the south of the Site. The Site is part of the Dianella District Centre which includes several pad sites, such as fast-food restaurants. The existing Dianella District Centre is located on the corner of Alexander Drive and Waverley Street/Grand Promenade and is situated approximately 10km north of Perth city centre.

The Site is bounded by Waverley Road to the north, Grand Promenade to the south, Alexander Drive to the west and Our Lady's Assumption School / Stirling Libraries - Dianella to the east as shown in **Figure 2-1.**

Figure 2-1: Site Location



Source: Nearmap – October 2024

2.2 Car Parking Provision and Demand

PJA engaged *Matrix Traffic and Transport Data* (Matrix) to undertake a car park occupancy survey of the existing car park in 30-minute intervals. The occupancy survey is undertaken for the following periods:

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- Thursday 23 October 2025 : 2:00 pm – 7:00 pm
- Saturday 25 October 2025 : 10:00 am – 2:00 pm

The extent of the car park survey includes the car park around Dianella Plaza, pad sites and Stirling Libraries. The number of car parking bays around the site is shown in **Figure 2-2** and the analysis of car parking demands are shown in **Figure 2-3** and **Figure 2-4**.

Figure 2-2: Existing Parking Provision



Source: Google Map

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Figure 2-3: Existing Car Park Occupancy Survey Results on Thursday

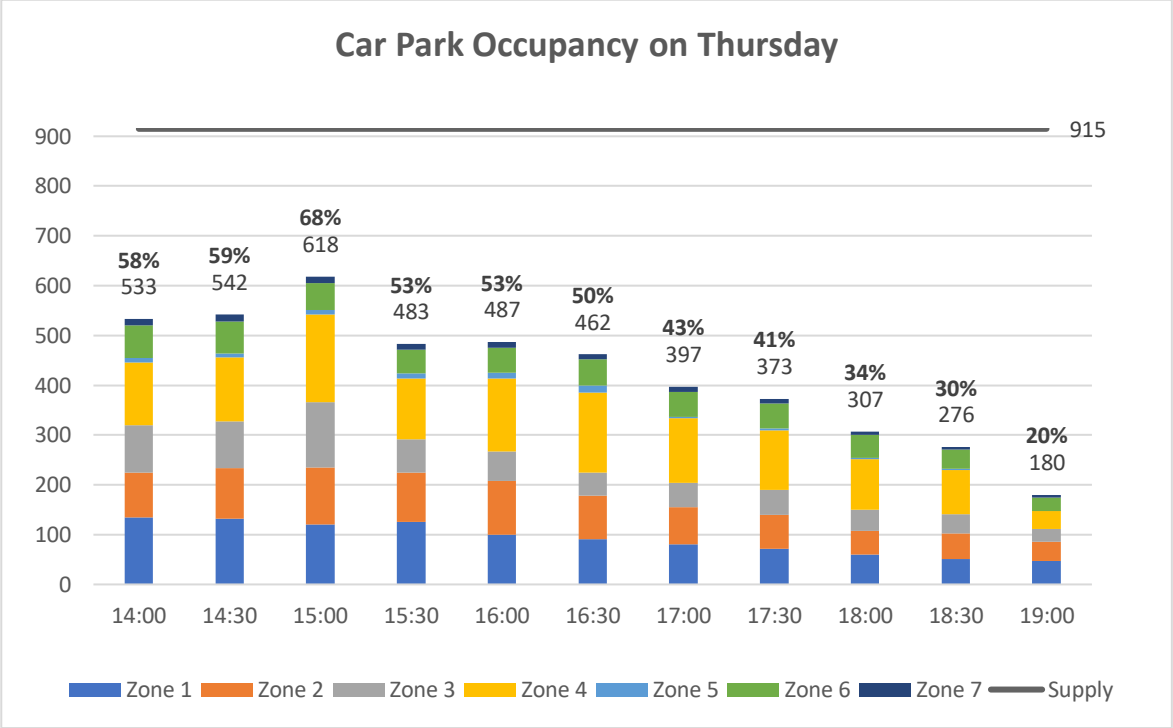
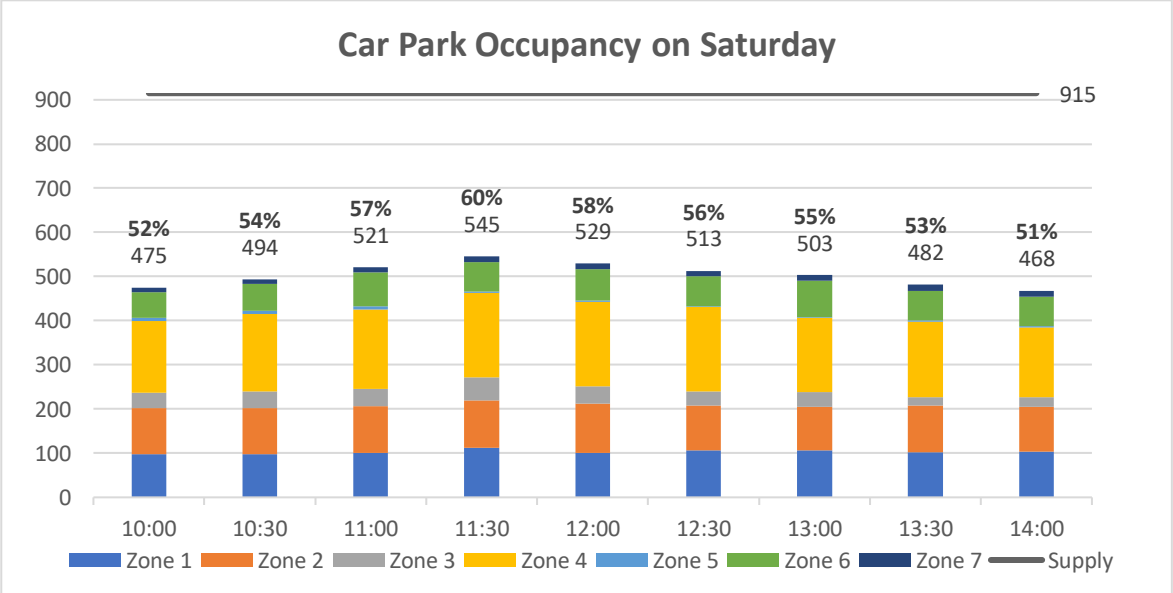


Figure 2-4: Existing Car Park Occupancy Survey Results on Saturday



The peak occupancy was observed at 3:00pm on Thursday and 11:30am on Saturday, where 68% and 60% respectively of the total supply was occupied. This indicates that there is a large supply surplus of 293/370 bays across the Dianella District Centre at peak parking demand.

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2.3 Bicycle Parking Provision

There is currently a rack of four and a rack of eight for bicycle parking around the entrances into the Dianella Plaza for a total of 18 spaces for bicycles.

2.4 Access Arrangements

The Site is currently accessible via Alexander Drive, Waverley Street and Grand Promenade. The existing access arrangements are shown in **Figure 2-5**.

Figure 2-5: Existing Dianella Plaza Access Arrangements



Base map source: Nearmap

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2.5 Traffic Generation

Based on the video survey undertaken for the Dianella District Centre as discussed in **Section 2.2**, the Daniella District Centre is generating approximately **1,213 vehicle trips in the Thursday PM peak (4:30 pm – 5:30pm)** and **1,400 vehicle trips in the Saturday mid-day peak (11:45 am – 12:45 pm)**.

2.6 Surrounding Road Network

Alexander Drive

In terms of the Metropolitan Road Hierarchy, Alexander Drive is classed as a District Distributor (A) road under the functional road hierarchy and an Other Regional Road (ORR or Blue Road) under the MRS. It is a four-lane divided road with two extra turning lanes at the intersection with Grand Promenade.

Left in, left out entry to the centre is available on the north-south carriageway of Alexander Drive. A median prevents right turns from the Centre.

Footpaths are provided on both sides of Alexander Drive with an informal mid-block pedestrian crossing point situated between Grand Promenade and Waverley Street at the location of the existing bus stops. Signal controlled crossings are available for pedestrian at the traffic signal intersection with Grand Promenade.

Grand Promenade

Grand Promenade is also classed as a District Distributor (A) road but it is not an ORR. It is a four-lane divided road with three median breaks providing access into the Centre for west bound vehicles turning right.

Footpaths are provided on both sides of Grand Promenade with an informal mid-block pedestrian crossing point situated between Alexander Drive and Kerry Street. Signal controlled crossings are available for pedestrian at the traffic signal intersection with Alexander Drive.

Waverley Street

Waverley Street is classified as a Local Distributor road hierarchy. Waverley Street is a two-lane undivided road with five access points serving the Centre. One of the access points forms a four-way roundabout with Pitt Street and Waverley Street.

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Kerry Street

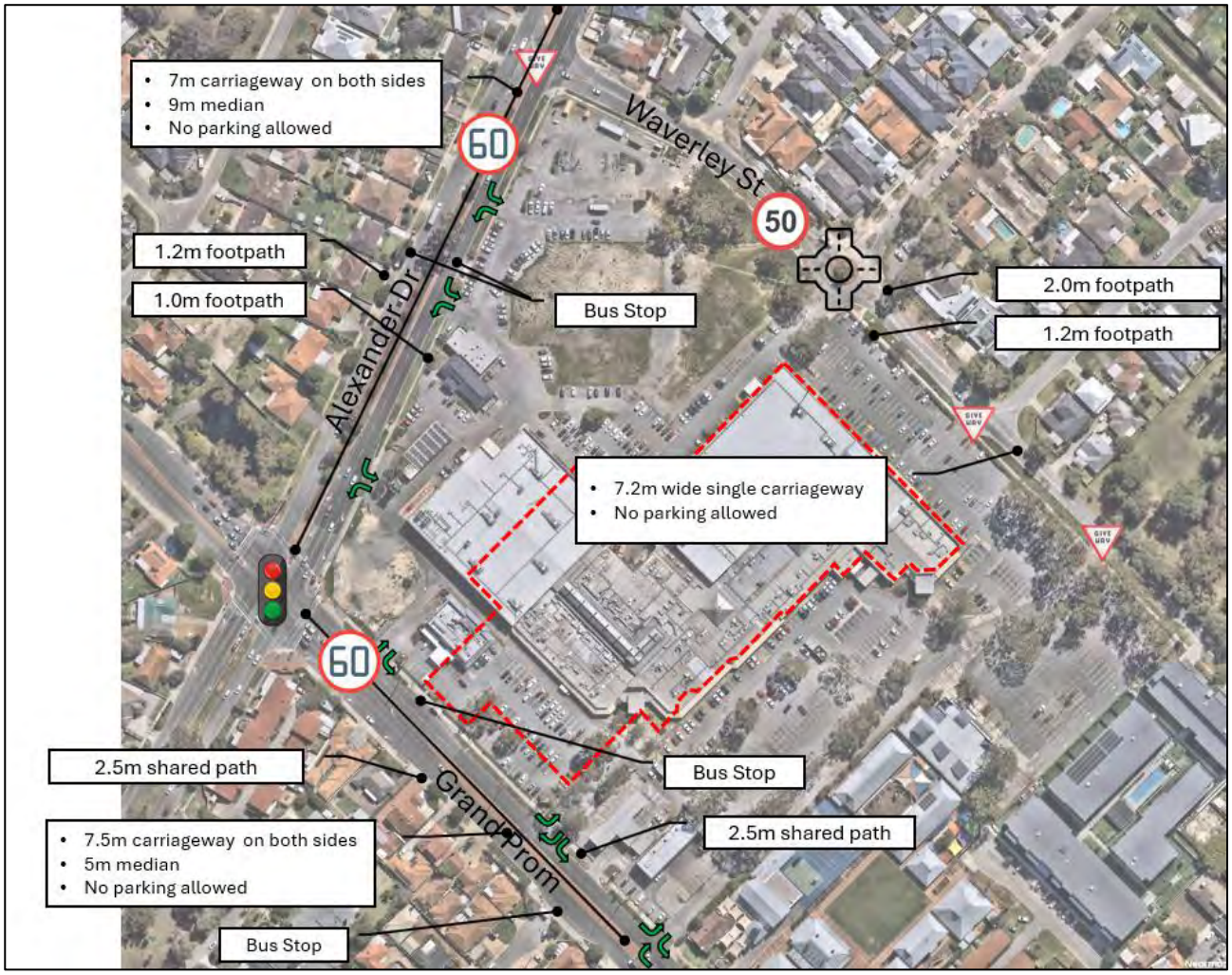
Kerry Street is classed an Access Road and is also a two-lane undivided road on the south-eastern boundary of the precinct which links Grand Promenade and Waverley Street. Kerry Street forms a t-intersection with Waverley Street and there is stop sign access control and a ban of right turn exits from Kerry Street into Grand Promenade.

Kerry Street also intersects Chester Avenue, which ends as a cul-de-sac at the Our Lady's Assumption primary school west of Kerry Street.

2.7 Traffic Management on Frontage Streets

The traffic management on frontage streets are summarised in **Figure 2-6**. Alexander Drive and Grand Promenade are dual carriageway with central medians while Waverley Street is an undivided single carriageway. Footpath or shared path are presented on both sides of these streets.

Figure 2-6: Traffic Management Fronting Site



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Base map source: Nearmap

2.8 Existing Traffic Volumes

2.8.1 MRWA Traffic Map – Alexander Drive and Grand Promenade

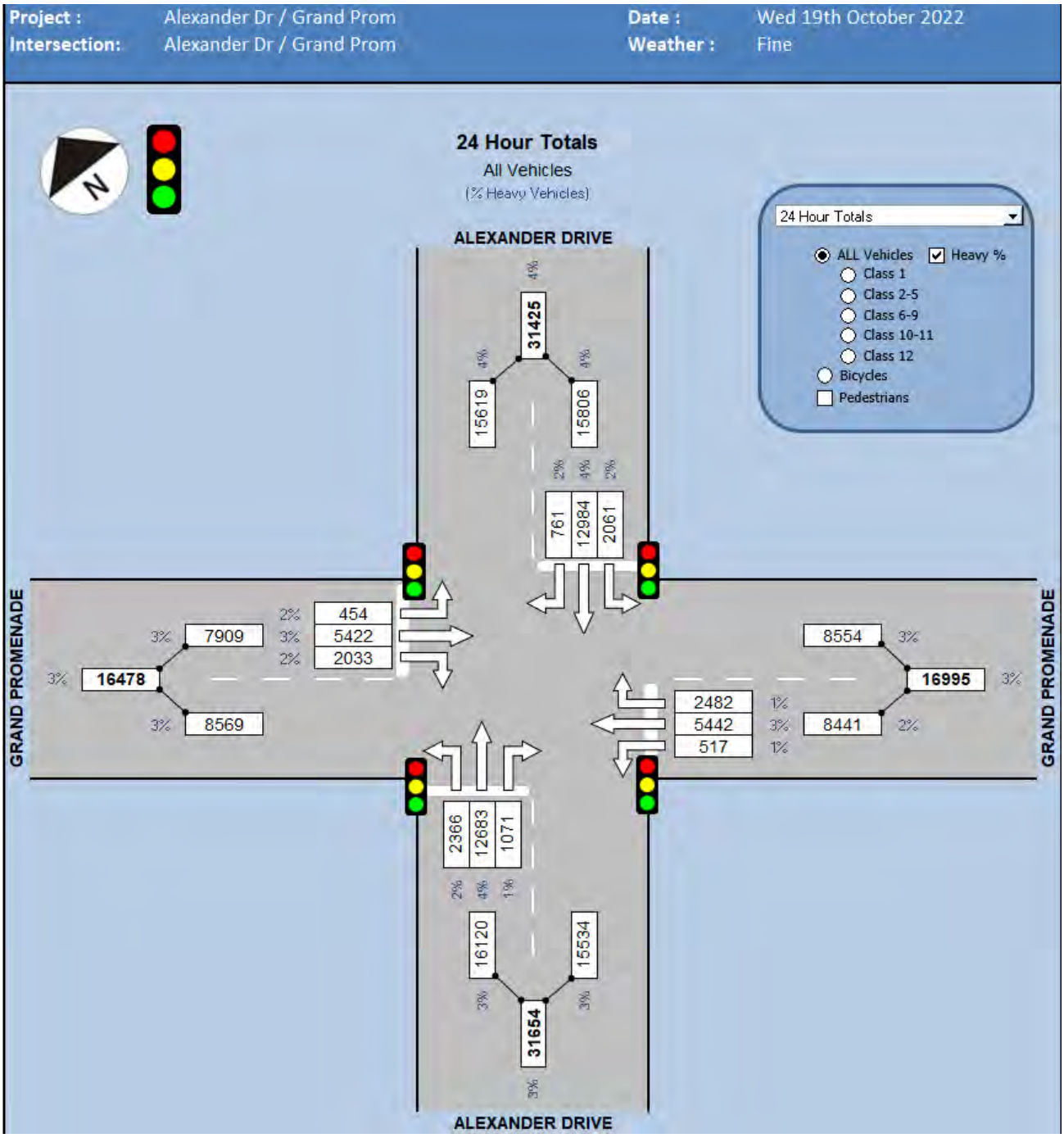
Alexander Drive intersects Grand Promenade as a signal controlled four-way intersection. As per video survey for the intersection dated 19 October 2022 on Main Roads WA Trafficmap shown in **Figure 2-7**, Alexander Drive is recorded as carrying 31,400 vehicles per day in 2022 (Monday to Friday average), with an average of 4% heavy vehicle composition.

Grand Promenade is recorded as carrying 17,000 vehicles per day in 2022 (Monday to Friday average) to the east of Alexander Drive and 16,500 vehicles per day to the west, with an average of 3% heavy vehicle composition.

The AM and PM peak hour periods at this intersection are 08:00 – 09:00 and 16:30 to 17:30 during the week. Alexander Drive carries approximately 2,500 vehicles per hour two-way in the AM peak and some 2,700 vehicles per day in the PM peak.

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Figure 2-7: 2022 Traffic Volumes – Intersection of Alexander Drive / Grand Promenade



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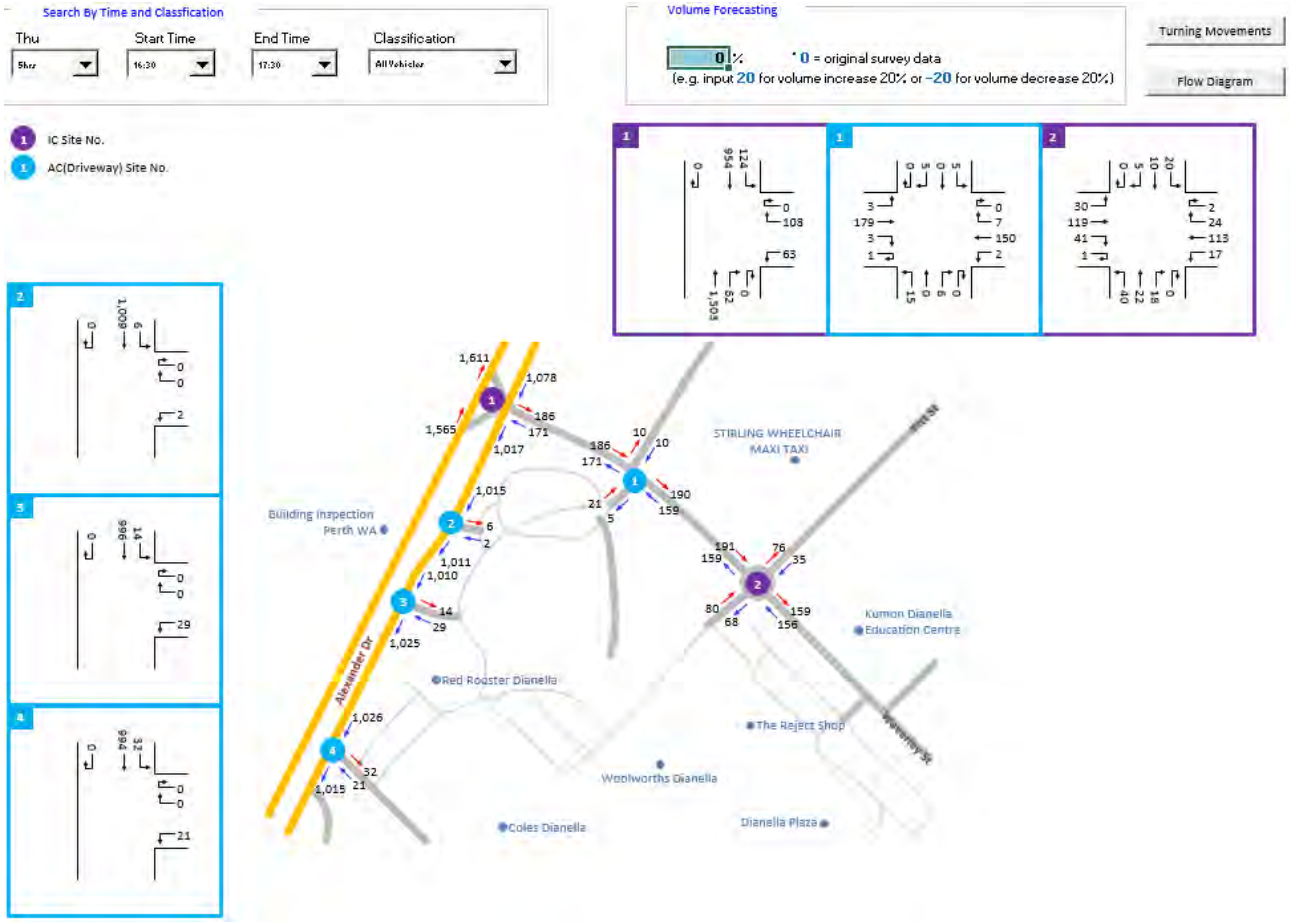
2.8.2 Surrounding Road Network

Matrix has also undertaken video surveys of the surrounding intersections to determine the existing volumes. The video survey is undertaken for the following periods:

- Thursday, 30 January 2025 (4:30pm – 5:30opm, **Figure 2-8**) & Saturday, 1 February 2025 (11:45am – 12:45pm, **Figure 2-9**)
  - Alexander Drive / Waverley Road
  - Waverley Street / Pitt Street / Site Access
  - Waverley Street / Jesmond Place (Access 1)
  - Alexander Drive / Access 2
  - Alexander Drive / Access 3
  - Alexander Drive / Access 4
- Thursday, 23 October 2025 (4:30pm – 5:30opm, **Figure 2-10**) & Saturday, 25 October 2025 (11:45am – 12:45pm, **Figure 2-11**)
  - Alexander Drive / Grand Promenade
  - Grand Promenade / Access 5
  - Grand Promenade / Access 6
  - Grand Promenade / Access 7
  - Grand Promenade / Access 8
  - Waverley Street / Access 9
  - Waverley Street / Access 10

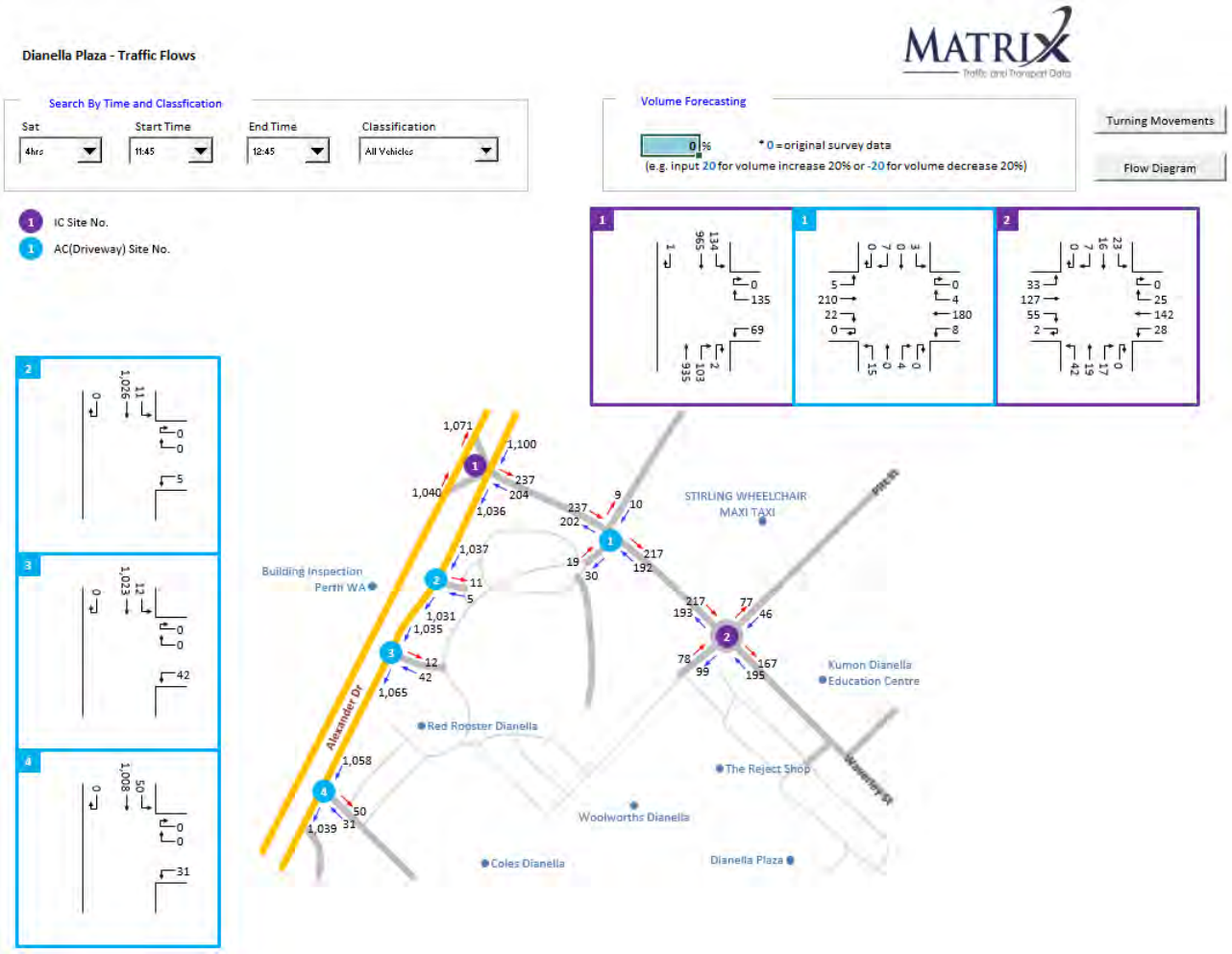
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Figure 2-8: Thursday, 30 January 2025 Existing Volumes



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Figure 2-9: Saturday, 1 February 2025 Existing Volumes



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Figure 2-10: Thursday, 23 October 2025 Existing Volumes

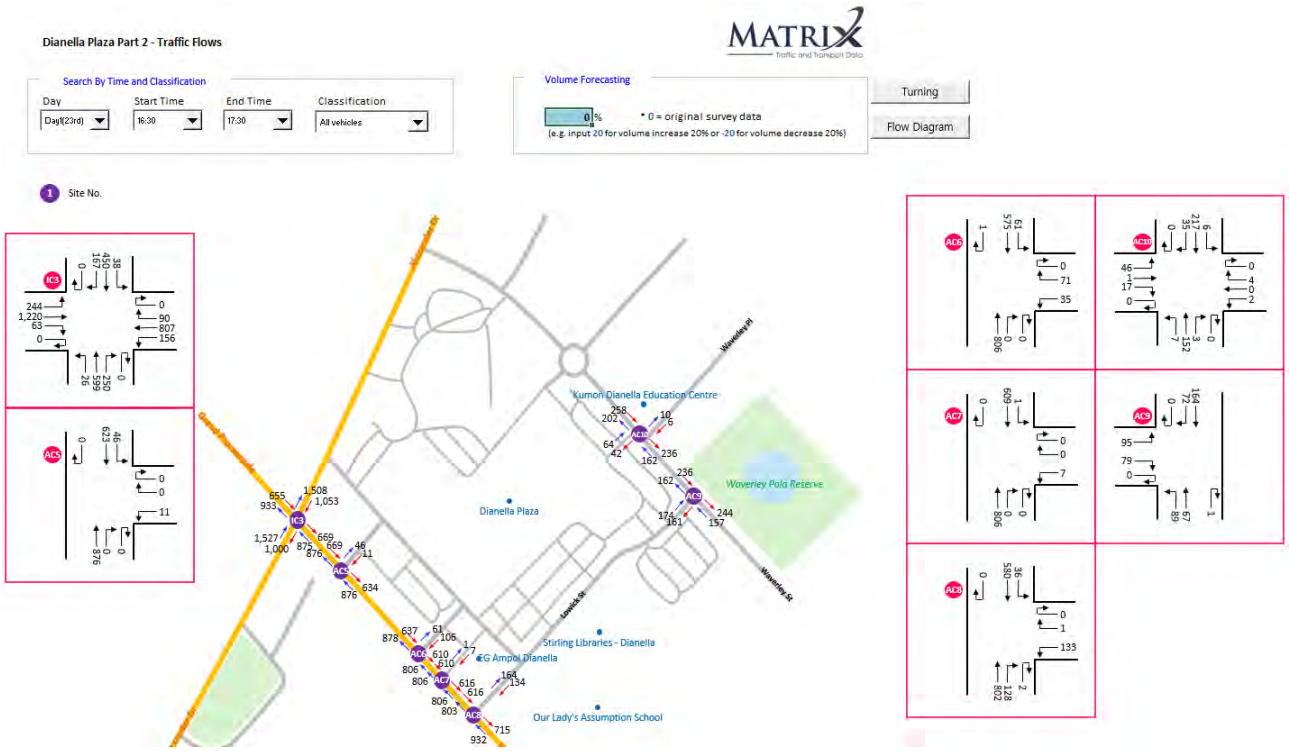
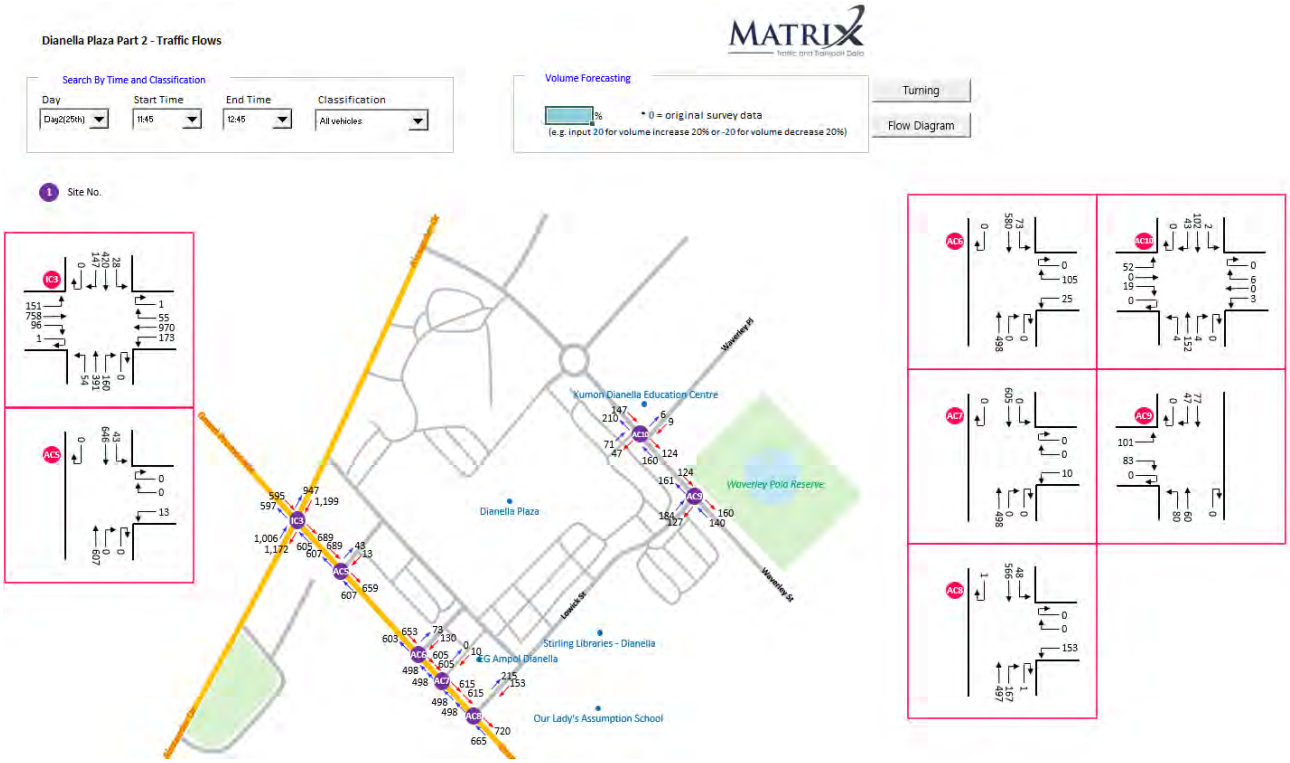


Figure 2-11: Saturday, 25 October 2025 Existing Volumes



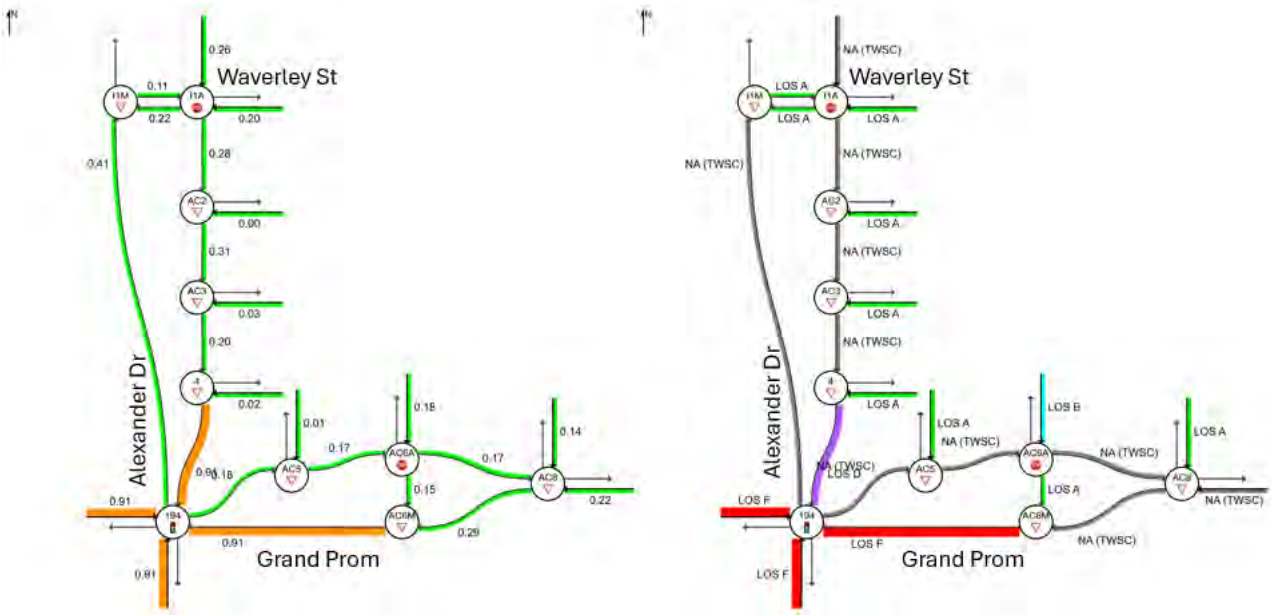
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2.9 Existing External Road Network - Traffic Modelling

SIDRA Intersection modelling of each of the following existing intersections/accesses has been undertaken to establish a baseline of the operation of the existing road network and the key intersections surrounding the Dianella District Centre site.

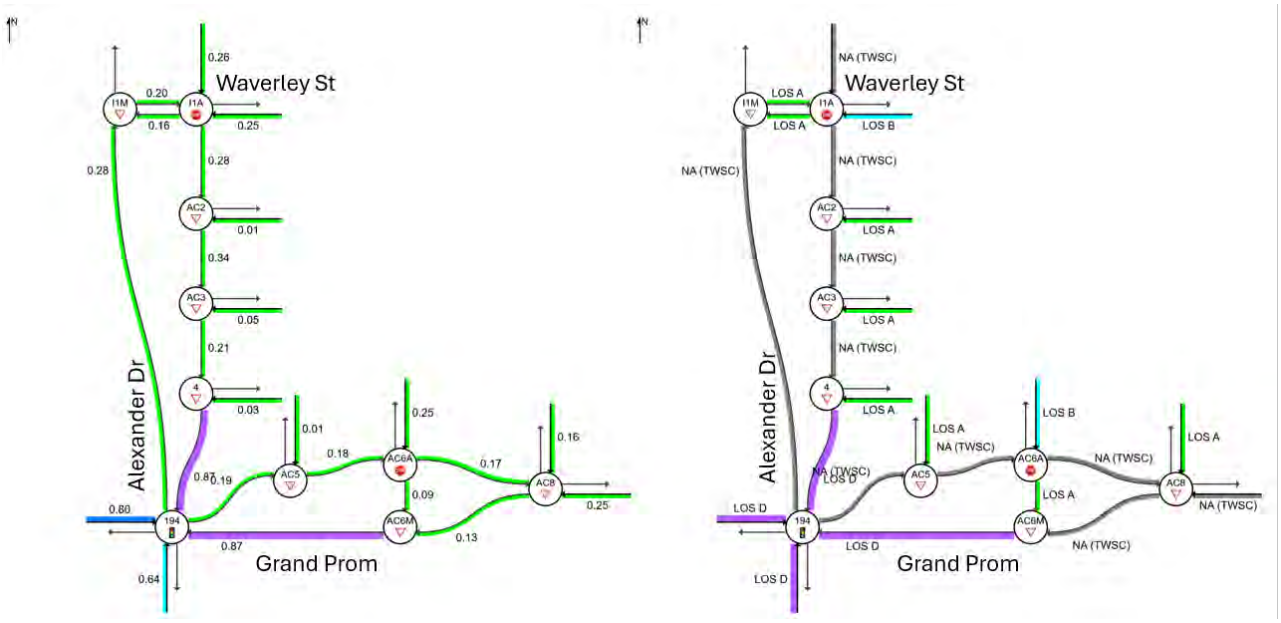
The results of the operation and performance of each intersection is summarised in the following sections.

Figure 2-12: 2025 Thursday PM Peak Existing Condition (Degree of Saturation/DOS and Level of Service/LOS)



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Figure 2-13: 2025 Saturday Mid-Day Peak Existing Condition (Degree of Saturation/DOS and Level of Service/LOS)



As shown in the figures above, the existing road network is currently operating within capacity in both Thursday and Saturday peak periods, this based on DoS of the approaches to intersections. Delays of the intersection of Grand Promenade and Alexander Drive result in a LoS of F for these approaches under current peak flows.

During Thursday PM peak, all the access points are operating with Level of Service B or better (≤15s delay), with the exception of signalised intersection of Alexander Drive / Grand Promenade as noted above. The east, south and west approaches of the signalised intersection are operating at LOS F (delay >80s).

In the Saturday peak, all access points are operating satisfactorily with acceptable LOS D or better (delay <55s).

2.10 Existing Active Travel Network Surrounding Site

The cycling environment around Dianella district centre is depicted on the Perth Bicycle Network (PBN) Maps published by the Department of Planning (**Figure 2-16**). A high-level assessment has been made of the roads' suitability for cycling on the basis of a good, medium or poor road. Both Alexander Drive and Grand Promenade are not promoted as 'Good Road Riding Environments', with no specific on-road infrastructure present on the multi-lane roads

To the north-west and south-east The Strand is allocated as a 'Good Road Riding Environment' with on-road cycle lanes (unprotected – white line separation) in both directions. A shared path along the northern side of Morley Drive provides access from the east and west in a strategic sense.

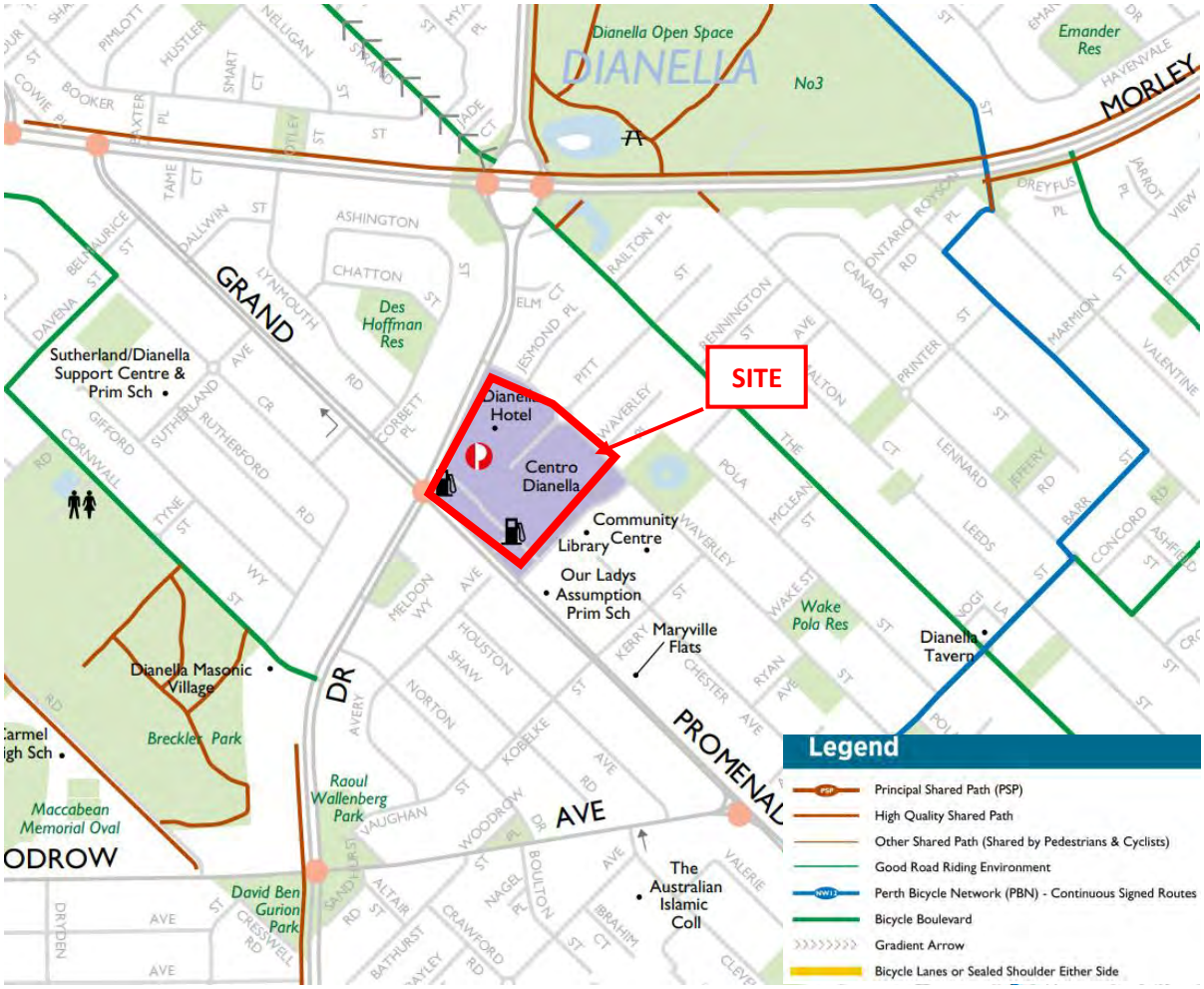
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The local streets such as Pitt Street and Rennington Street provide an alternative route to/from the Morley Drive shared path and whilst they do not provide any further specific cycle infrastructure, the low-traffic volume nature of these residential access streets would provide confident cyclists with a relatively low level of exposure to vehicular traffic and less confident cyclists could legally use the available footpaths surrounding the site.

PBN route NW7 connects to Dianella Open Space, which provides links to the Centre from the north-west/north-east via a shared path connecting to The Strand. From the south-east and southwest,

PBN routes NE4 and NE6 are in close proximity but do not coherently link to the Centre. Similarly a shared path provides access northward along Alexander Drive but this terminates at Cornwall Street before making any connection to the Centre. Generally there is a lack of direct connections to the centre from regional cycle routes.

Figure 2-14: Existing Active Travel Network Surrounding Site



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2.11 Perth and Peel Long-Term Cycle Network

The Department of Transport and Major Infrastructure's (DTMI) Long Term Cycle Network (LTCN) is a long-term vision for the metropolitan bicycle network, designating routes by function according to the WA Cycling Network Hierarchy.

Within the vicinity of development site, the following future cycle routes are identified within the LTCN as either Local Routes, Secondary Routes or Primary Routes.

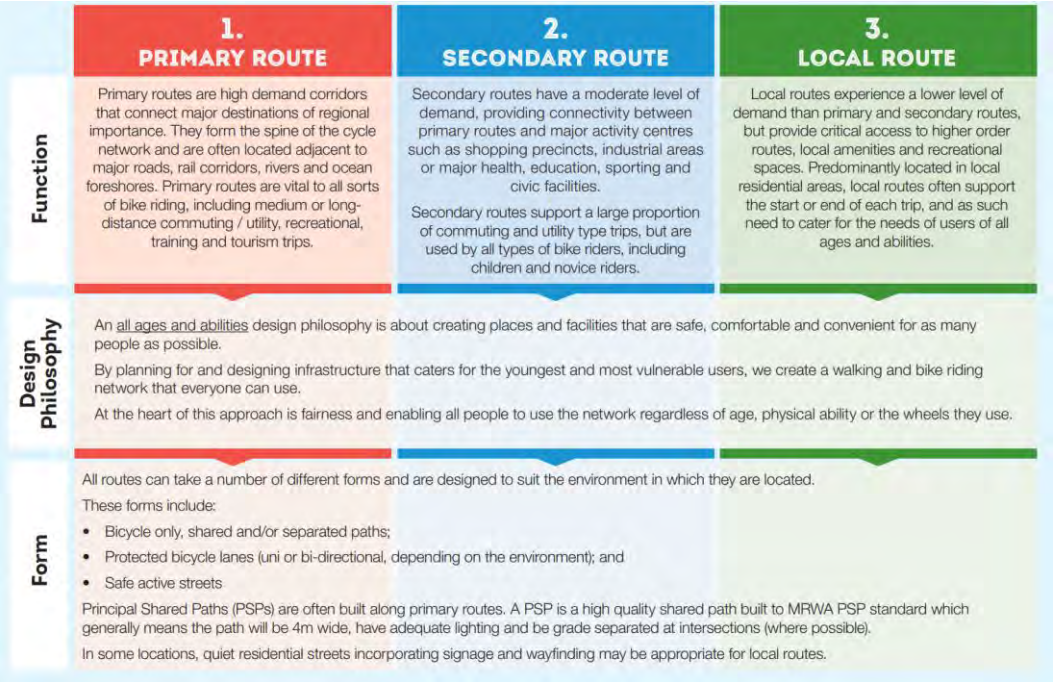
- Alexander Drive – Primary Route
- Brook Street / Morley Drive – Local Route
- Howe Crescent / Corbett Place / Grand Promenade – Secondary Route (Connecting to Alexander Drive)

The proposed residential development is well located to take advantage of the existing and future proposed cycling and walking infrastructure as part of the LTCN aspirations.

The Western Australian Cycling Network Hierarchy designates routes by their function, rather than built form. Function considers the type of activities that take place along a route, and the level of demand (existing and potential). The built form of a route is based on the characteristics of the environment, including space availability, topography, traffic conditions (speed, volumes), primary users, and so on. When considering appropriate built forms for primary, secondary and local routes, an all ages and abilities design philosophy should be adopted.

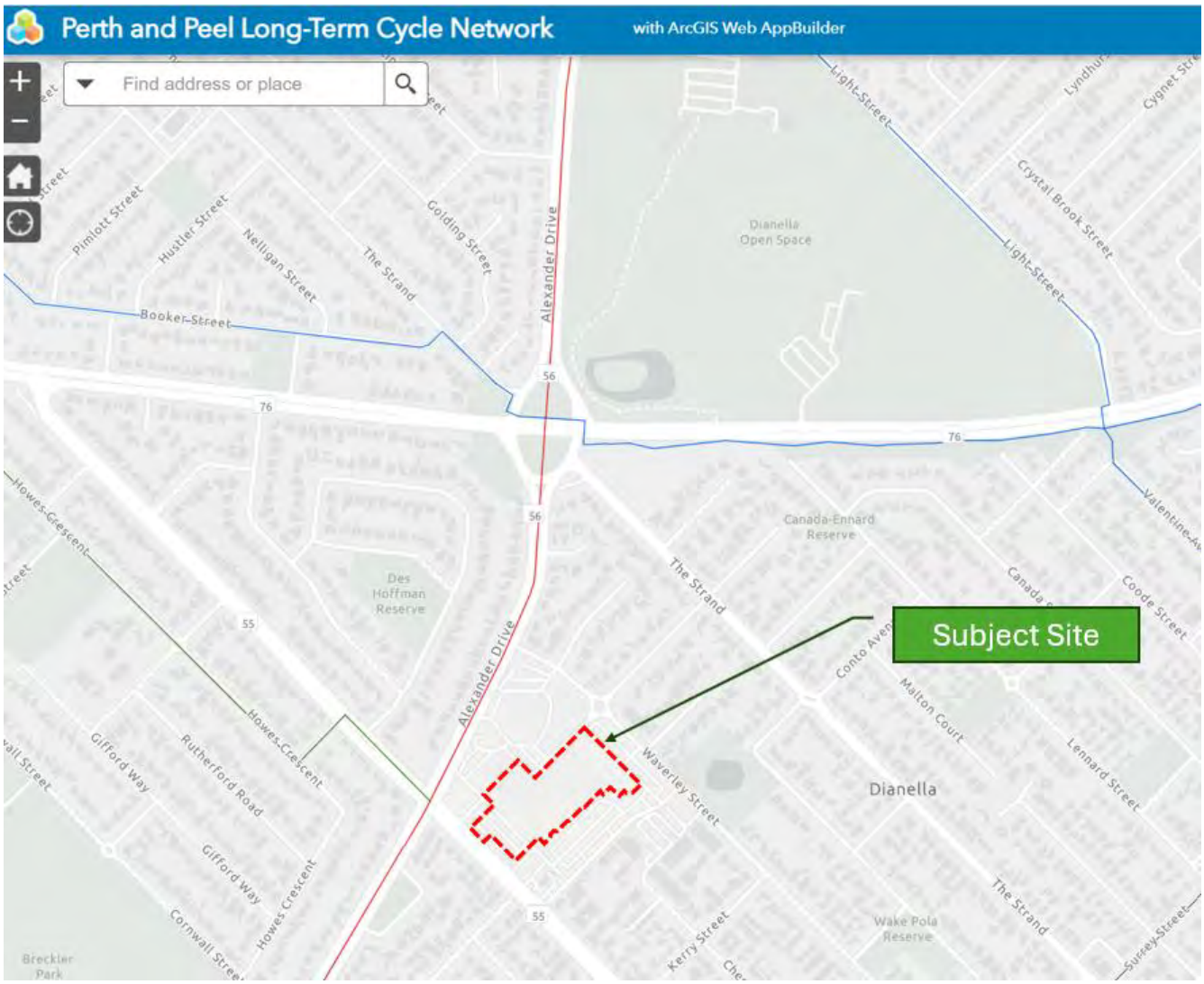
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Figure 2-15: Western Australian Cycling Network Hierarchy



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Figure 2-16: Department of Transport's Long Term Cycle Network, Surrounding the Site



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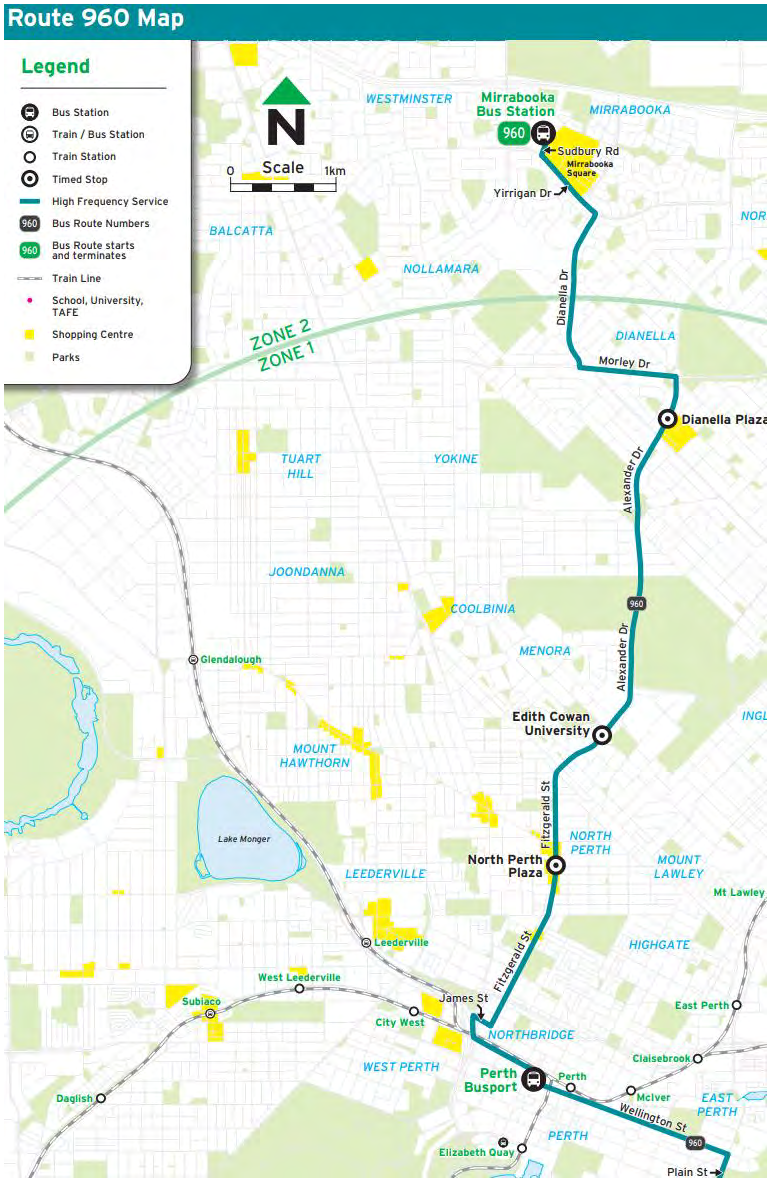
2.12 Existing Public Transport Provision

The following bus service routes pass by the site on either Alexander Drive and/or Grand Promenade stopping at the existing bus stops on each road respectively:

Bus Services Passing Dianella District Centre on Alexandr Drive:

- **960** - Mirrabooka Bus Station - Curtin University Bus Stn via Alexander Dr
- **360** - Perth Busport - Alexander Heights via Alexander Dr, Illawarra Cr North & The Avenue
- **20** - Galleria Bus Station - Edith Cowan University Mt Lawley via Alexander Dr

Figure 2-17: Bus Route Map – Service 960



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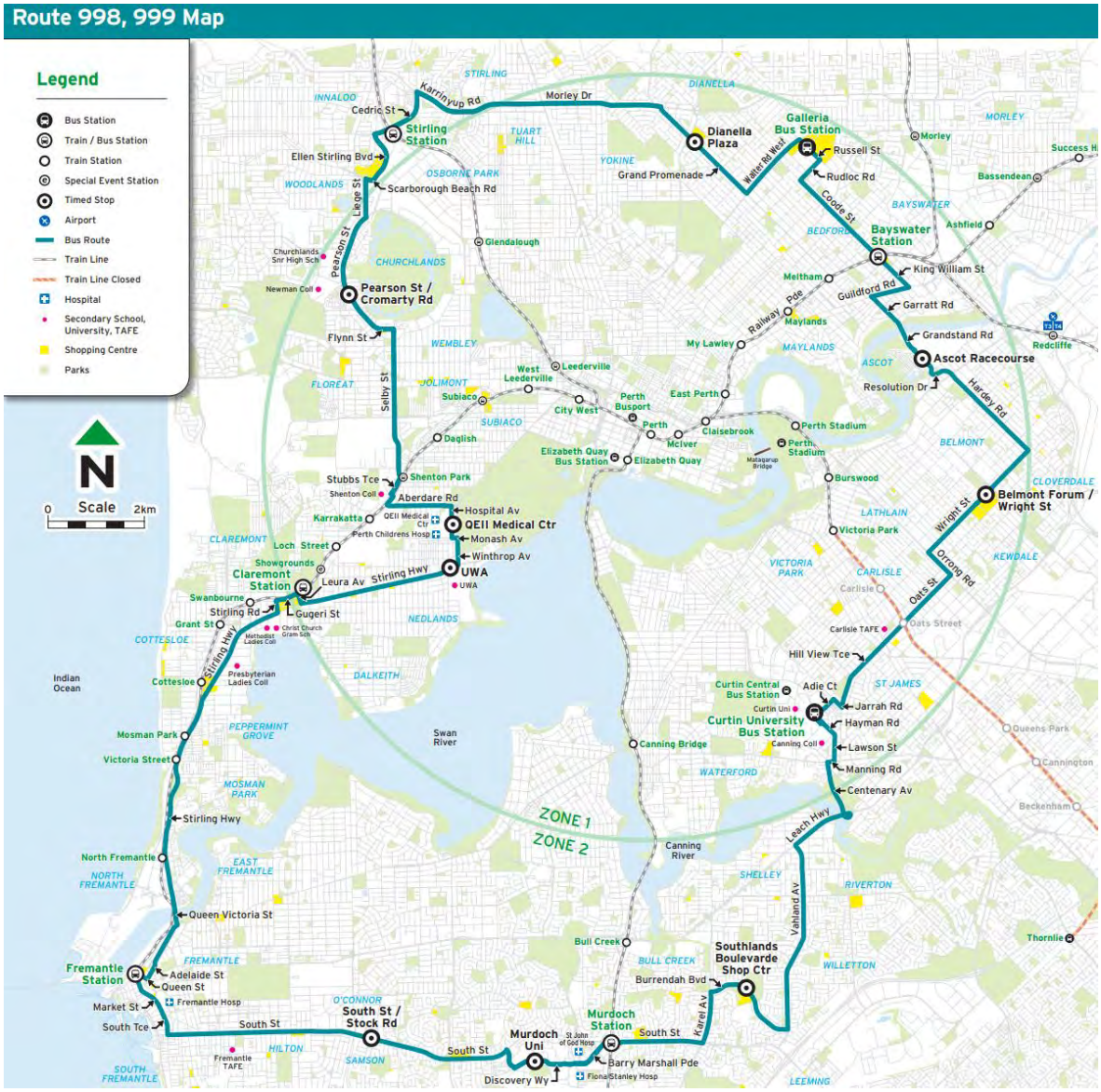
Bus Services Passing Dianella District Centre on Grand Promenade:

- **67** - Perth - Mirrabooka Bus Stn via Beaufort St & Grand Promenade
- **998** - CircleRoute – Clockwise

The Dianella District Centre is serviced by an excellent level of bus transport options, particularly the express services 960 and 998 which provide a frequency of bus every 10 to 15 minutes throughout the day Monday to Friday and up to half hourly intervals on Saturdays.

