Government of **Western Australia**
Development Assessment Panels

Metro South-West Joint Development Assessment Panel Agenda

Meeting Date and Time: 19 September 2018; 10:00am
Meeting Number: MSWJDAP/168
Meeting Venue: City of Rockingham Boardroom
Civic Boulevard
Rockingham

Attendance

DAP Members

Mr Tony Arias (Presiding Member)
Mr Brian Curtis (A/Deputy Presiding Member)
Mr Andrew Macliver (Specialist Member)

Item 8.1
Cr Jon Strachan (Local Government Member, City of Fremantle)
Cr Bryn Jones (Local Government Member, City of Fremantle)

Item 8.2
Cr Chris Elliot (Local Government Member, City of Rockingham)
Cr Deb Hamblin (Local Government Member, City of Rockingham)

Officers in attendance

Item 8.1
Mr Justin Lawrence (City of Fremantle)
Ms Julia Kingsbury (City of Fremantle)

Item 8.2
Mr Scott Jeffrey (Department of Finance)
Ms Sandra McLeish (Department of Finance)
Mr George Ashton (Element on behalf of the Department of Finance)
Mr Daniel Lees (Element on behalf of the Department of Finance)
Mr Neels Pretorius (City of Rockingham)
Mr Greg Delahunty (City of Rockingham)
Mr Mike Ross (City of Rockingham)

Minute Secretary

Ms Nicole D'Alessandro (City of Rockingham)

Applicants and Submitters

Item 8.1
Mr Peter Simpson (PTS Town Planning Pty Ltd)

Item 8.2
Mr Tony D'Andrea (EIW Architects)

Members of the Public / Media

Nil

1. Declaration of Opening

The Presiding Member declares the meeting open and acknowledges the past and present traditional owners and custodians of the land on which the meeting is being held.

2. Apologies

Cr Andrew Sullivan (Local Government Member, City of Fremantle)

3. Members on Leave of Absence

Nil

4. Noting of Minutes

Signed minutes of previous meetings are available on the DAP website.

5. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.

6. Disclosure of Interests

Member	Item	Nature of Interest
Cr Jon Strachan	8.1	Impartiality Interest – As a member of Fremantle Council, Cr Strachan has previously considered and voted on this application at a Council meeting.

7. Deputations and Presentations

7.1 Mr Peter Simpson (PTS Town Planning Pty Ltd) presenting in support of the application at Item 8.1. The presentation will provide a planning overview and background information on the application and address the development assessment and planning merits of the proposed development.

The City of Fremantle and Department of Finance may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

8. Form 1 – Responsible Authority Reports – DAP Applications

8.1

Property Location:	28 Cantonment Street, Fremantle
Development Description:	Partial demolition of existing Shopping Centre and construction of a six (6) Storey with basement Mixed use development containing Shop, Office and Hotel uses
Applicant:	PTS Town Planning Pty Ltd
Owner:	Silverleaf Pty Ltd
Responsible Authority:	City of Fremantle
DAP File No:	DAP/18/01453

8.2

Property Location:	Lot 9014 on Plan 413443 and Lot 750 on Plan 25777 Nyilla Approach, Baldivis
Development Description:	New Public Primary School
Applicant:	EIW Architects
Owner:	Perron Developments Pty Ltd and Mirvac (WA) Pty Ltd
Responsible Authority:	Department of Finance
DAP File No:	DAP/18/01467

9. Form 2 – Responsible Authority Reports – Amending or cancelling DAP development approval

Nil

10. Appeals to the State Administrative Tribunal

Nil

11. General Business / Meeting Closure

In accordance with Section 7.3 of the DAP Standing Orders 2017 only the Presiding Member may publicly comment on the operations or determinations of a DAP and other DAP members should not be approached to make comment.

Government of Western Australia
Development Assessment Panels

Form 1 – Responsible Authority Report

(Regulation 12)

Property Location:	28 Cantonment Street, Fremantle
Development Description:	Partial demolition of existing Shopping Centre and construction of a six (6) Storey with basement Mixed use development containing Shop, Office and Hotel uses
DAP Name:	Metro South-West JDAP
Applicant:	PTS Town Planning Pty Ltd
Owner:	Silverleaf Pty Ltd
Value of Development:	$15 million
LG Reference:	DAP003/18
Responsible Authority:	City of Fremantle
Authorising Officer:	Manager Development Approvals
DAP File No:	DAP/18/01453
Report Due Date:	21 September 2018
Application Received Date:	6 July 2018
Application Process Days:	90 Days
Attachment(s):	1: Amended Development plans 2: Site photos 3: Schedule of submissions

Officer Recommendation:

That the Metro South-West JDAP resolves to:

Approve DAP Application reference DAP/18/01453 and accompanying plans dated 3 August 2018 (Site Plan (DA-00), Basement (DA-01), Ground Floor (DA-02), Level 01 (DA-03), Level 02 (DA-04), Level 03 (DA-05), Level 04 (DA-06), Level 05 (DA-07), Roof Plan (DA-08), Demolition Plan (DA-23), North and South Elevations (DA-30), Tower East and West Elevations (DA-31), East and West Elevations (DA-40), North Elevation Goldsborough (DA-42), South Elevation Comparison without existing brick (DA-43), Sections A and B (DA-21), Elevations – Materiality (05), Shopfront Concepts (01), Shopfront Concepts (02) and Queen Street Perspective View (DA-50) in accordance with Clause 68 of the Planning and Development (Local Planning Schemes) Regulations 2015 and the provisions of the City of Fremantle Local Planning Scheme No. 4, subject to the following conditions:

Conditions

1. This approval relates only to the development as indicated on the approved plans dated 3 August 2018. It does not relate to any other development on this lot and must substantially commence within 4 years from the date of the decision letter.

2. Prior to the issue of a building permit, final details are to be submitted illustrating a minimum setback of 3.65m from the Queen Street boundary, with the exception of the retained and modified ground floor brick piers and glass awning addition, and demonstrating how, in the event of a future widening of Queen Street, these elements of the building could be removed without compromising the structural integrity or satisfactory external appearance of the remainder of the building.

3. This approval does not relate to any works within the road reserves. Any such works will be the subject of a separate agreement between the applicant/owner and the City of Fremantle.

4. Prior to the issue of a building permit, final details of the external materials, colours and finishes of the proposed development, including a physical sample board or materials is to be submitted and approved to the satisfaction of the City of Fremantle, on the advice of the City's Design Advisory Committee.

5. All storm water discharge shall be contained and disposed of on site or otherwise approved by the City of Fremantle.

6. Prior to the issue of a building permit, the following information is to be provided to the satisfaction of the City of Fremantle:
   a. A photographic archival record of the place prior to any works occurring, according to the Guide to Preparing an Archival Record.
   b. A detailed plan and schedule of remaining building fabric from the 1917 wool stores building which previously existed on the site. The plan and schedule shall identify what elements are to be retained, conserved and inserted into the proposed new development as part of a scheme for appropriately interpreting the 1917 building.

7. Prior to the occupation of the development approved, the approved landscaping shall be completed and maintained on an ongoing basis for the life of the development on the site to the satisfaction of the City of Fremantle.

8. Prior to the issue of a building permit, an outdoor lighting plan must be submitted and approved, by the City of Fremantle. The outdoor lighting is to be designed, baffled and located to prevent any increase in light spill onto the adjoining properties and is to be implemented and maintained upon the completion of the development to the satisfaction of the City of Fremantle.

9. Prior to the issue of a building permit, an external signage strategy shall be submitted to the satisfaction of the City of Fremantle.

10. The design and construction of the development is to meet the 4 star green star standard as per Local Planning Policy 2.13 or alternatively to an equivalent standard as agreed upon by the City of Fremantle. Any costs associated with generating, reviewing or modifying the alternative equivalent standard is to be incurred by the owner of the development site. Twelve (12) months after practical completion of the development, the owner shall submit either of the following to the City to the satisfaction of the City of Fremantle:
    a. a copy of documentation from the Green Building Council of Australia certifying that the development achieves a Green Star Rating of at least 4 Stars, or
    b. a copy of agreed equivalent documentation certifying that the development achieves a Green Star Rating of at least 4 Stars.

11. Prior to the issue of a building permit, the design and materials of the development shall adhere to the requirements set out within City of Fremantle policy L.P.P2.3 - Fremantle Port Buffer Area Development Guidelines for properties contained within Area 2. Specifically, the development shall provide the following:
    a. Glazing to windows and other openings shall be laminated safety glass of minimum thickness of 6mm or "double glazed" utilising laminated or toughened safety glass of a minimum thickness of 3mm.
    b. Air conditioners shall provide internal centrally located 'shut down' points and associated procedures for emergency use.
    c. Roof insulation in accordance with the requirements of the Building Codes of Australia.

12. Prior to occupation of the development, the new car parking and loading area(s), and vehicle access and circulation areas shown on the approved site plan, including the provision of

disabled car parking, shall be constructed, drained, and line marked in accordance with the Australian Standard for parking facilities and off-street car parking the satisfaction of the City of Fremantle.

13. All car parking and vehicle access and circulation areas shall be maintained and available for car parking/loading, and vehicle access and circulation on an ongoing basis to the satisfaction of the City of Fremantle.

14. Prior to the occupation of the development, any redundant crossovers and kerbs shall be removed and the verge reinstated at the expense of the applicant and to the satisfaction of the Chief Executive Officer, City of Fremantle.

15. Prior to the issue of a building permit, the plans hereby approved being modified to include 22 class 1 or class 2, and 14 class 3 bicycle parking bays and associated end-of-trip facilities consisting of:
    a. 2 male and 2 female showers, OR
    b. 4 unisex showers, AND
    c 22 Lockers
    in accordance with clause 4.15.1 and 4.15.2 of Local Planning Scheme No.4. The bays and end-of-trip facilities shall be provided and thereafter maintained to the satisfaction of the City of Fremantle.

16. Prior to issue of a building permit, the owner/developer is to submit a waste management plan for approval detailing the storage and management of the waste generated by the development. The approved waste management plan is to be implemented and maintained for the life of the development to the satisfaction of the City of Fremantle.

17. Prior to occupation of the development, the owner shall contribute a monetary amount equal in value to one percent of the estimated development cost, as indicated on the Form of Application for Planning Approval, to the City of Fremantle for development of public art works and/or heritage works to enhance the public realm consistent with the City's LPP 2.19 and to the satisfaction of the City of Fremantle. Based on the estimated cost of the development being $15 million the contribution to be made is $150,000.

18. Prior to the issue of a demolition permit and a building permit, a Demolition/Construction Management Plan shall be submitted to the satisfaction of the City of Fremantle addressing the following matters:
    a. The protective measures for significant fabric during construction
    b. Use of City car parking bays for construction related activities;
    c. Protection of infrastructure and street trees within the road reserve;
    d. Security fencing around construction sites;
    e. Gantries;
    f. Access to site by construction vehicles;
    g. Contact details;
    h. Site offices;
    i. Noise - Construction work and deliveries;
    j. Sand drift and dust management;
    k. Waste management;
    l. Dewatering management plan;
    m. Traffic management; and
    n. Works affecting pedestrian areas.

19. Prior to the issue of a Building Permit (but not including a Demolition Permit), final details are to be provided to demonstrate how the recommendations contained within the Crime

Prevention Assessment Report, prepared by JMG Safety Management dated 20 August 2018, will be implemented to the satisfaction of the City of Fremantle.

20. Where any of the preceding conditions has a time limitation for compliance, if any condition is not met by the time requirement within that condition, then the obligation to comply with the requirements of any such condition (other than the time limitation for compliance specified in that condition), continues whilst the approved development continues.

Advice Notes

i. With regards to condition No.2, the applicant is advised that the 3.65m setback requirement from the Queen Street boundary is to provide for potential future road widening of Queen Street. Whilst the City raises no current objection to the retention of the ground floor brick piers and its modification to provide temporarily weather protection, this structure may be required to be removed in the future.

ii. In relation to the public art contribution, the applicant is advised that Council may waive the requirement for the public art/heritage work contribution in accordance with clause 6 of LPP 2.19 where the development incorporates public art in the development to the same value as that specified in Condition 17 that is located in a position clearly visible to the general public on the site of the development. In determining the appropriateness and artistic merit of the public art, council shall seek relevant professional advice.

iii. New crossover(s) shall comply with the City's standard for standard crossovers, which are available on the City of Fremantle's web site. Prior to commencing construction of the crossover(s), the developer is to contact the Engineering Project Officer on 9432 9999 to arrange an inspection or alternatively via TECHSERVICES@fremantle.wa.gov.au.

iv. Local Planning Policy 1.10 Construction Sites can be found on the City's web site via http://www.fremantle.wa.gov.au/development/policies. The Infrastructure Engineering department can be contacted via TECHSERVICES@fremantle.wa.gov.au or 9432 9999.

v. The paving and landscaping depicted outside the boundaries of the subject property do not form part of this approval. For further queries relating to verge infrastructure modifications please contact the Infrastructure Engineering department via TECHSERVICES@fremantle.wa.gov.au or 9432 9999.

vi. The proponent must make application during the Building License application stage to Environmental Health Services via Form 1 - Application to construct, alter or extend a public building as a requirement of the Health (Public Buildings) Regulations 1992. For further information and a copy of the application form contact Environmental Health Services on 9432 9856 or via health@fremantle.wa.gov.au.

vii. Any removal of asbestos is to comply with the following –

Less than ten (10) square metres of bonded (non-friable) asbestos can be removed without a license and in accordance with the Health (Asbestos) Regulations 1992 and the Environmental Protection (Controlled Waste) Regulations 2001. Over 10 square metres must be removed by a licensed person or business for asbestos removal. All asbestos removal is to be carried out in accordance with the Occupational Safety and Health Act 1984 and accompanying regulations and the requirements of the Code of Practice for the Safe Removal of Asbestos 2nd Edition [NOHSC: 2002 (2005)];

Note: Removal of any amount of friable asbestos must be done by a licensed person or business and an application submitted to WorkSafe, Department of Commerce. http://www.docep.wa.gov.au

viii. A demolition permit is required to be obtained for the proposed demolition work. The demolition permit must be issued prior to the removal of any structures on site.

ix. Work on construction sites shall be limited to between 7am and 7pm on any day which is not a Sunday or Public Holiday. If work is to be done outside these hours a noise management plan must be submitted and approved by the Chief Executive Officer, City of Fremantle prior to work commencing.

x. Design and install all mechanical service systems, including air-conditioners, pool filter motors, gym weight equipment, amplified music, kitchen exhaust ducts and refrigeration motors, etc. to prevent noise levels from exceeding the relevant assigned levels as set out in the Environmental Protection (Noise) Regulations 1997 (as amended). It is advised to seek the services of a competent acoustic consultant to assist the applicant to address the potential noise impacts on noise sensitive receivers.

xi. Due to the historical use of the site for a potentially contaminating activity, the development of the site may intercept potentially contaminated soils. If potentially contaminated soils are identified, the site should be reported in accordance with section 11 of the Contaminated Sites Act 2003, and works appropriately managed to ensure that potential risks to human health and the environment are addressed. DWER recommends that the south west basement corner is constructed such that natural ventilation is optimised.

Details: outline of development application

Insert Zoning	MRS:	Central City
	TPS:	City Centre
Insert Use Class:		Hotel, Shop, Office and Public Carpark,
Insert Strategy Policy:		N/A
Insert Development Scheme:		Local Planning Scheme No. 4
Insert Lot Size:		16,100sqm
Insert Existing Land Use:		Shop and Public Car Park

Approval is sought for the partial demolition of the southern portion of the existing Woolstores Shopping Centre building and the construction of six (6) storey with basement Mixed use development including Shop, Office and Hotel uses at No.28 Cantonment Street, Fremantle. The proposal also includes the refurbishment of the northern portion area of the existing Woolstores building. Specifically, the development includes the following:

- Reducing the size of the existing Coles Supermarket from 4,300sqm to 3,200sqm;
- Re-alignment and refurbishment of the existing arcade;
- Alterations to the existing retail tenancies;
- Minor changes to the existing servicing and car parking areas;
- A new six (6) storey building along the Queen Street frontage to include:
- A basement car park accessed via Elder Place accommodating 46 hotel bays, 15 office bays, 5 motorbike bays, 25 bicycle bays, end of trip facilities, loading and other services;
- Ground level retail tenancies, an office lobby and a hotel lobby;
- First level office and hotel amenities; and
- 141 hotel rooms over levels 2 to 5.

The proposal includes a brick, metal and glass six (6) storey building that extends the southern portion of the existing Woolstores shopping centre and refurbishment of the remaining brick facade of the

subject site. The hotel and office addition features a weathered steel façade with balconies to hotel rooms.

These revised development plans are included as ***Attachment 1***.

Background:
The subject site is bound by Elder Place (west), Queen Street (south), Goldsbrough Street (north) and Cantonment Street (east). The site is 16,100m^2 and is zoned City Centre under Local Planning Scheme No. 4. The site is not heritage listed, nor is it located within a prescribed heritage area. However, the site is located directly adjacent to state registered properties including the Elders Woolstores at No.1 Goldsborough Street and the Fremantle Train Station building.

The lot is currently occupied by a single storey Shopping Centre and a two storey Public Carpark.

The subject site is identified as a key strategic site in the City Centre zone, due to its size and its proximity to Victoria Quay, Fremantle Train Station and the Queen Street axis leading to Kings Square. The site is also subject to the provisions of Scheme Amendment no. 49 which modified the development standards relating to 12 key sites within the inner east end of the City Centre. These provisions include specific requirements in relation to the design quality of the development.

The existing retail strata complex (which consists of six small shop tenancies) on the corner of Queen Street and Elder place is under multiple ownership and does not form part of the development site.

On 28 March 2017 the City received a development application DAP002/17 for the demolition of existing Shopping Centre and carpark building and the construction of a four (4) to ten (10) storey with basement Mixed use development including Shop, Public Car park, Tavern, Office, Hotel, Residential building and Multiple dwellings uses.

That proposal sought a maximum building height of 38.9m, which required the development to comply with the specific building height requirements set out in schedule 8 of LPS4, including a requirement for the design to be judged as being of exceptional design quality. The proposal was not considered to satisfy all of the relevant LPS4 criteria of Schedule 8, sub area 1.3.2, specifically the design quality requirements; consequently on 18 April 2018 the South West Joint Development Assessment Panel refused to grant planning approval for DAP002/17.

On 20 June 2018 the City received a development application DAP003/18 for the partial demolition of the existing Shopping Centre building and the construction of a six (6) storey with basement Mixed use development including Shop, Hotel and Office uses. The proposal also includes the refurbishment of the northern portion of the existing Shopping centre and public carpark.

See Attachment 1 below for copy of the most recent revised plans.

Legislation and Policy:

<u>Planning and Development (Local Planning Schemes) Regulations 2015</u>

Schedule 2

- Cl 3.(5) Local planning policies
- Cl 60. Requirement for development approval
- Cl64. Advertising applications
- Cl66. Consultation with other authorities
- Cl67. Matters to be considered by local government

<u>Local Planning Scheme No. 4</u>

The following Scheme provisions are considered the most relevant in the consideration of the planning application:

- Cl 3.2.1 (b) – Objectives of City Centre zone
- Table 1 - Zoning
- Table 2 - Vehicle parking Parking
- Cl 4.7.3.1 – Variation to parking requirements
- CL4.8.2 – Variation to other requirements
- Cl 4.14.1 – Demolition
- Schedule 8 – Local Planning Area 1 City Centre – Sub Area 1.3.2;
- Schedule 1 – Dictionary of defined words and expressions;
- Schedule A
  - Clause 61 - Supplemental provisions to the deemed provisions
  - Clause 78B – Advisory Committee

State Government Policies

- SPP3.1 - Residential Design Codes

Local Policies

The site is subject to the following relevant Local Planning Policies:

- Local Planning policy 1.10 – Construction Sites policy;
- Local Planning Policy 1.3 – Public Notification of Planning Proposals
- Local Planning Policy 1.9 – Design Advisory Committee and Principles Of Design
- Local Planning Policy 2.3 – Fremantle Port Buffer Area Development Guidelines
- Local Planning Policy 2.7 – Archaeological investigation as a condition of approval policy
- Local Planning Policy 2.12 - Planning Applications Impacting On Verge Infrastructure And Verge Trees
- Local Planning Policy 2.13 – Sustainable Buildings Design Requirements
- Local Planning Policy 2.19 – Contribution for Public Art and/or Heritage Works
- Local Planning Policy 3.1.5 – Precinct 5

Consultation:

Public Consultation

The application was advertised in accordance with Schedule 2, clause 64 of the Planning and Development (Local Planning Schemes) Regulations 2015.

The planning application was identified as a significant application as set out in Council's LPP1.3 Public Notification of Planning Proposals. The application was advertised for a period of 28 days and included the following actions:

- A sign notice being placed on the development site.
- Letter to owners and occupiers within 100m of the site.
- Advertising of the application occurred on the City's website.
- The Precinct Groups were informed of the proposal.
- Two (2) newspaper notices (21 July and 28 July 2018).
- A community information session held on 2 August 2018.

The Community Information session held on the 2 August 2018, was attended by three members of the public and three City of Fremantle Councillors.

In response to the public advertising, a total of 31 submissions were received with 11 submissions supporting the proposal and 20 submission raising objections. A table of the submissions is included as ***Attachment 3***, however a summary of the key planning concerns raised are outlined in the table below.

Issue Raised	Officer's comments
Building height	See Officer comment section below for 'Building height'
Bulk, scale, massing and siting	See Officer comment section below for 'Building height' - massing, building bulk and scale.
Development setting, materiality and context of the locality.	See Officer comment section below for 'Building height'
Lack of Design quality	See Officer comment section below for 'Building height' and Design Advisory Committee Comments
Character	See Officer comment section below for 'Building height' - character

Heritage Council of Western Australia (HCWA)
Whilst the site is not on the City's Heritage List nor on the State Heritage Register, in accordance with Section 11 of the *Heritage of Western Australia Act 1990*, the application was referred to the State Heritage Office (SHO) as the proposal may affect the following nearby State Registered Heritage Places:

- No. 1 Goldsborough Street, Fremantle (Elders Woolstores);
- No. 92 Adelaide Street, Fremantle (Film and Television Institute);
- Princess May Reserve;
- Pioneer Reserve; and
- No. 28 Phillimore Street, Fremantle (Fremantle Railway Station).

The Heritage Council provided the following comments in relation to the proposal on 24 July 2018:

> *The proposed development does not significantly impact on the identified cultural significance of either Elders Woolstores or Fremantle Railway Station and, therefore, we have no objection to the proposed development.*

Fremantle Port Authority (FPA)
The site is located within Area 2 of the Fremantle Port buffer area. In accordance with LPP2.3, the Fremantle Port Authority (FPA) was advised of the development proposal. The FPA provided the following comments in relation to the proposal:

> *The site is located within Area 2 of the Fremantle Port Buffer. The requirements of the City's local planning policy LPP2.3 Port Buffer Area Design Guidelines (LPP2.3) for Area 2 are applicable. It would be appreciated if these requirements could be included as conditions of approval.*

Department of Water and Environmental Regulations (DWER)
The application was referred to DWER as the Site was classified as '*possible contaminated – investigation required'*. On 31 July 2018 DWER provided the following advice to the City:

> *Due to the historical use of the site for a potentially contaminating activity, the development of the site may intercept potentially contaminated soils. If potentially contaminated soils are identified, the site should be reported in accordance with section 11 of the Contaminated Sites Act 2003, and works appropriately managed to ensure that potential risks to human health and the environment are addressed. DWER recommends that the south west basement corner is constructed such that natural ventilation is optimized.*

Department of Transport (PTA)
Given the site is located directly adjacent to the Fremantle bus terminal, the application was referred to PTA for comment. On 16 August 2018 PTA advised they had no objection to the proposal.

Design Advisory Committee (DAC)
The proposal was presented to the City's Design Advisory Committee (DAC) on two occasions, being:

- 11 June 2018 – Pre lodgement;
- 30 July 2018 – Original Plans

During the first meeting, DAC generally considered the concept a positive architectural response and approach, subject to the following being reviewed:

- *The ground floor full glass panelling needs to be reviewed as this is considered a missed opportunity to provide a more vital and architecturally strong street interface. Shop frontages need a design strategy approach developed to avoid the potential blandness of a fully glazed and flat street edge.*
- *The introduction of a more consistent pattern of robust external materials to the upper portions of the building, to lessen the glass box appearance and to achieve a more robust character.*
- *The more extensive use of brick is encouraged as is the introduction of Cor-ten or other similar material to assist in producing a more robust appearance for the building.*
- *The introduction of a Cantonment Street pedestrian linkage to align with the new Coles entrance should be explored.*

The applicant revised the plans to address majority of DAC recommendations and at its meeting on 30 July 2018, DAC made the following final recommendation:

> *The Design Advisory Committee, having considered the proposal for the refurbishment of the existing shopping centre and a Hotel / Office addition at 28 Cantonment Street, Fremantle, supports the proposal subject to:*
>
> *1. The submission of final details of materials, finishes and colours, and as noted above, for the external facades of the development.*
> *2. The submission of a Crime Prevention Through Environmental Design (CPTED) Report, prepared by a suitably qualified consultant. Any recommendations of the report should be implemented into the design of the development.*

To address DAC's recommendation 2 above, the proponent submitted a CPTED report on 22 August 2018 which concluded the following:

> *It is JMG's conclusion that the documentation reviewed as part of this report satisfies the design requirements for CPTED principles, subject to the following criteria:*
>
> *1. At completion of the all works, a final inspection of the premises is undertaken in order to confirm the sightlines and security devices have been completed to comply with the approved plans and specifications.*
>
> *It is JMG's opinion that the security elements discussed with the architects 17 August 2018 will meet the objectives of CPTED with respect to the extent of security cameras and retention of clear sight lines.*
>
> *Whilst it is acknowledged that these strategies reduce the risk of crime rather than prevent unlawful activity, this precinct will offer the community a safe place to recreate and work.*

Whilst the CPTED report generally supports the development, several recommendations were included such as increased CCTV surveillance and lighting designs, and as such a condition is recommended to be imposed to ensure all of the recommendations outlined in the provided CPTED report are incorporated into the development.

Planning Assessment:

1. Local Planning Scheme No. 4 (LPS4) Requirements

1.1) Demolition

Under the provisions of Clause 4.14.1 of LPS4, Council will only grant Planning Approval for the demolition of a building or structure where it is satisfied that the building or structure:

"(a) Has limited or no cultural heritage significance, and
(b) Does not make a significant contribution to the broader cultural heritage significance and character of the locality in which it is located."

An assessment of the proposal against this provision is discussed in the 'Officers Comment' section below.

1.2) Land use

Clause 3.2.1 of LPS4 provides objectives for each zone, with Clause 3.2.1(b) stating that the objectives of the 'City Centre' zone are:

"Development within the city centre zone shall—

(i) provide for a full range of shopping, office, administrative, social, recreation, entertainment and community services, consistent with the region-serving role of the centre and including residential uses, and
(ii) comply with the objectives of local planning area 1 of schedule 8,
(iii) conserve places of heritage significance the subject of or affected by development."

As will be discussed throughout the remaining 'Officers Comment' section, the proposed development is considered to be consistent with the objectives of the City Centre zone, specifically in relation to (i) above as the development provides for a mix of desirable land uses including Retail, Office and Hotel. In relation to (ii) above, it is noted that there are no 'objectives' specified for local planning area 1 of Schedule 8 of LPS4. With regards to (iii) above, the proposal is not considered to adversely impact on the identified cultural significance of either Elders Wool store or Fremantle Railway Station.

1.3) Sub Area 1.3.2 – Specific Design Requirements

The application has been assessed against the provisions of sub area 1.3.2 of Schedule 8, and except for g) and h), the development is considered to be compliant with these provisions.

	Provision	**Assessment**
a)	Notwithstanding the provisions of Table 1–Zoning–	
	(i) Residential uses will not be permitted in new buildings at ground level adjacent to Queen Street, Adelaide Street and Kings Square;	No Residential land uses are proposed at ground level adjacent to Queen Street.
	(ii) Land uses at ground level adjacent to Queen Street, Adelaide Street and Kings Square shall contribute to generating interest and activity within the adjacent public realm; and	Queen Street ground floor uses consists of Hotel seating and foyer/ reception, Office lobby and two retail tenancies. It is considered that the proposed mix of uses will generate interest and activity with the Queen Street public realm during and after business hours.
	(iii) A minimum of 15% of the net lettable area within all new development on sites with a development site area greater than 3000sqm shall be provided for Office use.	An additional 6,840m² floor area is proposed as part of this application. 1,024m^2 of Office floor area is provided which equates to 15%

		of the total net lettable area (nla) of the new development.
b)	New development fronting Queen Street, Adelaide Street and Kings Square shall incorporate design measures to– Provide continuous weather protection at ground level for pedestrians along these streets and public spaces; and Generate interest and activity within the adjacent public realm.	 Continuous weather protection is provided in the form of a 'Colonnade' along Queen Street. The proposed full height glazing to the ground floor facing Queen Street will promote interaction between Shop, Office and Hotel users and the public realm.
c)	New development at ground level adjacent to other streets and public areas not identified in a) and b) above may incorporate a mix of land uses and shall incorporate design measures to contribute to an interesting and diverse public realm.	Overall, the proposed mix of uses located within the ground floor perimeter of the building is well considered, and these uses will create activity and interest to the public realm.
d)	Clause 1.2 'Matters to be considered in applying general and specific height controls' does not apply to Sub Area 1.3.2.	Not applicable

The subject site is located within Local Planning Area 1 – City Centre (sub area 1.3.2) of Schedule 8 of the City's LPS4. Within sub area 1.3.2, the subject site is nominated as 'Site 1'. There are 18 sites within sub area 1.3.2, all of which have unique development standards, specifically in relation to building height. Sub area 1.3.2 effectively provides for (1) 'permitted building heights'; (2) 'discretionary building heights' (which have to satisfy two specific criteria); and (3) 'maximum building heights' (which have to meet a number of specific criteria and require discretionary judgement to be exercised by the decision-making authority).

The following building heights are prescribed in LPS4 for Site 1:

Provision				
e)	Permitted Building Height (Metres)	Building Height (Metres) which may be permitted subject to the development satisfying both of the following criteria– (i) The portion of building exceeding the Permitted Building Height being sufficiently set back from the street facade so as to not be visible from the street(s) and/or public open space(s) adjoining the site; and (ii) The design of the portion of building exceeding the Permitted Building Height being integrated with the design of the overall building.	Maximum Building Height (Metres) which may be permitted in accordance with clause (f)	Minimum Façade Height (Metres) that fronts a public street(s) and/ or public open space(s)
Permitted	21m	24.5m*	38.9m**	10m
Proposed	-	23.5m	**-**	22.3m

<table>
<tr><td>i)</td><td>The portion of building exceeding the Permitted Building Height being sufficiently set back from the street facade so as to not be visible from the street(s) and/or public open space(s) adjoining the site;</td><td>Portion of building exceeding 21m to 24.5m is setback so as not to be visible from respective streets in accordance with LPS4 definitions.</td></tr>
<tr><td>ii)</td><td>The design of the portion of building exceeding the Permitted Building Height being integrated with the design of the overall building.</td><td>The portion of the building proposed above 21m in height is integrated into the overall design of the Hotel/Office building.</td></tr>
<tr><td>g)</td><td>In the front elevation of all new development the ground floor level must be no greater than 600mm above the level of the adjacent footpath and the first floor level must be at least 4.5 metres above the level of the footpath adjacent to the site.</td><td>Discretion - Elder Place and Queen Street Corner up to 1.6m above adjoining footpath levels</td></tr>
<tr><td>h)</td><td>Building Setbacks
<table>
<tr><th>Frontage</th><th></th><th>Required</th><th>Proposed</th><th>Variation</th></tr>
<tr><td rowspan="2">Queen Street</td><td>Minimum street setbacks</td><td>3.65m</td><td>Nil</td><td>3.65m</td></tr>
<tr><td>Maximum street setback up to building heights 10m</td><td>5.65m</td><td>Up to 3.65m</td><td>Nil</td></tr>
<tr><td rowspan="2">All other streets</td><td>Minimum street setbacks</td><td>Nil</td><td>Nil</td><td>Nil</td></tr>
<tr><td>Maximum street setback up to building heights 10m</td><td>2</td><td>Nil</td><td>Nil</td></tr>
</table></td><td>Discretion for setback to Queen Street due to retention and modification of the existing facade along Queen Street and the proposed modification to create a new pedestrian colonnade.</td></tr>
<tr><td>i)</td><td>The maximum aggregate width of spaces between buildings at ground floor level at street frontage may be no more than 8 metres at any one location.</td><td>Complies</td></tr>
<tr><td>l)</td><td>The provisions of clauses 4.7.1 to 4.7.4 (Car Parking and Cash in Lieu) inclusive do not apply for Office land uses where located above ground floor level.</td><td>Noted</td></tr>
<tr><td>m)</td><td>The provisions of clause 4.7.3 (a) (i) and (ii) (Car parking relaxation subject to availability of parking in the locality and access to public transport) of the Scheme do not apply in Sub Area 1.3.2.</td><td>Noted</td></tr>
<tr><td>n)</td><td>The provisions of clauses 4.7.1 to 4.7.4 (Car Parking and Cash in Lieu) inclusive do not apply for visitor parking for residential land uses.</td><td>Noted</td></tr>
<tr><td>o)</td><td>The Council may impose a condition on planning approval for any new development in Sub Area 1.3.2 requiring a memorial to be placed on the property title advising of the potential for future development on adjoining land to be constructed in accordance with the building height and setback requirements</td><td>As the subject site is a street block, with the exception of six small strata tenancies on the corner of Elder Place and Queen Street, and the</td></tr>
</table>

	applicable to Sub Area 1.3.2, which include zero minimum side and rear setbacks.	proposed development is to build out the entire site, this provision is not considered relevant to the assessment of this application

1.4) Car Parking

	Provisions	**Required Bays** (Area A)	**Proposed Bays**	**Variation**
Hotel	1:5m^2 of lounge /garden area 1: 1 bedroom	40m^2 lounge area - 8 bays 141 rooms plus 8 additional bedrooms - 149 bays ***Total = 157***	46	111
Office	Nil – cl(l) of sub area1.3.2	-	15	-
Shop (Shopping centre plus retail tenancies)	1:18m^2 nla 5000 – 10,000m^2	6,388m^2 nla area ***Total = 355***	Nil	355
Public carpark	-	-	307	-
Total		512 bays	368 bays	**144 bays**

1.5) Delivery Bay

	Requirement	**Proposal**	**Discretion**
Hotel	1	1	Nil
Office	1 per 500m² = 3	1	2
Shop (Shopping centre)	1 per 100m² gla = 7	7	Nil
Total bays	11	9	**2**

1.6) Bicycle parking

	Requirement	**Proposal**	**Discretion**
Hotel	Class 1 – 1 per 100m² lounge area = 1 Class 3 - 1 per 100m² lounge area = 1	Nil	1 1
Office	-	-	-
Shop (Shopping centre)	Class 1 – per 300m² gla = 21 Class 3 - per 500m² gla = 13	25 15	Nil
Total	Class 1 – 22 Class 3 - 14	Class 1 - 25 Class 3 - 15	Nil

1.7) End of trip facilities

Provision	**Requirement**	**Proposed**	**Discretion**
Showers	2 Male and 2 Female or 4 Unisex	2 Male and 2 Female	Nil

Lockers	22	22	Nil

2 Local planning policies

- Local Planning Policy 1.3 – Public Notification of Planning proposals
- Local Planning Policy 1.6 – Heritage assessments
- Local Planning Policy 1.9 – Design Advisory Committee and Principles of Design
- Local Planning policy 1.10 – Construction Sites policy
- Local Planning Policy 2.3 – Fremantle Port Buffer Area Development Guidelines
- Local Planning Policy 2.7 – Archaeological investigation as a condition of approval policy
- Local Planning Policy 2.12 – Planning Applications Impacting on Verge Infrastructure and Verge Trees
- Local Planning Policy 2.13 – Sustainable Buildings Design Requirements
- Local Planning Policy 2.19 – Contribution for Public Art and/or Heritage Works

Appropriate conditions and advice notes are included to ensure compliance with these relevant policy provisions.

3.1 - Local Planning Policy 3.1.5 – Precinct 5 (LPP3.1.5)

Primary and Secondary Streets

The application has been assessed against cl 5.1.1 – 5.2.5 of LPP3.1.5 and the following comments are provided:

- The ground level of the proposed building incorporates appropriate uses which have the potential to provide activation during hours beyond traditional business hours.
- Multiple new ground floor tenancies are provided to Queen Street and the two corners (Elder Place and Cantonment Street),
- Due to the retention of the existing delivery services areas, the introduction of the basement carpark access from Elder Place and the existing public carpark egress off Goldsborough Street and Cantonment Street, the ability to significantly improve the pedestrians experience at these interface locations is somewhat limited. It is noted that the proposal includes multiple green walls, soft and hard landscaping treatments, and potential public artwork that will help improve some visual aesthetics of building from these respective streets,
- The middle portion of Cantonment Street currently consists of dual frontage tenancies, fronting Cantonment Street and the existing internal north south link of the shopping centre. This is also to remain unchanged except for the applicant response to DAC comments, with the introduction of two alfresco areas to encourage activation of use of Cantonment Street as a secondary pedestrian entrance to the Shopping complex.
- Overall, the proposal includes an active interface for the new Cantonment Street / Queen Street and Elder Place / Queen Street corners, and the middle section of the ground floor Queen Street interface includes what will be high pedestrian traffic areas due to the new Office and Hotel main entrances.
- The proposal includes an internal east west pedestrian linkage and retention and modification to the existing north south internal pedestrian linkage. These access paths are all weather protected, are equipped with universal access and provide for safe protected pedestrian movements over the site.

Major Off Street pedestrian routes

The application has been assessed against cl5.3.1 - 5.3.8. The following comments are provided:

- One east-west pedestrian linkage is proposed. LPP3.1.5 requires two east west pedestrian links across the site. Given the application only includes the substantial redevelopment of the southern quarter of site and the provided pedestrian link is within this portion of the development, an

additional pedestrian link could easily be accounted for in the future if/when redevelopment works are proposed for the remaining portion of site.
- Universal access is provided for the link from both corner access points.
- The DAC raised some concerns to designing out crime measures and certain components of the ground floor of the entire development, improving pedestrian sightlines and movements to and from Elder Place and the existing Goldsborough Street public carpark area. Accordingly, a condition of approval is to be imposed requiring the recommendations of the CPTED report to be implemented to the City's satisfaction.

Built Form and Legibility

The application has been assessed against cl 6.1 - 6.8 and the following comments are provided:
- The proposed brick and glass building is considered to provide a consistent edge of development which is continuous and generally consistent with the existing massing and scale of the established pattern to the north of site (Elders Site).
- The upper levels of the proposed development are occupied by Office and Hotel uses which provide passive surveillance over the adjoining Queen Street and corner areas of Cantonment Street and Elder Place public spaces.
- The provided east-west link is integrated with existing pedestrian patterns being Elder Place to Cantonment Street. The proposed building is consistent in form and incorporates a horizontal emphasis which complements the northern adjacent Elders Woolstores in form, treatment of roofline, material and general architectural detailing.

Officer Comments

1.1) Demolition and Archaeological Investigation

The construction of the 'Woolstores Shopping Centre' and carpark in 1986 involved the complete demolition of the Elder Shenton Wool Stores (1917).

Some elements of the demolished Elder Shenton Wool Stores (1917) were retained and relocated in the 1986 'Woolstores Shopping Centre' to interpret the cultural heritage significance of the earlier building and its use. These include the timber columns and beams now inserted in the mall, and the wool presses incorporated in the steel framed tower / entrance marker located externally between the shopping centre and the carpark. While these elements are only partly successful in contributing to the shopping centre experience by telling the story of the earlier building and its history, they still retain the potential to communicate this information if they were retained, conserved and presented in a more considered manner and were to become an integral part of the design of the proposed new development.

The advice of the City's Heritage Coordinator is that demolition of the existing buildings can be supported *as the proposed partial demolition of the 'Woolstores Shopping Centre' would only have an impact on buildings that are of little or no significance.*

The proposed partial demolition of the existing building is supportable as the Heritage Assessment findings satisfy Clause 4.14.1 (a) and (b).

In addition to the above, whilst acknowledging the site is not individually heritage listed or within a prescribed heritage area which are the prerequisite criteria under Schedule A cl 13B for Archaeological Investigation, the City's assessment also considered the potential for archaeological investigation given the extensive nature of the proposed development. The assessment stated that:

> The proposed development is not within a Heritage Area nor is it included on the Heritage List. Furthermore the site to which the development application relates also contains the 'Woolstores Shopping Centre' and car park. It is highly likely that the intensive groundworks undertaken as part

of the construction of these large buildings will have caused the complete removal of all archaeological evidence of the earlier Woolstores building.

It is therefore considered reasonable to assume that the place will reveal no evidence of contents, materials or objects that have aesthetic, historic, scientific, or social significance for the present community and future generations. It is therefore recommended that the condition referred to in clause 13B (1) of the Local Planning Scheme No 4, requiring an archaeological investigation of the place to be undertaken, should not be imposed.

With regards to the partial demolition of the building and its impact on the broader cultural heritage significance of the locality, this also is considered supportable as the portion of building to be removed has a neutral contribution to the greater area. Overall the demolition is supported against the criteria of 4.14 of LPS4.

1.2) Land use

Use	Permissibility
Hotel	A
Shop	P
Office	P

The proposed land uses are considered to be consistent with the objectives of the City Centre zone and appropriate within the proposed development for the following reasons:

- In the vicinity of the proposed development site, there is a mix of land uses including Tavern, Shops, Restaurants, Multiple dwellings, Convenience Stores, Consulting Rooms, Public Car parking etc. Overall, the mix of the proposed Office, Retail, and Hotel uses is considered to be complementary to the land uses already existing in the City Centre.
- There are no objectives provided in Schedule 8 for local planning area 1.
- The development is not considered to have a detrimental impact on the cultural significance of either the Elders Woolstores or the Fremantle Railway Station buildings.

1.3) Sub Area 1.3.2 – Specific Design Requirements

Building Height

The proposal complies with the requirements of LPS4 in terms of height, as it has a maximum height of 23.5m with any portion of the building over 21m and up to 24.5m being both sufficiently setback from relevant adjoining streets so as to not be visible from the street and integrated with the design of the overall building.

Clause 4.8.1.3 of the LPS4 states as follows;

> *Excluding development within the Residential zone, Council may permit a minor projection above the highest part of a development, subject to the development satisfying both of the following criteria;*
>
> *(a) The minor projection being no more than 4 metres above the highest part of the main building structure;*
> *(b) The cumulative area of the minor projection being no more than 10 per cent of the total roof area of the building.*

The proposed plant room represents 5% or approximately 800m^2 of the total roof area of the proposal and projects 2.7m above the highest part of the development.

Setbacks

The proposal complies with all setback provisions outlined in sub section (h) of Schedule 8 LPS4 with the exception of the ground level setback to Queen Street. The proposal includes the partial retention of the existing ground level façade (brick piers) and modification into a pedestrian colonnade. Although this portion of the façade of the building exists currently having regard for the proposed modifications to the structure, officers consider this to be a variation and the following assessment is made.

The clear intent to provide the 3.65m setback is to facilitate future desired road widening of Queen Street. Whilst not provided in this current design, given the structure to be retained on the ground floor in the 3.65m setback area consists of only the verandah (brick pillar and water impermeable roof covering), its removal could easily occur in the future if road widening is sought by Council.

With regards to the proposed building's basement level and above ground floor levels, the plans appear to have the development setback the required 3.65m distance from the Queen Street boundary, however a condition is to be imposed ensuring the entire development (except for the partially retained brick wall and glass awning cover on the ground floor) are setback the required 3.65m to protect the opportunity for potential future road widening of Queen Street.

The proponent has provided an additional image illustrating what the building would look like (before and after wall removal image) which is included in attachment 1.

Having regard to the above the reduced setback is supported, in this instance, as its retention doesn't prejudice the ability for the City to acquire the land for future road widening and to secure the removal of this element of the building without affecting the remainder of the building (both existing and new build elements as proposed in this application).

Other Sub Area 1.3.2 Matters

The development also requires discretion for the proposed finished floor level for the Elder Place and Queen Street corner shop frontage as the floor levels of this tenancy exceeds the maximum height of 600mm requirement above the adjacent footpath level.

The natural sloping topography from Cantonment Street and Elder Place and the size of the development site results in the finished floor level of the tenancy on Elder Place being approximately 1.6m above the respective footpath level. Whilst not strictly complying with this provision, considering that alternative universal access and direct stair access from Elder Place is provided and that the development and the design has incorporated glazed frontages, a high level of accessibility and activation would be available. Therefore given that a high level of interaction with street users would be maintained. Therefore, this is a matter which is considered supportable under cl4.8.2 of Scheme.

1.5) Car parking

The development proposes an onsite car parking bay shortfall of 144 bays and as such discretion is sought under clause 4.7.3.1 of LPS4 which provides the ability to waive car parking requirements subject to criteria. In relation to this proposal the most relevant provision of cl 4.7.3 is as follows:

> *(iii) any reduction in car parking demand due to the sharing of car spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces,*

It is considered that the proposed on-site car parking shortfall could be supported against Clause 4.7.3 (viii) above, as the likelihood that the proposed uses are capable of sharing the proposed 368 commercial onsite bays is high. Furthermore, the 144 car bay shortfall mainly results from the hotel parking deficiency and given the majority of future clientele is more than likely to be interstate or

international tourists or business visitors who may well not arrive by private car, the actual need for parking for this use is considered to be substantially less than that required by the Scheme. Furthermore, it is considered that the peak operating times for the Hotel, Office and the Shops onsite will have limited conflict with the peak operating times for surrounding Office, and Shop (Coles) uses reducing the competition between uses for the provided onsite car bays.

Having regard to the above, the proposed shortfall is not considered to result in an adverse impact upon the amenity of the immediate locality and can be supported.

1.6) Delivery Bay

The retained delivery service areas and new basement delivery facility for the Office and Hotel addition are considered to provide adequate servicing needs for the entire development. A range of vehicles sizes (vans, light trucks and semi-trailer vehicles) that typically deliver to such complexes can continue to service the site adequately.

1.7) Bicycle parking and
1.8) End of Trip facilities

Appropriate conditions are to be imposed ensuring compliance with Scheme provisions for both of these requirements.

3) Local Planning Policies

- LPP1.10 - Construction Sites
- LPP2.3 – Fremantle Port Authority
- LPP2.12 - Planning Applications Impacting On Verge Infrastructure And Verge Trees
- LPP2.13 - Sustainable Buildings Design Requirements
- LPP2.18 – New Residential Developments in the City Centre Zone - Noise from an Existing Source
- LPP 2.19: Contributions for Public Art and/or Heritage Works

Appropriate conditions and advice notes are to be imposed ensuring compliance with Scheme provisions for both of these requirements.

Matters to be considered

Through the assessment above, the following matters have been given due regard in reviewing this application in accordance with clause 67 of the Regulations.

(a) The aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;

See 'Planning Assessment' and 'Officers Comment' sections above.

(b) Any approved State planning policy

See 'Planning Assessment' and 'Officers Comment' sections above.

(g) any local planning policy for the Scheme area

See 'Planning Assessment' and 'Officers Comment' sections above.

(l) the effect of the proposal on the cultural heritage significance of the area in which the development is located

The site is not heritage listed nor is it within a prescribed heritage area. The State Heritage Office considered the proposal in regard to the cultural heritage significance of nearby state registered places (Elders Woolstores and Fremantle Train Station) and raised no objection.

(m) the compatibility of the development with its setting including 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

See 'Planning Assessment' and 'Officers Comment' sections above.

(n) the amenity of the locality including the following –
(i) environmental impacts of the development
(ii) the character of the locality
(iii) social impact of the development

See 'Planning Assessment' and 'Officers Comment' sections above.

(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

(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 probably effect on traffic flow and safety

The application included a traffic impact assessment which has been reviewed by the City and the development is considered acceptable in terms of proposed vehicle access points, manoeuvrability, onsite parking and the likely traffic movements to and from site.

(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

See 'Officers Comment' section above relating to car parking matters however it is noted that:
- The site is within close proximity to public transport stations (taxi, bus and train).
- The submitted waste management plan has been reviewed by the City and is considered acceptable subject to conditions.
- The site has multiple universal accessibility points for easy safe pedestrian movements over the site and adjoining public spaces.

(x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals

See 'Planning Assessment' and 'Officers Comment' sections above.

(y) any submissions received on the application

See 'Planning Assessment' and 'Officers Comment' sections above.

CITY OF FREMANTLE STRATEGIC IMPLICATIONS

The proposal is considered to comply with the following strategic plans:

Strategic Community Plan 2015-2025

- Increase the number of people working and living in Fremantle
- Increase the number of visitors to Fremantle
- Character culture and heritage focus area – addresses outcome 'Fremantle celebrates its history and heritage through active renewal'

Fremantle's Economic Development Strategy 2015-2020

- Place activation to increase commercial and social vibrancy
- Attraction of business and investment

Council Recommendation:

The application was referred to the 5 September 2018 Planning Committee meeting, where the officer's recommendation to conditionally approve the development was supported with no amendments.

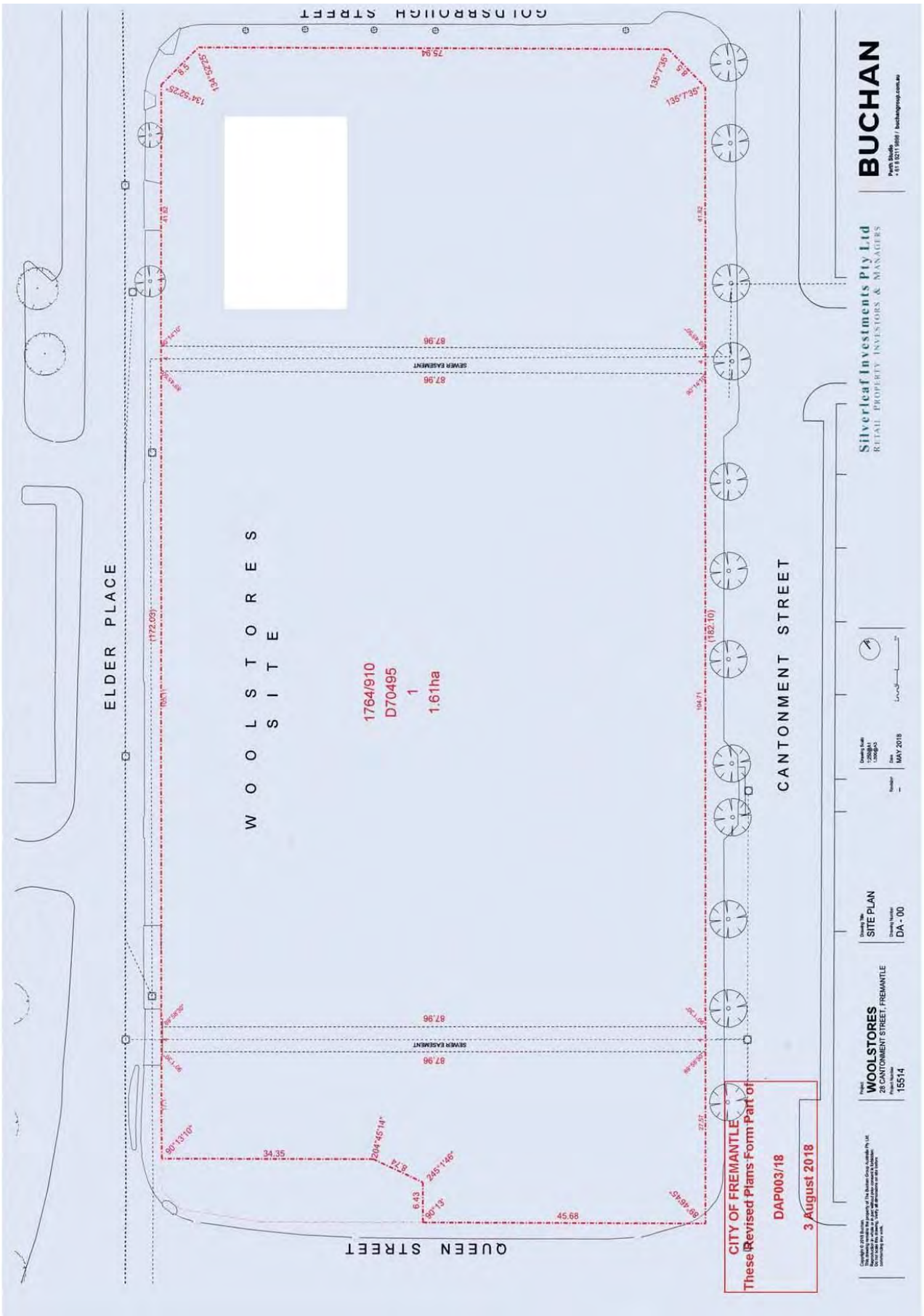
Conclusion:

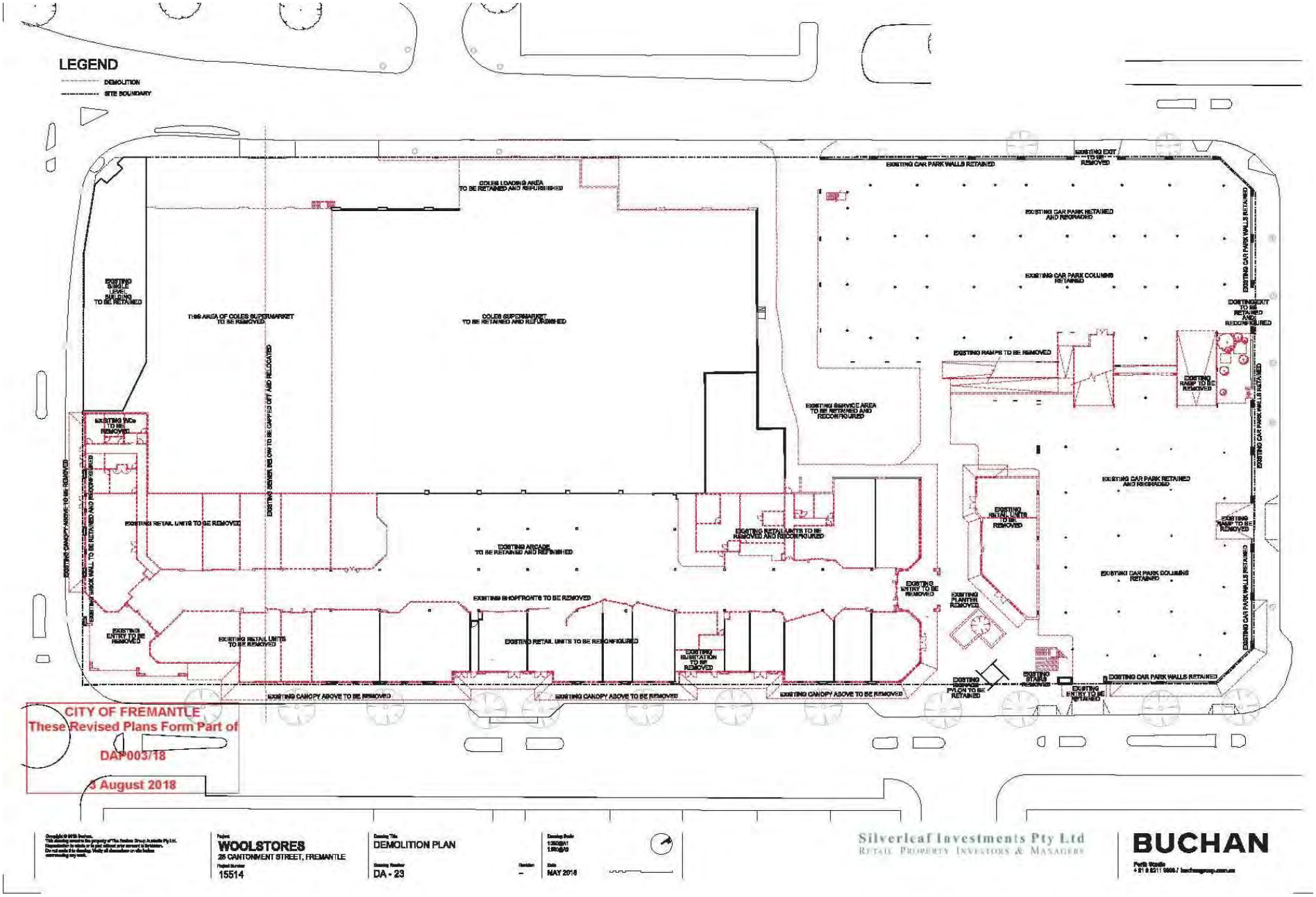
The assessment of the revised application is summarised as follows:

- The application includes the development of a six storey Mixed use building containing 1,024m^2 of Office space and 141 room Hotel and refurbishment of existing shopping centre and public carpark;
- The proposal seeks the exercise of discretion relating to land use, onsite car parking and some provisions of Schedule 8 of LPS4. In respect to these elements, the proposal is considered to satisfy the relevant merit based criteria;
- The City's DAC have reviewed the proposed design and advise that they support the design subject to two conditions in relation to the external materials and crime prevention measures. In summary the DAC advise that the improvements to the external facades result in a more coherent appearance of the Hotel/Office addition which contributes to the appropriateness of the scale of the addition to its surroundings.
- In addition to the above whilst officers clearly acknowledge that an application for complete redevelopment of the site would have been Council's preferable outcome, the current revised proposal is of satisfactory design and would secure much-needed investment and revitalisation of this important site, and delivers additional hotel accommodation and office space in central Fremantle which is a welcome addition to the city's tourism and business facilities.

The application is recommended for approval subject to relevant conditions.

ATTACHMENT 1: Development plans




LEGEND
DEMOLITION
SITE BOUNDARY
COLES LOADING AREA TO BE RETAINED AND REFURBISHED
EXISTING CAR PARK WALLS RETAINED
EXISTING EXIT TO BE REMOVED
EXISTING CAR PARK RETAINED AND REGRADED
EXISTING CAR PARK COLUMNS RETAINED
EXISTING CAR PARK WALLS RETAINED
EXISTING SINGLE LEVEL BUILDING TO BE RETAINED
THIS AREA OF COLES SUPERMARKET TO BE REMOVED
COLES SUPERMARKET TO BE RETAINED AND REFURBISHED
EXISTING EXIT TO BE RETAINED AND RECONFIGURED
EXISTING RAMPS TO BE REMOVED
EXISTING RAMP TO BE REMOVED
EXISTING SERVICE AREA TO BE RETAINED AND RECONFIGURED
EXISTING VOID TO BE REMOVED
EXISTING CANOPY ABOVE TO BE REMOVED
EXISTING SEWER BELOW TO BE CAPPED OFF AND RELOCATED
EXISTING RETAIL UNITS TO BE REMOVED
EXISTING RETAIL UNITS TO BE REMOVED AND RECONFIGURED
EXISTING RETAIL UNITS TO BE REMOVED
EXISTING ARCADE TO BE RETAINED AND REFINISHED
EXISTING SHOPFRONTS TO BE REMOVED
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EXISTING RETAIL UNITS TO BE RECONFIGURED
EXISTING SUBSTATION TO BE REMOVED
EXISTING SIGNAGE PYLON TO BE RETAINED
EXISTING STAIRS REMOVED
EXISTING ENTRY TO BE RETAINED
EXISTING CANOPY ABOVE TO BE REMOVED
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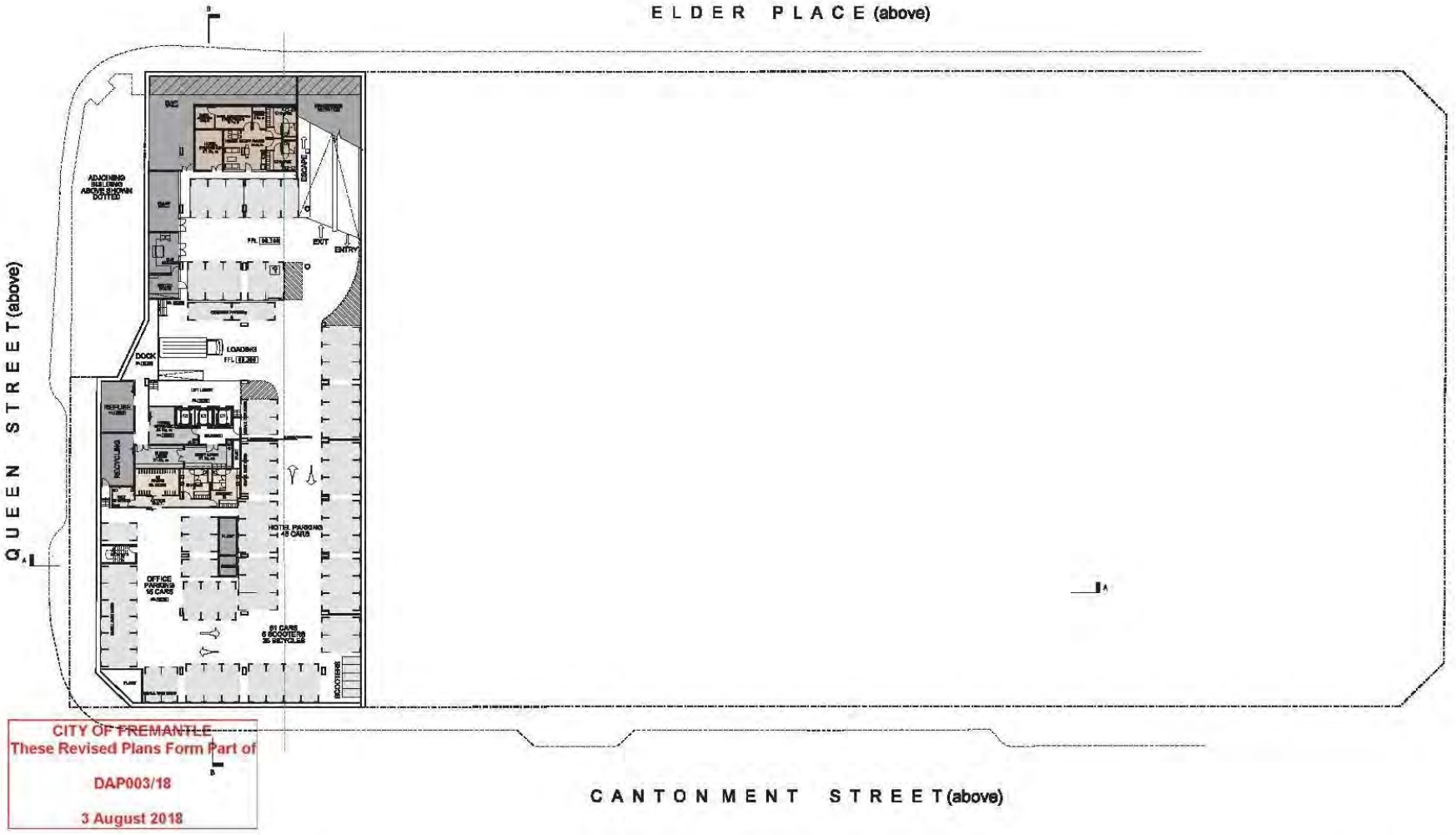
CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018
WOOLSTORES
25 CANTONMENT STREET, FREMANTLE
15514
DEMOLITION PLAN
DA - 23
MAY 2018
Silverleaf Investments Pty Ltd
RETAIL PROPERTY INVESTORS & MANAGERS
BUCHAN



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DAP003/18
3 August 2018

Project
WOOLSTORES
29 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
BASEMENT
Drawing Number
DA-01

Revision
A

Date
MAY 2018

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3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
GROUND FLOOR PLAN
Drawing Number
DA - 02
Revision
–

Drawing Scale
1:250@A1
1:500@A3
Date
MAY 2018

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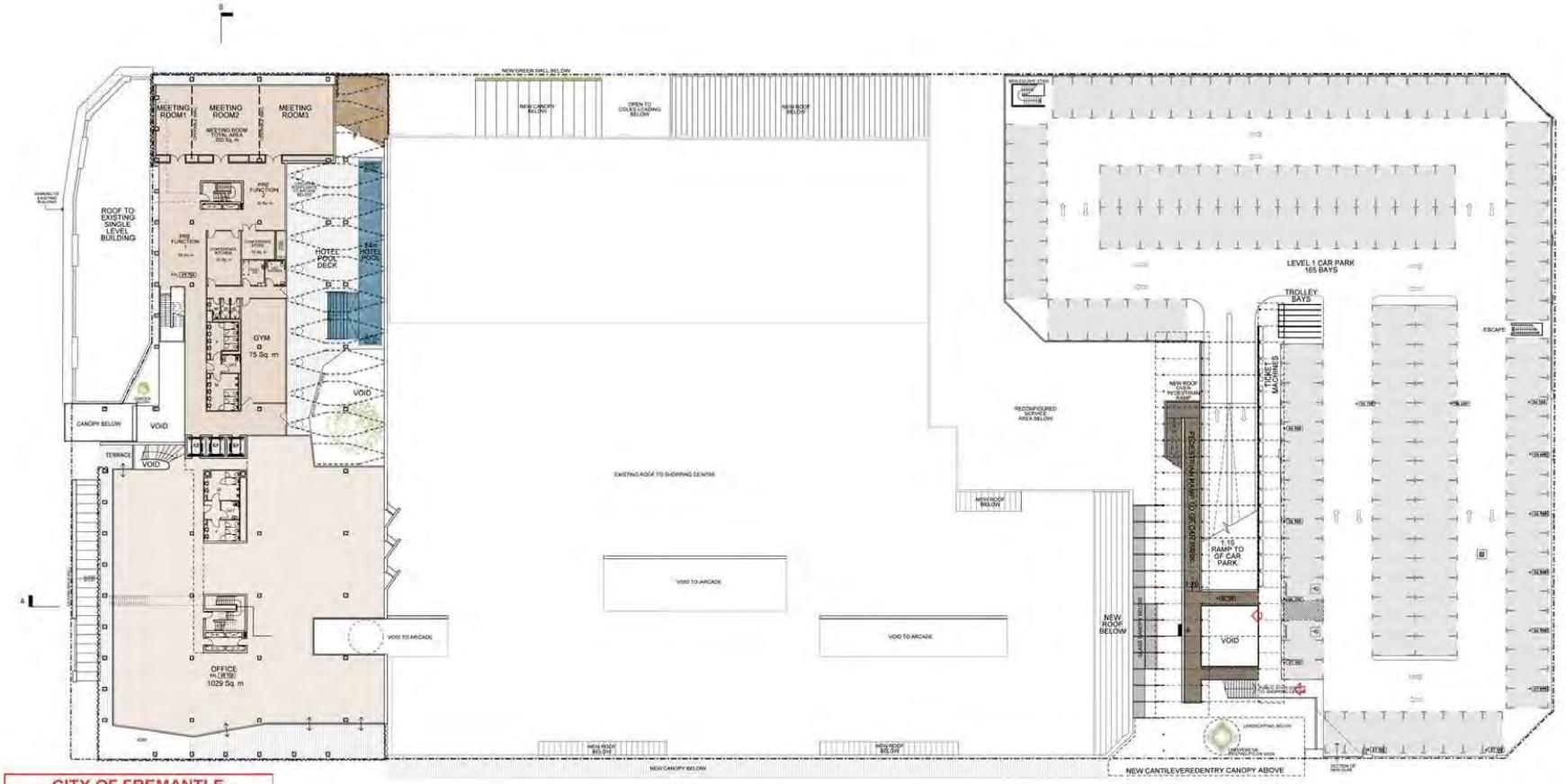

CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
LEVEL 01
Drawing Number
DA - 03

Revision
–

Drawing Scale
1:250@A1
1:500@A3
Date
MAY 2018

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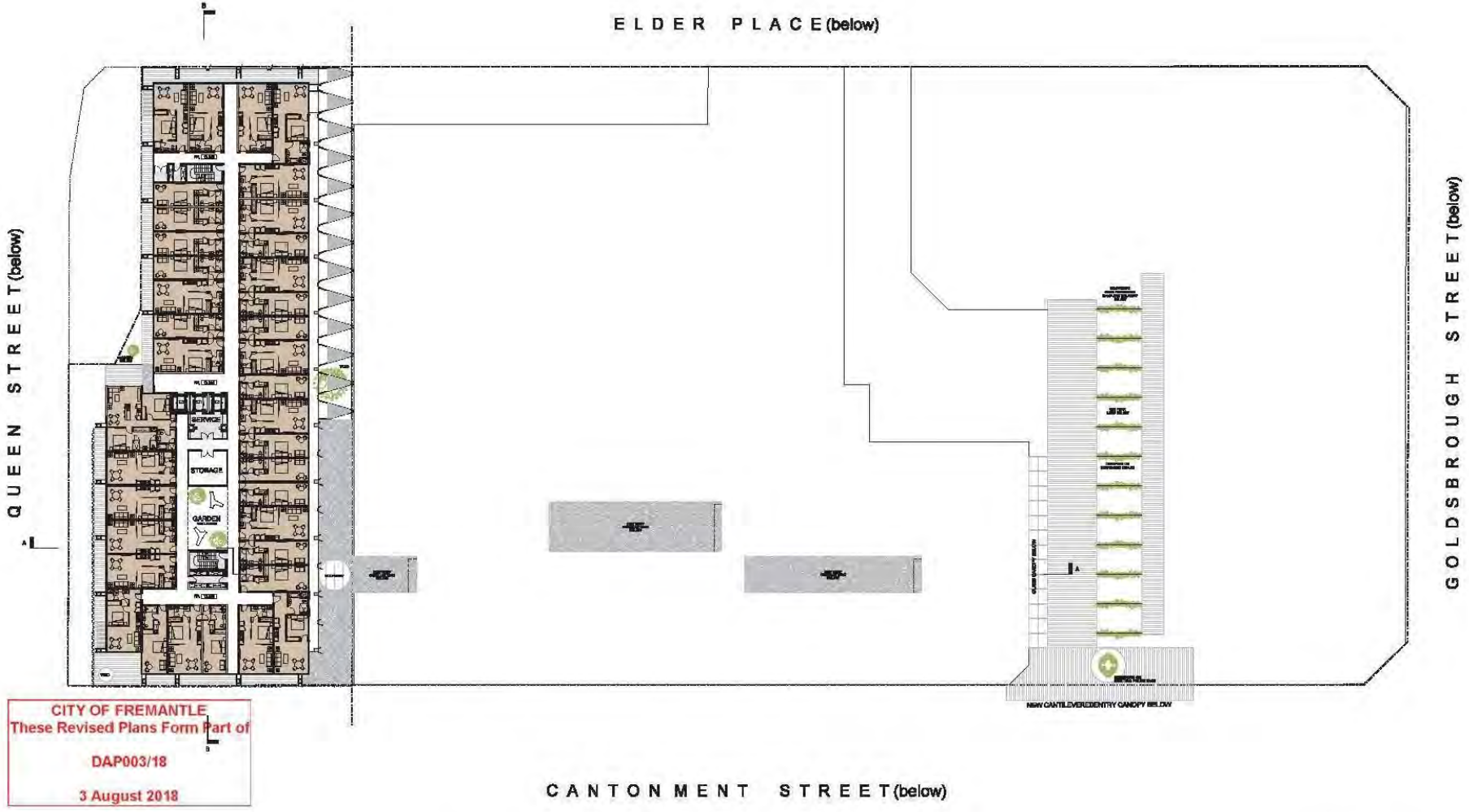

CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
LEVEL 02
Drawing Number
DA - 04

Revision
–
Drawing Scale
1:200@A1
1:400@A3
Date
MAY 2018

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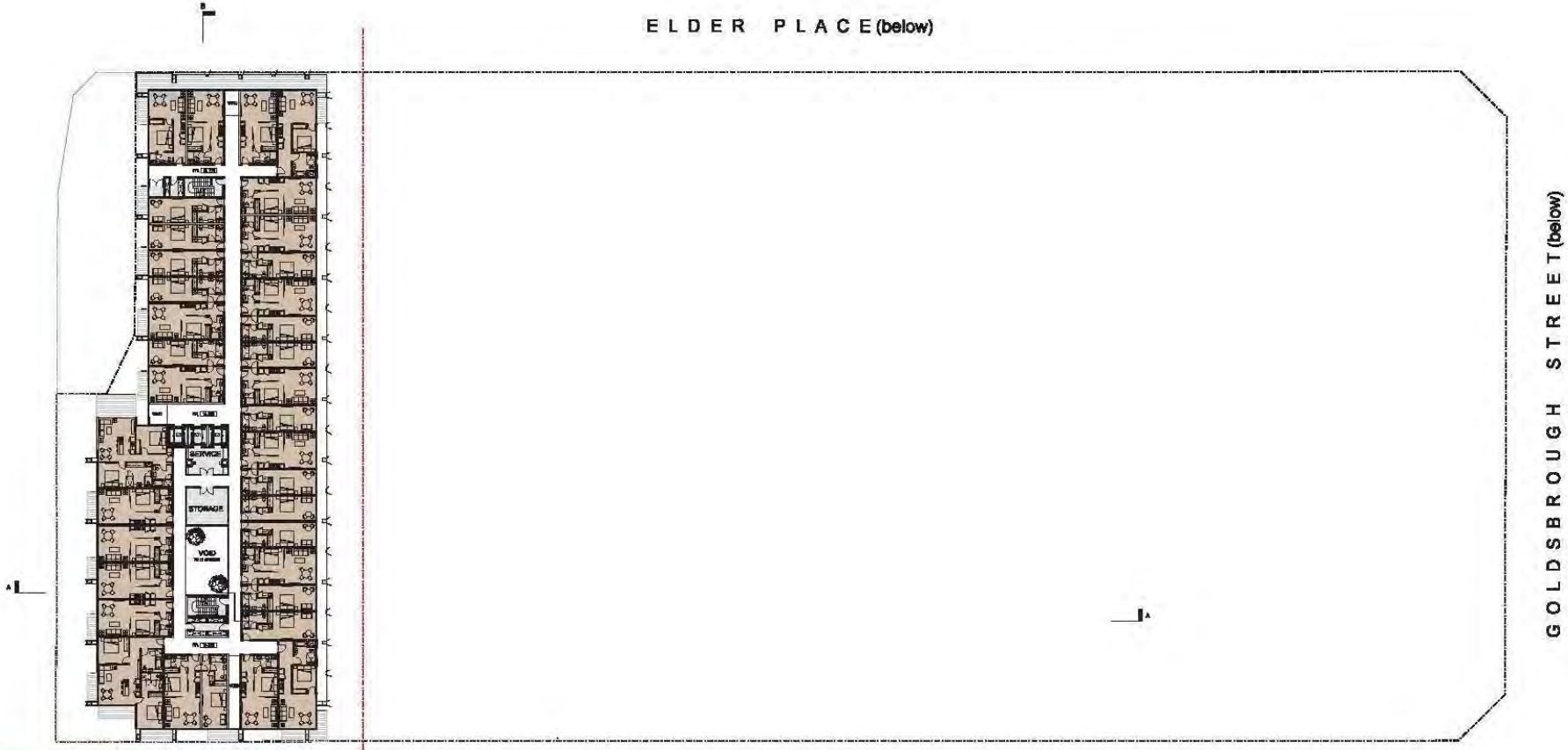


CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018

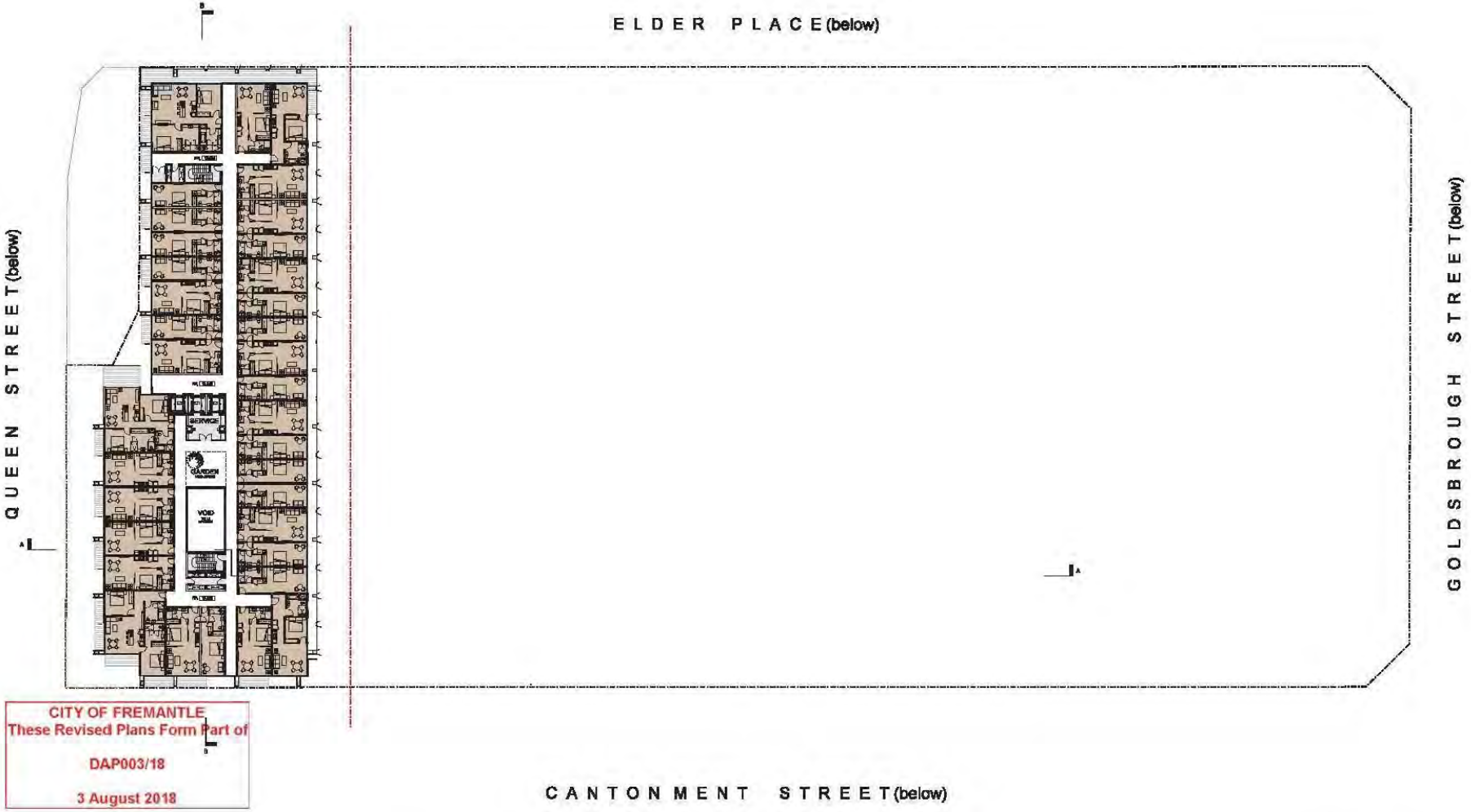
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
15514

LEVEL 03
DA - 05

–
MAY 2018

Silvercaf Investments Pty Ltd
Retail Property Investors & Managers

BUCHAN



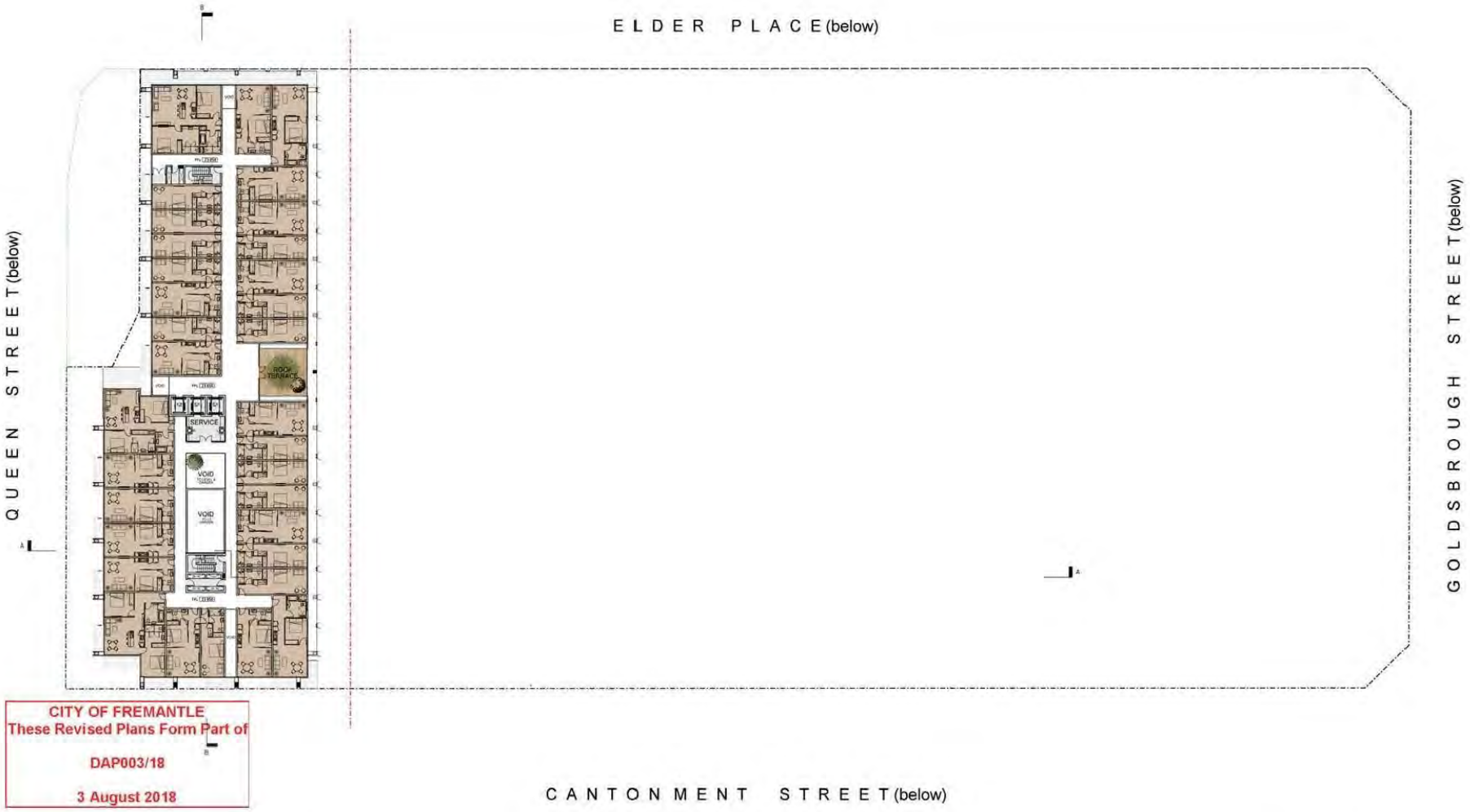
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
15514