An extract of the 960 and 998 bus routes is shown on **Figure 2-21 and Figure 2-22.**

Figure 2-18: Bus Route Map – Service 998



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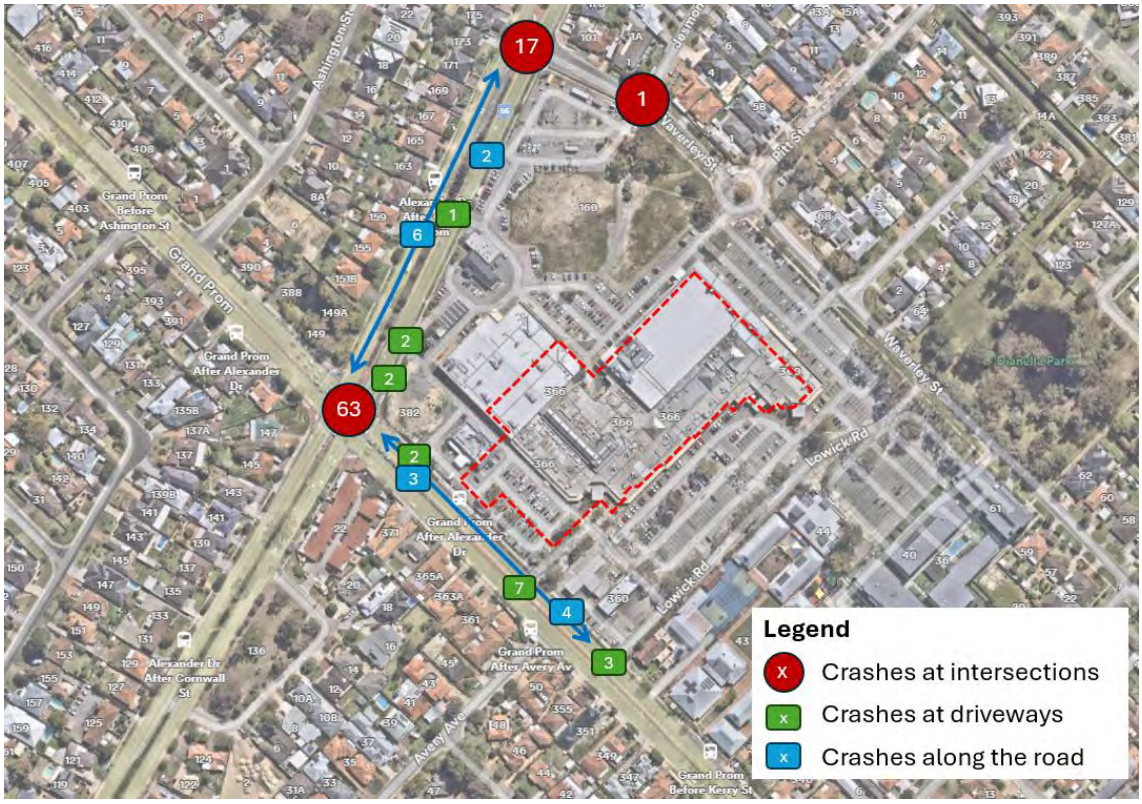
2.13 Existing Crash Data Assessment

A search of the Main Roads WA Reporting Centre for crash data surrounding the site was undertaken. This search covered all recorded traffic accidents for the most recently available five-year reporting period between 1 January 2020 and 31 December 2024 for the following roads surrounding the site:

- Alexander Drive
- Grand Promenade
- Waverley Road
- All site access driveways

The summary of the recorded crash data for the surrounding is shown in **Figure 2-19**.

Figure 2-19: Historic 5-year Crash Data Extract Surrounding Site



Source: Nearmap & Main Roads WA Crash Map

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Alexander Drive / Grand Promenade Signal Controlled Intersection

- 63 crashes in total, comprising:
  - 1 Hospitalisation
  - 18 Medical Treatment Required
  - 24 PDO Major
  - 20 PDO Minor

The hospitalisation involved right-turn-thru movements which suggest running a red light. 67% of the Medical crashes involved rear-end collisions. 50% of the PDO major crashes involved rear-end, with right-turn-thru and right-angle crashes making up most of the remainder of the PDO major crashes. 90% of the PDO minor crashes involved rear-end, with side-swipes making up the remainder of PDO minor crashes.

There appears to be an existing trend of rear-end crashes occurring at this intersection resulting in a range of severity consequences.

Alexander Drive / Waverley Street Priority Controlled Intersection

- 17 crashes in total, comprising:
  - 3 Hospitalisation
  - 2 Medical Treatment Required
  - 9 PDO Major
  - 3 PDO Minor

The hospitalisation and medical crashes involved right-turn-thru and right-angle crashes. 10 out of the 12 PDO crashes involved right-angle, with rear-end making up the remaining of the PDO crashes. Of the right angle crashes 8 involved vehicles turning from the median into the northbound traffic lanes of Alexander Drive.

Waverley Street / Jesmond Place Priority Controlled Intersection

- 1 crash only, Medical Treatment Required

While the crash happened at the intersection, the crash actually involved right-turn-thru with vehicle exiting from the Dianella Plaza driveway.

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Alexander Drive between Grand Promenade and Waverley Road:

- 5 crashes in total at driveways, comprising:
  - 1 Medical Treatment Required
  - 4 PDO Major

The medical crash involved a cyclist being hit by a small truck. All the PDO crashes involved right-angle crash.

- 8 crashes in total, comprising:
  - 5 Medical Treatment Required
  - 2 PDO Major
  - 1 PDO Minor

Of these crashes, one of the Medical crashes involved a pedestrian on scooter being hit by a car while crossing the road and the other Medical crash involved a side-swipe same direction incident. The 2 PDO crashes involved side-swipes from the same direction and a rear-end crash type.

Grand Promenade between Alexnder Drive and Eastern Site Access

- 12 crashes in total at driveways, comprising:
  - 1 Hospitalisations
  - 1 Medical Treatment Required
  - 7 PDO Major
  - 3 PDO Minor

All the crashes involved right-angle crash.

- 7 crashes in total along Grand Promenade, comprising:
  - 1 Hospitalisations
  - 1 Medical Treatment Required
  - 2 PDO Major
  - 3 PDO Minor

The hospitalisation crash involved pedestrian being hit on Grand Promenade. The medical crash involved rear-end into a vehicle that stopped at the middle of the road to make an illegal u-turn. The PDO crashes involved rear-end and sideswipe from the same direction.

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Waverley Road between Alexander Drive and Eastern Site Access

- 2 crashes in total, comprising:
  - 1 Medical Treatment Required
  - 1 PDO Minor

The potential impact of the proposed development of the site at the Dianella District Centre on the existing crash rates is discussed further in this report at **Section 8.1**.

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3 Proposed Development

3.1 Proposed Coles Store Relocation

The existing Coles store is currently located at the southwest corner of the Dianella Plaza. The proposal is to relocate the store to the southern end of the Dianella Plaza and reconfigure the car park layout with internal modifications to the Dianella Plaza. This is expected to result in an increase of approximately 1,344m^2 in floor space or about 7.2% increase in floor area.

The size of the existing and proposed Dianella District Centre is shown in Table 3-1.

Table 3-1: Change in Development Yield – Dianella Plaza

Development	Gross Floor Area (GFA) Size
Existing Dianella Plaza	18,616m^2
Dianella Plaza with Coles Store Relocation	19,960m^2

3.2 Vehicular Access Arrangements

The development proposes to retain access to the site via each of the four existing site access intersections listed below. Each of the site access intersections are expected to remain in their existing configuration.

Service vehicle access to the relocated Coles' loading area is primarily expected to be via the existing access to the west of the EG Ampol along Grand Promenade. Access to the existing loading area for Woolworths will remain via the roundabout at Waverley Street / Pitt Street. Swept paths have been checked and confirmed that semi-trailers up to 19m can access the loading bays.

3.3 Parking Provision

As discussed in **Section 2.2**, the current parking provision across the Dianella District Centre has a total of 915 car bays. The relocation of Coles store will also modify the existing car park layout on the northern side of the centre.

With the proposed modified car park layout, these will bring the total parking provision to 938 car bays as shown in **Figure 3-1**.

The parking required for the various proposed uses within the City's LPS3, Parking and Access Policy 6.7. This is discussed in more detail later in this report.

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Figure 3-1: Proposed Car Parking Provision



Base image source: Nearmap & DKO Architecture

3.4 Specific Issues

There are no specific transport issues that were initially identified in relation to the proposed development, prior to this assessment apart from ensuring that the road network can support the proposed development.

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3.5 Proposed Traffic Generation

In relation to the potential development scenario, traffic generation have been derived based on the change in the Dianella Plaza's gross floor area. With reference to **Table 3-1**, the proposed Coles store relocation will increase the gross floor area from 18,616 m^2 to 19,703 m^2, approximately 5.8%. As such, the existing turning movements in and out of the Dianella District Centre is expected to increase by the same factor to derive the proposed traffic generation, resulting in **additional 47 vehicles per hour** in both the Thursday PM peak and Saturday mid-day peak.

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4 Changes to the External Transport Network

4.1 Road Network Upgrades

The City of Stirling has a continuous program of major projects and works taking place in the City; however, interrogation of the City's latest online information confirms there are no major projects or works currently scheduled or taking place in the immediate vicinity of the Dianella Plaza District Centre.

4.2 Intersection Controls

Within the vicinity of the proposed development site there are no significant changes proposed to the surrounding road network intersection controls that would be likely to impact the development.

4.3 Pedestrian/Cycle Networks

DTMI:

As previously mentioned in section 2.10, DTMI's Long Term Cycle Network (LTCN) sets out a long-term vision for the metropolitan bicycle network, designating routes by function according to the WA Cycling Network Hierarchy.

Within the vicinity of development site, the following future cycle routes are identified within the LTCN as either Local Routes, Secondary Routes or Primary Routes.

- Alexander Drive – Primary Route
- Brook Street / Morley Drive – Local Route
- Howe Crescent / Corbett Place / Grand Promenade – Secondary Route (Connecting to Alexander Drive)

Community Infrastructure Plan 2023-2033

Through the City of Stirling's Community Infrastructure Plan 2023-2033, the City has committed to various goals and objectives to guide the development of future pedestrian and cycling infrastructure by ensuring strategies and bike plans be completed and that financial investment is advocated for at all levels of Government.

Goals 2 and 5 below outline the City's commitment to these objectives with timeframes of 2025 for completing the City-wide mountain bike plan and advocating for investment as an on-going commitment.

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Goal 2:

Deliver a strategic approach to the provision and improvement of community infrastructure to ensure we have a blueprint for future community needs.

How will we achieve this?		Timeframe
Develop localised community infrastructure plans to identify gaps in service provision across the City for each infrastructure type to guide the City's annual and longer-term financial planning.	• Complete the City's Community Infrastructure Action Plan.	2023
	• Update the Skate and BMX Facilities Strategy implementation plan and complete the City-wide mountain bike plan.	2025

Goal 5:

Advocate for increased investment in community infrastructure planning through better integration at all levels of government.

How will we achieve this?		Timeframe
Advocate across the sector and to State and Commonwealth governments to ensure future urban planning and other relevant planning frameworks capture community infrastructure planning as an essential component and considers density and population growth in an integrated manner.	• Advocate for increased financial investment in community infrastructure provision across State and Commonwealth sectors.	Ongoing
	• Seek funding for community infrastructure provision and improvements to ensure our community has better access to quality community infrastructure that meets their needs.	Ongoing

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5 Integration with Surrounding Area

5.1 Surrounding Attractors / Generators

Dianella is well located to regional attractions, with the CBD, Swan River and beaches all within an easy drive for employment and recreation. It is central to larger district and regional retail centres (3.8km Inglewood District Centre, 4km to Mirrabooka Regional Centre and 3.5km to Morley Strategic Metropolitan Centre). It is well placed to capture much of the immediate district's weekly retail expenditure.

An audit of retail services in the precinct's surroundings was conducted based on the Department of Planning Land Use and Employment Survey (2008) and the Property Council of Australia - Western Australian Shopping Centre Directory 2009. **Figure 5-1** illustrates the location of Dianella and surrounding centres as well as the supermarket brands associated with each centre.

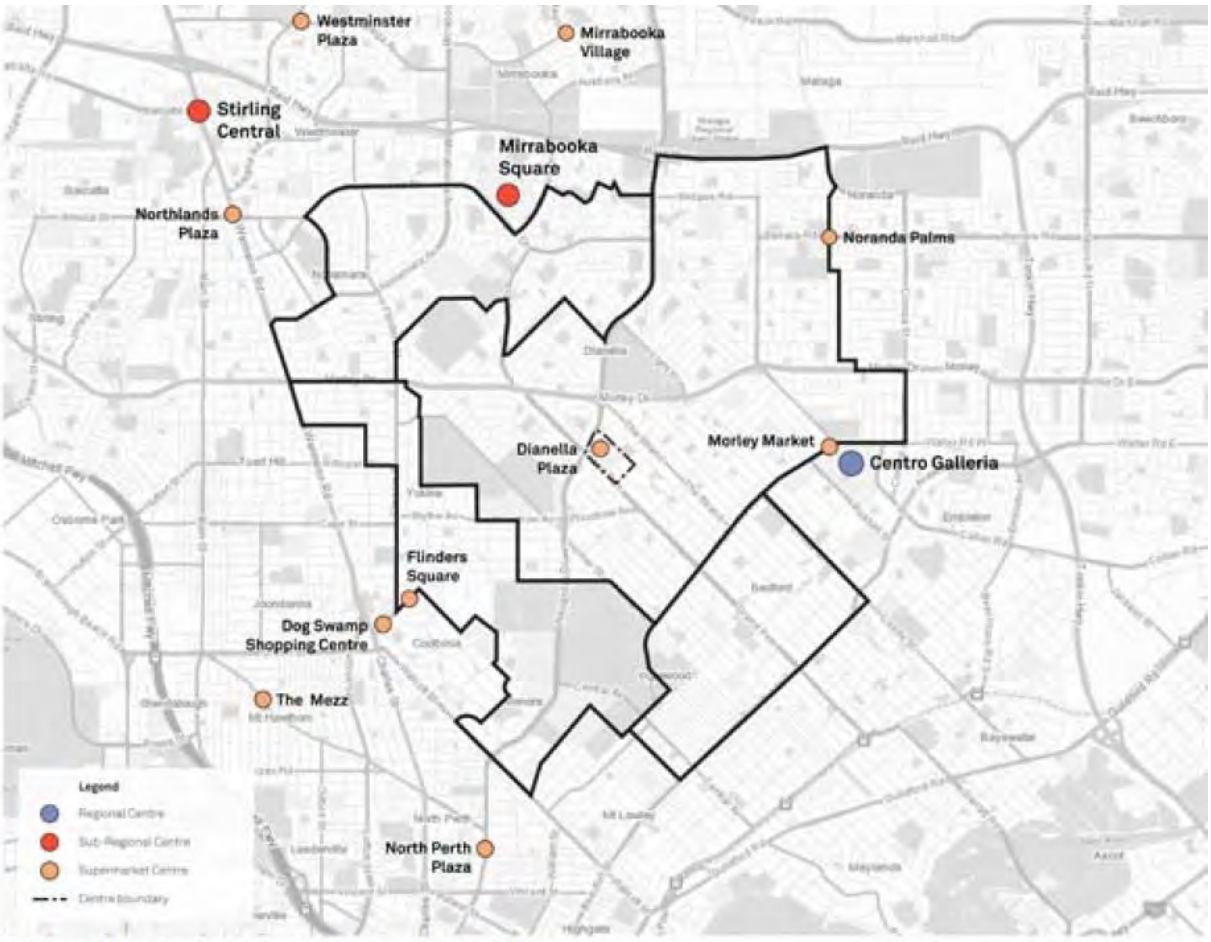
The Dianella District Centre is located in close proximity to several regional open space areas that cater for many active and passive recreational activities, including an 18-hole golf course and an Olympic size swimming pool. At the local scale there is a well distributed network of neighbourhood parks.

A mix of private and public primary schools is well distributed across the district. With the changing age and cultural demographic of Dianella some historical public schools including the Dianella Primary School have become private. Students living in Dianella attending public secondary schools travel to Morley, John Forrest or Mt Lawley Senior High Schools.

There are limited community/civic facilities within the district, notwithstanding that the Dianella Library and Dianella Community Centre are both located within the district centre and in close proximity to the Dianella Plaza shopping centre. To access other community facilities, residents have to travel to Inglewood, Mirrabooka or beyond. **Figure 5-2** shows the relative location of other attractors.

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Figure 5-1: Location of Dianella and Surrounding Centres



06_Main and Secondary Trade Areas in 2006 - Based on Urbis 2008 report

Figure 5-2: Location of Other Attractors



07_Attractors

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As mentioned in the earlier section, a Development Application has been lodged for three pad sites within the Dianella District Centre in the north west corner of the centre on the corner of Alexander Drive and Waverley Street. These developments integrate well with the proposed Coles store relocation with more car parking provision for the district centre. The traffic generated by the pad sites as demonstrated in the TIA is shown in Figure 5-3.

Figure 5-3: Proposed Pad Sites



Base Map Source: DKO

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5.2 Level of Overall Accessibility and Integration

There is a good level of cycling and pedestrian movement network presently surrounding the proposed development site, however cycling infrastructure is lacking in the immediate vicinity surrounding the Centre. Generally, there is a lack of direct connections to the centre from regional cycle routes.

The proposals contained within the Department of Transport's Long Term Cycle Plan for improved cyclist infrastructure on Alexander Drive will integrate with the future land uses proposed at the development site.

Generally, the development site is well positioned to take advantage of the future facilities proposed within the surrounding areas.

5.3 Access to Public Transport

The Dianella Plaza District Centre is serviced by an excellent level of bus transport options, particularly the express services 960 and 998 which provide a frequency of bus every 10 to 15 minutes throughout the day Monday to Friday and up to half hourly intervals on Saturdays. The development site is well located to take advantage of this existing transport provision.

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6 Analysis of External Transport Networks – Assessment Parameters

6.1 Assessment Years

In accordance with the WAPC Transport Impact Assessment Guidelines, the assessment years will generally be the year of full development (opening year) plus 10 years post full development (design year horizon).

On this basis, an assessment of the ultimate development was undertaken for full development of the site plus 10 years into the future. Assuming opening of all pad sites in 2026, the +10-year time horizon was chosen to be 2036.

As such, the assessment year is defined as follows:

- **2036 'Design Year Horizon'** (+10 years post opening with 100% development completed)

6.2 Assessment Time Periods

The assessment time periods will be consistent with the identified Thursday PM peak and Saturday peak periods on the surrounding road network, taken from the traffic surveys commissioned in January/February 2025 which are:

- 16:30 to 17:30 – Thursday
- 11:45 to 12:45 – Saturday

As discussed previously in Section 2.7, an AM peak assessment was not undertaken as the development is commercial and industry surveys denote the highest site traffic generation in the PM peak and Saturday midday period.

Commercial developments such as this will have lower traffic flows during the AM peak as one of the fast-food restaurants will have lower patronage whilst the tavern and drive-through will not be expected to be operating during the AM peak. Also, the main centre will typically open after the AM peak hour. This approach is accordance with the guidance provided in the WAPC publication Transport Impact Assessment guidelines, Part 5, Technical Guidance

6.3 Traffic Growth

An interrogation of available traffic data from Main Roads WA's reporting centre for the nearby count sites with long term data available (Grand Promenade and Fitzgerlad Street) has revealed that traffic has been decreasing over periods extending back to 2006 to 2010. For the period 2006 to 2020 there has been an average decrease in traffic volume of -0.3% across 15-20 years.

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It could be reasonable for no material traffic growth to be assumed over the next 10-year period, and beyond. However, in order to achieve a robust assessment and test the resilience of the future road network immediately surrounding the site, this TIA assumes a rate of 1% traffic growth per annum to 2036. This is considered a robust assessment of traffic growth up to 2036 as the current noted sites have shown that traffic flows have been decreasing over the last 15-20 years.

6.4 Traffic Scenario for Assessment

In order to establish the relative impact of the proposed development on the operation of the surrounding road infrastructure, a single time horizon assessment scenario was undertaken as part of this TIA.

The following traffic assessment scenarios have been included:

Scenario– 2036 Design Year Horizon:

Assumed Traffic Composition Includes:

- 2036 Road Network Traffic Volumes (2025 traffic + growth).
- Traffic generation from the proposed ALL pad sites and the effect of the supermarket relocation.
- Assessment undertaken on key external intersections surrounding the site, being:
  - Alexander Dive/Waverley Street – Give way Controlled T-Intersection;
  - Waverley Street/Pitt Street/Site Access – Roundabout Controlled Intersection
  - Waverley Street/Jesmond Place/Site Access – 4-way intersection

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7 Analysis of External Transport Networks – Intersection Assessments

7.1 Introduction

This section of the TIA presents the analysis of the existing road network around the Dianella District Centre. The following scenarios have been assessed in this assessment:

- 2026 Thursday & Saturday Base Case (no pad sites or store relocation)
- 2026 Thursday & Saturday Future Case (with pad sites and store relocation)
- 2036 Thursday Base Case (no pad sites or store relocation)
- 2036 Thursday & Saturday Future Case (with pad sites and store relocation)

7.2 Impact on Intersections

Across each of the following four assessment scenarios, the SIDRA Intersection capacity results for each approach are presented in the form of Degree of Saturation (DOS), Average Delay, Level of Service (LOS) and 95th Percentile Queue. These characteristics are defined as follows:

- **Degree of Saturation (DOS)**: is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The theoretical intersection capacity is exceeded for an un-signalised intersection where DOS > 0.80;
- **95% Queue:** is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected.
- **Average Delay:** is the average of all travel time delays for vehicles through the intersection. An unsignalised intersection is considered to be operated at capacity where the average delay exceeds 45 seconds for any individual movement.
- **Level of Service (LOS)**: is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers.

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7.3 Assessment Results – 2026 Thursday & Saturday Base Case

Under this scenario, the surrounding road network has been assessed in SIDRA Intersection and the results are provided in **Figure 7-1** and **Figure 7-2**.

Figure 7-1: 2026 Thursday PM Peak Base Case Condition (DoS & LoS)

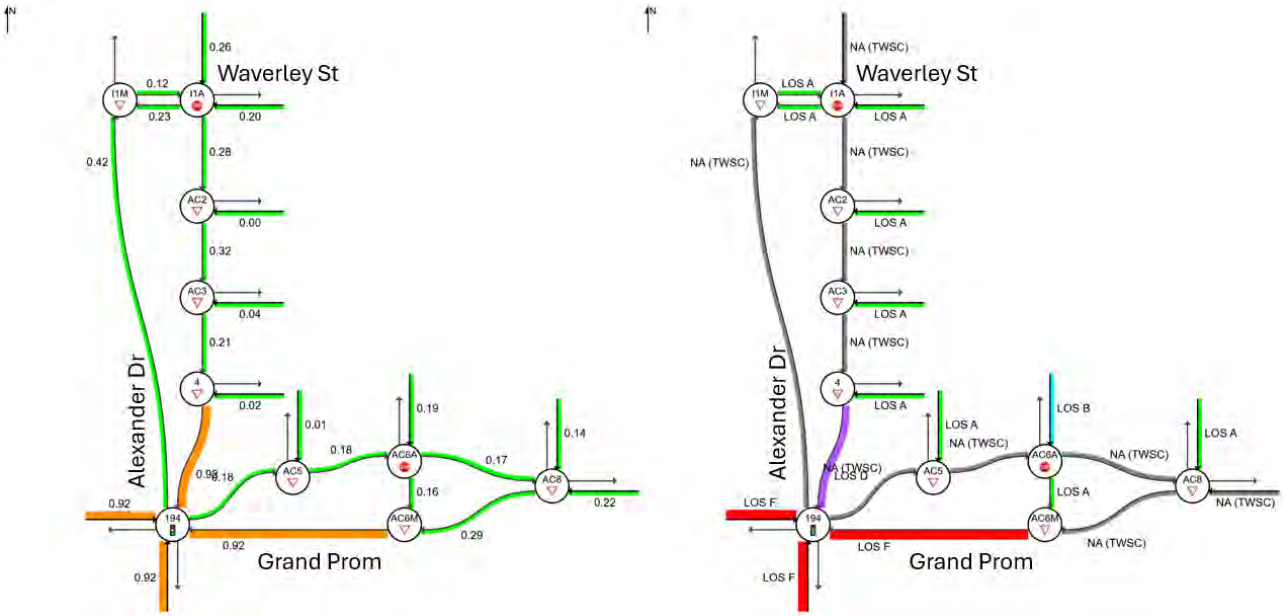
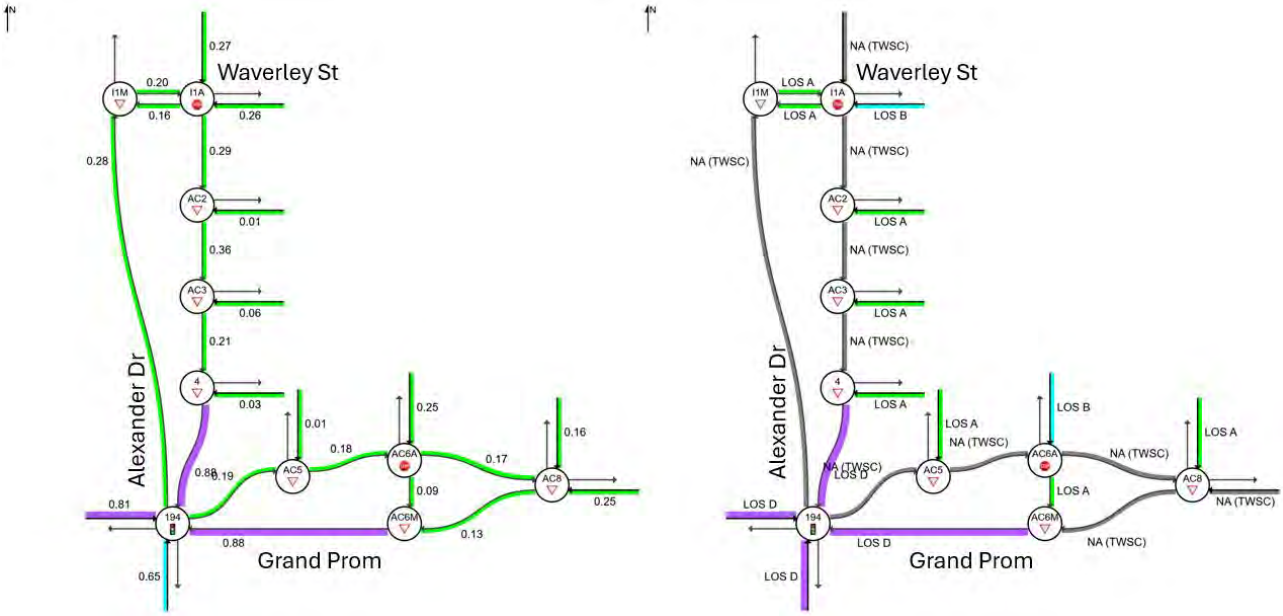


Figure 7-2: 2026 Saturday Mid-Day Peak Base Case Condition



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As demonstrated above, the existing road network is expected to operate within capacity in both the Thursday and Saturday peak periods, similar to the existing condition.

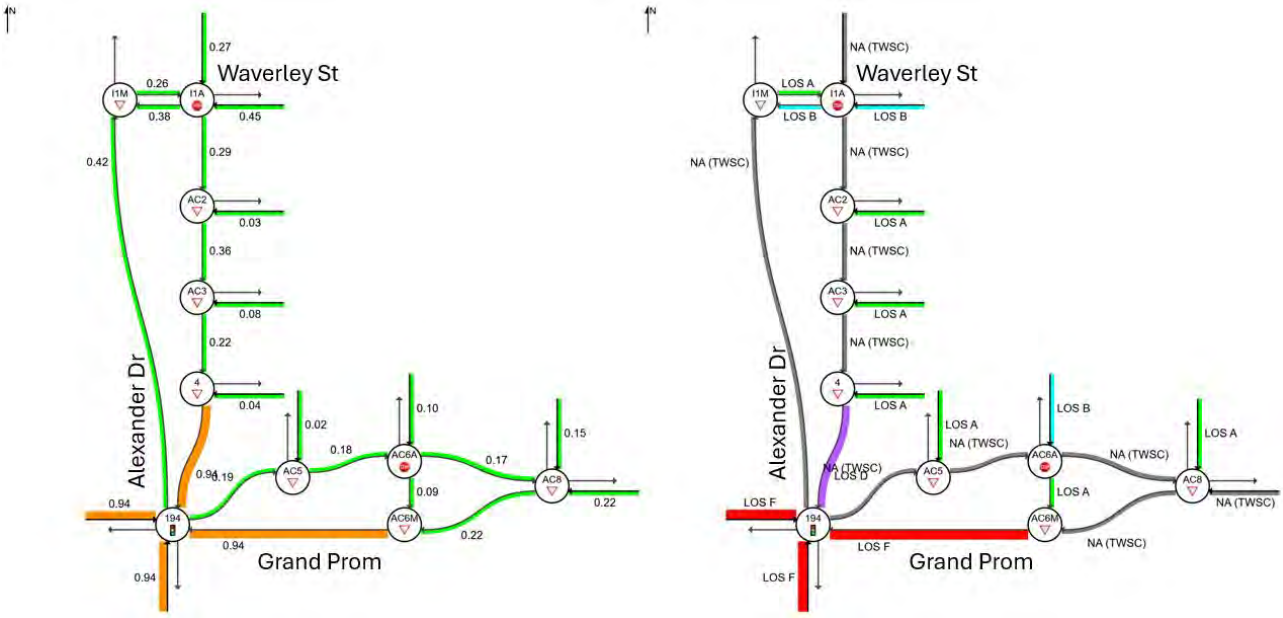
All the access points are operating with Level of Service B or better (≤15s delay), with the exception of signalised intersection of Alexander Drive / Grand Promenade. The east, south and west approaches of the signalised intersection are operating at LOS F (delay >80s).

In the Saturday peak, all access points are operating satisfactorily with acceptable LOS D or better (delay <55s).

7.4 Assessment Results – 2026 Thursday & Saturday Future Case

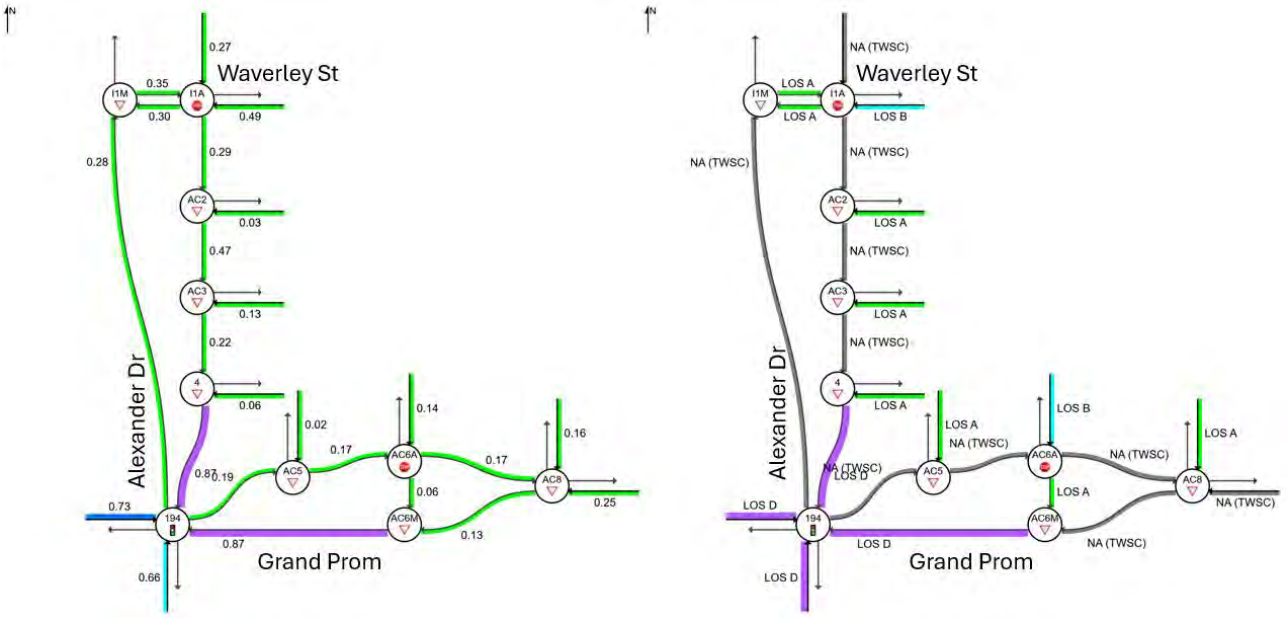
Under this scenario, the surrounding road network has been assessed in SIDRA Intersection and the results are provided in **Figure 7-3** and **Figure 7-4**.

Figure 7-3: 2026 Thursday PM Peak Future Case Condition



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Figure 7-4: 2026 Saturday Mid-Day Peak Future Case Condition



With the addition of pad sites and the development, the existing road network is expected to operate within capacity in both the Thursday and Saturday peak periods, similar to the existing condition.

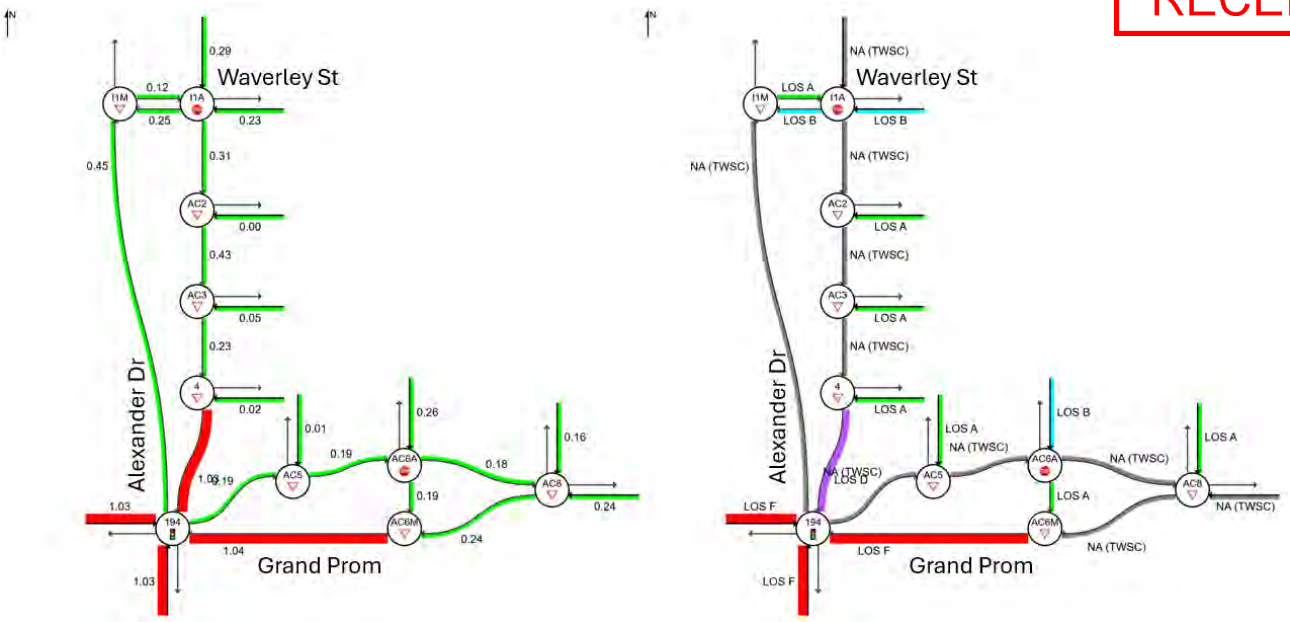
All the access points will operate similarly, with a slightly longer queues on Waverley Street and the intersection of Alexander Drive / Grand Promenade.

7.5 Assessment Results – 2036 Thursday Base Case

Under this scenario, the surrounding road network has been assessed in SIDRA Intersection and the results are provided in **Figure 7-5**Figure 7-6. It should be noted that only the Thursday peak period is being assessed for the 2036 base case. This is because the intersection of Alexander Drive / Grand Promenade is expected to operate close to capacity in the Thursday peak but performing well in the Saturday peak. The 2036 Thursday Base Case will be use as the baseline to assess the impact of the development.

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Figure 7-5: 2036 Thursday PM Peak Base Case Condition



By 2036, the intersection of Alexander Drive / Grand Promenade is expected to operate beyond capacity in the PM peak with Degree of Saturation of 1.04. The queue along Alexander Drive northbound approach is expected to be 697m long, almost tailing back to the intersection at Woodrow Avenue. The queue along Alexander Drive southbound approach is expected to be 242m, tailing back to the intersection at Waverley Street.

This shows that the background traffic growth on the existing road network may cause the intersection of Alexander Drive / Grand Promenade to fail by 2036.

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7.6 Assessment Results – 2036 Thursday & Saturday Future Case

Under this scenario, the surrounding road network has been assessed in SIDRA Intersection and the results are provided in **Figure 7-6** and **Figure 7-7**.

Figure 7-6: 2036 Thursday PM Peak Future Case Condition

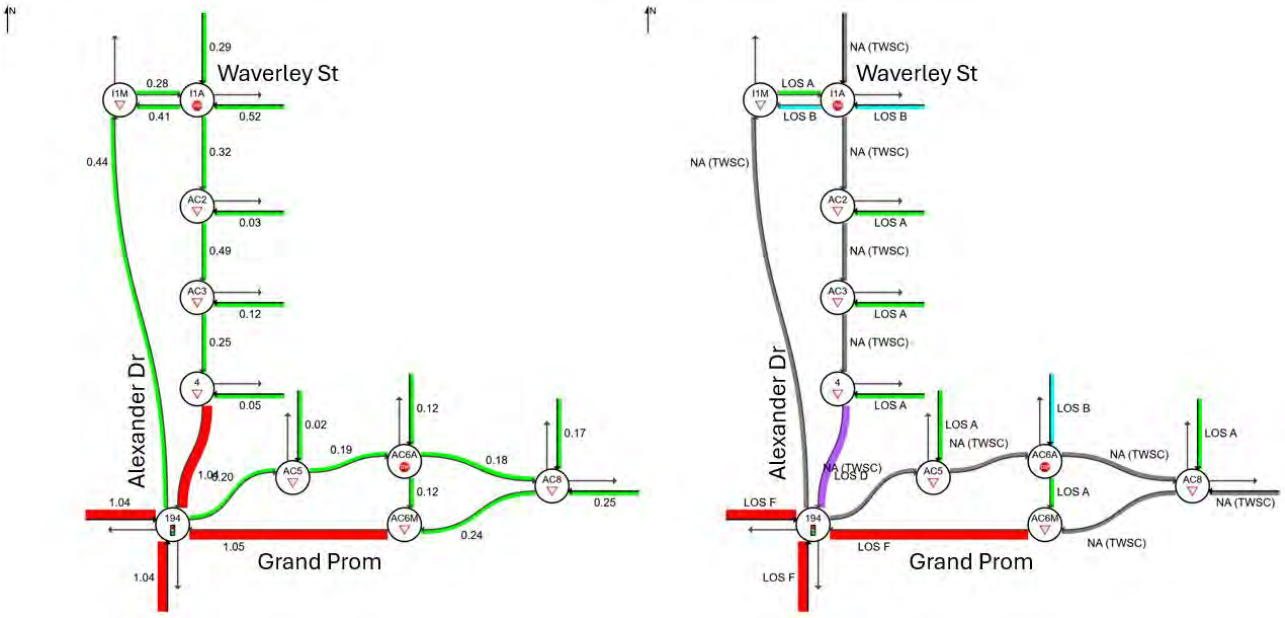
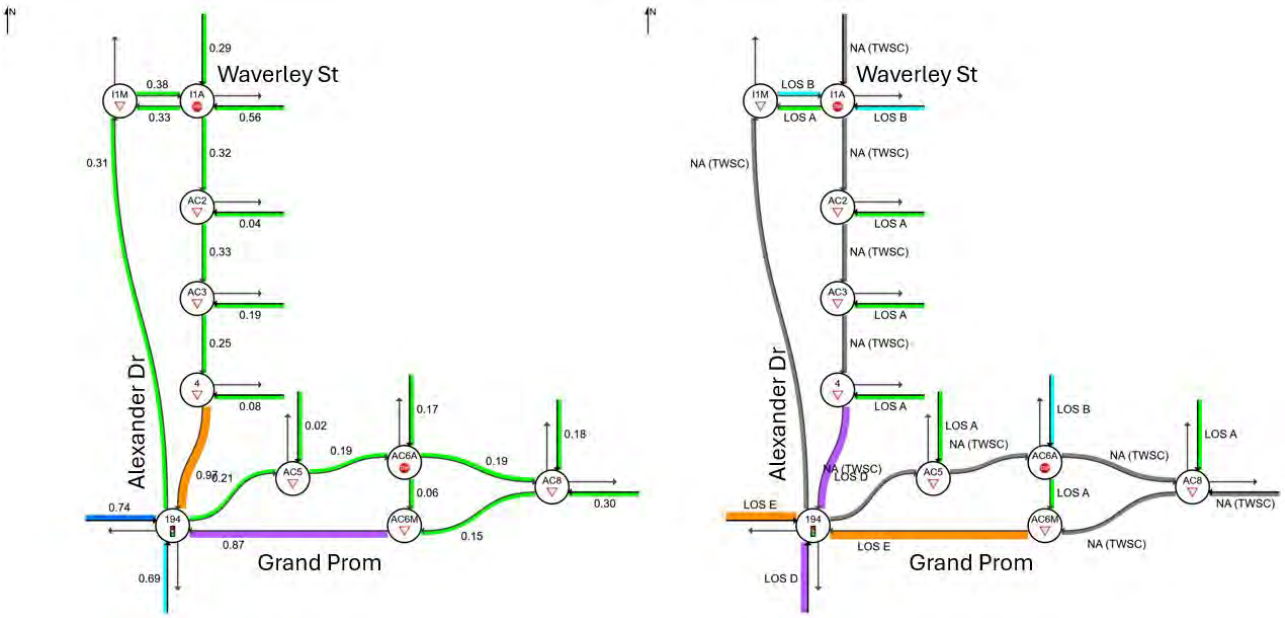


Figure 7-7: 2036 Saturday Mid-Day Peak Future Case Condition



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With the addition of pad sites and the development in 2036, the road network will further deteriorate in the Thursday PM peak. While the other access points and the intersection of Alexander Drive / Waverley Street will perform satisfactorily, the intersection of Alexander Drive / Grand Promenade will perform worse due to additional demands. However, the difference is minimal with the queues at the intersection increase less than 5%.

As for the Saturday midday peak, the overall road network is still expected to work satisfactorily with LOS B or better for most of the access points. The northbound and southbound approach at intersection of Alexander Drive / Grand Promenade is expected to operate at LoS D while Grand Promenade approaches will operate at LoS E.

As such, this shows that the failure of the intersection of Alexander Drive / Grand Promenade in 2036 Thursday peak is caused by the assumed 1% background traffic growth and not the proposed development. The impact of the pad sites and development is minimal on the surrounding road network.

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8 Road Safety Issues

8.1 Impact of the Development on Road Safety Issues

Alexander Drive / Grand Promenade Signal Controlled Intersection:
There current existing crash trend at the signal-controlled intersection of Alexander Drive / Grand Promenade shows that 64% of Medical crashes involving rear-end shunt type. 59% of the PDO major crashes and 92% of the PDO minor involved rear-end collisions.

This existing crash trend at this location is typical of signalised intersections under moderate to high traffic flows, where there are a high number of rear end type crashes. This crash type has been addressed with the installation of mast arm signals on Alexander Drive approaches and in mid 2025 the installation of mast arm traffic signals on the Grand Promenade approaches. This treatment may begin the reduce these crashes as traffic data for 2025 is yet to be released.

The traffic signals presently allow filter right turns on all approaches and there may be an issue related to gap selection for right turn vehicles across oncoming traffic and these are mostly occurring outside peak periods. This is a current recurring issue and not related to the proposed development.

The proposed development is likely to add approximately 40 additional vehicle movements in each direction per hour to this intersection which equates to approximately 3% of the total traffic currently using this intersection in one direction in peak periods. Whilst the actual impact of the development may be low at this intersection, typical traffic flows can vary up to 5% from day to day and the traffic generation would not be noticeable within the day-to-day variations.

Alexander Drive / Waverley Road Priority Controlled Intersection:

The unsignalised T-intersection of Alexander Drive and Waverley Street may experience an increase in delays for right turn vehicles but not to a level that might increase crashes as delays are expected to be within WAPC thresholds. The current crash rates are expected to remain as current with little impact from the proposed Stage 1 works on Grand Promenade side of the Dianella Plaza site.

This is a current issue and not linked with the proposed development.

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9 Parking Assessment

9.1 Car Parking Requirement

The City of Stirling's 'Policy 6.7: Parking and Access' sets out the requirements for access and parking provisions for non-residential development (including commercial and mixed-use developments) under their LPS3.

In general, the parking ratios vary across different commercial use types and locations (within the commercial category and activity centre type). The existing Dianella Plaza falls within the **Dianella Plaza District Centre (DC1)** and is covered under Table 1 Activity Centre Car Parking Ratios under this policy where a ratio of **1 space per 25m^2 GFA** is required.

Based on the expected 19,960m^2 GFA for the modified Dianella Plaza following the Stage 1 works, a total of **799 car parking spaces** is required. This comprises the following parking required for these areas:

- Current GFA unaffected by Stage 1 works — 416 spaces for 10,385m^2
- Overlap GFA of Stage 1 works on current centre — 216 spaces for 5,406m^2
- New GFA of Stage 1 works — 167 spaces for 4,169m^2

As discussed in **Section 3.3**, the modified car park layout will have a **car parking provision of 938 spaces**. This shows that following the Stage 1 works the Dianella District Centre will meet the statutory requirement for the size of the development, with a surplus of 139 car parking spaces.

It is further noted that the current peak parking demand for the current 18,616m^2 GFA recorded at 618 parked cars or a generation rate of approximately 1 space per 30m^2. On a demand basis the proposed 19,960m^2 GFA is expected to generate approximately 666 parked cars on a Thursday PM, thus there is expected to be approximately 272 empty parking spaces at these times.

9.2 Motorcycle Parking Provision

In accordance with the City of Stirling's 'Policy 6.7: Parking and Access', parking should be provided at a rate of 1 space per 1,000m^2 for a development in excess of a total of 500m^2 GFA. On this basis, the Dianella Plaza would require 20 motorcycle parking spaces based on the GFA of the entire site.

Based solely on the new and redeveloped 9,575m^2 GFA this would require 10 motorcycle parking spaces for the Stage 1 works.

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10 Conclusions

10.1 Summary of Key Findings

This Transport Impact Assessment evaluates the proposed development of relocation of Coles store within the Dianella Plaza, in accordance with Western Australian Planning Commission (WAPC) guidelines. The assessment considers existing transport conditions, projected traffic impacts, road safety, and the integration with surrounding transport networks.

- **Existing Conditions:** The existing Dianella Plaza is located at the intersection of Alexander Drive and Waverley Street, approximately 10 km north of the Perth CBD. The surrounding road network includes Alexander Drive (classified as a District Distributor A), Grand Promenade, Waverley Street, and Kerry Street.
- **Traffic Impact:** The development is anticipated to generate approximately 47 additional vehicle movements during peak hours, a substantial portion of which will be pass-by trips. The critical intersection of Alexander Drive / Grand Promenade is expected to fail by 2036 in the Thursday PM peak. However, this is caused by the assumed 1% background traffic growth on the existing road network and not the development impact. The additional vehicle movements generated by the Stage 1 works is less than 3% of the existing traffic flows.
- **Parking and Access:** The proposed development and pad sites will increase the total car parking spaces to 938 spaces. This is more than the requirement of 799 car parking spaces as per City of Stirling's 'Policy 6.7: Parking and Access', with a surplus of 139 car parking spaces.
- **Active and Public Transport Integration:** Currently, the site has limited active travel connectivity; however, future enhancements along Alexander Drive under the Long-Term Cycle Network (LTCN) will improve accessibility. Public transport access is robust, with high-frequency bus services (routes 960 and 998) operating near the site.

10.2 Conclusion and Recommendations

The assessment concludes that the proposed development can be accommodated within the existing and future road network with manageable impacts. Key recommendations include:

- **Active Travel Enhancements:** It is recommended to coordinate with the City of Stirling to expedite the implementation of Long-Term Cycle Network (LTCN) infrastructure along Alexander Drive, which will improve cycling/active travel connectivity.
- **Parking Management:** While adequate parking provision has been planned, ongoing monitoring of parking demand and user patterns is recommended.

Overall, the proposed development aligns with transport planning objectives and is expected to integrate effectively with the surrounding area while maintaining acceptable traffic and transportation outcomes.

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Technical Note

Project: Dianella Centre Stage 1

Subject: Response to City of Stirling

Client:	Greenpool Capital		
Project No:	08052	**Version:**	B - FINAL
Document Ref:	TP_TN_0002	**Author:**	Rodney Ding
Date:	01/09/26	**Approved:**	Simon Davies

1 Introduction

This technical note has been prepared to respond to queries raised by the City of Stirling regarding operational and safety matters associated with permitting a right-turn exit movement from Lowick Street following removal of the existing right-turn exit movement at the driveway.

The existing driveway is proposed to be converted to provide access for the Stage 1 Coles loading dock, which is the subject of the Development Application. As a result, the assessment considers the operational and safety implications of relocating all exit movements, including the right-turn exit, to Lowick Street.

2 Matters Raised by the City

2.1 Sight Distance Assessment

The proposed right-turn exit from Lowick Street utilises the existing Lowick Street intersection location. Accordingly, the available sight lines to traffic on Grand Promenade are unchanged from those currently available to vehicles exiting Lowick Street.

Sight distances were assessed from a point approximately 7m back from the centre of the left lane on Grand Promenade to approximately where the property boundary crossed Lowick Street. Based on a posted speed limit of 60km/h on Grand Promenade, the relevant Safe Intersection Sight Distance (SISD) requirement is approximately 123m. Allowing a 10km/h safety buffer, for 70km/h 151m should be provided.

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The available sight distance is approximately:

- Approximately 155m to the west (just beyond the bus stop); and
- Approximately 185m to the east (to about the Kerry Street/Kobelke Street intersection).



These sight distances are appropriate for 60km/h and provide a 10km/h safety buffer for traffic that might exceed the speed limit.

There is a small tree on the eastern side of Lowick Street, that impacts the sight lines to the east, which could be pruned to maintain a full 185m unhindered sight line on that side of Lowick Street.

Accordingly, the available visibility substantially exceeds the required SISD in both directions and the proposed right-turn movement would operate with sight distance conditions comparable to those currently available at the existing Lowick Street intersection.

2.2 Queuing Analysis

The existing 2025 access arrangement provides two separate exit locations from the shopping centre. The driveway provides a left-out movement and a two-stage right-out movement through the median, while Lowick Street provides a left-out movement only. Under the Stage 1 access works, the driveway would operate as access to the Coles loading dock only, with all public movements transferred to Lowick Street, including both left-out and right-out movements.

The operational assessment results are summarised in Table 1 to Table 4. Table 1 and Table 2 present the existing 2025 driveway and Lowick Street performance, respectively. Table 3 presents the proposed 2026 Lowick Street performance with the right-out movement introduced, and Table 4 presents the corresponding 2036 forecast performance.

Table 1: Driveway Existing 2025 Performance

Scenario	Movement	DOS	Level of Service	Delay (s)	Queue (m)
2025 Thursday	Left Out	0.18	A	9	5
	Right Out	0.18	B	18	7
2025 Saturday	Left Out	0.25	A	9	8
	Right Out	0.25	C	17	10

Table 2: Lowick Street Existing 2025 Performance

Scenario	Movement	DOS	Level of Service	Delay (s)	Queue (m)
2025 Thursday	Left Out	0.14	A	7	0
	Right In	0.19	A	9	6
2025 Saturday	Left Out	0.16	A	7	4
	Right In	0.25	A	10	8

Table 3: Lowick Street Proposed 2026 Performance (with Right Out)

Scenario	Movement	DOS	Level of Service	Delay (s)	Queue (m)
2026 Thursday	Left Out	0.25	A	10	11
	Right Out	0.31	C	24	13
	Right In	0.18	B	15	9
2026 Saturday	Left Out	0.34	A	10	13
	Right Out	0.34	C	23	15
	Right In	0.30	B	15	10

Table 4: Lowick Street Proposed 2036 Performance (with Right Out)

Scenario	Movement	DOS	Level of Service	Delay (s)	Queue (m)
2036 Thursday	Left Out	0.33	A	10	12
	Right Out	0.33	D	26	14
	Right In	0.27	A	15	8
2036 Saturday	Left Out	0.41	B	11	18
	Right Out	0.41	D	26	20
	Right In	0.35	B	22	12

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As shown in Table 1 and Table 2, the existing 2025 arrangement distributes exiting movements between the driveway and Lowick Street. At the driveway, the left-out movement operates at Level of Service (LoS) A with 9s delay and queues of 5m to 8m, while the right-out movement operates at LoS B to C with 17 to 18s delay and queues of 7m to 10m. At Lowick Street, the existing left-out movement operates at LoS A with 7s delay and queues of 0m to 4m. The 2025 results therefore indicate limited delay and short queues for existing exit movements, with the right-out movement from the driveway representing the higher-delay exit movement.

As shown in Table 3, under the proposed 2026 access arrangement, all exiting movements are transferred to Lowick Street, including the right-out movement. The left-out movement increases to 10s delay with queues of 11m to 13m, while maintaining LoS A. The new Lowick Street right-out movement records 23 to 24s delay, queues of 13m to 15m and LoS C. Compared with the existing 2025 driveway right-out movement in Table 1, this represents an increase in delay of approximately 5 to 7s and an increase in queue length of approximately 5m to 8m, with LoS reducing from B to C on Thursday and remaining at C on Saturday.

As shown in Table 4, by 2036 the Lowick Street left-out movement is forecast to operate with delays of 10 to 11s, queues of 12m to 18m and LoS A to B. The right-out movement is forecast to operate with 26s delay, queues of 14m to 20m and LoS D. Relative to the existing 2025 driveway right-out movement in Table 1, the 2036 Lowick Street right-out movement increases delay by approximately 8 to 9s and queues by approximately 7m to 10m, with LoS reducing to D. The forecast results indicate that consolidating all exit movements at Lowick Street increases exit delay and queueing when compared with the existing distributed access arrangement, although the degree of saturation remains below 0.50 in the 2026 and 2036 assessment scenarios presented in Table 3 and Table 4.

With respect to the WAPC Transport Impact Assessment Guidelines, the modelled delays for individual movements in Table 3 and Table 4 remain below the 45s reference threshold identified for individual movement delay assessment. The highest delay reported in the assessment is 26s for the Lowick Street right-out movement in 2036, as shown in Table 4, which is 19s below the 45s threshold. The proposed 2026 Lowick Street right-out delays of 23 to 24s in Table 3 are also materially below the threshold, while the left-out movement remains at 10s in 2026 and 10 to 11s in 2036.

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On the basis of the results presented in Table 3 and Table 4, the degree of saturation remains low, with the highest reported DOS being 0.41 in 2036. Queues are forecast to increase under the proposed arrangement, with the maximum queue increasing to 20m for the 2036 Saturday Lowick Street right-out movement in Table 4; however, this remains a short queue in absolute terms. Level of Service reduces for the right-out movement from B/C under the existing driveway arrangement in Table 1 to C in 2026 and D in 2036 at Lowick Street, as shown in Table 3 and Table 4. This indicates a perceptible reduction in right-turn exit performance, but it does not, by itself, indicate that the access exceeds the WAPC delay reference where the reported individual movement delays remain below 45s.

The anticipated queuing performance of the proposed access arrangement has been assessed within the Traffic Impact Assessment and is summarised in Tables 1 to 4 of this Technical Note.

The assessment indicates that:

- Average right-turn delays remain below 26s;
- The 95th percentile right turn queue lengths are forecast to be approximately 20m (3 vehicles);
- degree of saturation remains below 0.41; and
- all movements operate below the WAPC reference threshold of 45s average delay for individual movements.

The modelling indicates that queueing associated with the proposed right-turn movement can be accommodated within the site and does not indicate a material impact on traffic operations along Grand Promenade.

2.3 Internal Driveway Configuration

No modifications are proposed to the internal customer circulation network associated with the introduction of the right-turn movement at Lowick Street.

No changes are proposed to:

- internal traffic circulation arrangements;
- customer access lane geometry;
- aisle configurations; or
- the number of entry and exit lanes at Lowick Street.

The only access modification proposed as part of the Stage 1 works relates to the driveway servicing the proposed Coles loading dock. This access will convert from a customer access to car parks and the service station to an service vehicle access only to the Coles Loading dock.

2.4 Proposed Modifications to Grand Promenade

The proposed right-turn movement at Lowick Street utilises an existing median opening on Grand Promenade.

The existing right-turn movement at the driveway currently operates through a median approximately 4.8m wide. A median width of approximately 5.0m is available at Lowick Street. As such, the proposal largely transfers an existing two-stage right-turn manoeuvre from one location to another rather than introducing a new median treatment with a slightly wider median. This 5m conforms with the minimum allowed in Austroads *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* when sheltering right turning vehicles.

A concept design is shown attached in Appendix A. This shows the right turn opening at Lowick Street and the closure of the right turn through the median opposite the current driveway near the service station. The only modification is the opening of the median to allow the right turn from Lowick Street into Grand Promenade. All other geometric layout of the intersection is to remain unchanged, thus sight lines etc, are as they are currently.

The additional sight line consideration for the opening of the median, is the sight lines from the median when turning right. These sight lines are expected to be similar to those described in Section 2.1, with sight lines from the right turn east to beyond Kerry Street/Kobelke Street providing at least 185m SISD, this exceeding the minimum of 151m for a 60km/h speed limit plus a 10km/h buffer.

The detailed design of any associated roadworks, pavement markings, signage and median modifications can be addressed through subsequent roadworks approvals and detailed engineering design.

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2.5 Impact on the Surrounding Road Network

The operational effect of the proposal is limited to:

- closure of the existing right-turn exit at the driveway; and
- introduction of the right-turn exit at Lowick Street.

The proposal does not introduce additional development traffic beyond that already assessed within the Traffic Impact Assessment. Rather, it redistributes existing exiting traffic between access points.

Removing the right-out movement from the current driveway without replacing it will encourage dangerous movements, likely to be U-turns at Lowick Street in its present format, which is a worse safety outcome overall.

The proposed change to the right turn exit arrangements is not expected to have direct any impact on the Grand Promenade / Alexander Drive signalised intersection. Indeed, the proposed arrangement locates the right turn movement out of the site further away from the signalised intersection compared to the existing arrangement. This means that vehicles turning right out of Lowick Street are less likely to be impacted by north-westbound vehicles queued back from the signals on Grand Promenade than if the right turn out remained in the existing location.

The wider network impacts associated with the Stage 1 works have been assessed within the Traffic Impact Assessment and this has shown to be little material change of the operation of the key intersection of Alexander Drive and Grand Promenade. This is shown below in Table 5.

Table 5: Alexander Drive/Grand Promenade Tested Scenarios

Scenario	DOS	Level of Service	Delay (s)
2025 Thursday	0.91	F	89
2025 Saturday	0.87	D	45
2026 Thursday Base	0.92	F	91
2026 Saturday Base	0.88	D	45
2036 Thursday Base	1.03	F	170
2036 Saturday Base	0.88	D	49
2026 Thursday Stage 1	0.97	F	99
2026 Saturday Stage 1	0.87	D	47
2036 Thursday Stage 1	1.06	F	187
2036 Saturday Stage 1	0.98	D	52

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This intersection currently operates at a LoS F and DoS 0.91 in the Thursday PM peak and 0.88 and D in the Saturday peak. The Stage 1 works will redistribute some traffic flow due to car park relocations and this is expected to change the performance of this intersection to LoS F and DoS 0.97 in the Thursday PM peak and 0.87 and D in the Saturday peak. This is no material difference in the short term with the intersection operating in a similar manner.

Without any Stage 1 works and the maintenance of current traffic flow patterns this intersection is expected to operate at LoS F and DoS 1.03 in the Thursday PM peak and 0.88 and D in the Saturday peak.

At completion of the Stage 1 works this intersection is expected to operate at LoS F and DoS 0.97 in the Thursday PM peak and 0.87 and D in the Saturday peak.

In the longer term, by 2036, this intersection is expected to operate at LoS F and DoS 1.06 in the Thursday PM peak and 0.98 and D in the Saturday peak with the Stage 1 works.

In comparison to the base case without the Stage 1 works the intersection would operate at LoS F and DoS 1.03 in the Thursday PM peak and LoS D and DoS of 0.98 in the Saturday peak. There is little material difference between the Stage 1 works and the no development in 2036. The Stage 1 works is not the cause of this intersection failure, but natural background traffic growth on the adjacent road network, which will occur in 2036 irrespective of the development.

Other access points within the centre were assessed and were found to operate at levels generally consistent with their existing performance.

Accordingly, the operational impacts are localised to the driveway and Lowick Street access locations, with no material knock-on effects identified elsewhere within the surrounding road network.

2.6 Median Treatment Suitability

The suitability of the proposed median treatment is intrinsically linked to the assessment discussed in Section 3.4.

The median available at Lowick Street is comparable in width to the existing median currently used by vehicles undertaking the two-stage right-turn manoeuvre at the driveway.

Given:

- the available median width of approximately 5.0m which is slightly wider than the existing median width opposite the existing driveway where right turns are currently permitted;
- the ability to accommodate a B99 design vehicle; and
- the fact that the proposal effectively relocates an existing two-stage right-turn manoeuvre,

the median treatment is considered suitable in principle for accommodating the proposed movement, subject to confirmation through detailed design.

2.7 Additional Traffic Modelling

Additional operational modelling has been undertaken and is presented in Tables 1 to 4.

The modelling demonstrates that:

- right-turn delays increase modestly from approximately 17 to 18s currently (at the driveway) to 23 to 24s in 2026 and 26s in 2036 at Lowick Street;
- delays remain below the 45s reference threshold;
- queue lengths remain relatively short;
- degrees of saturation remain below 0.41; and
- no access movement approaches capacity.

Accordingly, the modelling does not identify any operational performance concerns that would preclude relocation of the right-turn movement from the driveway to Lowick Street.