LEVEL 04
DA - 06

MAY 2018

Silvercaf Investments Pty Ltd
Retail Property Investors & Managers

BUCHAN



Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
LEVEL 05
Drawing Number
DA - 07

Drawing Scale
1:250@A1
1:500@A3
Revision
–
Date
MAY 2018

Silverleaf Investments Pty Ltd
RETAIL PROPERTY INVESTORS & MANAGERS

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3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
ROOF PLAN
Drawing Number
DA - 08

Revision
–

Drawing Scale
1:250@A1
1:500@A3
Date
MAY 2018

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NORTH ELEVATION

SOUTH ELEVATION

CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018

WOOLSTORES REDEVELOPMENT
FREMANTLE, WESTERN AUSTRALIA

DEVELOPMENT APPLICATION
DAC Updates | June 2018

Client:
Silverleaf Investments Pty Ltd

BUCHAN

NORTH AND SOUTH ELEVATIONS

DA 30

21

EAST ELEVATION

WEST ELEVATION

CITY OF FREMANTLE
These Revised Plans Form Part of

DAP003/18

3 August 2018

WOOLSTORES
REDEVELOPMENT
FREMANTLE, WESTERN AUSTRALIA

DEVELOPMENT APPLICATION
DAC Updates | June 2018

Client:
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BUCHAN

EAST AND WEST ELEVATIONS

DA
31

Cantonment Street / East Elevation

REFER DETAIL SHEET:
SHOPFRONT CONCEPTS 01

ALFRESCO RECESS
REFER DETAIL SHEET: SHOPFRONT CONCEPTS 02

Elder Place / West Elevation

CITY OF FREMANTLE
These Revised Plans Form Part of

DAP003/18

3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE

Project Number
15514

Drawing Title
EAST AND WEST ELEVATIONS

Drawing Number
DA - 40

Revision
--

Drawing Scale
1:200@A2

Date
JULY 2018

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RETAIL PROPERTY INVESTORS & MANAGERS

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North Elevation - Goldsbrough Street

View Looking West Towards Carpark

View Looking North West Towards Carpark

CITY OF FREMANTLE
Plans Received Please Finish Part of
DAP/18/16
3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
NORTH ELEVATION
GOLDSBROUGH STREET
Drawing Number
DA - 42
Revision
-
Drawing Scale
1:200@A0
Date
AUGUST 2018

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Queen Street / South Elevation with Existing Brickwork

Queen Street / South Elevation without Existing Brickwork

CITY OF FREMANTLE
These Revised Plans Form Part of
DAP/18/216
3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
SOUTH ELEVATION COMPARISON WITHOUT EXISTING BRICK
Drawing Number
DA - 43
Revision
–

Drawing Scale
1:200@A3
Date
AUGUST 2018

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RETAIL PROPERTY INVESTORS & MANAGERS

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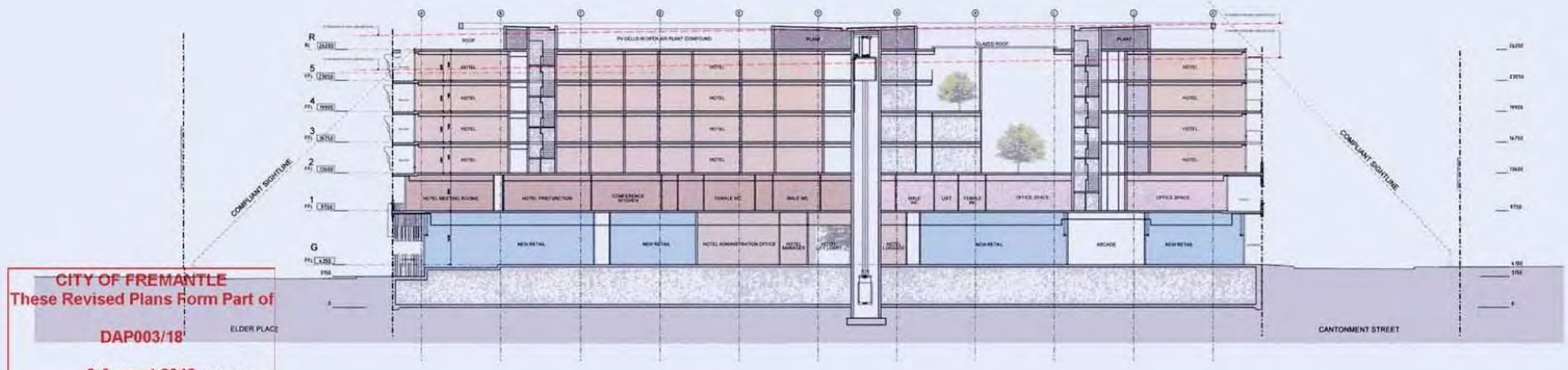
SECTION A



SECTION B

CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018

Project
WOOLSTORES
28 CANTONMENT STREET, FREMANTLE
Project Number
15514

Drawing Title
SECTIONS A AND B
Drawing Number
DA - 21
Revision
–

Drawing Scale
1:200@A1
1:400@A3
Date
MAY 2018

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RETAIL PROPERTY INVESTORS & MANAGERS

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roof top plant enclosure clad in black textured / ribbed steel skin

semi transparent rooftop plant screens

weathering steel clad portal frame elements and green toned curtain wall glazing

frameless glass balustrades fibre cement clad east & west facing balconies

perforated bronze aluminium sun shades to north facade

folded, corrugated, textured wheathering steel (cor-ten) wrap-cladding to denominate new 'Wool Stores' wing

copper toned feature cladding (level 1 -south elevation)

recyled timber sleeper and galvanised steel fascia screen around hotel deck

hotel entry defined by backlit black extruded aluminium canopy, screen

and green wall

textured timber clad office entrance lobby

ceramic tiles

recycled timber al fresco furniture

textured stone paving to new 'Wool Stores' arcades

suspended large scale wire sculpture concepts to retail courtyard

WOOLSTORES REDEVELOPMENT
FREMANTLE, WESTERN AUSTRALIA

DEVELOPMENT APPLICATION
DAC Updates | June 2018

Client:
Silverleaf Investments Pty Ltd

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ELEVATIONS - MATERIALITY | 05

existing cantonment street shop front refurbishment concept with 'alfresco recesses' setback.

CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018

WOOLSTORES REDEVELOPMENT
FREMANTLE, WESTERN AUSTRALIA

DEVELOPMENT APPLICATION
DAC Updates | June 2018

Client:
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section detail *elevation detail* *cantonment / queen street shop front concept*

CITY OF FREMANTLE
These Revised Plans Form Part of
DAP003/18
3 August 2018

WOOLSTORES REDEVELOPMENT
FREMANTLE, WESTERN AUSTRALIA

DEVELOPMENT APPLICATION
DAC Updates | June 2018

Client:
Silverleaf Investments Pty Ltd

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25

Shopfront Concepts | 01

WOOLSTORES REDEVELOPMENT
FREMANTLE, WESTERN AUSTRALIA

DEVELOPMENT APPLICATION
DAC Updates | June 2018

Client:
Silverleaf Investments Pty Ltd

BUCHAN

Queen Street Perspective View

DA 50

ATTACHMENT 2: Site photos

Photo 1: View of site from corner of Queen Street and Cantonment Street looking west on Queen Street

Photo 2: View of site from corner of Queen Street and Cantonment Street looking north on Cantonment Street

Photo 3: View of site from corner of Goldsborough Street and Cantonment Street looking west on Goldsborough Street

Photo 4: View of site from corner of Goldsborough Street and Cantonment Street looking South on Cantonment Street

Photo 5: View of site from corner of Goldsborough Street and Elder Place looking South on Elder Place

Photo 6: View of site from corner of Goldsborough Street and Elder Place looking east on Goldsborough Street

Photo 7: View of site from corner of Queen Street and Elder Place looking east on Queen Street

Photo 8: View of site from corner of Queen Street and Elder Place looking north on Elder Street

ATTACHMENT 3: Schedule of Submissions

No	Submission		
	Object / Support / Comment	**General Content(s)**	**Response**
1	Support	• Fully support proposal. • Site currently an 'eyesore'.	• Noted
2	Object	• Concerned the design doesn't fit into to the Fremantle character • Building does not have any architectural merit and will seriously detract from the character of the City. • It contributes nothing to the public realm and it will be a travesty if it is built. • There's no social, economic or environmental sustainability in bad architecture.	• Refer Planning Assessment • Refer Planning Assessment • Noted • Refer to planning Assessment DAC Comments
3	Object/ Support	• I think the design looks somewhat better than the original proposal. • Disappointed to see that there has been no attempt to activate Elder Street or Goldsbrough St. • Inclusion for a small retail/coffee shop(s) on the street level of the carpark on the corner of Elder St and Goldsbrough Street as Elder Street currently lacks activation.	• Noted • Noted • Noted
4	Object	• Horrible design. This has gone backwards, in every iteration.	• Refer to planning Assessment DAC Comments
5	Object	• This design outcome is so poor that I would rather this was not approved • I understand the reasoning behind knocking back the original design (taco shaped upper stories) however it was a far better design than this. This probably has better ground activation than the original but it looks amateurish and bland and this iconic site, quite frankly, deserves better. • Waive the height / bulk restrictions and slightly adjust the original design to have better ground floor activation.	• Noted • Refer Planning Assessment • Noted - Refer Planning Assessment Building height discussion
6	Object	• Too boxy, with a visually unappealing profile. • The original proposal was far superior. • This would be a wasted opportunity and not at all appropriate for a landmark site.	• Refer to planning Assessment DAC Comments
7	Support	• Disappointed to see design go backwards in architectural merit. • the latest plans are a great under-utilisation of such a prime site in the heart of Fremantle next to a major train station. • Fremantle is the best place in Australia and its full utilisation will be reached with an influx of residents to support streets of cafes, restaurants, small bars and other retail. • To have no residential in this development is a shame.	• Noted • Refer Planning Assessment • Refer Planning Assessment • Noted. There is no statutory obligation to provide residential land uses within any development within the City Centre under LPS4.

No	Submission		
	Object / Support / Comment	**General Content(s)**	**Response**
8.	Support	• Support this development, a great new asset for Fremantle	• Noted
9	Object	• Please ensure all plans comply with the building requirement. • Concerned about future noise, dust and light pollution.	• Refer Planning Assessment 'Building Height assessment • Noise Dust and light pollution are all matters dealt with under separate legislation from planning legislation and will be monitors and will need to comply through the life of the development if approved.
10	Support	• Fully support redevelopment.	• Noted
11	Object	• This design has no green spaces or innovation and doesn't relate to the surrounds. It is about getting the most on the block for financial outcomes rather than people. • Prefer previous reiteration of proposed development on site.	• Noted - Refer Planning Assessment
12	Support	• Fully support redevelopment. • It's in keeping with the type of development required in the CBD. • This is the first stage of a site desperately needing redevelopment. •	• Noted
13	Support	• The redevelopment of this site will bring much needed hotel rooms to the City. It is of a scale which I believe to be entirely appropriate to the eastern end of the Fremantle City Centre.	• Noted - Refer Planning Assessment
14	Support	• Fully support redevelopment. • The extended design process has delivered a quality "Freo" building that provides excellent activation at street level and is well articulated and appropriately set back above. • This site will act as a hub for recently completed and proposed local developments and an active link between Queen Victoria Street and the heart of Fremantle - a remarkable change that is perfectly timed.	• Noted
15	Object	• Another mediocre design for Fremantle. • The design needs to be more sympathetic to the area. • Prefer previous reiteration of proposed development on site.	• Noted - Refer to planning Assessment DAC Comments
16	Support	• The development is in keeping with other approved developments. • The street facade may be little busy with too many styles. Overall I support the development and think it would great transformation to the current tired Woolstores shopping centre.	• Noted
17	Support	• Fully support redevelopment.	• Noted
18	Object / Support	• The proposed design appears to be mostly appropriate for its location and appears to be largely compliant with the local planning framework. • The quality of information provided for advertising is limited with	• Noted - Refer to planning Assessment DAC Comments – Conditions of approval

No	Submission		
	Object / Support / Comment	**General Content(s)**	**Response**
		the elevations containing no annotation on materials and the only 3D image being on the cover of the accompanying report. • Architecture is a somewhat subjective issue, and there are differing opinions on what constitutes an appropriate architectural response to an existing place with historical value and character. • It should also be noted that the degree to which buildings need to be sensitive to their context varies from site to site within the same place. If the subject site were in Fremantle's west end, sandwiched between two listed buildings, it would require a more sensitive design than if it were on the periphery of the town centre. • Given its location and the prevailing orthodoxy of how new architecture responds to existing places, the proposed new building is a largely acceptable outcome for the site, subject to a few relatively minor changes – materiality an minor external form alterations. • Whilst the design is not described as 'design excellence' it is, nevertheless, of a quality that is better than average. • It exhibits fundamental aspects of Fremantle's character in respect to rhythm, colour, materials and proportion, although there is still room for more explanation or improvement or both at a detailed level. • Future redevelopment of the northern portion is not lost.	to be added • Noted - The six shops to the corner of Elder ad Queen Street don't form part of this application • Noted - Refer Planning Assessment Building height discussion
19	Object	• Building height • Bulk, scale, massing and sitting of the towers onsite, • The design isn't distinctive or unique befitting its locality, • Concerned the design doesn't fit into to the Fremantle character • The scale is horrific, the architectural style just a number of orderly boxes, no aesthetic and no reason to approve such an eyesore onto the landscape of the city.	• Noted • Refer Planning Assessment
20	Object	• The site deserves a high quality development which will be an asset to Fremantle for many decades to come. • The proposal appears very uninspiring, when what we need is a building which is inspiring in both function and form.	• Noted - Refer Planning Assessment
21	Object	• Development is needed but must not be done 'at any cost'. • The small shops along the Queen Street side need to be removed and an aspect designed that is in keeping with the significance of the area. • Development that does not fit with the award-winning city architecture doesn't belong.	• Refer Planning Assessment • Noted - The six shops to the corner of Elder ad Queen Street don't form part of this application
22	Object	• Building height. • Bulk, scale, massing and sitting of the tower onsite. • The design isn't distinctive or unique befitting its locality. • Concerned the design doesn't fit into to the Fremantle character. • The scale is horrific, the architectural style just a number of orderly boxes, no aesthetic and no reason to approve such an eyesore onto the landscape of the general city.	• Noted - Refer Planning Assessment
23	Support	• Fully support redevelopment and mix of retail uses to the City centre.	• Noted and refer Planning Assessment
24	Object	• This proposed six-storey development, if worth building, lacks the	• Noted and refer

No	Submission		
	Object / Support / Comment	**General Content(s)**	**Response**
		architectural merit that this central location deserves.	Planning Assessment
25	Object	• Bulk, scale, massing and sitting of the tower onsite. • The design isn't distinctive or unique befitting its locality. • Concerned the design doesn't fit into to the Fremantle character.	• Refer Planning Assessment
26	Support	• Fully support redevelopment and mix of retail uses to the City centre.	• Noted - Refer Planning Assessment
27	Object	• Fremantle's future is with intrinsic advantages of unique architecture, open spaces, heritage and character. • The design isn't distinctive or unique befitting its locality. • Concerned the design doesn't fit into to the Fremantle character.	• Noted - Refer Planning Assessment
28	Object	• Same comments as no.18 submission.	• Noted - Refer Planning Assessment
29	Object	• Same comments as no.18 submission. • Below mediocre outcome, Fremantle should aim for better. • Bulk, scale, massing and sitting of the tower onsite, • The design isn't distinctive or unique befitting its locality, • Concerned the design doesn't fit into to the Fremantle character	• Noted - Refer to planning Assessment DAC Comments – Conditions of approval to be added • Noted - The six shops to the corner of Elder ad Queen Street don't form part of this application • Noted - Refer Planning Assessment Building height discussion.
30	Object	• The proposed development is neither "distinctive" nor of "exceptional design quality", and hence does not pass the bar for the additional height concession. • Prefer previous reiteration of proposed development on site. • Below mediocre outcome, Fremantle should aim for better. • Bulk, scale, massing and sitting of the tower onsite. • The design isn't distinctive or unique befitting its locality. • Concerned the design doesn't fit into to the Fremantle character.	• Refer Planning Assessment • Noted
31	Object	• Fremantle deserves much better. • Impact on the heritage Signiant townscape. • Building height. • Bulk, scale, massing and sitting of the tower onsite. • The design isn't distinctive or unique befitting its locality. • Concerned the design doesn't fit into to the Fremantle character.	• Noted - Refer Planning Assessment • Refer Planning Assessment

Government of Western Australia
Development Assessment Panels

Form 1 – Responsible Authority Report

(Regulation 12)

Property Location:	Lot 9014 on Plan 413443 and Lot 750 on Plan 25777 Nyilla Approach, Baldivis
Development Description:	New Public Primary School
DAP Name:	Metro South-West JDAP
Applicant:	EIW Architects
Owner:	Perron Developments Pty Ltd and Mirvac (WA) Pty Ltd
Value of Development:	$12.1 million
LG Reference:	20.2018.204.1
Responsible Authority:	Department of Finance, Strategic Projects
Authorising Officer:	Sandra McLeish, Director - Planning Department of Finance, Strategic Projects
DAP File No:	DAP/18/01467
Report Due Date:	14 September 2018
Application Received Date:	23 July 2018
Application Process Days:	60 Days
Attachment(s):	1. Location Plan 2. Aerial / Site Plan 3. Development Plans for Approval 4. Fencing Plan 5. On-Street Parking Layout 6. City of Rockingham Referral Response 7. Transport Impact Assessment

Officer Recommendation:

That the Metro South-West JDAP resolves to:

Approve DAP Application reference DAP/18/01467 and accompanying architectural plans titled 'Baldivis North Primary School', being drawing number A1.00 stamped 'SP RECEIVED 4 SEPTEMBER 2018', and drawing numbers SK2.01^{P1}, SK3.01^{P2}, SK4.01^{P2}, SK4.02^{P1}, SK5.01^{P2}, SK7.01^{P2}, SK8.01^{P2} stamped 'SP RECEIVED 23 JULY 2018'; and the landscaping plans titled 'Baldivis North Primary School', being drawing numbers L01, L02, L03, L04, L05, L06, L07, L08, L09 stamped 'SP RECEIVED 23 JULY 2018'; and the standard transportable classroom plans titled 'Transportable School Buildings – Western Australia' being drawing numbers A1.01$^{/o}$, A2.01$^{/o}$ and A2.02$^{/o}$ stamped 'SP RECEIVED 4 SEPTEMBER 2018'; for the New Baldivis North Public Primary School in accordance with the provisions of the Metropolitan Region Scheme, subject to the following conditions:

Conditions

1. All stormwater produced shall be disposed of on-site to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission.

2. The development shall be connected to the reticulated sewerage system of the Water Corporation before commencement of any use where possible. Where reticulated sewerage is not available the development shall connect to an

approved effluent disposal system to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission.

3. All on-site car parking and associated vehicle access areas shown on the approved plans shall be constructed, drained, sealed, marked and sign-posted prior to occupation of the proposed development and thereafter maintained to the satisfaction of the Western Australian Planning Commission.

4. All on-site car parking and associated vehicle access areas shown on the approved plans shall be available for vehicles and shall not be used for the purpose of storage or obstructed during school hours, to the satisfaction of the Western Australian Planning Commission.

5. Prior to occupation of the development, the school is to prepare and implement a Kiss and Drive Operational Plan to ensure that the proposed on-street kiss and drive facility is appropriately managed by staff or parent volunteers during peak drop-off and pick-up times, in consultation with the City of Rockingham and to the satisfaction of the Western Australian Planning Commission.

6. Prior to occupation of the development, a minimum of 81 bicycle parking spaces are to be provided on-site to the satisfaction of the Western Australian Planning Commission.

7. Landscaping, as specified in the approved landscaping plans, shall be substantially commenced prior to occupation of the proposed development, completed within six months of the date of occupation, and thereafter maintained to the satisfaction of the Western Australian Planning Commission. Final species selection is to be determined in consultation with the City of Rockingham.

8. Prior to the installation of any signage, a signage plan indicating the location and design of any proposed signage (including traffic directional signage) shall be prepared to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission.

9. Prior to the commencement of site works, a Construction Management Plan shall be prepared in consultation with the City of Rockingham and to the satisfaction of the Western Australian Planning Commission. The requirements of the Construction Management Plan shall be observed at all times during the construction process.

10. Prior to the commencement of site works, a Dust Management Plan shall be prepared in consultation with the City of Rockingham and to the satisfaction of the Western Australian Planning Commission. Once approved, the Dust Management Plan is to be implemented in its entirety for the duration of the development.

11. Prior to lodging a building permit, a Waste Management Plan is to be prepared to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission. Waste collection shall be carried out in accordance with the approved plan thereafter.

12. The access points for the proposed development are to be designed to connect seamlessly with abutting roads and public footpath infrastructure, to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission.

13. All piped and wired services, plant, equipment and storage areas are to be screened from public view, and in the case of roof mounted plant, screened or located so as to minimise visual impact, to the satisfaction of the Western Australian Planning Commission.

Advice Notes

1. All development must comply with the provisions of the Health Regulations, National Construction Code, Public Building Regulations and all other relevant Acts, Regulations and Local Laws. This includes the provision of access and facilities for people with disabilities in accordance with the National Construction Code.

2. The applicant is reminded of its obligations under the Building Act 2011.

3. This approval does not include the works within the adjoining road reserves, as indicated on the approved plans. Separate approval is required from the City of Rockingham for works within the road reserve, including any landscaping required by the City. This includes the new vehicle crossovers for which separate approval is required under the Local Government (Uniform Local Provisions) Regulations 1996.

4. This approval does not authorise any interference with existing street trees or other vegetation within the adjoining road reserve. Separate approval is required from the City of Rockingham prior to engaging in the removal, pruning or replacement of any vegetation within the road reserve.

5. The City of Rockingham has advised that, given the Department of Education's position regarding the maintenance of the street verge area adjoining the school lot, a durable, low maintenance treatment such as paving and irrigated street trees in paved tree wells should be provided, to the specification of the City of Rockingham.

6. With respect to the required Construction Management Plan, the applicant is advised that this is to include a Traffic Management Plan to address the management of traffic during the construction phase. The Traffic Management Plan should be prepared in consultation with the City of Rockingham.

7. The applicant is advised that any damage or removal of a City of Rockingham asset within the road reserve (roads, signage, verge etc.) shall be made good at the cost of the applicant to the specification of the City of Rockingham. The City of Rockingham has recommended that a dilapidation report is prepared prior to commencing work, in order to demonstrate the existing condition of infrastructure.

8. All external lighting shall comply with requirements of AS 4282 - Control of Obtrusive Effects of Outdoor Lighting.

9. All car parking and associated vehicle access areas are to be constructed in accordance with relevant Australian Standards.

10. With respect to the approved landscaping plans, the City of Rockingham has advised that plantings adjacent to all public footpaths within the road reserve should be set back to allow for mature plant growth, whilst preventing overhanging of footpaths.

11. The City of Rockingham has advised that a Permit to take water for the use of groundwater may need to be obtained. The applicant should liaise with the Department of Water and Environmental Regulation in this regard.

12. The school is encouraged to contact the Department of Transport regarding participation in the 'Your Move' campaign, which seeks to reduce car dependence and promote alternative modes of transport including walking, cycling and public transport.

13. The proposed works fall within a site that has identified moderate to low acid sulphate soils risk. In line with standard self assessment tools developed by the Department of Planning, Lands and Heritage all construction and development on site shall recognise the risk and monitor any potential exposure of soils.

14. The applicant is to liaise with the landowners with regard to the construction of the new roads surrounding the school site.

15. Prior to occupation of the development, the school site should be amalgamated into one lot.

If the development of the subject of this approval is not substantially commenced within a period of two years from the date of this letter, the approval shall lapse and be of no further effect. Where an approval has so lapsed no development shall be carried out without the further approval of the responsible authority having first been sought and obtained.

The decision is issued pursuant to the provisions of the Metropolitan Region Scheme, and has been made after due consideration of the local and regional planning implications of the proposal.

Should the applicant be aggrieved by this decision, there is a right to apply for a review pursuant to the provisions of Clause 33 of the Metropolitan Region Scheme. Such an application for review must be submitted to the State Administrative Tribunal, 565 Hay Street, Perth in accordance with Part 14 of the Planning and Development Act 2005. It is recommended that you contact the State Administrative Tribunal for further details (telephone 9219 3111) or go to its website. http://www.sat.justice.wa.gov.au

Details: outline of development application

Zoning	MRS:	Urban
	TPS2:	Development
Use Class:		Public Primary School (TPS2: Educational Establishment)
Strategy Policy:		N/A
Development Scheme:		East Baldivis District Structure Plan The Edge Local Structure Plan One71 Baldivis Local Structure Plan
Lot Size:		4.1ha
Existing Land Use:		Vacant

Under Section 6 of the *Planning and Development Act 2005* public authorities are exempt from the requirement to obtain development approval for public works under a local planning scheme. The development of a public primary school is a public work. Section 5(2) of the *Planning and Development Act 2005* does however require the Crown to seek approval under any applicable Region Planning Scheme. As such, there is no requirement for this development to obtain approval under the City of Rockingham Town Planning Scheme No. 2, however development approval is required under the provisions of the Metropolitan Region Scheme.

Under delegation instrument DEL 2009/02 Powers of Officers (Department of Finance) (as amended), the Director - Planning, Strategic Projects (SP), Department of Finance is authorised to determine development applications for public primary schools on MRS zoned land on behalf of the Western Australian Planning Commission.

However, the above delegation to determine applications does not extend to Development Assessment Panel (DAP) applications, where the value of the proposed development is $10 million or more. Therefore, given the estimated cost of development, this application requires the determination of the Metro South-West JDAP.

As per the delegation, the responsible authority for this application is the Department of Finance, Strategic Projects.

Background:

Site Information and Background

The school site forms part of Lots 9015 and 750, straddling the boundary of two residential development areas being developed by Perron Developments Pty Ltd and Mirvac (WA) Pty Ltd.

The school site itself is largely vacant and cleared of significant vegetation, with subdivisional works currently being undertaken on the subject site and surrounds. The site is relatively flat, with a change in level of approximately 1.5 metres from a high point in the southwest corner of the site to a low point in the northeast corner.

The site maintains an existing road frontage to Nyilla Approach to the south and will ultimately be surrounded by public roads on all sides, with frontages to Gresham Boulevard to the north, Key Avenue to the east, and Pedicel Avenue to the west.

The applicant has advised that the subdivision works are expected to be completed in November 2018, at which point the Department of Education will take ownership of the site from the developers of the two estates. The roads around the school site are expected to be completed by June 2019, well in advance of the scheduled opening of the school at the start of the 2020 school year.

Details of Proposed Development

The applicant proposes to construct a new public primary school on the subject site to accommodate students from Kindergarten to Year 6, currently referred to as the future Baldivis North Primary School.

The new public primary school has been designed in accordance with the Department of Education's Primary Schools Brief, which sets out accommodation and design requirements for new public primary schools.

Specifically, the proposed development involves the construction of:

- Seven (7) single storey buildings, comprising:
    - An administration and dental therapy building;
    - A library and staff room building;
    - A multipurpose canteen, covered assembly and music block;
    - An early childhood teaching block containing two (2) kindergarten classrooms and three (3) pre-primary classrooms; and
    - Three (3) general teaching blocks containing a total of ten (10) general classrooms, an arts and crafts room, and an inclusive education classroom.
- Nine (9) general transportable classrooms and three (3) early childhood transportable classrooms, which form part of this application.
- Three (3) new on-site car parking areas providing a total of 149 on-site bays (including five (5) universal access bays), with access via new crossovers proposed to Gresham Boulevard, Nyilla Approach and Pedicel Avenue. A further 41 car parking pays, including six (6) kiss and drive drop-off bays, are to be provided within the road reserves directly abutting the school site, as indicated on the plans provided.
- Two (2) bicycle parking areas, which have been designed to accommodate a total of 48 bicycles.
- School sporting facilities, including a school oval, hardcourts and cricket nets.
- Installation of landscaping throughout the site, generally comprising irrigated turf and garden beds, and planting of various shade trees.
- 2.1 metre high garrison fencing around the perimeter of the school site, consistent with the fencing specifications of the Department of Education's Primary Schools Brief. 3.6 metre high chainmesh fencing is also proposed around the school hardcourts, as well as 1.2 metre high chainmesh fencing to enclose the external learning area adjacent the early childhood teaching block, as indicated on the supplied Fencing Plan at Attachment 4.

The proposed public primary school is to be constructed primarily of face brick and Colorbond roof sheeting with feature multi-cell polycarbonate sheeting, as shown in the coloured elevation drawings included at Attachment 3.

The proposed public primary school, including the transportable classrooms, has been designed to accommodate up to 854 students (774 full time equivalent), comprising 160 part-time kindergarten students and 694 pre-primary to year 6 students. Approximately 77 staff members will be employed at the school, based on the Department of Education's standard ratio of approximately one staff member for every ten students.

Department of Finance, Building Management and Works – Internal Design Review

The proposed development has undergone an internal design review process by the Department of Finance, Building Management and Works Building Research and Technical Services (BRaTS) team, having regard for the Department of Education's Primary Schools Brief. This review did not identify any areas of design concern.

Legislation and Policy:

Legislation

- *Planning and Development Act 2005*
- Metropolitan Region Scheme
- City of Rockingham Town Planning Scheme No. 2

The site is zoned 'Urban' under the Metropolitan Region Scheme and is zoned 'Development' under the City of Rockingham Town Planning Scheme No. 2 (TPS2). A number of Structure Plans have been adopted to guide the subdivision and development of the subject site and surrounds, as required under TPS2. These are discussed under the heading 'Local Policies', below.

State Government Policies

- Western Australian Planning Commission Development Control Policy 2.4 – School Sites.
- Western Australian Planning Commission Planning Bulletin 94 – Approval Requirements for Public Works and Development by Public Authorities.

Local Policies

- East Baldivis District Structure Plan

The East Baldivis District Structure Plan identifies the site for the development of a future Primary School, with the lot configuration and road layout having been refined through the adoption of The Edge Local Structure Plan and the One71 Baldivis Local Structure Plan, as discussed below.

- Local Structure Plan

The subject site is subject to both The Edge Local Structure Plan and the One71 Baldivis Local Structure Plan, which collectively identify the site as being reserved for 'Public Purposes – Primary School'. As such, the site is considered strategically

suitable for the development of a new public primary school, as proposed by this application.

Consultation:

Consultation with other Agencies or Consultants

- City of Rockingham

The application was referred to the City of Rockingham (the City) for comment, as required under the WAPC's notice of delegation. The comments provided by the City have addressed in the Planning Assessment section of this report and are included as Attachment 6.

Planning Assessment:

Western Australian Planning Commission Development Control Policy 2.4 – School Sites

The proposed public primary school has been assessed against the provisions of Development Control Policy 2.4 – School Sites (DC Policy 2.4) as follows:

- Site Requirements

The proposed site area of 4.1 hectares accords with the desirable 4 hectare minimum provided by DC Policy 2.4. As such, it is considered that the site is of an appropriate size to accommodate all required school facilities, with the development plans provided indicating that a functional layout can be achieved on site.

- Site Selection and Planning

As noted previously, the school site is currently vacant and cleared of significant vegetation, with subdivisional works being undertaken on the school site and surrounds.

The site is relatively flat, with a change in level of approximately 1.5 metres from a high point in the southwest corner to a low point in the northeast corner, with the proposed buildings to have a finished floor level of between 7.2 and 7.8 metres AHD.

Essential utilities including sewer, water, power, gas and telecommunications will be available to the primary school site. Connection to these services will be available in line with the operational requirements of the school.

- Access Considerations

The combined school site will ultimately maintain frontages to four public roads, with each to be provided with appropriate footpath infrastructure and on-street car parking bays where abutting the school site, as indicated on the plans provided. The roads are expected to be completed by June 2019, well in advance of the scheduled opening of the school at the start of the 2020 school year.

- Relationship to Nearby Land Uses

The proposed primary school site is to be surrounded by residential land uses on all sides. However, the primary school site will be bound by public roads on all sides, which will reduce any potential conflict with surrounding residential properties.

Parking and Access

In order to promote a consistent approach across the metropolitan region, the provision of parking at new public primary schools is assessed against the guidelines contained within the Department of Education's Primary Schools Brief, which stipulates that parking for new primary schools be provided in accordance with the following:

- Kindergarten:
    - 8 bays as a minimum.
    - 7 additional bays as a Department of Education directive.

- Primary and Pre-Primary:
    - 14 pick-up/drop-off bays per 100 students, with a minimum of 60 bays.
    - 10 staff bays per 100 students, with a minimum of 46 on-site bays (including 3 visitor bays).

- Universal Access Bays:
    - 1 bay for every 30 on-site bays.

- Additional Non-Compulsory Parking:
    - 4 bays for canteen staff.
    - Additional universal access bays as required.

- Dental Therapy (Non-Compulsory):
    - 6 bays on-site.

Based on the above, and the school site, inclusive of the proposed transportable classrooms, accommodating a maximum of 854 students (including 160 part-time kindergarten students), the proposal requires a total of 182 car parking bays, broken down as follows:

- 15 bays for the kindergarten component;
- 70 bays for staff and visitors; and
- 97 drop-off / pick-up bays.

A further six (6) bays are also required for the dental therapy clinic that forms part of the proposed administration building, bringing the total number of required bays to 188.

The proposed development will provide a total of 190 car parking bays, comprising:

- 149 on-site bays in three (3) separate car parking areas; and
- 41 car parking bays to be provided within the road reserves directly abutting the school site, including six (6) kiss and drive bays on Nyilla Approach.

It is also likely that additional on-street parking will be constructed on the opposite side of the boundary roads as these are completed, noting that there are 10 existing on-street bays along the south side of Nyilla Approach.

In accordance with the above, there is an adequate amount of car parking provided for the proposed primary school, based on the Department of Education's Primary Schools Brief requirements. This is also consistent with the findings of the Transport Impact Assessment that accompanies the application and it is noted that the City of Rockingham has not raised any concerns regarding the proposed works with respect to car parking. It is also noted that the City of Rockingham's Town Planning Scheme No. 2 and associated Local Planning Policies do not specify a car parking requirement for public primary schools.

Based on the 149 on-site bays provided, the school site is required to provide five (5) of these bays as universal access bays. The plans provided indicate that a total of five (5) universal access bays will be provided, distributed between each of the on-site car parking areas to be provided.

As noted previously, six (6) of the on-street bays on the north side of Nyilla Approach have also been designated as a kiss and drive drop-off facility, as required by recent amendments to the Department of Education's Primary Schools Brief. In accordance with the requirements of the Primary Schools Brief, a condition has been recommended to require the school to prepare and implement a Kiss and Drive Operational Plan to ensure that the proposed on-street kiss and drive facility is appropriately managed by staff or parent volunteers during peak drop-off and pick-up times, in consultation with the City of Rockingham and to the satisfaction of the Western Australian Planning Commission (Recommended Condition 5). This will ensure that the kiss and drive facility operates effectively in improving the turnover of bays during peak periods. The proposed kiss and drive bays are identified on the On-Street Parking Layout diagram that is included at Attachment 5.

A dedicated bus bay is also proposed on Gresham Boulevard.

In addition to the above, it is noted that the Transport Impact Assessment (TIA) that accompanies this application does not identify any concerns with respect to car parking and traffic generation, and concludes the following:

- *The adjacent road network has been planned and constructed to a suitable standard to accommodate the traffic generated by the school on a daily and peak hour basis;*
- *The available on-site and street parking satisfies the minimum car parking requirements of BMW. The parking assessment will be reviewed again once the boundary road network design is completed;*
- *All proposed vehicle crossovers are expected to achieve the minimum required sight distance.*
- *The existing and proposed path network is adequate for the safe and efficient movement of pedestrians and cyclists travelling to and from the school.*
- *The existing public transport service is considered sufficient to accommodate the expected demand for this service.*

Based on the above, the proposed public primary school is not expected to have any unacceptable impact on the operation of the surrounding road network. A copy of the TIA is included at Attachment 7.

Environmental and Heritage Considerations

- Heritage Considerations

A desktop search of European and Aboriginal heritage indicates that the site has no known heritage significance.

- Contamination

A desktop search of the Department of Water and Environmental Regulation's Contaminated Sites Database indicates that the subject site is not a registered contaminated site.

- Acid Sulphate Soils

The proposed works fall within a site that has identified moderate to low acid sulphate soils risk. In line with standard self assessment tools developed by the Department of Planning, Lands and Heritage all construction and development on site shall recognise the risk and monitor and potential exposure of soils. Should Acid Sulphate Soils be identified on site during construction, construction shall only continue in line with the Generic Acid Sulphate Soils and Dewatering Management Plan which provides agreement for development to occur on these sites subject to the construction occurring in accordance with the agreed Management Plan (this is in line with the agreement reached between the Department of Treasury and Finance (DTF), the Department of Environment and Conservation (DEC) and the Department of Water (DOW) on 4 August 2010).

A standard advice note has been included to address this (Recommended Advice Note 13).

- Multiple Use Palusplain Wetland

A desktop search indicates that the school site (and the surrounding area) is affected by a Multiple Use Palusplain (UFI 16021), being a flat, seasonally waterlogged wetland. However, the Department of Biodiversity Conservation and Attractions (DBCA) has previously advised that referral of applications is not necessary for Multiple Use wetlands and therefore the presence of the Palusplain does not present an impediment for development on the subject site in accordance with the endorsed Local Structure Plans.

- Bushfire

A desktop search of the State Map of Bush Fire Prone Areas indicates that a small portion in the southwest corner of the school site is affected by a bushfire prone area. However, the portion of the site that is affected by the bushfire prone area contains car parking and landscaping areas only, which do not constitute habitable buildings as defined under the Planning and Development (Local Planning Schemes) Regulations 2015, and all habitable buildings are located outside the area indicated as bushfire prone and in excess of 100 metres from the nearest bushfire hazard

(being the vegetation to the west of the site, adjacent Baldivis Road). As such, the applicant has provided a BAL Assessment (Basic) Report indicating a Bushfire Attack Level (BAL) for the proposed habitable buildings of BAL-LOW. The BAL Assessment (Basic) Report is considered to be an accurate depiction of the BAL rating for the site of the proposed works based on the provisions of the WAPC's Planning in Bushfire Prone Areas Bushfire Policy Framework Fact Sheet. Where the proposed development has a BAL rating of BAL-LOW the resultant bushfire risk is considered to be very low, and the policy measures under State Planning Policy 3.7: Planning in Bushfire Prone Areas do not apply as there is insufficient risk to warrant specific bushfire construction requirements.

On the basis of the above, no conditions or advice notes have been included with respect to bushfire.

City of Rockingham Recommendation:

As noted previously, the application was referred to the City of Rockingham (the City) for comment, as required under the WAPC's notice of delegation.

The City's referral response contains a number of comments in relation to the submitted Transport Impact Assessment (TIA), which have since been resolved by the applicant in consultation with the City.

Subject to the resolution of the aforementioned comments on the TIA, the City's referral response recommends that the application be approved subject to eleven (11) conditions and nine (9) advice notes.

The City's response, and each of the recommended conditions and advice notes, are addressed below. A copy of the City's referral response is included as Attachment 6.