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3 Summary

Section 2 confirms that the proposed relocation of the right-turn exit movement from the existing driveway to Lowick Street has been assessed against sight distance, access operation, internal circulation, median treatment suitability and wider network performance considerations.

The sight distance assessment indicates that the available visibility at Lowick Street exceeds the Safe Intersection Sight Distance requirement for a 60km/h posted speed environment, with approximately 155m available to the west and about 185m available to the east.

The queuing and delay assessment indicates that the proposed Lowick Street arrangement would increase right-turn exit delay and queueing when compared with the existing distributed access arrangement. However, the reported individual movement delays remain below the WAPC 45s reference threshold. The highest reported right-turn average delay is 26s in 2036, with a 95th percentile queue of 20m (3 vehicles) and a maximum degree of saturation of 0.41.

No changes are proposed to the internal customer circulation network, customer access lane geometry, aisle configurations or the number of entry and exit lanes at Lowick Street. The access modification is limited to the reallocation of customer exit movements to Lowick Street and the conversion of the existing driveway to serve the proposed Coles loading dock.

The proposed Grand Promenade treatment utilises an existing median opening and a median width comparable to the current two-stage right-turn arrangement. The assessment indicates that the median treatment is suitable in principle for the proposed B99 design vehicle manoeuvre, subject to confirmation through detailed design and roadworks approval processes.

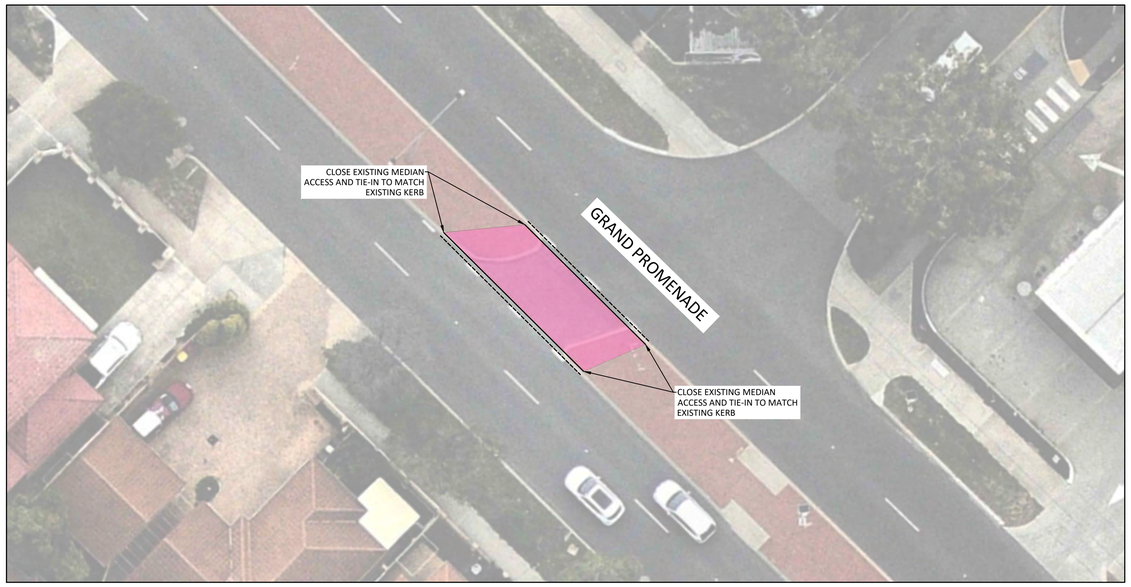
The wider network assessment indicates that the Stage 1 works do not materially alter the operational performance of the Alexander Drive and Grand Promenade intersection when compared with the relevant base scenarios. The longer-term forecast performance issue identified at that intersection is attributed to background traffic growth rather than the Stage 1 access changes.

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Appendix A Lowick Street Concept

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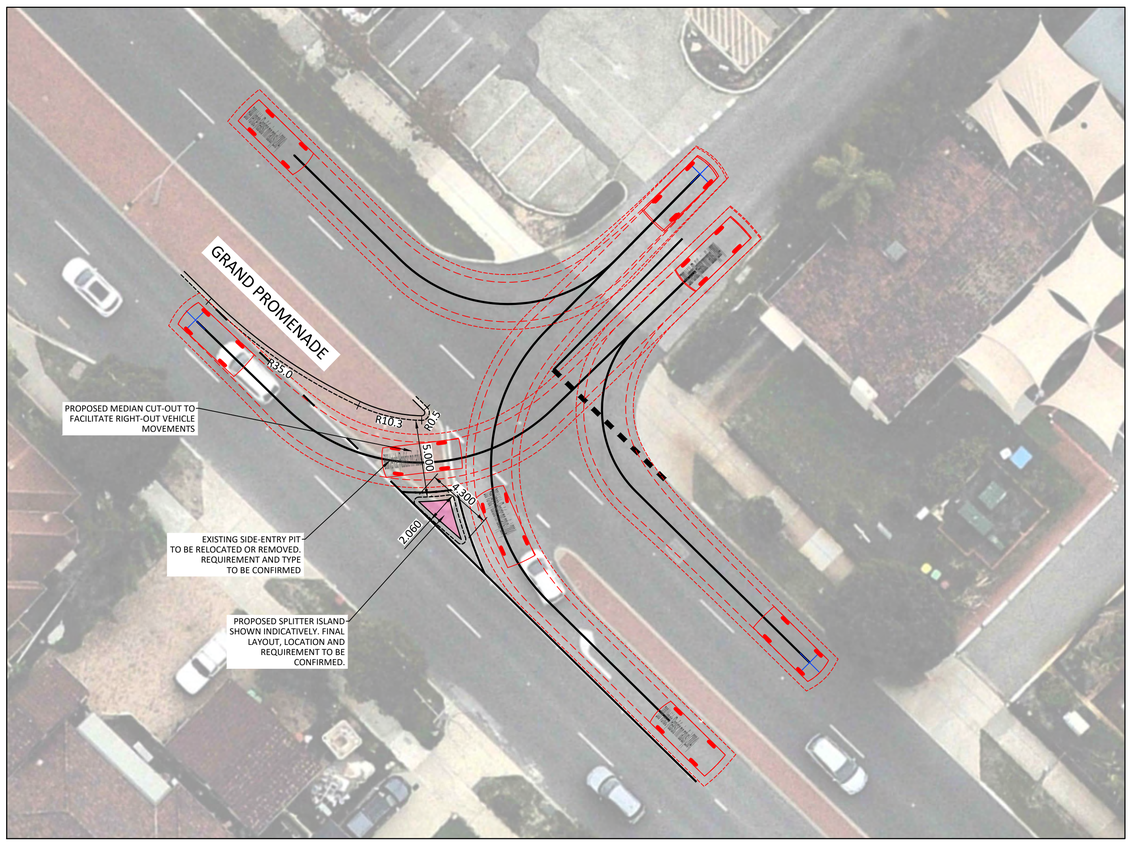
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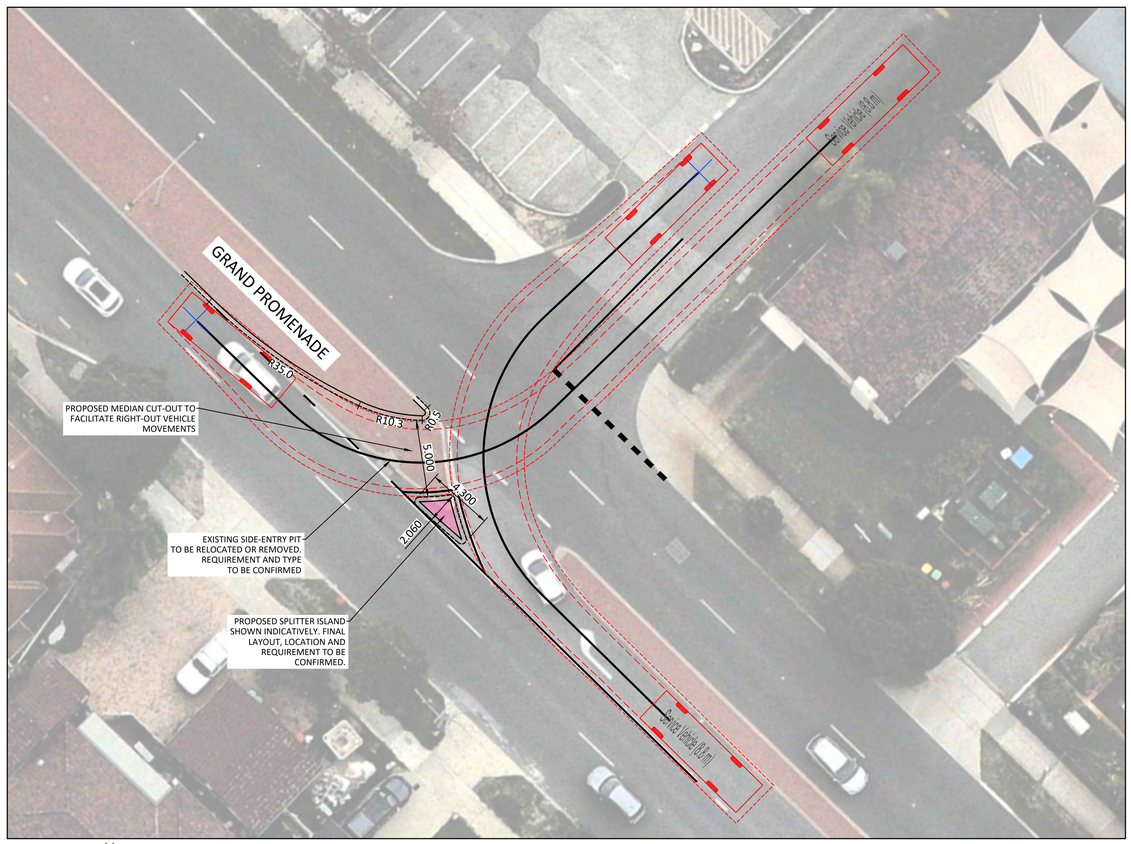
SERVICE CLASHES

CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

WARNING

BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

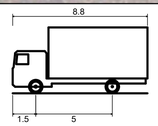






B99 Vehicle (5.2 m)

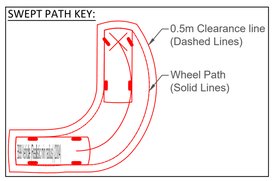
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m



Service Vehicle (8.8 m)

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

SWEPT PATH KEY:



Rev	Date	Drw	Chk	App

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Client
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Project
Dianella Plaza SC - Stage 1

Drawing Status
Draft

Title
Dianella Plaza Proposed Access Concept

Drawing No.
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Galt GEOTECHNICS

Report on:

GEOTECHNICAL STUDY PROPOSED DIANELLA PLAZA SHOPPING CENTRE REDEVELOPMENT – PHASE 1 ALEXANDER DRIVE DIANELLA

WAE200102-02 002 R Rev0

Submitted to:

Projective DM Pty Ltd

16 April 2024

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Figure 1: Site and Location Plan

Appendix A: Supplied Information
Appendix B: Site Photographs
Appendix C: Cone Penetration Test Results
Appendix D: Borehole Reports
Appendix E: Infiltration Test Results

Standard Geotechnical Definitions, Recommendations, Requirements and Limitations

1. INTRODUCTION

This report presents the outcomes of Galt Geotechnics' (Galt's) geotechnical study for the proposed Stage 1 of the Dianella Plaza Shopping Centre redevelopment on Alexander Drive, Dianella ("the site").

This report is to be read in conjunction with the appended "Geotechnical Definitions, Recommendations, Requirements and Limitations", 'Clause GDR1', etc. found at the back of this report.

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2. KEY FINDINGS

The site is underlain by Sand to the maximum investigated depth of 8 m. The sand is typically medium dense to dense with some near surface loose sand present in some test locations.

Groundwater was recorded at depths ranging from 6.5 m to 7.7 m.

An unsaturated hydraulic conductivity (k) of 5 m/day may be adopted for the design of soakwells.

3. SITE DESCRIPTION

Table 1: Summary of Site

Item	Comment
Site Extent	Refer Figure 1
Site Area	Around 7.7 ha
Current Site Surface Levels[1]	Typically RL 26 m AHD to RL 30 m AHD in middle of site
Vegetation	Mature trees within car park and near northern boundary. Typically paved across balance of the site.
Current Land Use	Commercial.
Existing Infrastructure	Dianella Plaza Shopping Centre and associated car parking
Site History[2]	1953 to 1965: Bushland 1965 to 1995: Construction of Dianella Plaza and associated car parks 1995 to present: Relatively unchanged. Northern-most building demolished in 2015 and area remains vacant.

NOTES:

1. *Site levels based on publicly available data (Landgate).*

2. *Site history based on aerial imagery (Landgate).*

4. PROPOSED DEVELOPMENT

Table 2: Summary of Proposed Development

Item	Comment
Proposed Development	Demolition of the existing Coles building, followed by construction of new Coles building further south (fronting Grand Promenade). The footprint of the existing Coles building will be occupied by several smaller commercial tenancies and car parking areas.
Basements Proposed	Assumed none
Proposed Finished Level	Assumed near current surface level
Cut/Fill	Minor to facilitate earthworks.
Assumed Foundation Type	Shallow footings and ground slabs
Assumed Retaining Walls	Minor if any
Assumed Stormwater Disposal	On-site via soakwells
Assumed Sewage Disposal	Off-site via sewer network

NOTES: ***1.*** *Proposed development details based on supplied information presented in Appendix A.*

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5. PROJECT OBJECTIVES

The objectives of the study were to:

- assess subsurface soil and groundwater conditions across the site;
- provide recommendations on suitable footing systems for the proposed development;
- provide allowable bearing pressure and settlement estimates for shallow foundations;
- provide a site classification(s) in accordance with AS 2870-2011 “Residential Slabs and Footings”;
- provide recommendations and geotechnical design parameters for earth retaining structures;
- recommend appropriate site preparation procedures including compaction criteria;
- assess the permeability of the soils at the site for potential on-site disposal of stormwater by infiltration; and
- provide a subgrade California bearing ratio (CBR) value for pavement thickness design by others.

6. FIELDWORK

Fieldwork was carried out in the presence of a representative from Galt on 2 April 2024 and comprised:

Table 3: Summary of Field Data

Type	Results Appendix	Summary	GDR Clause	Equipment Used	No. Tests	Depth Range (m)
Site Plan	Figure 1	-	-	Hand held GPS[1]	-	-
Photographs	B	-	-	-	-	-
Cone Penetration Tests (CPTs)	C	Section 8	GDR3.2	22-tonne truck	8	8
Machine Auger Boreholes (BH)	D	Section 8	GDR3.3	EVH Scout on utility	5	1.5
Perth Sand Penetrometer (PSP)			GDR3.5	Hand operated PSP	5	1.05-2.1
Infiltration Tests (IT)	-	Section 6.1	GDR3.7	Inverse auger hole	3	0.91

NOTES: ***1.*** *Hand held GPS is accurate to ±5 m.*

6.1. Infiltration Test Results

Table 4: Infiltration Test Results

Test Location	Soil Description	Depth (m)	Minimum Unsaturated Hydraulic Conductivity, k_{unsat} (m/day)
IT01	SAND (SP)	0.91	8.5
IT02			8.7
IT03			7.4

NOTES: ***1.*** *Infiltration test method using inverse auger is explained in GDR3.7*

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7. SITE CONDITIONS

7.1. Geology

Table 5: Summary of Geology Mapping

Map Sheet	Map Scale	Mapped Soils	Site Findings
Perth	1:50,000	Bassendean Sand	FILL: SAND (SP-SM); over SAND (SP)

7.2. Groundwater

Table 6: Summary of Groundwater Levels

Item	Date	Depth (m)	Elevation (m AHD)	Comment
Perth Groundwater Atlas	1997	1-5	25	
Site observations	2024	5.2-6.2	~23[2]	Groundwater depths inferred from pore pressure measurements

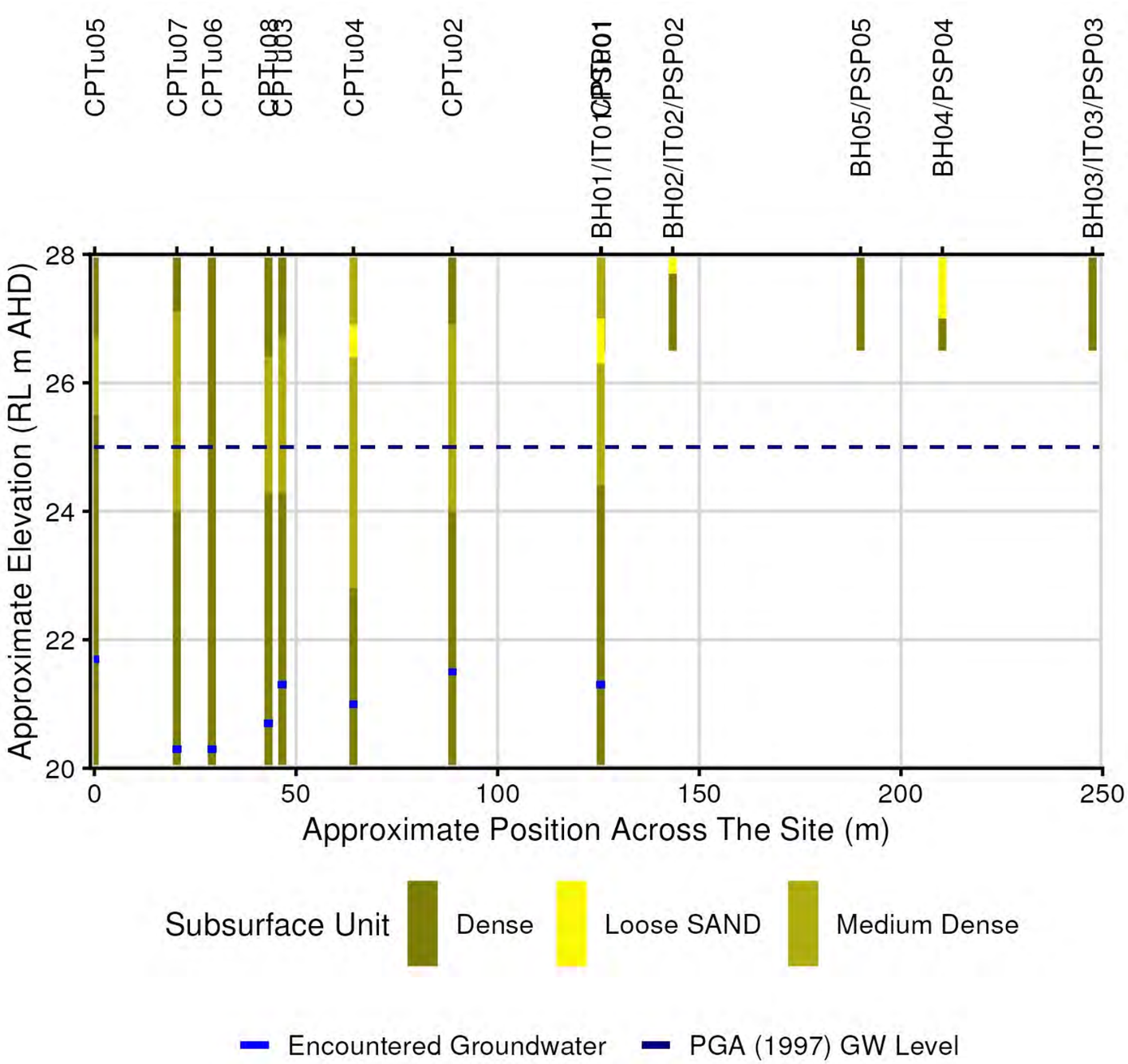
NOTES: ***1.*** *Perth Groundwater Atlas 1997 shows the historical maximum groundwater elevations.*
2. *Groundwater elevation estimated from assumed surface elevation of RL 28 m AHD.*

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8. GROUND MODEL

The subsurface conditions are generalised in the inline image and table below. The generalised subsurface units are described in the table with geotechnical design parameters.

Inline Image 1 – Idealised cross section of subsurface conditions on site.



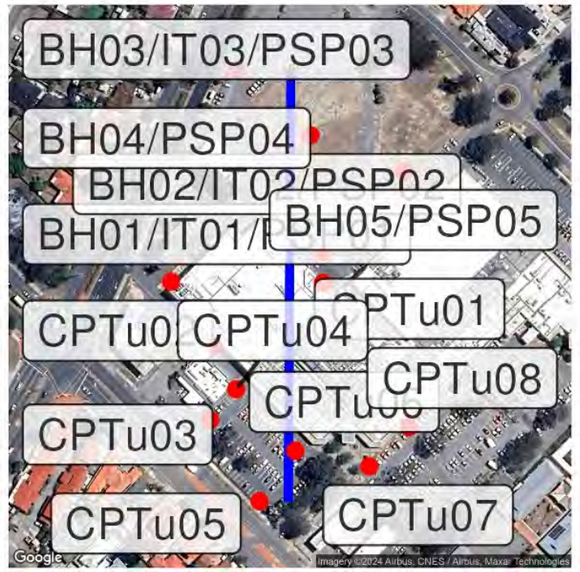


Table 7: Geotechnical Model Units and Design Parameters

Unit Name	Material Type	Where Found	Description	Comment	γ_{bulk} (kN/m^3)	ϕ' (°)	c' (kPa)	S_u (kPa)	E_v (MPa)	ν	k_0	Wall Friction=0		Wall Friction=0.5ϕ	
												k_a	k_p	k_a	k_p
A	Loose SAND	Within the upper 2 m of soil profile, typically toward the north of the site.	Fine to medium grained, grey, brown, yellow. Near surface FILL typically comprises gravelly SAND, fine to medium grained, fine to medium sized gravel.	Local fill similar to in situ material as noted on ground model.	17	32	-	-	5	0.3	0.42	0.31	3.25	0.27	5.55
B	Medium Dense SAND	Typically between RL 27 m AHD and RL 23 m AHD.			18	34	-	-	20	0.25	0.39	0.28	3.54	0.25	6.47
C	Dense SAND	At the surface and typically below RL 24 m AHD.			18	36	-	-	40	0.25	0.36	0.26	3.85	0.22	7.63

NOTES:

1. *These units are a generalization of results from individual tests, which should be referred to for more information.*
2. *Conditions at CPT locations below depth of soil sample recovery are inferred (refer to clause GDR3.2)*
3. *Topsoil is not included as a discrete unit.*
4. *For all earth pressure coefficients (retaining wall design) refer to clause GDR11.2 for more detail and interpretation. Unit weights for retaining structure design should be as per GDR11.2 or 1 kN/m^3 greater than the values in the table above.*

γ_{bulk} – bulk unit weight
ϕ' – effective friction angle
S_u – undrained shear strength
c'– effective cohesion
E_v – vertical elastic modulus
ν – Poisson's Ratio
k_a – coefficient of active earth pressure (Coulomb – AS4678-2002, Appendix E)
k_p – coefficient of passive earth pressure (Coulomb – AS4678-2002, Appendix E)
k_0 – coefficient of at-rest earth pressure (Jaky)

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9. GEOTECHNICAL ASSESSMENT

9.1. Summary

Table 8: Summary of Geotechnical Assessment

Type	Clause	Parameter	Comment
Site Suitability	-	-	We consider the site to be geotechnically suitable for the proposed development. Standard site preparation measures will apply.
Construction Methodology and Suitability	-		Shallow footings in accordance with AS2870-2011 will be suitable for this site. Mass retaining will be suitable for retaining above groundwater. Stormwater disposal via infiltration is suitable.
Site Classification (AS2870)	GDR5	A	y_s < 5 mm
Site Preparation	GDR6	-	**GDR6.2.1 Common Measures** followed by **GDR6.2.2 Sand Sites**.
Approved Fill	GDR8		**Approved Fill** for this site is to comprise **Permeable Sand**. All natural and existing fill sand may be assumed to be **Permeable Sand**.
Compaction Control	GDR7	-	A PSP may be used for compaction control on site-derived **Permeable Sand.** Deemed to comply values for 'Bassendean Sand' in GDR7.4 are applicable.
Shallow Footings	GDR9	q_{all} = 250 kPa	Design tables for shallow footings are presented in Section 9.2. 70% of the settlement is expected to occur during construction.
Earth Pressure Coefficients	GDR11	Section 8	Earth pressure coefficients can be used for the generalised subsurface unit presented. Any **Permeable Sand** fill may be assumed to be Unit B – Medium Dense SAND.
Unsaturated Hydraulic Conductivity	GDR13	k_{unsat} = 5 m/day	k_{unsat} values apply where disposing into **Approved Fill (Permeable Sand)** or natural sand, minimum 0.5 m above the groundwater table GDR13.4.
Pavement Subgrade CBR	GDR16	CBR = 10%	Subgrade to comprise compacted in-situ sand or compacted **Approved Fill**

NOTES: ***1.*** *q_{all} – allowable bearing pressure (maximum for all footings, refer to footing tables for further details)*

9.2. Shallow Footings

Table 9: Isolated Pad - Footing Allowable Bearing Pressures and Estimated Settlements

d_e (m)	b (m)	q_{all} (kPa)	s (mm)
0.5	0.5	160	<5
	1.0	180	5-10
	1.5	200	10-15
	2.0	200	15-20
	3.0	200	20-25
1.0	1.0	200	5-10
	2.0	200	10-15
	3.0	200	15-20
	4.0	200	20-25

NOTES:

1. *d_e – minimum embedment depth (below finished ground level or floor slab)*
2. *b – Footing breadth (footings assumed approximately square)*
3. *q_{all} – allowable bearing pressure (peak).*
4. *s – estimated settlement (excludes shrink/swell from site class)*
5. *Refer to GDR9*

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Table 10: Isolated Strip Footing - Allowable Bearing Pressures and Estimated Settlements

d_e (m)	b (m)	q_{all} (kPa)	s (mm)
0.5	0.5	140	<5
	1.0	140	5-10
	1.5	150	10-15
	2.0	160	15-20
	3.0	160	20-25
1.0	1.0	160	5-10
	2.0	160	10-15
	3.0	160	15-20

NOTES:

1. *d_e – minimum embedment depth (below finished ground level or floor slab)*
2. *b – Footing width (footings assumed long relative to width)*
3. *q_{all} – allowable bearing pressure (peak).*
4. *s – estimated settlement (excludes shrink/swell from site class)*
5. *Refer to GDR9*

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10. CLOSURE

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Timothy Dunton
Engineering Geologist

Rick Piovesan CPEng
Geotechnical Engineer

https://galtgeo.sharepoint.com/sites/wae200102/shared documents/02 projective dm/03 correspondence/wae200102-02 002 r rev0.docx

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Figures





Legend

- Site Boundary
- Borehole / Infiltration Test / Perth Sand Penetrometer
- Borehole / Perth Sand Penetrometer
- Cone Penetration Test with Pore Pressure Measurement

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N

0 20 40 60 80 100
Meters

NOTES
Aerial Imagery and Cadastre sourced from Landgate/SLIP



SCALE	1:1,500	(A3)
DRAWN	CED	
DATE DRAWN	5/4/2024	
CHECKED	RP	
DATE CHECKED	16/4/2024	
PROJECTION	GDA 1994 MGA Zone 50	

Galt Geotechnics Pty Ltd
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Osborne Park WA 6017

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CLIENT	**PROJECTIVE DM PTY LTD**
PROJECT	PROPOSED PHASE 1 REDEVELOPMENT
LOCATION	DIANELLA PLAZA SHOPPING CENTRE ALEXANDER DRIVE, DIANELLA
TITLE	SITE & LOCATION PLAN

Job No	Fig No	Rev
WAE200102-02	FIGURE 1	**A**

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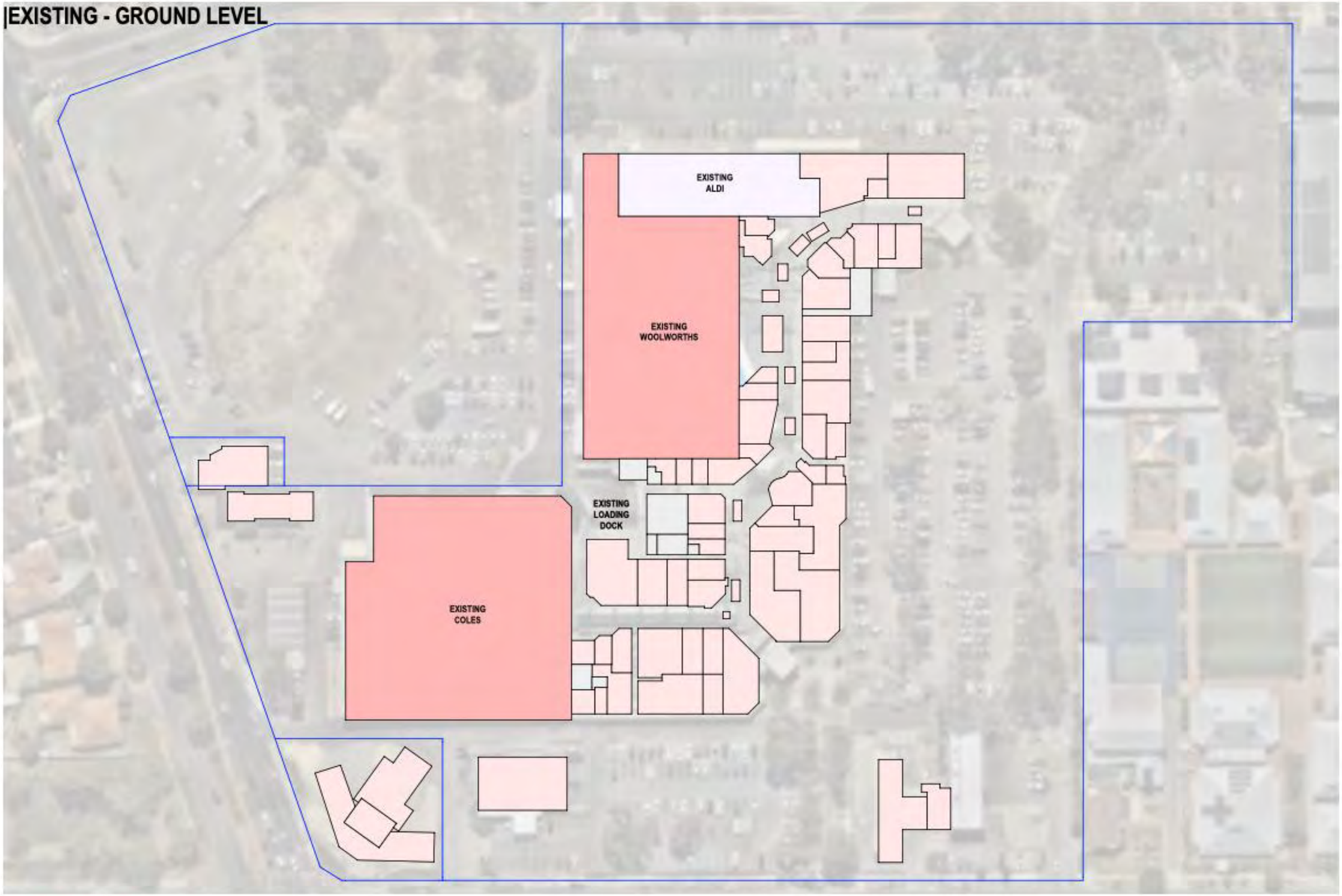
Appendices

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Appendix A: Supplied Information

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EXISTING - GROUND LEVEL



DKO ARCHITECTURE

DIANELLA PLAZA, PERTH
DOCUMENT TITLE

PREPARED FOR:
GREENPOOL CAPITAL

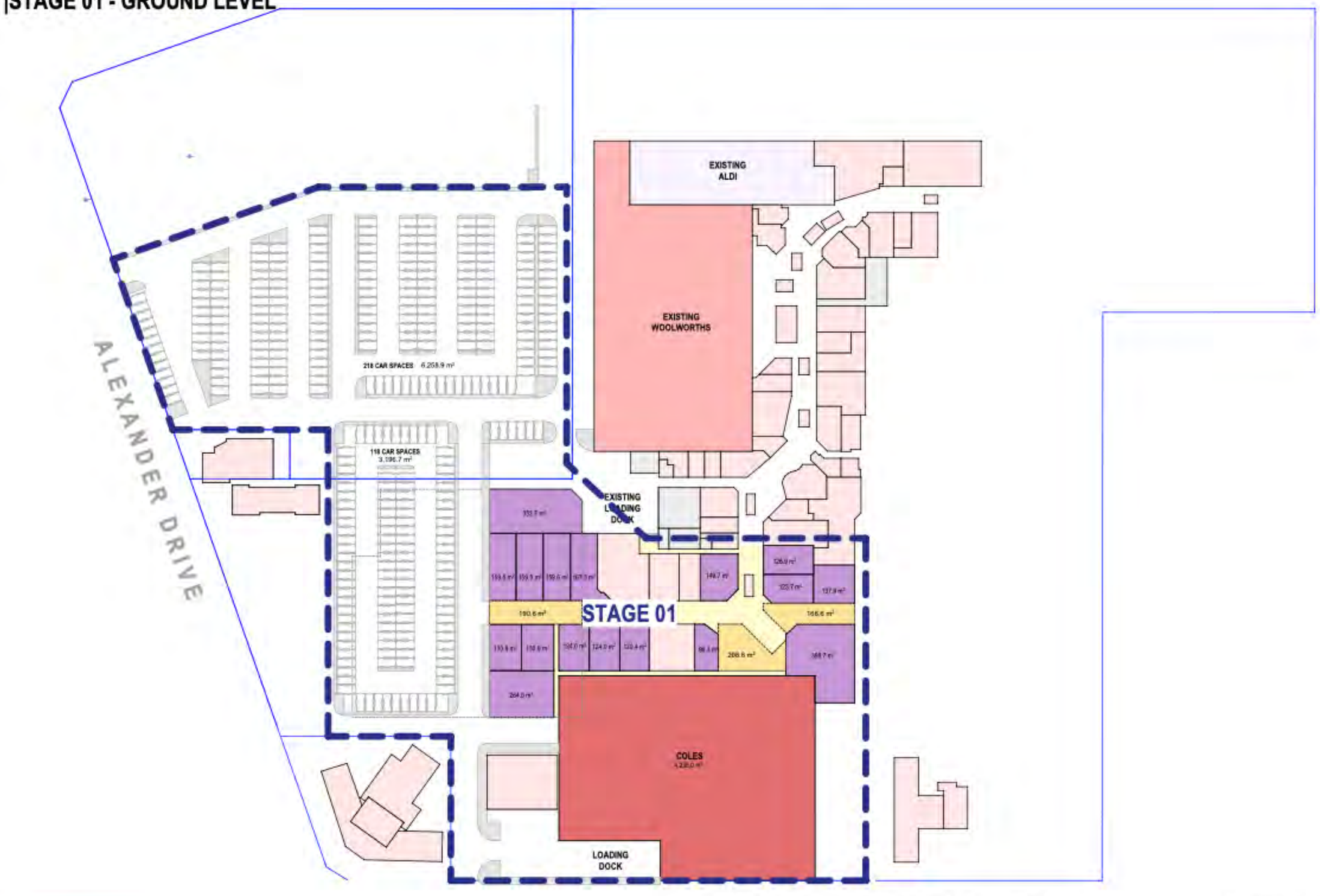
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PAGE 3

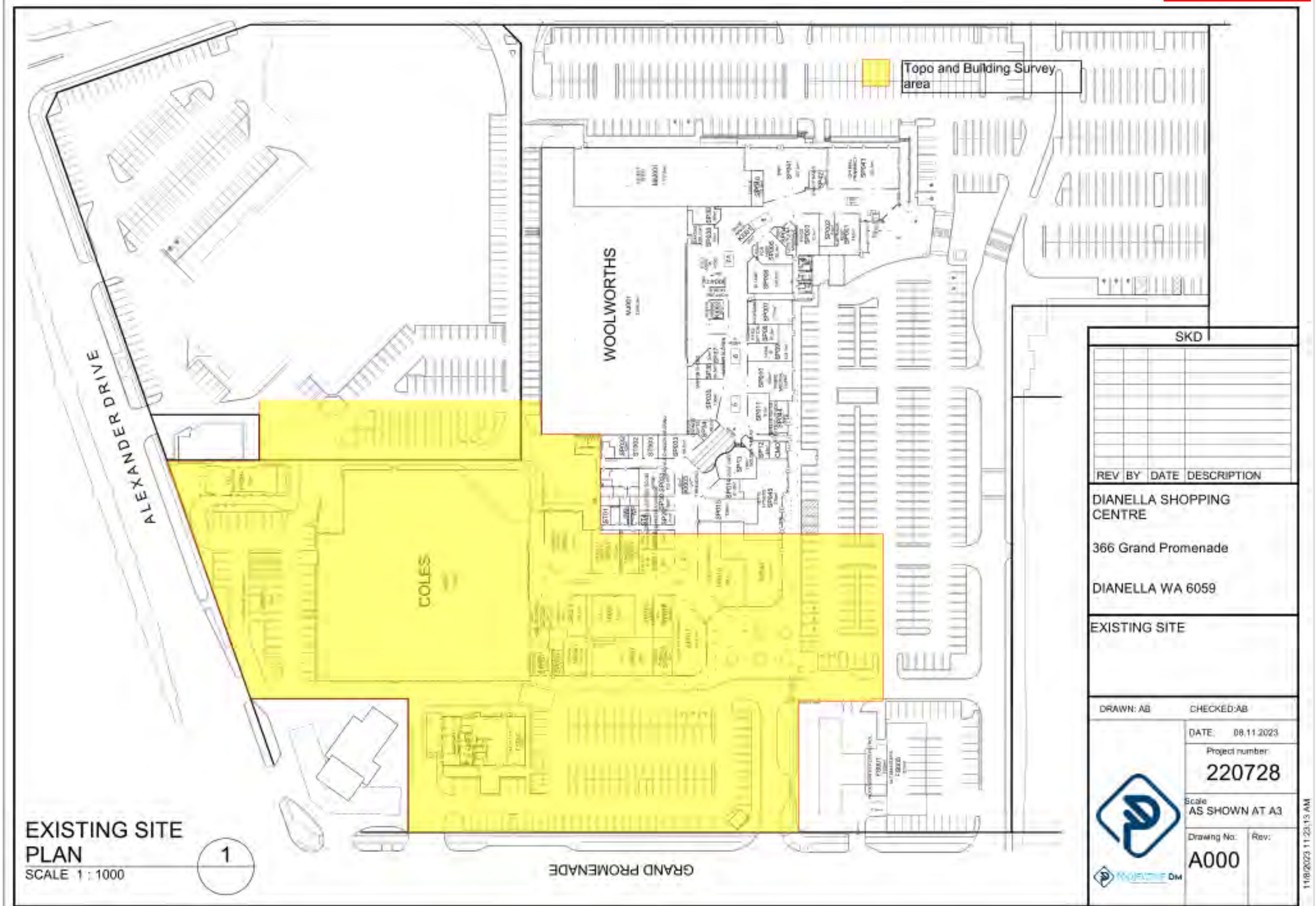
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|STAGE 01 - GROUND LEVEL



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EXISTING SITE PLAN
SCALE 1 : 1000

1

REV	BY	DATE	DESCRIPTION

DIANELLA SHOPPING CENTRE

366 Grand Promenade

DIANELLA WA 6059

EXISTING SITE

DRAWN: AB CHECKED:AB

DATE: 08.11.2023

Project number
220728

Scale
AS SHOWN AT A3

Drawing No: A000

Rev:

11/8/2023 11:23:13 AM

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Appendix B: Site Photographs

Photograph 1: Facing northeast at BH01 location.



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Photograph 2: Facing southeast at BH01 location.



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Photograph 3: Facing southwest at BH01 location. IT01 in progress.



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Photograph 4: Facing southeast at BH02 location.

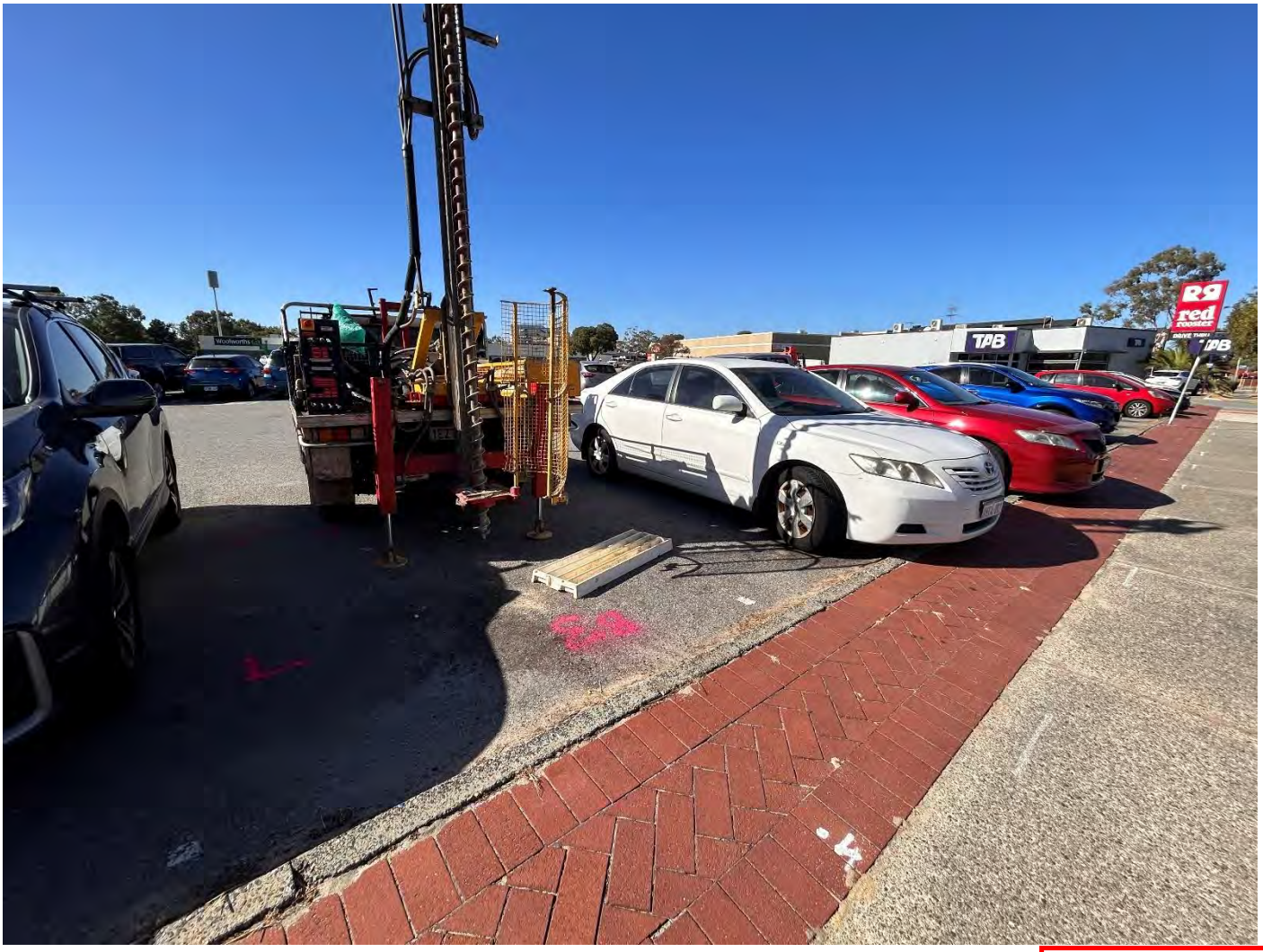


Photograph 5: Facing northeast at BH03 location.



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Photograph 6: Facing southeast at BH03 location.



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Photograph 7: Facing southwest at BH05 location.



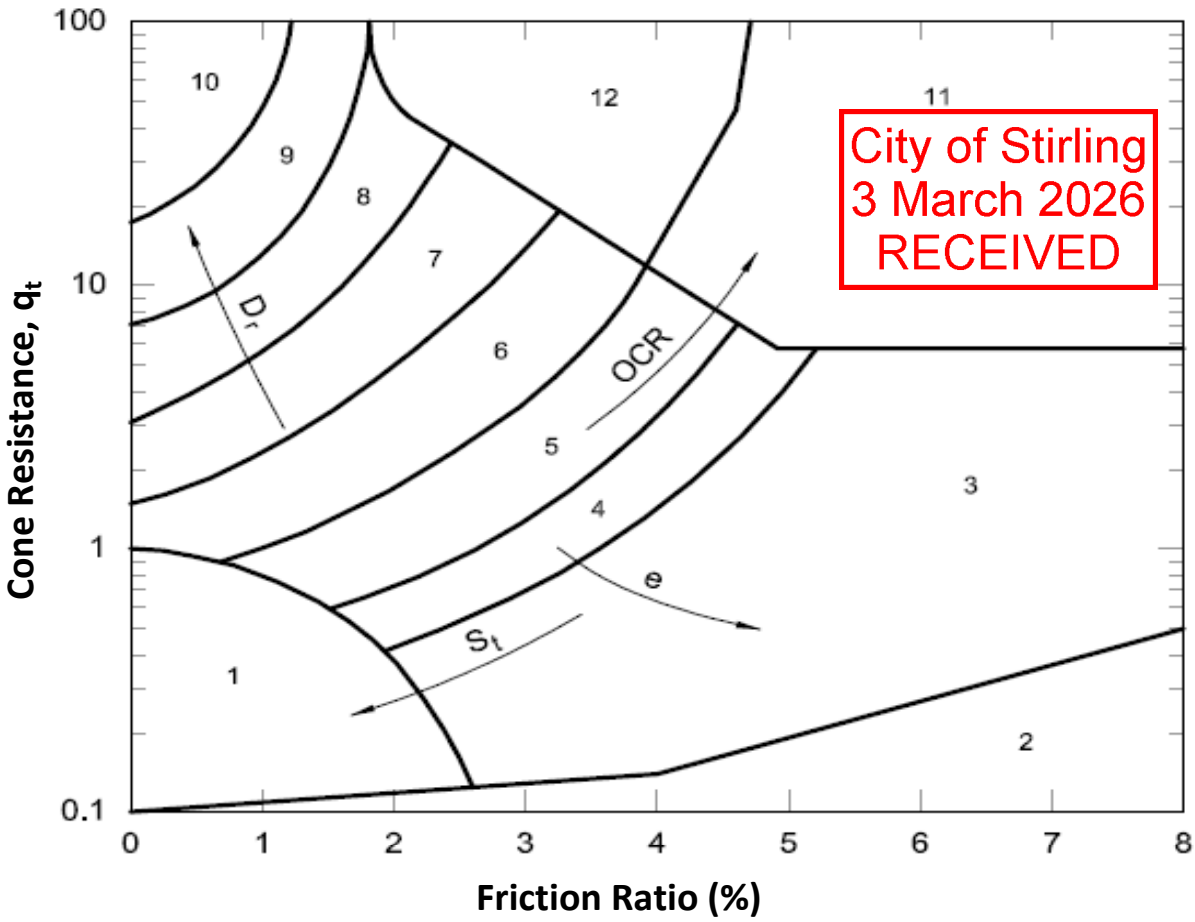
Photograph 8: Facing south at CPT01 location.



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Appendix C: Cone Penetration Test Results

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DEFINITIONS

q_t : Cone tip resistance corrected for pore water pressure
S_t : Sensitivity
e : Void ratio
D_r : Relative density
OCR : Overconsolidation ratio
OC : Overconsolidated

SOIL BEHAVIOUR TYPE ZONES

1. Sensitive fine grained
2. Organic material
3. Clay
4. Silty clay to clay
5. Clayey silt to silty clay
6. Sandy silt to clayey silt
7. Silty sand to sandy silt
8. Sand to silty sand
9. Sand
10. Gravelly sand to sand
11. Very stiff fine grained material (OC/cemented)
12. Sand to clayey sand (OC/cemented)

NOTES

A. Some overlap in type zones is expected
B. Local correlations are preferred and may indicate soil type boundaries that are different from those shown above

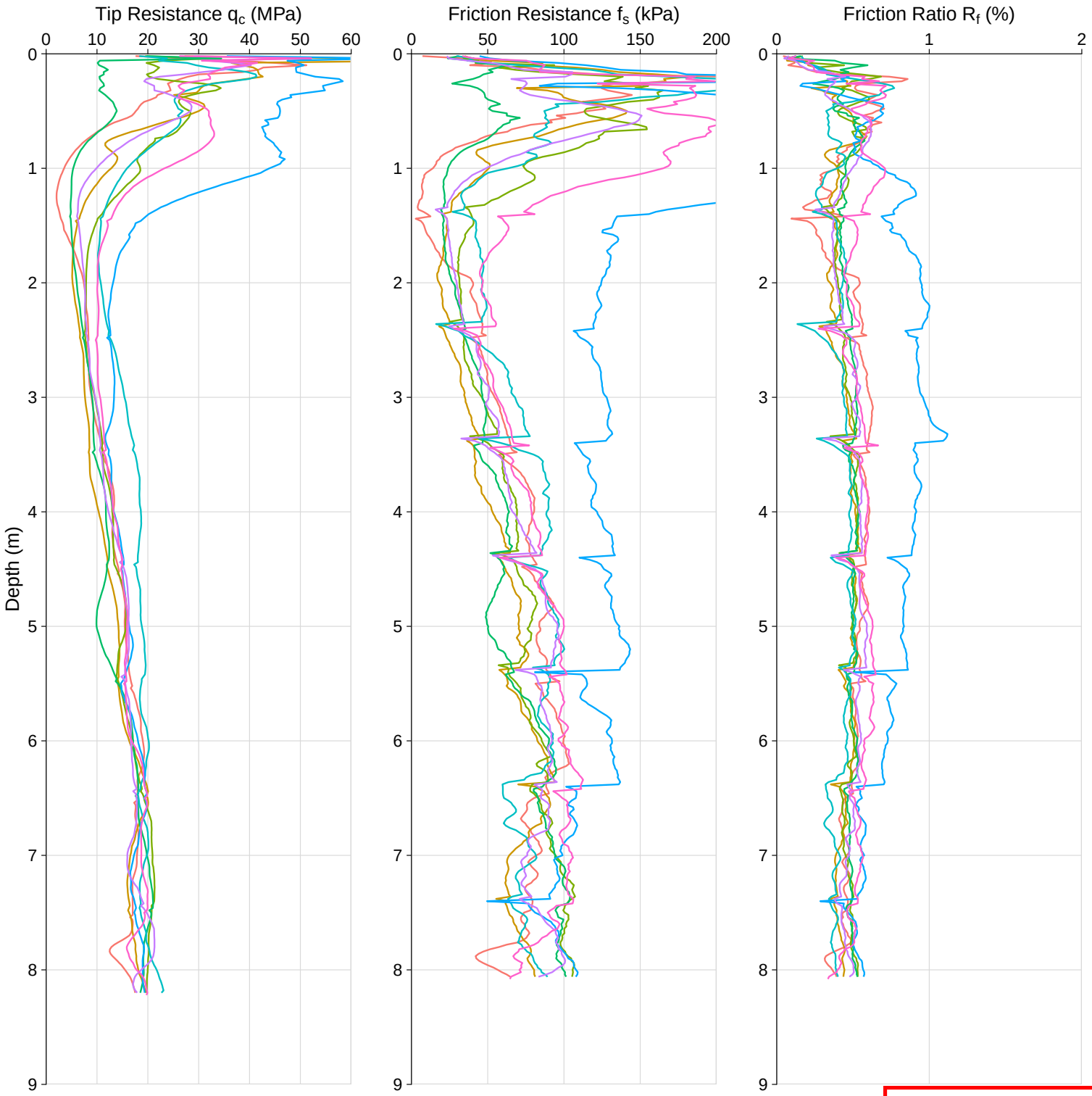
Reference: Robertson, P.K., Campanella, R.G., Gillespie, D. and Grieg, J. (1986) "Use of Piezometer Cone Data". Proceedings of the ASCE Speciality Conference In Situ '86: Use of In Situ Tests in Geotechnical Engineering, Blacksburg, pp 1263-80, American Society of Civil Engineers (ASCE)

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CONE PENETRATION TESTING (CPT) SOIL TYPE INTERPRETATION

CONE PENETRATION TEST

ALL TESTS		**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024 - 03/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



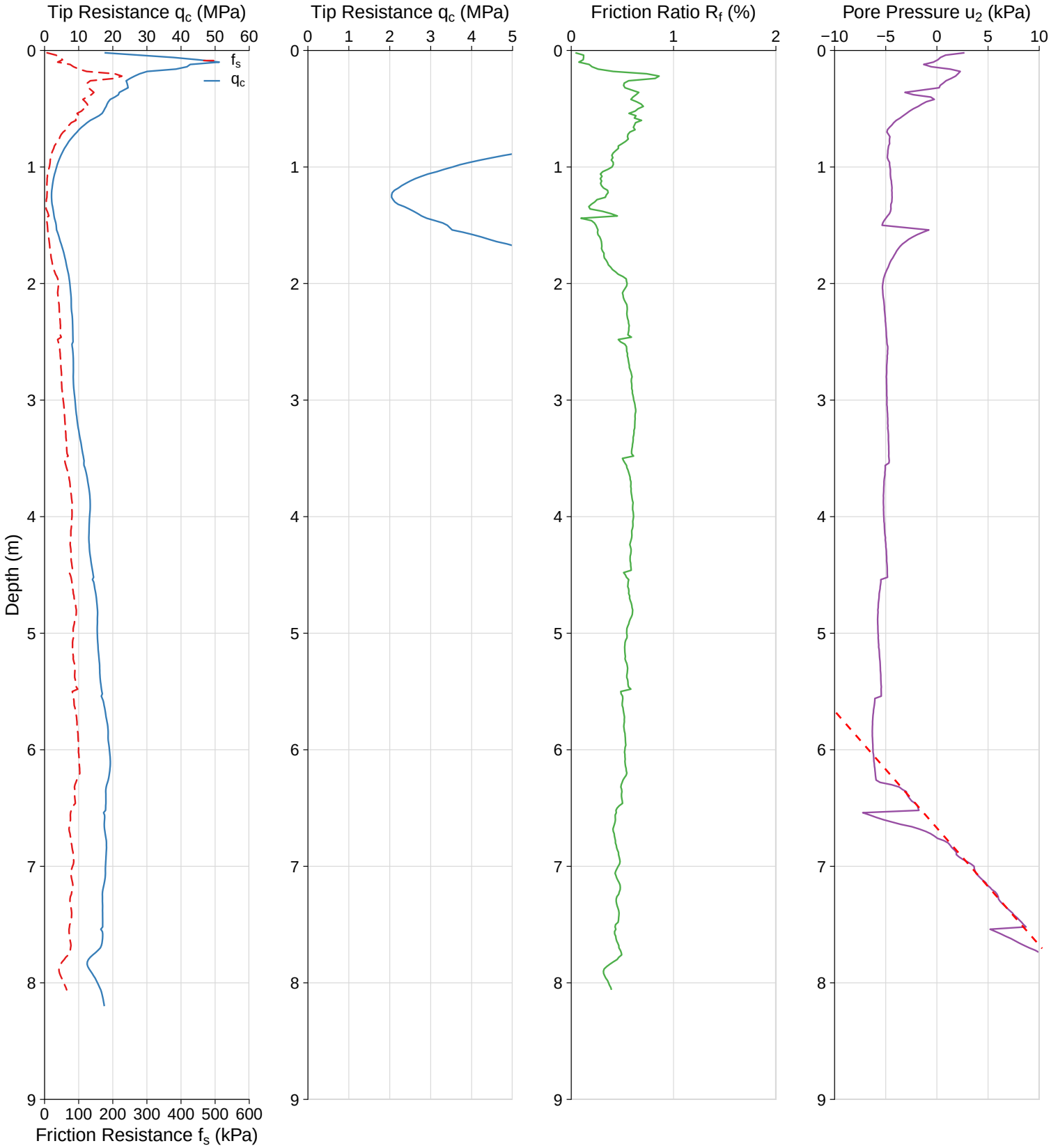
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RIG: AP van den Berg Hyson 200kN 14T Truck

CONE PENETRATION TEST

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CPT ID:	WAE200102-02_CPTU01	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

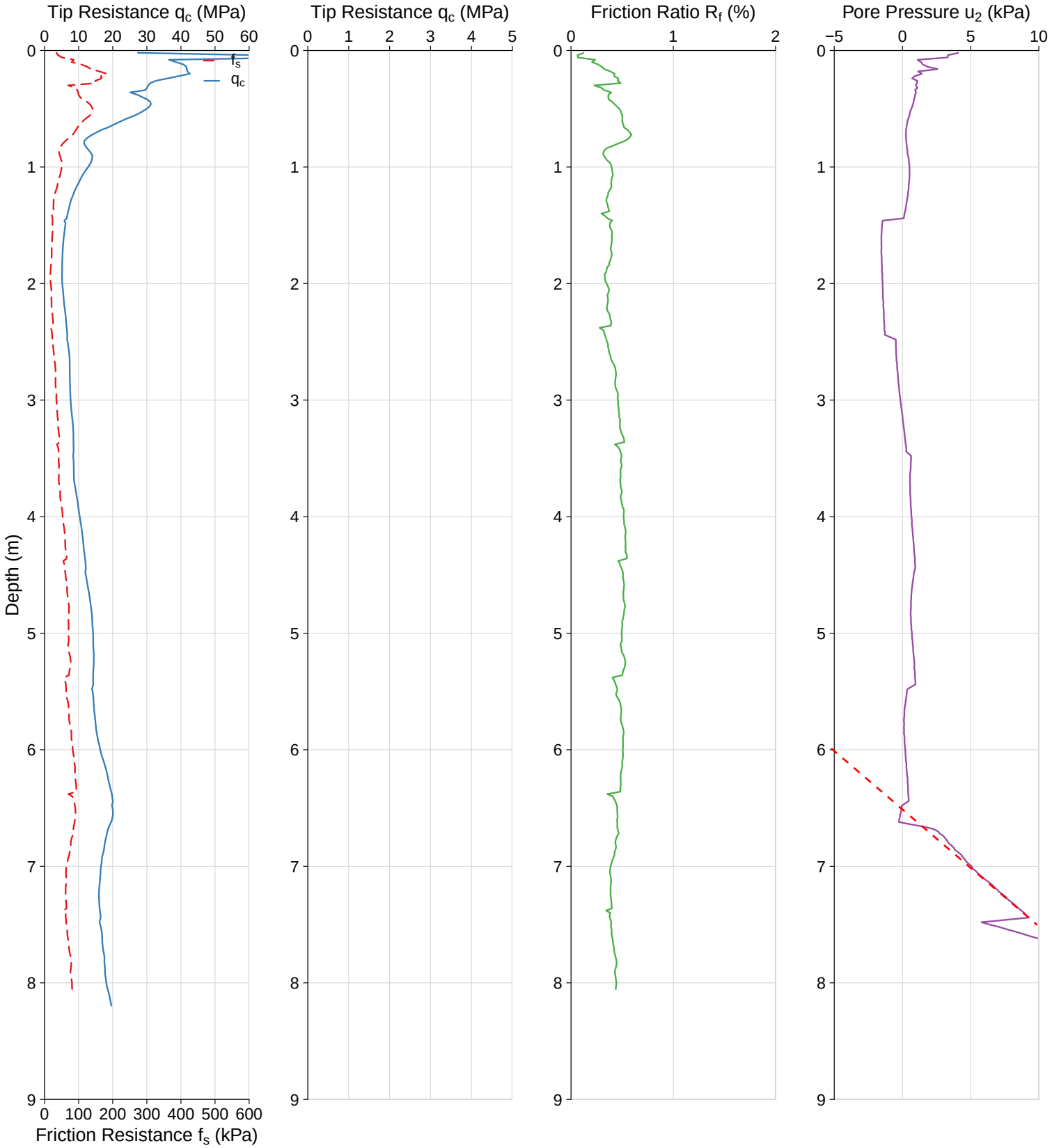
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CPT ID:	WAE200102-02_CPTU02	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

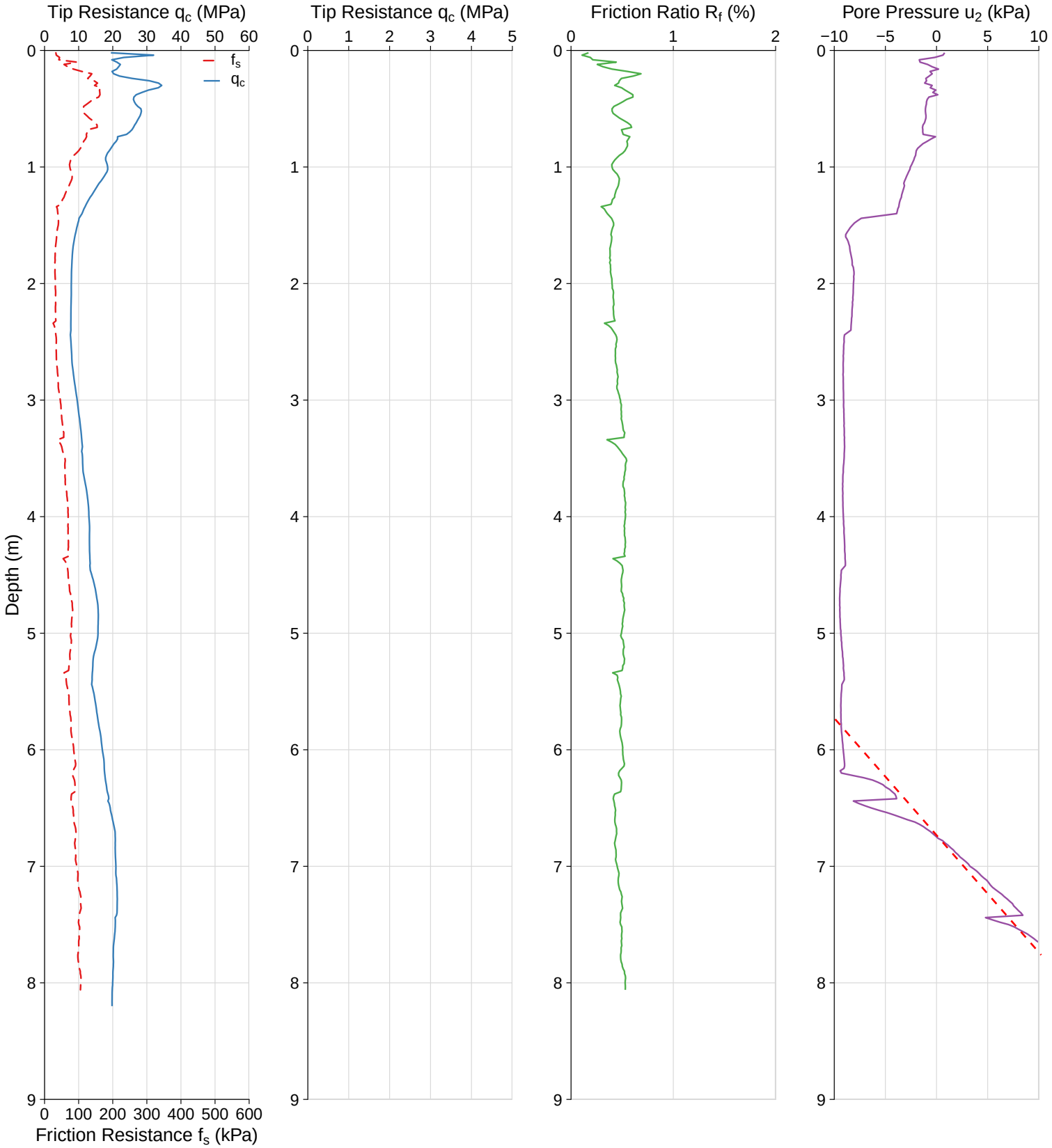
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CPT ID:	WAE200102-02_CPTU03	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

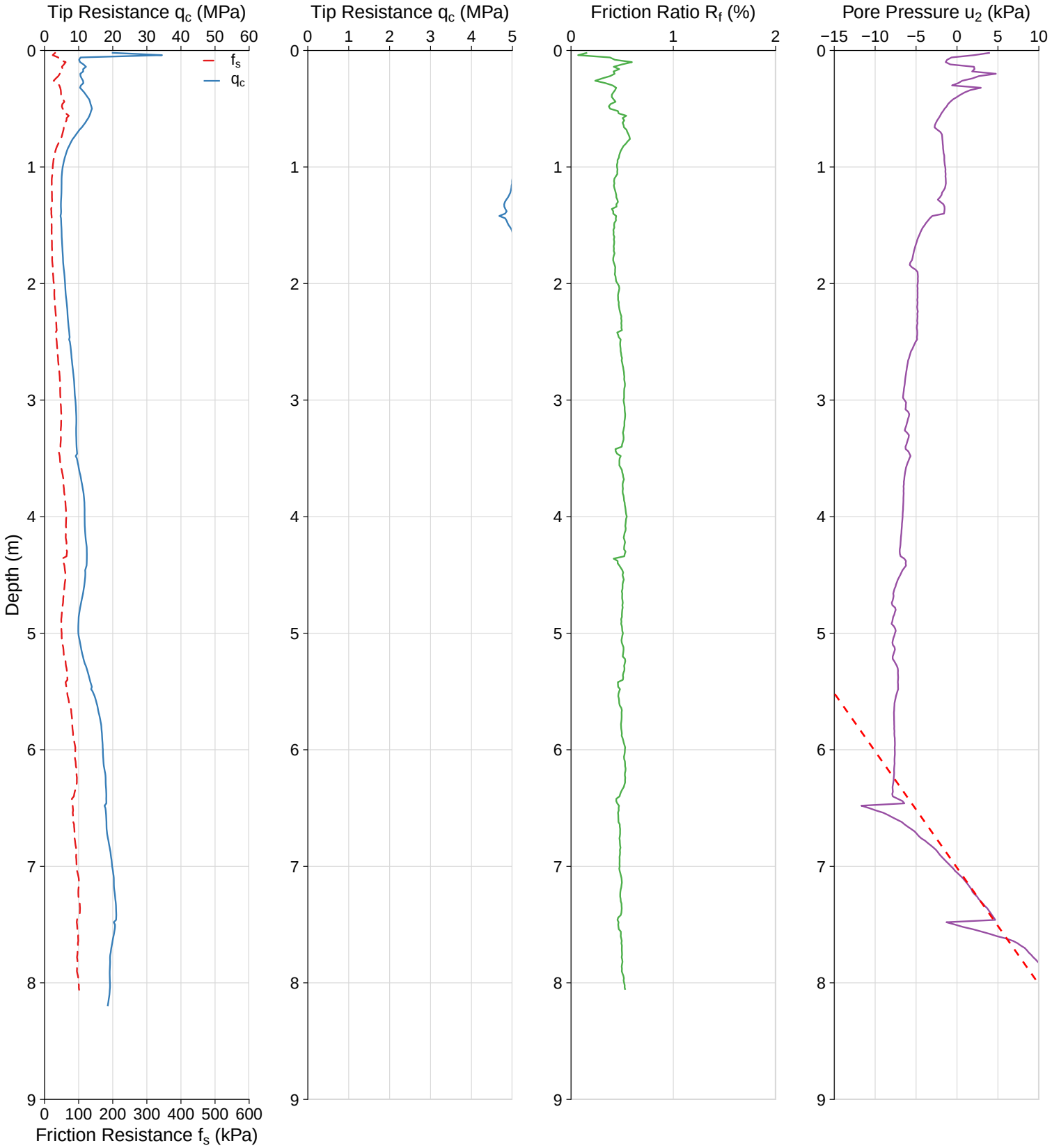
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CPT ID:	WAE200102-02_CPTU04	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

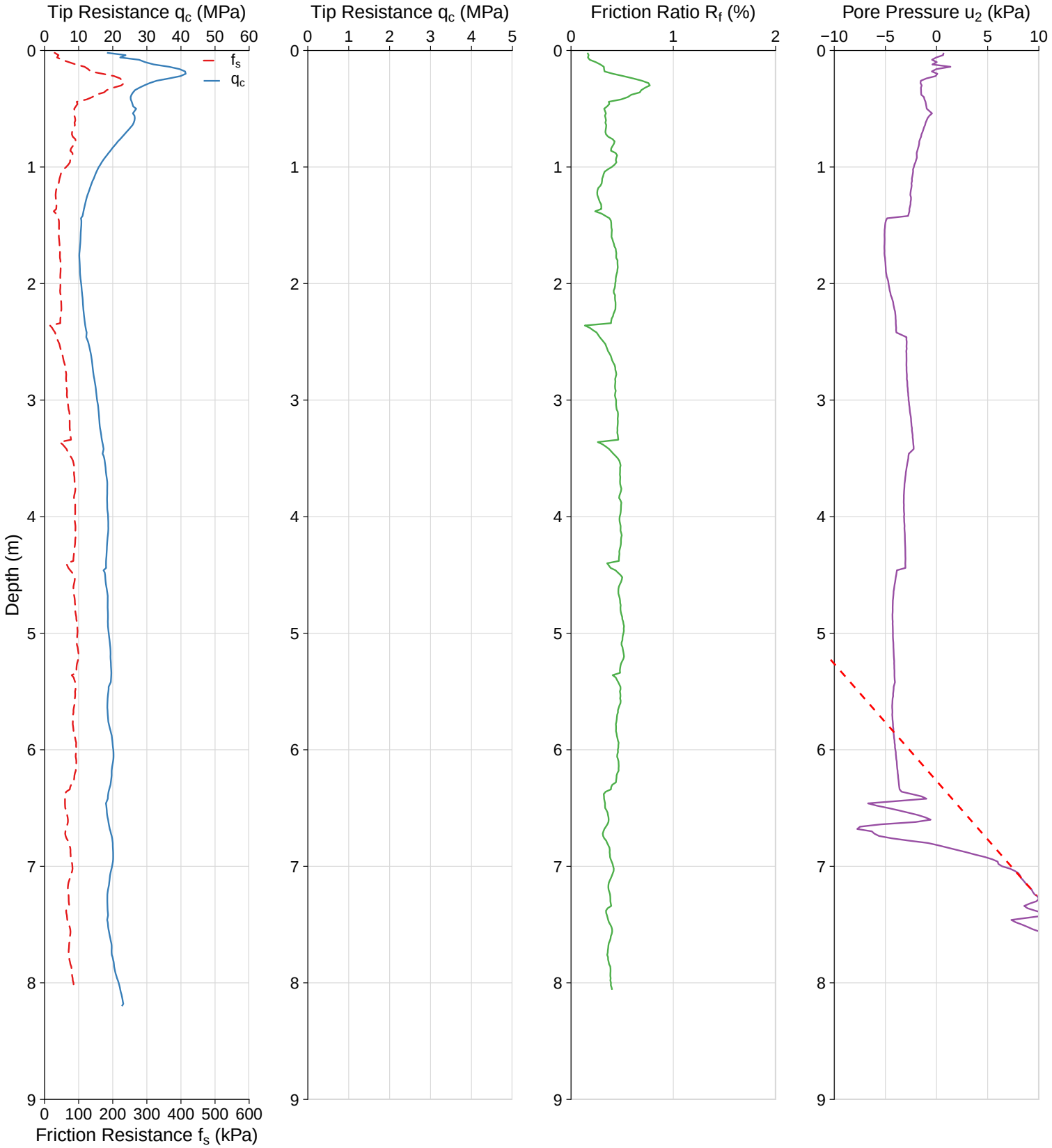
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CPT ID:	WAE200102-02_CPTU05	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre

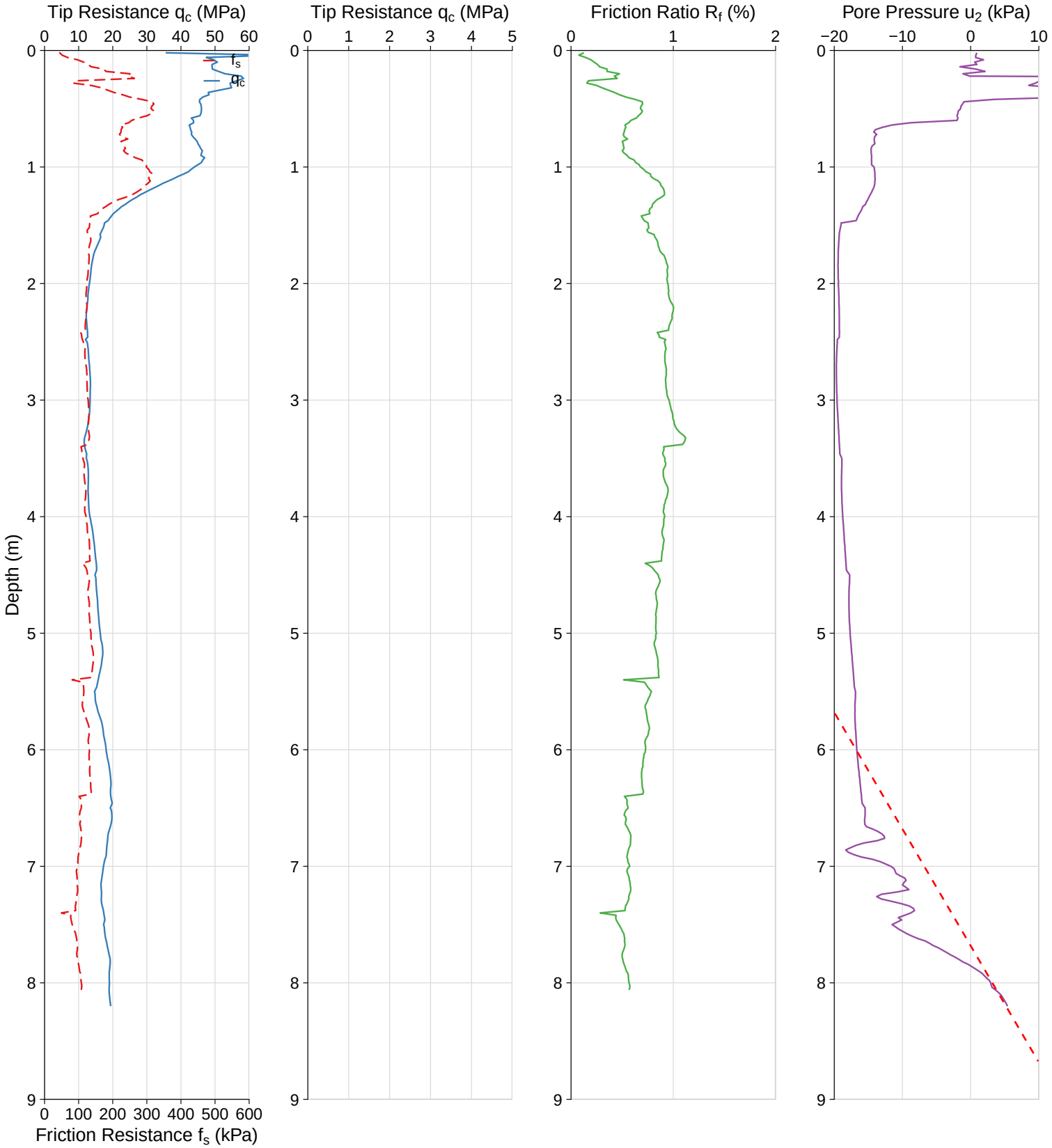


WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

CONE PENETRATION TEST

City of Stirling
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CPT ID:	WAE200102-02_CPTU06B	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

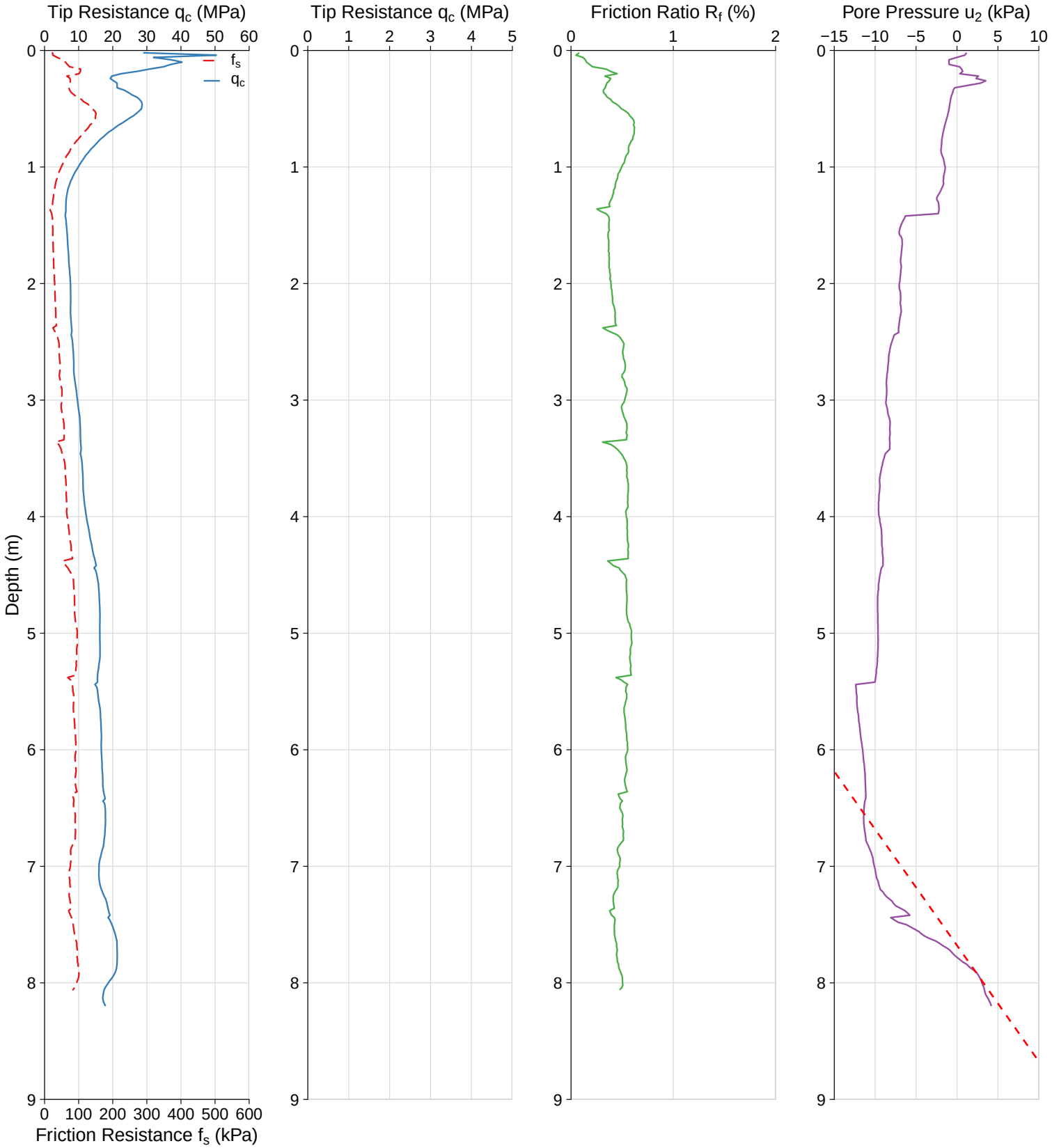
Galt GEOTECHNICS

Galt Geotechnics - Tested in accordance with AS 1289.6.5.1-1999

CONE PENETRATION TEST

City of Stirling
3 March 2026
RECEIVED

CPT ID:	WAE200102-02_CPTU07	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

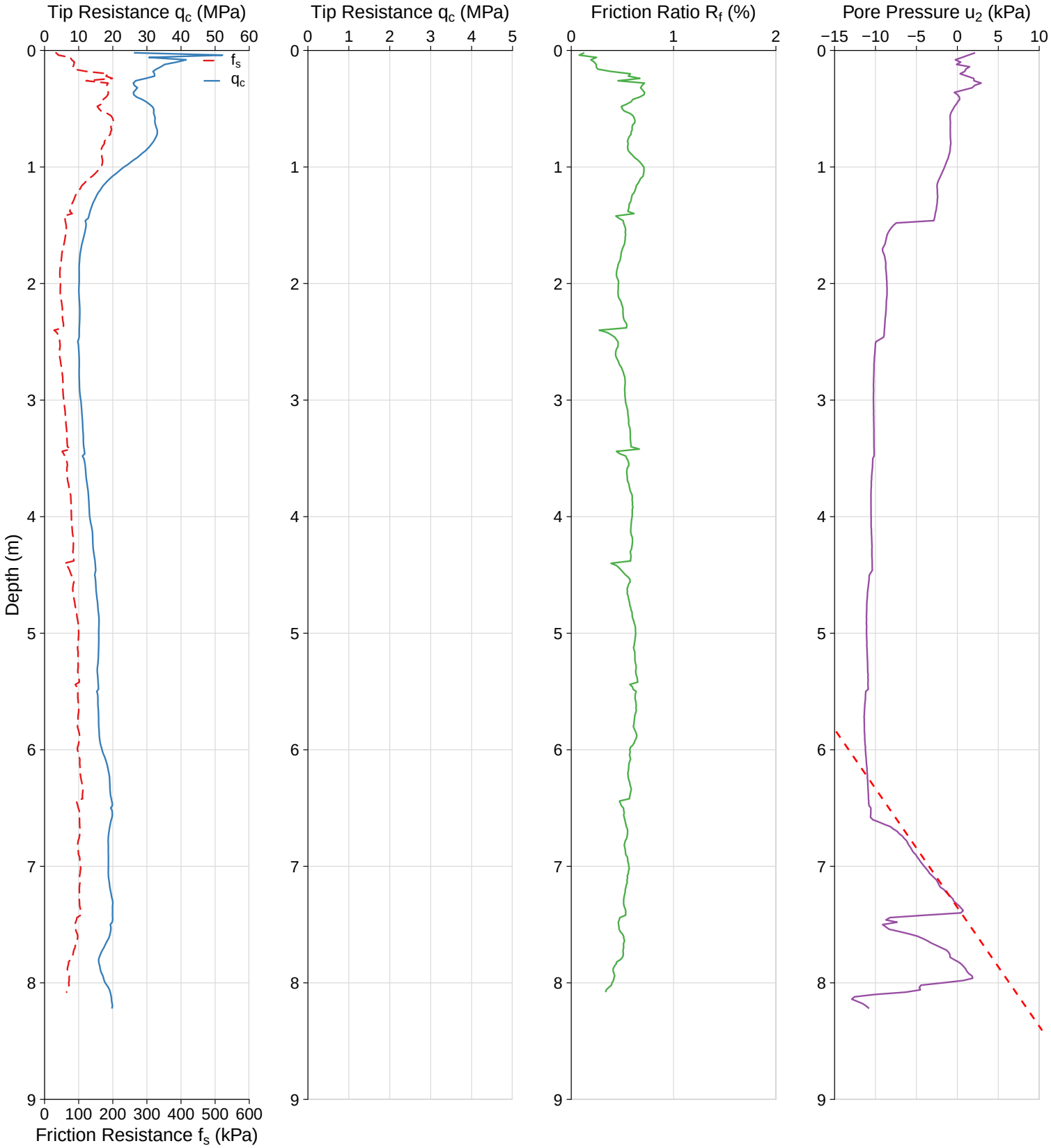
Galt GEOTECHNICS

Galt Geotechnics - Tested in accordance with AS 1289.6.5.1-1999

CONE PENETRATION TEST

City of Stirling
3 March 2026
RECEIVED

CPT ID:	WAE200102-02_CPTU08	**CLIENT:**	Projective DM PTY LTD
JOB NUMBER:	WAE200102-02	**PROJECT:**	Proposed Phase One Redevelopment
DATE:	02/04/2024	**LOCATION:**	Dianella Plaza Shopping Centre



WATER:		**CO-ORDS:**	
TERMINATION:		**ELEVATION:**	
DUMMY PROBE:		**PRE-DRILL:**	
RIG:	AP van den Berg Hyson 200kN 14T Truck	**WASHER/DISC:**	Porous

Galt GEOTECHNICS

Galt Geotechnics - Tested in accordance with AS 1289.6.5.1-1999

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Appendix D: Borehole Reports

EXPLANATORY NOTES TO BE READ WITH BOREHOLE AND TEST PIT REPORTS

METHOD OF DRILLING OR EXCAVATION

AC	Air Core	E	Excavator	PQ3	PQ3 Core Barrel
AD/T	Auger Drilling with TC-Bit	EH	Excavator with Hammer	PT	Push Tube
AD/V	Auger Drilling with V-Bit	HA	Hand Auger	R	Ripper
AT	Air Track	HMLC	HMLC Core Barrel	RR	Rock Roller
B	Bulldozer Blade	HQ3	HQ3 Core Barrel	SON	Sonic Rig
BH	Backhoe Bucket	N	Natural Exposure	SPT	Driven SPT
CT	Cable Tool	NMLC	NMLC Core Barrel	WB	Washbore
DT	Diatube	PP	Push Probe	X	Existing Excavation

SUPPORT

T	Timbering

PENETRATION EFFORT (RELATIVE TO THE EQUIPMENT USED)

VE	Very Easy	E	Easy	F	Firm
H	Hard	VH	Very Hard		

WATER

►	Water Inflow	▼	Water Level
◄	Water Loss (complete)		
◁	Water Loss (partial)		

SAMPLING AND TESTING

B	Bulk Disturbed Sample	P	Piston Sample
BLK	Block Sample	PBT	Plate Bearing Test
C	Core Sample	U	Undisturbed Push-in Sample
CBR	CBR Mould Sample		U50: 50 mm diameter
D	Small Disturbed Sample	SPT	Standard Penetration Test
ES	Environmental Soil Sample		Example: 3, 4, 5 N=9
EW	Environmental Water Sample		3,4,5: Blows per 150 mm
G	Gas Sample		N=9: Blows per 300 mm after
HP	Hand Penetrometer		150 mm seating interval
LB	Large Bulk Disturbed Sample	VS	Vane Shear; P = Peak
M	Mazier Type Sample		R = Remoulded (kPa)
MC	Moisture Content Sample	W	Water Sample

ROCK CORE RECOVERY

TCR = Total Core Recovery (%) $= \frac{CRL}{TCL} \times 100$

RQD = Rock Quality Designation (%) $= \frac{ALC>100}{TCL} \times 100$

TCL	Length of Core Run
CRL	Length of Core Recovered
ALC>100	Total Length of Axial Lengths of Core Greater than 100 mm Long

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METHOD OF SOIL DESCRIPTION
BOREHOLE AND TEST PIT REPORTS

GRAPHIC LOG & SOIL CLASSIFICATION SYMBOLS

Graphic	USCS	Soil Name
		FILL (various types)
		COBBLES / BOULDERS
	GP	GRAVEL (poorly graded)
	GW	GRAVEL (well graded)
	GC	Clayey GRAVEL
	GM	Silty GRAVEL
	SP	SAND (poorly graded)
	SW	SAND (well graded)
	SC	Clayey SAND

Graphic	USCS	Soil Name
	SM	Silty SAND
	ML	SILT (low liquid limit)
	MH	SILT (high liquid limit)
	CL	CLAY (low plasticity)
	CI	CLAY (medium plasticity)
	CH	CLAY (high plasticity)
	OL	Organic SILT (low liquid limit)
	OH	Organic SILT (high liquid limit)
	Pt	PEAT

NOTE: Dual classification given for soils with a fines content between 5% and 12%.

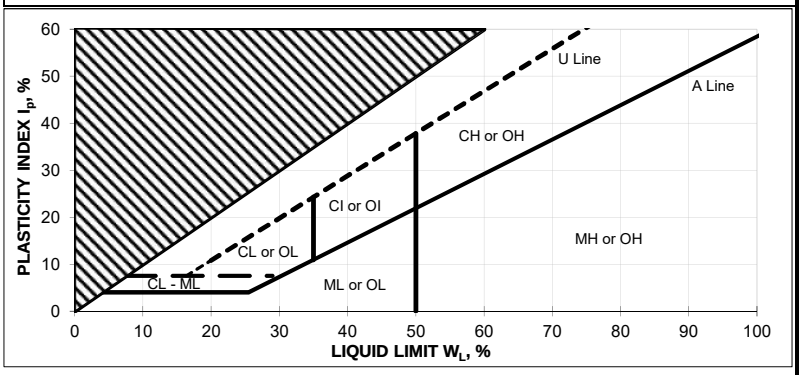
SOIL CLASSIFICATION AND INFERRED STRATIGRAPHY

Soil descriptions are based on AS1726-2017. Material properties are assessed in the field by visual/tactile methods in combination with field and laboratory testing techniques (where used).

NOTE: AS 1726-2017 defines a fine grained soil where the total dry mass of fine fractions (<0.075 mm particle size) exceeds 35%.

PARTICLE SIZE		
Soil Name		**Particle Size (mm)**
BOULDERS		>200
COBBLES		63 to 200
GRAVEL	Coarse	19 to 63
	Medium	6.7 to 19
	Fine	2.3 to 6.7
SAND	Coarse	0.6 to 2.36
	Medium	0.21 to 0.6
	Fine	0.075 to 0.21
FINES	SILT	0.002 to 0.075
	CLAY	<0.002

PLASTICITY - MODIFIED CASAGRANDE CHART - AS1726-2017



RESISTANCE TO EXCAVATION		
Symbol	**Term**	**Description**
VE	Very easy	All resistances are relative to the selected method of excavation
E	Easy	
F	Firm	
H	Hard	
VH	Very hard	

MOISTURE CONDITION	
Symbol	**Term**
D	Dry
M	Moist
W	Wet

CEMENTATION	
Cementation	**Description**
Weakly cemented	Soil may be easily disaggregated by hand in air or water
Moderately cemented	Effort is required to disaggregate the soil by hand in air or water

CONSISTENCY		
Symbol	**Term**	**Undrained Shear Strength (kPa)**
VS	Very Soft	0 to 12
S	Soft	12 to 25
F	Firm	25 to 50
St	Stiff	50 to 100
VSt	Very Stiff	100 to 200
H	Hard	>200

ORGANIC SOILS	
Material	**Organic Content % of dry mass**
Inorganic soil	<2%
Organic soil	2% to 25%
Peat	>25%

DENSITY		
Symbol	**Term**	**Density Index (%)**
VL	Very Loose	<15
L	Loose	15 to 35
MD	Medium Dense	35 to 65
D	Dense	65 to 85
VD	Very Dense	>85

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REPORT OF BOREHOLE: BH01

Job No	: WAE200102-02	Easting	: 0.00	Sheet	: 1 OF 1
Client	: Projective DM Pty Ltd	Northing	: 0.00	Logged	: Alex Mathew
Project	: Proposed Phase 1 Redevelopment	UTM	: 50J	Logged Date	: 02/04/2024
Location	: Dianella Plaza, Grand Promenade, Dianella WA	Drill Rig	: EVH Scout 1750	Checked	: TD
Contractor	: Galt Geotechnics	Inclination	: -90 deg	Checked Date	: 09/04/2024

Drilling Method	Excavation Resistance	PSP	DCP graph	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Remarks	Sample
AD/V		SET 4 5 6 8 13 16			0.04 0.3 1	Non-Soil Fill Natural		ASP SP-SM SP SP	Asphalt Fill Gravelly SAND: brown, medium dense to dense, fine to medium grained, fine to coarse sized gravel, with fines. Fill SAND: brown grey, dense to very dense, fine to medium grained, trace fines, trace gravel. Natural SAND: yellow, fine to medium grained, trace fines .	D	MD-D D-VD		
									BH01 Terminated at 1.5m (Target Depth. Groundwater not encountered)				

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REPORT OF BOREHOLE: BH02

Job No	: WAE200102-02	Easting	: 0.00	Sheet	: 1 OF 1
Client	: Projective DM Pty Ltd	Northing	: 0.00	Logged	: Alex Mathew
Project	: Proposed Phase 1 Redevelopment	UTM	: 50J	Logged Date	: 02/04/2024
Location	: Dianella Plaza, Grand Promenade, Dianella WA	Drill Rig	: EVH Scout 1750	Checked	: TD
Contractor	: Galt Geotechnics	Inclination	: -90 deg	Checked Date	: 09/04/2024

Drilling Method	Excavation Resistance	PSP	DCP graph	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Remarks	Sample
AD/V		SET			0.1	Non-Soil		ASP	Asphalt	D			
		2				Fill		SP-SM	Fill Gravelly SAND: pale yellow, loose, fine to medium grained, fine to medium sized gravel, with fines.		L		
		5			0.3	Fill		SP	Fill SAND: brown yellow, dense to very dense, fine to medium grained, trace gravel, trace fines.		D-VD		
		8											
		10			0.7	Natural		SP	Natural SAND: yellow, fine to medium grained, trace fines.				
		11											
		12			1								
									BH02 Terminated at 1.5m (Target Depth. Groundwater not encountered)				

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REPORT OF BOREHOLE: BH03

Job No	: WAE200102-02	Easting	: 0.00	Sheet	: 1 OF 1
Client	: Projective DM Pty Ltd	Northing	: 0.00	Logged	: Alex Mathew
Project	: Proposed Phase 1 Redevelopment	UTM	: 50J	Logged Date	: 02/04/2024
Location	: Dianella Plaza, Grand Promenade, Dianella WA	Drill Rig	: EVH Scout 1750	Checked	: TD
Contractor	: Galt Geotechnics	Inclination	: -90 deg	Checked Date	: 09/04/2024

Drilling Method	Excavation Resistance	PSP	DCP graph	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Remarks	Sample
AD/V		SET			0.02	Topsoil		ASP	Asphalt	D	D-VD		
		17				Non-Fill		SP -SM	Fill Gravelly SAND: pale yellow brown, dense to very dense, fine to medium grained, fine to coarse sized gravel, with fines.				
		17			0.3	Fill		SP	Fill SAND: brown, dense to very dense, fine to medium grained, with fine to medium sized gravel, trace fines.				
		20											
		19 R			0.8	Natural		SP	Natural SAND: yellow, fine to medium grained, trace fines.				
					1				**BH03 Terminated at 1.5m (Target Depth. Groundwater not encountered)**				

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REPORT OF BOREHOLE: BH04

Job No	: WAE200102-02	Easting	: 0.00	Sheet	: 1 OF 1
Client	: Projective DM Pty Ltd	Northing	: 0.00	Logged	: Alex Mathew
Project	: Proposed Phase 1 Redevelopment	UTM	: 50J	Logged Date	: 02/04/2024
Location	: Dianella Plaza, Grand Promenade, Dianella WA	Drill Rig	: EVH Scout 1750	Checked	: TD
Contractor	: Galt Geotechnics	Inclination	: -90 deg	Checked Date	: 09/04/2024

Drilling Method	Excavation Resistance	PSP	DCP graph	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Remarks	Sample
AD/V		SET 1 3 2 2 2 2 8 9 10			1	Fill		SP-SM	Fill SAND: grey, loose, fine to medium grained, with fines, trace rootlets within top 0.2 m.	D	L		
					1	Natural		SP	Natural SAND: yellow brown, fine to medium grained, trace fines .		D-VD		
		9 11 11							**BH04 Terminated at 1.5m (Target Depth. Groundwater not encountered)**				

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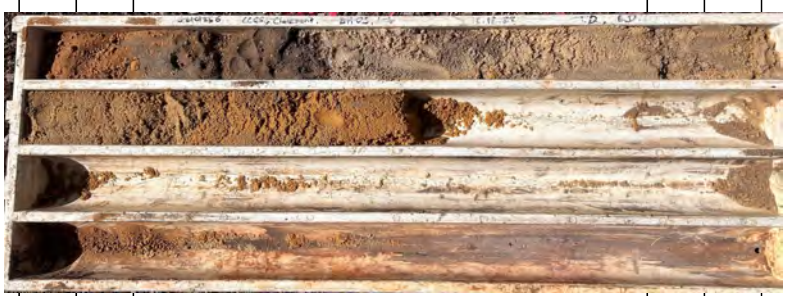


REPORT OF BOREHOLE: BH05

Job No	: WAE200102-02	Easting	: 0.00	Sheet	: 1 OF 1
Client	: Projective DM Pty Ltd	Northing	: 0.00	Logged	: Alex Mathew
Project	: Proposed Phase 1 Redevelopment	UTM	: 50J	Logged Date	: 02/04/2024
Location	: Dianella Plaza, Grand Promenade, Dianella WA	Drill Rig	: EVH Scout 1750	Checked	: TD
Contractor	: Galt Geotechnics	Inclination	: -90 deg	Checked Date	: 09/04/2024

Drilling Method	Excavation Resistance	PSP	DCP graph	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Remarks	Sample
AD/V		SET			0.2	Fill		SP-SM	Fill Gravelly SAND: pale yellow, dense to very dense, fine to medium grained, fine to medium sized gravel, with fines.	D	D-VD		
		13			0.3	Fill		SP-SM	Fill SAND: brown, dense to very dense, fine to medium grained, with gravel, with fines.				
		5 HB				Fill		SP	As above, pale brown, trace gravel, trace fines.				
					1	Natural		SP	Natural SAND: yellow, fine to medium grained, trace fines .				
									BH05 Terminated at 1.5m (Target Depth. Groundwater not encountered)				

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Appendix E: Infiltration Test Results

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Hydraulic Conductivity Calculation - Inverse Auger Hole Method

Galt Geotechnics

Job No:	WAE200102-02
Client:	Projective DM Pty Ltd
Project:	Proposed Phase 1 Redevelopment
Location:	Dianella Plaza Shopping Centre
BH Name:	BH01/IT01
Test Depth:	0.91 m

Spreadsheet author:	ORW	17-Oct-09

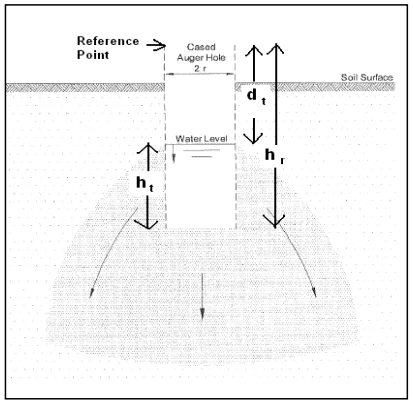
$$K = 1.15r \frac{\log_{10}(h_0 + \frac{1}{2}r) - \log_{10}(h_t + \frac{1}{2}r)}{t - t_0}$$

REFERENCE: Cocks, G. *Disposal of Stormwater Runoff by Soakage in Perth Western Australia*, Journal and News of the Australian Geomechanics Society, Volume 42 No 3 September 2007, pp101-114

Spreadsheet Legend

	Required input
	Calculated field
	Comment field
	Field not used
	Fixed field

Parameter	Description	Value	Units
K	Hydraulic Conductivity		m/s
r	radius of test hole	0.045	m
t	time since start of measurement		s
h_r	reference point height above base	0.91	m
d_t	depth from reference point to water at time t		m
h_t	Water column height at time t		m
h_0	h_t at t=0		m



Test 1

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.75	0.16		
20	0.78	0.13	2.0E-04	17.4
40	0.82	0.09	2.7E-04	23.5
60	0.845	0.065	2.8E-04	23.8
80	0.86	0.05	2.6E-04	22.4
100	0.9	0.01	3.9E-04	33.5
		AVERAGE	2.8E-04	24.1

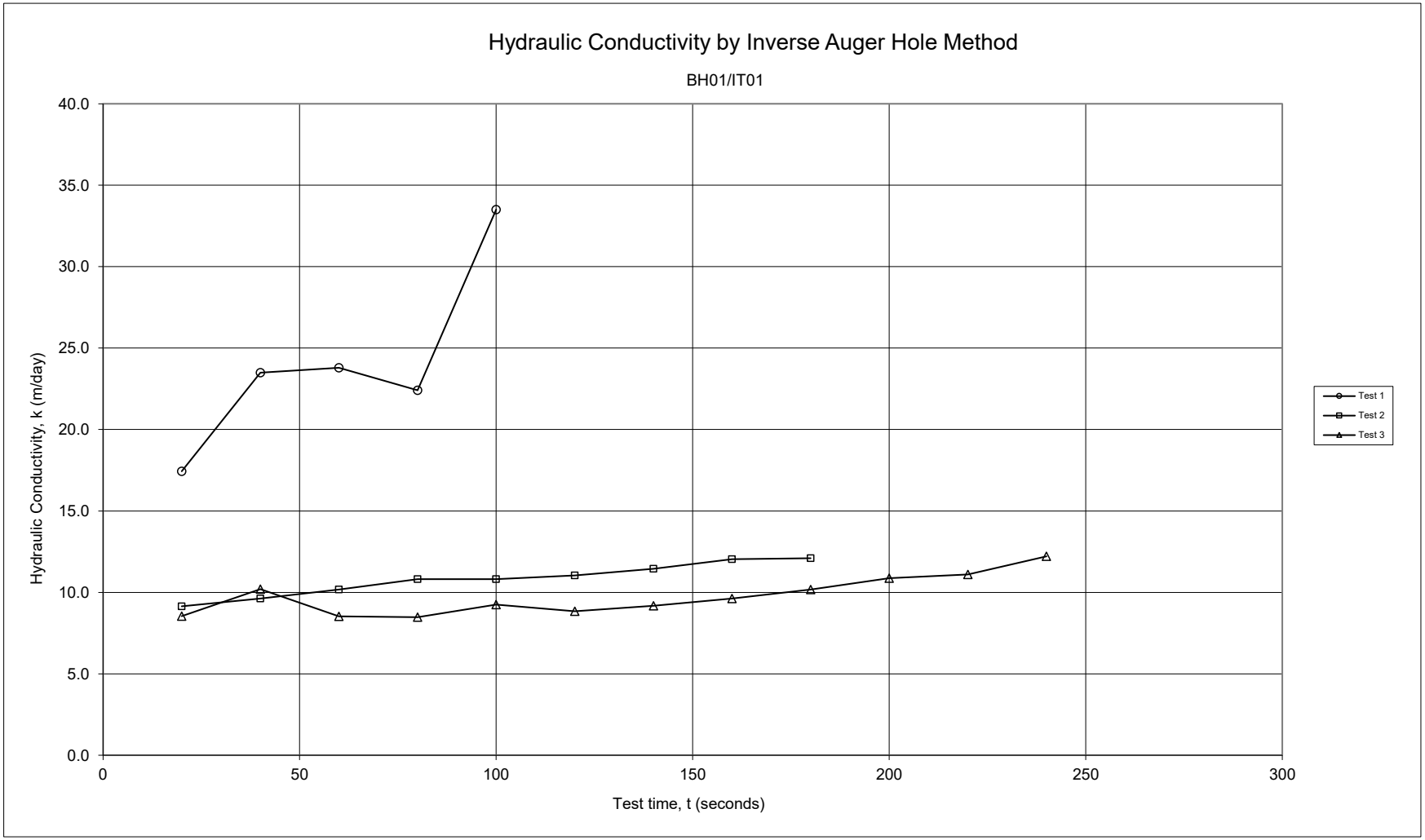
Test 2

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.71	0.2		
20	0.73	0.18	1.1E-04	9.1
40	0.75	0.16	1.1E-04	9.6
60	0.77	0.14	1.2E-04	10.2
80	0.79	0.12	1.3E-04	10.8
100	0.805	0.105	1.3E-04	10.8
120	0.82	0.09	1.3E-04	11.0
140	0.835	0.075	1.3E-04	11.4
160	0.85	0.06	1.4E-04	12.0
180	0.86	0.05	1.4E-04	12.1
		AVERAGE	1.2E-04	10.8

Test 3

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.695	0.215		
20	0.715	0.195	9.9E-05	8.5
40	0.74	0.17	1.2E-04	10.2
60	0.75	0.16	9.9E-05	8.5
80	0.765	0.145	9.8E-05	8.5
100	0.785	0.125	1.1E-04	9.2
120	0.795	0.115	1.0E-04	8.8
140	0.81	0.1	1.1E-04	9.2
160	0.825	0.085	1.1E-04	9.6
180	0.84	0.07	1.2E-04	10.2
200	0.855	0.055	1.3E-04	10.9
220	0.865	0.045	1.3E-04	11.1
240	0.88	0.03	1.4E-04	12.2
		AVERAGE	1.1E-04	9.7

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Hydraulic Conductivity Calculation - Inverse Auger Hole Method

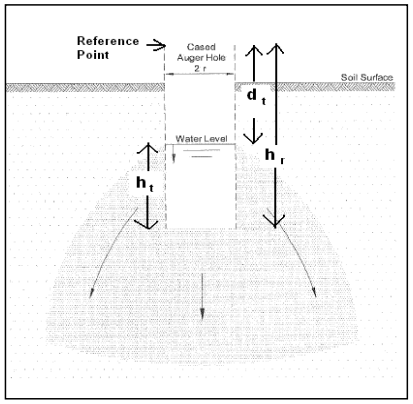
Galt Geotechnics

Job No:	WAE200102-02
Client:	Projective DM Pty Ltd
Project:	Proposed Phase 1 Redevelopment
Location:	Dianella Plaza Shopping Centre
BH Name:	BH02/IT02
Test Depth:	0.91 m

Spreadsheet author:	ORW	17-Oct-09

$$K = 1.15r \frac{\log_{10}(h_0 + \frac{1}{2}r) - \log_{10}(h_t + \frac{1}{2}r)}{t - t_0}$$

REFERENCE: Cocks, G. *Disposal of Stormwater Runoff by Soakage in Perth Western Australia*, Journal and News of the Australian Geomechanics Society, Volume 42 No 3 September 2007, pp101-114



Spreadsheet Legend

	Required input
	Calculated field
	Comment field
	Field not used
	Fixed field

Parameter	Description	Value	Units
K	Hydraulic Conductivity		m/s
r	radius of test hole	0.045	m
t	time since start of measurement		s
h_r	reference point height above base	0.91	m
d_t	depth from reference point to water at time t		m
h_t	Water column height at time t		m
h_0	h_t at t=0		m

Test 1

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.7	0.21		
20	0.765	0.145	3.7E-04	31.8
40	0.79	0.12	2.8E-04	23.8
60	0.82	0.09	2.7E-04	23.5
80	0.84	0.07	2.6E-04	22.4
100	0.86	0.05	2.6E-04	22.6
120	0.89	0.02	3.2E-04	27.5
		AVERAGE	2.9E-04	25.3

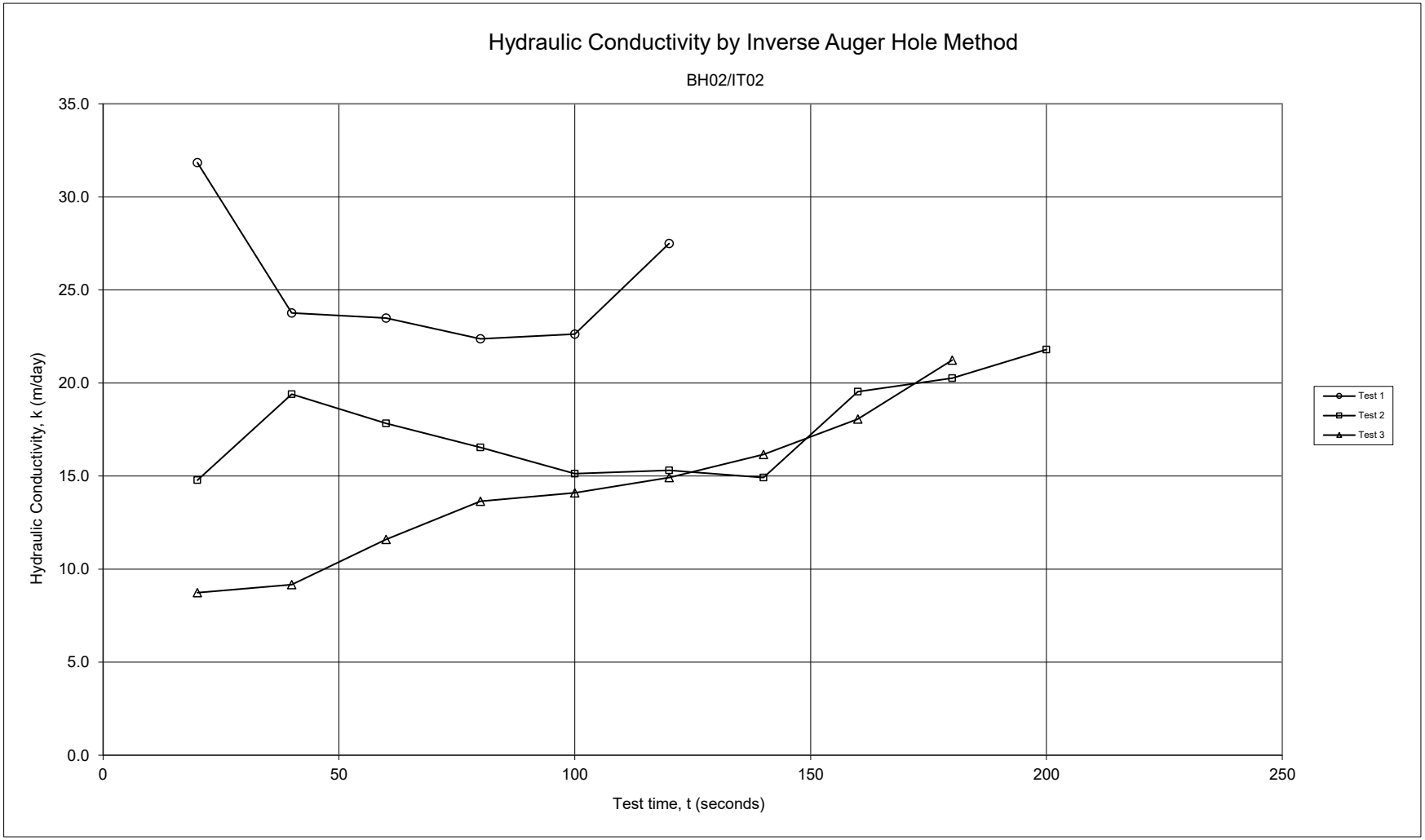
Test 2

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.72	0.19		
20	0.75	0.16	1.7E-04	14.8
40	0.79	0.12	2.2E-04	19.4
60	0.81	0.1	2.1E-04	17.8
80	0.825	0.085	1.9E-04	16.5
100	0.835	0.075	1.8E-04	15.1
120	0.85	0.06	1.8E-04	15.3
140	0.86	0.05	1.7E-04	14.9
160	0.89	0.02	2.3E-04	19.5
180	0.9	0.01	2.3E-04	20.3
200	0.91	0	2.5E-04	21.8
		AVERAGE	2.0E-04	17.5

Test 3

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.7	0.21		
20	0.72	0.19	1.0E-04	8.7
40	0.74	0.17	1.1E-04	9.2
60	0.77	0.14	1.3E-04	11.6
80	0.8	0.11	1.6E-04	13.6
100	0.82	0.09	1.6E-04	14.1
120	0.84	0.07	1.7E-04	14.9
140	0.86	0.05	1.9E-04	16.2
160	0.88	0.03	2.1E-04	18.1
180	0.9	0.01	2.5E-04	21.2
		AVERAGE	1.6E-04	14.2

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Hydraulic Conductivity Calculation - Inverse Auger Hole Method

Galt Geotechnics

Job No:	WAE200102-02
Client:	Projective DM Pty Ltd
Project:	Proposed Phase 1 Redevelopment
Location:	Dianella Plaza Shopping Centre
BH Name:	BH03/IT03
Test Depth:	0.91 m

Spreadsheet author:	ORW	17-Oct-09

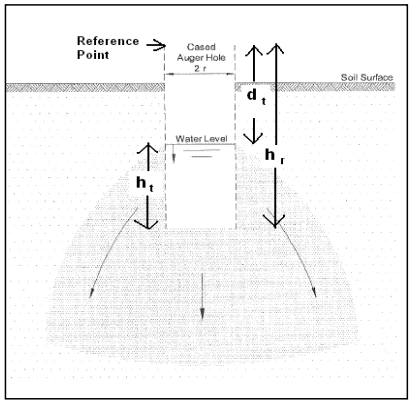
$$K = 1.15r \frac{\log_{10}(h_0 + \frac{1}{2}r) - \log_{10}(h_t + \frac{1}{2}r)}{t - t_0}$$

REFERENCE: Cocks, G. *Disposal of Stormwater Runoff by Soakage in Perth Western Australia*, Journal and News of the Australian Geomechanics Society, Volume 42 No 3 September 2007, pp101-114

Spreadsheet Legend

	Required input
	Calculated field
	Comment field
	Field not used
	Fixed field

Parameter	Description	Value	Units
K	Hydraulic Conductivity		m/s
r	radius of test hole	0.045	m
t	time since start of measurement		s
h_r	reference point height above base	0.91	m
d_t	depth from reference point to water at time t		m
h_t	Water column height at time t		m
h_0	h_t at t=0		m



Test 1

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.74	0.17		
20	0.78	0.13	2.6E-04	22.6
40	0.8	0.11	2.1E-04	18.1
60	0.835	0.075	2.5E-04	22.0
80	0.865	0.045	2.9E-04	25.4
100	0.89	0.02	3.4E-04	29.3
		AVERAGE	2.7E-04	23.5

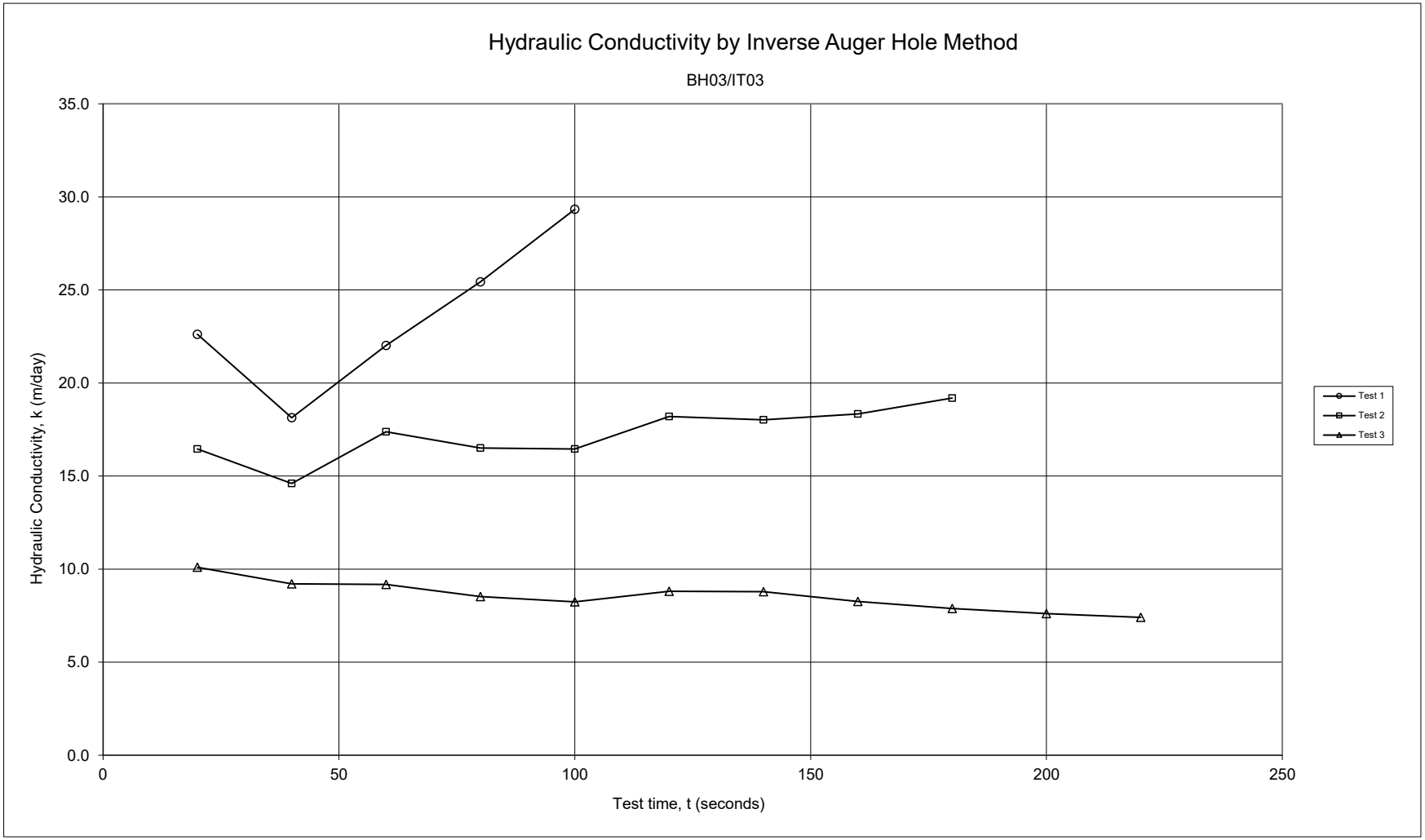
Test 2

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.74	0.17		
20	0.77	0.14	1.9E-04	16.4
40	0.79	0.12	1.7E-04	14.6
60	0.82	0.09	2.0E-04	17.4
80	0.835	0.075	1.9E-04	16.5
100	0.85	0.06	1.9E-04	16.5
120	0.87	0.04	2.1E-04	18.2
140	0.88	0.03	2.1E-04	18.0
160	0.89	0.02	2.1E-04	18.3
180	0.9	0.01	2.2E-04	19.2
		AVERAGE	2.0E-04	17.2

Test 3

t (s)	d_w (m)	h_t (m)	K (m/s)	K (m/day)
0	0.73	0.18		
20	0.75	0.16	1.2E-04	10.1
40	0.765	0.145	1.1E-04	9.2
60	0.78	0.13	1.1E-04	9.2
80	0.79	0.12	9.9E-05	8.5
100	0.8	0.11	9.5E-05	8.2
120	0.815	0.095	1.0E-04	8.8
140	0.825	0.085	1.0E-04	8.8
160	0.83	0.08	9.6E-05	8.3
180	0.835	0.075	9.1E-05	7.9
200	0.84	0.07	8.8E-05	7.6
220	0.845	0.065	8.6E-05	7.4
		AVERAGE	9.9E-05	8.5

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Standard Geotechnical Definitions, Recommendations, Requirements and Limitations

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GDR1 ABOUT THIS APPENDIX

These technical notes are to be read with the attached report. These notes contain important information regarding the study in the attached report, and the report cannot be considered in isolation without full reading of these notes.

Where there are conflicts between this appendix and the report text, the report text takes precedence.

Unless noted otherwise, geotechnical investigations are conducted in accordance with AS1726-2017, “Geotechnical site investigations”.

Unless noted otherwise, the report does not include any assessment (or implied assessment) of karst risk.

GDR2 DEFINITIONS

The following definitions apply:

- **Approved Fill** – fill that has been assessed and approved by the geotechnical engineer or civil designer for a particular purpose.
- **Bulk Fill** – Controlled fill intended to support future infrastructure, but potentially lacking some engineering properties required for upper fill layers or adjacent to structures, where fill with specific properties may be required. Contrast with Select Fill.
- **Civil Design** – the engineering design of the earthworks including surface water and erosion control and subsurface drainage control (where required) to achieve an earthworked, drained site which is capable of supporting the proposed development (including target site classification to AS2870, where relevant). This design is separate to this geotechnical investigation and is a required element of a site development.
- **Clay** – A component of a soil with particles smaller than 0.002 mm in size.
- **Cohesionless (Non-cohesive) Soil** – A soil mass that has does not hold together at low applied stress levels. The strength of the soil depends solely on friction between particles.
- **Cohesive Soil** – A soil mass that has holds together and can adhere to itself.
- **Collapsible Soil** – a soil with high void ratio that is typically strong when dry but loses strength and consolidates under constant stress when wetted, usually due to loss of soil matric suction or dissolving of a chemical cementing agent.
- **Compaction –** The process of increasing the soil density, typically be mechanical means.
- **Competent Person** – A person who has, through a combination of training, education and experience, acquired knowledge and skills enabling that person to correctly perform a specified task.
- **Consistency** – The stiffness of a cohesive soil, at specific moisture contents, to resist mechanical stress or manipulation (remoulding).
- **Controlled (or engineered) Fill** – Any fill for which engineering properties are controlled during placement. Also referred to as structural fill.
- **Dense –** with respect to sandy soils, at a relatively high density index or dry density ratio, exhibiting better engineering parameters with respect to strength and stiffness than the same material at a lower density index.
- **Density** – A measure of the mass of material per unit volume.
- **Eccentric Load** – a load incorporating either a varying vertical load and/or a horizontal load such that the peak vertical stress exceeds the average vertical stress.
- **Fill** – Any material that has been placed by anthropogenic processes.
- **Fines** – A component of a soil with particles smaller than 0.075 mm in size.
- **Groundwater** – Water located beneath the earth’s surface in pore spaces, fractures and voids in soil or rock.
- **Gravel** – A component of a soil with particles between 2.36 mm and 63 mm in size.