<u>TIA Comments</u>

The City's comments on the submitted TIA were as follows:

- *The traffic generation for the school was calculated based on the number of Full-Time Equivalent students (774) rather than the total number of students (854). Please calculate the traffic generation based on the total number of students.*

- *The Transport Assessments prepared for the One71 Baldivis and The Edge Local Structure Plans assume that 430 students attending the primary school. The TIA for the school assumes that key intersections had been analysed at the "Structural Plan" stage, however, the total number of students was unknown at Structure Plan stage and there is now an additional 424 students anticipated to be attending the school (i.e. 854-430=424). Trip generation from the additional number of students in the traffic analysis for the proposed primary school is therefore required to be included for the following:*
    - *Baldivis Road/Pemberton Boulevard/Parkerville Boulevard (roundabout)*
    - *Baldivis Road/Key Avenue (T-intersection)*

- *The following intersection analysis need to be included in the TIA to demonstrate that intersections around the perimeter of the school will function satisfactorily:*
    - *Gresham Boulevard/Key Avenue*
    - *Gresham Boulevard/Pedicel Avenue*

- *Nyilla Approach/Pedicel Avenue*
- *Nyilla Approach/Key Avenue*

- *The applicant must liaise with the developers for the One71 Baldivis and The Edge Local Structure Plan areas with regard to the timing for the completion of roadworks. The TIA report for the school considers the ultimate scenarios where all roads would be built, however, should some of the roads be unconstructed after the school opening then this scenario must also be considered and addressed in the TIA report.*

- *The applicant is to liaise with the developers or the One71 Baldivis and The Edge Local Structure Plan areas regarding the provision of on-street bays along the perimeter of the school. The estimated number of on-street car parking bays should be updated in the TIA report for the school.*

The applicant has since submitted an updated TIA, which addresses the above comments by:

- Recalculating the traffic generation for the school based on the total number of students (854) rather than the full-time equivalent (774), with the outcomes still identified as satisfactory;
- Including the requested intersection analysis, with all requested intersections assessed as performing within capacity and all measures of performance within acceptable levels;
- The number of on-street bays to be provided has been confirmed with the developers of the respective estates, as referenced previously in report, with the total number of bays provided in and around the school site being sufficient to meet the parking requirements under the Primary Schools Brief; and
- The timing for completion of the surrounding road network has been included, as referenced previously in this report. All roads around the school site are scheduled for completion in June 2019, well in advance of the scheduled opening of the school at the start of the 2020 school year.

The City of Rockingham has confirmed that the revised TIA adequately addresses the comments provided in the referral response.

<u>Recommended Conditions</u>

1. *Earthworks over the site associated with the development must be stabilised to prevent sand or dust blowing off the site, and appropriate measures shall be implemented within the time and in the manner directed by the City of Rockingham in the event that sand or dust is blown from the site.*

In this regard, it is recommended that a condition (Recommended Condition 10) be included to require the preparation of a Dust Management Plan prior to the commencement of site works, in consultation with the City of Rockingham and to the satisfaction of the Western Australian Planning Commission. Once approved, the Dust Management Plan is to be implemented in its entirety for the duration of the development. This is considered to appropriately address the City's recommended condition.

2. *Prior to applying for a Building Permit, a Stormwater Management Plan must be prepared by a suitably qualified engineer showing how stormwater will be*

contained on-site and those plans must be submitted to the City of Rockingham for its approval. All stormwater generated by the development must be managed in accordance with Planning Policy 3.4.3 - Urban Water Management to the satisfaction of the City of Rockingham. The approved plans must be implemented and all works must be maintained for the duration of the development.

In this regard, it is recommended that a condition (Recommended Condition 1) be included to require that all stormwater produced is disposed of on-site to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission, consistent with standard wording used by the Department of Finance, Strategic Projects. This is considered to appropriately address the City's recommended condition, noting that the requirements specified in the above condition can still be imposed, being the relevant specifications of the City.

3. *Any damage to existing City infrastructure within the road reservation including kerb, road pavement, and footpaths is to be repaired to the satisfaction of the City, Manager Land and Development Infrastructure at the cost of the applicant.*

The above condition relates to assets within the adjoining road reserves, which are located outside the boundaries of the subject site and are under the control of the City of Rockingham. As such, it is recommended that an advice note be included to this effect (Recommended Advice Note 7).

4. *Prior to applying for a Building Permit, a Landscaping Plan must be prepared and include the following detail, to the satisfaction of the City of Rockingham:*

    a. *The location, number and type of existing and proposed trees and shrubs, including calculations for the landscaping area;*
    b. *Any lawns to be established and areas to be mulched;*
    c. *Any natural landscape areas to be retained;*
    d. *Those areas to be reticulated or irrigated;*
    e. *Verge treatments, including replanting of native species in the adjacent Road reserves;*
    f. *The relocation of existing street trees on Nyilla Approach, required to be removed as a result of works.*

    The landscaping must be completed prior to the occupation of the development, and must be maintained at all times to the satisfaction of the City of Rockingham.

In this regard, it is noted that detailed landscaping plans for the proposed development site have been provided and form part of the plans that are recommended for approval. As such, it is not considered necessary to require the provision of further landscaping plans as a condition of approval. However, it is recommended that a condition (Recommended Condition 7) be included to require that landscaping, as specified in the approved landscaping plans, shall be substantially commenced prior to occupation of the proposed development, completed within six months of the date of occupation, and thereafter maintained to the satisfaction of the Western Australian Planning Commission, with final species selection to be determined in consultation with the City of Rockingham.

With respect to Points (e) and (f) of the above condition, it is noted that the issue of landscaping with the adjoining road reserve is a matter to be negotiated between the applicant/owner and the City, with an advice note having been recommended with respect to verge landscaping (Recommended Advice Note 5). There is currently no verge landscaping shown on the plans provided.

5. *The carpark(s) must:*

    a. *provide a minimum of 149 parking spaces;*
    b. *prior to applying for a Building Permit, be designed in accordance with User Class 3 of the Australian/New Zealand Standard AS/NZS 2890.1:2004, Parking facilities, Part 1: Off-street car parking unless otherwise specified by this approval;*
    c. *include a minimum of two (2) car parking space(s) dedicated to people with disabilities designed in accordance with Australian/New Zealand Standard AS/NZS 2890.6:2009, Parking facilities, Part 6: Off-street parking for people with disabilities, linked to the main entrance of the development by a continuous accessible path of travel designed in accordance with Australian Standard AS 1428.1—2009, Design for access and mobility, Part 1: General Requirements for access—New building work;*
    d. *be constructed, sealed, kerbed, drained and marked prior to the development being occupied and maintained thereafter;*
    e. *have lighting installed, prior to the occupation of the development; and*
    f. *confine all illumination to the land in accordance with the requirements of Australian Standard AS 4282—1997, Control of the obtrusive effects of outdoor lighting, at all times.*

    The car park(s) must be constructed in accordance with the above requirements prior to occupation of the development and maintained in good working order for the duration of the development.

In relation to parts (a) and (d), it is noted that the proposed site plan includes 149 on-site car parking bays and it is recommended that a standard condition be included to require that all car parking and associated vehicle access areas shown on the approved plans shall be constructed, drained, sealed, marked and sign-posted prior to occupation of the proposed development and thereafter maintained to the satisfaction of the Western Australian Planning Commission (Recommended Condition 3). This appropriately addresses parts (a) and (d) of the City's recommended condition.

Parts (b), (c), (e) and (f) can all be addressed through compliance with Australian Standards and have there been addressed through the inclusion of standard advice notes relating to the need for:

- All car parking and associated vehicle access areas are to be constructed in accordance with relevant Australian Standards (Recommended Advice Note 9); and
- All external lighting to comply with requirements of AS 4282 - Control of Obtrusive Effects of Outdoor Lighting (Recommended Advice Note 8).

6. *Prior to applying for a Building Permit, detailed plans and specifications must be submitted to and approved by the City of Rockingham for on-street car parking spaces within the adjacent road reserves.*

   The car parking spaces must:

   a. *be designed, constructed, sealed, kerbed, drained and marked in accordance with Australian Standard AS 2890.5—1993, Parking facilities, Part 5: On-street parking; and*
   b. *be constructed, sealed, kerbed, drained and marked prior to the development being occupied and maintained thereafter; and comply with the above requirements for the duration of the development.*

The above condition relates to the construction of on-street parking bays, which fall outside the boundaries of the subject and therefore do not form part of this approval. Separate approval is required from the City of Rockingham for all works within the road reserve. A standard advice note (Recommended Advice Note 3) has been recommended to this effect.

7. *Prior to applying for a Building Permit, a Waste Management Plan must be prepared and include the following detail to the satisfaction of the City of Rockingham:*

   a. *the location of bin storage areas and bin collection areas;*
   b. *the number, volume and type of bins, and the type of waste to be placed in the bins;*
   c. *management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas; and*
   d. *frequency of bin collections.*

   All works must be carried out in accordance with the Waste Management Plan, for the duration of development and maintained at all times.

This is considered fair and reasonable, and it is recommended that it be included with a modified wording (Recommended Condition 11). The modified wording requires the preparation of a Waste Management Plan to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission, with waste collection to be carried out in accordance with the approved plan thereafter. The requirements specified in the above condition can still be imposed, being the relevant specifications of the City.

8. *Prior to applying for a Building Permit, engineering drawings and specifications are to be submitted and approved for the construction of full earthworks, carriageways, shared path(s), drainage facilities and pedestrian crossing(s) required for the proposed roads abutting the subject site.*

   The works must be completed prior to the occupation of the development.

As noted earlier, the applicant has advised that the subdivision works are expected to be completed in November 2018, at which point the Department of Education will take ownership of the site from the developers of the two estates. The roads around the school site are expected to be completed by June 2019, well in advance of the scheduled opening of the school at the start of the 2020 school year. Consistent with the City's recommended advice note 9 (discussed below), Recommended Advice

Note 14 has been included, to require the applicant to liaise with the landowners with regard to the construction of the new roads surrounding the school site. This is considered to appropriately address the City's recommended condition, in that the requirement for the surrounding roads to be constructed (by the developers) is imposed under the terms of the subdivision approval.

9. *Prior to applying for a Building Permit, a Traffic Management Plan must be submitted to and approved by the City of Rockingham. The Traffic Management Plan must be implemented for the duration of the development to the satisfaction of the City of Rockingham at all times.*

The above condition relates to the management of traffic during the construction phases of the development and is in part aimed at preventing damage to the City's infrastructure within the adjoining road reserves.

In this regard, it is noted that a standard condition has been recommended to require the preparation of a Construction Management Plan in consultation with the City of Rockingham and to the satisfaction of the Western Australian Planning Commission, prior to the commencement of site works, with the requirements of the Construction Management Plan to be observed at all times during the construction process (Recommended Condition 9). It is considered that the requested Traffic Management Plan can therefore form part of the required Construction Management Plan, with an advice note having been recommended to this effect (Recommended Advice Note 6).

A further advice note has also been recommended to advise the applicant that any damage or removal of a City of Rockingham asset within the road reserve (roads, signage, verge etc.) shall be made good at the cost of the applicant to the specification of the City of Rockingham (Recommended Advice Note 7).

10. *Prior to applying for a Building Permit, a Dust Management Plan must be submitted to and approved by the City of Rockingham. The Dust Management Plan must be implemented for the duration of the development to the satisfaction of the City of Rockingham at all times.*

This is considered fair and reasonable, and it is recommended that it be included with a modified wording as Recommended Condition 10. The modified wording requires the preparation a Dust Management Plan in consultation with the City and to the satisfaction of the WAPC, prior to the commencement of site works. Once approved, the Dust Management Plan is to be implemented in its entirety for the duration of the development.

11. *All existing street trees and irrigation must be identified on the landscape plans and incorporated into the Civil engineering drawings. Existing irrigated trees are to be retained and incorporated with any new car park embayment's, if existing trees cannot be retained, they must be replaced with similar sized trees, irrigated and in an approved location to the satisfaction of the City of Rockingham.*

This condition relates to existing street trees, which fall outside the boundaries of the subject site. As such, any pruning or removal of street trees requires separate approval from the City of Rockingham. A standard advice note has been recommended to this effect (Recommended Advice Note 4).

Recommended Advice Notes:

1. *With respect to the landscaping plan, the applicant and owner should liaise with the City of Rockingham's Land and Development Infrastructure Services to confirm requirements for landscaping plans. The City has advised that Planting adjacent to all public footpaths should be set back to allow for mature plant growth and not overhang footpaths cause a tripping hazard or requiring continuous pruning.*

As noted previously, detailed landscaping plans for the proposed development site have been provided and form part of the plans that are recommended for approval. These are considered acceptable, and therefore the City's recommended condition regarding the provision of further detailed landscaping plans has not been recommended. However, it is recommended that an advice note be included to advise the applicant of the City's comments in relation to plantings adjacent public footpaths (Recommended Advice Note 10).

2. *With respect to condition 3 it is recommended that a dilapidation report is prepared prior to commencing work to demonstrate existing condition of infrastructure.*

As noted previously, an advice note has been recommended to advise the applicant that any damage or removal of a City of Rockingham asset within the road reserve (roads, signage, verge etc.) shall be made good at the cost of the applicant to the specification of the City of Rockingham (Recommended Advice Note 7). This recommended advice note has been extended to include the contents of the above advice note from the City.

3. *All works in the road reserve, including construction of a crossover or footpath, installation of on-street carparking spaces, planting of street trees, bicycle parking devices, street furniture and other streetscape works and works to the road carriageway must be to the specifications of the City; the applicant should liaise with the City of Rockingham's Land and Development Infrastructure Services in this regard.*

As noted previously, separate approval is required from the City of Rockingham for all works within the road reserve. A standard advice note (Recommended Advice Note 3) has been recommended to this effect.

4. *A Permit to take Water for the use of groundwater may need to be obtained; the applicant should liaise with the Department of Water in this regard.*

It is recommended that advice note be included to this effect (Recommended Advice Note 11).

5. *It is recommended the applicant provide sufficient bicycle parking bays to service the number of students and staff of the development.*

In this regard, the plans provided indicate that a total of 48 bicycle parking spaces are to be provided. However, as noted in the accompanying Transport Impact Assessment, the Primary Schools Brief requires a total of 81 bicycle parking spaces to be provided to accommodate the maximum student capacity inclusive of all of the proposed transportable classrooms. As such, a condition has been included to require the provision of 81 bicycle parking spaces prior to occupation

(Recommended Condition 6). This is considered to adequately address the City's recommended advice note, noting that the City's TSP2 and associated Local Planning Policies do not define a bicycle parking requirement for Educational Establishments.

6. *The development must comply with the Food Act 2008, the Food Safety Standards and Chapter 3 of the Australian New Zealand Food Standards Code (Australia Only); the applicant and owner should liaise with the City's Health Services in this regard.*

In this regard, it is noted that a standard advice note (Recommended Advice Note 1) has been included to advise the applicant that all development must comply with the provisions of the Health Regulations, National Construction Code, Public Building Regulations and all other relevant Acts, Regulations and Local Laws. This is considered to adequately address the City's recommended advice note.

7. *The disposal of wastewater into the Water Corporation's sewerage system must be with approval of the Water Corporation; the applicant and owner should liaise with the Water Corporation in this regard.*

This is considered fair and reasonable, and it is recommended that a standard condition (Recommended Condition 2) be included to require that the development shall be connected to the reticulated sewerage system of the Water Corporation before commencement of any use where possible. Where reticulated sewerage is not available the development shall connect to an approved effluent disposal system to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission. This is considered to appropriately address the City's recommended advice note.

8. *Given the Department of Education's position regarding the maintenance of the street verge area that adjoin the school lot (from the back of the road kerb to the property boundary includes the footpath), providing a durable, low maintenance treatment such as paving and irrigated street trees in paved tree wells to the satisfaction of the City of Rockingham.*

It is recommended that an Advice Note be included to this effect (Recommended Advice Note 5).

9. *The Applicant needs to liaise with the developers (Perron and Mirvac) for the construction of Pedicel Avenue, Gresham Boulevard, Key Avenue and the other future road networks which connects Parkville Boulevard to facilitate traffic movement for the school site.*

As noted earlier, Recommended Advice Note 14 has been included, to require the applicant to liaise with the landowners with regard to the construction of the new roads surrounding the school site. This is considered to appropriately address the City's recommended condition, in that the requirement for the surrounding roads to be constructed (by the developers) is imposed under the terms of the subdivision approval.

As noted earlier, the roads around the school site are expected to be completed by June 2019, well in advance of the scheduled opening of the school at the start of the 2020 school year.

Additional Standard Conditions and Advice Notes:

In addition to the conditions and advice notes recommended in the preceding sections of this report, additional standard conditions have been included in relation to the requirement for:

- All on-site car parking and associated vehicle access areas shown on the approved plans to be available for vehicles and not to be used for the purpose of storage or obstructed during school hours, to the satisfaction of the Western Australian Planning Commission (Recommended Condition 4).

- A signage plan indicating the location and design of any proposed signage (including traffic directional signage) to be prepared to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission, prior to the installation of any signage (Recommended Condition 8).

- The access points for the proposed development to be designed to connect seamlessly with abutting roads and public footpath infrastructure, to the specification of the City of Rockingham and the satisfaction of the Western Australian Planning Commission (Recommended Condition 12).

- All piped and wired services, plant, equipment and storage areas to be screened from public view, and in the case of roof mounted plant, screened or located so as to minimise visual impact, to the satisfaction of the Western Australian Planning Commission (Recommended Condition 13).

- The school site to be amalgamated into one lot, prior to occupation of the development (Recommended Condition 15).

Standard advice notes have also been included to:

- Remind the applicant of its obligations under the Building Act 2011 (Recommended Advice Note 2); and

- Encourage the school to contact the Department of Transport regarding participation in the 'Your Move' campaign, which seeks to reduce car dependence and promote alternative modes of transport including walking, cycling and public transport (Recommended Advice 12).

Options/Alternatives:

The Department of Finance, Strategic Projects has no alternative recommendation.

Conclusion:

The proposed Baldivis North Public Primary School is located on a site identified in the applicable District and Local Structure Plans as a primary school.

Car parking and access for the proposed development is assessed as sufficient to cater for the 854 students the combined school site is designed to accommodate.

There are no known environmental or heritage constraints that would inhibit the development of the site for a public primary school.

It is recommended that the proposed development should therefore be approved subject to conditions.

source: googlemaps

Location Plan

Nyilla Approach, Baldivis

Date: 6 Sept 2018 Scale: NTS @ A4 Staff: GA_GW Checked: GA File: 712-393 PS lyilla app.ai

element.

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Subject Site

source: nearmaps

Aerial Photograph

Nyilla Approach, Baldivis

Date: 6 Sept 2018 Scale: NTS @ A4 Staff: GA_GW Checked: GA File: 712-393 PS lyilla app.ai

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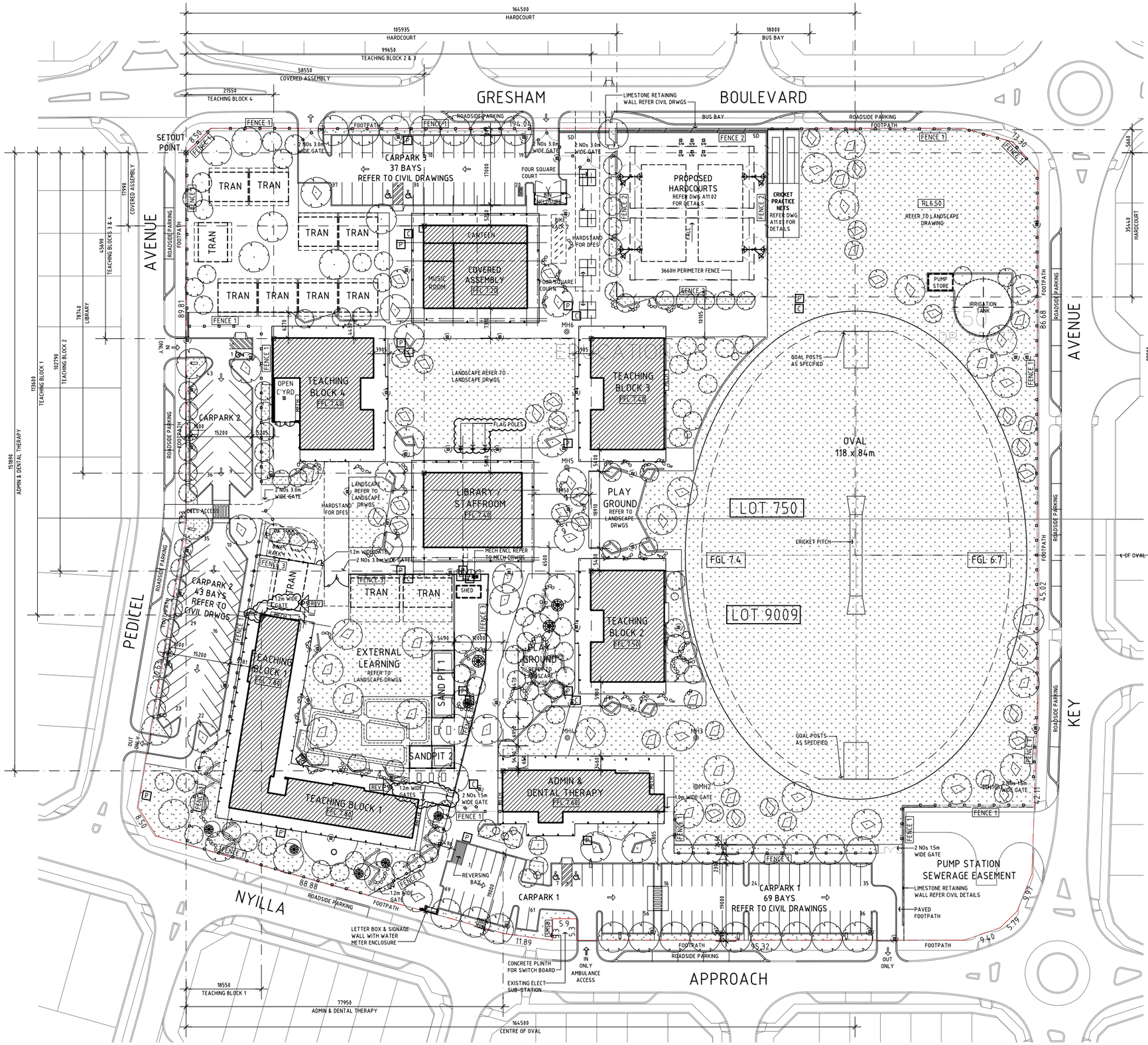

LEGEND:

- NEW TREES - REFER TO LANDSCAPE DWGS.
- RL xx.xx — PROPOSED LEVELS
- REFER TO LANDSCAPE DRAWINGS FOR EXTENTS OF PAVING, TYPES AND PATTERNS
- EXTENTS OF TURF/GARDEN BEDS - FOR TYPES REFER TO LANDSCAPE DRAWINGS
- BR '#' — BICYCLE RACK
- FH — FIRE HYDRANT - REFER TO HYD DWGS.
- P — POWER PIT - REFER TO ELECTRICAL DWGS
- C — COMMUNICATION PIT - REFER TO ELECTRICAL DWGS
- SMSB — SITE SWITCH BOARD - REFER TO ELECTRICAL DWGS
- S/W — SOAK WELL - REFER TO HYDRAULIC & CIVIL DWGS.
- SW — STORM WATER DRAIN
- GREASE TRAP REFER HYDRAULIC DRAWINGS
- SD — GRATED DRAIN - REFER TO HYDRAULIC & CIVIL DWGS.
- MH — MANHOLE - REFER HYDRAULIC DRAWINGS
- FENCE 1 — 2100mm HIGH GARRISON FENCE & GATES AS SPECIFIED.
- FENCE 2 — 3600mm HIGH CHAIN WIRE FENCE & GATES AS SPECIFIED.
- FENCE 3 — 1200mm HIGH CHAIN WIRE FENCE & GATES AS SPECIFIED.
- TRAN. — FUTURE TRANSPORTABLE BY OTHERS.
- LANDSCAPE FEATURE . REFER LANDSCAPE DETAILS
- LANDSCAPE FEATURE . REFER LANDSCAPE DETAILS

4/09/18	P10	FUTURE CHILDCARE DELETED
27/08/18	P9	ISSUED FOR BOQ ADDED ACCESS GATES TO TB1 ADDED FLAG POLES
09/08/18	P8	ISSUE TO CONSULTANTS FOR CO-ORDINATION UPDATED BOUNDARY LINE, EMBAYMENT PARKINGS VERANDAH PAVINGS & COLUMNS, RW SUMPS,
07/08/18	P7	ISSUE TO 4L UPDTAED LINE OF VERANDAH PAVING
31/07/18	P6	ISSUE TO PF ADDED EXISTING DEVELOPER'S PARKING LAYOUT
12/07/18	P5	ISSUE TO ALL CONSULTANTS ADDED BUS BAY ALONG GRESHAM BOULEVARD, REVISED PARKING ARRANGEMENT, ELECT SUBSTATION, LETTER BOX LOCATION & CROSS OVER ALONG NYILLA APPROACH
06/07/18	P4	ISSUE TO ALL CONSULTANTS GENERAL UPDATE OF BUILDING BLOCKS, LANDSCAPE & ADDED LIMESTONE RETAINING WALL AND MOVED HARDCOURT SOUTH OF WALL
22/06/18	P3	ISSUE TO ALL CONSULTANTS
07/06/18	P2	ISSUE TO PF
06/06/18	P1	ISSUE TO PF
DATE	ISSUE	DESCRIPTION

PRELIMINARY — ISSUE: P10

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Building Management and Works

PROJECT.

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 9009 NYILLA APPROACH BALDIVIS

SITE PLAN

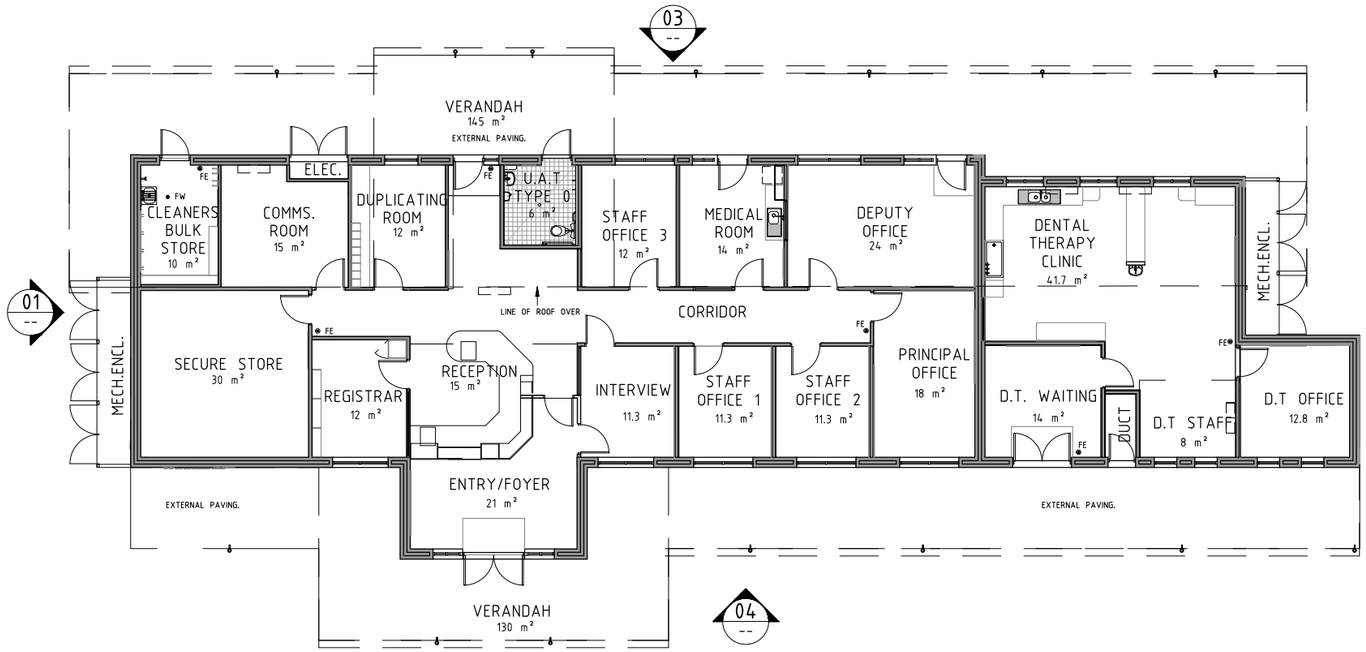
OVERALL SITE PLAN

DRAWN: FW		DESIGNED: EIW	
CHECKED: AD		PRINCIPAL:	
APPROVED:			
SCALE: 1:500		DATE: MARCH 2018	DRAWING No: A1.00
BMW PROJECT No: 14442		EIW PROJECT No: 1801	
BMW FILE No: 2018 / 04877		EIW FILE No: 1801 - BNA1.00P7	

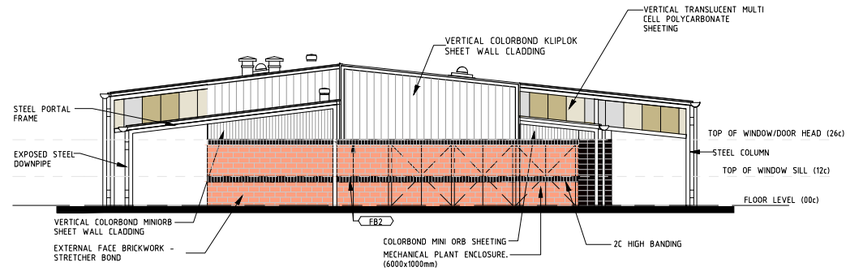
THIS IS A REVIT DRAWING DO NOT AMEND MANUALLY

N

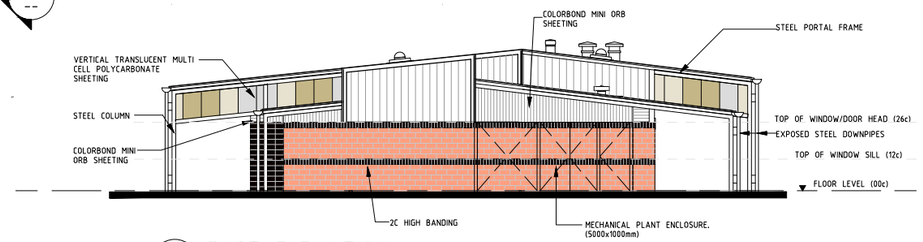
SITE PLAN 1:500



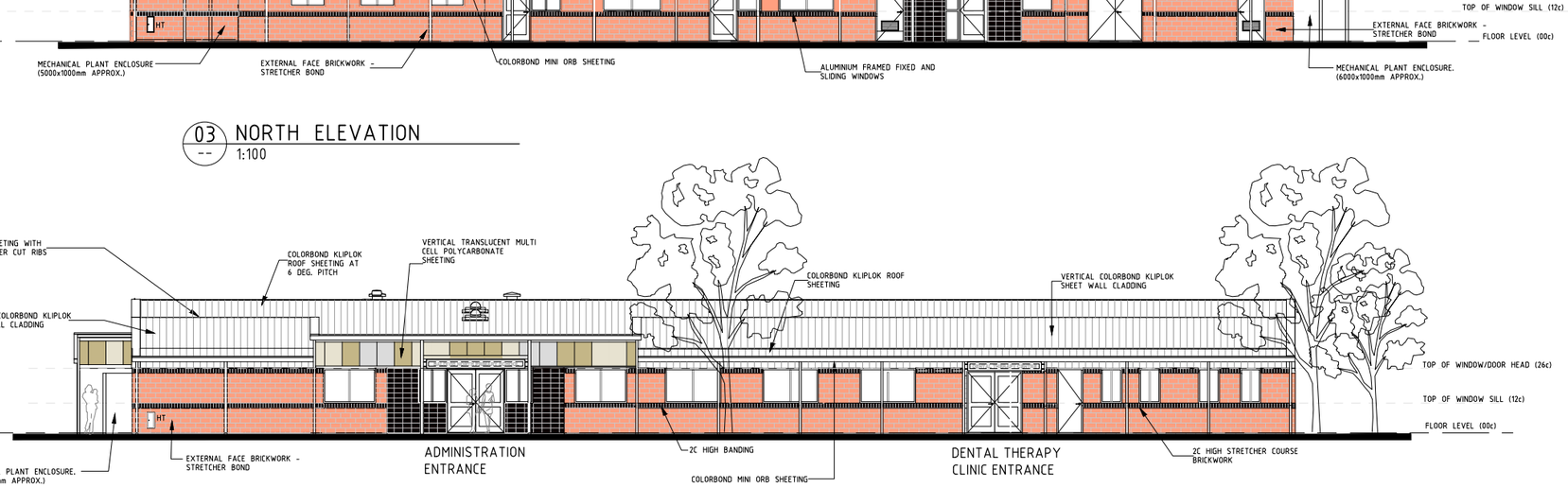
- FLOOR PLAN
1:100



01 WEST ELEVATION
1:100



02 EAST ELEVATION
1:100



03 NORTH ELEVATION
1:100

04 SOUTH ELEVATION
1:100

N

ADMINISTRATION BUILDING

SCALE. : 1:100@A1 0 1 2 10m

BALDIVIS NORTH PRIMARY SCHOOL
LOTS 750 & 9009 NYILLA APPROACH, BALDIVIS

JOB NO. : 1801 DATE : APRIL 2018 DWG NO. : SK2.01 REV : P1

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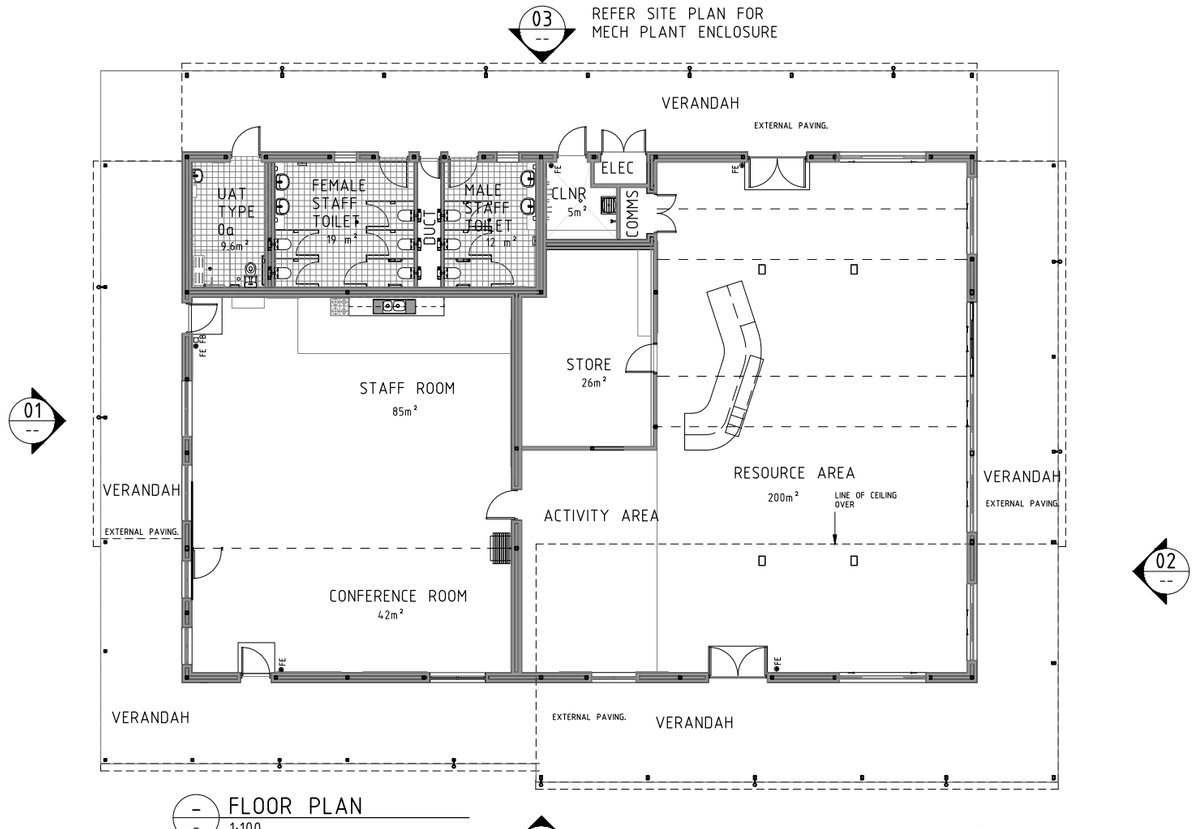
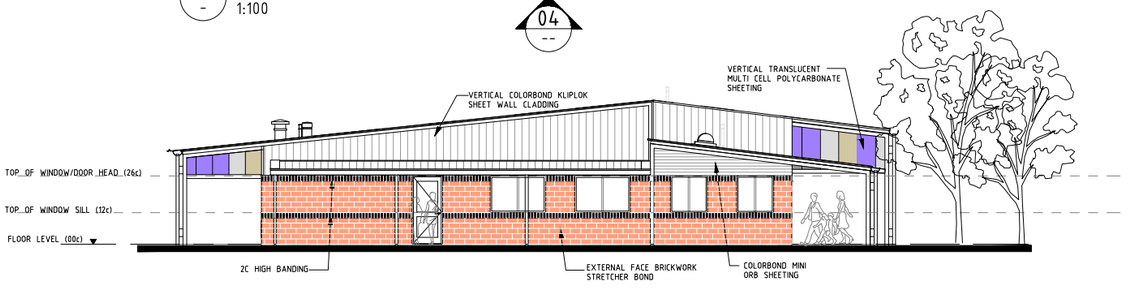
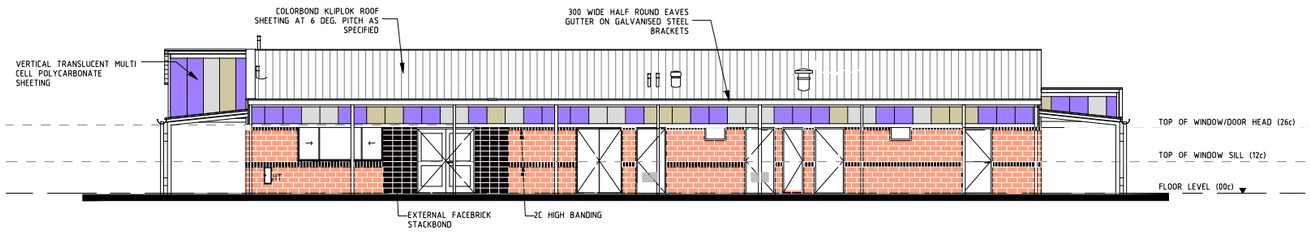