- **Heavily Loaded** – in reference to mobile plant, particularly intended for equipment where ground bearing pressures exceed 50 kPa and/or equipment has a high centre of gravity and could be prone to toppling. In reference to buildings/structures, where footing pressures exceed 100 kPa and/or footing dimensions exceed 1 m wide.
- **Hydraulic Conductivity** – ratio of volume flux to hydraulic gradient – a quantitative measure of soil's ability to transmit water when subjected to a hydraulic gradient. k_{sat} – saturated hydraulic conductivity, intended for dewatering assessment, subsoil drainage design and other engineering assessments where saturated soils are relevant. k_{unsat} – unsaturated hydraulic conductivity, intended for design of stormwater disposal elements such as soakwells and infiltration basins, where the base of disposal elements is above the groundwater level.
- **In situ** – In the place and condition in which it exists naturally. May also refer to fill that is present at any site prior to an investigation taking place.
- **Limestone** – A sedimentary carbonate rock. The use of the term does not infer a specific strength, carbonate content or grain size. Refer to GDR4.1 for further detail.
- **Loose** – with respect to sand soils, at a relatively low density index or dry density ratio, typically indicating poorer engineering parameters with respect to strength and stiffness than the same material at a higher density index.
- **Material** – Matter that meets the definitions of 'soil', 'rock', other engineered matter (i.e., concrete, bricks etc.) or non-engineered matter (organics, contaminated refuse, deleterious material).
- **May** – Indicates that the statement is an option.
- **Must** – Indicates that the statement is mandatory.
- **Natural** – In the context of soil or rock, material which is present as a result of natural geological processes and has not been subject to anthropogenic engineering processes (such as filling, excavation, replacement, etc).
- **Organic** – In the context of soil, material derived from living matter, primarily plants.
- **Overconsolidated** – a soil that has been subjected to a greater vertical stress than its current state.
- **Permeable Soil** – soil that meets the civil design permeability requirements to allow relatively rapid flow of water through the soil matrix.
- **Rock** – Any aggregate of minerals and/or materials that cannot be disaggregated by hand in air or water without prior soaking.
- **Sand** – a component of soil with particle size between 0.075 mm and 2.36 mm.
- **Select Fill** – a controlled fill which has been chosen for particular engineering characteristics (such as strength, CBR, grading, permeability, etc), commonly for use as a higher-grade capping layer or adjacent to structures. Contrast with Bulk Fill.
- **Shall** – Indicates that the statement is mandatory.
- **Should** – Indicates that the statement is a recommendation.
- **Silt** – A component of a soil with particles between 0.075 mm and 0.002 mm in size.
- **Soil** – Particulate materials that occur in the ground and can be disaggregated or remoulded by hand in air or water without prior soaking.
- **Sand** – A component of a soil with particle between 0.075 mm and 2.36 mm in size.
- **Uncontrolled Fill** – Any material that has been deposited by anthropogenic process, which does not meet the definition of 'controlled fill'.

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GDR3 GEOTECHNICAL TEST METHODS AND INTERPRETATION

GDR3.1 Test Pit Excavation

Test pit excavations are formed using mechanical excavation equipment (typically an excavator) or hand dug, with the objective of inspecting (or profiling) the soil exposed in the excavation.

Typical limitations on test pit excavations are:

- Limited depth of excavation – typically governed by reach of the excavator arm.
- Cannot be excavated below groundwater in cohesionless soils, due to collapse and water ingress.
- Cannot be excavated through very stiff / very dense soils (i.e., desiccated clays or cemented soils) or most rock.
- Cannot typically obtain rock samples that are suitable for strength testing.

Test pits are usually mechanically excavated with a toothed bucket (intended for excavation in clay or weak rock) or a flat-edged bucket (typically for sands).

When hand-dug test pits are excavated, it is usually for recovery of near-surface soils or inspection of shallow in-ground elements.

We note that where test pits are excavated on a site, they are only ever loosely backfilled during our studies. They must always be located during site preparation works, over-excavated to their full depth and plan extents and re-filled with approved fill in compacted layers.

GDR3.2 Cone Penetration Tests (CPTs)

Cone penetration testing (CPT) is done by Galt or specialist contractors and typically to AS1289.6.5.1. The test involves pushing an instrumented cone into the soil with a hydraulically operated pushing frame. The test measures tip resistance and sleeve friction on the cone, which are then plotted with depth.

We interpret soil types and associated geotechnical soil parameters from CPT data using the following:

Technical Interpretations and International Guides

- Robertson P.K., Campanella R.G., Gillespie D. and Grieg J. (1986). "Use of piezometer cone data". Proceedings of the ASCE Speciality Conference In Situ '86: Use of In Situ Tests in Geotechnical Engineering, Blacksburg, pp 1263-80, American Society of Civil Engineers (ASCE).
- Robertson, P.K., Cabal K.L. (2016) "Guide to Cone Penetration Testing for Geotechnical Engineering 6th Edition 2015". Gregg Drilling & Testing, Inc., California.
- Baldi G., Bellotti R., Ghionna V.H., Jamiolkowski M., Lo Presti D. C. (1989) "Modulus of sands from CPTs and DMTs". Proc. 12th Int. Conf. on SMFE, Rio de Janeiro, Vol 1, p165-170, Balkema, Rotterdam.

Local (Perth and Western Australia) Research, Interpretation and Guides

- Fahey, M., Lehane, B., Stewart, D. (2003) "Soil stiffness for shallow foundation design in the Perth CBD". Australian Geomechanics Vol. 8 No. 3.
- Main Roads Western Australia (MRWA) (2009) "Structures Engineering Design Manual". Document 3912/03, Perth.
- Lehane B. (2017). "CPT-Based Design of Foundations", E.H. Davis Memorial Lecture, Australian Geomechanics, Vol 54. No. 4' and
- Galt's in-house correlations between CPT data and other geotechnical testing.

GDR3.3 Borehole Drilling

Boreholes are drilled for sampling of the soil and rock, with a small disturbance footprint. Typical techniques are:

- Auger drilling (hand auger or machine auger) – for recovery of soil at relatively shallow depths only. Cannot penetrate cemented soils or rock.
- Push probe drilling – for recovery of soil at relatively shallow depths and below groundwater. Cannot penetrate cemented soils or rock.
- Air core drilling – for recovery of soil, cemented soil and rock (typically up to high strength rock). Not suited to drilling of very high strength rock.
- Diamond coring (or rotary coring) – for recovery of cemented soil, rock and some soil types (typically not sand). Suited to all strengths of rock.

If used, standard penetration tests (SPTs) are done in accordance with AS1289.6.3.1. Correlations for consistency and density are based on:

- Standards Australia (2016), "HB160-2006, Soils Testing".

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GDR3.4 Dynamic Cone Penetrometer (DCP)

The DCP is a hand-held tool for assessing penetration resistance of a soil. This comprises a 16 mm rod equipped with a 20 mm cone, hammered into the ground using a falling 9 kg weight on a 510 mm slide hammer on the top of the rod. This is done in accordance with AS1289.6.3.2 and the blow counts to hammer in the rod are measured in 100 mm penetration increments. Where provided, correlations for consistency and density are based on:

- Standards Australia (2016), "HB160-2006, Soils Testing".

GDR3.5 Perth Sand Penetrometer (PSP)

The PSP is a variation on a DCP and uses a 9 kg weight on a 600 mm slide hammer to hammer in a 16 mm rod with a blunt (square-faced) end. Testing is done in accordance with AS1289.6.3.3, with the following typical variations:

- Testing is often done to a greater depth than the 450 mm covered in the standard.
- Blow counts are sometimes recorded in 150 mm intervals (compared to 300 mm intervals used in the standard) to provide better resolution on the tests.

Where provided, correlations for density are based on:

- Standards Australia (2016), "HB160-2006, Soils Testing".

GDR3.6 Dynamic Probing Super Heavy (DPSH)

The DPSH test involves driving a solid cone (20 cm^2) into the ground using a 63.5 kg hammer falling 760 mm. Testing is done in accordance with EN ISO 22476-2 – Geotechnical engineering – Field testing – Part 2: Dynamic probing – DPSH-B.

Results may be presented as either:

- N10 (No. of blows required for every 100 mm penetration);
- N30 (No. of blows required for every 300 mm penetration); or
- q_d (dynamic tip resistance, analogous to CPT q_c).

GDR3.7 Inverse Auger Hole Infiltration Test (Falling Head, Unsaturated Soil)

Infiltration tests are carried out using the 'inverse auger hole' method described by:

- Cocks, G (2007), "Disposal of Stormwater Runoff by Soakage in Perth Western Australia", Journal and News of the Australian Geomechanics Society, Volume 42 No. 3, pp 101-114

This test is an unsaturated falling head test, in that it is carried out above the groundwater table and is intended to mimic the behaviour of soak wells and similar drainage elements (i.e. soakage basins), which discharge stormwater into an unsaturated medium.

The hole is wetted only for a short period prior to the testing.

The test is usually repeated three times, with the intention that the second and third tests provide similar results (within about 10%-20%). Tests are done over a short duration, typically 2 minutes to 10 minutes. The focus of the testing is generally when the head is low (200 mm or lower), such that the relevant lateral zone is as saturated as the zone directly below the borehole.

The hydraulic conductivity derived from this test is not to be used for applications where saturated hydraulic conductivity is relevant, e.g.:

- Subsoil drainage design; and
- Dewatering estimations.

Based on Galt's in-house research, this method does not completely saturate the soil in any reasonable test length, and thus may not be suitable for assessment of soils at sites where the critical drainage condition is a fully saturated soil (i.e., in areas with high groundwater tables). Our research on sand sites indicates that the test does correlate well with actual soak well performance, in unsaturated sand zones without impermeable zones.

GDR3.8 Guelph Permeameter Test (Constant Head, Quasi-Saturated Soil)

The Guelph permeameter test, conducted in accordance with the constant head test method outlined in Appendix G of AS1547, is a constant-head test in nominally "saturated" soil (in that the test is conducted until a "steady state" is reached). However, we note that this test can only be done above the groundwater table and as such, is in an unsaturated zone. Therefore, the hydraulic conductivity derived from this test should be used with caution and evaluated against other test methods (such as saturated, constant-head permeability testing from laboratory samples, or in situ saturated hydraulic conductivity testing below the groundwater table).

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GDR4 GEOLOGICAL UNITS

GDR4.1 Limestone

The term 'Limestone' is used to describe a carbonate rock. Tamala Limestone is the common limestone in Western Australia, and typically comprises cemented quartz and shell fragments cemented together by calcium carbonate.

Limestone can vary significantly across short distances in composition, strength and cementation. Tamala limestones in Western Australia also have known possible geological features including:

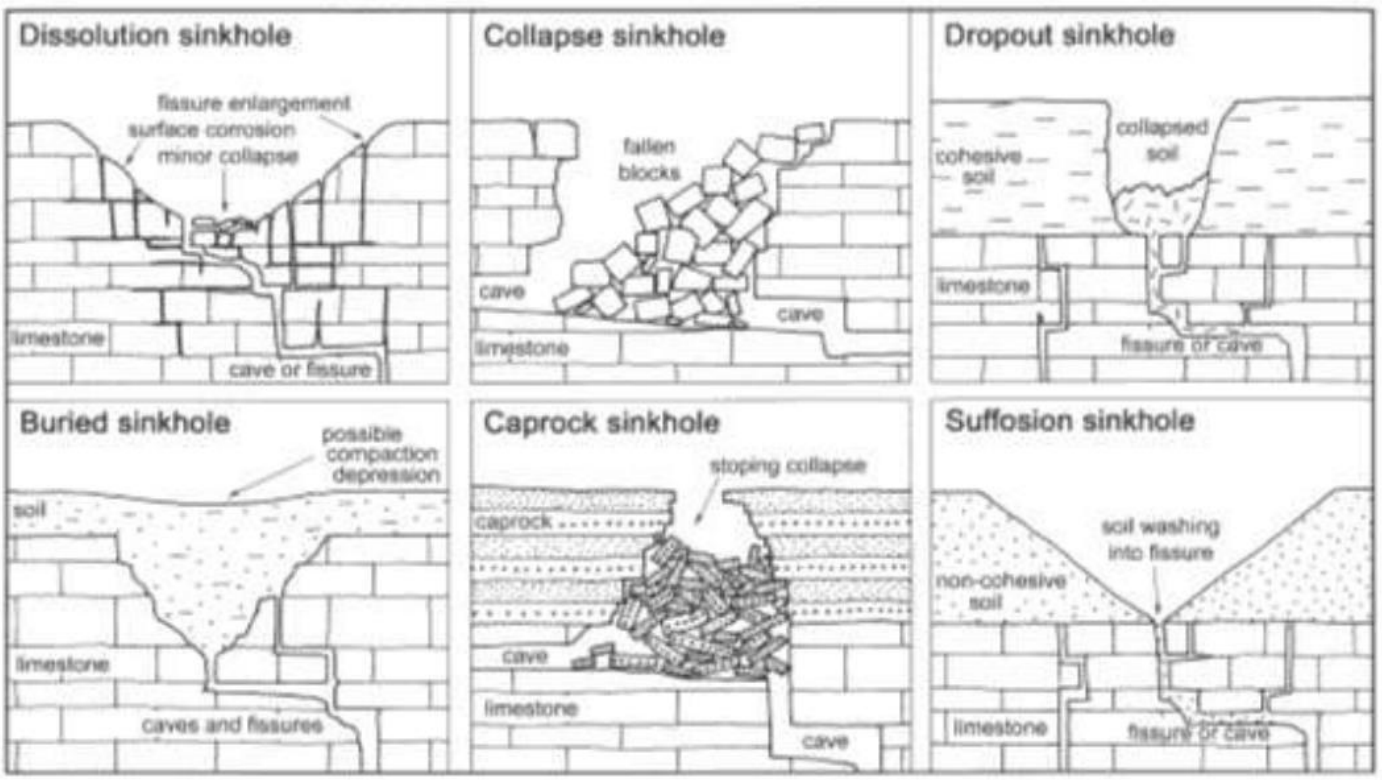
- Caprock/calcrete – The formation of a very hard duricrust, usually due to sun exposure. Caprock may be up to 3 m thick, but typically around 1.5 m thick. Caprock is very difficult to excavate and may require the use of hydraulic rock breakers or rock saws to excavate.
- Solution features/tubes – Often initially formed due to the presence of Eucalypt and Jarrah roots during limestone formation, and often increasing in depth and size due to ongoing weathering. May be up to 500 mm in diameter. These are typically filled with very loose, unconsolidated sand.
- Pinnacles – Pinnacles are usually the limestone that is left around surrounding solution features. Often can comprise very hard limestone/caprock that can be substantially higher than surrounding areas. Pinnacles may have also been formed by surrounding erosion (i.e., wind/water).
- Karst/caves – Karst is caused by the dissolution of limestone, typically where there is interaction in low-lying areas with water and limestone. Karst manifests itself as loose near-surface sand with cavities (caves) in the underlying limestone. This can lead to sinkholes and collapse of overlying structures.

Inline images showing typical pinnacle/solution features and Karstic features follow. These are taken from:

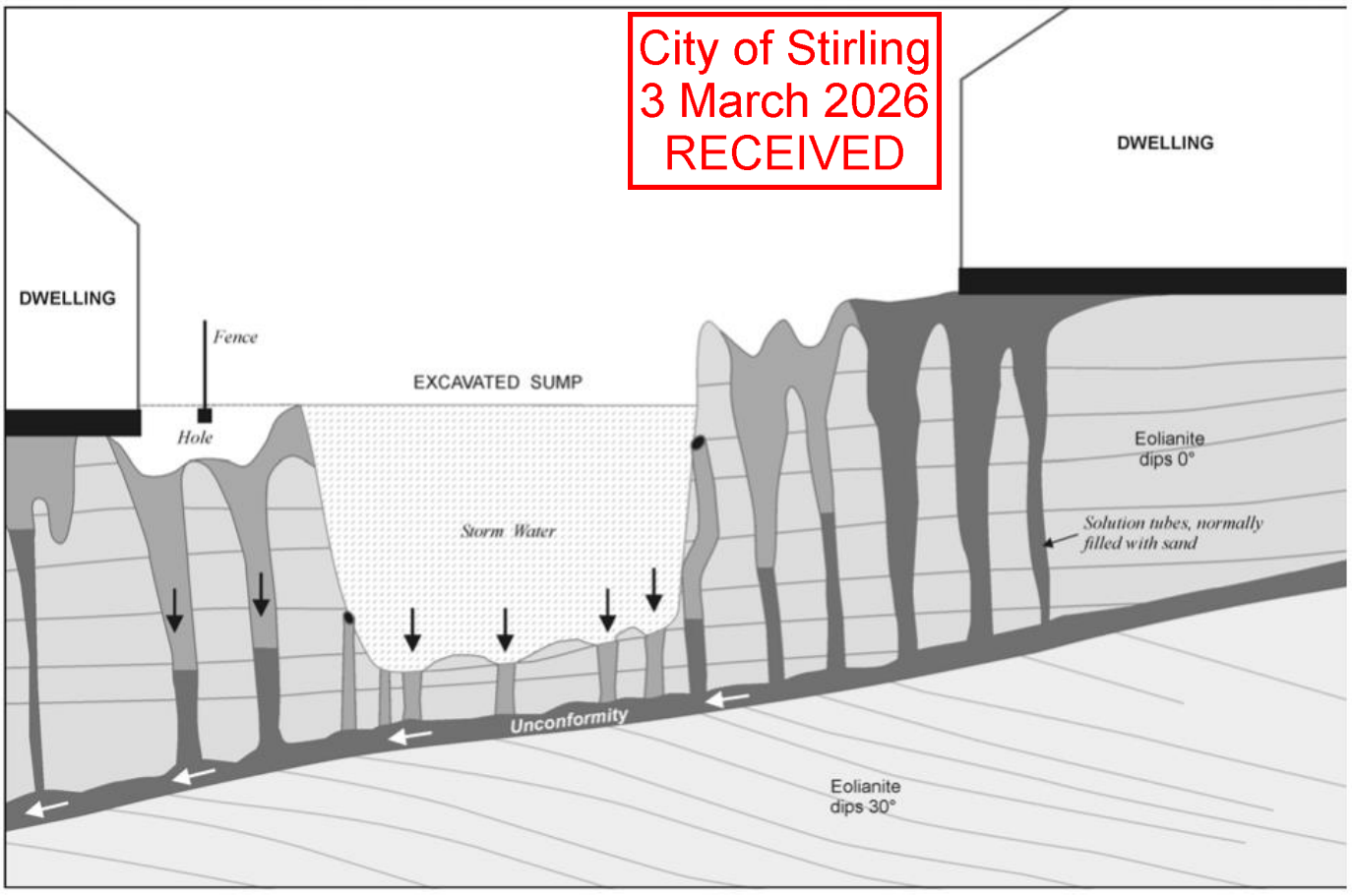
- Gordon, R. (2003). "Coastal Limestones". Australian Geomechanics Vol.38 No. 4, The Engineering Geology of Perth.

- Waltham, A. & Fookes, P. (2003). "Engineering Classification of Karst Ground Conditions: Quarterly Journal of Engineering Geology and Hydrogeology, Vol 36.

Inline Image GDR 1 - Karstic Sinkhole Features from Waltham and Fookes (2003)



Inline Image GDR 2: Pinnacle/Solution Features from Gordon (2003)



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GDR4.2 Pindan Sands and Collapsible Soils

In the Western Australian context, Pindan sands are sandy soils present predominantly across the Pilbara and Kimberley regions. Pindan sands are typically:

- Red brown in colour.
- Between 10% and 40% fines.
- Of aeolian origin, usually resulting in unconsolidated in situ conditions (nuclear density gauge testing often indicates these soils have in situ density ratios of 80%-85% of modified maximum dry density).
- Very strong when dry due to high soil suctions in the fine fraction, which create strong bonds between the sand particles.

As the grains are usually held in place by the dry fine fraction, this can lead to:

- very high settlements (i.e., “collapse”) as the grain-to-grain bonds are weakened as matric suction decreases on soaking; and
- loss of vertical and horizontal strength/stiffness as the grain-to-grain bonds weaken.

The risks associate with Pindan sands are usually quantified in terms of the collapse potential/magnitude of possible collapse events.

Other similar soils are present in Western Australia that may exhibit similar collapse potential and may not strictly be Pindan sands (i.e., have other grain-to-grain bonding mechanisms).

GDR5 SITE CLASSIFICATION

Site classification refers to the assessment of a site in reference to AS2870-2011, “Residential slabs and footings”. The method for assessing the site class is outlined in Section 2 of AS2870-2011, which indicates that this may be done by:

- assessing the characteristic surface movement, due to seasonal moisture changes in the soil profile;
- assessing the performance of existing foundations; or
- assessment of the soil profile (where there are deleterious inclusions, landfill, putrescible waste etc.).

The site classifications based on the expected characteristic surface movement are summarised in Table GDR 1.

Table GDR 1: Summary of Site Classifications (AS2870-2011)

Class	Description	Characteristic Surface Movement (y_s)
A	Most sand and rock site with little or no ground movement from moisture change	Not Defined (typically <5 mm)
S	Slightly reactive clay sites with only slight ground movement from moisture changes	0 – 20 mm
M	Moderately reactive clay sites, which may experience moderate ground movements from moisture change	20 – 40 mm
H1	Highly reactive sites, which may experience high ground movements from moisture change	40 – 60 mm
H2	Highly reactive sites, which may experience very high ground movements from moisture change	60 – 75 mm
E	Extremely reactive sites, which may experience extreme ground movements from moisture change	>75 mm
P	Sites which include soft soils, such as soft clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise	Not Defined

The calculated characteristic surface movement is predominantly based on:

- the reactivity (i.e., the shrink-swell potential) of the soil (and any proposed fill);

- the design depth of soil suction change, which is the maximum expected depth of soil suction change due to seasonal soil moisture changes; and
- the depth to any bedrock and groundwater table.

The design depth of soil suction change for Western Australia has been refined using the Thornthwaite Moisture Index (TMI). We have carried out assessment using the depths as detailed in:

- Hu Y, Saraceni P, Cocks G, Zhou M (2016). "TMI assessment and climate zones in Western Australia". Australian Geomechanics Journal, Vol.51 No.3.
- Hu Y, Raj A, Cocks G, Verheyde F (2019). "Re-assessment of TMI based climate zones in metropolitan Perth, WA". ANZ Geomechanics Conference 2019, Perth Australia.

The design depth of soil suction change for Northern Territory is based on the research presented in:

- Jackson, S (2022), "Thornthwaite moisture index and climate zones in the Northern Territory", Australian Geomechanics Journal, Vol. 57 No. 3.

We highlight that AS2870-2011 does not make any reference to the fines content of a soil when assessing the site classification.

Where a site classification is provided in our reports, it is always predicated on the requirement that the recommended site preparation procedures are carried out.

We also highlight that the footing performance and shrink-swell movements of a site can be impacted by the planting or removal of trees. This should be considered where appropriate, and we refer to the CSIRO BTF 18-2011 "Foundation Maintenance and Footing Performance: A Homeowner's Guide" for further information.

AS 2870 is limited to single and double storey residential buildings with normal shallow footings with a maximum bearing pressure of 100 kPa and is not applicable where development types other than this are proposed.

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GDR6 SITE PREPARATION

GDR6.1 General

The intent of the site preparation guidelines provided in the above report are to ensure that the earthworks can be constructed to meet specific requirements, i.e., minimum compaction, fill requirements, removal of unsuitable material etc. The site preparation guidelines are not exhaustive, and on-site conditions may dictate that other preparation measures may be required to meet geotechnical requirements.

GDR6.2 Site Preparation

Site preparation measures outlined in this section relate to bulk earthworks at the site in preparation for the construction of buildings, pavements and other structures.

The preparation of a site in accordance with outlined measures below or those presented in the report text does not imply that the site is suitable for heavily loaded plant or eccentric loads. This is especially applicable for working platforms for mobile plant including cranes, crawlers or the like. The site surface may still not be trafficable for mobile plant. Individual working platform assessments must be done if heavily loaded mobile plant are proposed.

GDR6.2.1 Common Measures

The common measures outlined below are to prepare standard sites in advance of proof compaction, bulk excavation and filling. These measures are applicable to most sites, however the applicability of these measures is stated in the main report.

Table GDR 2: Common Measures

Measure	Commentary
Demolish and remove structures and pavements	Demolish existing structures and pavements, including removal of all buried services and footings and dispose off-site.
Remove demolition debris and other deleterious material	Remove any demolition debris and other deleterious material from site including old footings, slabs, soak wells, buried services, paving and building rubble.
Strip uncontrolled fill (where present)	Strip any uncontrolled fill from the site (where encountered) and, if suitable, stockpile it for potential re-use as non-structural fill. If contaminated, dispose off-site. Refer to the report text for discussions on the presence of detected uncontrolled fill and its composition. It is important to realise that undetected uncontrolled fill may be present between test locations and the absence of its identification in our report does not preclude its presence. If uncontrolled fill is detected during site works, please contact us for inspection and to provide recommendations.
Remove trees	All tree roots must be removed, this may result in significant excavation in places. Where tree roots and stumps are removed, the disturbed soil must be over-excavated and replaced with controlled, compacted fill. Backfilling of over-excavations is discussed in the following sections .
Strip and stockpile topsoil.	Strip and stockpile topsoil from unpaved areas of the site for potential re-use in non-structural applications. The topsoil strip is only necessary to remove roots and we recommend a topsoil strip as necessary to remove all roots from the soil.
Carry out bulk excavation	Excavate to the required level. Stockpile suitable excavated material for potential re-use as fill (the re-use of spoil as fill , if appropriate, is discussed in the report text) and remove unsuitable or excess material off-site.
Batter edges of excavation	Excavations should be battered to a temporary slope as given in the report text where applicable and not in close proximity to adjacent structures etc. If required, construct temporary/permanent retaining walls where batters cannot be accommodated.

By following these measures, the site should have been prepared to a point where topsoil and vegetation has been removed to expose either natural soil or controlled fill. Over-excavation to the required levels may then be required for some projects. Once complete, the site is now ready for proof compaction and filling.

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GDR6.2.2 Sand Sites

The preparation measures outlined below are provided for sand sites meeting the following criteria:

- Site underlain by sand.
- No collapsible soils present.
- No deep loose sand.
- Compaction of a loose upper horizon to maximum 1 m depth.
- No shallow groundwater (<1 m deep).
- No limestone or other rock present at shallow depth.
- “Common Measures” outlined in Section GDR6.2.1 have been completed (as required).

The applicability of these measures is stated in the main report. These measures must be carried out for all areas where structures, footings, pavements and any other settlement-sensitive infrastructure is proposed.

Unless specified otherwise in the report, the **Approved Fill** to be used is outlined in Section GDR8 (**Permeable Sand** where permeable fill is required, else **General Sand**). The specific selection is subject to the requirements of the civil designer.

Table GDR 3: Sand Site Measures

Measure	Commentary
Moisture condition and proof compact.	Moisture condition and compact the exposed sandy ground to achieve the density specified in Section GDR7.1 ("sand") to a depth of at least 900 mm.
Test proof compaction	Check that the density specified in Section GDR7.1 ("sand") has been achieved to a depth of at least 900 mm. We note that the applicability of the use of the PSP for compaction control is discussed in the report. Unless specifically approved for use on the subject site, the contractor must **not** assume that the use of the PSP is appropriate.
Treat areas of loose or unsuitable material	Any areas of loose sand or unsuitable material (including over-excavated areas of former trees and root balls) must be removed and replaced with **Approved Fill** as outlined in the report or as noted above. The report will explain the suitability of site-derived materials for re-use as approved fill.
Carry out bulk filling	Where fill is required to build up levels, use **Approved Fill**, placed and compacted in layers of no greater than 300 mm loose thickness. Test compaction to achieve the density specified in Section GDR7.1.

In following this method, shallow/surficial loose sand will be compacted, and the site will be filled (where required) in preparation for supporting footings, ground slabs, pavements and the like.

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GDR6.2.3 Deep Loose Sand Sites

The preparation measures outlined below are provided for sand sites meeting the following criteria:

- Site underlain by sand.
- Collapsible soils or deep loose sand present (if applicable, this is discussed in the report).
- Over-excavation, compaction and replacement of loose sand required.
- No shallow groundwater (<1 m deep).
- No limestone or other rock present at shallow depth.
- "Common Measures" outlined in Section GDR6.2.1 have been completed.

The greatest depth of compaction that can be achieved with standard compaction equipment (vibrating roller, etc) is around 1 m (for sands). As such, it is necessary to cut down the site level to a point where this compaction can be done to the lowest level needed to be improved.

The applicability of these measures is stated in the main report. These measures must be carried out for all areas where structures, footings and any other settlement-sensitive infrastructure are proposed. Not typically required for pavement subgrades, however, this is discussed in the report if required.

Unless specified otherwise in the report, the **Approved Fill** to be used is outlined in Section GDR8 (**Permeable Sand** where permeable fill is required, else **General Sand**). The specific selection is subject to the requirements of the civil designer.

Table GDR 4: Deep Loose Sand Site Measures

Measure	Commentary
Over-excavate to the required depth.	Over-excavate sand soil to the depth stated in the report and, if appropriate (discussed in report) retain it for re-use as fill. Over-excavation is likely to be done in stages depending on the site area available for earthworks. Excavations must be battered to a temporary slope as given in the report text where applicable and not in close proximity to adjacent structures etc. If required, construct temporary/permanent retaining walls where batters cannot be accommodated.
Moisture condition and proof compact.	Moisture condition and compact the exposed sandy ground to achieve the density specified in Section GDR7.1 ("sand") to a depth of at least 900 mm.
Test proof compaction	Check that the density specified in Section GDR7.1 ("sand") has been achieved to a depth of at least 900 mm. We note that the applicability of the use of the PSP for compaction control is discussed in the report. Unless specifically approved for use on the subject site, the contractor must **not** assume that the use of the PSP is appropriate.
Treat areas of loose or unsuitable material	Any areas of loose sand or unsuitable material (including over-excavated areas of former trees and root balls) must be removed and replaced with compacted **Approved Fill** as outlined in the report or as noted above. The report will explain the suitability of site-derived materials for re-use as approved fill.

Measure	Commentary
Carry out bulk filling	Where fill is required to build up levels (including restoration of the site surface level to the original level), use **Approved Fill**, placed and compacted in layers of no greater than 300 mm loose thickness. Test compaction as specified in Section GDR7.1.

In following this method, deep, loose sand will be compacted to a sufficient depth to reduce settlement impacts and the site will be filled (where required) in preparation for supporting footings, ground slabs, pavements and the like.

GDR6.2.4 Clayey Sites

The preparation measures outlined below are provided for sand sites meeting the following criteria:

- Site underlain by cohesive soils (typically >12% fines, i.e., clayey enough for the fines proportion of the soil to dominate behaviour).
- No collapsible soils present.
- No deep soft soils or organic soils.
- Over consolidated clayey soils present which will not be subject to significant primary or secondary consolidation (settlements expected to be within the limit of typical seasonal movements occasioned by moisture content changes, which would be captured in assignment of an AS2870 site classification).
- No shallow groundwater (<1 m deep)
- No rock present at shallow depth.
- "Common Measures" outlined in Section GDR6.2.1 have been completed.

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The applicability of these measures is stated in the main report. These measures must be carried out for all areas where structures, footings, pavement subgrades and any other settlement-sensitive infrastructure is proposed.

Unless specified otherwise in the report, the **Approved Fill** to be used is **Clay** as outlined in Section GDR8.

Table GDR 5: Clay Site Measures

Measure	Commentary
Moisture condition and proof compact.	Moisture condition and compact the exposed clayey ground to achieve the density specified in Section GDR7.1 ("fine grained soils") to a depth of at least 300 mm.
Test proof compaction	Check that the density specified in Section GDR7.1 ("fine grained soils") has been achieved to a depth of at least 300 mm. The use of a penetrometer for compaction control of cohesive soils is not an appropriate substitute for in situ NDG testing.
Treat areas of loose or unsuitable material	Any areas of soft clayey soils or unsuitable material (including over-excavated areas of former trees and root balls) must be removed and replaced with compacted **Approved Fill**. The report will explain the suitability of site-derived materials for re-use as approved fill.
Carry out bulk filling	Where excavations are done into clayey soils (e.g. to treat soft zones, remove root balls and the like), they must not be backfilled filled with sand fill (even where a sand topping layer is proposed). Where fill is required (including backfilling of excavations to remove trees), only use **Approved Fill**, moisture conditioned, placed and compacted in layers of no greater than 300 mm loose thickness. Test moisture and compaction as specified in Section GDR7.1.
Grade completed clayey surface	Surface water control is essential for clayey sites. This also applies to control of infiltrated water into sand topping layers or the like. The surface of clayey ground must be graded at a minimum of 1% crossfall to drain. This is a general recommendation and an appropriate civil design must be done to account for surface and subsoil drainage.
Install sand topping layer	Where a sand topping layer is proposed, this should be done as outlined in Section GDR6.2.5.

These measures do not take into account the objectives of the civil design for the site, particularly with regard to surface water drainage and groundwater control (including clay grading, subsoil drainage, thickness and composition of a sand topping layer and the like). This must be taken into account by the civil designer. General commentary on drainage control measures is presented in Section GDR14.

GDR6.2.5 Sand Topping Layer

Where a sand topping layer is required:

Unless specified otherwise in the report, the **Approved Fill** to be used is outlined in Section GDR8 (**Permeable Sand** where permeable fill is required, else **General Sand**). The specific selection is subject to the requirements of the civil designer.

Table GDR 6: Sand Topping Layer Measures

Measure	Commentary
Prepare Substrate	Prepare the clayey or other substrate as separately outlined prior to installing the topping layer.
Build up sand topping layer	Build up level to the required level with **Approved Fill**, placed and compacted in layers of no greater than 300 mm loose thickness to achieve the density specified in Section GDR7.1.

For the purposes of achieving the allowable bearing pressures and site classification discussed in the report, it is not necessary to have the bases of slabs and footings in the sand topping layer, i.e. if required, they may extend through the sand topping layer into clayey soil below.

GDR6.2.6 Limestone Sites

The preparation measures outlined below are provided for sites underlain by limestone (refer to Section GDR4.1), meeting the following criteria:

- Site underlain by sand overlying limestone.
- Compaction of a loose upper horizon to maximum 1 m depth, with localised deeper treatments between pinnacles if required.
- No shallow groundwater (<1 m deep)
- "Common Measures" outlined in Section GDR6.2.1 have been completed.

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The site preparation measures outlined below are aimed at improvement of the site in preparation for construction of the structures including on-ground slabs, shallow footings, retaining walls and pavements.

Unless specified otherwise in the report, the **Approved Fill** may comprise one of the following as specified in Section GDR8 (the specific selection is subject to the requirements of the civil designer):

- **Permeable Sand** where permeable fill is required
- **General Sand** where permeable fill is not required
- **Mixed Sand/Limestone Fill** where permeable fill is not required

The re-use of any limestone for fill is subject to the requirements of the civil design and discussions in the report text. The use of **Mixed Sand/Limestone Fill** is discussed in Section GDR6.2.7. The preparation measures outlined in Table GDR 7 assume sand fill.

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Table GDR 7: Standard Limestone Site Measures (Bulk Earthworks)

Measure	Commentary
Treat zones of loose sand	Where deep loose sand is present (particularly, but not exclusively, between limestone pinnacles), over-excavate to the depth as noted in the report . Sand should be retained for re-use as fill if recommended in the report. Limestone debris and pinnacles should be separated and only re-used if recommended in the report.
Moisture condition and proof compact.	Moisture condition and compact the exposed sandy ground to achieve the density specified in Section GDR7.1 ("sand") to a depth of at least 900 mm. Proof compaction of intact limestone is not required.
Test proof compaction	Check that the density specified in Section GDR7.1 ("sand") has been achieved to a depth of at least 900 mm. We note that the applicability of the use of the PSP for compaction control is discussed in the report. Unless specifically approved for use on the subject site, the contractor must not assume that the use of the PSP is appropriate. If refusal to the test method is encountered within the target test depth on limestone and the results to the refusal depth are acceptable, it is not necessary to repeat compaction testing at that location. Compaction control of intact limestone is not required.
Treat areas of loose or unsuitable material	Any areas of loose sand or unsuitable material (including over-excavated areas of former trees and root balls) must be removed and replaced with compacted **Approved Fill** as outlined in the report or as noted above. The report will explain the suitability of site-derived materials for re-use as approved fill.
Carry out bulk filling	Where fill is required to build up levels, use **Approved Fill**, placed and compacted in layers of no greater than 300 mm loose thickness. Test compaction to achieve the density specified in Section GDR7.1.

These measures do not take into account the specifics of the civil design, including the requirement (if any) for excavatable and/or free draining layers to achieve construction and drainage objectives. The civil design must take precedence and is not specifically considered in this advice.

Soakwells can perform poorly in limestone and specific advice may apply to the installation of soakwells in limestone areas. If not discussed in our report, please contact us for further advice.

Without further consultation with the structural designer, footings for any one structure must not be founded on a mixture of sand and intact limestone. This is due to potential differential settlements between limestone zones (relatively stiff) and soil zones (relatively soft). Where this is the case, the measures outlined in Table GDR 8 must be followed, only with guidance from the structural designer and Galt.

Table GDR 8: Standard Limestone Site Measures (Footing and Slab Preparation)

Measure	Commentary
Excavate and compact for slabs, subgrades, pad or strip footings	Excavate for pad and strip footings. Where a mix of soil and limestone is present below any one structure, one of the following must be done (to be agreed with structural designer and us): ▪ **Over-excavate limestone and replace with compacted soil:** Typically where the foundation largely comprises soil and a relatively small amount of limestone is present. Where footings and slabs are founded partly on soil and partly on limestone, over-excavate the limestone by at least 300 mm below the base of footing or slab and replace the excavated material with compacted **Approved Fill**. ▪ **Remove soil from over limestone and replace with concrete**: Typically where the foundation largely comprises limestone and a relatively small amount of soil is present. Localised zones of sand and mixed sand/limestone rubble must be removed and replaced with lean-mix concrete, e.g. 10 MPa blinding concrete. ▪ **Design the structure to accommodate differential foundation movements:** For example, include construction joints or use a more heavily reinforced footing (subject to the structural designer's requirements).
Test compaction of footing bases, slabs or subgrades.	Compact the exposed bases to achieve the density specified in Section GDR7.1 ("sand"), to a depth of at least 900 mm, or to the depth where limestone is intersected. If refusal to the test method is encountered within the target test depth on limestone and the results to the refusal depth are acceptable, it is not necessary to repeat compaction testing at that location. Compaction control of intact limestone is not required. Remove, replace and compact as required with approved fill any zone not achieving the density specified in Section GDR7.1 ("sand")

GDR6.2.7 Mixed Sand/Limestone Filling

On sites where deemed appropriate by the Civil Design, **Approved Fill** may comprise limestone rubble fill (**Mixed Sand/Limestone**, as specified in Section GDR8).

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The preparation measures outlined below are provided for sites meeting the following criteria:

- No shallow groundwater (<1 m deep)
- "Common Measures" outlined in Section GDR GDR6.2.1 have been completed.
- Substrate preparation for the relevant site type has been done in preparation for further filling (as relevant for sand, limestone or clayey sites discussed in the preceding sections).

The site preparation measures outlined below are required prior to construction of structures including on-ground slabs, shallow footings, retaining walls and pavements.

Table GDR 9: Mixed Sand/Limestone Fill Measures

Measure	Commentary
Develop a method specification for the filling	A performance specification is not appropriate for compaction control in **Mixed Sand/Limestone** fill, due to oversize limestone particles and the limitations of test methods. Therefore, a method specification is required. Development of a method specification is discussed in Section GDR7.5. A tentative method specification for **Mixed Sand/Limestone** Fill preparation is also provided.
Carry out bulk filling	Where fill is required to build up levels, use **Approved Fill**, placed and compacted in accordance with the developed method specification.
Maintain Construction Records	As performance testing cannot be done, quality assurance records are limited. Therefore, the parameters mentioned in Section GDR7.5.1 must be kept in a comprehensive record of the earthworks done to the developed method specification. The use of the PSP is possible only to check for loose sand zones between limestone particles. High PSP blow counts, where limestone particles are intersected, are meaningless in terms of assessing density of the prepared fill. The primary means of validation of the earthworks is conformance with the developed method specification.
Install sand topping layer	Where a sand topping layer is proposed, this should be done as outlined in Section GDR6.2.5.

These measures do not take into account the specifics of the civil design, including the requirement (if any) for excavatable and/or free draining layers to achieve construction and drainage objectives. The civil design must take precedence and is not specifically considered in this advice.

Soakwells can perform poorly in limestone fill and specific advice may apply to the installation of soakwells in limestone fill areas. If not discussed in our report, please contact us for further advice.

GDR6.3 Guidance on Sites with Cohesive Soils

Cohesive soils (most commonly, "clayey" soils) require careful moisture conditioning to facilitate compaction. We recommend that the moisture content of the material is between optimum moisture content (OMC) and 2% wet of OMC at the time of placement and compaction. We note that compaction to the densities specified in Section GDR7.1 can be difficult to achieve for clayey material when not appropriately moisture conditioned.

Vibratory padfoot rollers are preferred for compacting cohesive fill to promote proper kneading and interlocking of subsequent layers.

Clayey soils will drain poorly when inundated following rain events and result in saturated conditions that may inhibit compaction of the soil. In general, it is preferable to avoid trying to re-work clayey sites within several days of any substantial rainfall.

We recommend that the surfaces of clayey sites are sealed by compaction (i.e., final compaction should be with a smooth drum roller) and graded to drain (to avoid low spots where water can pond and cause softening) prior to any

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rain events. Stripping back of softened materials to expose competent natural or compacted clayey soil is required before continuing earthworks.

If difficulties are experienced during compaction due to water, further advice should be sought from a geotechnical engineer.

GDR6.4 Preparation and Testing of Shallow Footings

It is preferable to dig all footing excavations carefully with a flat-edged bucket to minimise the disturbance of underlying foundation soil.

Where the footing base is disturbed, or compaction is required, this must be done using appropriate compaction equipment particular to the task (as evaluated by the contractor) – typically a 'jumping jack', self-propelled plate compactor or an excavator-mounted plate compactor.

All footing bases must be tested to achieve the density requirements of Section GDR7.1. PSP testing of sand foundations is only applicable where the use of the PSP is specifically approved in the report, otherwise all testing is to be done using the NDG.

Sand Topping Layer - Where a sand topping layer is present over a different soil (i.e., clay, limestone etc.), testing of the density of the sand topping layer is only necessary within the thickness of the sand topping layer. Testing does not need to extend into the underlying compacted substrate, which is separately subjected to compaction control.

Mixed Sand/Limestone Fill – Where mixed sand/limestone fill has been installed to a method specification, no compaction control testing is required, however re-compaction of the base must be done as noted above.

In situ limestone – where in situ limestone (weakly or more cemented limestone, with no sand zones or voids) is present at a footing base and no over-excavation has been done (refer to Section GDR6.2.6 regarding over-excavation of footing bases in limestone), then no compaction control testing is required.

Where loose or soft material is encountered, one of the following actions must be taken:

- Over-excavate the loose / soft layer to expose a suitable layer that does meet the required density (Section GDR7.1) and either:
  - Place and compact Approved Fill (relevant to the appropriate preparation measures outlined in Section GDR6.2) to achieve the required density (Section GDR7.1); or
  - Pouring blinding concrete (f'_c>15 MPa at 28 days) from the competent layer up to the underside of the footing.

All foundations must be assessed by a competent person prior to blinding.

Measures must be taken to minimise moisture changes in clayey foundation soils at the base of footing excavations. Concrete footings are to be poured soon after excavation to minimise the potential for excessive moisture change. The use of a concrete blinding layer following foundation preparation should be considered.

GDR7 COMPACTION AND MOISTURE CONDITIONING

GDR7.1 Requirements

Any soil within the significant founding zone of structures (buildings, slabs, pavements, etc.) must be suitably moisture conditioned and compacted. These soils must be compacted to the requirements as outlined below.

Table GDR 10: Compaction and Moisture Requirements

Soil Description	Soil Particle Limits	Moisture Requirement	Density Requirement (DDR)	Possible QA/QC Test Methods
Sand	<5% fines <5% gravel *Maximum particle size 9.5 mm*	MOMC ±2%	95% MMDD	PSP NDG
Gravel	<5% fines >50% gravel *Maximum particle size 19.0 mm*	MOMC ±2%	95% MMDD	NDG
Clayey/Silty Gravel	5-35% fines >50% gravel *Maximum particle size 19.0 mm*	MOMC ±2%	95% MMDD	NDG
Sand with fines or gravel	5-35% fines; and/or 5-50% gravel *Maximum particle size 19.0 mm*	MOMC ±2%	95% MMDD	NDG Method Specification
Fine grained soils (Clayey or Silty)	>35% fines *Maximum particle size 19.0 mm*	MOMC ±2%; or SOMC ±2%[2]	92% MMDD; or 95% SMDD	NDG Method Specification
Oversize/rubbly soil	Any soils with particles >19.0 mm	MOMC ±2%	95% MMDD (Or equivalent to)	Method Specification Detailed Assessment Based on Specific Material

NOTES:

1. *DDR – Dry Density Ratio*
   MMDD – Modified maximum dry density (AS1289.5.2.1)
   MOMC – Modified optimum moisture content (AS1289.5.2.1)
   SMDD – Standard maximum dry density (AS1289.5.1.1)
   SOMC – Standard optimum moisture content (AS1289.5.1.1)
   PSP – Perth Sand Penetrometer
   NDG – Nuclear Density Gauge
2. *Preferably OMC to OMC +2%, for ease of compaction and producing a homogenous fill*
3. *Test frequencies are specified in Section GDR7.6.*

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The soil groups and definitions outlined above are generally based on AS1726-2017. Test methods are discussed in subsequent sections.

GDR7.2 Construction Recommendations

Over-excavation and replacement of loose material must be done where the minimum DDR cannot be achieved.

Fill must be placed in horizontal layers of not greater than 300 mm loose thickness. Each layer must be compacted by suitable compaction equipment, and carefully controlled to ensure even compaction over the full area and depth of each layer.

Care will need to be taken if compacting in the vicinity of existing structures, such as the adjacent properties. This is particularly important if vibratory compaction is being carried out.

- Tynan (1973), "Ground Vibration and Damage Effects on Buildings", Australia Road Research Board, Special Report No. 11.

Tynan (1973) provides guidance on the selection of compaction equipment for use adjacent to structures. The distance of influence (i.e., the definition of "vicinity") will vary depending on the size of compaction plant proposed for use. Where there is concern regarding the impact on nearby structures, a dilapidation study should be done.

Care must be taken when compaction is undertaken when the site surface is within 1 m of the groundwater level, as compaction (particularly with vibration) can draw the water up to the surface. In this instance, consideration should be given to:

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- Static rolling only;
- Using a pioneering layer (if possible); or
- Dewatering to keep the water at least 1 m below the surface being compacted.

GDR7.3 Nuclear Density Gauge

Where applicable, a nuclear density gauge (NDG) must be used in accordance with AS1289.5.8.1. NDG tests must be done to a depth of 300 mm or as otherwise indicated in the text of the attached report.

GDR7.4 Perth Sand Penetrometer

Where clean sand is used (<5% fines and <5% gravel), a Perth sand penetrometer (PSP) may be used for compaction control in accordance with AS1289.6.3.3. Refer to the report for recommended blow counts correlating to the specified density.

Where the fines or gravel contents of a sand soil exceed the maximum contents noted above, a PSP must not be used exclusively for compaction control. As a minimum, ongoing confirmation testing with an NDG is required. If not specified in our report, please contact us for further advice regarding test frequencies.

If difficulties are experienced recording the required blow counts, a site-specific PSP correlation should be carried out to determine the PSP blow count correlating to a DDR of 95% MMDD. In addition, a particle size distribution (PSD) test should be carried out to verify that the use of a PSP is suitable for the sands being tested. A site-specific PSP correlation must:

- be done on site;
- use the nuclear density gauge (NDG) to determine density at a minimum of 5 points with varying density to a depth of 300 mm below surface;
- include at least 1 point where the dry density ratio is in excess of 95% MMDD;
- use a calibrated PSP to determine the PSP blow count from 150 mm to 450 mm at each NDG test point; and
- be plotted on a chart of PSP blow count vs DDR.

Only where specifically stated as applicable in the report and where the use of the PSP is relevant as noted above, the following values may be taken as deemed to conform to a dry density ratio of 95% MMDD for the relevant sand type.

Table GDR 11: Deemed-to-comply Values for PSP Results in Perth Sands

Depth Interval (mm)	Bassendean	Tamala	Calcareous
0-150	SET	SET	SET
150-450	7	8	12
450-750	9	10	14
750-1050	11	12	16

NOTES:

1. *Blows per 300 mm interval*
2. *Bassendean Sand is typically a white - grey, low-fines quartz sand found on the eastern part of the Perth coastal plain*
3. *Tamala / Spearwood sand is typically yellow or orange, low-fines quartz sand found on the western part of the Perth coastal plain*
4. *Calcareous sands are typically white or yellow, calcareous sand found in low-lying areas on the western fringe of the Perth coastal plain*

5. *Values derived from Galt experience on PSP correlations done on sites across Perth for the 150-450 mm interval.*

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GDR7.5 Method Specifications

GDR7.5.1 General

Where proposed, a method specification should be developed by a geotechnical engineer or similarly qualified person and ratified by us (including a site visit by us). The method specification should be confirmed by the construction of a trial pad or trial area and the compaction methodology should be checked against either:

- density, as assessed using a nuclear density gauge; or
- settlement, as assessed using a dGPS.

Specific advice should be requested for the development of a method specification, taking into consideration the material being compacted.

Method specification compliance should be maintained for all areas on a minimum 20 m grid, with the compliance to include:

- Roller used (weight, style, vibration);
- Water application rate (per lift);
- Layer thickness placed; and
- Number of passes with roller.

GDR7.5.2 Indicative Method Specification – Sand/Limestone Rubble Mix

Where mixed sand/limestone is used as structural fill, a performance specification is not appropriate due to the inaccuracies of standard test methods (NDG/PSP etc.) in this type of material. A method specification can be used instead. The following indicative method specification is provided for evaluation and trial but must be trialled and ratified by us prior to widespread employment on site. The following would be typically adopted:

- Maximum particle size: 250 mm
- Maximum loose layer thickness: 350 mm
- Minimum watering rate: 10 L/m^2/100 mm thickness of loose material (e.g. 35 L/m^2 for a 350 mm thick layer)
- Minimum 8 passes with a vibrating padfoot roller, minimum static weight 10 tonnes.
- The compacted fill must comprise closely packed particles without any significant voids between the larger particles.

GDR7.6 Testing Frequency

After compaction, verify that the required density has been achieved by testing at the base of excavation and through the full depth of any fill, and to a minimum depth of:

- 900 mm where a PSP is used; or
- 300 mm where a NDG is used.

The frequency of testing (when a method specification is not used) should be as follows:

Table GDR 12: Compaction Testing Frequency Requirements

Area	Minimum Testing Frequency	Minimum Tests Per Lot
Proof Compacted Area	1 test per 1,000 m^2 (30 m grid)	2
Structural Fill Outside of Building and Pavement Footprints	1 test per 500 m^3 2 tests per layer *Whichever is greater*	2
Structural Fill Within Building and Pavement Footprints	1 test per 500 m^3 4 tests per layer *Whichever is greater*	4
Spread/Pad Footings	1 test per 9 m^2 per footing	1
Strip Footings/Retaining Wall Foundations	Minimum 2 tests At 5 m centres *Whichever is greater*	2
On-ground slabs, pavements and rafts	Minimum 2 tests At 10 m centres 1 test per 100 m^2 *Whichever is greater*	2

NOTES:

1. *A 'lot' is defined in the context of this section as a section of earthworks that is undertaken in one operation where the equipment, personnel, materials and methodology are consistent throughout the entire process. This would typically be limited to operations done in one day, but this is not mandatory.*
2. *There will frequently be multiple 'lots' in an earthworks process, therefore the number of tests must be adjusted according to the minimum number per lot in this table (where this is more than the frequency specified in 'testing requirements').*

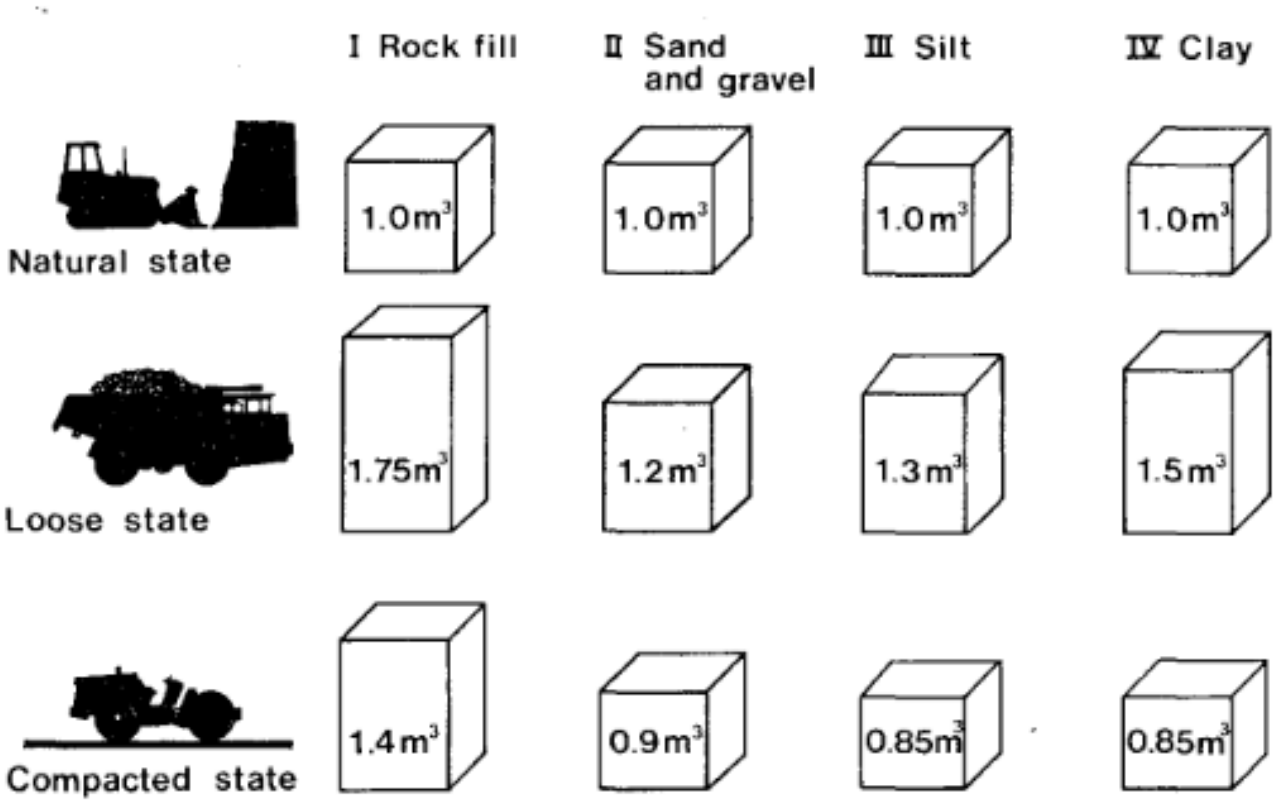
GDR7.7 Bulking and Compaction Factors

All soils will "bulk" when excavated to stockpile, and "compact" when placed from stockpile to earthworks layers. Published bulk and compaction factors are presented below for conventional materials, taken from:

- Forssblad, L (1981), "Vibratory Soil and Rock Fill Compaction", Dynapac Maskin AB

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Inline Image GDR 3: Volumes of Different Types of Fill Materials in Natural, Loose and Compacted State



These values are indicative only and will vary according to site specific conditions. The values provided here must not be used for commercial volume estimates or settling disputes regarding volumes.

GDR8 APPROVED FILL AND CONFORMANCE TESTING

Imported fill must comply with the material requirements as stated in AS 3798-2007, “Guidelines on Earthworks for Commercial and Residential Developments”.

Where doubt exists, a geotechnical engineer must be engaged to inspect and approve the use of potential fill materials.

The following table presents recommended material parameters for standard fill types. This does not take account of availability of materials either on site or in the local area. Refer to the report text for specific advice on fill at the subject site.

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Table GDR 13: Standard Fill Recommendations

Soil Description	Application	Soil Particle Limits (%)[3]				k_{min}[1] (m/d)	OC[2] (%)	Atterberg Limits		CBR[6] (%)	Test Method[4]
		Fines	Sand	Gravel	Max.			LL (%)	PI (%)		
Permeable Sand	Permeable bulk fill Retaining wall backfill Permeable select fill	≤5	≥90	≤5	9.5	5	≤2	NP	NP	≥12	PSP NDG
General Sand	Bulk fill Select fill (permeability not required)	≤5	≥90	≤5	9.5	N/A	≤2	NP	NP	≥12	PSP NDG
Silty Sand	Bulk fill Select fill	≤35	≥55	≤10	9.5	N/A	≤2	<35	<11	≥12	NDG
Clayey Sand	Bulk fill Select fill	≤35	≥55	≤10	9.5	N/A	≤2	<40	N/A	≥12	NDG
Mixed Sand/Limestone	Bulk fill (permeability not required)	≤5	≥20	≤80	250	N/A	≤2	NP	NP	N/A	NDG Method
Blue Metal Gravel[8]	Retaining wall backfill Drainage trench backfill	≤3	≤5	≥90	37.5	5	≤1	NP	NP	N/A	NDG
Clay[7]	Reinstatement of localised excavations in clay Bulk fill	≥12	Varies	≤30	19	N/A	≤2	Varies			NDG

NOTES:

1. *k_{min} – minimum saturated hydraulic conductivity (AS1289.6.7.1, remoulded to minimum DDR 100% MMDD).*
2. *OC – organic content (Walkley-Black method recommended, AS1289.4.1.1 – not loss on ignition methods)*
3. *% by mass.*
4. *Test method indicates possible compaction control methods for this material.*
   PSP – Perth sand penetrometer (AS1289.6.3.3). Where a PSP is used, a site-specific correlation must be done unless otherwise noted in the report.
   NDG – Nuclear density gauge (AS1289.5.8.1)
   Method – method specification
5. *Atterberg Limits: LL – liquid limit PI – plasticity index NP – non-plastic*
6. *CBR: California bearing ratio (for sand - remoulded to DDR 95% MMDD @ OMC, 4.5 kg surcharge). CBR values may be changed depending on the design pavement requirements.*
7. *"Clay" fill type is included for broad reference only and to illustrate preferred applications, particle size limits and recommended test method. Specific discussion on the use of clayey fills is included in the report text if applicable. Atterberg limit and CBR testing of clayey fills may be required and advice must be sought from us if not stated in the report.*
8. *"Blue metal" gravel refers to single sized, crushed, washed igneous rock gravel used for drainage purposes.*
9. *In the absence of specific test frequencies by the civil designer, the testing shown in Table GDR 14 must be done (highlights in Table GDR 13 show where the test is required).*

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Table GDR 14: Conformance Testing Frequency Requirements

Parameter	Frequency (m^3)	Minimum Tests per Source	AS1289 Reference
Particle size distribution	5,000	1	3.6.1
Hydraulic conductivity (permeability)	10,000	2	6.7.1
Organic content	5,000	1	4.1.1
Atterberg limits	5,000	1	3.1.1, 3.2.1, 3.3.1
CBR	10,000	2	6.1.1

NOTES:
1. *Frequency is for the nominal number of cubic metres of compacted fill.*
2. *Unless stated otherwise in the report text, the conformance testing must also be carried out on site-derived materials to confirm suitability.*

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GDR9 SHALLOW FOUNDATIONS

GDR9.1 Design

Footings and slabs may be designed in accordance with the assigned site classification in accordance with AS2870-2011. We note that AS2870-2011 is limited to single and double storey residential and commercial developments and may not be strictly applicable.

Where the report provides tables for shallow footing design, custom footings may be designed by the structural engineer using the data provided therein.

GDR9.2 Interpretation of Provided Values

BEARING PRESSURES

All settlement and bearing pressures estimates are provided on the assumption that the site preparation requirements outlined in the report are completed below all structures plus a minimum distance of 1 m beyond the outside edge of any footing or slab. It is essential that the soil below all foundations is appropriately prepared as outlined and meets the relevant compaction requirements.

Allowable bearing pressures for footings of intermediate plan dimensions (to any tabulated) can be interpolated. Footings that have a plan dimension either smaller or larger than those presented in the report will need to be considered individually along with other embedment depths.

Allowable bearing pressures, where provided, are considered to be the upper limit for shallow footings to limit total and differential settlements. Footings carrying eccentric loading, such as below retaining walls, must be assessed separately.

SETTLEMENTS

The reporting of settlements to any precision level is not intended to imply a high accuracy of settlement prediction. Settlements as reported should be considered 'order of magnitude'.

Estimated settlements represent vertical downwards movement due to loading and do not take into account potential additional movement associated with the characteristic surface movement of the soil (which must be taken in addition to these settlements from loading, refer Section GDR5). The site classification is discussed in the report.

The actual settlement of any proposed structure will depend upon a number of factors including the applied pressures, footing size and base preparation. The estimated settlement(s) provided in this report are for the working bearing pressures as indicated. Differential settlements are likely between footings of similar sizes, loads and elevations (as

stated in the report text). A proportion of the settlement is expected to occur during construction (i.e., during initial loading.

The provided settlement estimates (unless otherwise stated) do not include interaction effects from footings founded near other footings (i.e., groups of footings). Interaction effects will need to be considered if the spacing between adjacent footings is smaller than the dimension of the footings (i.e., the centre-to-centre spacing between footings is less than twice the width of the footing). This could act to double provided settlements, dependent on the footing configuration. Where an assessment of footing groups is required, a more detailed numerical or finite-element modelling analysis would need to be undertaken.

CREEP AND CONSOLIDATION

Creep settlement is an irreversible component of long-term soil settlement caused by sustained vertical stress. Consolidation is a time-dependent irreversible compression in a soil layer caused by a reduction in pore pressure between soil particles. Both creep and consolidation can occur in natural materials as a result of earthworks or the placement of loads on to soil layers. The settlements as presented for short-term loading do not include consideration for creep and consolidation settlements unless specifically stated.

GDR9.3 Raft Foundations

Where moduli of subgrade reactions are provided for the design of raft foundations, we highlight that these are an estimate of the elastic reaction of the soil. The values are provided based on an expected load and loaded area size. Soils are typically non-linear in their response and will have different stiffnesses at different levels of strain and load repetitions. This is due to the physical interaction of soil particles under different levels of stress.

The possibility of a non-linear response must be considered by the designer of any raft foundation.

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GDR10 PILED FOUNDATIONS

Piles must be designed and tested in accordance with AS2159-2009, “Piling – Design and Installation”. We use the following interpretation/design methods to provide pile design parameters:

- Franki Africa Pty Ltd (2008) “A Guide to Practical Geotechnical Engineering in South Africa”. 4th ed.
- AFNOR (2012) “NF P 94-262 – Justification des ouvrages géo-techniques, Normes d’application nationale de l’Eurocode 7”, Afnor, Paris, July 2012.
- Lehane, B. (2017) “CPT-Based Design of Foundations”. E.H Davis Memorial Lecture, Australian Geomechanics Vol 54. No. 4.
- Lehane, B. et al. (2020) “A New ‘Unified’ CPT-Based Axial Pile Capacity Design for Drivel Piles in Sand”. Proceedings of the Fourth International Symposium on Frontiers of Offshore Geotechnics.
- Doan., Lehane, B. (2021) “CPT-Based Design Method for Axial Capacities of Drilled Shafts and Cast-in-place Piles.” American Society of Civil Engineers (ASCE), Journal of Geotechnical and Geoenvironmental Engineering.

The pile designer must:

- consider the possible variation in subsurface conditions at each pile location;
- consider any pile group effects based on the final piling configuration;
- assume that the unit shaft resistance in tension is less than 80% of the unit shaft resistance in compression to account for Poisson’s effect in sand;
- ignore pile resistance in the surficial 0.5 m or 1 x pile diameter (whichever is greater), if relevant;

- consider the impact of weak layers underlying stiffer layers (or vice versa) on end bearing capacity; and
- reduce the pile capacity in tension to no greater than 0.8 of the pile capacity in compression.

The piling contractor must:

- make their own assessment on the suitability of their equipment to install any piles at the subject site; and
- carry out or appoint a suitably experienced contractor to test the piles in accordance with AS2159.

Where dynamic or static testing of the piles does not occur, we consider that a design geotechnical reduction factor (ϕg) of 0.4 is applicable for the pile design. If testing of the piles is proposed by the piling contractor, a higher ϕg could be adopted.

Unless otherwise stated, providing pile design parameters does not specifically indicate the driveability of any piles into soil units.

A separate driveability study may be required and must be considered by the pile designer and installer. The given pile design parameters must not be used for driveability assessments as these parameters are likely to be un-conservative.

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GDR11 EARTH RETAINING STRUCTURES

GDR11.1 General

Retaining structures may be designed in accordance with AS4678 (2002) “Earth Retaining Structures”. Unless otherwise specifically stated, we recommend that all retaining walls are backfilled with free-draining soil (Permeable Sand or Blue Metal Gravel as defined in Section GDR8).

Where the cohesive soil is used as retaining wall backfill, a suitable, permanent drainage system must be placed behind the wall such that a build-up of pore pressure is prevented. A separator geotextile (Bidim A24, or similar, or heavier) must be used between the interface of any granular backfill and the cohesive soil.

Where drainage is not provided, the retaining wall must be designed to accommodate water pressure behind the wall (10 kPa per metre height).

GDR11.2 Earth Pressure Coefficients and Strength Parameters

Where earth pressure coefficients are provided for retaining walls, the wall designer must make an independent assessment of the parameters appropriate to the construction method to be used, including alternative values of wall friction. Unless otherwise stated, we have assumed a horizontal ground surface behind and in front of the retaining wall for provided parameters.

GDR11.2.1 Cohesionless Soils

Where cross-referenced for suitability in the report, the following parameters may be adopted for design of earth retaining structures in cohesionless soils (sand and gravel).

Table GDR 15: Retaining Wall Geotechnical Parameters (Cohesionless Soils)

Density	γ (kN/m³)	ϕ' (°)	k_0	Wall Friction=0		Wall Friction=0.5ϕ		Wall Friction=0.67ϕ	
				k_a	k_p	k_a	k_p	k_a	k_p
Very Loose	17	30	0.44	0.33	3.00	0.29	4.81	0.28	5.74
Loose	17	32	0.42	0.31	3.25	0.27	5.55	0.26	6.83
Medium Dense	18	34	0.39	0.28	3.54	0.25	6.47	0.23	8.26
Dense	19	36	0.36	0.26	3.85	0.22	7.63	0.21	10.18
Very Dense (1)	19	38	0.34	0.24	4.20	0.21	9.11	0.20	12.85
Very Dense (2)	19	40	0.31	0.22	4.60	0.19	11.06	0.18	16.73

NOTES:

1. *Earth pressure coefficients are provided in this table for conditions of zero friction between the wall and the soil and with wall friction of 0.5Φ' or 0.67Φ'.*
2. *A horizontal ground surface behind and in front of the wall has been assumed.*
3. *The retaining wall designer should make an independent assessment of the parameters appropriate to the construction method to be used, including alternative values of wall friction.*
4. *γ – bulk unit weight*
   ϕ' – effective friction angle
   k_a – coefficient of active earth pressure (Coulomb – AS4678-2002, Appendix E)
   k_p – coefficient of passive earth pressure (Coulomb – AS4678-2002, Appendix E)
   k_0 – coefficient of at-rest earth pressure (Jaky)
5. *Maximum fines content 12% for applicability of this table for design purposes.*
6. *Unit weights based on Table D1 of AS4678-2002, for moist bulk weight.*
7. *Friction angle based on Equation D1 and Table D2 of AS4678-2002, based on rounded, moderately graded siliceous sand.*

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GDR11.2.2 Cohesive Soils

Where cohesive soils (i.e. clayey or silty soils) are proposed for backfill, geotechnical design parameters may be provided in the form of effective strength and undrained strength parameters. We note that:

- Undrained strength parameters should be used for analysis of short-term stability, or stability under sudden loading of cohesive soils.
- The effective strength parameters should be used for analysis of free-draining soils and the long-term stability of cohesive soils.

Table GDR 16: Retaining Wall Geotechnical Design Parameters (Cohesive Soils – Undrained)

Consistency	γ_b (kN/m³)	c_u (kPa)
Soft	17	12
Firm	18	25
Stiff	19	50
Very Stiff	20	100
Hard	20	200

NOTES:

1. *γ_b – bulk unit weight*
   c_u – undrained cohesion
   ϕ_u = 0° (undrained friction angle)
2. *Unit weights based on Table D1 of AS4678-2002*
3. *Undrained cohesion based on lower end of shear strengths as define in AS1726-2017, Table 11*

Table GDR 17: Retaining Wall Geotechnical Design Parameters (Cohesive Soils – Drained)

Fines Content	PI (%)	γ_b (kN/m^3)	ϕ' (°)	c' (kPa)[5]
12-35%	All	19	32	0
>35%	10	20	30	0 – 5
>35%	20	20	26	0 – 5
>35%	30	20	23	0 – 5
>35%	40	20	21	0 – 5

NOTES:

1. *γ_b – bulk unit weight*
   c' – drained cohesion
   ϕ' – effective friction angle
   PI – plasticity index
2. *Unit weights based on Table D1 of AS4678-2002, assuming generally stiff to hard overconsolidated soils.*
3. *For fines contents <35% (silty sand and clayey sand), strength parameters based on:*
   - *Lehane, B. et al (2007) "A Laboratory Investigation of the Upper Horizons of the Perth/Guildford Formation in Perth CBD", Australian Geomechanics Vol 42. No. 3.*
4. *For fines content >35% (sandy clay), strength parameters based on:*
   - *CIVL5503 course notes (2004), "Underground Construction", University of Western Australia*
5. *c' = 0 recommended for long-term design. Table D4 of AS4678 suggests c' up to 5 kPa for 'poor' fine grained soils and 10 kPa for 'average' fine-grained soils. The use of c' for design is subject to the designer's judgement but recommended by us only for temporary works.*

Per AS4678-2002 Appendix E, horizontal earth pressures for frictional-cohesive soils may be calculated in accordance with the Rankine-Bell design model (illustrated in Figure E2 of AS4678). The earth pressures are as follows (Z = depth, all other terms have the meanings given in the above tables):

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- Active: $p_a = \gamma Z tan^2\left(45 - \frac{\emptyset}{2}\right) - 2ctan\left(45 - \frac{\emptyset}{2}\right)$
- Passive: $p_p = \gamma Z tan^2\left(45 + \frac{\emptyset}{2}\right) + 2ctan\left(45 + \frac{\emptyset}{2}\right)$

GDR11.3 Design and Construction Considerations

Compaction plant can augment the lateral earth pressure acting on retaining walls. Hand operated compaction equipment is recommended within 2 m of any retaining walls to minimise compaction pressures.

Retaining walls can move and rotate under imposed soil loading resulting in settlement behind the wall. This must be considered in the design and during construction of the retaining walls in order that adjacent infrastructure is not adversely affected.

It is important to note that some ground movement will occur behind any soil retaining system, including gravity retaining walls.

GDR12 EXCAVATIONS, BATTERS AND SLOPES

GDR12.1 Excavatability

Our assessment of the excavatability of rock is based on a combination of:

- Our experience on earthworks and construction projects across Australia; and
- Figure 10 of the revised graphical method of assessing excavatability of rock by:
- Pettifer, G.S. & Fookes, P.G., "A revision of the graphical method for assessing the excavatability of rock", Quarterly Journal of Engineering Geology, 27, pp145-164, 1994.

GDR12.2 Safety

All excavations must be carried out in accordance with:

- Commission for Occupational Safety and Health (2022). "Excavation: Code of Practice", Department of Mines, Industry Regulation and Safety, 89pp, Perth.

Excavations in cohesionless soils are particularly prone to instability unless support is provided. Care must be exercised in such excavations and appropriate safety measures adopted where necessary, particularly in the vicinity of existing buildings, structures and infrastructure.

The toe of any batter must be at least 500 mm above groundwater (including perched groundwater).

Unless a specific slope stability assessment or retention design has been done, the toe of any excavation should not encroach within a line of 1V:3H to any nearby footings, pavements or other settlement-sensitive structures.

Surcharges (such as structures, plant and soil stockpiles) must not be placed at or close to the crest of unsupported excavations, without a specific slope stability assessment.

A geotechnical engineer must be consulted where there is any doubt regarding the stability or safety of unsupported excavations.

GDR12.3 Batters

Temporary batter slopes provided in the report are subject to the following conditions, unless otherwise stated:

- The maximum slope height is 2 m without specific advice and slope stability analysis.
- The groundwater level for the duration of the excavation must be at least 500 mm below the toe of the slope.
- No surcharges are present in the vicinity of the slope (i.e. must be outside a line of 1V:3H from the toe of the slope).

Unless noted specifically in the report, the following batters may be adopted (maximum height: 2 m):

Table GDR 18: Default Batter Angles

Situation	Material	Batter
Temporary	Cohesionless Soils (Sand/Gravel)	1V:2H
Temporary	Cohesive Soils – Soft	1V:2H
Temporary	Cohesive Soils – Firm, Stiff, Very Stiff or Hard	1V:1H
Temporary	Limestone – Variably Cemented	1V:1H
Temporary	Limestone – Well Cemented	1V:0.5H
Permanent	All Soils	1V:3H
Permanent	Limestone – Variably Cemented	1V:2H
Permanent	Limestone – Well Cemented	1V:1H

Where specified batters cannot be accommodated in the vicinity of existing footings, roads and services, temporary or permanent lateral support will be required.

Specific advice is required for batters higher than 2 m.

Erosion control must be considered for permanent slopes.

Rock slopes must be inspected, and all loose cobbles / boulders removed. Permanent rock slopes may require dentition works or possibly rock catch drains.

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GDR12.4 Grouting

Permeation or jet grouting involves injecting a microfine cement into soil to form a grouted soil block (soilcrete) to support excavation and structures. Grouting is typically only effective where the soil has the capacity to "take" the grout and form a uniformly cemented soil mass. Permeation grouting is generally limited to relatively permeable, coarse-grained cohesionless soils (sands and gravels with <5% fines).

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If grouting is proposed, we recommend the following:

- Grouting must be carried out by a suitably experienced contractor.
- Only microfine cement grout should be used (not GP or coarse cement blends) to ensure adequate penetration into the soil matrix.
- Grouting should be done on a grid of not greater than 300 m.
- Application rates must be discussed with the contractor.
- The grouted soil mass must have intimate contact with any structures it is intended to support.
- The contractor must satisfy themselves that the proposed grouting can be installed with their equipment and into the subsurface conditions encountered at the site, considering possible obstructions, groundwater, cemented layers, loose sands etc.
- Testing of the grouted soil mass must be done to ensure that the grout has adequately permeated through the soil matrix. This can be done by drilling into the soil mass to ensure the cementation is continuous.

Grouting is most effective on permeable, relatively loose natural sand. Where historical filling or other ground disturbances have occurred, the grouting process can be less effective due to the tendency of grout (or other liquids) to follow more permeable paths / zones through the disturbed soil.

GDR13 STORMWATER DISPOSAL AND DRAINAGE DESIGN

GDR13.1 Groundwater Separation – Controlled Groundwater

These recommendations ONLY apply to where regional controls on groundwater (primarily: subsoil drainage, but also surficial 'main drains') exist, i.e. only to areas where groundwater is actively controlled.

The following reference:

- IPWEA (2016), "Specification: Separation Distances for Groundwater Controlled Urban Development", Institute of Public Works Engineering Australasia

recommends the following separation distances from drainage infrastructure to groundwater:

- Underground infiltration systems: 0 mm from the 50% AEP (annual exceedance probability) phreatic surface.
- Surface infiltration systems (vegetated): 300 mm from the 50% AEP phreatic surface.

The above IPWEA reference also states that performance measures for underground infiltration systems are to have a: *demonstration of acceptable volumetric capacity when groundwater is elevated above base of system and that the groundwater recedes below the invert of the system during mosquito breeding seasons (grated or partially open systems)*.

GDR13.2 Groundwater Separation – Uncontrolled Groundwater

These recommendations apply where regional controls on groundwater levels are not present. For infiltration into soakwells and soakage basins to be the full theoretical value, an adequate separation to groundwater must be achieved, because otherwise performance is hindered by inadequate separation to groundwater or partial submergence of the infiltrative element.

We recommend a minimum separation of 500 mm from the underside of infiltrative elements to maximum groundwater level.

- To average annual maximum groundwater level (AAMGL), where this has been defined for the site; or
- To historical maximum groundwater level, where this has been defined to the site.

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GDR13.3 Design Hydraulic Conductivity Values

Where provided, the values of hydraulic conductivity (k) should be considered the maximum/upper limit design values. As discussed in Section GDR3.7, the inverse auger hole test is an unsaturated field test carried out above the groundwater table and, as such, presents the best-case conditions for drainage.

For soak wells in sand, we provide the design value taking into consideration the variability in materials and reduced permeability as a result of:

- Densification of sand during site preparation works; and
- Natural variation in sands.

Design k_{unsat} values provided for soak wells are only appropriate for the design of unsaturated soils where the base of disposal area is at least 500 mm above groundwater and 500 mm above any impermeable layer.

Where design values of k_{unsat} have been provided, clogging of the base of the soakwell / drainage basin has not been considered. Clogging will need to be controlled with maintenance over the life of the soakwell / drainage basin.

For the design of subsoil drains or modelling of saturated soil performance, a k_{sat} value must be given (in the report text) or assessed by laboratory testing (or a combination of field and laboratory testing). Unless specifically stated, k_{unsat} values presented in our report are for unsaturated conditions and intended for design of stormwater disposal elements above groundwater. If no k_{sat} value has been provided, do not use the provided k_{unsat} value for saturated drainage design. Please contact us for further advice.

For saturated or semi-saturated sands, the hydraulic conductivity must be assessed by testing of representative soil samples at a NATA accredited laboratory to determine:

- The modified maximum dry density (MMDD); and
- The constant-head permeability (AS1289.6.7.1) on a sample remoulded to at least 5% greater than the proposed specification density (i.e., sample should be remoulded to 100% MMDD if the earthworks specification requires a density ratio of 95% MMDD).

For saturated or semi-saturated clayey or silty soils, the hydraulic conductivity must be assessed by testing of representative soil samples at a NATA accredited laboratory to determine:

- The standard maximum dry density (SMDD); and
- The falling-head permeability (AS1289.6.7.2) on a sample remoulded to at least 3% greater than the proposed specification density (i.e., sample should be remoulded to 101% SMDD if the earthworks specification requires a density ratio of 98% SMDD).

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GDR13.4 Soakwells

In uncontrolled groundwater environments, the base of any soakwell must be the higher of:

- At least 500 mm above the average annual maximum groundwater level (AAMGL).
- At least 500 mm above any low permeability/impermeable layers (clay, rock or otherwise).

In controlled groundwater environments (refer to Section GDR13.1), the base of any soakwell may be 0 mm above the controlled groundwater level at the location of the soakwell (as determined by the civil engineer).

Soak wells must be placed outside a line of 1V:2H extending below the edge of the nearest footing, subject to local council regulations. Discharge from soak wells has been known to promote densification of loose sandy soils, leading to settlements of footings and slabs. Soak wells should be carefully wrapped with geotextile to prevent migration of sand and fines into the soak well.

Where soak wells are proposed to dispose of water within a line of 1V:2H from any basement walls or similar, the walls must be waterproofed to prevent seepage or damp within the basement wall.

In potentially karstic terrain or areas of potentially collapsible soils, soakwells should typically be located 10 m from the nearest footing, slab or pavement.

GDR13.5 Design Groundwater Elevation

Where applicable, a recommended design groundwater elevation will be provided in the report and will be identified as such.

In the absence of a specific statement on design groundwater elevation, **do not assume** that:

- Absence of comments about groundwater indicates an absence of groundwater (in particular, sites that are dry in the dry season to the investigated depth may well become waterlogged in the rainy season).
- Where groundwater depths/levels are noted, that these are fixed (groundwater fluctuations occur over the course of the year and between wetter and drier years).

Where groundwater elevations are likely to be critical for a development (particularly where large-scale subdivision or large developments are proposed with substantial channelling of stormwater into on-site disposal by infiltration), a site-specific hydrology study is likely to be required to confirm design groundwater elevations.

GDR14 DRAINAGE CONTROL

In addition to the site preparation measures outlined for cohesive soils (refer Section GDR6.2.4), careful control of surface water and stormwater is essential to minimise the likelihood of cohesive soils decreasing in strength and affecting the installed infrastructure. These measures include:

- The ground surface of clayey soils should be graded to drain any seepage away from structures and prevent standing water over the cohesive soils. A grade of at least 1% is recommended.
- Pavements should be sealed to minimise water ingress.
- Stormwater disposal swales should be located at least 10 m away from buildings, retaining walls and pavements.
- Runoff from hardstandings and pavements must either be collected and discharged via pipes into discrete locations (via swales or soakage basins) at least 10 m away from structures and pavements or, alternatively, discharged over a wide area, but not allowed to collect and discharge into concentrated areas, particularly near structures and pavements.

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- Spoon drains should be used to collect water at the crest of slopes to capture surface runoff and direct it away from running directly down slopes or seeping into the ground behind slopes.

These measures are general in nature only and do not take into account the civil design objectives, which must be addressed separately by the civil designer.

GDR15 DEWATERING

Dewatering may be required for excavations and construction below groundwater or perched groundwater tables. Common dewatering methods are summarised below:

Table GDR 19: Dewatering Recommendations

Material	Recommended Methods
Sandy Soils	Spears Deep Well Point
Impermeable Clay	Sump Pumping

Dewatering spears are typically suitable for small scale excavations below groundwater, with a typical recommendation for spears to be installed at 1 m below the base of any excavation. Dewatering spears may not be suitable where there are impermeable/cemented/strong transition layers, i.e., it may not be possible to extract water near an impermeable layer (rock/clay), or the spear may not be readily driven through a hard clay/cemented layer (i.e., coffee rock).

Sump pumping can be done by grading a clayey excavation to drain (i.e., by using spoon drains), and excavating a sump in the excavation. A sump can typically be backfilled with a blue metal gravel, with a pump wrapped in a geofabric (i.e., Bidim A14 or similar), with disposal of water away from the excavation.

Deep well point dewatering is typically suitable for larger excavations, where there are transitional layers or where the aquifer is confined. It may not be suitable where there are impermeable layers within the profile. It involves the installation of a deep filtered well to a depth required to draw down the groundwater level at the entire site. A deep well dewatering system must be designed by a suitable designer to provide design flow rates, draw down depths etc.

GDR16 PAVEMENT SUBGRADES

Unless otherwise specified, the provided subgrade California bearing ratio (CBR) is not a pavement design, but an assessment of the subgrade as an input into any required pavement designs.

Provided design values are based on the assumption that the relevant site preparation measures are completed for all pavement subgrades, including the use of appropriate approved fill and adequate compaction. We highlight that specific requirements such as those outlined by Main Roads WA (MRWA) or the local council in their construction specifications may have different requirements.

The provided design value is based on laboratory testing (where done), local experience, and the advice as outlined in:

- Main Roads Western Australia (2013). “Engineering Road Note 9 – Procedure for the Design of Road Pavements”. Western Australia Supplement to the Austroads Guide to Pavement Technology Part 2: Pavement Structural Design, East Perth.

Where the subgrade differs from that described in the text, the subgrade CBR must be confirmed.

The performance of any pavement is highly dependent on the surface and subsurface drainage provided (also considering factors like capillary rise from seasonally high groundwater tables). Adequate drainage must be provided to any pavements, and capillary rise must be considered by the designer.

GDR17 SOIL CORROSIVITY AND AGGRESSIVITY

The relevant exposure classifications for concrete and steel piles in soils based on the exposure conditions are presented in Table GDR 20 and Table GDR 21 respectively.

The relevant exposure classifications for concrete in sulfate soils based on the exposure conditions are presented in Table GDR 22.

Table GDR 20: Exposure Classification for Concrete Piles in Soil

Exposure Conditions				Exposure Classification	
Sulfates (expressed as SO_4)[1]		pH	Chlorides in Groundwater (ppm)	Soil Conditions A[2]	Soil Conditions B[3]
In Soil (ppm)	In Groundwater (ppm)				
< 5,000	< 1,000	> 5.5	<6000	Mild	Non-aggressive
5,000 – 10,000	1,000 – 3,000	4.5 – 5.5	6,000-12,000	Moderate	Mild
10, 000 – 20,000	3,000 – 10,000	4 – 4.5	12,000-30,000	Severe	Moderate
> 20,000	> 10,000	< 4	>30,000	Very Severe	Severe

NOTES:
1. *Approximately 100 ppm SO_4 = 80 ppm SO_3*
2. *Soil Conditions A – high permeability soils (e.g. sands and gravels) which are in groundwater*
3. *Soil Conditions B – low permeability soils (e.g. silts and clays) or all soils above groundwater*
4. *Table reproduced from Table 6.4.2(C) of AS2159-2009*

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Table GDR 21: Exposure Classification for Steel Piles in Soil

pH	Chlorides		Resistivity (ohm.cm)	Exposure Classification	
	In Soil (ppm)	In Water (ppm)		Soil Conditions A[2]	Soil Conditions B[3]
> 5	< 5,000	< 1,000	> 5,000	Non-aggressive	Non-aggressive
4–5	5,000-20,000	1,000–10,000	2,000 – 5,000	Mildly aggressive	Non-aggressive
3–4	20,000-50,000	10,000–20,000	1,000 – 2,000	Moderately aggressive	Mildly aggressive
< 3	> 50,000	> 20,000	< 1,000	Severely aggressive	Moderately aggressive

NOTES:
1. *1 ppm (parts per million) is equivalent to 1 mg/kg*
2. *Soil Conditions A – high permeability soils (e.g. sands and gravels) which are in groundwater*
3. *Soil Conditions B – low permeability soils (e.g. silts and clays) or all soils above groundwater*
4. *Table reproduced from Table 6.5.2(C) of AS2159-2009*

Table GDR 22: Exposure Classification for Concrete in Sulfate Soils

Exposure Conditions			Exposure Classification	
Sulfates (expressed as SO_4)[1]		pH	Soil Conditions A[2]	Soil Conditions B[3]
In Soil (ppm)	In Groundwater (ppm)			
< 5,000	< 1,000	> 5.5	Mild	Non-aggressive
5,000 – 10,000	1,000 – 3,000	4.5 – 5.5	Moderate	Mild
10, 000 – 20,000	3,000 – 10,000	4 – 4.5	Severe	Moderate
> 20,000	> 10,000	< 4	Very Severe	Severe

NOTES:
1. *Approximately 100 ppm SO_4 = 80 ppm SO_3*
2. *Soil Conditions A – high permeability soils (e.g. sands and gravels) which are in groundwater*
3. *Soil Conditions B – low permeability soils (e.g. silts and clays) or all soils above groundwater*
4. *For disturbed soils, the assumption of soil A conditions where accelerated corrosion is possible should be considered.*
5. *Table reproduced from Table 4.8.1 of AS3600-2018*

GDR18 LIQUEFACTION

Soil liquefaction can occur when loose, granular, Holocene age material below the groundwater table is subjected to a seismic event (typically within 15 m of the ground surface). This can cause a loss of strength and result in vertical and lateral movements of the site surface.

Where a liquefaction analysis is carried out and outlined in the report, this has been done in accordance with consideration to the design earthquake details as presented in AS1170.4-2007:

- The hazard factor is taken from Figure 3.2 (C) and Table 3.2. The Hazard Factor (Z) for Western Australia represents the 1 in 500-year annual probability of exceedance of ground motions measured in gravity (g).
- The probability factor (k_p) is taken from Table 3.1.

Unless otherwise stated, an earthquake magnitude of 7.5 for the south-west of WA is based on research by:

- Dhu T., Sinadinovski C., Edwards M., Robinson D., Jones T., Jones A. (2004) “Earthquake Risk Assessment for Perth, Western Australia”. 13th World Conference on Earthquake Engineering, Vancouver, B.C., Canada. Paper No. 2748.

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GDR19 EXPECTATIONS OF THE REPORT

The following sections have been prepared to clarify what is and is not provided in your report. It is intended to inform you of what your realistic expectations of this report should be and how to manage your risks associated with the conditions on site.

Geotechnical engineering and environmental science are less exact than other engineering and scientific disciplines. We include this information to help you understand where our responsibilities begin and end. You should read and understand this information. Please contact us if you do not understand the report or this explanation. We have extensive experience in a wide variety of projects and we can help you to manage your risk.

GDR20 THIS REPORT RELATES TO PROJECT-SPECIFIC CONDITIONS

This report was developed for a unique set of project-specific conditions to meet the needs of the nominated client. It took into account the following:

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- the project objectives as we understood them and as described in this report;
- the specific site mentioned in this report; and
- the current and proposed development at the site.

It should not be used for any purpose other than that indicated in the report. You should not rely on this report if any of the following conditions apply:

- the report was not written for you;
- the report was not written for the site specific to your development;
- the report was not written for your project (including a development at the correct site but other than that listed in the report); or
- the report was written before significant changes occurred at the site (such as a development or a change in ground conditions).

You should always inform us of changes in the proposed project (including minor changes) and request an assessment of their impact.

Where we are not informed of developments relevant to your report, we cannot be held responsible or liable for problems that may arise as a consequence.

Where design is to be carried out by others using information provided by us, we recommend that we be involved in the design process by being engaged for consultation with other members of the project team. Furthermore, we recommend that we be able to review work produced by other members of the project team that relies on information provided in our report.

GDR21 DATA PROVIDED BY THIRD PARTIES

Where data is provided by third parties, it will be identified as such in our reports. We necessarily rely on the completeness and accuracy of data provided by third parties in order to draw conclusions presented in our reports. We are not responsible for omissions, incomplete or inaccurate data associated with third party data, including where we have been requested to provide advice in relation to field investigation data provided by third parties.

GDR22 SOIL LOGS

Our reports often include logs of intrusive and non-intrusive investigation techniques prepared by Galt. These logs are based on our interpretation of field data and laboratory results. The logs should only be read in conjunction with the report they were issued with and should not be re-drawn for inclusion in other documents not prepared by us.

GDR23 THIRD PARTY RELIANCE

We have prepared this report for use by the client. This report must be regarded as confidential to the client and the client's professional advisors. We do not accept any responsibility for contents of this document from any party other than the nominated client. We take no responsibility for any damages suffered by a third party because of any decisions or actions they may make based on this report. Any reliance or decisions made by a third party based on this report are the responsibility of the third party and not of us.

GDR24 CHANGE IN SUBSURFACE CONDITIONS

The recommendations in this report are based on the ground conditions that existed at the time when the study was undertaken. Changes in ground conditions can occur in numerous ways including anthropogenic events (such as construction or contaminating activities on or adjacent to the site) or natural events (such as floods, groundwater fluctuations or earthquakes). We should be consulted prior to use of this report so that we can comment on its reliability. It is important to note that where ground conditions have changed, additional sampling, testing or analysis may be required to fully assess the changed conditions.

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GDR25 SUBSURFACE CONDITIONS DURING CONSTRUCTION

Practical constraints mean that we cannot know every minute detail about the subsurface conditions at a particular site. We use professional judgement to form an opinion about the subsurface conditions at the site. Some variation to our evaluated conditions is likely and significant variation is possible. Accordingly, our report should not be considered as final as it is developed from professional judgement and opinion.

The most effective means of dealing with unanticipated ground conditions is to engage us for construction support. We can only finalise our recommendations by observing actual subsurface conditions encountered during construction. We cannot accept liability for a report's recommendations if we cannot observe construction.

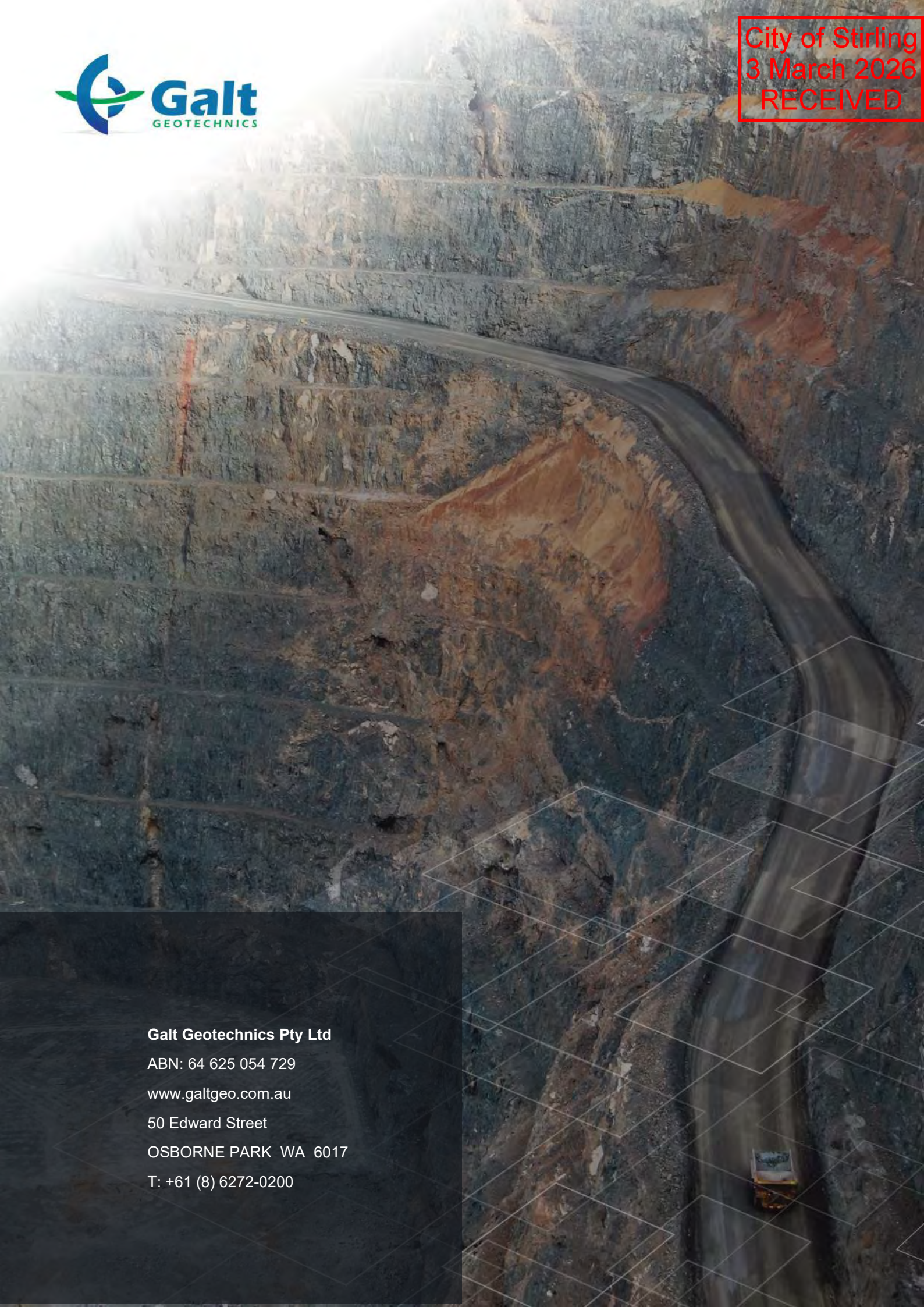
GDR26 ENVIRONMENTAL AND GEOTECHNICAL ISSUES

Unless specifically mentioned otherwise in our report, environmental considerations are not addressed in geotechnical reports. Similarly, geotechnical issues are not addressed in environmental reports. The investigation techniques used for geotechnical investigations can differ from those used for environmental investigations. It is the client's responsibility to satisfy themselves that geotechnical and environmental considerations have been taken into account for the site.

Geotechnical advice presented in a Galt Environmental report has been provided by Galt Geotechnics under a sub-contract agreement. Similarly, environmental advice presented in a Galt Geotechnics report has been provided by Galt Environmental under a sub-contract agreement.

Unless specifically noted otherwise, no parties shall draw any inferences about the applicability of the Western Australian state government landfill levy from the contents of this document.

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Dianella Plaza Shopping Centre Redevelopment, Stage-1

Stormwater Management Plan

Prepared for Greenpool Capital

October 2025

Project Number P24045

P24045-REP-C-0002

Revision A

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Document Control

Revision	Date	Description	Prepared	Reviewed	Approved
A	24/10/2025	Issued for DA	V Latchamsetty	A Mayahi	A Mayahi

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1. Introduction

1.1 Description of Project

BG&E was engaged by Greenpool Capital to provide civil design services for Dianella Plaza Shopping Centre Redevelopment, Stage 1 (the Project). The Project is located in Dianella to the east of City of Perth; a locality plan is provided in Figure 1.1.



Figure 1.1 – Locality Plan

1.2 Purpose of this Report

This Site Stormwater and Drainage Management Plan has been prepared in supporting of application for DA lodgement for the Project. This report outlines the stormwater drainage methodology of the existing and proposed Site, discussing site conditions, design criteria and stormwater systems.

The following documentation was referenced in the preparation of this report:

- Architectural Drawings.
- Galt Geotechnical Study (Document No. WAE200102-02 002 R Rev0).

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2. Geotechnical Investigation

2.1 Preliminary Geotechnical Investigations

A geotechnical investigation has been carried out on this site by Galt Geotechnics in April 2024.

A summary of the geotechnical conditions of the site is below.

2.2 Groundwater

During the geotechnical investigation on site groundwater was recorded at depth ranging from 6.5m to 7.7m.

Table 1: Summary of Groundwaters Levels

Item	Date	Depth (m)	Elevation (m AHD)	Comment
Perth groundwater Atlas	1997	1-5	25	-
Site Observation	2024	5.2-6.2	`23[2]	Groundwater depths inferred from pore pressure measurements

Notes:

1. Perth Groundwater Atlas 1997 shows the historical maximum groundwater elevations.
2. Groundwater elevation estimated from assumed surface elevation of RL 28 m AHD.

2.3 Geology

Table 2: Summary of Geology Mapping

Map Sheet	Map Scale	Mapped Soils	Site Findings
Perth	1:50,000	Bassendean Sand	FILL: SAND (SP-SM); over SAND (SP)

2.4 Subsurface Conditions

The site is underlain by Sand to the maximum investigated depth of 8 m. The sand is typically medium dense to dense with some near surface loose sand present in some test locations.

- Loose SAND: Within the upper 2 m of soil profile, typically toward the north of the site.
- Medium Dense SAND: Typically between RL 27 m AHD and RL 23 m AHD.
- Dense SAND: At the surface and typically below RL 24 m AHD.

2.5 Soil Infiltration

According to the Galt Geotechnical Investigation report, an infiltration rate of 5 m/day was determined based on testing. Stormwater may be disposed via underground tanks provided there is at least 0.5 m clearance to the design groundwater elevation.

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3. Stormwater Management

3.1 General

This section provides a detailed overview of the drainage works associated with the proposed shopping centre redevelopment. The scope of works includes identifying the necessary modifications to the existing drainage system affected by the proposed redevelopment and proposing new underground infiltration tanks for the new development. These modifications will ensure that the drainage infrastructure can adequately accommodate the existing impervious areas impacted by the redevelopment, as well as any additional catchment areas introduced by the project.

3.2 Existing Drainage

An existing stormwater drainage pit and pipe system is located within the existing Shopping Centre. As most of the existing drainage will not be impacted by the proposed redevelopment. However, the existing drainage system impacted by the proposed Coles building will be modified to suit the proposed redevelopment.

3.3 Drainage Design Criteria

The drainage works for this development will be designed according to Australian Rainfall and Runoff (2019), and Part 5A of Austroads Guide to Road Design (2013) and, to ensure:

- Provision of a stormwater pipe network to cater for runoff from events up to the 10% AEP (minor system).
- Provision for all buildings and major overland flow routes to safely convey flows up to the 1% AEP (major system).
- Assessment and provision of detention and storage requirements for the 1% AEP event, ensuring that flood levels during the major event remain below basement and ground floor thresholds, and below anticipated top water levels (TWLs).
- The stormwater network is sized to collect and convey runoff from hardscape, softscape, and pavement catchments of the proposed development, with provision for infiltration and retention in accordance with WSUD principles.
- For events exceeding the 1% AEP or for back-to-back storm events, flows will be conveyed via designated major overland flow paths to the council's drainage network, without adverse impacts to adjacent properties.
- Water quality treatment measures (e.g. vegetated swales, GPTs) shall be incorporated in line with the Stormwater Management Manual for WA to achieve best practice pollutant reduction targets and to reduce the tanks maintenance and extend infrastructure lifespan.

3.4 Stormwater Solutions

The proposed drainage design incorporates new infiltration/detention tanks to manage the stormwater runoff generated from the redeveloped catchment area. These tanks are carefully located within the proposed western carpark to optimise hydraulic performance and integration with the overall site layout.

In selecting the tank locations, consideration has been given to the project staging plan, existing and proposed landscape and tree planting zones, and the existing underground services. This approach ensures that the installation of the tanks during the initial stage can be undertaken with minimal disturbance to future works and that subsequent development stages can proceed without impacting the infrastructure constructed as part of Stage 1.

The design intent is to manage stormwater locally within the site and to achieve a sustainable and constructible drainage solution, maintaining adequate separation from landscaped areas and ensuring accessibility for maintenance while minimising future rework or disruption as the site is progressively developed.

3.4.1 Catchments

The primary stormwater system on the site will be designed to receive water from the roofs, hard/soft landscaping, and pavement areas of the planned development. The overall catchment is around 3 hectares.

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3.4.2 Storage

The storage tanks will be located beneath the proposed carpark to the west of the site. The storage tanks are trafficable with infiltration. It is proposed to use modular tank system with a minimum 0.5m clearance to the underground water to provide better infiltration. The initial tanks' sizing can be found in the following table:

Table 3: Proposed Stormwater Tank Sizing

Tank ID	Footprint (Width x Length x Height)	Volume
Tank-A	20.0m x 24.8m x 2 Stack	375m^3
Tank-B	20.0m x 24.8m x 2 Stack	375m^3
Tank-C	20.0m x 24.8m x 2 Stack	375m^3
Tank-D	12.8m x 20.0m x 2 Stack	194m^3
Tank-E	12.8m x 20.0m x 2 Stack	194m^3

3.4.3 Extreme Event

Events more than the 100-year ARI or back-to-back storm events, are expected to travel via the major overland flow routes offsite into the council's drainage network.

The flow routes were aligned with the site topography to direct water away from buildings, pedestrian footpaths, and critical infrastructure, minimising potential flooding or damage.

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Appendices

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Appendix A
Stormwater Drainage Plan

NEW GRAF ECOBLOC INSPECT SMART STORMWATER MANAGEMENT SYSTEM OR SIMILAR APPROVED 375m³ DOUBLE STACKED (CELLS) 24.8m LONG x 20.0m WIDE

NEW GRAF ECOBLOC INSPECT SMART STORMWATER MANAGEMENT SYSTEM OR SIMILAR APPROVED 375m³ DOUBLE STACKED (CELLS) 24.8m LONG x 20.0m WIDE

NEW GRAF ECOBLOC INSPECT SMART STORMWATER MANAGEMENT SYSTEM OR SIMILAR APPROVED 375m³ DOUBLE STACKED (CELLS) 24.8m LONG x 20.0m WIDE

NEW GRAF ECOBLOC INSPECT SMART STORMWATER MANAGEMENT SYSTEM OR SIMILAR APPROVED 194m³ DOUBLE STACKED (CELLS) 20.0m LONG x 12.8m WIDE

NEW GRAF ECOBLOC INSPECT SMART STORMWATER MANAGEMENT SYSTEM OR SIMILAR APPROVED 194m³ DOUBLE STACKED (CELLS) 20.0m LONG x 12.8m WIDE

ALEXANDER DRIVE

GRAND PROMENADE

70 71 59 231 110 79 100 78

NOTES

1. DO NOT SCALE DRAWINGS.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

LEGEND

CADASTRAL BOUNDARY

NEW DRAINAGE TANK

EXISTING DRAINAGE PIPE

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WARNING
BEWARE OF UNDERGROUND/OVERHEAD SERVICES. THE LOCATIONS OF UNDERGROUND/OVERHEAD SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

BEFORE YOU DIG www.byda.com.au

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SCALE 1:500 AT A1 SIZE

SKETCH ONLY

BG&E

DATE	23/10/2025
SCALE	1:500
GRID	PCG94
PREPARED	JS
SHEET	1 OF 1

PROJECT: DIANELLA PLAZA SHOPPING CENTRE REDEVELOPMENT

TITLE: CONCEPT DRAINAGE PLAN

PROJECT No. P24045 | SKETCH No. SK-C-0001 | REV B

DATE PLOTTED 23 October 2025 7:19:04 PM

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Dianella Plaza Redevelopment – Stage 1

Sustainability Report

Greenpool Capital Pty Ltd

Job No:	1048178
Doc Ref:	1048178 -RPT-SY-001
Revision:	—
Revision Date:	14 November 2025

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Project title	Dianella Plaza Redevelopment – Stage 1	**Job Number**
Report title	Sustainability Report	1048178

Document Revision History

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Document Validation (latest issue)

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X	X	X
Principal author	Checked by	Verified by
Signed by: Dana Jump	Signed by: a.gurav	Signed by: a.gurav

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Executive summary

This report outlines the Ecological Sustainable Design (ESD) strategy for the proposed Dianella Plaza Redevelopment Stage 1, located in Dianella, within the City of Stirling. The site is located within the Dianella Centre Special Control Area, as defined in Local Planning Scheme No. 3, Amendment 7.

The Stage 1 works will involve moving the Coles box, new car park works and creation of new entries to the Centre's South. The site will also include landscaping and carparking provisions.

This report outlines how the proposed development aligns with the relevant sustainability credentials in the City of Stirling. The following documents are referred to within this report:

- Local Planning Scheme No. 3, specifically Schedule 13 (Dianella Centre Special Control Area).
- Federal government – legislated commitment to net zero
- State government - Western Australian Climate Policy (2020)

Table 1 below demonstrates how the proposed development responds to the requirements and outlines which sections of this report are relevant for each requirement.

Table 1: Relevant Local Government Authority (LGA) ESD requirements for the project.

Outcome	Development must demonstrate that:	Comments
Local Planning Scheme No.3, Amd. 7 Dianella Centre Special Control Area (6.12)		
Objectives		
✓	**a)** To ensure a diversity of uses and services which encourage reduced car travel, shorter trips and better social interaction	See Section 6.0
✓	**b)** To ensure the development of multiple functions benefitting the community through appropriate social services and business mix	N/A
✓	**c)** To ensure the integration of intensive building form and land uses with public transport infrastructure	See Section 6.0
✓	**d)** To ensure building forms provide for a long life span and adaptability for use changing with time	See Section 2.1
✓	**e)** To apply the activity centre standards of the Residential Design Codes, to encourage consolidated housing forms and diversity.	N/A
✓	**f)** To apply minimum development standards to achieve the desired intensive building form and land use mix.	N/A
Federal Net Zero Commitment		
✓	Legislated federal target of net-zero by 2050, and emissions reduction target of 43% by 2030	The project will deliver a renewable-powered, highly efficient building built with reused and low carbon materials contributing to net-zero targets.

Outcome	Development must demonstrate that:	Comments
		Refer to Section 2.2.
Western Australian Climate Policy (2020)		
✓	1. Better integration of large-scale renewable and distributed energy resources and reduced carbon emissions (pg. 18) 2. Reduced emissions and increased carbon sequestration (pg. 20) 3. Increased uptake of low- and zero-emissions vehicles, fuels, and transport technologies. Improved public transport, freight transport and active transport options (pg. 22). The Policy also contains a target to: 1. Achieve our aspiration of net zero emissions by 2050.	Embodied carbon reductions are targeted for the project – refer to Section 2.1. Development will minimise energy use and generate renewable energy – refer to Section 2.2. Electric vehicle bays and public transport will all be available for building occupants and visitors – refer to Section 6.0

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1.0 Introduction

Stage 1 of the Dianella Plaza Redevelopment, located at 366 Grand Promenade, Dianella WA 6059, involves relocating the Coles store and repurposing the existing internal space to accommodate smaller retail outlets and Car Park 1. The redevelopment will also feature new landscaping.

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Figure 1.1 Render PLACEHOLDER

1.1 Design Guidelines – City of Stirling

The proposed building is within the City of Stirling and therefore must conform to the following policies and guidelines.

1.1.1 Local Planning Scheme No. 3, Amd. 7 Dianella Centre Special Control Area (6.12)

The Scheme sets out the Council's planning aims, zones and reserves land, regulates land use and development, outlines planning application procedures, and provides for administration, enforcement, and other statutory matters.

1.1.2 Federal commitment to net zero by 2050

Commitments to reduce net carbon emissions to zero by 2050 are now legislated at a federal level within Australia. The specific targets in the relevant Bills are as follows:

- Emissions reduction target of 43% by 2030; and
- Net zero emissions by 2050.

1.1.3 Western Australian Climate Policy

The Western Australian Climate Policy was published in November 2020 by the Government of Western Australia. The Policy states a commitment and aspiration toward a low carbon future for the State.

The aspirational targets contained within the policy include reaching net zero by 2050. The policy outlines several key themes and their associated actions. Themes relevant to this development include the following.

- Transforming energy generation and use,
- Storing carbon and caring for our landscapes,
- Lower-carbon transport,
- Resilient cities and regions, and
- Government leadership.

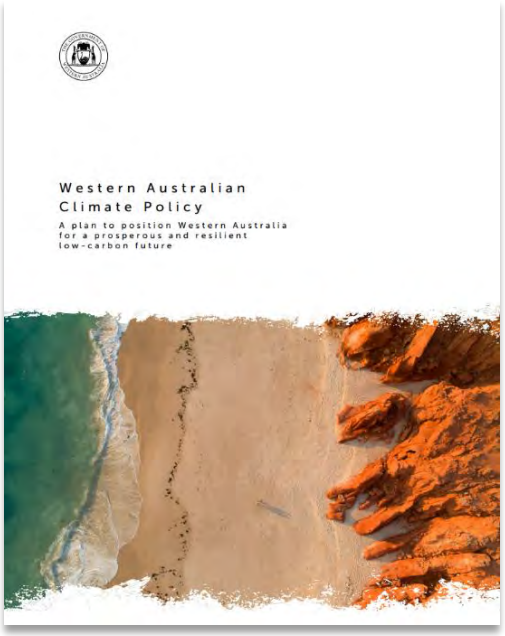


Figure 1.2 Front cover of the WA Climate Policy.
Source: State Government.

1.2 Sustainability initiatives

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This report details the project's current sustainability initiatives across the following categories:

- Embodied and operational carbon,
- Indoor environment quality,
- Water efficiency,
- Waste management,
- Transport,
- Urban ecology,
- Social impact.

As an overview, the development has been designed with investigations into the following initiatives to contribute to the overall sustainability performance of the Stage 1 Redevelopment:

- Reuse of existing structure and roofing to reduce the need for new construction materials, reducing the embodied carbon impact from the redevelopment
- Solar PV system installed on the roof
- Reuse of demolished and locally reclaimed materials for landscaping and other features

2.0 Embodied and operational carbon

Buildings consume considerable natural resources in their construction, operation, and demolition. This section of the report will provide details about the potential impacts caused by the building and how these impacts have been reduced when compared to typical buildings of this nature.

The proposed development will aim to reduce the total embodied carbon in the construction materials and aim to maximise the operational efficiency of the building's services.

2.1 Embodied carbon

Embodied carbon refers to the total amount of energy required to produce a product or system, and includes energy inputs for raw material extraction, processing, manufacturing, and distribution. In doing so, it considers both direct and indirect energy inputs and is often used as a holistic measure of environmental impact.

To minimise embodied carbon on the project, initiatives are currently present or being investigated for the design, as listed below.

- Reuse of existing structure and roofing to reduce the need for new construction materials, reducing the embodied carbon impact from the redevelopment
- Reuse of demolished materials for landscaping and other features
- Use of responsibly sourced, lower carbon materials options including steel and concrete
- Use of path, paving and construction materials for landscaping that are locally available to reduce freight transport-associated carbon impacts

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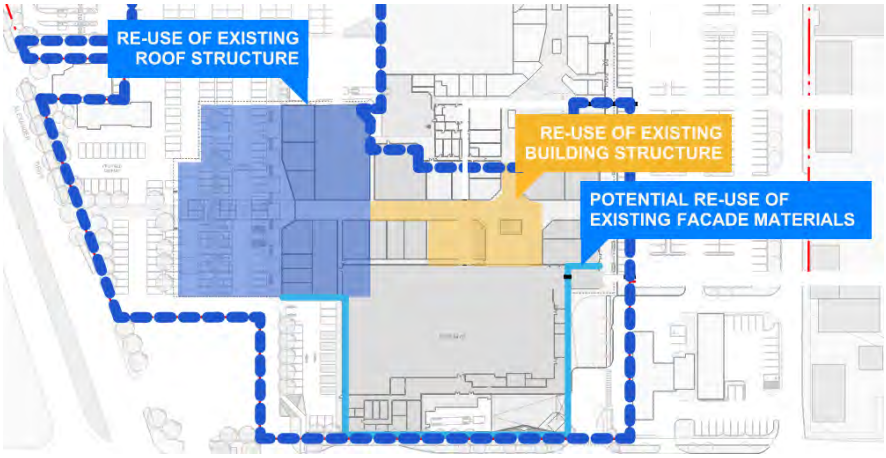


Figure 2.1 The design approaches for significant reuse of onsite materials to reduce embodied carbon.

2.2 Operational energy efficiency

The proposed development has considered the importance of reducing operational energy. This will be achieved through several initiatives, as detailed below.

2.2.1 High performance building fabric

All aspects of the building's thermal performance will be constructed to exceed Section J requirements in the National Construction Code (NCC) 2022.

For glazing to the façades, a high-performance glazing system will be selected to prevent excessive summer heating while allowing useful passive solar gains in winter. A low glazing U-Value would minimize the conductive loss or gain of heat between the interior and exterior of the building.

2.2.2 Thermal bridging

Thermal bridging describes the transference of heat at a point through which it can bypass insulating layers of the structure. The presence of such points in a building's envelope can produce unwanted heat gains and losses.

In designing for sustainability and energy efficiency, the architectural and structural detailing on the project will consider thermal bridging solutions where viable, such as roof spacer systems.

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Figure 2.2 Example of thermal bridging

2.2.3 Lighting

Energy efficient lighting fixtures are to be targeted for the development, with low energy consuming LED lighting currently considered for the project.

Motion and / or timer sensors are also considered for specific areas to optimise energy efficiency where possible. This will be targeted primarily for transient spaces provided that it does not compromise safety of the building occupants.

2.2.4 Shade structures

Through a combination of eaves, screens, and awnings, the project will seek to reduce shade the façade and glazed areas from direct sunlight.

This will reduce cooling demands during the summer months and thus reduce energy consumption.

2.2.5 Monitoring

Energy use on-site will be closely monitored through extensive sub-metering and an intelligent building management system. This will assist in monitoring energy consumption for faults / abnormalities.

2.2.6 On-site renewables

In addition to the above initiatives, on-site energy production will also be considered by the development. A roof mounted photo-voltaic system is being considered for installation.

This would further reduce the energy demand for the project, and system size will be optimised during design. The current roof plan shows opportunity to include a 1.1MW system, comparable with the recent Forest Lakes Shopping Centre installation. The feasibility analysis is in progress.

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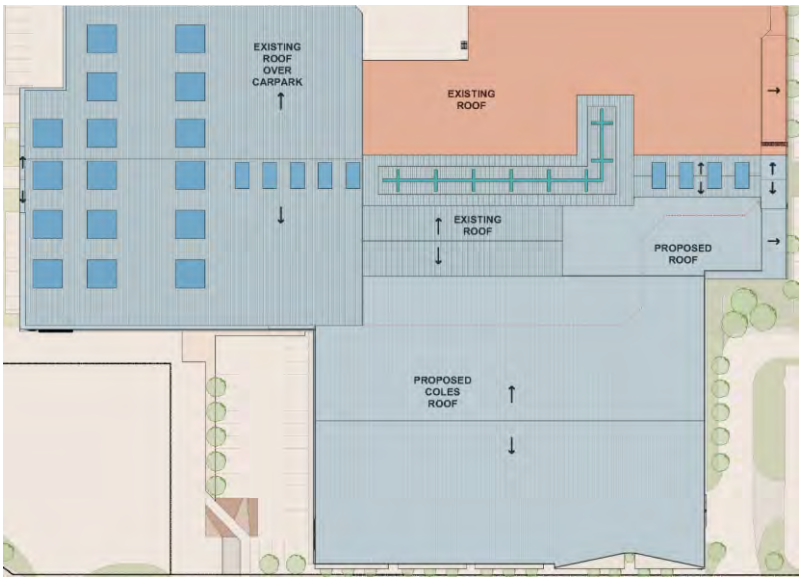


Figure 2.4 Existing and proposed roof space. Solar PV feasibility is underway

3.0 Indoor environmental quality

The indoor environment quality (IEQ) within a building contributes significantly to user wellbeing and is therefore a critical part of any design. It comprises a range of factors, including but not limited to air quality, lighting, acoustics, and thermal comfort.

The proposed development has considered the above and adopted several strategies to enhance indoor environment quality, as outlined in this section of the report.

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3.1 Thermal comfort

An indoor environment that is too hot or too cold can affect mood, performance, and productivity.

To control internal comfort and minimise excessive heat loss in winter and heat gains in summer, several strategies will be investigated for the proposed development:

- High performance glazing will be installed to improve the thermal performance of the building envelope.
- External shading and operable windows / doors prevent excessive heat gains in summer.
- Good thermal mass is present through the heavyweight façade elements, which will improve thermal comfort.

3.2 Acoustic comfort

A comfortable acoustic environment is also key to productivity and mood of building occupants.

The project may include internal partitions and external walls that have good acoustic separation, to minimise noise pollution entering the building. Maximum internal noise levels may also be controlled to avoid a noisy work environment.

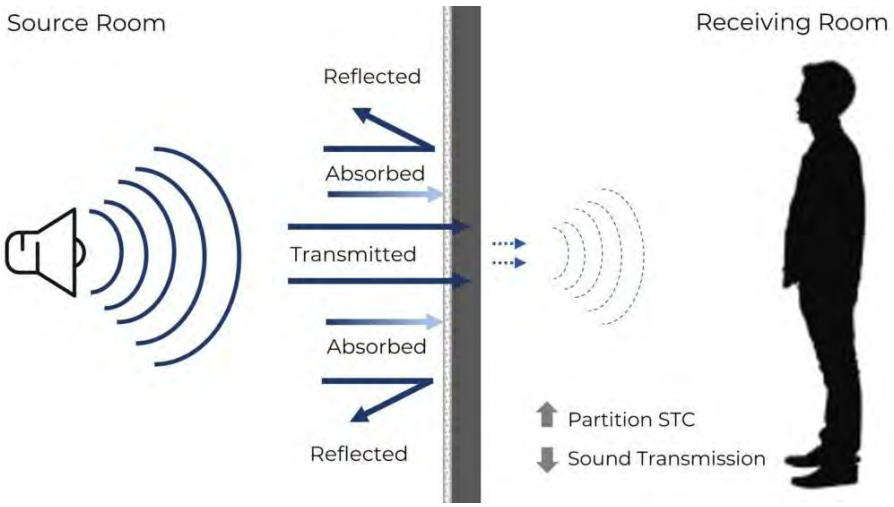


Figure 3.1 Acoustic separation will occur between spaces.

3.3 Emissions & toxicity

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors than outdoors. VOCs are emitted by a wide array of products numbering in the thousands (typically paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers).

The development will aim to specify materials with low emissions content including low-VOC and low formaldehyde content to avoid contaminating the indoor air.

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3.4 Artificial lighting

The project will seek to provide high quality artificial lighting to all regularly occupied spaces.

3.5 Ventilation and fresh air access

The project will be utilising mechanical ventilation as it contains retail spaces where operable glazing may not be viable. The mechanical systems will draw fresh outdoor air from outside the building and deliver to all regularly occupied spaces.

Pollutants entering the building will be minimised, and a high level of outdoor air (≥50% over NCC) will be provided to ensure levels of indoor pollutants are maintained at acceptable levels.

4.0 Water Efficiency

A reduction of water usage does not only alleviate pressure from the local water supply but also means reduced costs of operation.

The following sections set out design strategies utilised for this development to reduce the building's water consumption.

4.1 Water fixtures & fittings

Occupant consumption is a major contributor to potable water usage. Low flow water fittings and fixtures will be targeted for the project, in line with best practice WELS ratings, as shown below.

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Table 2: Proposed water fittings WELS rating

Fixture / Fitting Type	WELS Rating
Taps	5-star
Toilets	4-star
Urinals (where applicable)	6-star
Showers	3-star
Clothes Washing Machine	4-star
Dishwasher	5-star

4.2 Water-wise landscaping

This development will be creating a water-wise landscape, with a majority of native species proposed for the plant selections. These selections are naturally hardy natives and have low water demand, meaning they will be suited to the local climate and have reduced ongoing irrigation requirements past establishment (>3-5yrs).

The overall landscape design will have the potential to passively direct stormwater runoff into landscaped areas to provide natural irrigation from rain source.

Irrigation systems for the development will target the use of a combination of spray and drip irrigation to minimise ongoing maintenance requirements and water use.

Figure 4.1 Green space and landscaped areas will be present in the project, with native species noted in the landscaping plans.
RENDER PLACEHOLDER

4.3 Stormwater management

Stormwater is precipitation runoff over ground-level surfaces that does not soak into the ground but has not entered a waterway such as a stream or a lake.

Best practice urban design calls for the natural infiltration of stormwater in the built environment. This helps to restore the natural water cycle, whilst reducing damage associated with excessive runoff.

The use of vegetated and porous areas is currently proposed within the development and will enable natural infiltration.

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5.0 Waste management

The main objectives for the waste management strategies for construction and operational waste are to ensure that waste is avoided and recycled during design, construction, and operation.

Waste within a building construction context can be avoided by encouraging the selection of onsite reuse, lower-impact and long-term materials. Operational waste to landfill can be reduced by providing relevant and easily accessible facilities for recyclable waste and other waste that can be diverted from landfill such as organic waste, batteries or e-waste.