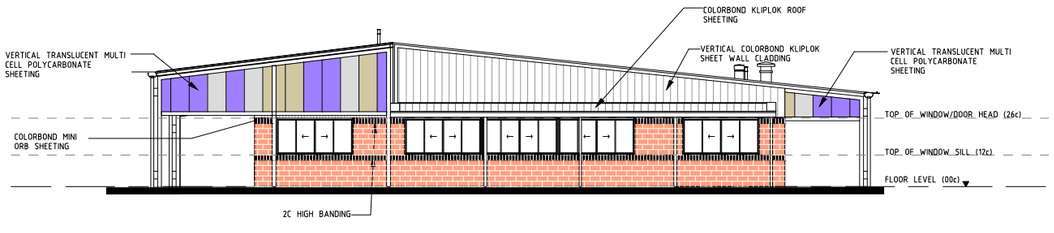
FLOOR PLAN
1:100



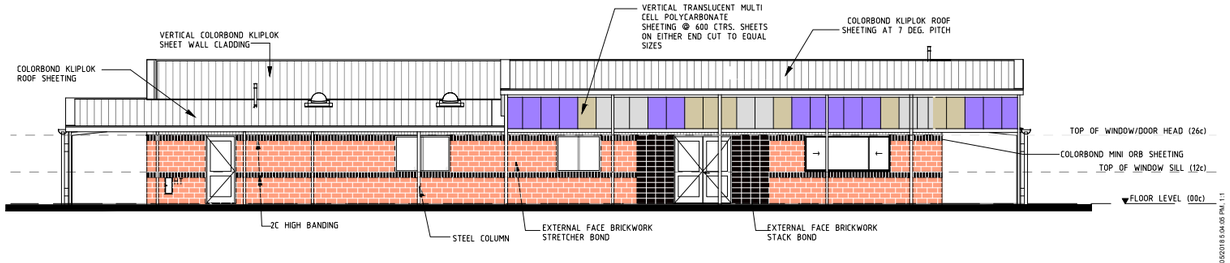
1 WEST ELEVATION
1:100



3 NORTH ELEVATION
1:100



2 EAST ELEVATION
1:100



4 SOUTH ELEVATION
1:100

N

LIBRARY BUILDING

SCALE. : 1:100@A1 0 1 2 10m

BALDIVIS NORTH PRIMARY SCHOOL
LOTS 750 & 9009 NYILLA APPROACH, BALDIVIS

JOB NO. : 1801 DATE : APRIL 2018 DWG NO. : SK3.01 REV : P2

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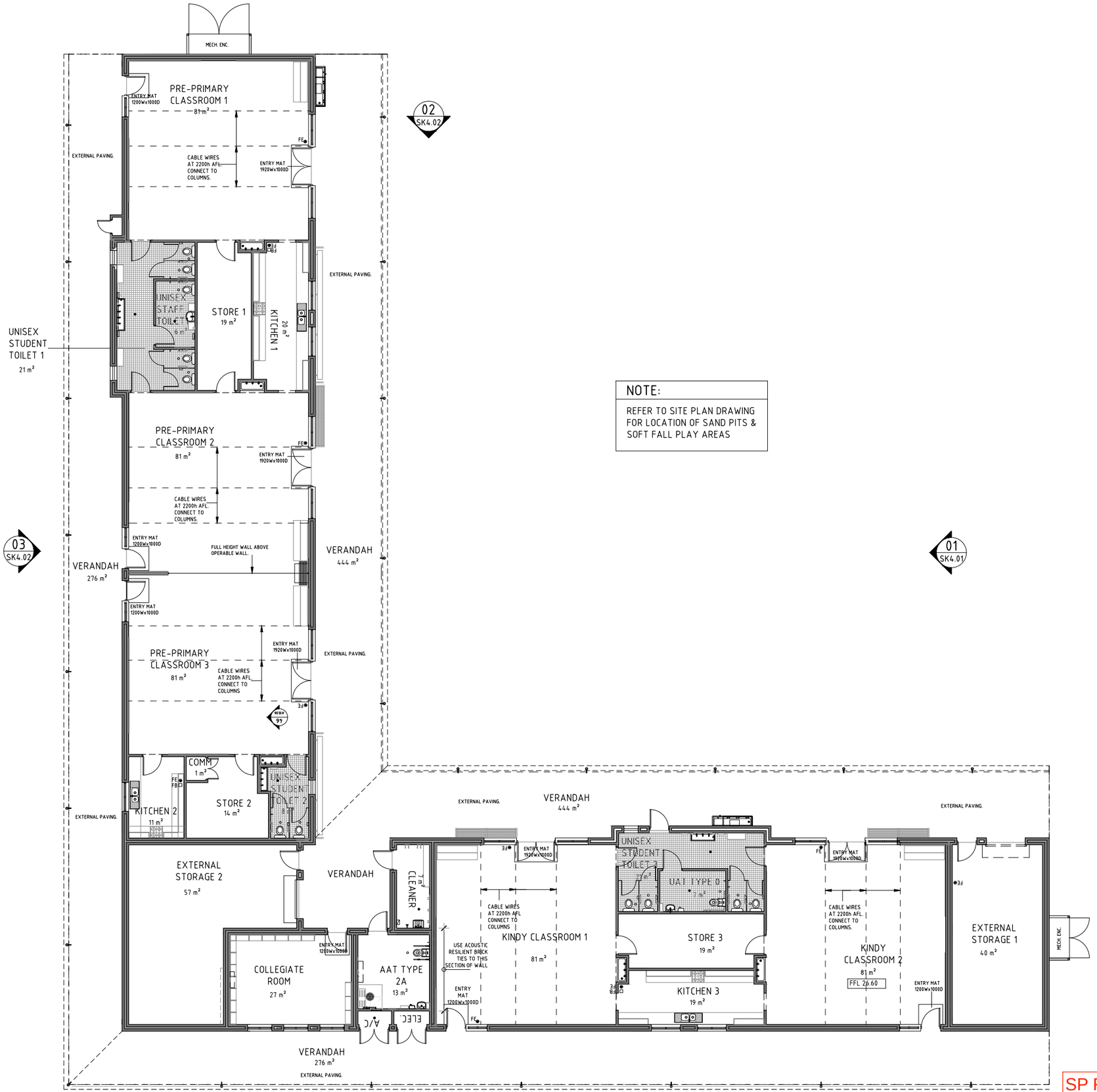

NOTE:

REFER TO SITE PLAN DRAWING FOR LOCATION OF SAND PITS & SOFT FALL PLAY AREAS

– SK1.01 TEACHING BLOCK 1 FLOOR PLAN
1:100

NORTH

TEACHING BLOCK 1

SCALE. : 1:100@A1 0 1 2 10m

04 SK4.01

BALDIVIS NORTH PRIMARY S SCHOOL

LOTS 750 & 9009 NYILLA APPROACH, BALDIVIS

JOB NO. : 1801 DATE : APRIL 2018 DWG NO. : SK4.01 REV : P2

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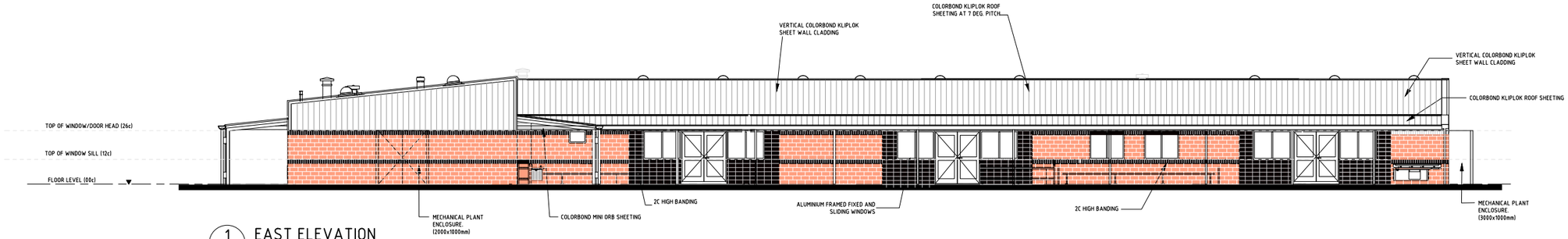
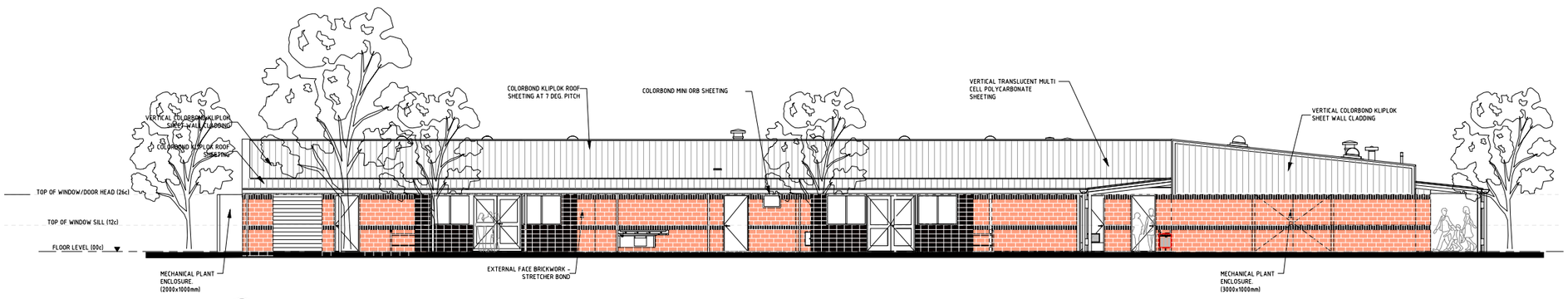
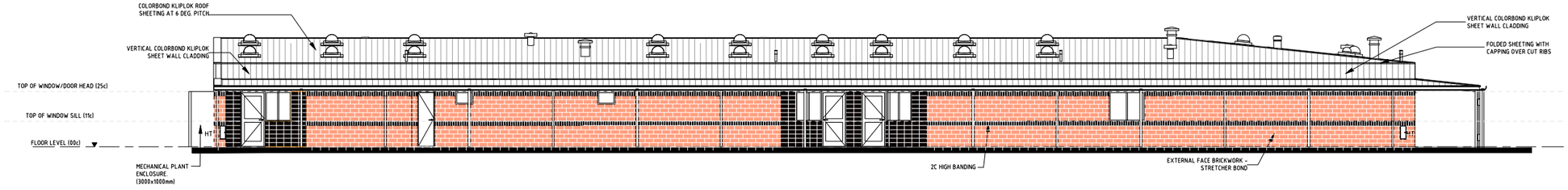


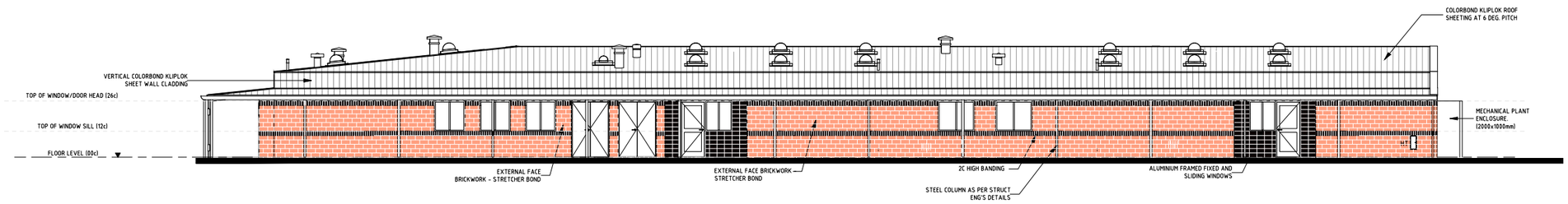
1 SK4.01 EAST ELEVATION
1:100



2 SK4.01 NORTH ELEVATION
1:100



3 SK4.01 WEST ELEVATION
1:100



4 SK4.01 SOUTH ELEVATION
1:100

N

TEACHING BLOCK 1

SCALE. : 1:100@A1 0 1 2 10m

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 9009 NYILLA APPROACH, BALDIVIS

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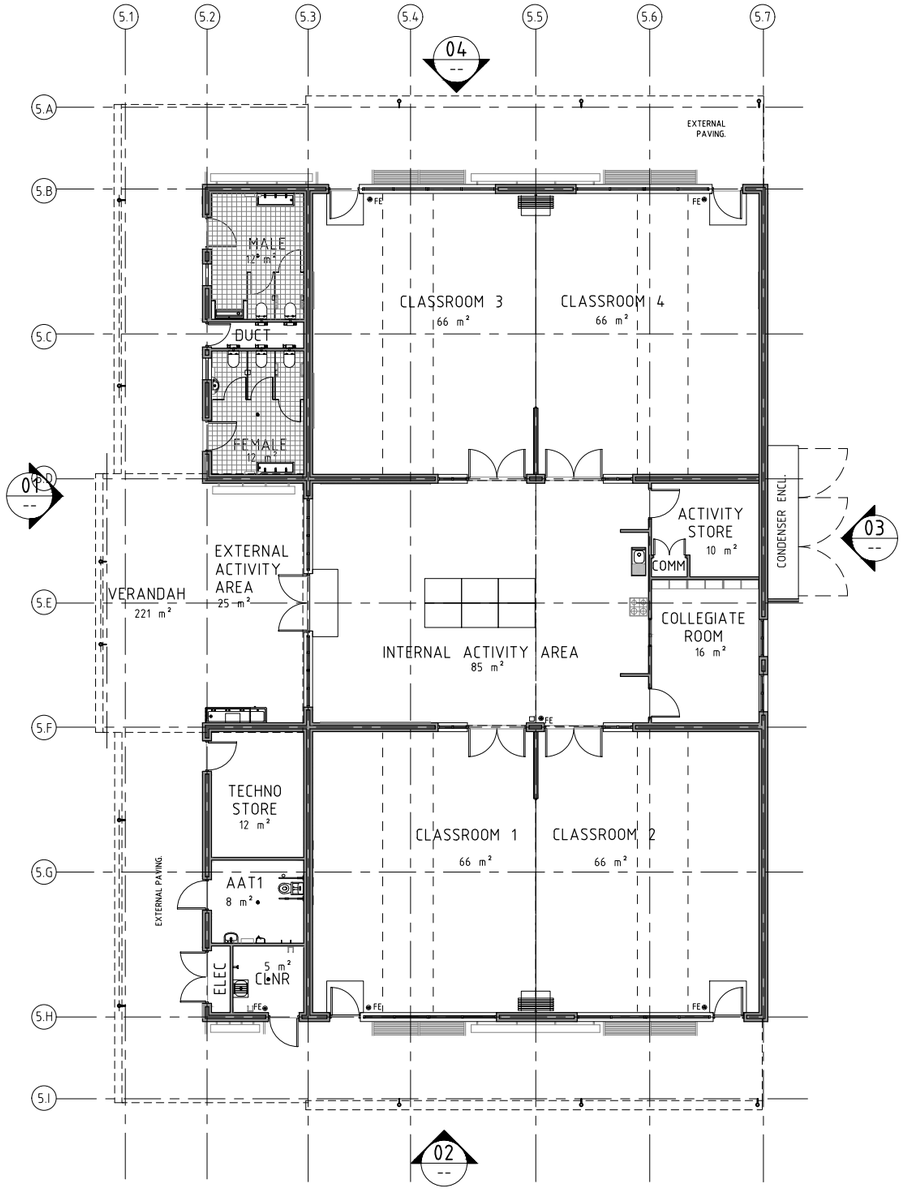
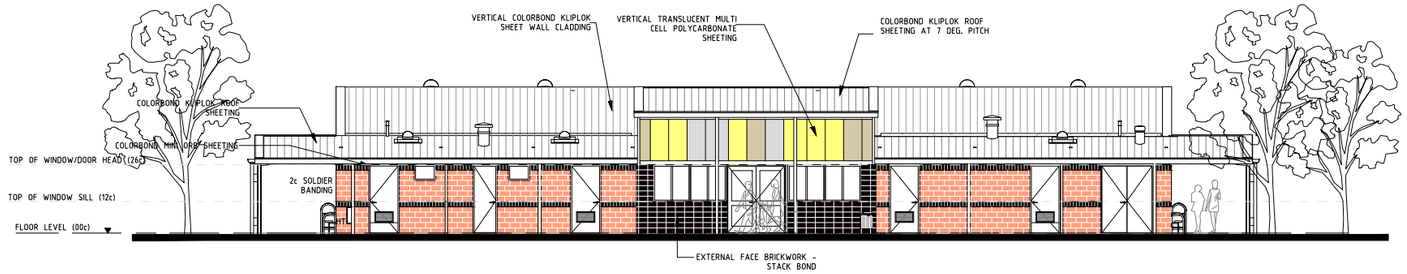
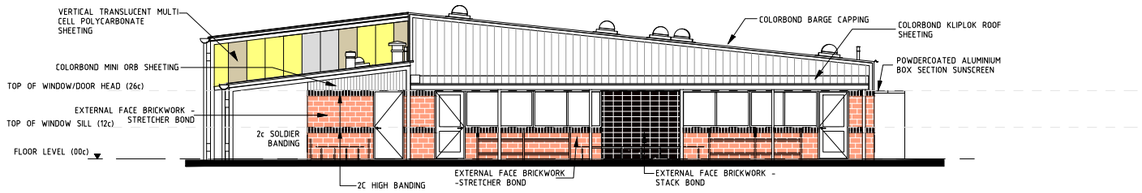


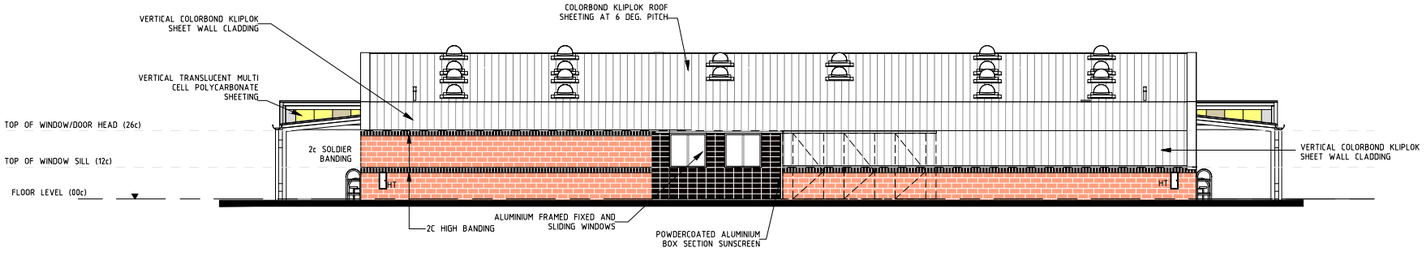
– SK1.01 FLOOR PLAN
1:100



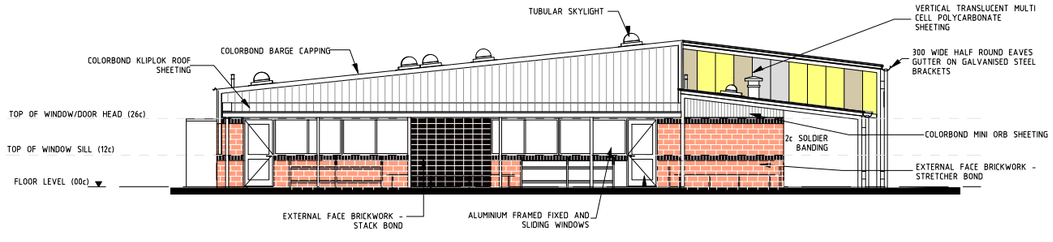
1 -- WEST ELEVATION
1:100



2 -- SOUTH ELEVATION
1:100



3 -- EAST ELEVATION
1:100



4 -- NORTH ELEVATION
1:100

N

TEACHING BLOCK 2 & 3

SCALE. : 1:100@A1 0 1 2 10m

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 9009 NYILLA APPROACH, BALDIVIS

JOB NO. : 1801 DATE : APRIL 2018 DWG NO. : SK5.01 REV : P2

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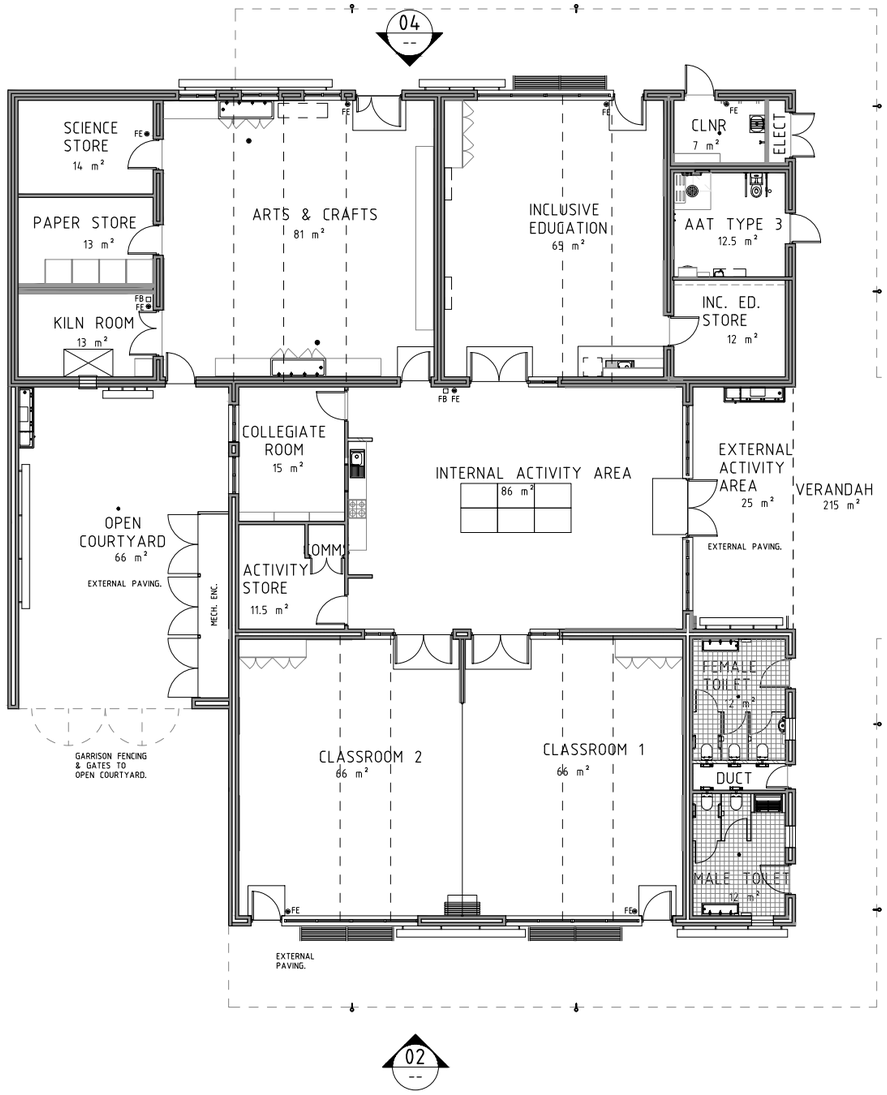
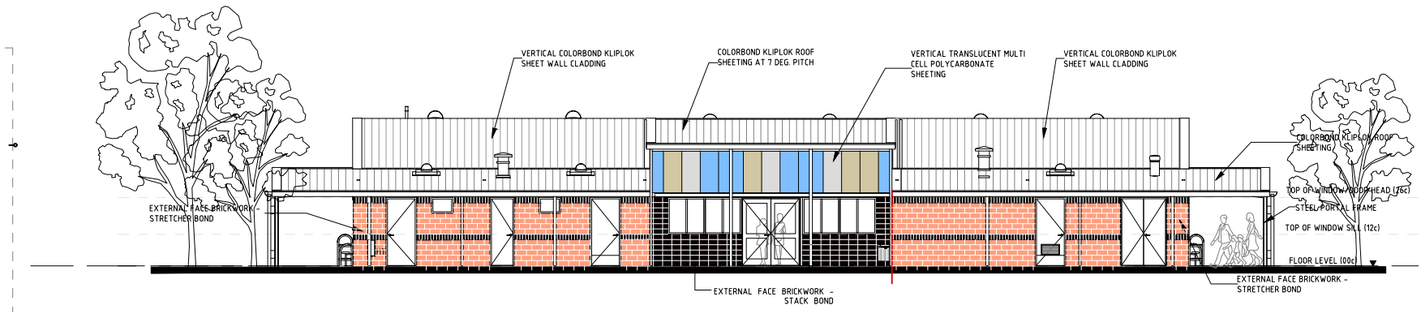
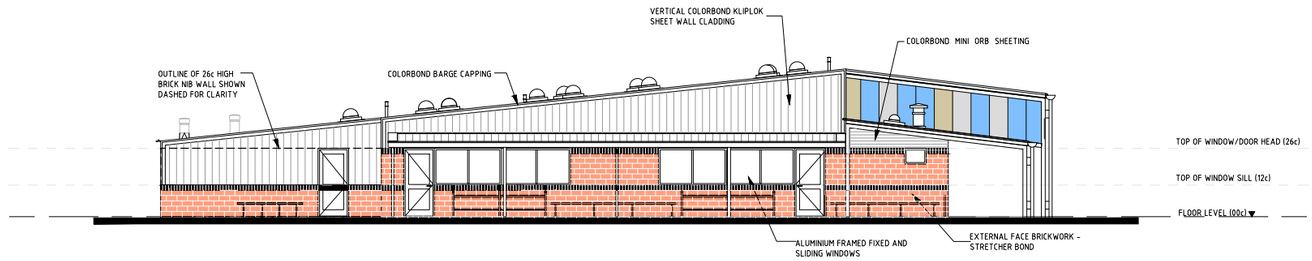


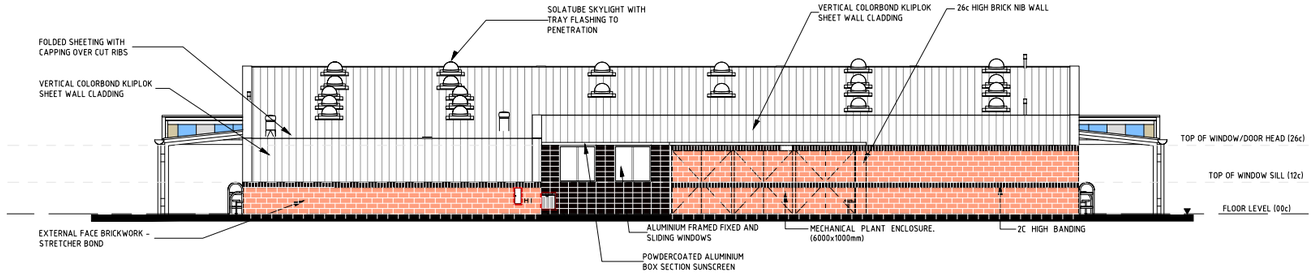
– FLOOR PLAN
1:100



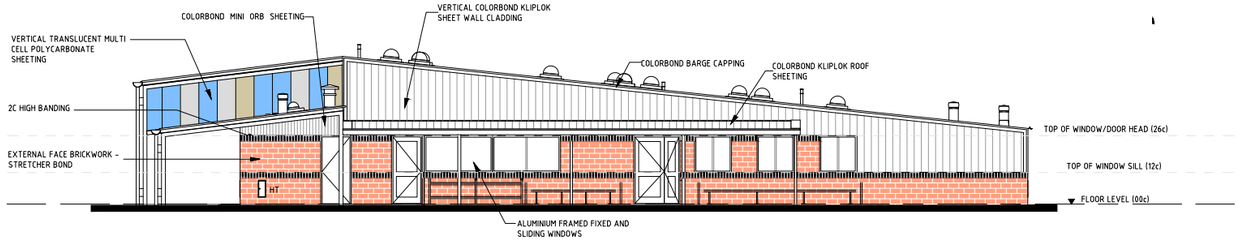
1 – EAST ELEVATION
1:100



2 – SOUTH ELEVATION
1:100



3 – WEST ELEVATION
1:100



4 – NORTH ELEVATION
1:100

TEACHING BLOCK 4

SCALE. : 1:100@A1 0 1 2 10m

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 9009 NYILLA APPROACH, BALDIVIS

JOB NO. : 1801 DATE : MARCH 2018 DWG NO. : SK7.01 REV : P2

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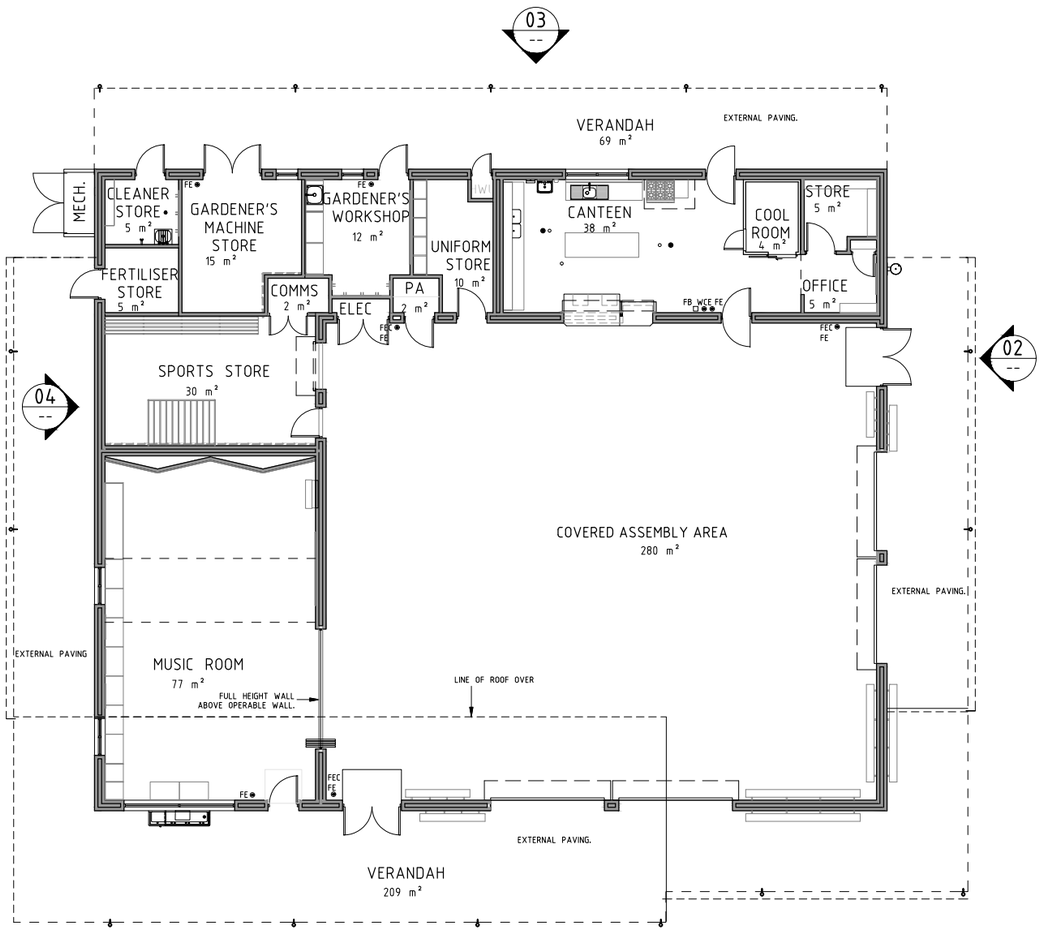

01
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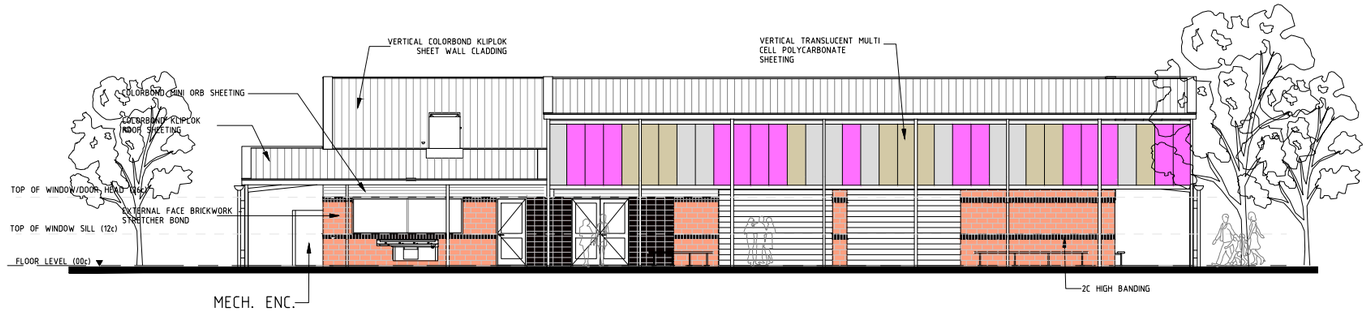
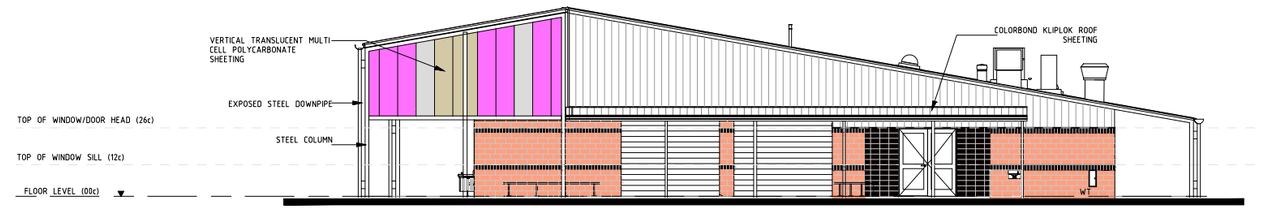
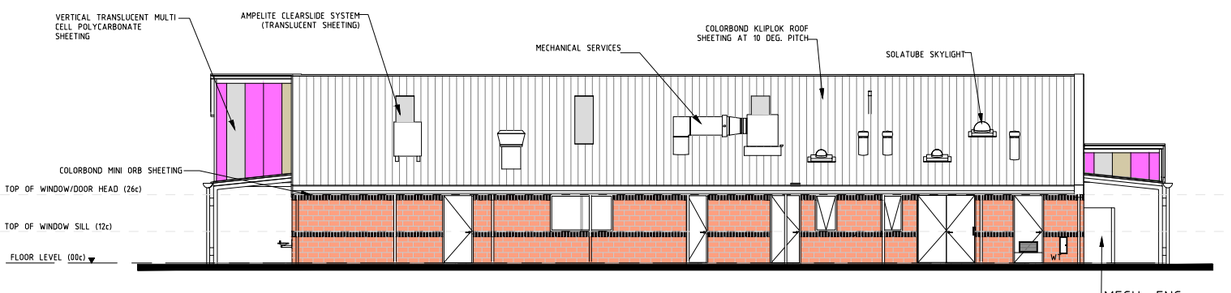
- FLOOR PLAN
1:100



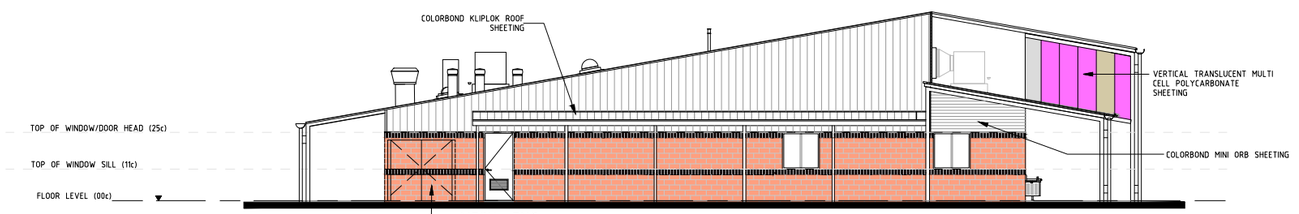
1 - SOUTH ELEVATION
1:100



2 - EAST ELEVATION
1:100



3 - NORTH ELEVATION
1:100



4 - WEST ELEVTION
1:100

N

COVERED ASSEMBLY

SCALE. : 1:100@A1

0 1 2 10m

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 9009 NYILLA APPROACH, BALDIVIS

JOB NO. : 1801 DATE : APRIL 2018 DWG NO. : SK8.01 REV : P2

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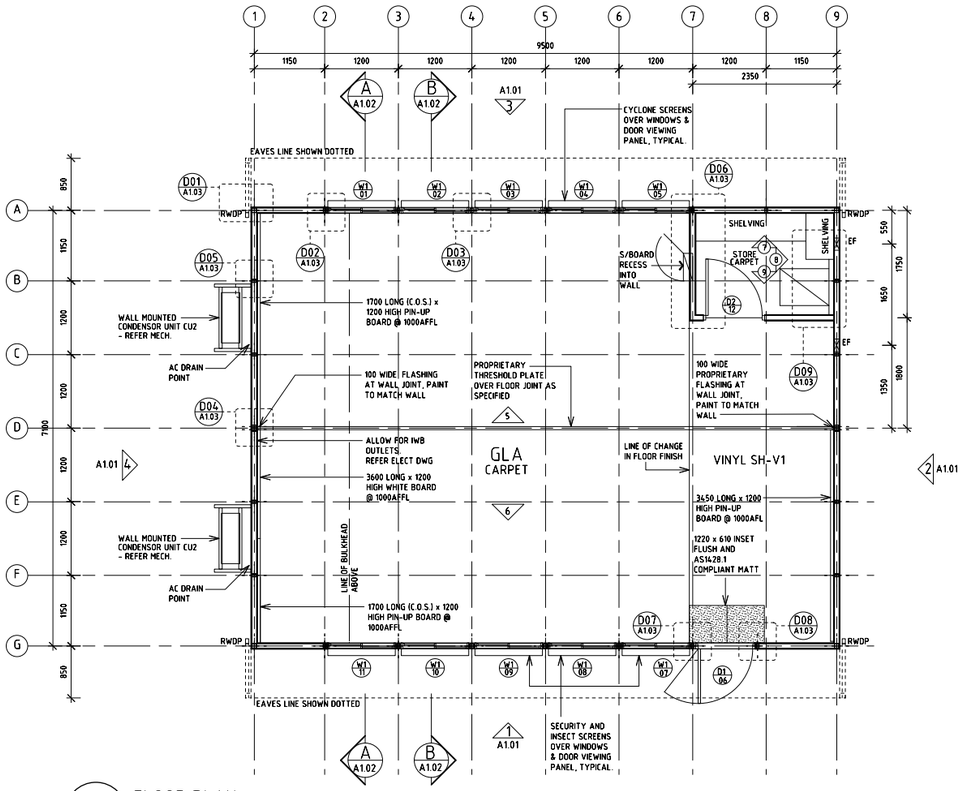
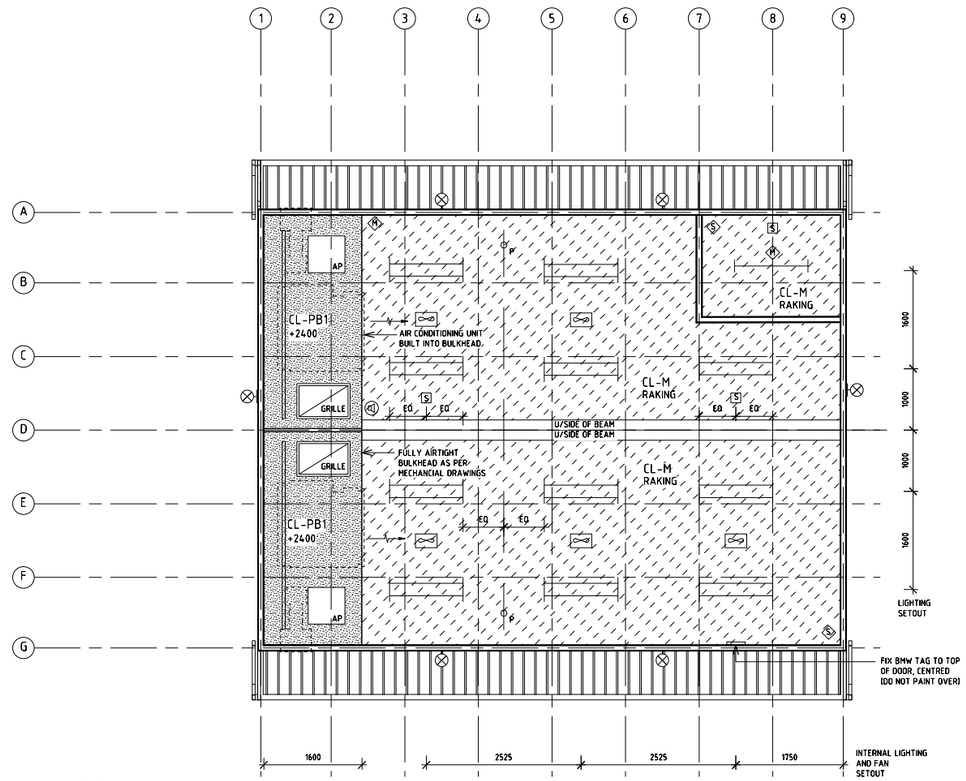
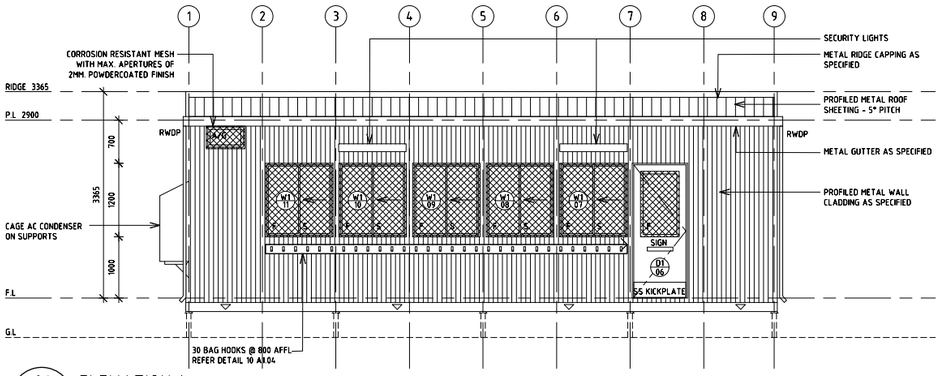


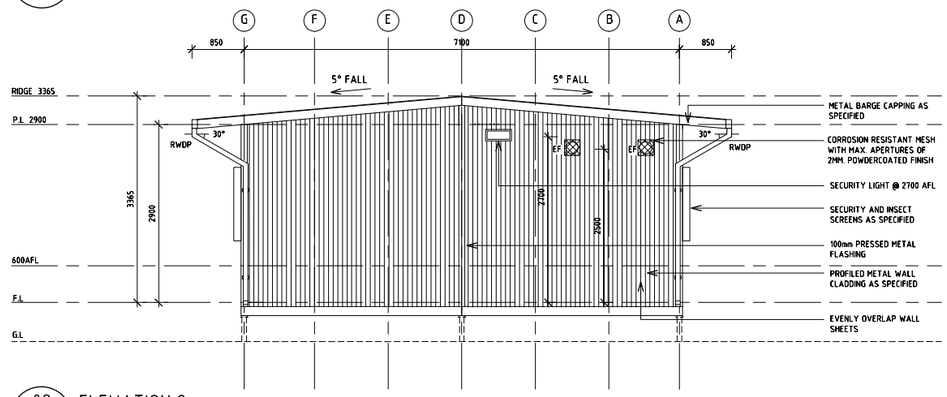
– / A1.01 FLOOR PLAN 1:50



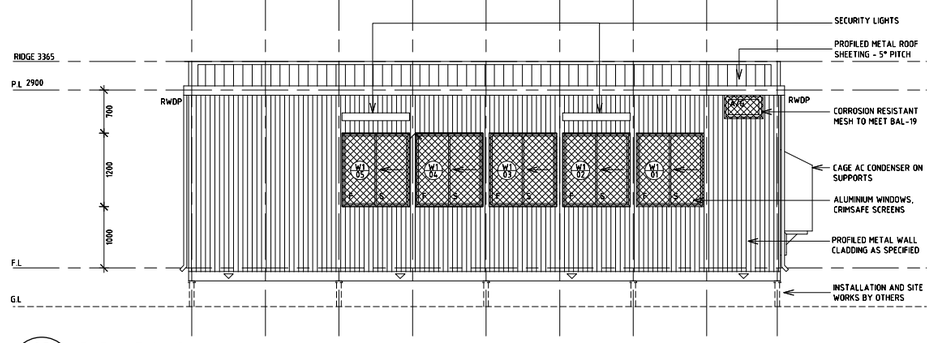
– / A1.01 CEILING PLAN 1:50



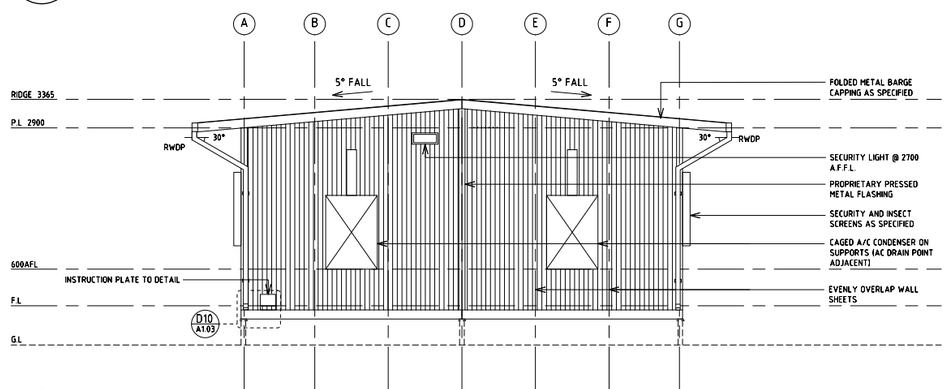
01 / A1.01 ELEVATION 1 1:50 / SIDE A



02 / A1.01 ELEVATION 2 1:50



03 / A1.01 ELEVATION 3 1:50



04 / A1.01 ELEVATION 4 1:50

NOTES

1.THE VERANDAH IS TO BE FABRICATED TO ALLOW FOR ATTACHMENT TO TRANSPORTABLE IN EACH ALTERNATIVE LOCATION AS SHOWN ON THE DRAWINGS
2. LOCATION OF TRANSPORTABLE ONSITE & SITE WORKS IS NOT IN SCOPE OF WORKS
3. REFER TO DOOR & HARDWARE SCHEDULE FOR EXTENT OF THRESHOLD PLATES & HARDWARE
4. THIS TRANSPORTABLE BUILDING HAS BEEN DESIGNED TO BAL-19

LEGEND

P.L	PLATE LEVEL	GR1	GRAB RAIL TYPE 1
F.L	FLOOR LEVEL	LS	LIGHT SWITCH
G.L	GROUND LEVEL	LUM-S	LUMINAIRE - SECURITY
AP	ACCESS PANEL	NIC	NOT IN CONTRACT
ACC	AIR CON CONTROL	PB	PINBOARD
AV	AV WALL PLATE	PM	PARABOLIC MIRROR
DATA	DATA WALL PLATE	PTD	PAPER TOWEL DISPENSER
EF	FIXED WINDOW SASH	RWDP	RAINWATER DOWNPIPE
EFS	EXHAUST FAN SWITCH	S	SLIDING WINDOW SASH
EFSO	FIXED WINDOW SASH	SD	SOAP DISPENSER
F	EXHAUST FAN	SS	STAINLESS STEEL
FB	FIRE BLANKET	TEL	TELEPHONE WALL PLATE
FE	FIRE EXTINGUISHER	TH	THERMOSTAT
FR	FRIDGE (NIC)	TRH	TOILET ROLL HOLDER
FWG	FLOOR WASTE GULLY	U/S	UNDERSIDE
GPO	SINGLE GPO WALL PLATE	USB	USB WALL PLATE
DGPO	DOUBLE GPO WALL PLATE	WB	WHITEBOARD
		VC	VOLUME CONTROL

CEILING LEGEND

- CL-PB1 P/BOARD BULKHEAD, FLUSH JOINTED
- CL-PB2 IMPACT RESISTANT P/BOARD, 'H' MOULD JOINTS
- CL-M PERFORATED METAL ACOUSTIC CEILING.
- TWIN SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
- SINGLE SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
- AP CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN
- WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES
- PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETECTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
- SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
- SPEAKER
- T THERMOSTAT
- P DAYLIGHT SENSOR
- M MOTION SENSOR
- S SECURITY MOTION SENSOR

SP RECEIVED 4 SEPTEMBER 2018

NO.	REVISION	DATE	BY
0	ISSUE FOR TENDER	04.05.18	IPH

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Government of **Western Australia**
Department of **Finance**
Building Management and Works

TENDER

TRANSPORTABLE SCHOOL BUILDINGS
WESTERN AUSTRALIA
GENERAL LEARNING AREA CLASSROOMS

GLA PLANS AND ELEVATIONS

DRAWN	IPH	DESIGNED	AI	REDUCTION	
CHECKED	AI	PRINCIPAL		0 1250	
APPROVED	AI	ADRIAN IREDALE			
SCALE 1: 50 @A1 1: 100 @A3		DATE APRIL 2018		DRAWING No. A1.01 /0	
BMW PROJ No. 14488		BMW TENDER No. 0149118			

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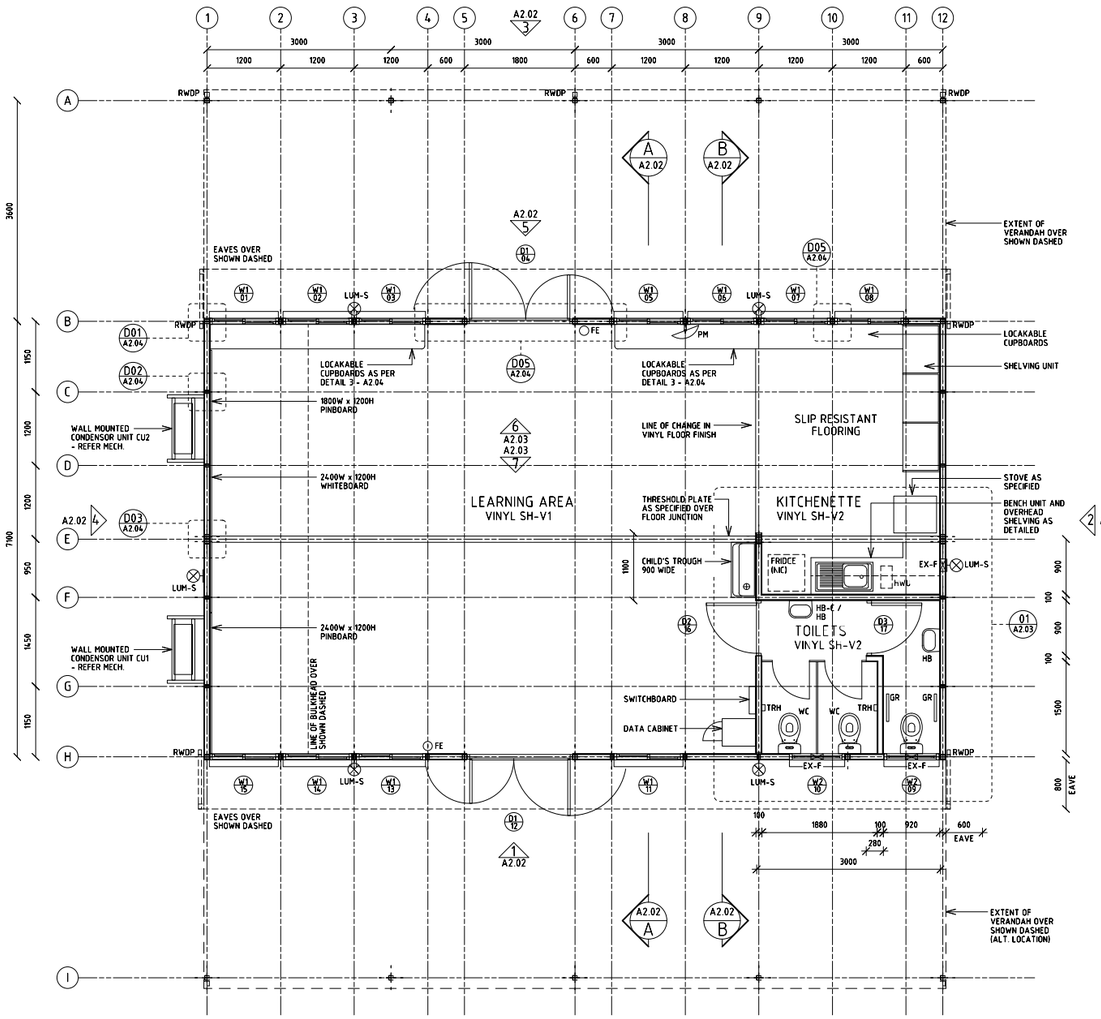
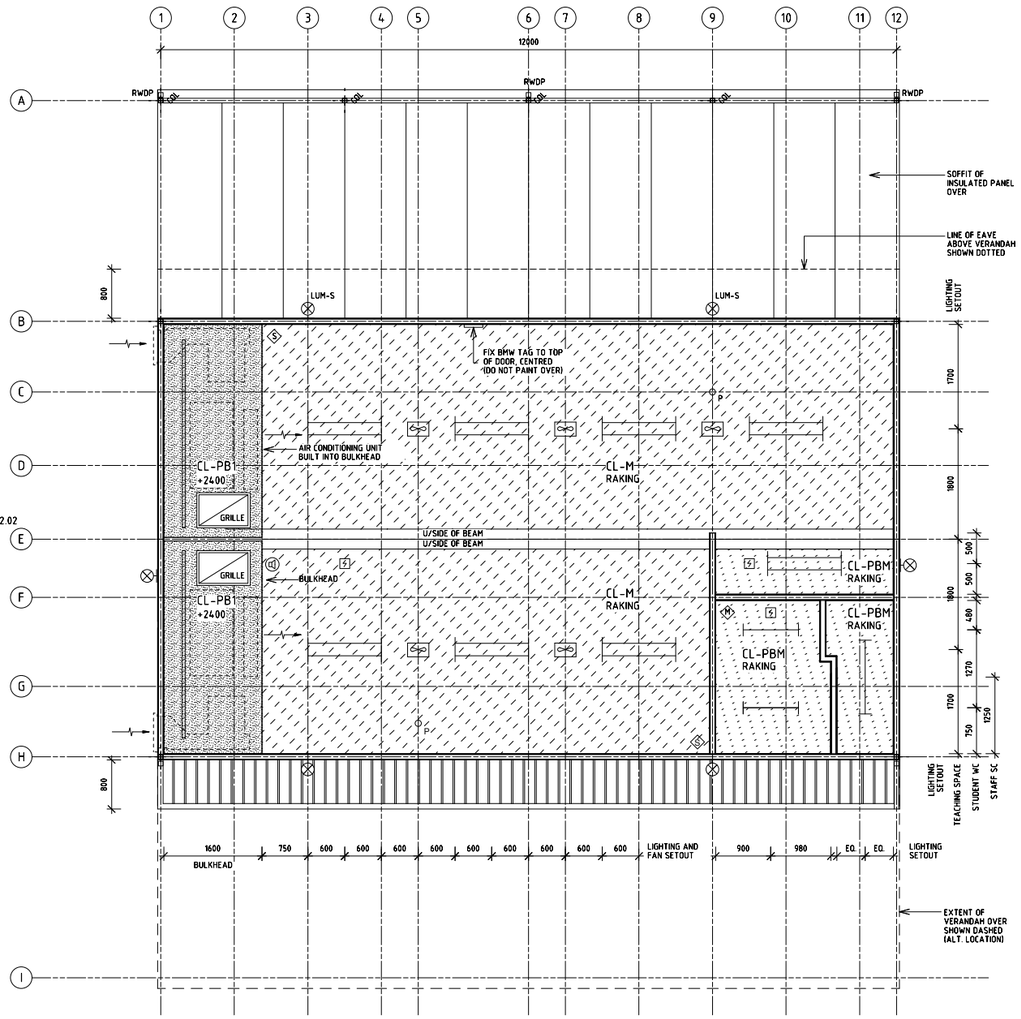


01 FLOOR PLAN
1:50



02 CEILING PLAN
1:50

NOTES

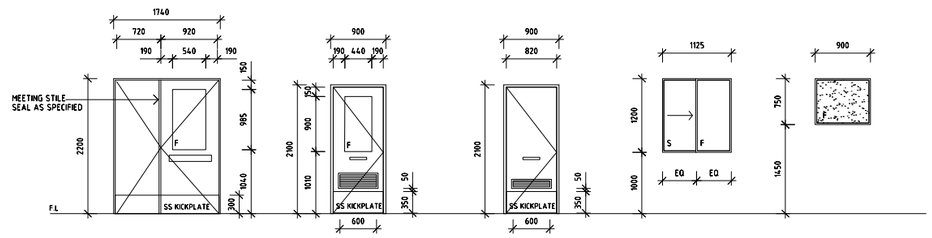
1. THE VERANDAH IS TO BE FABRICATED TO ALLOW FOR ATTACHMENT TO TRANSPORTABLE IN EACH ALTERNATIVE LOCATION AS SHOWN ON THE DRAWINGS
2. LOCATION OF TRANSPORTABLE ONSITE & SITE WORKS IS NOT IN SCOPE OF WORKS
3. REFER TO DOOR & HARDWARE SCHEDULE FOR EXTENT OF THRESHOLD PLATES & HARDWARE
4. THIS TRANSPORTABLE BUILDING HAS BEEN DESIGNED TO BAL-19

LEGEND

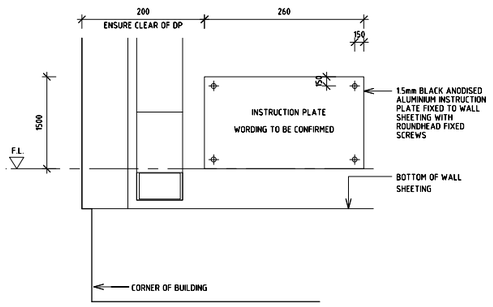
P.L	PLATE LEVEL	GR1	GRAB RAIL TYPE 1
F.L	FLOOR LEVEL	LS	LIGHT SWITCH
G.L	GROUND LEVEL	LUM-S	LUMINAIRE - SECURITY
AP	ACCESS PANEL	NIC	NOT IN CONTRACT
ACC	AIR CON CONTROL	PB	PINBOARD
AV	AV WALL PLATE	PM	PARABOLIC MIRROR
DATA	DATA WALL PLATE	PTD	PAPER TOWEL DISPENSER
EF	FIXED WINDOW SASH	RWDP	RAINWATER DOWNPIPE
EFS	EXHAUST FAN SWITCH	S	SLIDING WINDOW SASH
EFSO	FIXED WINDOW SASH	SD	SOAP DISPENSER
F	EXHAUST FAN	SS	STAINLESS STEEL
FB	FIRE BLANKET	TEL	TELEPHONE WALL PLATE
FE	FIRE EXTINGUISHER	TH	THERMOSTAT
FR	FRIDGE (NIC)	TRH	TOILET ROLL HOLDER
FWG	FLOOR WASTE GULLY	U/S	UNDERSIDE
GPO	SINGLE GPO WALL PLATE	USB	USB WALL PLATE
DGPO	DOUBLE GPO WALL PLATE	WB	WHITEBOARD
		VC	VOLUME CONTROL

CEILING LEGEND

- CL-PBM — MOISTURE RESISTANT P/BOARD, 'H' MOULD JOINTS
- CL-PB1 — P/BOARD BULKHEAD, FLUSH JOINTED
- CL-M — PERFORATED METAL ACOUSTIC CEILING.
- TWIN SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
- SINGLE SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
- AP — CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN
- WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES
- PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETECTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
- SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
- SPEAKER
- THERMOSTAT
- DAYLIGHT SENSOR
- MOTION SENSOR
- SECURITY MOTION SENSOR



DOOR AND WINDOW TYPE:	D1	D2	D3	W1	W2
OPENING NUMBER:	04,12	16	17	01, 02, 03, 05, 06, 07, 08, 11, 13, 14, 15	09, 10
LOCATION:	EXTERNAL	STUDENT TOILET	STAFF TOILET	EXTERNAL	EXTERNAL
FRAME:	ALUMINIUM	STEEL 12 ZINCANNEAL	STEEL 12 ZINCANNEAL	ALUMINIUM	ALUMINIUM
WINDOW/DOOR:	40mm SOLID CORE DOOR WITH CRIMSAFE SECURITY GRILLE SCREW FIXED TO DOOR VIEWING PANEL AND WITH TAMPER RESISTANT FIXINGS	40mm SOLID CORE DOOR WITH LAMINATED SAFETY GLASS VIEWING PANEL	40mm SOLID CORE DOOR	CYCLONE RATED INSECT/ SECURITY SCREENS	CYCLONE RATED INSECT/ SECURITY SCREENS OBSCURE GLAZING
REMARKS:	- HEAVY DUTY DOOR HARDWARE - INTERNAL TURNSNIB WITH ANTI-LOCKOUT ESCAPE LOCK - 'HOLD OPEN' DOOR CLOSER MECHANISM SET AT 110° - PAINT FINISH TO ALL SIDES OF DOOR - 1 OFF DOOR SIGN - 'PRE-PRIMARY CLASSROOM' - REFER TO SPECIFICATIONS FOR GLAZING AND CYCLONE RATED INSECT SCREEN OVER - FULL WEATHER SEAL TO ALL SIDES AND MEETING STILE.	- HEAVY DUTY DOOR HARDWARE - FLOOR MOUNTED DOOR STOP - 'HOLD OPEN' DOOR CLOSER MECHANISM SET AT 90° - PAINT FINISH TO ALL SIDES OF DOOR - 1 OFF DOOR SIGN - 'TOILET' - REFER TO SPECIFICATIONS FOR GLAZING - VANDAL PROOF STEEL POWDERCOATED DOOR GRILLE - REFER MECH	- HEAVY DUTY DOOR HARDWARE - INTERNAL TURNSNIB WITH ANTI-LOCKOUT ESCAPE LOCK - OCCUPANCY INDICATOR - FLOOR MOUNTED DOOR STOP - LIFT OFF HINGES FOR EMERGENCY ACCESS - 'HOLD OPEN' DOOR CLOSER MECHANISM SET AT 90° - PAINT FINISH TO ALL SIDES OF DOOR - 1 OFF DOOR SIGN - 'STAFF TOILET' - VANDAL PROOF STEEL POWDERCOATED DOOR GRILLE - REFER MECH	REFER TO SPECIFICATIONS FOR GLAZING, CYCLONE RATED INSECT SCREEN OVER AND WINDOW RATINGS	REFER TO SPECIFICATIONS FOR GLAZING, CYCLONE RATED INSECT SCREEN OVER AND WINDOW RATINGS



03 DETAIL ELEVATION
1:5

1:5 / INSTRUCTION PLATE
INSTRUCTIONS TO BE AS DETAILED ABOVE AND ENGRAVED INTO PLATE IN ISONORM TYPE

SP RECEIVED 4 SEPTEMBER 2018

NO	REVISION	DATE	BY
0	ISSUE FOR TENDER	04.05.18	IPH

DOCUMENTATION BY: **iredale pedersen hook** architects
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Government of **Western Australia**
Department of **Finance**
Building Management and Works

TENDER

TRANSPORTABLE SCHOOL BUILDINGS
WESTERN AUSTRALIA
GENERAL LEARNING AREA CLASSROOMS

PRE PRIMARY PLANS AND DOOR / WINDOW SCHEDULE

DRAWN	IPH	DESIGNED	AI
CHECKED	AI	PRINCIPAL	ADRIAN IREDALE
APPROVED	AI		
SCALE 1:50 @A1, 1:100 @A3		DATE	APRIL 2018
BMW PROJ No. 14.88		BMW TENDER No. 014.9118	

REDUCTION 0 1250

DRAWING No. A 2.01 /0

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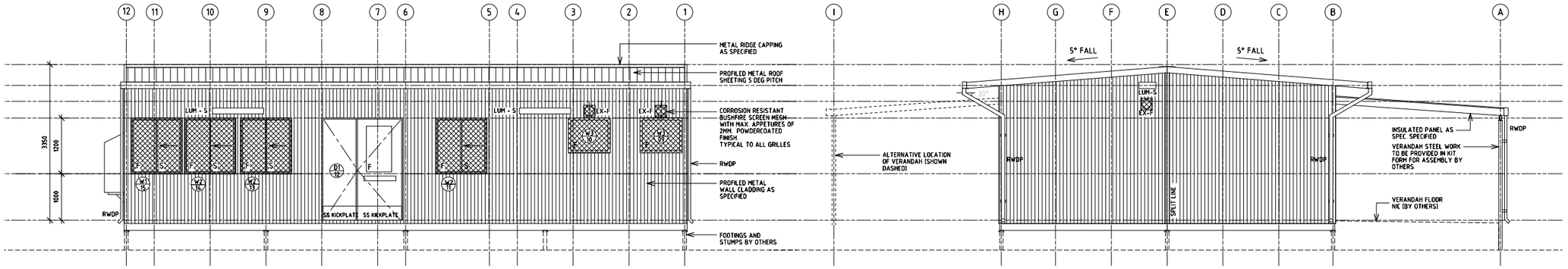
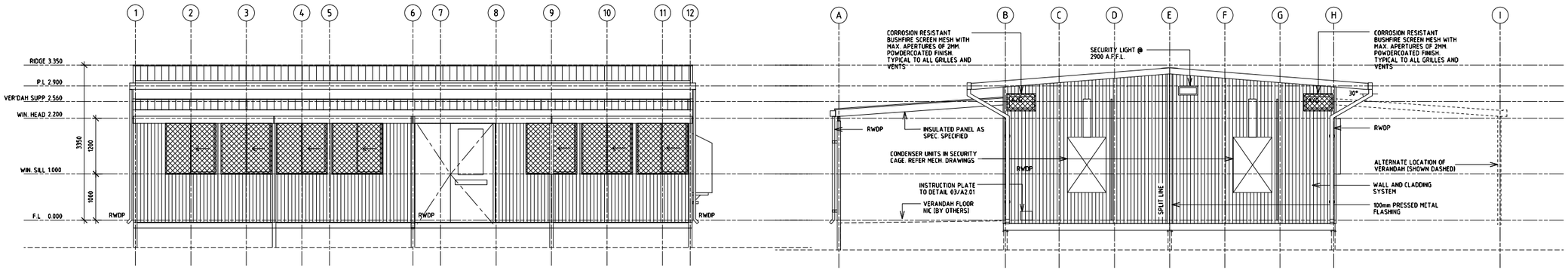


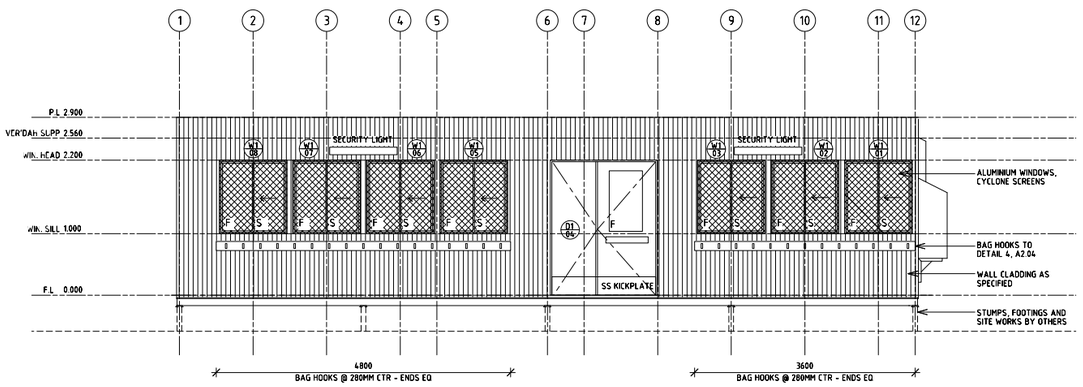
1 A2.01 ELEVATION 1
1:50

2 A2.01 ELEVATION 2
1:50



3 A2.01 ELEVATION 3
1:50 / INCLUDING PATIO

4 A2.01 ELEVATION 4
1:50



5 A2.01 ELEVATION 5
1:50

NOTES

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LEGEND

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F.L	FLOOR LEVEL	LS	LIGHT SWITCH
G.L	GROUND LEVEL	LUM-S	LUMINAIRE - SECURITY
AP	ACCESS PANEL	NIC	NOT IN CONTRACT
ACC	AIR CON. CONTROL	PB	PINBOARD
AV	AV WALL PLATE	PM	PARABOLIC MIRROR
DATA	DATA WALL PLATE	PTD	PAPER TOWEL DISPENSER
EF	FIXED WINDOW SASH	RWDP	RAINWATER DOWNPIPE
EFS	EXHAUST FAN SWITCH	S	SLIDING WINDOW SASH
EFSO	FIXED WINDOW SASH	SD	SOAP DISPENSER
F	EXHAUST FAN	SS	STAINLESS STEEL
FB	FIRE BLANKET	TEL	TELEPHONE WALL PLATE
FE	FIRE EXTINGUISHER	TH	THERMOSTAT
FR	FRIDGE (NIC)	TRH	TOILET ROLL HOLDER
FWG	FLOOR WASTE GULLY	U/S	UNDERSIDE
GPO	SINGLE GPO WALL PLATE	USB	USB WALL PLATE
DGPO	DOUBLE GPO WALL PLATE	WB	WHITEBOARD
		VC	VOLUME CONTROL

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Building Management and Works

TENDER

TRANSPORTABLE SCHOOL BUILDINGS
WESTERN AUSTRALIA
GENERAL LEARNING AREA CLASSROOMS

PRE PRIMARY ELEVATIONS

DRAWN	IPH	DESIGNED	AI	REDUCTION 0 1250
CHECKED	AI	PRINCIPAL		
APPROVED	AI	ADRIAN IREDALE		
SCALE 1: 50 @A1 1: 100 @A3		DATE APRIL 2018		DRAWING No. A 2.02 /0
BMW PROJ No. 14488		BMW TENDER No. 0149118		

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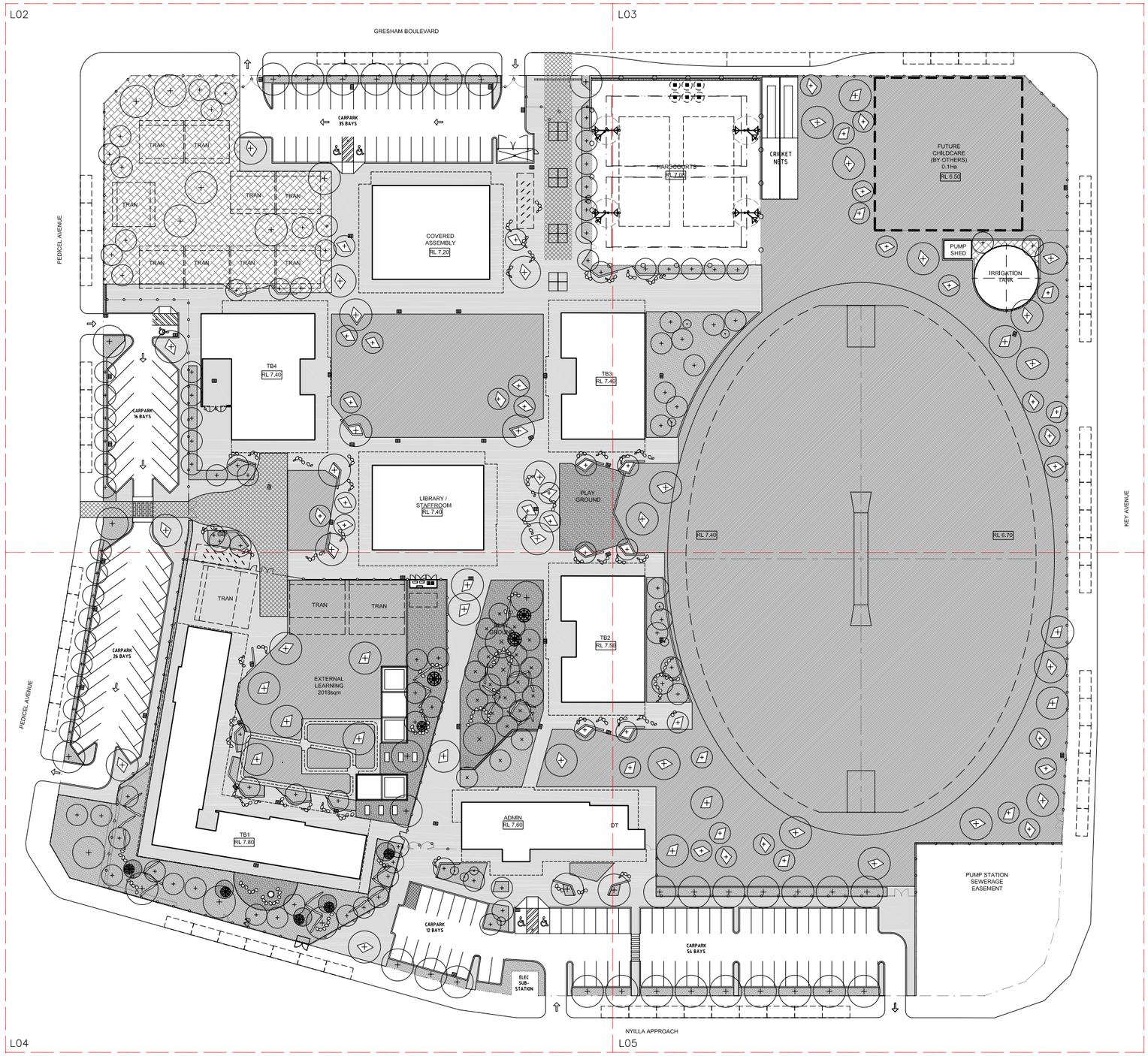

LEGEND :

- PROPOSED TREES
- PROPOSED IRRIGATED TURF
- PROPOSED IRRIGATED GARDEN BED
- PROPOSED PLAYGROUND ZONES
- FESA ACCESSIBLE PAVING
- PROPOSED MULCH ONLY AREAS
- PROPOSED PAVING

SP RECEIVED 23 JULY 2018

17/07/18	C	DA SUBMISSION
05/07/18	B	DESIGN DEVELOPMENT
29/06/18	A	ISSUE FOR INFORMATION
DATE	ISSUE	REVISION

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W www.eiwarch.com.au ABN 88 1290 054 672
eiw architects

Government of **Western Australia**
Department of **Finance**
Building Management and Works

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA

LANDSCAPE SITE PLAN

DRAWN: TC		DESIGNED: 4LS	REDUCTION: 0 12.5
CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:500 @ A1		DATE: 17/07/18	DRAWING No.: L01
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

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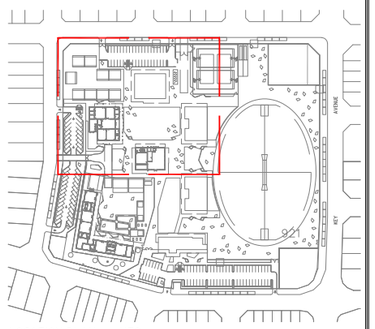
N

LEGEND:

+	PROPOSED IRRIGATED TREES- REFER SOFT LANDSCAPE PLAN
FESA	FESA ACCESS PAVING- REFER DETAILS AND SPECIFICATION
PAV 1	PAVING TYPE 1 – REFER DETAILS AND SPECIFICATION
MK	MOW KERB – REFER DETAILS AND SPECIFICATION
EDGE	SANDPIT EDGE- REFER DETAILS AND SPECIFICATION
TW	TREE WELL – REFER DETAILS AND SPECIFICATION
WALL	400MM HIGH SEATING WALL – REFER DETAILS AND SPECIFICATION
ENTRY	ENTRY WALL – REFER DETAILS AND SPECIFICATION
4SQ	4 SQUARE LINE MARKING – REFER DETAILS AND SPECIFICATION
ROCK	ROCK SEATING – REFER SPECIFICATION
MULCH	MULCH ONLY – REFER SPECIFICATION
SFMUL	SOFTFALL MULCH – REFER SPECIFICATION
GDB	GARDEN BED SHRUB PLANTING – REFER SOFT LANDSCAPE PLAN
TURF	ROLL ON TURF- REFER SOFT LANDSCAPE PLANS
FENCE	PALISADE FENCE- REFER ARCH
VP	VEGETABLE PLANTER BED – REFER SPECIFICATION
LOG	LOG PLAY ELEMENT – REFER DETAILS AND SPECIFICATION
CUB	CUBBY PLAY ELEMENT – REFER DETAILS AND SPECIFICATION
CP	CONVERSATION PIT TEACHING ELEMENT – REFER DETAILS AND SPECIFICATION

SP RECEIVED 23 JULY 2018



LOCATION PLAN NTS

DATE	ISSUE	REVISION	ISSUE
17/07/18	C	DA SUBMISSION	
05/07/18	B	DESIGN DEVELOPMENT	
29/06/18	A	ISSUE FOR INFORMATION	
			C

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Building Management and Works

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART LANDSCAPE PLAN

DRAWN: TC		DESIGNED: 4LS	REDUCTION:
CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:200 @ A1		DATE: 17/07/18	DRAWING No.: L02
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

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RETAINING WALL BY CIVIL

HARDCOURTS
RL 7.08

CRICKET NETS

FUTURE CHILDCARE (BY OTHERS) 0.1Ha
RL 6.50

PUMP SHED

IRRIGATION TANK

TB3
RL 7.40

RL 7.40

RL 6.70

KEY AVENUE

0.5% FALL

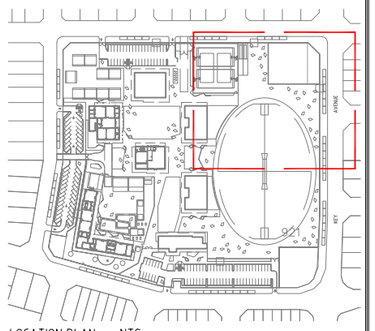
1% FALL

TW TURF ROCK WALL GDB PAV1 MK MULCH

LEGEND:

+	PROPOSED IRRIGATED TREES- REFER SOFT LANDSCAPE PLAN
FESA	FESA ACCESS PAVING- REFER DETAILS AND SPECIFICATION
PAV 1	PAVING TYPE 1 - REFER DETAILS AND SPECIFICATION
MK	MOW KERB - REFER DETAILS AND SPECIFICATION
EDGE	SANDPIT EDGE- REFER DETAILS AND SPECIFICATION
TW	TREE WELL - REFER DETAILS AND SPECIFICATION
WALL	400MM HIGH SEATING WALL - REFER DETAILS AND SPECIFICATION
ENTRY	ENTRY WALL - REFER DETAILS AND SPECIFICATION
4SQ	4 SQUARE LINE MARKING - REFER DETAILS AND SPECIFICATION
ROCK	ROCK SEATING - REFER SPECIFICATION
MULCH	MULCH ONLY - REFER SPECIFICATION
SFMUL	SOFTFALL MULCH - REFER SPECIFICATION
GDB	GARDEN BED SHRUB PLANTING - REFER SOFT LANDSCAPE PLAN
TURF	ROLL ON TURF- REFER SOFT LANDSCAPE PLANS
FENCE	PALISADE FENCE- REFER ARCH
VP	VEGETABLE PLANTER BED - REFER SPECIFICATION
LOG	LOG PLAY ELEMENT - REFER DETAILS AND SPECIFICATION
CUB	CUBBY PLAY ELEMENT - REFER DETAILS AND SPECIFICATION
CP	CONVERSATION PIT TEACHING ELEMENT - REFER DETAILS AND SPECIFICATION

SP RECEIVED 23 JULY 2018



LOCATION PLAN NTS

DATE	ISSUE	REVISION	ISSUE
17/07/18	C	DA APPLICATION	C
05/07/18	B	DESIGN DEVELOPMENT	
29/06/18	A	ISSUE FOR INFORMATION	

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BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART LANDSCAPE PLAN

DRAWN: TC		DESIGNED: ALS	REDUCTION:
CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:200 @ A1		DATE: 17/07/18	DRAWING No.: L03
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

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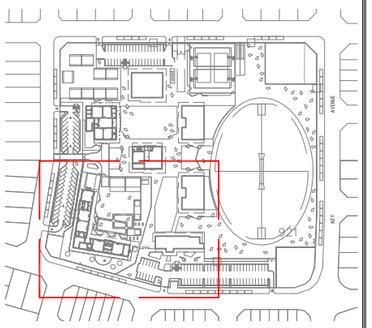
LEGEND:

+	PROPOSED IRRIGATED TREES- REFER SOFT LANDSCAPE PLAN
FESA	FESA ACCESS PAVING- REFER DETAILS AND SPECIFICATION
PAV 1	PAVING TYPE 1 - REFER DETAILS AND SPECIFICATION
MK	MOW KERB - REFER DETAILS AND SPECIFICATION
EDGE	SANDPIT EDGE- REFER DETAILS AND SPECIFICATION
TW	TREE WELL - REFER DETAILS AND SPECIFICATION
WALL	400MM HIGH SEATING WALL - REFER DETAILS AND SPECIFICATION
ENTRY	ENTRY WALL - REFER DETAILS AND SPECIFICATION
4SQ	4 SQUARE LINE MARKING - REFER DETAILS AND SPECIFICATION
ROCK	ROCK SEATING - REFER SPECIFICATION
MULCH	MULCH ONLY - REFER SPECIFICATION
SFMUL	SOFTFALL MULCH - REFER SPECIFICATION
GDB	GARDEN BED SHRUB PLANTING - REFER SOFT LANDSCAPE PLAN
TURF	ROLL ON TURF- REFER SOFT LANDSCAPE PLANS
FENCE	PALISADE FENCE- REFER ARCH
VP	VEGETABLE PLANTER BED - REFER SPECIFICATION
LOG	LOG PLAY ELEMENT - REFER DETAILS AND SPECIFICATION
CUB	CUBBY PLAY ELEMENT - REFER DETAILS AND SPECIFICATION
CP	CONVERSATION PIT TEACHING ELEMENT - REFER DETAILS AND SPECIFICATION

SP RECEIVED 23 JULY 2018



LOCATION PLAN NTS

DATE	ISSUE	REVISION	ISSUE
17/07/18	C	DA APPLICATION	
05/07/18	B	DESIGN DEVELOPMENT	
29/06/18	A	ISSUE FOR INFORMATION	
			C

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eiw architects

Government of **Western Australia**
Department of **Finance**
Building Management and Works

BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART LANDSCAPE PLAN

DRAWN: TC		DESIGNED: 4LS	REDUCTION:
CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:200 @ A1		DATE: 17/07/18	DRAWING No.: L04
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

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RL 7.40

RL 6.70

REFER L02 REFER L01 REFER L04

REFER L03

TB2
RL 7.50

DT

CARPARK
54 BAYS

PUMP STATION
SEWERAGE
EASEMENT

NYILLA APPROACH

REFER L04

1.25% FALL

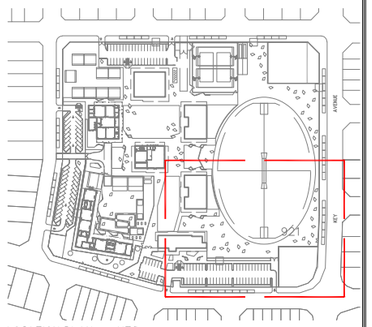
1% FALL

2% FALL

LEGEND:

+	PROPOSED IRRIGATED TREES- REFER SOFT LANDSCAPE PLAN
FESA	FESA ACCESS PAVING- REFER DETAILS AND SPECIFICATION
PAV 1	PAVING TYPE 1 - REFER DETAILS AND SPECIFICATION
MK	MOW KERB - REFER DETAILS AND SPECIFICATION
EDGE	SANDPIT EDGE- REFER DETAILS AND SPECIFICATION
TW	TREE WELL - REFER DETAILS AND SPECIFICATION
WALL	400MM HIGH SEATING WALL - REFER DETAILS AND SPECIFICATION
ENTRY	ENTRY WALL - REFER DETAILS AND SPECIFICATION
4SQ	4 SQUARE LINE MARKING - REFER DETAILS AND SPECIFICATION
ROCK	ROCK SEATING - REFER SPECIFICATION
MULCH	MULCH ONLY - REFER SPECIFICATION
SFMUL	SOFTFALL MULCH - REFER SPECIFICATION
GDB	GARDEN BED SHRUB PLANTING - REFER SOFT LANDSCAPE PLAN
TURF	ROLL ON TURF- REFER SOFT LANDSCAPE PLANS
FENCE	PALISADE FENCE- REFER ARCH
VP	VEGETABLE PLANTER BED - REFER SPECIFICATION
LOG	LOG PLAY ELEMENT - REFER DETAILS AND SPECIFICATION
CUB	CUBBY PLAY ELEMENT - REFER DETAILS AND SPECIFICATION
CP	CONVERSATION PIT TEACHING ELEMENT - REFER DETAILS AND SPECIFICATION

SP RECEIVED 23 JULY 2018



LOCATION PLAN NTS

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29/06/18	A	ISSUE FOR INFORMATION	

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BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART LANDSCAPE PLAN

DRAWN: TC		DESIGNED: ALS	REDUCTION:
CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:200 @ A1		DATE: 17/07/18	DRAWING No.: L05
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

N

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DO NOT AMEND MANUALLY

CARPARK
35 BAYS

COVERED
ASSEMBLY
RL 7.20

HARDCOU
RL 7.08

TB4
RL 7.40

CARPARK
16 BAYS

TB3
RL 7.40

LIBRARY /
STAFFROOM
RL 7.40

PLAY
GROUND

TRAN

TURF

MULCH

GDB

REFER L07

REFER L08

REFER L09

N

LEGEND:

AF-1 — PROPOSED TREE - REFER SCHEDULE.