5.1 Construction and demolition waste

The project construction and demolition phase will aim to divert as much waste from landfill as possible. This is to be achieved through reuse of existing structure and roofing onsite to avoid significant C&D waste generation and on-site separation of waste streams during construction into major groups, such as cardboard, metal, general waste, and concrete/brick rubble.

5.2 Operational waste management

A dedicated waste storage area will be provided for the separation and storage of recyclable waste during operation, allowing for the different waste streams to be separated to match the local recycling scheme.

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6.0 Transport

Several sustainable transport options are supported within the development, as detailed below.

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6.1 Access to amenities and public transport

The site close to excellent public transport options available on Grand Promenade and Alexander Drive. High frequency bus services which run every 15 minutes or less are located within 400m of the site on these major roads. The redevelopment will continue to support the planning objectives to ensure a diversity of uses and services which encourage reduced car travel, shorter trips and better social interaction and to ensure the integration of intensive building form and land uses with public transport infrastructure.



Figure 6.1 Proximity to public transport routes helps support active and low emission transport use for community accessing Dianella Plaza

6.2 Electric vehicles

The proposed development is investigating the provision for future electric vehicle (EV) charging, including infrastructure and commercial considerations.

7.0 Urban ecology

The development will ensure landscaped areas are included where possible, and contribute to the local ecology, character, and amenity.

7.1 Enhancing ecological value

The project site features the existing Dianella Plaza and paved car park with sparse vegetation.

The ecological value of the site is not expected to be negatively impacted as a result of the proposed development. It is likely to be enhanced through landscaping design.



Figure 7.1 Aerial photograph of the existing Dianella Plaza Site. Source: Google Maps.

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7.2 Minimising heat island effect

The heat island effect describes the condition where urban areas have a higher average temperature than its rural surroundings owing to the make-up of the built environment.

The project will aim to address this through the use of light-coloured façade and roof materials.

There is potential for widened verges and landscape islands (5-10m wide) on the east, north, western edge to accommodate trees, shrubs and groundcovers and mitigate solar heat loading. The landscaping design may mitigate micro-climatic impacts upon the public realm by designing and siting key elements to allow prevailing winds and northern sun to penetrate the site.

The project is seeking to retain roofing structures to provide a shade structure for new car park spaces.

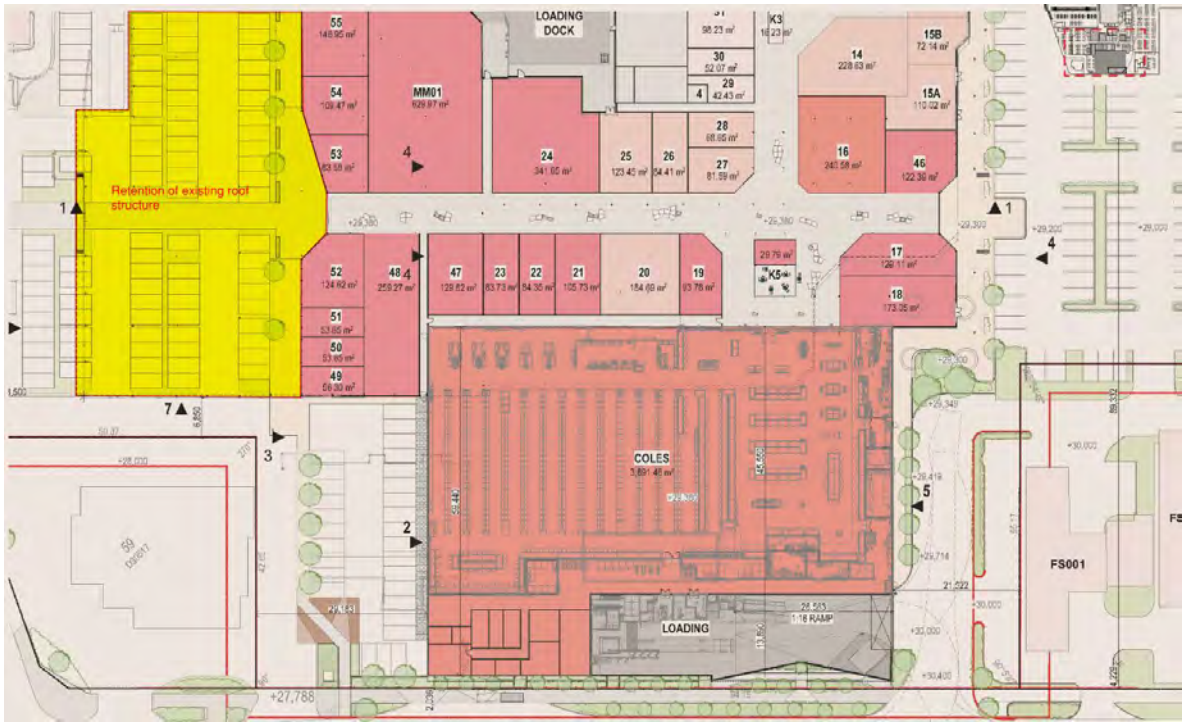


Figure 7.2 Design ideas included in the development – shade structures, lighter coloured roof and façade, and landscaping

7.3 Light Pollution

Excessive amounts of light being projected upwards is not energy efficient and has been shown to have potential negative impacts on the local wildlife.

If uplighting is included in the project design, the amount and placement of uplighting will be managed and designed such that light spill to the night sky is minimised.

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8.0 Social Impact

8.1 Social and community benefit

The project will be designed such that the building will enhance the surrounding area and urban context.

The building will also be designed such that is accessible for all abilities and include natural spaces to promote occupant health and wellbeing.

The retail tenants within the building will also provide employment for the local community, whilst providing more even local amenities for the residents of Dianella and adjacent areas, within the City of Stirling.

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Figure 8.1 The project will provide positive social impact. IMAGE PLACEHOLDER

9.0 Codes and Ratings

The building will be subject to voluntary and mandatory building codes and metrics to measure the performance of the rating. This section of the report outlines the main codes and ratings and identifies the project's response.

9.1 NCC 2022 Section J

All buildings must satisfy the energy efficiency requirements laid out in Section J of the National Construction Code (NCC) 2022. Compliance can be achieved through two separate pathways.

The first pathway is prescriptive, where a development must meet the Deemed to Satisfy (DTS) requirements for construction. In the event the DTS requirements cannot be met, the second pathway uses a modelling approach to verify that the building energy efficiency is equal to or better than what would be achieved under DTS.

The building will exceed compliance requirements regarding thermal performance through one of the above pathways.

9.2 Green Star

The development is being designed to fulfil requirements in terms of Ecologically Sustainable Design (ESD) and is being benchmarked against a 4 Star Green Star Buildings v1 rating tool but not seeking formal certification. Green Star is a comprehensive sustainability design tool that assesses the environmental impact of a building over a range of environmental indicators, from management and ecology to energy and water use, material selection and waste production.

A 4 Star Green Star Buildings standard requires a total of 15 points to be achieved in the aforementioned categories. Sufficient weighted credits have been selected to achieve this requirement, and further opportunities will be pursued during the design stages of the project.

Based on the proposed design response, the predicted performance in each respective environmental category is tabulated in the Scorecard in Appendix A. The sustainability strategy of this development demonstrates how the development is proposing to achieve the 4 Star Green Star equivalency benchmark.

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10.0 References

City of Stirling (2024). Local Planning Scheme No. 3 Scheme Text.
https://www.stirling.wa.gov.au/awcontent/Web/Documents/Developing%20Property/LPS3-Scheme-Text-Amt-113-current-version-for-Gazettal.pdf

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Appendix A Green Star Strategy

Please see overleaf.

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greenstar Buildings

Minimum points required	
	4 Star: 15 points
	5 Star: 35 points
	6 Star: 70 points

Submission planner

Summary

Registering from	2023 onwards		
Net zero carbon in operations targeted	No	**Targeted Green Star rating**	4 Star
Minimum expectations met	Yes	**Core points targeted**	20
Credit Achievement points targeted	17	**Leadership points targeted**	0
Exceptional Performance points targeted	3	**Total points targeted**	20

	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Targeted performance level	Total points targeted	Comments	Summarised requirements
	Responsible				**17**				
1	Industry Development	-	1	-	**1**	Credit Achievement	**1**	**Credit:** The building owner or developer appoints a Green Star Accredited Professional, discloses the cost of sustainable building practices to the GBCA, and markets the building's sustainability achievements.	- Green Star AP - Financial Transparency - Marketing Sustainability Achievements
2	Responsible Construction	•	1	-	**1**	Credit Achievement	**1**	**Min:** The Contractor has an EMS & EMP in place to manage impacts on site. Divert at least 80% of construction & demolition waste from landfill. The Contractor provides training on the sustainability targets of the building. **Credit:** 90% of construction and demolition waste is diverted from landfill, and waste contractors and facilities comply with the Green Star Construction and Demolition Waste Reporting Criteria.	- Contractor EMS & EMP - 90% Construction Waste Diversion - Sustainability Training
3	Verification and Handover	•	1	-	**1**	Minimum Expectation	•	**Min:** The building has been commissioned and will be tuned, set up for optimum ongoing management (metering and monitoring). The project team create and deliver O&M information to the FM team at the time of handover. Information is available to building users on how to best use the building. Air-tightness testing required. **Credit:** Independent verification for commissioning and tuning through ICA or soft landings approach that involves the future FM team. For large projects both must occur.	- Energy and Water Metering and Monitoring - Service and Maintainability Review - Commissioning (ICA for credit achievement) - Soft Landing Approach (for credit achievement) - Building Systems Tuning - Building logbook - Building User Guide - O&M Manuals
4	Operational Waste	•	-	-	**0**	Minimum Expectation	•	**Min:** Demonstrate the building is designed to allow effective management of operational waste by: separating waste streams; dedicated and adequately sized waste storage area; and ensuring easy and safe access to waste storage areas for both occupants and waste collection contractors.	- Collection of Waste Streams - Dedicated Waste Storage Area - Signoff from Waste Specialist (or WMP)
5	Responsible Procurement	-	1	-	**1**			**Credit:** The building's design and construction procurement process follows ISO 20400 Sustainable Procurement - Guidance and at least one identified supply chain risk and opportunity is addressed.	
6	Responsible Structure	-	3	2	**5**	Credit Achievement	**3**	**Credit:** 80% of all structural components (by cost) meet a Responsible Products Value (RPV) score of at least 10. **Exceptional:** Credit plus either: 10% of all products in the structure (by cost) meet a RPV score of at least 15, OR 30% of all products in the structure (by cost) have an average RPV score of at least 12.	
7	Responsible Envelope	-	2	2	**4**			**Credit:** 60% of all building envelope components (by cost) meet a Responsible Products Value (RPV) score of at least 10. **Exceptional:** Credit plus either: 10% of all products in building envelope (by cost) meet a RPV score of at least 15, OR 25% of all products in the building envelope (by cost) have an average RPV score of at least 12.	
8	Responsible Systems	-	1	1	**2**			**Credit:** 20% of all active building systems (by cost) meet a Responsible Products Value (RPV) score of at least 6. **Exceptional:** Credit plus either: 5% of all active building systems (by cost) meet a RPV score of at least 11, OR 15% of all active building systems (by cost) have an average RPV score of at least 8.	
9	Responsible Finishes	-	1	1	**2**	Credit Achievement	**1**	**Credit:** 60% of all internal building finishes (by area) meet a Responsible Products Value (RPV) score of at least 7. **Exceptional:** Credit plus either: 10% of all internal building finishes (by area) meet a RPV score of at least 12, OR 20% of all internal building finishes (by area) have an average RPV score of at least 9.	
						Total	**6**		
	Healthy				**14**				
10	Clean Air	•	2	-	**2**	Minimum Expectation	•	**Min:** Levels of indoor pollutants are maintained at acceptable levels, a high level of fresh air is provided and Pollutants entering the building are minimised. **Credit:** The building's ventilation systems allow for easy maintenance and high levels of outdoor air are provided.	- Separation from pollutants - Ductwork Cleaning - MERV8 or higher filters - Access for cleaning - Demand Control Ventilation to keep Co2 levels below 800ppm or 50% extract outdoor air
11	Light Quality	•	2	2	**4**	Minimum Expectation	•	**Min:** Lighting within the building meets minimum comfort requirements, good lighting levels suitable for the typical tasks in each space are available, and the building provides adequate levels of daylight. **Credit:** The building provides either best practice Artificial Lighting or best practice access to daylight. **Exceptional:** The building provides both best practice Artificial Lighting and best practice access to daylight.	- CRI >= 85 for light sources - SDCM <= 3 for all light sources - Meet IEEE 1789-205 for LED lighting - Meet AS/NZS 1680.1:2006 illumination requirements - Meet maintenance factor in AS/NZS 1680.4 - Glare from light sources controlled - High levels of daylight - TQ required for daylighting requirements
12	Acoustic Comfort	•	2	-	**2**	Minimum Expectation	•	**Min:** An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants. **Credit:** Depending on the building typology achieve 2 to 4 of the acoustic criteria: maximum internal noise levels; minimum internal noise levels; provides acoustic separation; minimises impact noise transfer; and/or is designed with reverberation control.	- Acoustic comfort strategy

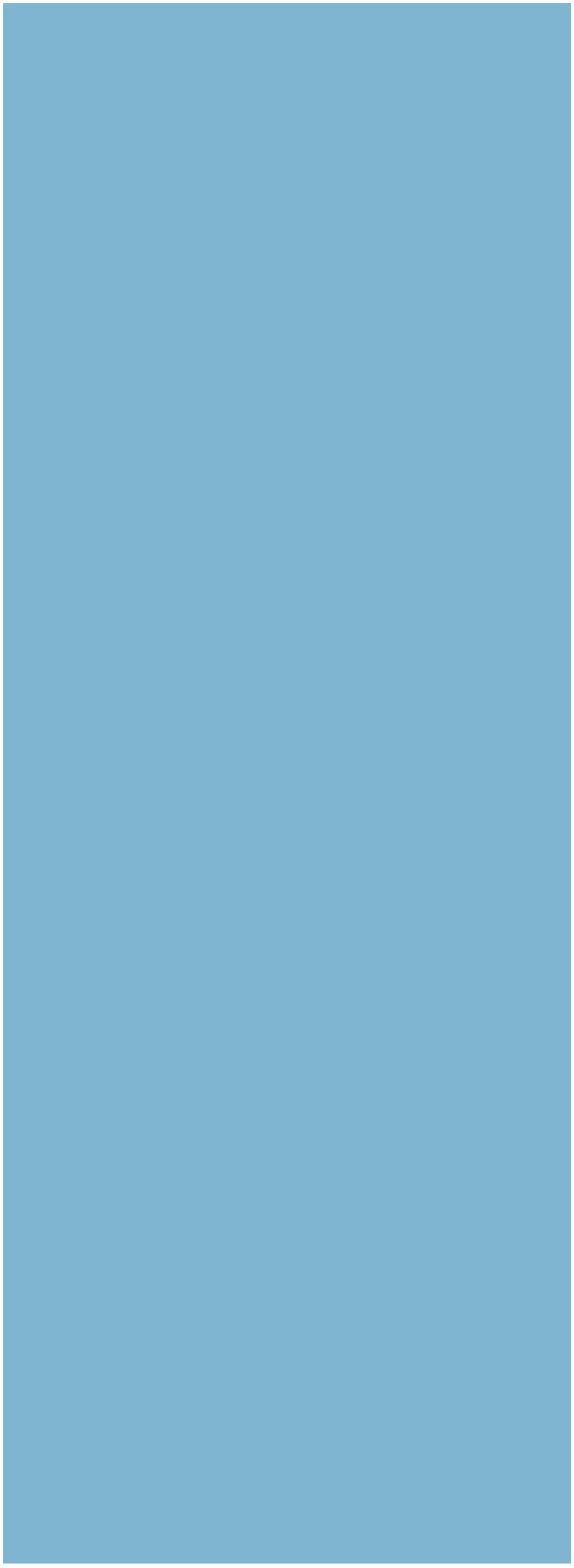
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13	Exposure to Toxins	•	2	-	**2**	Minimum Expectation	•	**Min:** The building's paints adhesives, sealants, carpets, and engineered wood products are low in TVOC and formaldehyde or non-toxic. Occupants are not exposed to banned or highly toxic materials in the building. **Credit:** On-site tests verify the building has low Volatile Organic Compounds (VOC) and formaldehyde levels.	- Low VOC Paints, Sealants, Adhesives and Carpets - Low Formaldehyde emission engineer wood
14	Amenity and Comfort	-	2	-	**2**			**Credit:** The building has dedicated amenity rooms to act as parent room, a relaxation room, or an exercise room.	
15	Connection to Nature	-	1	1	**2**			**Credit:** The building provides views, includes indoor plants, and incorporates nature-inspired design OR 5% of the building's floor area or site area (whichever is greater) is allocated to nature in which occupants can directly engage with. **Exceptional:** The building provides both credits options.	
						Total			
	Resilient				**8**				
16	Climate Change Resilience	•	1	-	**1**	Minimum Expectation	•	**Min:** The project team completes the climate change pre-screening checklist and communicates the building's exposure to climate change risks to the applicant. **Credit:** The project team develops a project-specific climate change risk and adaptation assessment for the building. Extreme and high risks are addressed.	- Climate Change Adaptation Plan and workshop
17	Operations Resilience	-	2	-	**2**			**Credit:** A comprehensive review of future building operational shocks and stresses are undertaken. Building design and future operational plan addresses high or extreme system-level interdependency risks and level of survivability in a blackout.	
18	Community Resilience	-	1	-	**1**			**Credit:** The project team undertakes a needs analysis of the community, identifies shocks and stresses that impact the building's ability to service the community, and develops responses to manage these.	
19	Heat Resilience	-	1	-	**1**			**Credit:** At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect.	- Roof with minimum SRI 64 - Hardscape with minimum SRI 34
20	Grid Resilience	-	3	-	**3**			**Credit:** The project meets one or several of: (1) active generation and storage systems, (2) demand response strategy, or (3) reduced electricity consumption through passive design.	- Solar PV system 100kWp
						Total			
	Positive				**30**				
21	Upfront Carbon Emissions	•	3	3	**6**	Exceptional Performance	**6**	**Min:** The building's upfront carbon emissions are at least 10% less than those of a reference building. **Credit:** The building's upfront carbon emissions are at least 20% less than those of a reference building. [Climate Positive Pathway] **Exceptional:** The building's upfront carbon emissions are at least 40% less than those of a reference building.	- Low carbon concrete - Reused or certified timber, bricks etc
22	Energy Use	•	3	3	**6**	Credit Achievement	**3**	**Min:** The building's energy use is at least 10% less than a reference building. **Credit:** The building's energy use is at least 20% less than a reference building. [Climate Positive Pathway] **Exceptional:** The building's energy use is at least 30% less than a reference building.	- 100 kWp Solar PV - Efficient HVAC System - High efficiency LED lighting - Energy modelling
23	Energy Source	•	3	3	**6**	Credit Achievement	**3**	**Min:** The building provides a Zero Carbon Action Plan. **Credit:** 100% of the building's electricity comes from renewable electricity. **Exceptional:** 100% of the building's energy comes from renewables. No gas is used for space heating, domestic hot water or cooking. [Climate Positive Pathway]	- Zero Carbon Action Plan
24	Other Carbon Emissions	-	2	2	**4**			**Credit:** The building owner eliminates or offsets emissions from refrigerants. [Climate Positive Pathway] **Exceptional:** All other emissions not captured in the Positive category are eliminated or offset including all Upfront Carbon Emissions (embodied carbon).	- 100% Carbon emission from refrigerants to be offset
25	Water Use	•	3	3	**6**	Minimum Expectation	•	**Min:** The building installs efficient water fixtures or uses 15% less potable water compared to a reference building. Multi-unit residential buildings use 10% less potable water compared to a reference building. **Credit:** The building uses 45% less potable water compared to a reference building (40% for residential). The building has infrastructure for recycled water connection. **Exceptional:** The building uses 75% less potable water compared to a reference building (60% for residential).	- Water efficient fixtures
26	Life Cycle Impacts	-	2	-	**2**			**Credit:** The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.	
						Total	**12**		
	Places				**8**				
27	Movement and Place	•	3	-	**3**	Minimum Expectation	•	**Min:** The building includes showers and changing facilities for building occupants that are accessible, inclusive and located in a safe and protected space. **Credit:** The building's access prioritises cycling and includes bicycle parking facilities, a Sustainable Transport Plan has been prepared and implemented, the building has EV charging capabilities, transport options that reduce the need for private fossil fuel vehicles are prioritised, and the building's design and location encourage walking.	
28	Enjoyable Places	-	2	-	**2**			**Credit:** The building delivers memorable, beautiful, vibrant communal or public places where people want to gather and participate in the community. The spaces are inclusive, safe, flexible and enjoyable.	
29	Contribution to Place	-	2	-	**2**	Credit Achievement	**2**	**Credit:** The building's design contributes to the liveability of the wider urban context and enhances the public realm.	
30	Culture, Heritage and Identity	-	1	-	**1**			**Credit:** The building's design reflects and celebrates local demographics and identities, the history of the place, and any hidden or minority entities. This celebration was arrived through meaningful engagement with community groups early in the design process.	
						Total	**2**		
	People				**9**				
31	Inclusive Construction Practices	•	1	-	**1**	Minimum Expectation	•	**Min:** During construction, the head contractor provides gender inclusive facilities and protective equipment. Policies are implemented on-site to increase awareness and reduces instances of discrimination, racism and bullying. **Credit:** The head contractor provides and monitors high quality staff support on-site to reduce at least five key physical and mental health impacts relevant to construction workers. They must also evaluate the effectiveness of their interventions.	- Contractor requirements

32	Indigenous Inclusion	-	2	-	**2**			**Credit:** The building's design and construction celebrates Aboriginal and Torres Strait Islander people, culture and heritage through playing an active role in the organisational RAP and/or incorporating Indigenous Design and Planning principles.	
33	Procurement and Workforce Inclusion	-	2	1	**3**			**Credit:** At least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups through a social procurement strategy **Exceptional:** At least 4% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups through a social procurement strategy.	
34	Design for Inclusion	-	2	1	**3**			**Credit:** The building is designed and constructed to be inclusive to a diverse range of people with different needs. **Exceptional:** Engagement with target groups has informed the inclusive design.	
						Total			
	Nature				**14**				
35	Impacts to Nature	•	2	-	**2**	Minimum Expectation	•	**Min:** The building was not built on, or significantly impacted, a site with a high ecological value + Managing Light Pollution Impacts. **Credit:** The building's design and construction conserves existing natural elements, and (if deemed necessary by an Ecologist) at least 50% of existing site with high biodiversity value is retained	
36	Biodiversity Enhancement	-	2	2	**4**			**Credit:** The site includes an appropriate landscape area with a diversity of species and prioritises the use of climate-resilient and indigenous plants, AND a site-specific Biodiversity Management Plan is provided to the building owner or building owner representative. **Exceptional:** A greater area of landscaping is provided and the landscaping includes critically endangered and/or endangered plant species native to the bioregion.	
37	Nature Connectivity	-	2	-	**2**			**Credit:** The site must be built to encourage species connectivity through the site, and to adjacent sites. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy.	
38	Nature Stewardship	-	2	-	**2**			**Credit:** The building owner, as part of the project's development, undertakes activities that protects or restores biodiversity at scale beyond the development's boundary.	
39	Waterway Protection	-	2	2	**4**			**Credit:** The building demonstrates an annual average flow reduction (ML/yr) of 40% and meets specified pollutants targets. **Exceptional:** The building demonstrates an annual average flow reduction (ML/yr) of 80% and meets specified pollutants targets.	
						Total			
	Leadership				**0**				
40	Market Transformation	-		-	**0**				
41	Leadership Challenges	-		-	**0**				
						Total			
	Sector Specific				**4**				
SS1	Collaborative Leasing	-	1	1	**2**			**Credit:** There is a commitment between landlord and tenant regarding collaboration, resource management and performance reporting. At least 10% of tenants have signed high quality lease agreements. **Exceptional:** There is a commitment between landlord and tenant regarding collaboration, resource management and performance reporting. A majority of tenants have signed high quality lease agreements.	
SS2	Tenant Energy Sources	-	1	1	**2**			**Credit:** The building owner actively assist tenants to procure renewable electricity. At least 40% of tenant space (by NLA) uses 100% renewable electricity. **Exceptional:** At least 80% of tenant space (by NLA) uses 100% renewable energy.	
						Total			

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Dianella Plaza Redevelopment – Stage 1

Sustainability Report

Greenpool Capital Pty Ltd

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Executive summary

This report outlines the Ecological Sustainable Design (ESD) strategy for the proposed Dianella Plaza Redevelopment Stage 1, located in Dianella, within the City of Stirling. The site is located within the Dianella Centre Special Control Area, as defined in Local Planning Scheme No. 3, Amendment 7.

The Stage 1 works will involve moving the Coles box, new car park works and creation of new entries to the Centre's South. The site will also include landscaping and carparking provisions.

This report outlines how the proposed development aligns with the relevant sustainability credentials in the City of Stirling. The following documents are referred to within this report:

- Local Planning Scheme No. 3, specifically Schedule 13 (Dianella Centre Special Control Area).
- Federal government – legislated commitment to net zero
- State government - Western Australian Climate Policy (2020)

Table 1 below demonstrates how the proposed development responds to the requirements and outlines which sections of this report are relevant for each requirement.

Table 1: Relevant Local Government Authority (LGA) ESD requirements for the project.

Outcome	Development must demonstrate that:	Comments
Local Planning Scheme No.3, Amd. 7 Dianella Centre Special Control Area (6.12)		
Objectives		
✓	**a)** To ensure a diversity of uses and services which encourage reduced car travel, shorter trips and better social interaction	See Section 6.0
✓	**b)** To ensure the development of multiple functions benefitting the community through appropriate social services and business mix	N/A
✓	**c)** To ensure the integration of intensive building form and land uses with public transport infrastructure	See Section 6.0
✓	**d)** To ensure building forms provide for a long life span and adaptability for use changing with time	See Section 2.1
✓	**e)** To apply the activity centre standards of the Residential Design Codes, to encourage consolidated housing forms and diversity.	N/A
✓	**f)** To apply minimum development standards to achieve the desired intensive building form and land use mix.	N/A
Federal Net Zero Commitment		
✓	Legislated federal target of net-zero by 2050, and emissions reduction target of 43% by 2030	The project will deliver a renewable-powered, highly efficient building built with reused and low carbon materials contributing to net-zero targets.

Outcome	Development must demonstrate that:	Comments
		Refer to Section 2.2.
Western Australian Climate Policy (2020)		
✓	1. Better integration of large-scale renewable and distributed energy resources and reduced carbon emissions (pg. 18) 2. Reduced emissions and increased carbon sequestration (pg. 20) 3. Increased uptake of low- and zero-emissions vehicles, fuels, and transport technologies. Improved public transport, freight transport and active transport options (pg. 22). The Policy also contains a target to: 1. Achieve our aspiration of net zero emissions by 2050.	Embodied carbon reductions are targeted for the project – refer to Section 2.1. Development will minimise energy use and generate renewable energy – refer to Section 2.2. Electric vehicle bays and public transport will all be available for building occupants and visitors – refer to Section 6.0

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1.0 Introduction

Stage 1 of the Dianella Plaza Redevelopment, located at 366 Grand Promenade, Dianella WA 6059, involves relocating the Coles store and repurposing the existing internal space to accommodate smaller retail outlets and Car Park 1. The redevelopment will also feature new landscaping.

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Figure 1.1 Render PLACEHOLDER

1.1 Design Guidelines – City of Stirling

The proposed building is within the City of Stirling and therefore must conform to the following policies and guidelines.

1.1.1 Local Planning Scheme No. 3, Amd. 7 Dianella Centre Special Control Area (6.12)

The Scheme sets out the Council's planning aims, zones and reserves land, regulates land use and development, outlines planning application procedures, and provides for administration, enforcement, and other statutory matters.

1.1.2 Federal commitment to net zero by 2050

Commitments to reduce net carbon emissions to zero by 2050 are now legislated at a federal level within Australia. The specific targets in the relevant Bills are as follows:

- Emissions reduction target of 43% by 2030; and
- Net zero emissions by 2050.

1.1.3 Western Australian Climate Policy

The Western Australian Climate Policy was published in November 2020 by the Government of Western Australia. The Policy states a commitment and aspiration toward a low carbon future for the State.

The aspirational targets contained within the policy include reaching net zero by 2050. The policy outlines several key themes and their associated actions. Themes relevant to this development include the following.

- Transforming energy generation and use,
- Storing carbon and caring for our landscapes,
- Lower-carbon transport,
- Resilient cities and regions, and
- Government leadership.

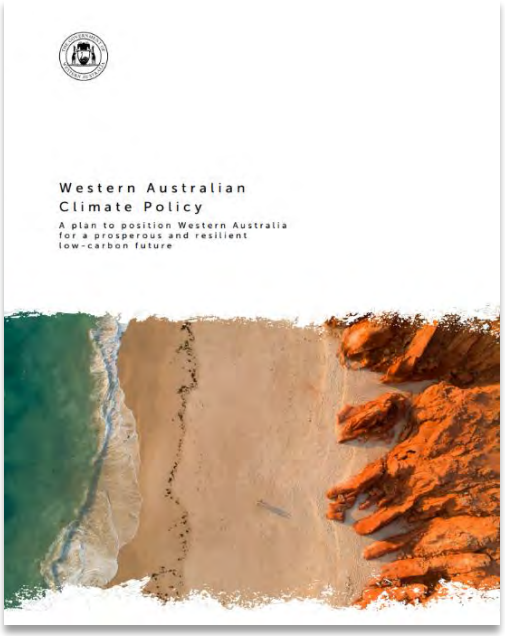


Figure 1.2 Front cover of the WA Climate Policy.
Source: State Government.

1.2 Sustainability initiatives

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This report details the project's current sustainability initiatives across the following categories:

- Embodied and operational carbon,
- Indoor environment quality,
- Water efficiency,
- Waste management,
- Transport,
- Urban ecology,
- Social impact.

As an overview, the development has been designed with investigations into the following initiatives to contribute to the overall sustainability performance of the Stage 1 Redevelopment:

- Reuse of existing structure and roofing to reduce the need for new construction materials, reducing the embodied carbon impact from the redevelopment
- Solar PV system installed on the roof
- Reuse of demolished and locally reclaimed materials for landscaping and other features

2.0 Embodied and operational carbon

Buildings consume considerable natural resources in their construction, operation, and demolition. This section of the report will provide details about the potential impacts caused by the building and how these impacts have been reduced when compared to typical buildings of this nature.

The proposed development will aim to reduce the total embodied carbon in the construction materials and aim to maximise the operational efficiency of the building's services.

2.1 Embodied carbon

Embodied carbon refers to the total amount of energy required to produce a product or system, and includes energy inputs for raw material extraction, processing, manufacturing, and distribution. In doing so, it considers both direct and indirect energy inputs and is often used as a holistic measure of environmental impact.

To minimise embodied carbon on the project, initiatives are currently present or being investigated for the design, as listed below.

- Reuse of existing structure and roofing to reduce the need for new construction materials, reducing the embodied carbon impact from the redevelopment
- Reuse of demolished materials for landscaping and other features
- Use of responsibly sourced, lower carbon materials options including steel and concrete
- Use of path, paving and construction materials for landscaping that are locally available to reduce freight transport-associated carbon impacts

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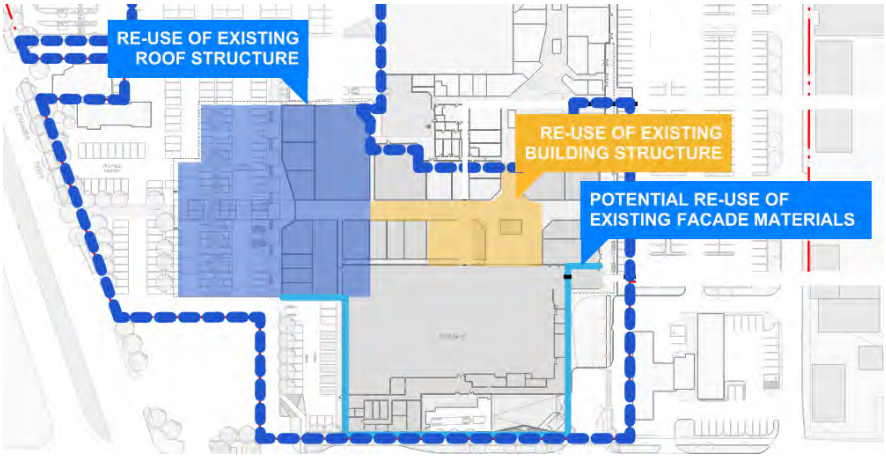


Figure 2.1 The design approaches for significant reuse of onsite materials to reduce embodied carbon.

2.2 Operational energy efficiency

The proposed development has considered the importance of reducing operational energy. This will be achieved through several initiatives, as detailed below.

2.2.1 High performance building fabric

All aspects of the building's thermal performance will be constructed to exceed Section J requirements in the National Construction Code (NCC) 2022.

For glazing to the façades, a high-performance glazing system will be selected to prevent excessive summer heating while allowing useful passive solar gains in winter. A low glazing U-Value would minimize the conductive loss or gain of heat between the interior and exterior of the building.

2.2.2 Thermal bridging

Thermal bridging describes the transference of heat at a point through which it can bypass insulating layers of the structure. The presence of such points in a building's envelope can produce unwanted heat gains and losses.

In designing for sustainability and energy efficiency, the architectural and structural detailing on the project will consider thermal bridging solutions where viable, such as roof spacer systems.

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Figure 2.2 Example of thermal bridging

2.2.3 Lighting

Energy efficient lighting fixtures are to be targeted for the development, with low energy consuming LED lighting currently considered for the project.

Motion and / or timer sensors are also considered for specific areas to optimise energy efficiency where possible. This will be targeted primarily for transient spaces provided that it does not compromise safety of the building occupants.

2.2.4 Shade structures

Through a combination of eaves, screens, and awnings, the project will seek to reduce shade the façade and glazed areas from direct sunlight.

This will reduce cooling demands during the summer months and thus reduce energy consumption.

2.2.5 Monitoring

Energy use on-site will be closely monitored through extensive sub-metering and an intelligent building management system. This will assist in monitoring energy consumption for faults / abnormalities.

2.2.6 On-site renewables

In addition to the above initiatives, on-site energy production will also be considered by the development. A roof mounted photo-voltaic system is being considered for installation.

This would further reduce the energy demand for the project, and system size will be optimised during design. The current roof plan shows opportunity to include a 1.1MW system, comparable with the recent Forest Lakes Shopping Centre installation. The feasibility analysis is in progress.

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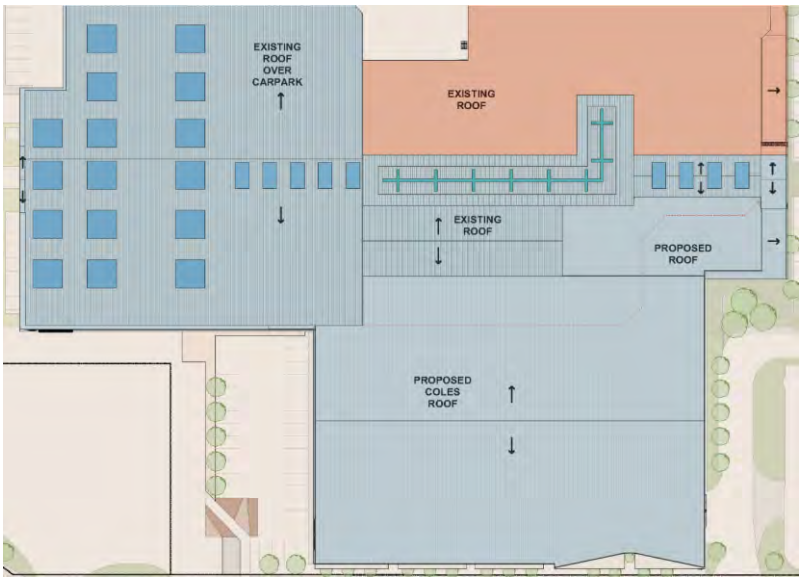


Figure 2.4 Existing and proposed roof space. Solar PV feasibility is underway

3.0 Indoor environmental quality

The indoor environment quality (IEQ) within a building contributes significantly to user wellbeing and is therefore a critical part of any design. It comprises a range of factors, including but not limited to air quality, lighting, acoustics, and thermal comfort.

The proposed development has considered the above and adopted several strategies to enhance indoor environment quality, as outlined in this section of the report.

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3.1 Thermal comfort

An indoor environment that is too hot or too cold can affect mood, performance, and productivity.

To control internal comfort and minimise excessive heat loss in winter and heat gains in summer, several strategies will be investigated for the proposed development:

- High performance glazing will be installed to improve the thermal performance of the building envelope.
- External shading and operable windows / doors prevent excessive heat gains in summer.
- Good thermal mass is present through the heavyweight façade elements, which will improve thermal comfort.

3.2 Acoustic comfort

A comfortable acoustic environment is also key to productivity and mood of building occupants.

The project may include internal partitions and external walls that have good acoustic separation, to minimise noise pollution entering the building. Maximum internal noise levels may also be controlled to avoid a noisy work environment.

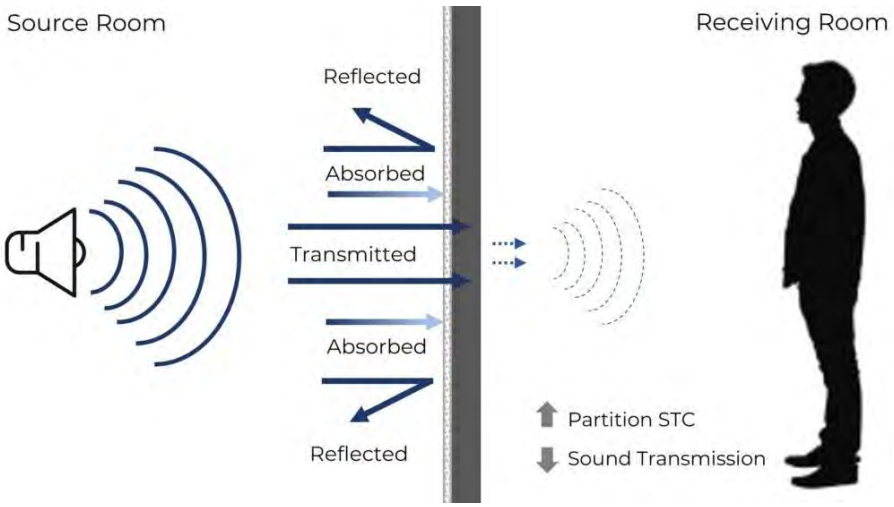


Figure 3.1 Acoustic separation will occur between spaces.

3.3 Emissions & toxicity

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors than outdoors. VOCs are emitted by a wide array of products numbering in the thousands (typically paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers).

The development will aim to specify materials with low emissions content including low-VOC and low formaldehyde content to avoid contaminating the indoor air.

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3.4 Artificial lighting

The project will seek to provide high quality artificial lighting to all regularly occupied spaces.

3.5 Ventilation and fresh air access

The project will be utilising mechanical ventilation as it contains retail spaces where operable glazing may not be viable. The mechanical systems will draw fresh outdoor air from outside the building and deliver to all regularly occupied spaces.

Pollutants entering the building will be minimised, and a high level of outdoor air (≥50% over NCC) will be provided to ensure levels of indoor pollutants are maintained at acceptable levels.

4.0 Water Efficiency

A reduction of water usage does not only alleviate pressure from the local water supply but also means reduced costs of operation.

The following sections set out design strategies utilised for this development to reduce the building's water consumption.

4.1 Water fixtures & fittings

Occupant consumption is a major contributor to potable water usage. Low flow water fittings and fixtures will be targeted for the project, in line with best practice WELS ratings, as shown below.

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Table 2: Proposed water fittings WELS rating

Fixture / Fitting Type	WELS Rating
Taps	5-star
Toilets	4-star
Urinals (where applicable)	6-star
Showers	3-star
Clothes Washing Machine	4-star
Dishwasher	5-star

4.2 Water-wise landscaping

This development will be creating a water-wise landscape, with a majority of native species proposed for the plant selections. These selections are naturally hardy natives and have low water demand, meaning they will be suited to the local climate and have reduced ongoing irrigation requirements past establishment (>3-5yrs).

The overall landscape design will have the potential to passively direct stormwater runoff into landscaped areas to provide natural irrigation from rain source.

Irrigation systems for the development will target the use of a combination of spray and drip irrigation to minimise ongoing maintenance requirements and water use.

Figure 4.1 Green space and landscaped areas will be present in the project, with native species noted in the landscaping plans.
RENDER PLACEHOLDER

4.3 Stormwater management

Stormwater is precipitation runoff over ground-level surfaces that does not soak into the ground but has not entered a waterway such as a stream or a lake.

Best practice urban design calls for the natural infiltration of stormwater in the built environment. This helps to restore the natural water cycle, whilst reducing damage associated with excessive runoff.

The use of vegetated and porous areas is currently proposed within the development and will enable natural infiltration.

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5.0 Waste management

The main objectives for the waste management strategies for construction and operational waste are to ensure that waste is avoided and recycled during design, construction, and operation.

Waste within a building construction context can be avoided by encouraging the selection of onsite reuse, lower-impact and long-term materials. Operational waste to landfill can be reduced by providing relevant and easily accessible facilities for recyclable waste and other waste that can be diverted from landfill such as organic waste, batteries or e-waste.

5.1 Construction and demolition waste

The project construction and demolition phase will aim to divert as much waste from landfill as possible. This is to be achieved through reuse of existing structure and roofing onsite to avoid significant C&D waste generation and on-site separation of waste streams during construction into major groups, such as cardboard, metal, general waste, and concrete/brick rubble.

5.2 Operational waste management

A dedicated waste storage area will be provided for the separation and storage of recyclable waste during operation, allowing for the different waste streams to be separated to match the local recycling scheme.

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6.0 Transport

Several sustainable transport options are supported within the development, as detailed below.

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6.1 Access to amenities and public transport

The site close to excellent public transport options available on Grand Promenade and Alexander Drive. High frequency bus services which run every 15 minutes or less are located within 400m of the site on these major roads. The redevelopment will continue to support the planning objectives to ensure a diversity of uses and services which encourage reduced car travel, shorter trips and better social interaction and to ensure the integration of intensive building form and land uses with public transport infrastructure.



Figure 6.1 Proximity to public transport routes helps support active and low emission transport use for community accessing Dianella Plaza

6.2 Electric vehicles

The proposed development is investigating the provision for future electric vehicle (EV) charging, including infrastructure and commercial considerations.

7.0 Urban ecology

The development will ensure landscaped areas are included where possible, and contribute to the local ecology, character, and amenity.

7.1 Enhancing ecological value

The project site features the existing Dianella Plaza and paved car park with sparse vegetation.

The ecological value of the site is not expected to be negatively impacted as a result of the proposed development. It is likely to be enhanced through landscaping design.



Figure 7.1 Aerial photograph of the existing Dianella Plaza Site. Source: Google Maps.

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7.2 Minimising heat island effect

The heat island effect describes the condition where urban areas have a higher average temperature than its rural surroundings owing to the make-up of the built environment.

The project will aim to address this through the use of light-coloured façade and roof materials.

There is potential for widened verges and landscape islands (5-10m wide) on the east, north, western edge to accommodate trees, shrubs and groundcovers and mitigate solar heat loading. The landscaping design may mitigate micro-climatic impacts upon the public realm by designing and siting key elements to allow prevailing winds and northern sun to penetrate the site.

The project is seeking to retain roofing structures to provide a shade structure for new car park spaces.

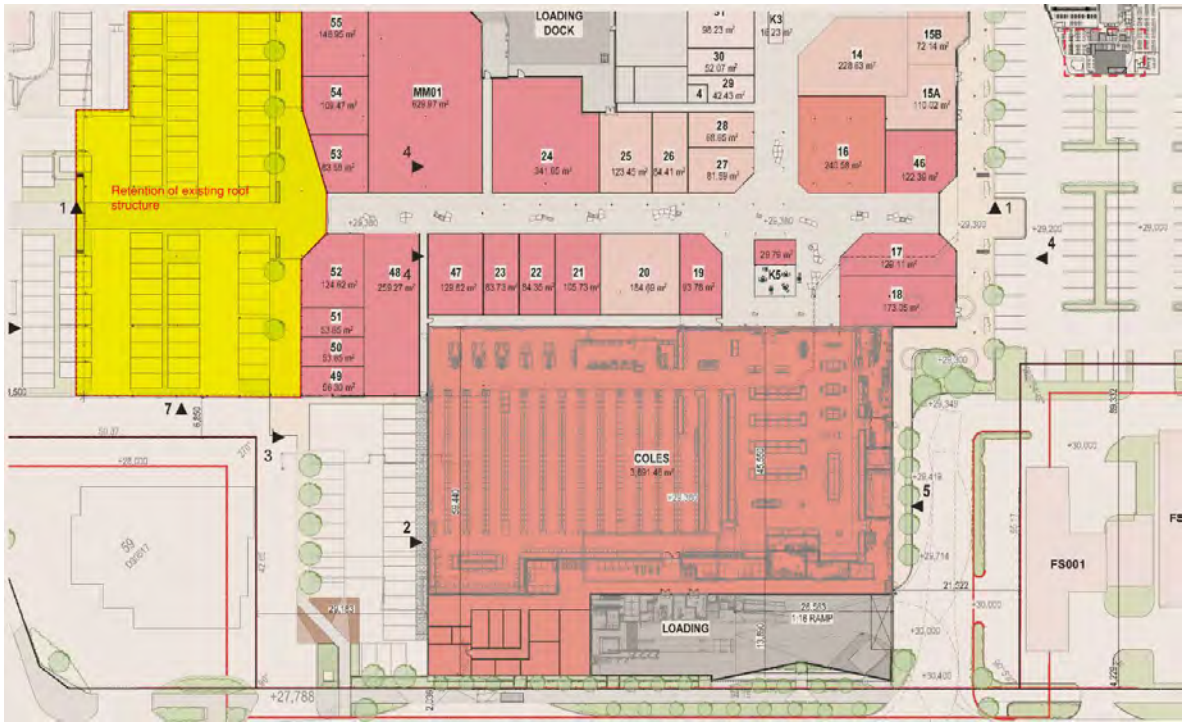


Figure 7.2 Design ideas included in the development – shade structures, lighter coloured roof and façade, and landscaping

7.3 Light Pollution

Excessive amounts of light being projected upwards is not energy efficient and has been shown to have potential negative impacts on the local wildlife.

If uplighting is included in the project design, the amount and placement of uplighting will be managed and designed such that light spill to the night sky is minimised.

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8.0 Social Impact

8.1 Social and community benefit

The project will be designed such that the building will enhance the surrounding area and urban context.

The building will also be designed such that is accessible for all abilities and include natural spaces to promote occupant health and wellbeing.

The retail tenants within the building will also provide employment for the local community, whilst providing more even local amenities for the residents of Dianella and adjacent areas, within the City of Stirling.

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Figure 8.1 The project will provide positive social impact. IMAGE PLACEHOLDER

9.0 Codes and Ratings

The building will be subject to voluntary and mandatory building codes and metrics to measure the performance of the rating. This section of the report outlines the main codes and ratings and identifies the project's response.

9.1 NCC 2022 Section J

All buildings must satisfy the energy efficiency requirements laid out in Section J of the National Construction Code (NCC) 2022. Compliance can be achieved through two separate pathways.

The first pathway is prescriptive, where a development must meet the Deemed to Satisfy (DTS) requirements for construction. In the event the DTS requirements cannot be met, the second pathway uses a modelling approach to verify that the building energy efficiency is equal to or better than what would be achieved under DTS.

The building will exceed compliance requirements regarding thermal performance through one of the above pathways.

9.2 Green Star

The development is being designed to fulfil requirements in terms of Ecologically Sustainable Design (ESD) and is being benchmarked against a 4 Star Green Star Buildings v1 rating tool but not seeking formal certification. Green Star is a comprehensive sustainability design tool that assesses the environmental impact of a building over a range of environmental indicators, from management and ecology to energy and water use, material selection and waste production.

A 4 Star Green Star Buildings standard requires a total of 15 points to be achieved in the aforementioned categories. Sufficient weighted credits have been selected to achieve this requirement, and further opportunities will be pursued during the design stages of the project.

Based on the proposed design response, the predicted performance in each respective environmental category is tabulated in the Scorecard in Appendix A. The sustainability strategy of this development demonstrates how the development is proposing to achieve the 4 Star Green Star equivalency benchmark.

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10.0 References

City of Stirling (2024). Local Planning Scheme No. 3 Scheme Text.
https://www.stirling.wa.gov.au/awcontent/Web/Documents/Developing%20Property/LPS3-Scheme-Text-Amt-113-current-version-for-Gazettal.pdf

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Appendix A Green Star Strategy

Please see overleaf.

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greenstar Buildings

Minimum points required	
	4 Star: 15 points
	5 Star: 35 points
	6 Star: 70 points

Submission planner

Summary

Registering from	2023 onwards		
Net zero carbon in operations targeted	No	**Targeted Green Star rating**	4 Star
Minimum expectations met	Yes	**Core points targeted**	20
Credit Achievement points targeted	17	**Leadership points targeted**	0
Exceptional Performance points targeted	3	**Total points targeted**	20

	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Targeted performance level	Total points targeted	Comments	Summarised requirements
	Responsible				**17**				
1	Industry Development	-	1	-	**1**	Credit Achievement	**1**	**Credit:** The building owner or developer appoints a Green Star Accredited Professional, discloses the cost of sustainable building practices to the GBCA, and markets the building's sustainability achievements.	- Green Star AP - Financial Transparency - Marketing Sustainability Achievements
2	Responsible Construction	•	1	-	**1**	Credit Achievement	**1**	**Min:** The Contractor has an EMS & EMP in place to manage impacts on site. Divert at least 80% of construction & demolition waste from landfill. The Contractor provides training on the sustainability targets of the building. **Credit:** 90% of construction and demolition waste is diverted from landfill, and waste contractors and facilities comply with the Green Star Construction and Demolition Waste Reporting Criteria.	- Contractor EMS & EMP - 90% Construction Waste Diversion - Sustainability Training
3	Verification and Handover	•	1	-	**1**	Minimum Expectation	•	**Min:** The building has been commissioned and will be tuned, set up for optimum ongoing management (metering and monitoring). The project team create and deliver O&M information to the FM team at the time of handover. Information is available to building users on how to best use the building. Air-tightness testing required. **Credit:** Independent verification for commissioning and tuning through ICA or soft landings approach that involves the future FM team. For large projects both must occur.	- Energy and Water Metering and Monitoring - Service and Maintainability Review - Commissioning (ICA for credit achievement) - Soft Landing Approach (for credit achievement) - Building Systems Tuning - Building logbook - Building User Guide - O&M Manuals
4	Operational Waste	•	-	-	**0**	Minimum Expectation	•	**Min:** Demonstrate the building is designed to allow effective management of operational waste by: separating waste streams; dedicated and adequately sized waste storage area; and ensuring easy and safe access to waste storage areas for both occupants and waste collection contractors.	- Collection of Waste Streams - Dedicated Waste Storage Area - Signoff from Waste Specialist (or WMP)
5	Responsible Procurement	-	1	-	**1**			**Credit:** The building's design and construction procurement process follows ISO 20400 Sustainable Procurement - Guidance and at least one identified supply chain risk and opportunity is addressed.	
6	Responsible Structure	-	3	2	**5**	Credit Achievement	**3**	**Credit:** 80% of all structural components (by cost) meet a Responsible Products Value (RPV) score of at least 10. **Exceptional:** Credit plus either: 10% of all products in the structure (by cost) meet a RPV score of at least 15, OR 30% of all products in the structure (by cost) have an average RPV score of at least 12.	
7	Responsible Envelope	-	2	2	**4**			**Credit:** 60% of all building envelope components (by cost) meet a Responsible Products Value (RPV) score of at least 10. **Exceptional:** Credit plus either: 10% of all products in building envelope (by cost) meet a RPV score of at least 15, OR 25% of all products in the building envelope (by cost) have an average RPV score of at least 12.	
8	Responsible Systems	-	1	1	**2**			**Credit:** 20% of all active building systems (by cost) meet a Responsible Products Value (RPV) score of at least 6. **Exceptional:** Credit plus either: 5% of all active building systems (by cost) meet a RPV score of at least 11, OR 15% of all active building systems (by cost) have an average RPV score of at least 8.	
9	Responsible Finishes	-	1	1	**2**	Credit Achievement	**1**	**Credit:** 60% of all internal building finishes (by area) meet a Responsible Products Value (RPV) score of at least 7. **Exceptional:** Credit plus either: 10% of all internal building finishes (by area) meet a RPV score of at least 12, OR 20% of all internal building finishes (by area) have an average RPV score of at least 9.	
						Total	**6**		
	Healthy				**14**				
10	Clean Air	•	2	-	**2**	Minimum Expectation	•	**Min:** Levels of indoor pollutants are maintained at acceptable levels, a high level of fresh air is provided and Pollutants entering the building are minimised. **Credit:** The building's ventilation systems allow for easy maintenance and high levels of outdoor air are provided.	- Separation from pollutants - Ductwork Cleaning - MERV8 or higher filters - Access for cleaning - Demand Control Ventilation to keep Co2 levels below 800ppm or 50% extract outdoor air
11	Light Quality	•	2	2	**4**	Minimum Expectation	•	**Min:** Lighting within the building meets minimum comfort requirements, good lighting levels suitable for the typical tasks in each space are available, and the building provides adequate levels of daylight. **Credit:** The building provides either best practice Artificial Lighting or best practice access to daylight. **Exceptional:** The building provides both best practice Artificial Lighting and best practice access to daylight.	- CRI >= 85 for light sources - SDCM <= 3 for all light sources - Meet IEEE 1789-205 for LED lighting - Meet AS/NZS 1680.1:2006 illumination requirements - Meet maintenance factor in AS/NZS 1680.4 - Glare from light sources controlled - High levels of daylight - TQ required for daylighting requirements
12	Acoustic Comfort	•	2	-	**2**	Minimum Expectation	•	**Min:** An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants. **Credit:** Depending on the building typology achieve 2 to 4 of the acoustic criteria: maximum internal noise levels; minimum internal noise levels; provides acoustic separation; minimises impact noise transfer; and/or is designed with reverberation control.	- Acoustic comfort strategy

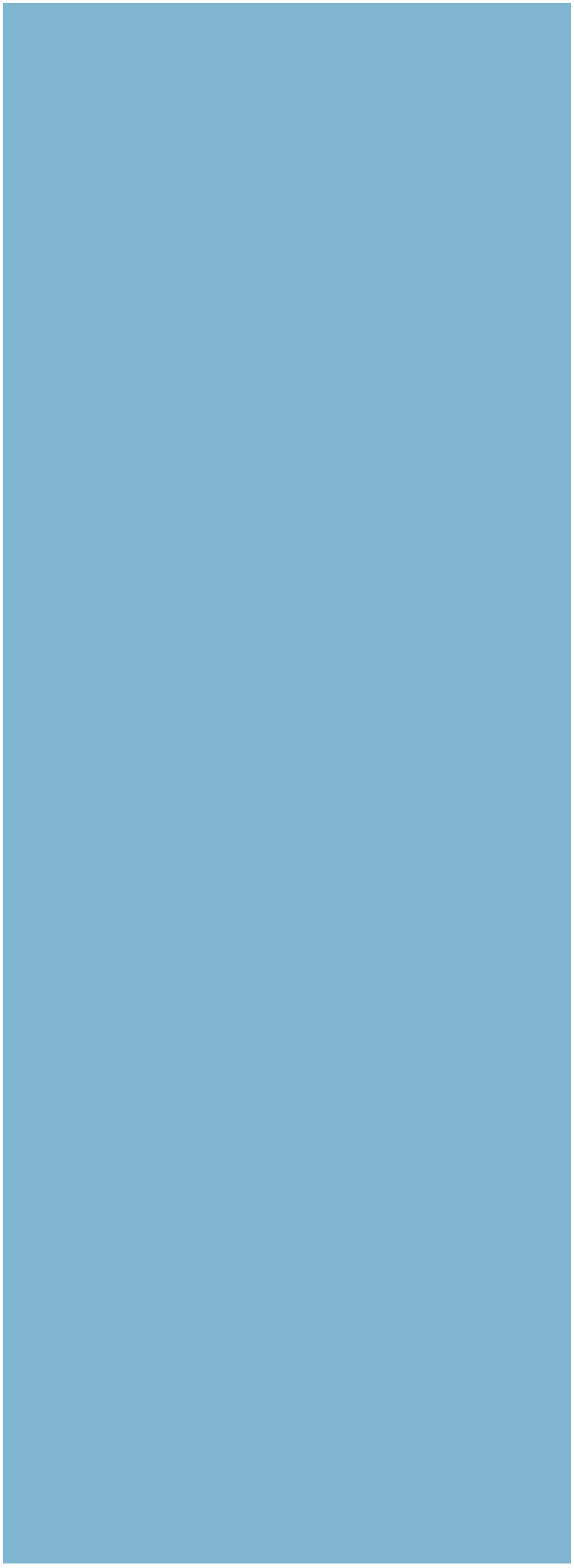
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13	Exposure to Toxins	•	2	-	**2**	Minimum Expectation	•	**Min:** The building's paints adhesives, sealants, carpets, and engineered wood products are low in TVOC and formaldehyde or non-toxic. Occupants are not exposed to banned or highly toxic materials in the building. **Credit:** On-site tests verify the building has low Volatile Organic Compounds (VOC) and formaldehyde levels.	- Low VOC Paints, Sealants, Adhesives and Carpets - Low Formaldehyde emission engineer wood
14	Amenity and Comfort	-	2	-	**2**			**Credit:** The building has dedicated amenity rooms to act as parent room, a relaxation room, or an exercise room.	
15	Connection to Nature	-	1	1	**2**			**Credit:** The building provides views, includes indoor plants, and incorporates nature-inspired design OR 5% of the building's floor area or site area (whichever is greater) is allocated to nature in which occupants can directly engage with. **Exceptional:** The building provides both credits options.	
						Total			
	Resilient				**8**				
16	Climate Change Resilience	•	1	-	**1**	Minimum Expectation	•	**Min:** The project team completes the climate change pre-screening checklist and communicates the building's exposure to climate change risks to the applicant. **Credit:** The project team develops a project-specific climate change risk and adaptation assessment for the building. Extreme and high risks are addressed.	- Climate Change Adaptation Plan and workshop
17	Operations Resilience	-	2	-	**2**			**Credit:** A comprehensive review of future building operational shocks and stresses are undertaken. Building design and future operational plan addresses high or extreme system-level interdependency risks and level of survivability in a blackout.	
18	Community Resilience	-	1	-	**1**			**Credit:** The project team undertakes a needs analysis of the community, identifies shocks and stresses that impact the building's ability to service the community, and develops responses to manage these.	
19	Heat Resilience	-	1	-	**1**			**Credit:** At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect.	- Roof with minimum SRI 64 - Hardscape with minimum SRI 34
20	Grid Resilience	-	3	-	**3**			**Credit:** The project meets one or several of: (1) active generation and storage systems, (2) demand response strategy, or (3) reduced electricity consumption through passive design.	- Solar PV system 100kWp
						Total			
	Positive				**30**				
21	Upfront Carbon Emissions	•	3	3	**6**	Exceptional Performance	**6**	**Min:** The building's upfront carbon emissions are at least 10% less than those of a reference building. **Credit:** The building's upfront carbon emissions are at least 20% less than those of a reference building. [Climate Positive Pathway] **Exceptional:** The building's upfront carbon emissions are at least 40% less than those of a reference building.	- Low carbon concrete - Reused or certified timber, bricks etc
22	Energy Use	•	3	3	**6**	Credit Achievement	**3**	**Min:** The building's energy use is at least 10% less than a reference building. **Credit:** The building's energy use is at least 20% less than a reference building. [Climate Positive Pathway] **Exceptional:** The building's energy use is at least 30% less than a reference building.	- 100 kWp Solar PV - Efficient HVAC System - High efficiency LED lighting - Energy modelling
23	Energy Source	•	3	3	**6**	Credit Achievement	**3**	**Min:** The building provides a Zero Carbon Action Plan. **Credit:** 100% of the building's electricity comes from renewable electricity. **Exceptional:** 100% of the building's energy comes from renewables. No gas is used for space heating, domestic hot water or cooking. [Climate Positive Pathway]	- Zero Carbon Action Plan
24	Other Carbon Emissions	-	2	2	**4**			**Credit:** The building owner eliminates or offsets emissions from refrigerants. [Climate Positive Pathway] **Exceptional:** All other emissions not captured in the Positive category are eliminated or offset including all Upfront Carbon Emissions (embodied carbon).	- 100% Carbon emission from refrigerants to be offset
25	Water Use	•	3	3	**6**	Minimum Expectation	•	**Min:** The building installs efficient water fixtures or uses 15% less potable water compared to a reference building. Multi-unit residential buildings use 10% less potable water compared to a reference building. **Credit:** The building uses 45% less potable water compared to a reference building (40% for residential). The building has infrastructure for recycled water connection. **Exceptional:** The building uses 75% less potable water compared to a reference building (60% for residential).	- Water efficient fixtures
26	Life Cycle Impacts	-	2	-	**2**			**Credit:** The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.	
						Total	**12**		
	Places				**8**				
27	Movement and Place	•	3	-	**3**	Minimum Expectation	•	**Min:** The building includes showers and changing facilities for building occupants that are accessible, inclusive and located in a safe and protected space. **Credit:** The building's access prioritises cycling and includes bicycle parking facilities, a Sustainable Transport Plan has been prepared and implemented, the building has EV charging capabilities, transport options that reduce the need for private fossil fuel vehicles are prioritised, and the building's design and location encourage walking.	
28	Enjoyable Places	-	2	-	**2**			**Credit:** The building delivers memorable, beautiful, vibrant communal or public places where people want to gather and participate in the community. The spaces are inclusive, safe, flexible and enjoyable.	
29	Contribution to Place	-	2	-	**2**	Credit Achievement	**2**	**Credit:** The building's design contributes to the liveability of the wider urban context and enhances the public realm.	
30	Culture, Heritage and Identity	-	1	-	**1**			**Credit:** The building's design reflects and celebrates local demographics and identities, the history of the place, and any hidden or minority entities. This celebration was arrived through meaningful engagement with community groups early in the design process.	
						Total	**2**		
	People				**9**				
31	Inclusive Construction Practices	•	1	-	**1**	Minimum Expectation	•	**Min:** During construction, the head contractor provides gender inclusive facilities and protective equipment. Policies are implemented on-site to increase awareness and reduces instances of discrimination, racism and bullying. **Credit:** The head contractor provides and monitors high quality staff support on-site to reduce at least five key physical and mental health impacts relevant to construction workers. They must also evaluate the effectiveness of their interventions.	- Contractor requirements

32	Indigenous Inclusion	-	2	-	**2**			**Credit:** The building's design and construction celebrates Aboriginal and Torres Strait Islander people, culture and heritage through playing an active role in the organisational RAP and/or incorporating Indigenous Design and Planning principles.	
33	Procurement and Workforce Inclusion	-	2	1	**3**			**Credit:** At least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups through a social procurement strategy **Exceptional:** At least 4% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups through a social procurement strategy.	
34	Design for Inclusion	-	2	1	**3**			**Credit:** The building is designed and constructed to be inclusive to a diverse range of people with different needs. **Exceptional:** Engagement with target groups has informed the inclusive design.	
						Total			
	Nature				**14**				
35	Impacts to Nature	•	2	-	**2**	Minimum Expectation	•	**Min:** The building was not built on, or significantly impacted, a site with a high ecological value + Managing Light Pollution Impacts. **Credit:** The building's design and construction conserves existing natural elements, and (if deemed necessary by an Ecologist) at least 50% of existing site with high biodiversity value is retained	
36	Biodiversity Enhancement	-	2	2	**4**			**Credit:** The site includes an appropriate landscape area with a diversity of species and prioritises the use of climate-resilient and indigenous plants, AND a site-specific Biodiversity Management Plan is provided to the building owner or building owner representative. **Exceptional:** A greater area of landscaping is provided and the landscaping includes critically endangered and/or endangered plant species native to the bioregion.	
37	Nature Connectivity	-	2	-	**2**			**Credit:** The site must be built to encourage species connectivity through the site, and to adjacent sites. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy.	
38	Nature Stewardship	-	2	-	**2**			**Credit:** The building owner, as part of the project's development, undertakes activities that protects or restores biodiversity at scale beyond the development's boundary.	
39	Waterway Protection	-	2	2	**4**			**Credit:** The building demonstrates an annual average flow reduction (ML/yr) of 40% and meets specified pollutants targets. **Exceptional:** The building demonstrates an annual average flow reduction (ML/yr) of 80% and meets specified pollutants targets.	
						Total			
	Leadership				**0**				
40	Market Transformation	-		-	**0**				
41	Leadership Challenges	-		-	**0**				
						Total			
	Sector Specific				**4**				
SS1	Collaborative Leasing	-	1	1	**2**			**Credit:** There is a commitment between landlord and tenant regarding collaboration, resource management and performance reporting. At least 10% of tenants have signed high quality lease agreements. **Exceptional:** There is a commitment between landlord and tenant regarding collaboration, resource management and performance reporting. A majority of tenants have signed high quality lease agreements.	
SS2	Tenant Energy Sources	-	1	1	**2**			**Credit:** The building owner actively assist tenants to procure renewable electricity. At least 40% of tenant space (by NLA) uses 100% renewable electricity. **Exceptional:** At least 80% of tenant space (by NLA) uses 100% renewable energy.	
						Total			

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Asia Australia Europe MENA UK and Ireland
www.cundall.com

Department of Planning, Lands and Heritage

GOVERNMENT OF WESTERN AUSTRALIA

Your ref: DA26.0339
Our ref: DP/11/02191
Enquiries: Sultan Hossain (6552 4043)

City of Stirling
Administration Centre
25 Cedric Street
STIRLING WA 6021

Attention: Meron Nega

Dear Meron,

Lot 110 (No. 366) and Lot 78 (No. 360) Grand Promenade and Lot 70 (No. 160 Alexander Drive, Dianella - Relocation of Coles Supermarket

Thank you for forwarding the application on 28 April 2025 to provide comments on the above-mentioned development proposal. In accordance with the Western Australian Planning Commission (WAPC) Instrument of Delegation dated 31 March 2025, the Road Planning Team within the Department of Planning, Lands and Heritage provides the following comments.