DA-5 / SR-1 — PROPOSED SHRUB PLANTING - REFER SCHEDULE.

TURF — ROLL ON TURF- REFER DETAILS AND SPECIFICATION.

MULCH — MULCH ONLY- REFER DETAILS AND SPECIFICATION.

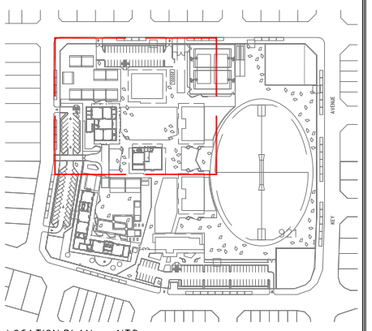
GDB — IRRIGATED GARDEN BED- REFER DETAILS AND SPECIFICATION.

NOTE: PLANTS TO BE LAID OUT IN CLUSTERED GROUPS1, 3, 5, OR 7 OF THE SAME SPECIES. PLANTING SPECIES AND NUMBERS INDICATED ON PLAN.

PLANT SCHEDULE

SYMB	BOTANICAL NAME	SIZE	SPACING	QTY
TREES				
AF	AGONIS FLEXUOSA	100L	as indicated	0
BA	BANKSIA ATTENUATA	100L	as indicated	0
CF	CORYMBIA FICIFOLIA	100L	as indicated	33
EG	EUCALYPTUS GOMPHOCEPHALA	100L	as indicated	19
EL	EUCALYPTUS LEUCOXYLON 'ROSEA'	100L	as indicated	20
EV	EUCALYPTUS VICTRIX	100L	as indicated	13
XP	XANTHORRHOEA PREISSII	TRANS	as indicated	0
SHRUBS				
AL	ANIGOZANTHOS FLAVIDUS	140MM	4/M2	0
AM	ANIGOZANTHOS MANGLESII	140MM	4/M2	0
CS	CALOTHAMNUS SANGUINEUS	140MM	4/M2	0
DR	DIANELLA REVOLUTA	140MM	4/M2	141
EK	EREMOPHILA 'KALBARRI CARPET'	140MM	4/M2	35
FN	FICINIA NODOSA	140MM	4/M2	268
HC	HIBBERTIA CUNEIFORMIS	140MM	4/M2	186
GO	GREVILLEA OBTUSIFOLIA GIN GIN GEM	140MM	4/M2	0
SP	SCAEVOLA 'PURPLE FANFARE'	140MM	4/M2	382
WF	WESTRINGIA FRUITICOSA 'BLUE GEM'	140MM	4/M2	141

SP RECEIVED 23 JULY 2018



LOCATION PLAN NTS

DATE	ISSUE	REVISION	ISSUE
17/07/18	C	DA APPLICATION	
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BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART SOFT LANDSCAPE PLAN

DRAWN: TC	DESIGNED: ALS	REDUCTION:	
CHECKED: AT	PRINCIPAL:		
APPROVED: AT			
SCALE: 1:200 @ A1	DATE: 17/07/18	DRAWING No.: L06	
BMW PROJECT No.:	EIW PROJECT No.: 40132		
BMW FILE No.:	EIW FILE No.:		

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HARDCOURTS
RL 7.08

CRICKET NETS

FUTURE CHILDCARE (BY OTHERS) 0.1Ha
RL 6.50

PUMP SHED

IRRIGATION TANK

MULCH

GDB

TB3
RL 7.40

TURF

RL 7.40

RL 6.70

KEY AVENUE

N

LEGEND:

AF-1 — PROPOSED TREE - REFER SCHEDULE.

DA-5 / SR-1 — PROPOSED SHRUB PLANTING - REFER SCHEDULE.

TURF — ROLL ON TURF- REFER DETAILS AND SPECIFICATION.

MULCH — MULCH ONLY- REFER DETAILS AND SPECIFICATION.

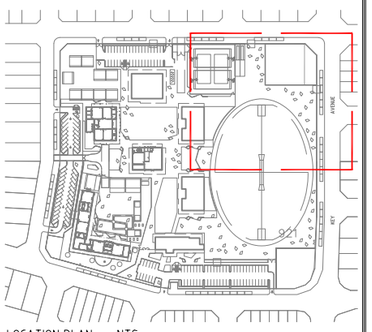
GDB — IRRIGATED GARDEN BED- REFER DETAILS AND SPECIFICATION.

NOTE: PLANTS TO BE LAID OUT IN CLUSTERED GROUPS1, 3, 5, OR 7 OF THE SAME SPECIES. PLANTING SPECIES AND NUMBERS INDICATED ON PLAN.

PLANT SCHEDULE

SYMB	BOTANICAL NAME	SIZE	SPACING	QTY
TREES				
AF	AGONIS FLEXUOSA	100L	as indicated	6
BA	BANKSIA ATTENUATA	100L	as indicated	9
CF	CORYMBIA FICIFOLIA	100L	as indicated	7
EG	EUCALYPTUS GOMPHOCEPHALA	100L	as indicated	9
EL	EUCALYPTUS LEUCOXYLON 'ROSEA'	100L	as indicated	6
EV	EUCALYPTUS VICTRIX	100L	as indicated	2
XP	XANTHORRHOEA PREISSII	TRANS	as indicated	3
SHRUBS				
AL	ANIGOZANTHOS FLAVIDUS	140MM	4/M2	150
AM	ANIGOZANTHOS MANGLESII	140MM	4/M2	213
CS	CALOTHAMNUS SANGUINEUS	140MM	4/M2	150
DR	DIANELLA REVOLUTA	140MM	4/M2	150
EK	EREMOPHILA 'KALBARRI CARPET'	140MM	4/M2	150
FN	FICINIA NODOSA	140MM	4/M2	213
HC	HIBBERTIA CUNEIFORMIS	140MM	4/M2	213
GO	GREVILLEA OBTUSIFOLIA GIN GIN GEM	140MM	4/M2	150
SP	SCAEVOLA 'PURPLE FANFARE'	140MM	4/M2	213
WF	WESTRINGIA FRUITICOSA 'BLUE GEM'	140MM	4/M2	150

SP RECEIVED 23 JULY 2018



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BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART SOFT LANDSCAPE PLAN

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CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:200 @ A1		DATE: 17/07/18	DRAWING No.: L07
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

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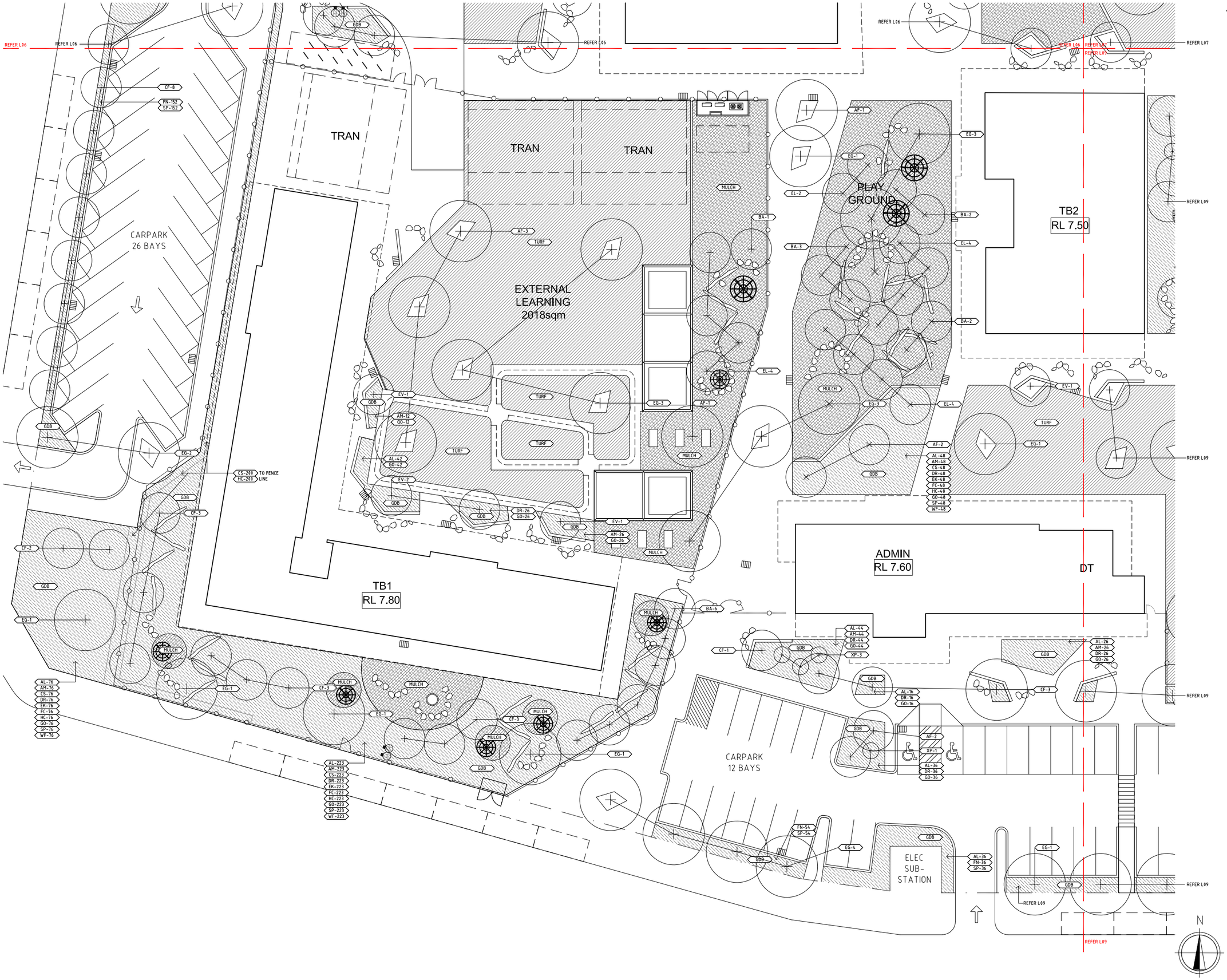


LEGEND:

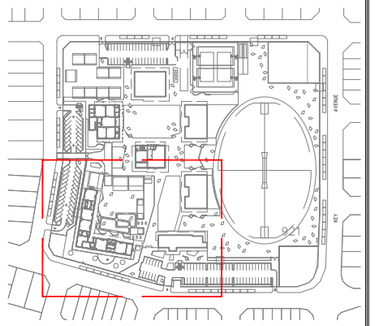
- AF-1 — PROPOSED TREE - REFER SCHEDULE.
- DA-5, SR-1 — PROPOSED SHRUB PLANTING - REFER SCHEDULE.
- TURF — ROLL ON TURF - REFER DETAILS AND SPECIFICATION.
- MULCH — MULCH ONLY - REFER DETAILS AND SPECIFICATION.
- GDB — IRRIGATED GARDEN BED - REFER DETAILS AND SPECIFICATION.

NOTE: PLANTS TO BE LAID OUT IN CLUSTERED GROUPS1, 3, 5, OR 7 OF THE SAME SPECIES. PLANTING SPECIES AND NUMBERS INDICATED ON PLAN.

PLANT SCHEDULE

SYMB	BOTANICAL NAME	SIZE	SPACING	QTY
TREES				
AF	AGONIS FLEXUOSA	100L	as indicated	9
BA	BANKSIA ATTENUATA	100L	as indicated	14
CF	CORYMBIA FICIFOLIA	100L	as indicated	23
EG	EUCALYPTUS GOMPHOCEPHALA	100L	as indicated	22
EL	EUCALYPTUS LEUCOXYLON 'ROSEA'	100L	as indicated	14
EV	EUCALYPTUS VICTRIX	100L	as indicated	5
XP	XANTHORRHOEA PREISSII	TRANS	as indicated	4
SHRUBS				
AL	ANIGOZANTHOS FLAVIDUS	140MM	4/M2	547
AM	ANIGOZANTHOS MANGLESII	140MM	4/M2	455
CS	CALOTHAMNUS SANGUINEUS	140MM	4/M2	547
DR	DIANELLA REVOLUTA	140MM	4/M2	495
EK	EREMOPHILA 'KALBARRI CARPET'	140MM	4/M2	347
FN	FICINIA NODOSA	140MM	4/M2	242
HC	HIBBERTIA CUNEIFORMIS	140MM	4/M2	547
GO	GREVILLEA OBTUSIFOLIA GIN GIN GEM	140MM	4/M2	575
SP	SCAEVOLA 'PURPLE FANFARE'	140MM	4/M2	242
WF	WESTRINGIA FRUITICOSA 'BLUE GEM'	140MM	4/M2	347

SP RECEIVED 23 JULY 2018



LOCATION PLAN NTS

17/07/18	C	DA APPLICATION
05/07/18	B	DESIGN DEVELOPMENT
29/06/18	A	ISSUE FOR INFORMATION
DATE	ISSUE	REVISION — ISSUE: C

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BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART SOFT LANDSCAPE PLAN

DRAWN: TC		DESIGNED: 4LS	REDUCTION:
CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:200 @ A1		DATE: 17/07/18	DRAWING No.: L08
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

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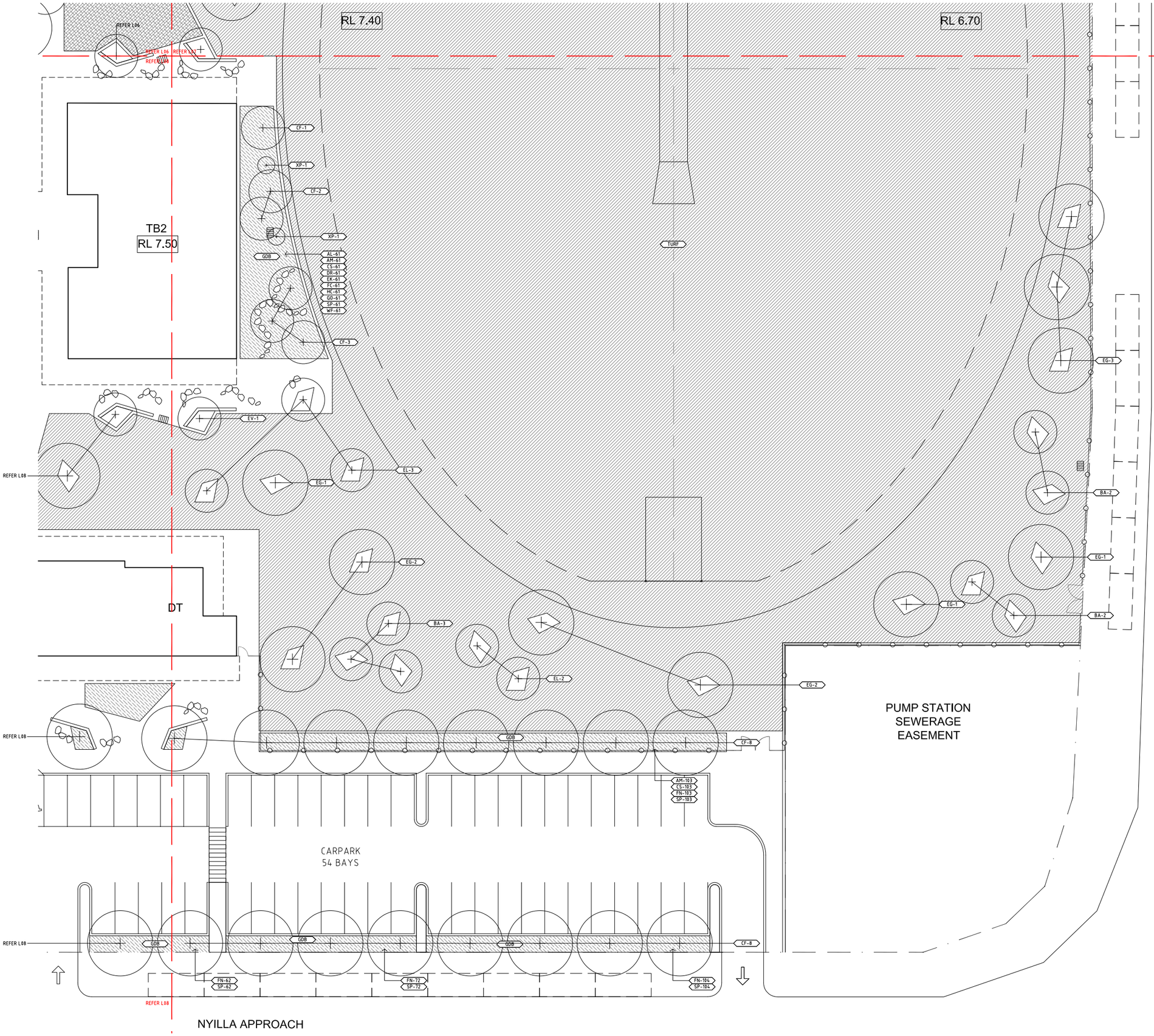

LEGEND:

AF-1 — PROPOSED TREE - REFER SCHEDULE.

DA-5 / SR-1 — PROPOSED SHRUB PLANTING - REFER SCHEDULE.

TURF — ROLL ON TURF- REFER DETAILS AND SPECIFICATION.

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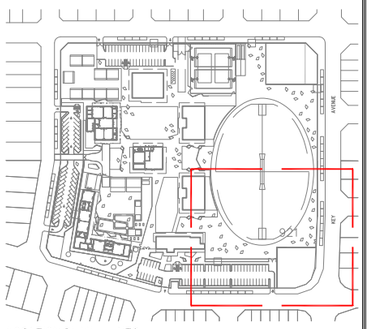
NOTE: PLANTS TO BE LAID OUT IN CLUSTERED GROUPS1, 3, 5, OR 7 OF THE SAME SPECIES. PLANTING SPECIES AND NUMBERS INDICATED ON PLAN.

PLANT SCHEDULE

SYMB	BOTANICAL NAME	SIZE	SPACING	QTY
TREES				
AF	AGONIS FLEXUOSA	100L	as indicated	0
BA	BANKSIA ATTENUATA	100L	as indicated	7
CF	CORYMBIA FICIFOLIA	100L	as indicated	22
EG	EUCALYPTUS GOMPHOCEPHALA	100L	as indicated	10
EL	EUCALYPTUS LEUCOXYLON 'ROSEA'	100L	as indicated	5
EV	EUCALYPTUS VICTRIX	100L	as indicated	1
XP	XANTHORRHOEA PREISSII	TRANS	as indicated	2
SHRUBS				
AL	ANIGOZANTHOS FLAVIDUS	140MM	4/M2	61
AM	ANIGOZANTHOS MANGLESII	140MM	4/M2	164
CS	CALOTHAMNUS SANGUINEUS	140MM	4/M2	164
DR	DIANELLA REVOLUTA	140MM	4/M2	61
EK	EREMOPHILA 'KALBARRI CARPET'	140MM	4/M2	61
FN	FICINIA NODOSA	140MM	4/M2	402
HC	HIBBERTIA CUNEIFORMIS	140MM	4/M2	61
GO	GREVILLEA OBTUSIFOLIA GIN GIN GEM	140MM	4/M2	61
SP	SCAEVOLA 'PURPLE FANFARE'	140MM	4/M2	402
WF	WESTRINGIA FRUTICOSA 'BLUE GEM'	140MM	4/M2	61

SP RECEIVED 23 JULY 2018



LOCATION PLAN NTS

DATE	ISSUE	REVISION	ISSUE
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BALDIVIS NORTH PRIMARY SCHOOL

LOTS 750 & 921 NYILLA APPROACH, BALDIVIS
WESTERN AUSTRALIA
PART SOFT LANDSCAPE PLAN

DRAWN: TC		DESIGNED: ALS	REDUCTION:
CHECKED: AT		PRINCIPAL:	
APPROVED: AT			
SCALE: 1:200 @ A1		DATE: 17/07/18	DRAWING No.: L09
BMW PROJECT No.:		EIW PROJECT No.: 40132	
BMW FILE No.:		EIW FILE No.:	

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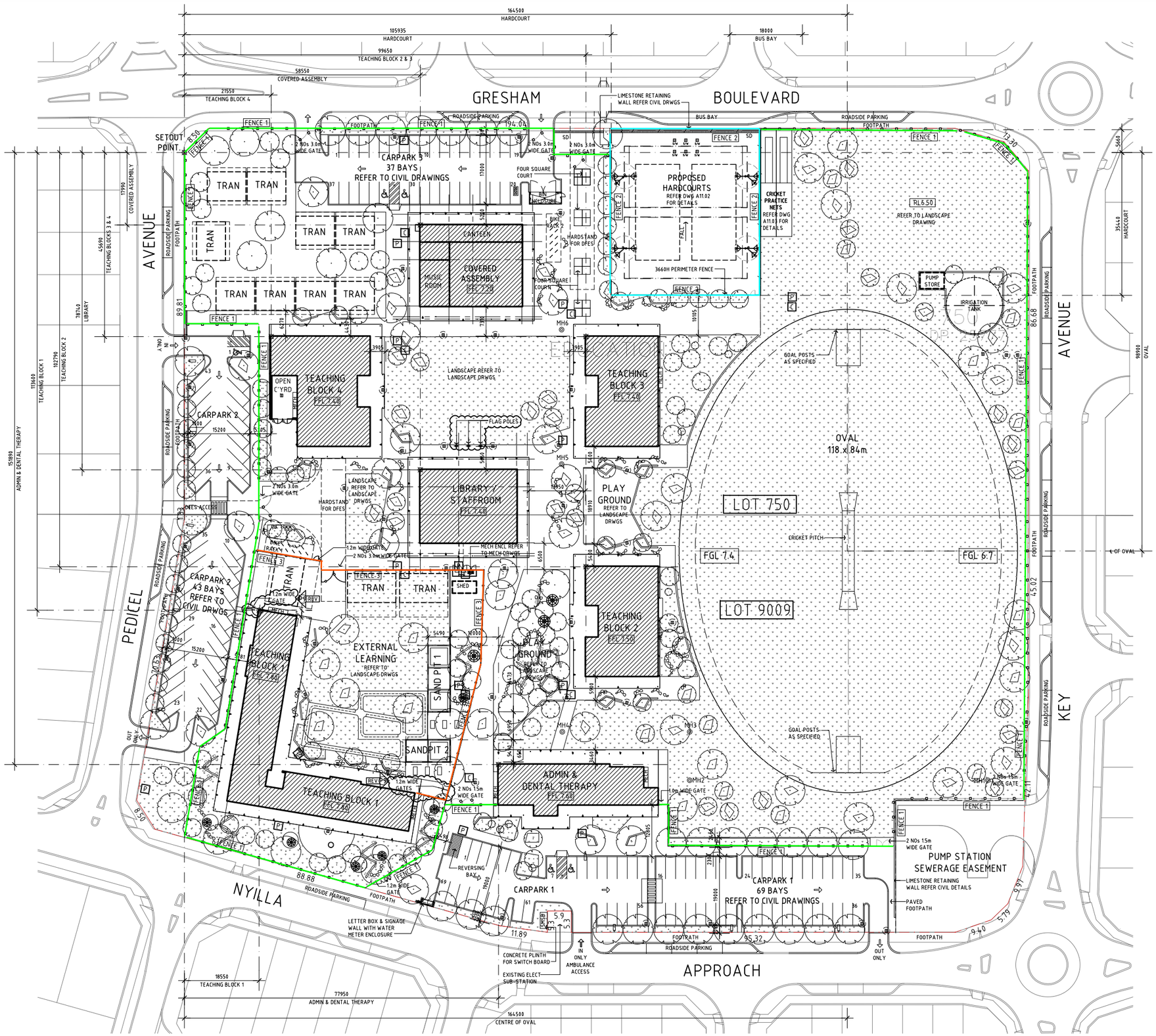

N

SITE PLAN
1:500

LEGEND:

- NEW TREES - REFER TO LANDSCAPE DWGS.
- RL xx.xx — PROPOSED LEVELS
- REFER TO LANDSCAPE DRAWINGS FOR EXTENTS OF PAVING, TYPES AND PATTERNS
- EXTENTS OF TURF/GARDEN BEDS - FOR TYPES REFER TO LANDSCAPE DRAWINGS
- BR '#' — BICYCLE RACK
- FH — FIRE HYDRANT - REFER TO HYD DWGS.
- P — POWER PIT - REFER TO ELECTRICAL DWGS
- C — COMMUNICATION PIT - REFER TO ELECTRICAL DWGS
- SMSB — SITE SWITCH BOARD - REFER TO ELECTRICAL DWGS
- S/W — SOAK WELL - REFER TO HYDRAULIC & CIVIL DWGS.
- SW — STORM WATER DRAIN
- GREASE TRAP REFER HYDRAULIC DRAWINGS
- SD — GRATED DRAIN - REFER TO HYDRAULIC & CIVIL DWGS.
- MH — MANHOLE - REFER HYDRAULIC DRAWINGS
- FENCE 1 — 2100mm HIGH GARRISON FENCE & GATES AS SPECIFIED.
- FENCE 2 — 3600mm HIGH CHAIN WIRE FENCE & GATES AS SPECIFIED.
- FENCE 3 — 1200mm HIGH CHAIN WIRE FENCE & GATES AS SPECIFIED.
- TRAN. — FUTURE TRANSPORTABLE BY OTHERS.
- LANDSCAPE FEATURE . REFER LANDSCAPE DETAILS
- LANDSCAPE FEATURE . REFER LANDSCAPE DETAILS

SP RECEIVED 4 SEPTEMBER 2018

4/09/18	P10	FUTURE CHILDCARE DELETED
27/08/18	P9	ISSUED FOR BOQ ADDED ACCESS GATES TO TB1 ADDED FLAG POLES
09/08/18	P8	ISSUE TO CONSULTANTS FOR CO-ORDINATION UPDATED BOUNDARY LINE, EMBAYMENT PARKINGS VERANDAH PAVINGS & COLUMNS, RW SUMPS,
07/08/18	P7	ISSUE TO 4L UPDTAED LINE OF VERANDAH PAVING
31/07/18	P6	ISSUE TO PF ADDED EXISTING DEVELOPER'S PARKING LAYOUT
12/07/18	P5	ISSUE TO ALL CONSULTANTS ADDED BUS BAY ALONG GRESHAM BOULEVARD, REVISED PARKING ARRANGEMENT, ELECT SUBSTATION, LETTER BOX LOCATION & CROSS OVER ALONG NYILLA APPROACH
06/07/18	P4	ISSUE TO ALL CONSULTANTS GENERAL UPDATE OF BUILDING BLOCKS, LANDSCAPE & ADDED LIMESTONE RETAINING WALL AND MOVED HARDCOURT SOUTH OF WALL
22/06/18	P3	ISSUE TO ALL CONSULTANTS
07/06/18	P2	ISSUE TO PF
06/06/18	P1	ISSUE TO PF
DATE	ISSUE	DESCRIPTION

PRELIMINARY — ISSUE: P10

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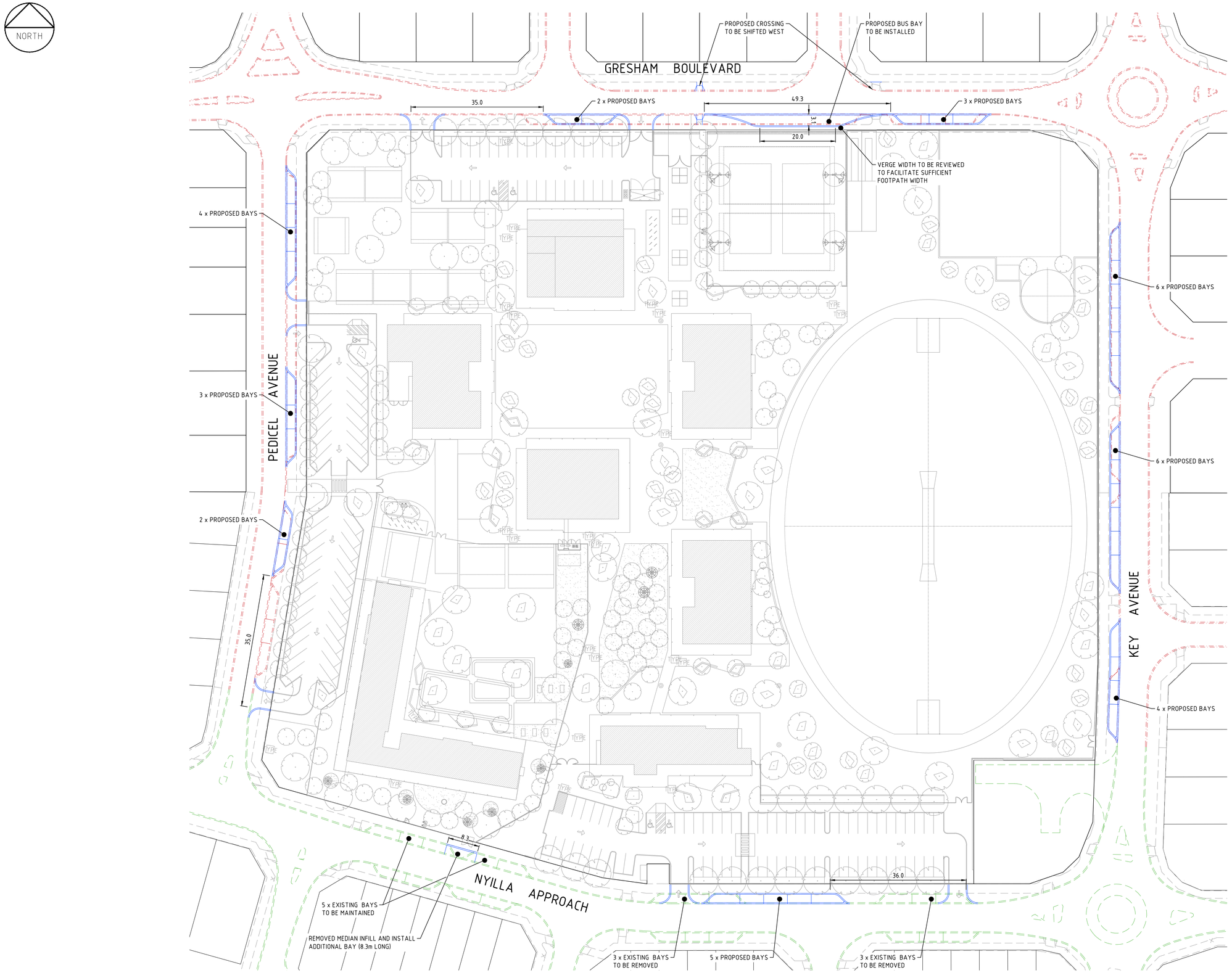
PROJECT.
BALDIVIS NORTH PRIMARY SCHOOL
LOTS 750 & 9009 NYILLA APPROACH BALDIVIS
SITE PLAN

OVERALL SITE PLAN

DRAWN: FW		DESIGNED: EIW	
CHECKED: AD		PRINCIPAL:	
APPROVED:			
SCALE: 1:500		DATE: MARCH 2018	DRAWING No: A1.00
BMW PROJECT No: 14442		EIW PROJECT No: 1801	
BMW FILE No: 2018 / 04877		EIW FILE No: 1801 - BNA1.00P7	



LEGEND

- EXISTING KERB
- PROPOSED KERB
- FUTURE KERB

TOTAL BAYS

- 35 ON STREET BAYS PROVIDED ADJACENT TO BALDIVIS NORTH PRIMARY SCHOOL
- PLUS 6 ON STREET BAYS PROVIDED ADJACENT TO BALDIVIS NORTH PRIMARY SCHOOL FOR KISS AND RIDE
- TOTAL OF 41 BAYS

SP RECEIVED 7 AUGUST 2018

C	07/08/18	BUS BAY & PRAM CROSSING RELOCATED & 3 x BAYS ADDED
B	06/08/18	BUS BAY RELOCATED & ADDITIONAL BAY ADDED
A	02/08/18	ISSUED FOR DISUCSSION

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Government of **Western Australia**
Department of **Finance**
Building Management and Works

BALDIVIS NORTH PRIMARY SCHOOL
EXTERNAL CARBAY LAYOUT
SKETCH

DRAWN JS		DESIGNED JDP	REDUCTION 0 25
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18-062

Our Ref: 20.2018.204.1 – AD18/62945

Your Ref:

Enquiries to: Mr Neels Pretorius

29th August 2018

Ms Sandra McLeish
Building Management and Works
Department of Finance
Locked Bag 44
CLOISTERS SQUARE WA 6850

Dear Sir/Madam

Re: Proposed Educational Establishment (Baldivis North Primary School) - Lot 9009 Key Avenue & Lot 750 Baldivis Road, Baldivis

I refer to the above application referred to the Dap Secretariat on the 31st July 2018.

The City has now completed its assessment of the application and the following comments are provided.

Traffic

The City has the reviewed the submitted Transport Impact Assessment (TIA) and provides the following comments:

- The traffic generation for the school was calculated based on the number of Full-Time Equivalent students (774) rather than the total number of students (854). Please calculate the traffic generation based on the total number of students.

- The Transport Assessments prepared for the One71 Baldivis and The Edge Local Structure Plans assume that 430 students attending the primary school. The TIA for the school assumes that key intersections had been analysed at the "Structural Plan" stage, however, the total number of students was unknown at Structure Plan stage and there is now an additional 424 students anticipated to be attending the school (i.e. 854-430=424). Trip generation from the additional number of students in the traffic analysis for the proposed primary school is therefore required to be included for the following:
  - Baldivis Road/Pemberton Boulevard/Parkerville Boulevard (roundabout)
  - Baldivis Road/Key Avenue (T-intersection)

- The following intersection analysis need to be included in the TIA to demonstrate that intersections around the perimeter of the school will function satisfactorily:
  - Gresham Boulevard/Key Avenue
  - Gresham Boulevard/Pedicel Avenue
  - Nyilla Approach/Pedicel Avenue
  - Nyilla Approach/Key Avenue

- The applicant must liaise with the developers for the One71 Baldivis and The Edge Local Structure Plan areas with regard to the timing for the completion of roadworks. The TIA report for the school considers the ultimate scenarios where all roads would be built, however, should some of the roads be unconstructed after the school opening then this scenario must also be considered and addressed in the TIA report.

- The applicant is to liaise with the developers or the One71 Baldivis and The Edge Local Structure Plan areas regarding the provision of on-street bays along the perimeter of the school. The estimated number of on-street car parking bays should be updated in the TIA report for the school.

Subject to the satisfactory address the above comments, the City supports the proposed development subject to the following conditions and advice notes:

Conditions

1. Earthworks over the site associated with the development must be stabilised to prevent sand or dust blowing off the site, and appropriate measures shall be implemented within the time and in the manner directed by the City of Rockingham in the event that sand or dust is blown from the site.

2. Prior to applying for a Building Permit, a Stormwater Management Plan must be prepared by a suitably qualified engineer showing how stormwater will be contained on-site and those plans must be submitted to the City of Rockingham for its approval. All stormwater generated by the development must be managed in accordance with Planning Policy 3.4.3 - Urban Water Management to the satisfaction of the City of Rockingham. The approved plans must be implemented and all works must be maintained for the duration of the development.

3. Any damage to existing City infrastructure within the road reservation including kerb, road pavement, and footpaths is to be repaired to the satisfaction of the City, Manager Land and Development Infrastructure at the cost of the applicant.

4. Prior to applying for a Building Permit, a Landscaping Plan must be prepared and include the following detail, to the satisfaction of the City of Rockingham:

   (i) The location, number and type of existing and proposed trees and shrubs, including calculations for the landscaping area;
   (ii) Any lawns to be established and areas to be mulched;
   (iii) Any natural landscape areas to be retained;
   (iv) Those areas to be reticulated or irrigated;
   (v) Verge treatments, including replanting of native species in the adjacent Road reserves;
   (vi) The relocation of existing street trees on Nyilla Approach, required to be removed as a result of works.

   The landscaping must be completed prior to the occupation of the development, and must be maintained at all times to the satisfaction of the City of Rockingham.

5. The carpark(s) must:

   (i) provide a minimum of 149 parking spaces;
   (ii) prior to applying for a Building Permit, be designed in accordance with User Class 3 of the Australian/New Zealand Standard AS/NZS 2890.1:2004, Parking facilities, Part 1: Off-street car parking unless otherwise specified by this approval;
   (iii) include a minimum of two (2) car parking space(s) dedicated to people with disabilities designed in accordance with Australian/New Zealand Standard AS/NZS 2890.6:2009, Parking facilities, Part 6: Off-street parking for people with disabilities, linked to the main entrance of the development by a continuous accessible path of travel designed in accordance with Australian Standard AS 1428.1—2009, Design for access and mobility, Part 1: General Requirements for access—New building work;
   (iv) be constructed, sealed, kerbed, drained and marked prior to the development being occupied and maintained thereafter;
   (v) have lighting installed, prior to the occupation of the development; and
   (vi) confine all illumination to the land in accordance with the requirements of Australian Standard AS 4282—1997, Control of the obtrusive effects of outdoor lighting, at all times.

   The car park(s) must be constructed in accordance with the above requirements prior to occupation of the development and maintained in good working order for the duration of the development.

6. Prior to applying for a Building Permit, detailed plans and specifications must be submitted to and approved by the City of Rockingham for on-street car parking spaces within the adjacent road reserves.

   The car parking spaces must:

   (i) be designed, constructed, sealed, kerbed, drained and marked in accordance with Australian Standard AS 2890.5—1993, Parking facilities, Part 5: On-street parking; and
   (ii) be constructed, sealed, kerbed, drained and marked prior to the development being occupied and maintained thereafter; and comply with the above requirements for the duration of the development.

7. Prior to applying for a Building Permit, a Waste Management Plan must be prepared and include the following detail to the satisfaction of the City of Rockingham:

   (i) the location of bin storage areas and bin collection areas;
   (ii) the number, volume and type of bins, and the type of waste to be placed in the bins;
   (iii) management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas; and
   (iv) frequency of bin collections.

All works must be carried out in accordance with the Waste Management Plan, for the duration of development and maintained at all times.

8. Prior to applying for a Building Permit, engineering drawings and specifications are to be submitted and approved for the construction of full earthworks, carriageways, shared path(s), drainage facilities and pedestrian crossing(s) required for the proposed roads abutting the subject site.

   The works must be completed prior to the occupation of the development.

9. Prior to applying for a Building Permit, a Traffic Management Plan must be submitted to and approved by the City of Rockingham. The Traffic Management Plan must be implemented for the duration of the development to the satisfaction of the City of Rockingham at all times.

10. Prior to applying for a Building Permit, a Dust Management plan must be submitted to and approved by the City of Rockingham. The Dust Management Plan must be implemented for the duration of the development to the satisfaction of the City of Rockingham at all times.