Land Requirements

The subject site is located at the north-eastern corner of Alexander Drive and Grand Promenade. Alexander Drive is an Other Regional Road (ORR) in the Metropolitan Region Scheme (MRS) and Category 2 according to WAPC Plan Number SP 694/7. The subject lot is not affected by either the ORR reservation or any planning control area.

Access

Dianella Shopping Centre is currently accessed from Alexander Drive, Waverley Street, Lowick Road and Grand Promenade. These existing vehicular accesses will be retained and no new vehicular access has been proposed. This aligns with the WAPC's Regional Roads (Vehicular Access) Policy D.C. 5.1 which seeks to minimise the number of new crossovers onto regional roads.

WAPC State Planning Policy (SPP) 5.4 Road and Rail Noise

The proposed development is not susceptible to road traffic and rail noise. Therefore, State Planning Policy 5.4 *Road and Rail Noise* requirements and all necessary measures, as detailed in the SPP 5.4 Implementation Guidelines is not applicable.

Transport Impact Assessment (February 2026) prepared by PJA

A Transport Impact Assessment prepared by PJA in February 2026 was submitted in support of the proposed development. Due to the proposed relocation of the Coles Supermarket, it is expected in an increase of approximately 1,087 sqm of gross floor area, resulting in an additional 47 vehicular trips per hour in both Thursday PM peak and Saturday mid-day peak periods. The assessment of the intersection of Alexander Drive and Grand Promenade at the base year (2026) shows that the intersection is operating at a Level of Service 'F' during Thursday PM peak periods. However,

considering the scale of additional traffic generated by the proposal, the Road planning Team do not have any objection to the proposal.

Recommendations:

The Department raises no objections to the proposed development.

Should you have any queries, please contact Mr. Sultan Hossain on 6552 4043 or via email to sultan.hossain@dplh.wa.gov.au.

Yours sincerely

Simon Luscombe
Principal Planning Officer
Strategy and Engagement

09 June 2026



Metropolitan Region Scheme Map

Government of Western Australia
Department of Water and Environmental Regulation

Your ref: DA26/0339
Our ref: DMO 11250,
Enquiries: Tim Hallam, Ph 6364 6596
Email: tim.hallam@dwer.wa.gov.au

Meron Nega
Senior Planning Officer
City of Stirling
25 Cedric Street
Stirling WA 6021

By email: development@stirling.wa.gov.au

Dear Meron Nega

DEVELOPMENT APPLICATION NUMBER DA26/0339 – LOT 110 (366) AND 78 (360) GRAND PROMENADE AND LOT 70 (106) ALEXANDER DRIVE, DIANELLA

I refer to your email dated 28 April 2025 to the Department of Water and Environmental Regulation (the department) regarding an application to the City of Stirling for the proposed development of the above-mentioned lots.

As per the requirements under section 58(6)(b) of the *Contaminated Sites Act 2003* (CS Act), advice is required as to the suitability of the land for the proposed development. The department understands that the proposed development comprises the demolition of a portion of the main shopping centre (Dianella Plaza) as well as buildings to the south and west of the main centre, the creation of new commercial lots within the main centre and the relocation of Coles to the south of the main centre adjacent to Grand Promenade.

Land at Lot 78 on Diagram 46369 was classified under the CS Act as *remediated for restricted use* on 23 May 2007 and a memorial (reference number K828094 ML) was placed on the certificate of title. The classification was based on Lot 78's historical use as a service station which is a land use that has the potential to cause contamination as specified in the guideline 'Assessment and management of contaminated sites' (Department of Water and Environmental Regulation, 2021). Historical contamination assessments conducted between 1999 and 2002 at Lot 78 found hydrocarbons (such as from petrol, diesel and oil) present in soil and groundwater at concentrations above assessment criteria relevant at the time. Limited remedial works have been completed at Lot 78 and impacted soil and groundwater remains beneath Lot 78.

Part of Lot 110 on Diagram 72485 as shown as Subject X on Deposited Plan 420919 was classified under the CS Act as *remediated for restricted use* on 6 December 2023 and a memorial (P846504 ML) was placed on the certificate of title. Land comprising the balance of Lot 110 (i.e. Dianella Plaza) has not been reported to the department as a known or suspected contaminated site.

Subject X on Deposited Plan 420919 (i.e. Shop 44) was formerly used as a dry-cleaning facility for approximately six years from around 2013 to 2019. Dry cleaning is a land use which has the potential to cause contamination, as specified in the guideline 'Assessment and management of contaminated sites' (Department of Water and Environmental Regulation, 2021).

The classification was based on contamination assessments undertaken at the site between 2018 and 2021 which included soil vapour, indoor air and groundwater sampling.

Investigations undertaken in 2018 and 2019 found chlorinated hydrocarbons (tetrachloroethene, also known as PCE) was present in soil vapour in concentrations exceeding interim soil vapour health investigation levels for commercial and industrial land (interim HIL D), as published in the 'National Environment Protection (Assessment of Site Contamination) Measure 1999' (the NEPM). Indoor air monitoring was also carried out within the building between 2018 and 2020, which found that concentrations of contaminants, including PCE, were found to be within acceptable limits. Investigations carried out in 2021 found that PCE was present in soil vapour in concentrations below health screening levels at the site and concentrations of PCE in groundwater was below the relevant assessment criteria. The contamination assessments were reviewed by the Department of Health who advised that residual concentrations of PCE at the site do not pose an unacceptable health risk to commercial users of the site with the implementation of the Site Management Plan.

Land at Lot 70 on Deposited Plan 70732 has not been reported to the department as a known or suspected contaminated site under the CS Act and the department holds no records for this lot. Historical aerial imagery indicates that this lot was occupied by buildings from around 1970 to around 2015. The lot is currently vacant and used as an informal overflow car park.

Based on available information, the site is considered suitable for the proposed commercial land use. Therefore, the department has no objection to the proposed development of the site and recommends that the approval should not include a contamination condition.

However, given the risks associated with the potential disturbance of contaminated soil and groundwater beneath the site, the department recommends that the following advice note be applied to any approval granted by the City of Stirling:

Advice

> Due to the presence of hydrocarbon impacted soil and groundwater beneath the site, a site-specific health and safety plan is recommended to address the risks to the health of any workers undertaking intrusive works.

Acid sulfate soil risk mapping indicates that the site lies within an area identified as having a low to moderate risk of acid sulfate soils occurring within three metres of the natural soil surface.

As the proposed development works have the potential to disturb acid sulfate soils the department recommends that the following advice note be applied to any approval granted by the City of Stirling:

Advice

Acid sulfate soils (ASS) risk mapping indicates that the site is located within an area identified as representing a low to moderate risk of ASS occurring within 3 metres of the natural soil surface. Please refer to Department of Water and Environmental Regulation's acid sulfate soil guidelines for information to assist with the management of ground and/or groundwater disturbing works. https://www.der.wa.gov.au/your-environment/acid-sulfate-soils/69-acidsulfatesoils-guidelines

If you have any queries in relation to the above, please contact Environmental Officer, Tim Hallam, on 6364 6596.

Yours sincerely



Andrew Miller
SENIOR MANAGER
CONTAMINATED SITES
Delegated Officer under section 91
of the *Contaminated Sites Act 2003*

10 June 2026

Development Services
629 Newcastle Street Leederville WA 6007
PO Box 100 Leederville WA 6902
T (08) 9420 2099
F (08) 9420 3193

Your Ref: DA26/0339
Our Ref: 213328223 - DAP435874
Enquiries: Belinda Hill
Direct Tel: 9420 3286
Email: land.planning@watercorporation.com.au

25 June 2026

City Of Stirling
PO BOX 1533
OSBORNE PARK WA 6916

Attention of: Meron Nega, Senior Planning Officer

Re: Lot 110 (No.36) & Lot 78 (No. 360) Grand Promenade & Lot 70 (No. 160) Alexander Drive, Dianella – Stage 1 Redevelopment Dianella Shopping Centre

Thank you for your letter dated 28 April 2026. We offer the following comments regarding this proposal.

Water
The development is located within the Yokine gravity water zone.

Based on the hydraulic modelling assessment, the existing water network has sufficient capacity to accommodate the additional demand from this development. The model was developed and tested under the following scenarios:

1. Including a development of the shopping centre.
2. Excluding development of shopping centre.

Assumptions:

- Only stage 1 of the development was modelled.
- The development increased the commercial area by 2,568 sqm.
- The peak day scaling ratio was 2.007.

Findings
Under both scenarios, the system had capacity to handle the stage 1 development.

Hydraulic Details (for internal use only)

- 42m minimum pressure under scenario 1
- 46m minimum pressure under scenario 2.

Fire Flow:
The surrounding hydrants were also modelled with the proposed development, with sufficient fire flow after the development.

Wastewater
It has been determined that the proposed increase in commercial density is not expected to place significant additional demand on the existing sewer network.

However, Water Corporation long-term planning indicates that the existing DN900 Bedford Branch Sewer, located along Waverley Street to the north of the development, is projected to surcharge under future zoning conditions.

To mitigate this risk, it is recommended that the proposed development of the Dianella Plaza shopping centre gravitate to and discharge via the existing DN225 sewer connection points. These are located between upstream access chamber X4362 and downstream access chamber P0487 along the western boundary of the site on Alexander Drive, thereby avoiding potential future capacity constraints.

General Comments
This proposal will require approval by our Building Services section prior to commencement of works. Infrastructure contributions and fees may be required to be paid prior to approval being issued.

For further information about building applications, the developer should follow this link:
https://www.watercorporation.com.au/home/builders-and-developers/building/lodging-a-building-application

The developer is expected to provide all water and sewerage reticulation if required. A contribution for Water, Sewerage and Drainage headworks may also be required. In addition, the developer may be required to fund new works or the upgrading of existing works and protection of all works associated with the Water Corporation. Water Corporation may also require land being provided for works.

The information provided above is subject to review and may change. If the proposal has not proceeded within the next 6 months, please contact us to confirm that this information is still valid.

Please provide the above comments to the landowner, developer and/or their representative.

Should you have any queries or require further clarification on any of the above issues, please do not hesitate to contact the Enquiries Officer.

Belinda Hill
A/Manager - Land Use Planning
Development Services

Design Review Report – Item 1

Local government:	City of Stirling	
Item no.:	Item 1 - PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application - Commercial / Retail	
Acting Chairperson:	Jackson Liew	
Panel members:	Munira Mackay Lisa Shine Simon Venturi	
Local government officers:	Dean Williams Gareth Glanville Shaun Wheatland Simone Palmer	Coordinator Planning Coordinator City Future Projects Senior Planning Officer DRP Support Officer
Observers	Vicky Dimitriou Olivia Abbonizio Peter Melrosa Beth Russell Grayson Spashett	Senior Planning Officer Senior Strategic Planning Officer – City Future Strategic Planning Officer - City Future Planning Officer Workplace Learning Student - Building
Date:	12 September 2024	Time: 2pm
Venue:	City of Stirling – Challenger Room	

Proponent/s		
	Rebecca Travaglione	Urbis Pty Ltd *(Applicant)*
	Callie Chai	DKO Architects
	Dennis Chew	DKO Architects
	Sarah Cooney	Plan E
	Brad Osborne	Greenpool Capital
	Kaila Gordon	DKO Architects
	Owners	Dianella Plaza Asset Co Pty
Observer/s		

Briefings		
Development assessment overview	Shaun Wheatland	Senior Planning Officer
Technical issues	Shaun Wheatland	Senior Planning Officer
Design Review		
Proposed development	Item 1 - PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application - Commercial / Retail	
Property address	Centro Dianella, 366 Grand Promenade, Dianella	
Background		
Proposal		

Applicant or applicant's representative address to the design review panel	Rebecca Travaglione Callie Chai Dennis Chew Sarah Cooney	Urbis Pty Ltd DKO Architects DKO Architects Plan E
Key issues / recommendations	This is the first review of the proposal. The Panel acknowledges the intricate planning context of the site and understands that Stage 1 is closely integrated with the overarching master planning process, with both informing each other to ensure a cohesive urban design strategy and alignment with the long-term development objectives. Notwithstanding further planning and design development work is required to refine key elements to address both the public realm and broader site context. The Panel is generally supportive of the new entry and through-link, contingent upon resolving the design of the southern blank wall and loading dock, to address the public realm and enhance connectivity with the streetscape. The retention and reuse of the existing roof structures and materials are supported, along with recommendations for detailed improvements to enhance the sense of place and to create a more inviting space for the community. The Panel looks forward to seeing progress on the design at a second review. Refer to attached Design Quality Evaluation Report.	
Chairperson signature		

Design quality evaluation **Item 1 – PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application – Commercial / Retail** **DRP Meeting – Thursday 12 September 2024**		
	S	*Design Principle satisfied*
	P	*Design Principle pending further attention*
	N	*Design Principle not satisfied*
Principle 1 **Context and character**		*Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*
	N	1a. The Panel is generally supportive of the masterplan vision and its integration with the broader context but recommends further planning and design development work is required. 1b. The Panel noted the development area under review is limited to Stage 1 only and the applicant has been in conversation with the City to develop a new activity centre plan. It is understood that the activity centre plan and Stage 1 works would be developed concurrently. 1c. Comment was made by the Panel there is opportunity for further analysis and dialogue around the context. The context and site analysis could be stronger and assist the Panel to gain a better understanding of housing in the area and the streetscape. 1d. The Applicant was encouraged to continue to develop the masterplan to assist with determining whether the proposal has the right mix and use for this location. It was suggested the masterplan and vision should start to speak to the staging of the urban centre and narrative should be provided as it is currently unclear. 1e. It was stated by the Panel nil setbacks and the large blank wall to the street are not supported. The large blank wall is problematic as it limits activation to the street. It is important for the development to activate the frontage to be successful. 1f. Comment was made by the Panel that there may be a sleeving opportunity where the loading dock and the blank wall is located. Sleeving with shopfront tenancies may mitigate the impact, or alternatively, the loading dock could be located internally. It was suggested if sleeving is achieved all other benefits with opening up the new entry on Alexander Drive will then be worth pursuing. 1g. It is important to consider opportunities for public spaces/infrastructures to make the centre an attraction and a destination where all demographics like to visit 1h. It was noted by the Panel that the entry statement with gable type roof profile and the footpath materials are a positive attribute of the proposal.
Principle 2 **Landscape quality**		*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*
	P	2a. The Panel commended the Applicant on the early engagement of the landscape consultant. 2b. The Panel noted the commitment for tree planting at every 3-6 car bay and raised that the size of the tree wells and root zones in the carpark area are to be reviewed against the planting species to ensure survival rates. 2c. The Panel stated landscaping is moving in the right direction however the current landscaping is all peripheral and inside the boundary. It was suggested it would be beneficial to have additional landscaping outside the boundary. 2d. The statement from the Applicant in relation to footpath material, raised planters with upright feature plant and cascading species to separate pedestrian movement from vehicular traffic is supported by the Panel and it is essential for a successful outcome this is followed through. 2e. Comment was made by the Panel there are no new initiatives in the carpark and water saving urban design initiatives could be explored. 2f. The removal of verge trees is not supported and requires early consultation with

		the City. It would be useful to see what is being proposed in relation to existing context and a narrative as to why. It may also assist to establish what trees are currently in the area. 2g. It was mentioned a better vision for the tree and planting strategy would benefit the project. 2h. Further information around retention of the roof and its articulation would be beneficial to gain a better understanding of the design resolution. 2i It was suggested by the Panel that the undercroft area could be opened up for alfresco seating and provide a dining opportunity. The Applicant is encouraged to consider additional landscaping at these areas to assist in softening to create a comfortable and usable public experience.
Principle 3 **Built form and scale**		*Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*
	P	3a. The Panel noted there is no height or overshadowing concerns with the proposal. 3b. It was noted by the Panel retention of the roof structure is supported and encouraged the applicant to explore public use opportunities, such as alfresco areas and seating. Additionally, there is potential to open up portions of the roof to allow natural daylight, creating a welcoming space for people beneath. 3c. The Applicant was encouraged to further examine and provide resolution to address the bulk and scale impacting the public realm.
Principle 4 **Functionality and build quality**		*Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.*
	N	4a. The Panel noted that the preliminary selection of materials is promising in terms of durability, however further details will be needed as the design develops. The applicant is encouraged to explore fine-grain finishes. 4b. It was noted by the Panel that there are no additional crossovers proposed apart from retaining the existing. 4c. It was mentioned that the air conditioning condensers and refrigeration plant may likely be located on the roof and be properly screened. Additional information to be provided in the next review. 4d. The Panel encouraged the applicant to examine the back-of-house and loading dock areas as the proposed locations are problematic in addressing the public realm.
Principle 5 **Sustainability**		*Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*
	P	5a. The Panel supports the sustainability initiatives specifically on the retention of the existing built form and around the reuse of the existing structures and materials. 5b. The Panel commended the Applicant for engaging the services of a sustainability expert and noted the ESD narrative is positive. 5c. The Panel questioned whether sustainability could be pushed further targeting a 5-star buildings (as-built) considering the opportunity to further reduce operation and maintenance cost.
Principle 6 **Amenity**		*Good design optimises internal and external amenity for occupants, visitors and neighbours providing environments that are comfortable, productive and healthy.*
	N	6a. Comment was made by the Panel that the articulation of the entry lobby is supported. 6b. The Panel is supportive of the pedestrian network in principle and suggested further investigation or the opportunity to incorporate public space infrastructure, which would positively contribute to the overall design and improve amenity of

		the centre. 6c. Lowick Street is proposed as a future activated street and green link. Additional details are needed to understand how this street would interface with the library, car parks and the school; and how the new entry to the centre is connected to this street. 6d. A statement was made by the Panel one of the downfalls of the scheme is the prime space has been allocated to vehicles and the loading dock. This space should be used to provide a better experience for customers. 6e. The masterplan indicated a new built form immediate adjacent to the library which may be problematic. The applicant is requested to provide additional details. 6f. The Panel acknowledged the effort to address and break up the blank wall fronting Grand Promenade but noted that it has not been effective. The applicant is requested to review an alternative design to address the public realm.
Principle 7 **Legibility**		*Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*
	P	7a. It was mentioned by the Panel the entrance is well defined and the links are supported. 7b. The Panel acknowledged the proposal for Lowick Street as a future activated street and green link. This is a welcome addition although requires further design development. 7c. The Panel stated the pedestrian footpath is a positive outcome although the pedestrian entry through the carpark requires strengthening and further development. 7d. Comment was made the entrance may not be legible once trees are introduced and it was suggested some further articulation may be required. 7e. Comment was made by the Panel the proposal is relying on a strong architectural response; and the urban design, especially the blank wall and the loading dock location is problematic.
Principle 8 **Safety**		*Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*
	N	8a. It was stated by the Panel that the south side of the development along Grand Promenade is problematic due to the inactive blank wall. Street activation and potential setback should be considered and investigated. Relocating the BOH and loading dock may assist in opening up the façade. 8b. The panel noted there are several other blank walls fronting the car parks which may require further review. 8c. Comment was made by the Panel breaking down the scale is a good idea with wall recesses although be aware of any safety issues this may introduce.
Principle 9 **Community**		*Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*
	P	9a. It was noted by the Panel that this district centre is in need of an upgrade and revamp. The revitalization is supported and a welcomed asset for the broader community. 9b. It was mentioned by the Panel that percent for public art could be investigated and integrated at the next stage.
Principle 10 **Aesthetics**		*Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*

	P	10a. It was noted the aesthetics of the proposal is progressing and can evolve. It was suggested further development of the verandah idea and greenhouse area would be beneficial 10b. It was noted the aesthetics along Grand Promenade requires further interrogation. The supermarket box requires considerable thought and planning attention for aesthetics. The Applicant is encouraged to seek opportunities to improve this area and how it presents to the public realm. 10c. A good indication in terms of the preliminary selection of durable materials and finishes was provided by the Applicant. This could be developed further upon resolution of the planning and design. 10d. The Panel strongly encouraged fine grain variation and colours to further assist with the aesthetics. 10e. It was suggested by the Panel that signage could be investigated early to achieve an integrated and coherent outcome as this can impact the aesthetics of the development.

Design Review progress
Item 1 – PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application – Commercial / Retail
DRP Meeting – Thursday 12 September 2024

S	*Design Principle satisfied*
P	*Design Principle pending further attention*
N	*Design Principle not satisfied*

	DR1 12/9/24		
Principle 1 - **Context and character**	N		
Principle 2 - **Landscape quality**	P		
Principle 3 - **Built form and scale**	P		
Principle 4 - **Functionality and build quality**	N		
Principle 5 - **Sustainability**	P		
Principle 6 - **Amenity**	N		
Principle 7 - **Legibility**	P		
Principle 8 - **Safety**	N		
Principle 9 - **Community**	P		
Principle 10 - **Aesthetics**	P		

DR1 – DRP Recommendations DRP Meeting – 12/9/2024	DR2 – Applicant Response DRP Meeting – 12/9/2024	DR2 - DRP Recommendations DRP Meeting –	DR2 – Applicant Response DRP Meeting –
1a. The Panel is generally supportive of the masterplan vision and its integration with the broader context but recommends further planning and design development work is required. 1c. Comment was made by the Panel there is opportunity for further analysis and dialogue around the context. The context and site analysis could be stronger and assist the Panel to gain a better understanding of housing in the area and the streetscape. 1d. The Applicant was encouraged to continue to develop the masterplan to assist with determining whether the proposal has the right mix and use for this location. It was suggested the masterplan and vision should start to speak to the staging of the urban centre and narrative should be provided as it is currently unclear. 1e. It was stated by the Panel nil setbacks and the large blank wall to the street are not supported. The large blank wall is problematic as it limits activation to the street. It is important for the development to activate the frontage to be successful. 1f. Comment was made by the Panel that there may be a sleeving opportunity where the loading dock and the blank wall is located. Sleeving with shopfront tenancies may mitigate the impact, or			

	alternatively, the loading dock could be located internally. It was suggested if sleeving is achieved all other benefits with opening up the new entry on Alexander Drive will then be worth pursuing. 1g. It is important to consider opportunities for public spaces/infrastructures to make the centre an attraction and a destination where all demographics like to visit			
2b. 2c. 2d. 2e. 2f.	The Panel noted the commitment for tree planting at every 3-6 car bay and raised that the size of the tree wells and root zones in the carpark area are to be reviewed against the planting species to ensure survival rates. The Panel stated landscaping is moving in the right direction however the current landscaping is all peripheral and inside the boundary. It was suggested it would be beneficial to have additional landscaping outside the boundary. The statement from the Applicant in relation to footpath material, raised planters with upright feature plant and cascading species to separate pedestrian movement from vehicular traffic is supported by the Panel and it is essential for a successful outcome this is followed through. Comment was made by the Panel there are no new initiatives in the carpark and water saving urban design initiatives could be explored. The removal of verge trees is not			

	supported and requires early consultation with the City. It would be useful to see what is being proposed in relation to existing context and a narrative as to why. It may also assist to establish what trees are currently in the area. 2g. It was mentioned a better vision for the tree and planting strategy would benefit the project. 2h. Further information around retention of the roof and its articulation would be beneficial to gain a better understanding of the design resolution. 2i It was suggested by the Panel that the undercroft area could be opened up for alfresco seating and provide a dining opportunity. The Applicant is encouraged to consider additional landscaping at these areas to assist in softening to create a comfortable and usable public experience.			
3b.	It was noted by the Panel retention of the roof structure is supported and encouraged the applicant to explore public use opportunities, such as alfresco areas and seating. Additionally, there is potential to open up portions of the roof to allow natural daylight, creating a welcoming space for people beneath. 3c. The Applicant was encouraged to further examine and provide resolution to address the bulk and scale impacting the public realm.			
4a.	The Panel noted that the preliminary selection of materials is promising in terms of durability, however further details will be needed as the design develops.			

	The applicant is encouraged to explore fine-grain finishes.			
4d.	The Panel encouraged the applicant to examine the back-of-house and loading dock areas as the proposed locations are problematic in addressing the public realm.			
5c.	The Panel questioned whether sustainability could be pushed further targeting a 5-star buildings (as-built) considering the opportunity to further reduce operation and maintenance cost.			
6b.	The Panel is supportive of the pedestrian network in principle and suggested further investigation or the opportunity to incorporate public space infrastructure, which would positively contribute to the overall design and improve amenity of the centre.			
6c.	Lowick Street is proposed as a future activated street and green link. Additional details are needed to understand how this street would interface with the library, car parks and the school; and how the new entry to the centre is connected to this street.			
6d.	A statement was made by the Panel one of the downfalls of the scheme is the prime space has been allocated to vehicles and the loading dock. This space should be used to provide a better experience for customers.			
6f.	The Panel acknowledged the effort to address and break up the blank wall fronting Grand Promenade but noted that it has not been effective. The applicant is requested to review an alternative design to address the public realm.			

7c.	The Panel stated the pedestrian footpath is a positive outcome although the pedestrian entry through the carpark requires strengthening and further development.			
7d.	Comment was made the entrance may not be legible once trees are introduced and it was suggested some further articulation may be required.			
8a.	It was stated by the Panel that the south side of the development along Grand Promenade is problematic due to the inactive blank wall. Street activation and potential setback should be considered and investigated. Relocating the BOH and loading dock may assist in opening up the façade.			
8b.	The panel noted there are several other blank walls fronting the car parks which may require further review.			
9b.	It was mentioned by the Panel that percent for public art could be investigated and integrated at the next stage.			
10a.	It was noted the aesthetics of the proposal is progressing and can evolve. It was suggested further development of the verandah idea and greenhouse area would be beneficial			
10b.	It was noted the aesthetics along Grand Promenade requires further interrogation. The supermarket box requires considerable thought and planning attention for aesthetics. The Applicant is encouraged to seek opportunities to improve this area and how it presents to the public realm.			

10c. A good indication in terms of the preliminary selection of durable materials and finishes was provided by the Applicant. This could be developed further upon resolution of the planning and design. 10d. The Panel strongly encouraged fine grain variation and colours to further assist with the aesthetics. 10e. It was suggested by the Panel that signage could be investigated early to achieve an integrated and coherent outcome as this can impact the aesthetics of the development.			

Design Review Report – Item 1

Local government:	City of Stirling	
Item no.:	Item 1 - PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application - Commercial / Retail	
Chairperson:	Philip Gresley	
Panel members:	Munira Mackay Jackson Liew Tony Blackwell	
Local government officers:	Peter Prendergast Dean Williams Shaun Wheatland Simone Palmer	Service Lead Planning Coordinator Planning Senior Planning Officer DRP Support Officer
Observers		
Date:	21 November 2024	Time: 2pm
Venue:	City of Stirling – Challenger Room	

Proponent/s		
	Rebecca Travaglione Megan Gammon Dennis Chew Callie Chai Andrew Baranowski	Urbis Pty Ltd *(Applicant)* Urbis Pty Ltd DKO Architects DKO Architects Plan E
	Owners	Dianella Plaza Asset Co Pty
Observer/s		

Briefings		
Development assessment overview	Shaun Wheatland	Senior Planning Officer
Technical issues	Shaun Wheatland	Senior Planning Officer
Design Review		
Proposed development	Item 1 - PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application - Commercial / Retail	
Property address	Centro Dianella, 366 Grand Promenade, Dianella	
Background		
Proposal		
Applicant or applicant's representative address to the design review panel	Rebecca Travaglione Megan Gammon Dennis Chew Callie Chai Andrew Baranowski	Urbis Pty Ltd Urbis Pty Ltd DKO Architecture DKO Architecture Plan E

Key issues / recommendations	The Panel conducted a thorough review of the proposed design, acknowledging positive steps taken since DRP1 but highlighting areas where significant improvement is required. While the masterplan vision and integration with the broader context are generally supported, the current proposal lacks sufficient alignment with key design principles. Improvements to the Grand Promenade interface, such as façade modulation, landscaping, and public art, were noted but remain insufficient to provide the desired level of community benefit or activation. The location of the Coles without sleeved retail or active uses was identified as a key concern, as was the dominance of blank walls and the problematic loading dock placement. The landscaping strategy, while progressing, requires greater integration with the built form and public realm. Opportunities for activating Lowick Street as a green link, strengthening pedestrian pathways, and improving tree retention and planting strategies were emphasized. Concerns remain regarding the lack of coordination between architecture and landscape, as well as the need for a more refined approach to materials, signage, and sustainable initiatives. The revitalization of this district centre is acknowledged as a critical community asset, and the Panel strongly recommends further design development and engagement with relevant stakeholders to address the concerns raised and ensure a positive outcome. Refer to attached Design Quality Evaluation Report.
Chairperson signature	

Design quality evaluation **Item 1 – PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application – Commercial / Retail** **DRP Meeting – Thursday 21 November 2024**		
	S	*Design Principle satisfied*
	P	*Design Principle pending further attention*
	N	*Design Principle not satisfied*
Principle 1 **Context and character**		*Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*
	N	1a. The Panel is generally supportive of the masterplan vision and its integration with the broader context but recommends further planning and design development work is required. 1b. The Panel noted the development area under review is limited to Stage 1 only and the applicant has been in conversation with the City to develop a new activity centre plan. It is understood that the activity centre plan and Stage 1 works would not be developed concurrently. 1c. It was reiterated by the Panel that the entry statement with gable type roof profile and the footpath materials are a positive attribute of the proposal. 1d. The Panel advised that the location of the Coles in close proximity to the street, without sleeved retail or real active uses, is not an optimal outcome and encourages the applicant to further explore other viable master planning options to relieve the design tension. 1e. Notwithstanding 1d, since DRP1, work has been carried out to improve the interface with the Grand Promenade context which includes improved façade modulation, an increased setback, improved soft and hard landscaping, new openings into blank walls, and the introduction of integrated public art. The outcome however is not yet supported by the Panel. Should the applicant pursue this non-favoured site planning option, more work is required to improve the responsiveness to Contact and Character, Amenity, Functionality, Legibility, Landscape and to further enhance Aesthetics. The current proposal interrupts the larger context of the Grand Promenade by introducing significant built form elements within an otherwise landscaped streetscape and does not in turn provide enough benefit to the community in return. It also has very limited real activation with only a small staff room having visual connection. 1f. The northwest and southeast facing elevations to Coles will be dominant to the street (particularly from vehicles) and warrant significant design attention. This should be provided to the Panel at the next meeting. These should be of a high quality and consider all relevant comments in this report. 1g. The Panel continues to encourage the applicant to reconsider the loading dock location to ensure that legibility and amenity for pedestrians is preserved for the pedestrian experience from Grand Promenade through to the pocket park and new south-east main shopping centre entry. This could also have the benefit of unlocking sleeving with retail, the preferred design option. Truck access is not activation. To maximise pedestrian benefit, and to obtain maximum benefit from the retention of existing trees, minimise any truck movements through rigorous design including turning circle analysis. 1h. Acknowledging Grand Promenade as a hostile environment, the Panel encouraged targeted improvements, including activating bus stops and integrating pedestrian connections from nearby side streets to create a safer, more engaging public realm. 1i. The Panel noted that while improvements have been made, a more sophisticated approach to materials and forms is needed to better align with the site's potential and character. 1j. Benefit might be found in acknowledging the level changes across the site and how these are being effectively integrated into the design. 1k. It was suggested by the Panel the street hierarchy and vision for the future should be demonstrated in the next DRP.

Principle 2 **Landscape quality**		*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*
	P	2a. The Panel commended the Applicant on the early engagement of the landscape consultant. 2b. Additional landscaping in the public realm is recommended to enhance the design's relationship with surrounding areas, support discretion being sought, and strengthen public infrastructure. 2c. While the imagery provided is compelling, the current landscape gestures remain peripheral. A stronger, more integrated landscaping strategy is required to establish a cohesive relationship between the built form and public spaces. 2d. The inclusion of water-sensitive urban design (WSUD) measures, such as improved ground preparation and irrigation, should be considered to ensure the longevity of the proposed tree planting strategy 2e. **I**t was reiterated by the Panel the importance of retaining existing trees where possible. A tree retention strategy across the site is recommended. 2f. The Panel noted the commitment for tree planting at every 3-6 car bays and raised the importance of soil and ground preparation to ensure survival rates. 2g. It was recommended by the Panel the SRI (solar reflective index) on the hard materials should be double checked. 2h. Additional work including coordination between Architect and Landscape Architect is required to bolster the design around the Coles building fronting Grand Promenade. Noting the improvements brought to DRP2 of brickwork retaining walls, additional work is required which might include denser and more mature planting regime (including to the verge), better and higher quality public realm elements that significantly enhance the outcome for community - including activating bus stops and integrating pedestrian connections from nearby side streets to create a safer, more engaging public realm. 2i. The statement from the Applicant in relation to footpath material, raised planters with upright feature plant and cascading species to separate pedestrian movement from vehicular traffic is supported by the Panel and it is essential for a successful outcome that this is followed through.
Principle 3 **Built form and scale**		*Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*
	P	3a. The Panel noted there is no height or overshadowing concerns with the proposal. 3b. It was noted by the Panel retention of the roof structure is supported. 3c. Greater coordination between the architecture and landscape design is needed to ensure a cohesive public realm experience, particularly along the Grand Promenade frontage. 3d. The Panel recommended significant refinements to the built form facing Grand Promenade including all elevations, as the current design lacks depth, overhangs, and meaningful articulation. Refer Principle 1. The Applicant was encouraged to further examine and provide resolution to address the bulk and scale impacting the public realm.
Principle 4 **Functionality and build quality**		*Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.*
	N	4a. The Panel noted that the preliminary selection of materials is promising in terms of durability, however further details will be needed as the design develops. The applicant is encouraged to further explore fine-grain finishes. 4b. It was noted by the Panel that there are no additional crossovers proposed apart from the retention of the existing. 4c. The proposed internal layout was identified as an area requiring further

		improvement, particularly regarding active uses facing Grand Promenade and the functional integration of service areas. There is additional opportunity to breakdown the facades to create more meaningful and useful landscaped spaces. 4d. The loading dock remains problematic, both in terms of its visual impact and its interaction with the public realm.
Principle 5 **Sustainability**		*Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*
	P	5a. The Panel supports the sustainability initiatives specifically on the retention of the existing built form and around the reuse of the existing structures and materials. 5b. The Panel commended the Applicant for engaging the services of a sustainability expert and noted the ESD narrative is positive. 5c. Photovoltaic panels (PVs) on the roof are recommended to further enhance the project's energy efficiency and sustainability credentials. 5d. The Panel questioned whether sustainability could be pushed further targeting a 5-star buildings (as built) considering the opportunity to further reduce operation and maintenance cost.
Principle 6 **Amenity**		*Good design optimises internal and external amenity for occupants, visitors and neighbours providing environments that are comfortable, productive and healthy.*
	P	6a. Comment was made by the Panel that the articulation of the entry lobby is supported. 6b. The Panel is supportive of the pedestrian network in principle and suggested further investigation or the opportunity to incorporate public space infrastructure, which would positively contribute to the overall design and improve amenity of the centre. 6c. Lowick Street is identified as a future green link, but additional details are needed to clarify its interface with surrounding uses such as the library, car parks, and school. 6d. The dominance of vehicles and the allocation of prime space to the loading dock rather than customer / community member experience areas was again flagged as a significant shortcoming. 6e. The blank walls fronting Grand Promenade remains unresolved. Alternative designs to enhance activation and public realm engagement are required. 6f. Nighttime loading operations were raised as a concern, with potential impacts on residents across the road. The Panel encouraged further analysis of lighting and noise mitigation measures.
Principle 7 **Legibility**		*Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*
	P	7a. It was mentioned by the Panel the entrance is well defined and the pedestrian links are supported. 7b. The Panel acknowledged the vision for Lowick Street as a future activated street and green link but raised concerns about how this activation will be achieved. The Panel queried whether discussions have taken place with neighbouring properties, such as the school and library, and emphasized the importance of a clear strategy for greening and activating this space. 7c. While the pedestrian footpath from Grand Promenade to the entry pocket park is recognized as a positive element of the design, the Panel noted that it requires further strengthening and refinement to ensure functionality and user safety. 7d. The Panel expressed concern that the legibility of the entrance could be diminished once trees are introduced, recommending additional design work to maintain its prominence and accessibility.

Principle 8 **Safety**		*Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*
	N	8a. It was stated by the Panel that the south side of the development along Grand Promenade is problematic due to the inactive blank wall. Street activation and potential setback should be further considered and investigated. 8b. Pedestrian and truck access points remain unclear and require clearer delineation to ensure safety for all users. 8c. The Panel noted that incorporating wall recesses to break down the scale will be a positive approach but advised caution to ensure that such features do not introduce potential safety concerns.
Principle 9 **Community**		*Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*
	P	9a. It was noted by the Panel that this district centre is in need of an upgrade and revamp. The revitalisation is supported and a welcomed asset for the broader community. 9b. The Panel observed that the current designs for the Coles fail to deliver an adequate level of community benefit through its urban interface with Grand Promenade, particularly given the level of discretion being sought. The Panel recommended further consideration be given to enhancing the design to better respond to and engage with the community.
Principle 10 **Aesthetics**		*Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*
	P	10a. The Panel acknowledges the work carried out since DRP1 to improve the interface with the Grand Promenade context which includes improved façade modulation, an increased setback, improved soft and hard landscaping, new openings into blank walls, and the introduction of integrated public art. The outcome however is not yet supported by the Panel. Should the applicant pursue this non-favoured site planning option The Grand Promenade façades require significant further development to improve presentation to the public realm. This includes reconsidering the supermarket box design and incorporating finer grain architectural detailing and colours. 10b. A good indication in terms of the preliminary selection of durable materials and finishes was provided by the Applicant. This could be developed further upon resolution of the planning and design as stated in DRP 1. 10c. The Panel strongly encouraged the Applicant to continue to explore fine grain variation and colours to further assist with the aesthetics. 10d. It was suggested by the Panel that signage could be investigated further to achieve an integrated and coherent outcome as this can impact the aesthetics of the development.

Design Review progress
Item 1 – PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella – Pre Development Application – Commercial / Retail
DRP Meeting – Thursday 21 November 2024 and 12 September 2024

S	*Design Principle satisfied*
P	*Design Principle pending further attention*
N	*Design Principle not satisfied*

	DR1 12/9/24	***DR2 21/11/24***	
Principle 1 - **Context and character**	N	N	
Principle 2 - **Landscape quality**	P	P	
Principle 3 - **Built form and scale**	P	P	
Principle 4 - **Functionality and build quality**	N	N	
Principle 5 - **Sustainability**	P	P	
Principle 6 - **Amenity**	N	P	
Principle 7 - **Legibility**	P	P	
Principle 8 - **Safety**	N	N	
Principle 9 - **Community**	P	P	
Principle 10 - **Aesthetics**	P	P	

Recommendations Summary Item 1 – PDA24/0054 – Centro Dianella, 366 Grand Promenade, Dianella			
DR1 – DRP Recommendations DRP Meeting – 12/9/2024	**DR1 – Applicant Response DRP Meeting – 12/9/2024**	**DR2 - DRP Recommendations DRP Meeting – 21/11/2024**	**DR2 – Applicant Response DRP Meeting – 21/11/2024**
1a. The Panel is generally supportive of the masterplan vision and its integration with the broader context but recommends further planning and design development work is required. 1c. Comment was made by the Panel there is opportunity for further analysis and dialogue around the context. The context and site analysis could be stronger and assist the Panel to gain a better understanding of housing in the area and the streetscape. 1d. The Applicant was encouraged to continue to develop the masterplan to assist with determining whether the proposal has the right mix and use for this location. It was suggested the masterplan and vision should start to speak to the staging of the urban centre and narrative should be provided as it is currently unclear. 1e. It was stated by the Panel nil setbacks and the large blank wall to the street are not supported. The large blank wall is problematic as it limits activation to the street. It is important for the development to activate the frontage to be successful. 1f. Comment was made by the Panel that there may be a sleeving opportunity where the loading dock and the blank wall is located.	1a. Further site analysis has been conducted. 1d. Further information has been provided on the future masterplan, staging and narrative. 1e. Design response better reflects the residential context and internal use of the centre. The revisions include façade articulation, additional green buffer and community artwork while maintaining the functionality of the shopping centre. 1f. Further analysis has been conducted and additional design options have been explored to effectively conceal the services zones from public interfaces. The updated design incorporates articulation measures to mitigate the visual impact of the loading dock, while maintaining the functionality of the site. 1g. Amenities include undercover parking spaces, covered pedestrian walkways, tree canopy zones to enhance the public interface and pedestrian experience.	1a. The Panel is generally supportive of the masterplan vision and its integration with the broader context but recommends further planning and design development work is required. 1d. The Panel advised that the location of Coles in close proximity to the street, without sleeved retail or real active uses, is not an optimal outcome and encourages the applicant to further explore other viable master planning options to relieve the design tension. 1f. The northwest and southeast facing elevations to Coles will be dominant to the street (particularly from vehicles) and warrant significant design attention. This should be provided to the Panel at the next meeting. These should be of a high quality and consider all relevant comments in this report. 1g. The Panel continues to encourage the applicant to reconsider the loading dock location to ensure that legibility and amenity for pedestrians is preserved for the pedestrian experience from Grand Promenade through to the pocket park and new south-east main shopping centre entry. This could also have the benefit of unlocking sleeving with retail, the preferred design option. Truck access is not activation. To	

Sleeving with shopfront tenancies may mitigate the impact, or alternatively, the loading dock could be located internally. It was suggested if sleeving is achieved all other benefits with opening up the new entry on Alexander Drive will then be worth pursuing. 1g. It is important to consider opportunities for public spaces/infrastructures to make the centre an attraction and a destination where all demographics like to visit.		maximise pedestrian benefit, and to obtain maximum benefit from the retention of existing trees, minimise any truck movements through rigorous design including turning circle analysis. 1h. Acknowledging Grand Promenade as a hostile environment, the Panel encouraged targeted improvements, including activating bus stops and integrating pedestrian connections from nearby side streets to create a safer, more engaging public realm. 1i. The Panel noted that while improvements have been made, a more sophisticated approach to materials and forms is needed to better align with the site's potential and character. 1j. Benefit might be found in acknowledging the level changes across the site and how these are being effectively integrated into the design. 1k. It was suggested by the Panel the street hierarchy and vision for the future should be demonstrated in the next DRP.	
2b. The Panel noted the commitment for tree planting at every 3-6 car bay and raised that the size of the tree wells and root zones in the carpark area are to be reviewed against the planting species to ensure survival rates. 2c. The Panel stated landscaping is moving in the right direction however the current landscaping is all peripheral and inside the boundary. It was suggested it	2b. In permanent carpark areas it is proposed trees be planted at a minimum of 1 tree per 7.5 linear parking metres, additionally structural soil and water sensitive urban design principles are proposed to tree planting in permanent carpark areas. Trees planted in temporary carpark areas will be installed in root control bags for future relocation. All trees in carpark areas to be within amended soil and irrigated.	2b. Additional landscaping in the public realm is recommended to enhance the design's relationship with surrounding areas, support discretion being sought, and strengthen public infrastructure. 2c. While the imagery provided is compelling, the current landscape gestures remain peripheral. A stronger, more integrated landscaping strategy is required to establish a cohesive relationship between the built	

would be beneficial to have additional landscaping outside the boundary. 2d. The statement from the Applicant in relation to footpath material, raised planters with upright feature plant and cascading species to separate pedestrian movement from vehicular traffic is supported by the Panel and it is essential for a successful outcome this is followed through. 2e. Comment was made by the Panel there are no new initiatives in the carpark and water saving urban design initiatives could be explored. 2f. The removal of verge trees is not supported and requires early consultation with the City. It would be useful to see what is being proposed in relation to existing context and a narrative as to why. It may also assist to establish what trees are currently in the area. 2g. It was mentioned a better vision for the tree and planting strategy would benefit the project. 2h. Further information around retention of the roof and its articulation would be beneficial to gain a better understanding of the design resolution. 2i It was suggested by the Panel that the undercroft area could be opened up for alfresco seating and provide a dining opportunity. The Applicant is encouraged to consider additional landscaping at these areas to assist in	2c. All existing trees external to the boundary are to be retained. Additional landscaping including irrigated trees, low shrubs and groundcovers are proposed in suitable verge areas directly adjacent to the site. A broader landscape strategy, external to the development site could potentially include tree and landscaping opportunities to adjacent sites and public realm. 2e. Water sensitive urban design initiates to include linear swale / garden beds with native tree and low shrub (grasses) planting areas of flush to kerb to allow for passive irrigation of landscaped areas. Structural soil and organic mulch to base of trees. 2f. No trees to verge areas (external to site boundary) are proposed to be removed. New tree planting extent will improve shade opportunities within the stie. Existing trees and surrounding street character has been identified in the site analysis. The proposed tree and shrub planting palette has been revised to further compliment this character. 2g. The tree and plating strategy focuses on robust, sustainable, heat tolerant species that will minimise ongoing maintenance and water requirements. The proposed planting palette is complimentary to the existing site character to strengthen placemaking opportunities. 2h. Roof plan shown. 2i. Additional landscaping opportunities include creation of a vegetated forecourt setting to entry with	form and public spaces. 2d. The inclusion of water-sensitive urban design (WSUD) measures, such as improved ground preparation and irrigation, should be considered to ensure the longevity of the proposed tree planting strategy 2e. It was reiterated by the Panel the importance of retaining existing trees where possible. A tree retention strategy across the site is recommended. 2f. The Panel noted the commitment for tree planting at every 3-6 car bays and raised the importance of soil and ground preparation to ensure survival rates. 2g. It was recommended by the Panel the SRI (solar reflective index) on the hard materials should be double checked. 2h. Additional work including coordination between Architect and Landscape Architect is required to bolster the design around the Coles building fronting Grand Promenade. Noting the improvements brought to DRP2 of brickwork retaining walls, additional work is required which might include denser and more mature planting regime (including to the verge), better and higher quality public realm elements that significantly enhance the outcome for community - including activating bus stops and integrating pedestrian connections from nearby side streets to create a safer, more engaging public realm.	

	softening to create a comfortable and usable public experience.		landscape buffers between pedestrians and vehicles. Increased amenity may include seating opportunities along open pathways and raised or fixed planters with upright, screening and cascading plants (irrigated).		
3b.	It was noted by the Panel retention of the roof structure is supported and encouraged the applicant to explore public use opportunities, such as alfresco areas and seating. Additionally, there is potential to open up portions of the roof to allow natural daylight, creating a welcoming space for people beneath.	3b.	The roof plan includes skylights for increased amenity, with alfresco seating areas being considered at the south east entry to enhance public use.	3c. Greater coordination between the architecture and landscape design is needed to ensure a cohesive public realm experience, particularly along the Grand Promenade frontage.
3c.	The Applicant was encouraged to further examine and provide resolution to address the bulk and scale impacting the public realm.	3c.	Noting that this comment specifically relates to the Grand Promenade, façade breaks have been incorporated to reduce the bulk and scale. The design also includes setting the facade back from the street, with added openings and potential artwork to further enhance the visual appeal.	3d. The Panel recommended significant refinements to the built form facing Grand Promenade including all elevations, as the current design lacks depth, overhangs, and meaningful articulation. Refer Principle 1. The Applicant was encouraged to further examine and provide resolution to address the bulk and scale impacting the public realm.
4a.	The Panel noted that the preliminary selection of materials is promising in terms of durability, however further details will be needed as the design develops. The applicant is encouraged to explore fine-grain finishes.	4a.	Durable materials have been incorporated into the development, aligning with the existing centre to help establish its identity in contrast to future developments outlined in the master plan. Brick work to be incorporated with the landscaping through seating elements ad ground floor treatment.	4a. The Panel noted that the preliminary selection of materials is promising in terms of durability, however further details will be needed as the design develops. The applicant is encouraged to further explore fine-grain finishes.
4d.	The Panel encouraged the applicant to examine the back-of-house and loading dock areas as the proposed locations are problematic in addressing the public realm.	4d.	Several options to position the back-of-house and loading dock areas in locations that minimise disruption to the public realm. The design has been articulated to ensure these areas are as unobtrusive as possible.	4c. The proposed internal layout was identified as an area requiring further improvement, particularly regarding active uses facing Grand Promenade and the functional integration of service areas. There is additional opportunity to breakdown the facades to create more meaningful and useful landscaped spaces.

5c. The Panel questioned whether sustainability could be pushed further targeting a 5-star buildings (as-built) considering the opportunity to further reduce operation and maintenance cost.	5c We acknowledge the Panel's suggestion to push sustainability further toward a 5-star (as-built) rating. While this has been considered it will be addressed in future stages of the development.	5c. Photovoltaic panels (PVs) on the roof are recommended to further enhance the project's energy efficiency and sustainability credentials. 5d. The Panel questioned whether sustainability could be pushed further targeting a 5-star buildings (as built) considering the opportunity to further reduce operation and maintenance cost.	
6b. The Panel is supportive of the pedestrian network in principle and suggested further investigation or the opportunity to incorporate public space infrastructure, which would positively contribute to the overall design and improve amenity of the centre. 6c. Lowick Street is proposed as a future activated street and green link. Additional details are needed to understand how this street would interface with the library, car parks and the school; and how the new entry to the centre is connected to this street. 6d. A statement was made by the Panel one of the downfalls of the scheme is the prime space has been allocated to vehicles and the loading dock. This space should be used to provide a better experience for customers. 6f. The Panel acknowledged the effort to address and break up the blank wall fronting Grand Promenade but noted that it has not been effective. The applicant is requested to review an alternative design to address the public realm.	6b. The landscaping surrounding the development, which includes integrated seating, clear pathways and pocket parks will enhance the pedestrian experience and contribute positively to the centres overall amenity. 6c. Additional information on Lowick Street has been provided. Increased visibility between the library and school creates a connection that enhances the street amenity. 6d. This pertains to the Grand Promenade interface, where access is primarily through personal vehicles or public transport. Parking locations are distributed among entrances with a clearly defined public transport link to enhance customer experience. 6f. In response, we have incorporated additional design elements, including further setbacks, enhanced window fenestrations and a contribution to public art to better address the public realm.	6b. The Panel is supportive of the pedestrian network in principle and suggested further investigation or the opportunity to incorporate public space infrastructure, which would positively contribute to the overall design and improve amenity of the centre. 6e. The blank walls fronting Grand Promenade remains unresolved. Alternative designs to enhance activation and public realm engagement are required. 6f. Nighttime loading operations were raised as a concern, with potential impacts on residents across the road. The Panel encouraged further analysis of lighting and noise mitigation measures.	

7c. The Panel stated the pedestrian footpath is a positive outcome although the pedestrian entry through the carpark requires strengthening and further development. 7d. Comment was made the entrance may not be legible once trees are introduced and it was suggested some further articulation may be required.	7c. Pedestrian footpaths and planting have been designed to enhance legibility through the carpark. Further legibility will be shown through signage. 7d. The selected tree species features an open canopy, allowing clear visibility to the entrances. Tree species will further analysis of sight lines have been illustrated.	7b. The Panel acknowledged the vision for Lowick Street as a future activated street and green link but raised concerns about how this activation will be achieved. The Panel queried whether discussions have taken place with neighbouring properties, such as the school and library, and emphasized the importance of a clear strategy for greening and activating this space. 7c. While the pedestrian footpath from Grand Promenade to the entry pocket park is recognized as a positive element of the design, the Panel noted that it requires further strengthening and refinement to ensure functionality and user safety. 7d. The Panel expressed concern that the legibility of the entrance could be diminished once trees are introduced, recommending additional design work to maintain its prominence and accessibility.	
8a. It was stated by the Panel that the south side of the development along Grand Promenade is problematic due to the inactive blank wall. Street activation and potential setback should be considered and investigated. Relocating the BOH and loading dock may assist in opening up the façade. 8b. The panel noted there are several other blank walls fronting the car parks which may require further review.	8a. Several options to position the back-of-house and loading dock have been reviewed to minimise disruption to the public realm. The design has been articulated to ensure these areas are as unobtrusive as possible. Please see functionality and build quality. 8b. The main façade interfaces have been articulated to effectively respond to these areas. Please see community pages.	8a. It was stated by the Panel that the south side of the development along Grand Promenade is problematic due to the inactive blank wall. Street activation and potential setback should be further considered and investigated. 8b. Pedestrian and truck access points remain unclear and require clearer delineation to ensure safety for all users. 8c. The Panel noted that incorporating wall recesses to break down the scale will be a positive approach but advised caution to ensure that such	

		features do not introduce potential safety concerns.	
9b. It was mentioned by the Panel that percent for public art could be investigated and integrated at the next stage.	9b. We appreciate the Panels' suggestion to investigate a percent for public art. We are considering an art contribution for the Grand Promenade interface at the next stage.	9b. The Panel observed that the current designs for the Coles fail to deliver an adequate level of community benefit through its urban interface with Grand Promenade, particularly given the level of discretion being sought. The Panel recommended further consideration be given to enhancing the design to better respond to and engage with the community.	
10a. It was noted the aesthetics of the proposal is progressing and can evolve. It was suggested further development of the verandah idea and greenhouse area would be beneficial 10b. It was noted the aesthetics along Grand Promenade requires further interrogation. The supermarket box requires considerable thought and planning attention for aesthetics. The Applicant is encouraged to seek opportunities to improve this area and how it presents to the public realm. 10c. A good indication in terms of the preliminary selection of durable materials and finishes was provided by the Applicant. This could be developed further upon resolution of the planning and design. 10d. The Panel strongly encouraged fine grain variation and colours to further assist with the aesthetics. 10e. It was suggested by the Panel that signage could be investigated early to achieve an integrated and coherent outcome as this can impact the aesthetics of the	10a. Skylights to under croft space have been illustrated on the roof plan. Considering alfresco spill out zone to south/east entry. 10b. Several options to position the back-of-house and loading dock have been reviewed to minimise disruption to the public realm. The design has been articulated to ensure these areas are as unobtrusive as possible. 10c. Noted. Not response is required. 10d. Durable and cost effective materials have been incorporated into the development aligning with the existing centre to help establish its identity in contrast to future developments outlined in the master plan. We will continue to explore fine-grain finishes as the design evolves. 10e. Signage has been explored and indicatively shown. This will be explored further upon resolution of the planning and design.	10a. The Panel acknowledges the work carried out since DRP1 to improve the interface with the Grand Promenade context which includes improved façade modulation, an increased setback, improved soft and hard landscaping, new openings into blank walls, and the introduction of integrated public art. The outcome however is not yet supported by the Panel. Should the applicant pursue this non-favoured site planning option The Grand Promenade façades require significant further development to improve presentation to the public realm. This includes reconsidering the supermarket box design and incorporating finer grain architectural detailing and colours. 10b. A good indication in terms of the preliminary selection of durable materials and finishes was provided by the Applicant. This could be developed further upon resolution of the planning and	

development.		design as stated in DRP 1. 10c. The Panel strongly encouraged the Applicant to continue to explore fine grain variation and colours to further assist with the aesthetics. 10d. It was suggested by the Panel that signage could be investigated further to achieve an integrated and coherent outcome as this can impact the aesthetics of the development.	

PART D – OTHER BUSINESS

1. State Administrative Tribunal Applications and Supreme Court Appeals

2. Meeting Closure