11. All existing street trees and irrigation must be identified on the landscape plans and incorporated into the Civil engineering drawings. Existing irrigated trees are to be retained and incorporated with any new car park embayment's, if existing trees cannot be retained, they must be replaced with similar sized trees, irrigated and in an approved location to the satisfaction of the City of Rockingham.

Advice Notes:

1. With respect to the landscaping plan, the applicant and owner should liaise with the City of Rockingham's Land and Development Infrastructure Services to confirm requirements for landscaping plans. Planting adjacent to all footpaths should be set back to allow for mature plant growth and not overhang footpaths cause a tripping hazard or requiring continuous pruning

2. With respect to condition 3 it is recommended that a dilapidation report is prepared prior to commencing work to demonstrate existing condition of infrastructure.

3. All works in the road reserve, including construction of a crossover or footpath, installation of on-street carparking spaces, planting of street trees, bicycle parking devices, street furniture and other streetscape works and works to the road carriageway must be to the specifications of the City; the applicant should liaise with the City of Rockingham's Land and Development Infrastructure Services in this regard.

4. A Permit to take Water for the use of groundwater may need to be obtained; the applicant should liaise with the Department of Water in this regard.

5. It is recommended the applicant provide sufficient bicycle parking bays to service the number of students and staff of the development.

6. The development must comply with the Food Act 2008, the Food Safety Standards and Chapter 3 of the Australian New Zealand Food Standards Code (Australia Only); the applicant and owner should liaise with the City's Health Services in this regard.

7. The disposal of wastewater into the Water Corporation's sewerage system must be with approval of the Water Corporation; the applicant and owner should liaise with the Water Corporation in this regard.

8. Given the Department of Education's position regarding the maintenance of the street verge area that adjoin the school lot (from the back of the road kerb to the property boundary includes the footpath), providing a durable, low maintenance treatment such as paving and irrigated street trees in paved tree wells to the satisfaction of the City of Rockingham.

9. The Applicant needs to liaise with the developers (Perron and Mirvac) for the construction of Pedicel Avenue, Gresham Boulevard, Key Avenue and the other future road networks which connects Parkville Boulevard to facilitate traffic movement for the school site.

Please note that the application is exempt from requiring Development Approval under the *City of Rockingham Town Planning Scheme No.2*.

Should you have any enquiries with respect to this advice, please contact Mr Neels Pretorius on 9527 0763.

Yours faithfully

G DELAHUNTY
SENIOR PROJECTS OFFICER

cc. eiw architects tony@eiwarch.com.au
Element primaryschools@elementwa.com.au

TRANSPORT IMPACT ASSESSMENT

Project:	Baldivis North Primary School
Client:	eiw Architects
Author:	Paul Nguyen
Version:	5
Document #	1805001-TIA-001

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Document Status

Version	Document Status	Prepared By	Reviewed By	Approved By	Date
1	Client Review	P Nguyen	L Dawson	L Dawson	04/05/2018
2	Revision 1	P Nguyen	L Dawson	L Dawson	20/07/2018
3	Revision 2	P Nguyen	L Dawson	L Dawson	07/08/2018
4	Revision 3	P Nguyen	L Dawson	L Dawson	04/09/2018
5	Revision 4	P Nguyen	L Dawson	L Dawson	06/09/2018

File Reference: Y:\Jobs Active 2018\T&T - Traffic and Parking\EIW_Baldivis North Primary School_TIA_1805001\Report\eiw_Baldivis North Primary School_TIA_V5.docx

Contents

Figures

Tables

1. Summary

Shawmac was commissioned to assess the impacts associated with parking and traffic generation from the proposed Baldivis North Primary School which will have a capacity of 774 full time equivalent students from kindergarten to Year 6.

The proposed school site is located on the parcel of land bounded by the existing Nyilla Approach and future roads Pedicel Avenue, Key Avenue and Gresham Boulevard.

The assessment has been undertaken in accordance with the BMW *Primary School Brief* and the West Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines*. The potential traffic volumes generated by the site were estimated by applying generation rates recommended for WA schools by the Perth and Regions Travel Survey (PARTS).

Traffic was assigned to the adjacent existing road network and flows used as a basis for assessing traffic impacts associated with the site. Based on the assessment it was shown that the planned road network surrounding the proposed school has been designed with consideration given to the future school. The predicted traffic flows generated by the proposed school can be accommodated within the planned road network with minimal adverse impacts.

2. Introduction and Background

2.1. Proponent

Shawmac Pty Ltd has been commissioned by EIW Architects to prepare a Transport Impact Assessment (TIA) for the proposed Baldivis North Primary School.

This TIA has been prepared in accordance with the BMW *Primary School Brief* as well as the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines*. The assessment considers the following key matters:

- The site and surrounding road network;
- Traffic generation characteristics;
- Traffic distribution assessment and network assignment;
- Parking assessment and management;
- Road safety assessment;
- Pedestrian and cyclist demand and facilities assessment; and
- Public transport accessibility.

The school is being built to accommodate population growth in the area. The school will initially be built as a standard pattern primary school accommodating up to 457 full time equivalent (FTE) students (497 total students). As demand increases, the school may be expanded with up to 12 transportables to accommodate up to 774 FTE students (854 total students). This assessment considers the transport impact of the ultimate development scenario based on the maximum student capacity including the transportables.

2.2. Site Location and Land Use

The school site will be located on Part Lot 9009 Key Avenue, Baldivis in the City of Rockingham. The general site location is shown in Figure 1.

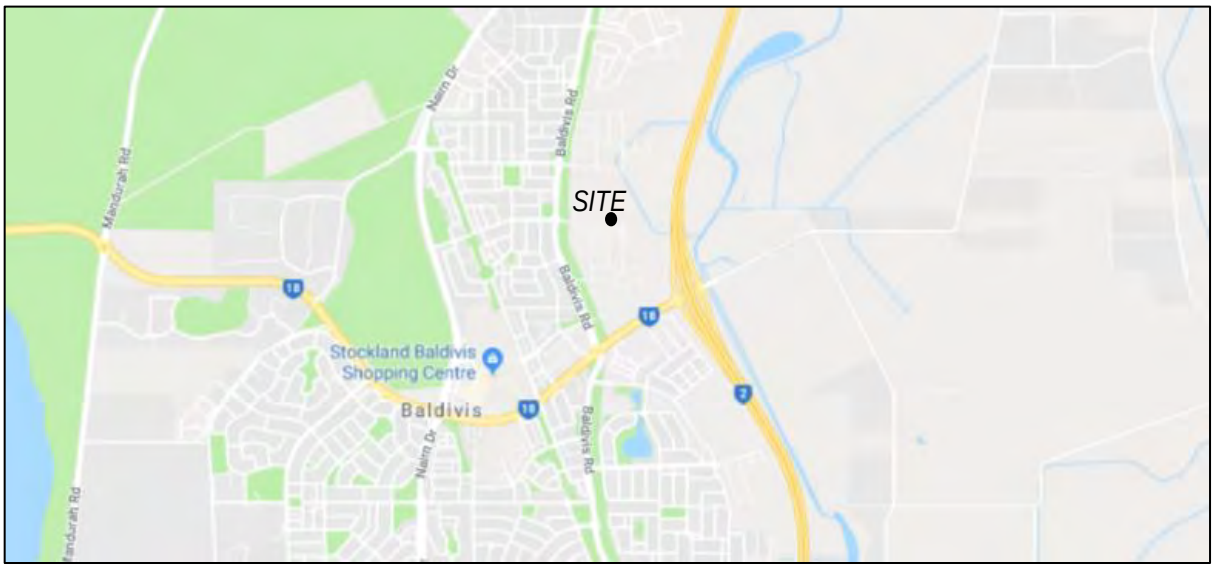


Figure 1: Site Location

The site is on the north side of Nyilla Approach between future roads Pedicel Avenue and the extension of Key Avenue. The site is currently vacant and partially cleared for development. The site and surrounding land is currently zoned Development and the surrounding area is primarily existing residential development or land being prepared for residential development. An aerial photo of the site is shown in Figure 2.

Figure 2: Aerial Photo of Site

2.3. Planning Background

The site is located within the East Baldivis District Structure Plan which was adopted in 2014. The school site is also located within the "One 71 Baldivis" and "The Edge" Local Structure Plan (LSP) areas. The northern half of the school is within "One 71 Baldivis" as shown in Figure 3 and the southern half is within "The Edge" as shown in Figure 4.

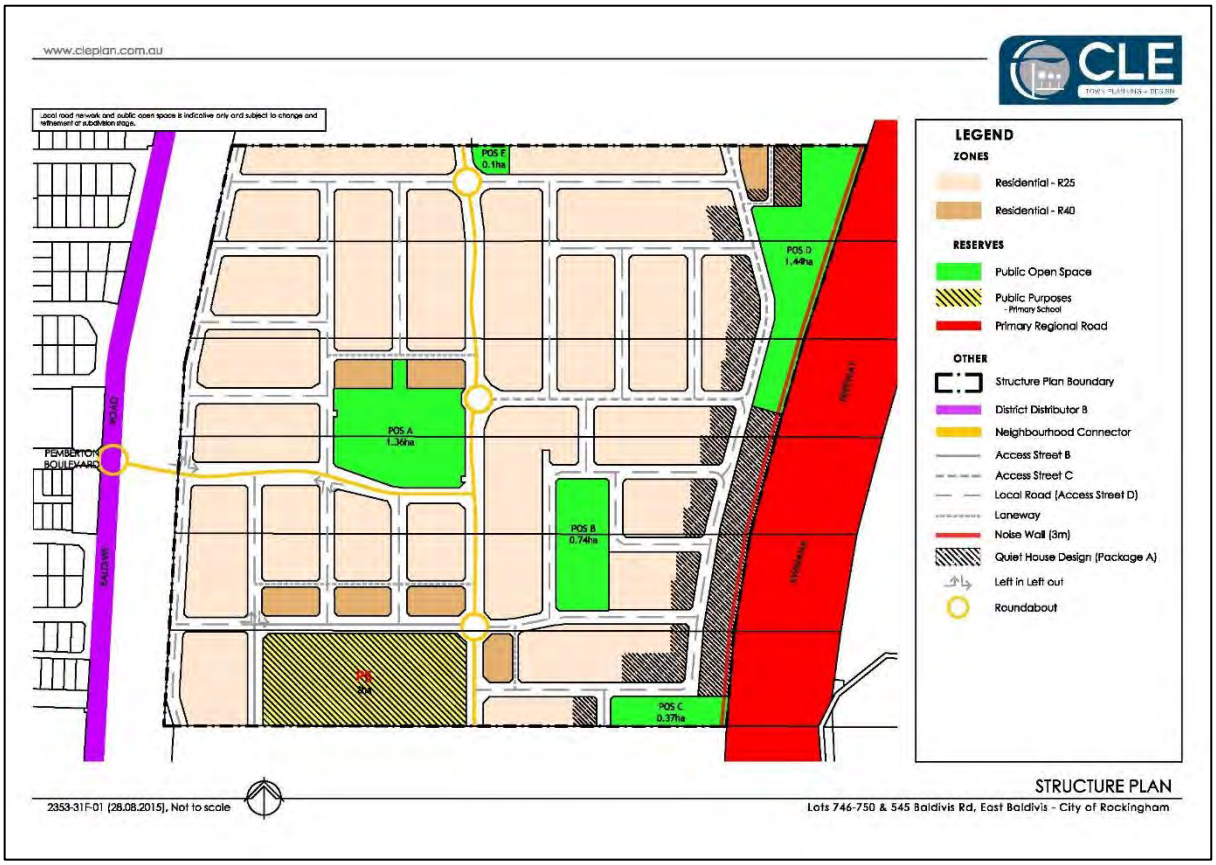


Figure 3: One 71 Baldivis LSP

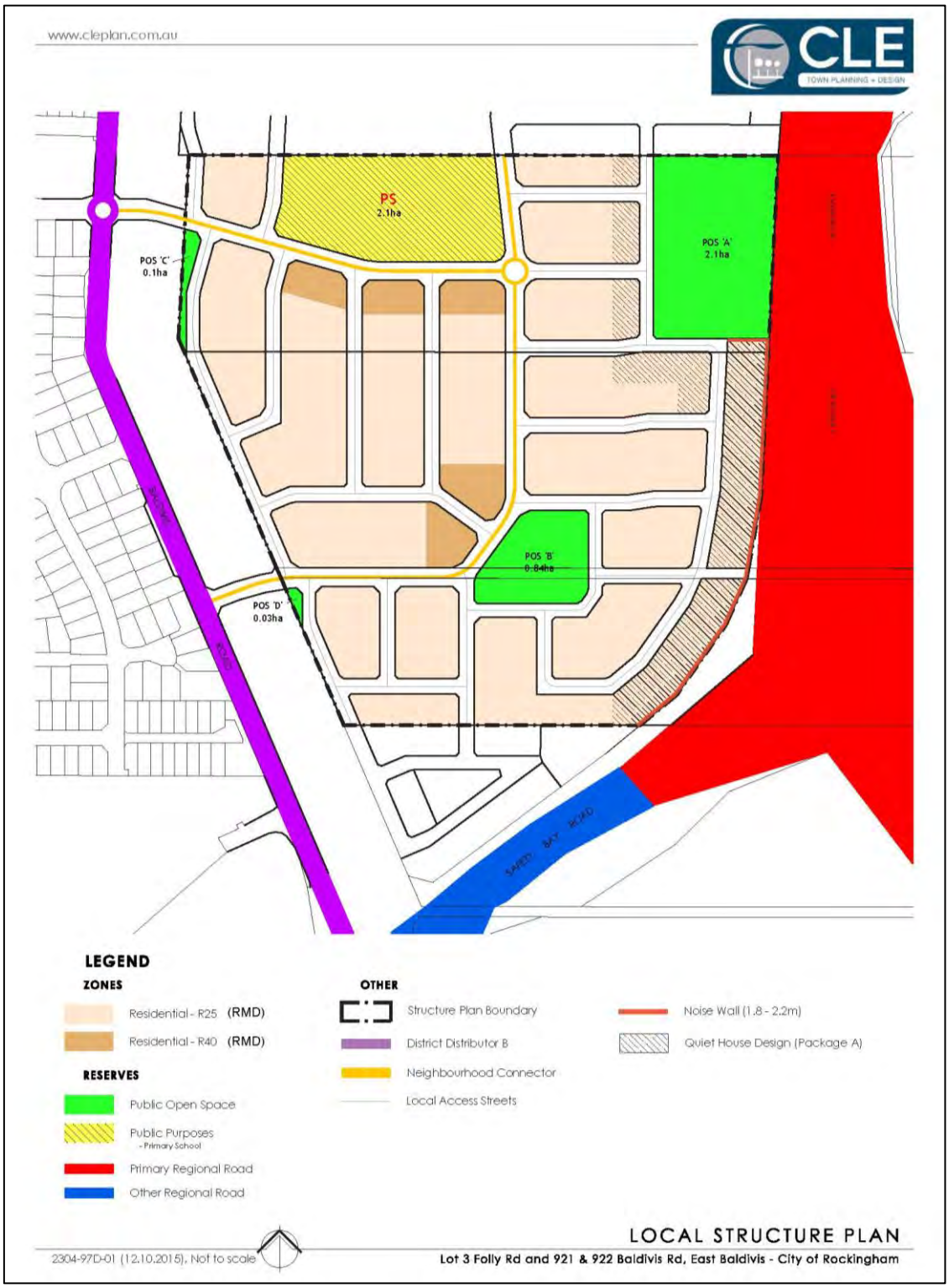


Figure 4: The Edge LSP

3. Proposed Development

The proposal is to construct the Baldivis North Primary School to accommodate students from early childhood to Year 6. The planned opening date for the school is in 2020. The site plan for the school is attached as Appendix A.

3.1. Student Numbers

The estimated enrolment capacity of the school is 854 students (774 FTE) students as summarised in Table 1.

Table 1: Student Numbers

Category	Student Numbers (BMW Brief)	Student Number (Full Time Equivalent)
Kindergarten (Part-time)	80 Part Time Students	40
Pre-Primary	81 Students	81
Primary (Year 1 - 6)	336 Students	336
Transportable Classrooms		
Kindergarten (Part-time)	2 Transportables = 80 Part Time Students	40
Pre-Primary	1 Transportable = 25 Students	25
Primary (Year 1 - 6)	9 Transportables = 252 Students	252
Total	854	774

3.2. Car Parking

149 car parking bays are proposed on the school site within three parking areas. All three car parks will operate as one-way car parks except for the 15-bay car park along Nyilla Approach. A turnaround bay has been provided in this car parking area.

A total of 41 parallel parking bays are proposed on the school side of the four roads fronting the school including 6 Kiss and Drive bays. The boundary road network is being constructed by developers separately from the school development. It is understood that the boundary roads and street parking layout will be completed by June 2019 prior to the opening of the school. The resulting parking supply to the school is therefore considered to be 190 bays. The proposed car parking supply is shown in Figure 5.

3.3. Access Arrangement

All three car parking areas will have one entry crossover and one exit crossover. The proposed access arrangement is also illustrated in Figure 5.

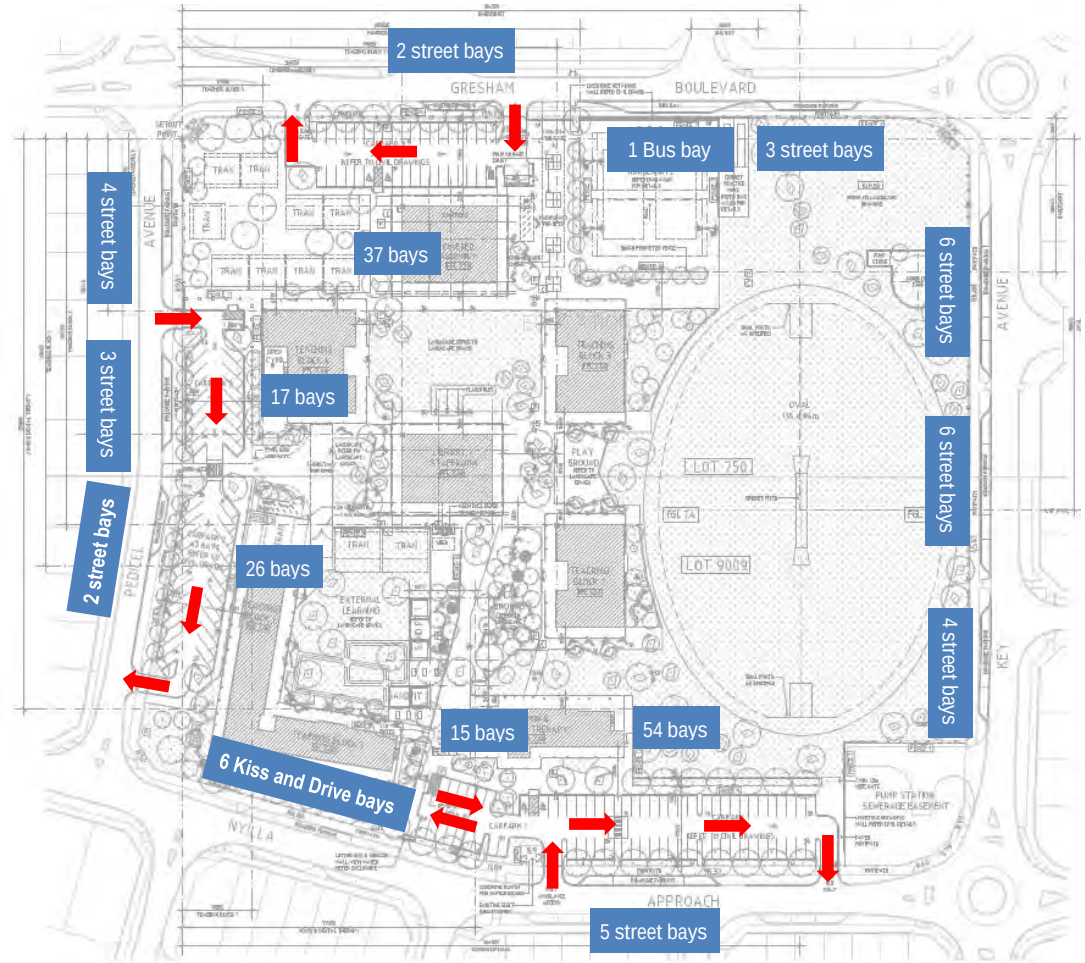


Figure 5: Proposed Car Parking and Access Arrangement

4. Existing Scenario

4.1. Road Network

4.1.1. Existing Road Layout and Hierarchy

The layout and hierarchy of the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in Figure 6.

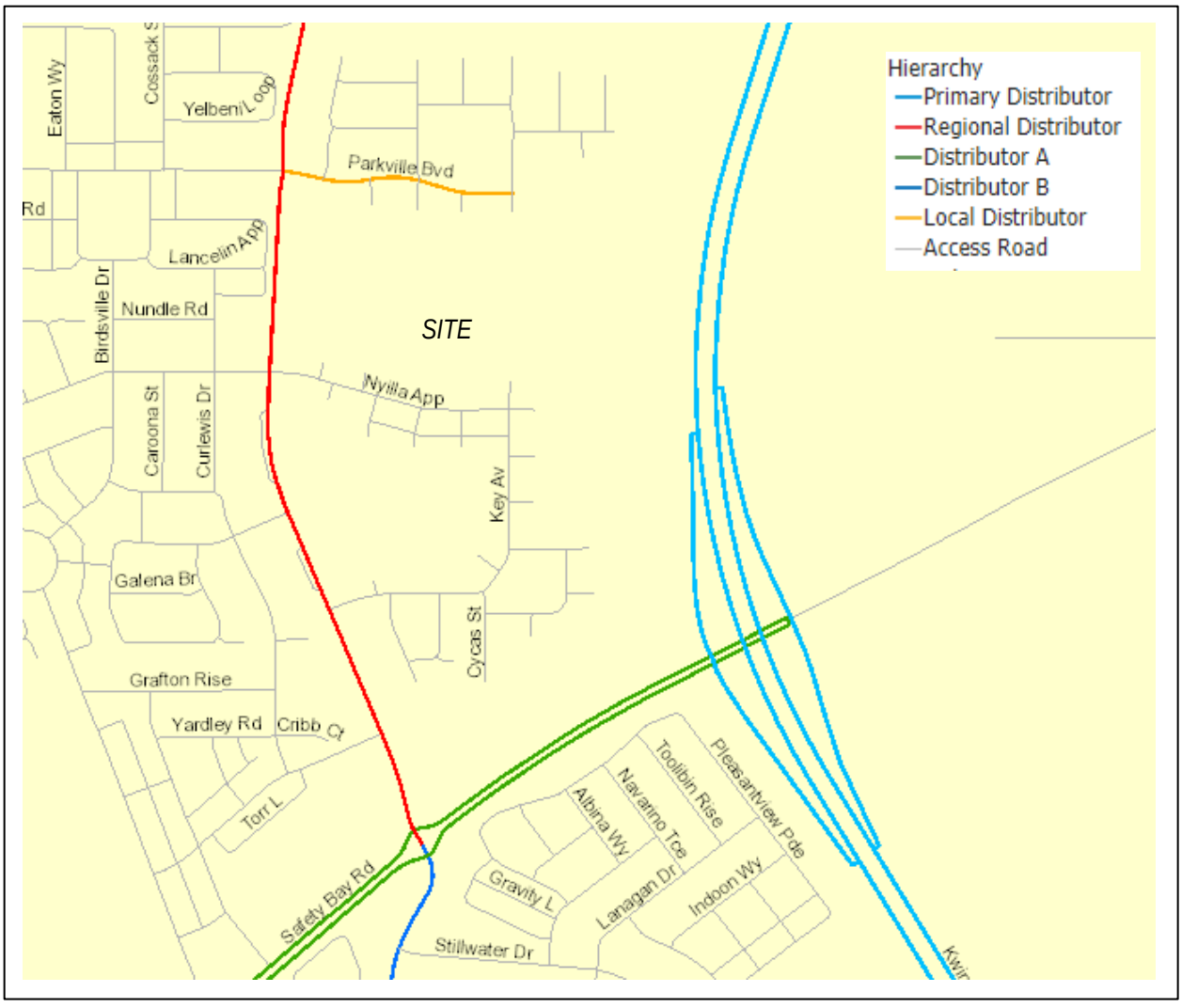


Figure 6: Existing Road Network Hierarchy

4.1.2. Carriageway Width and Cross Section

The configuration of the relevant existing roads are summarised in Table 2.

Table 2: Road Configuration

Road and Location	Road Type	Cross Section	Carriageway Width (approx.)
Nyilla Approach	Access Road	Single carriageway – 2 lanes	7.2m pavement plus indented parking
Key Avenue	Access Road	Single carriageway – 2 lanes	7.2m pavement
Parkerville Boulevard	Local Distributor	Single carriageway – 2 lanes	7.2m pavement plus indented parking
Baldivis Road	Regional Distributor	Single carriageway – 2 lanes Divided carriageway – 2 lanes south of Kookynie Loop	7.5m pavement 2 x 5.0m lanes plus 5.5m median
Safety Bay Road	District Distributor A	Dual carriageway – 4 lanes	2 x 3.5m lanes each direction plus 4.0m median

4.1.3. Daily and Peak Hour Traffic Flows

The latest available traffic counts for Baldivis Road and Safety Bay Road was obtained from Main Roads WA as summarised in Figure 7 and detailed in Table 3. As the development being proposed is a school, the counts are Average Weekday Traffic (AWT) counts. The peak hour traffic volumes were taken to be those during the typical school peaks from 8 to 9am and from 3 to 4pm.

The traffic volumes along the existing access roads (Nyilla Approach, Key Avenue) are estimated to be below 300 vehicles per day (vpd) based on the current stage of development and the incomplete road network.

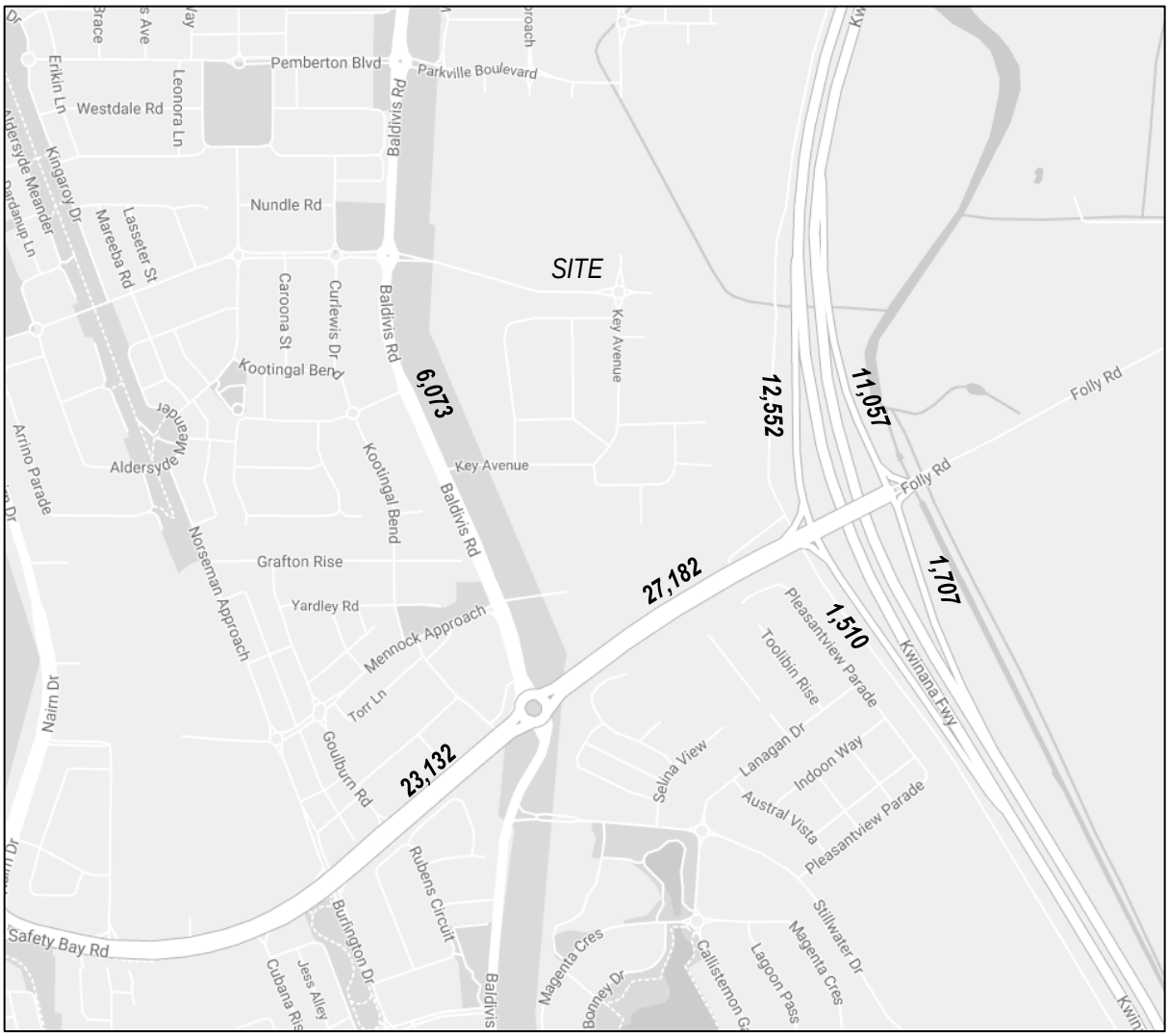


Figure 7: Latest Daily Traffic Counts

Table 3: Detailed Traffic Count Data

Road and Location	Daily		AM Peak (8-9)		PM Peak (3-4)		% Heavy Vehicles	Date
	NB/WB	SB/EB	NB/WB	SB/EB	NB/WB	SB/EB		
Safety Bay Road west of Baldivis Road	11,067	12,065	695	796	1,020	724	8.9%	2017/2018
Safety Bay Road west of Kwinana Fwy	13,093	14,089	660	1,027	1,251	862	5.8%	2017/2018
Baldivis Road	3,037	3,036	205	220	243	311	6.8%	2012/2013
Kwinana Freeway north of Safety Bay Road	12,552	11,057	1,007	524	783	1,029	-	2014/2015
Kwinana Freeway south of Safety Bay Road	1,510	1,707	106	96	107	140	-	2014/2015

5. Proposed Transport Network

Once the surrounding road network is complete, Key Avenue and Nyilla Approach will operate as Local Distributor / Neighbourhood Connector B roads. The remainder of the new roads will be Access Roads and Laneways. The proposed layout and hierarchy of the road network as indicated in the transport assessments for One 71 and The Edge are shown in Figure 8 and Figure 9, respectively.

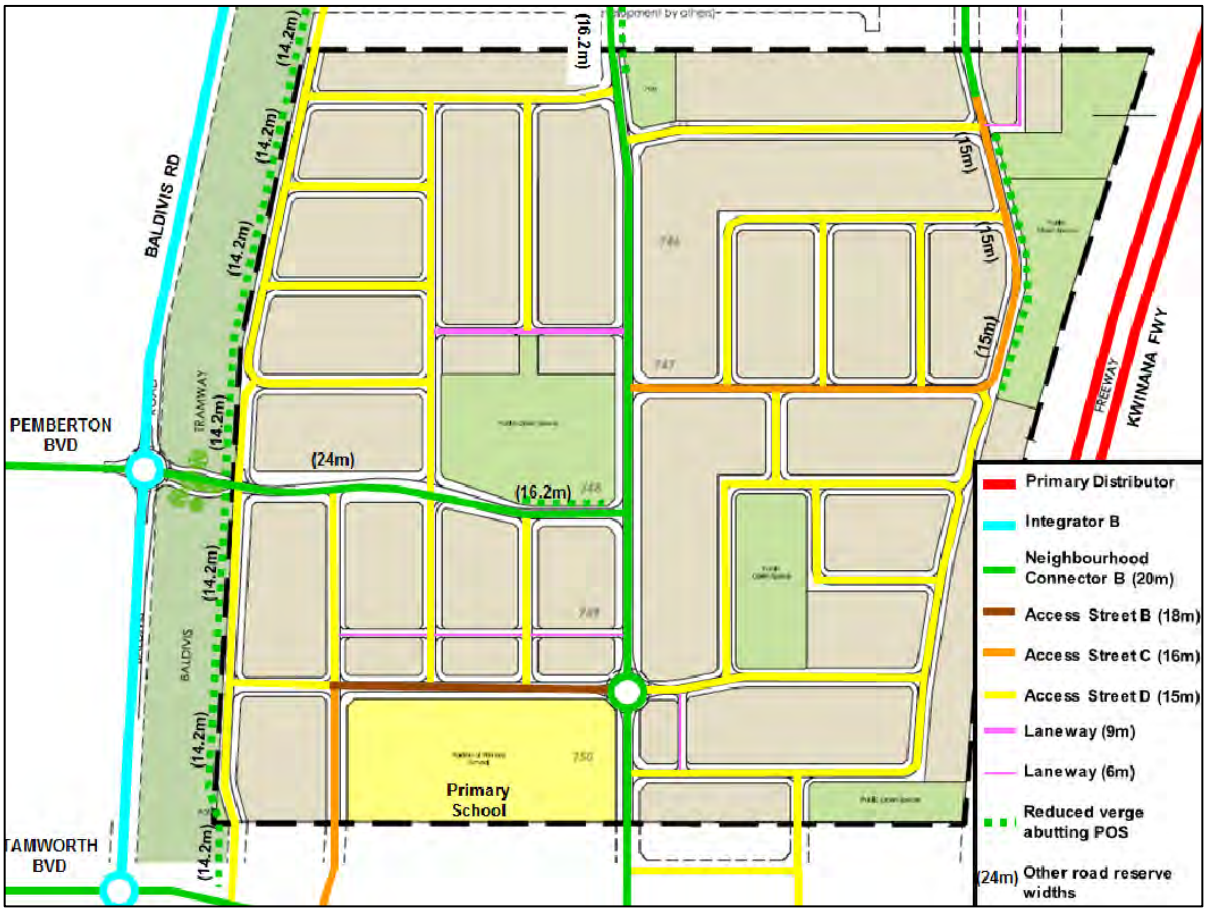


Figure 8: Proposed Road Network Hierarchy – One 71 (Transcore, 2015)

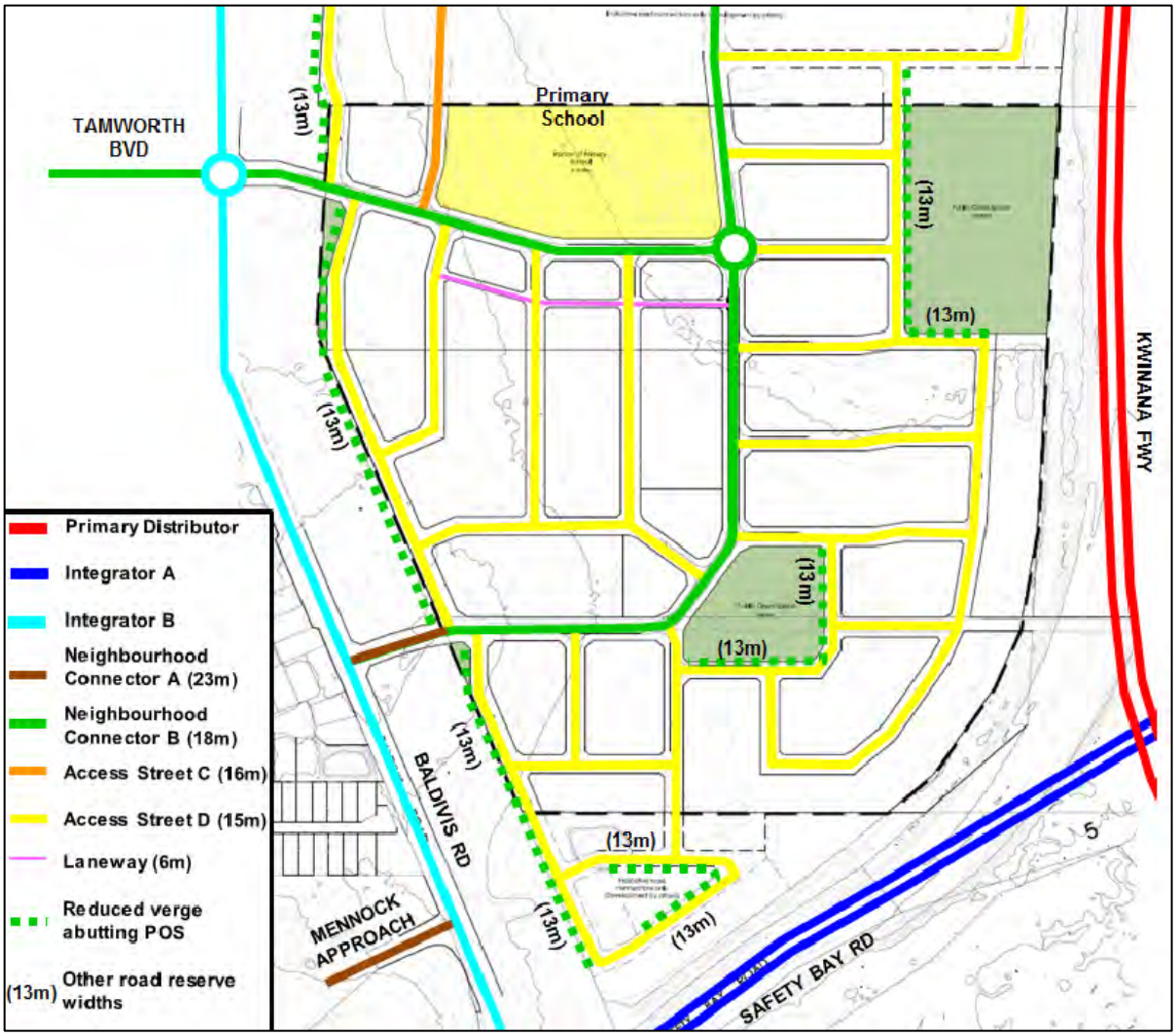


Figure 9: Proposed Road Network Hierarchy – The Edge (Transcore, 2014)

The proposed intersection control on the adjacent road network are shown in Figure 10 and Figure 11.

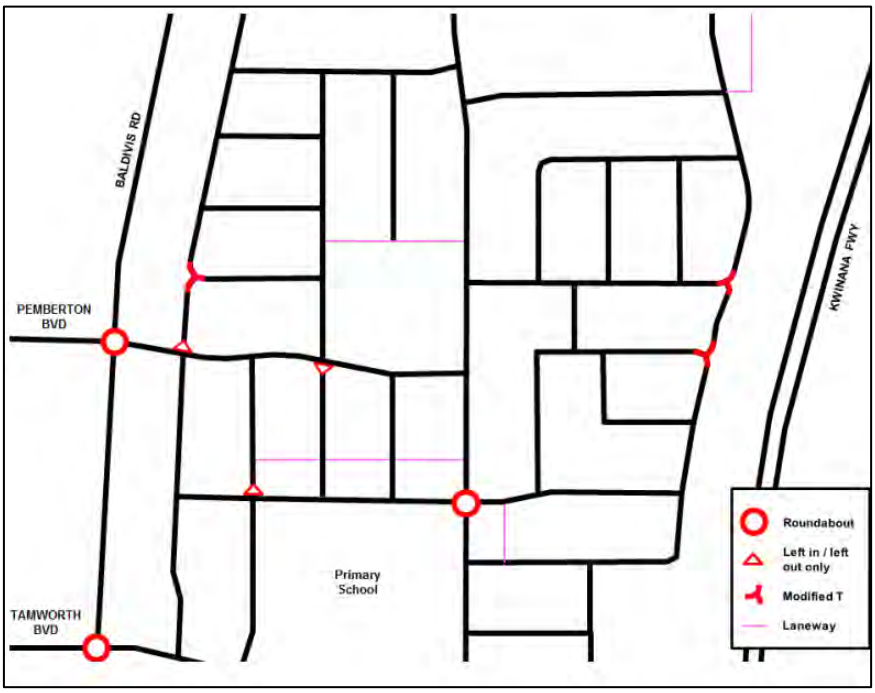


Figure 10: Proposed Intersection Control – One 71 Baldivis (Transcore, 2015)

Figure 11: Proposed Intersection Control – The Edge (Transcore, 2014)

It is noted that the intersection to the east of the Baldivis Road / Pemberton Boulevard / Parkerville Boulevard roundabout will ultimately be restricted to left-in/left-out (LILO) on both north and south sides due to the constructed splitter island and not just from the north side as shown previously in Figure 10. This restriction, combined with the proposed LILO restriction in the north-west corner of the school, will result in the majority of school traffic accessing the school using Nyilla Approach. While some traffic coming from the north and west via Baldivis Road and Pemberton Boulevard may still use Parkerville Boulevard, the majority are likely to continue south to use Nyillla Approach due to the location of the parking areas and the Kiss and Drive bays. This is illustrated in Figure 12.

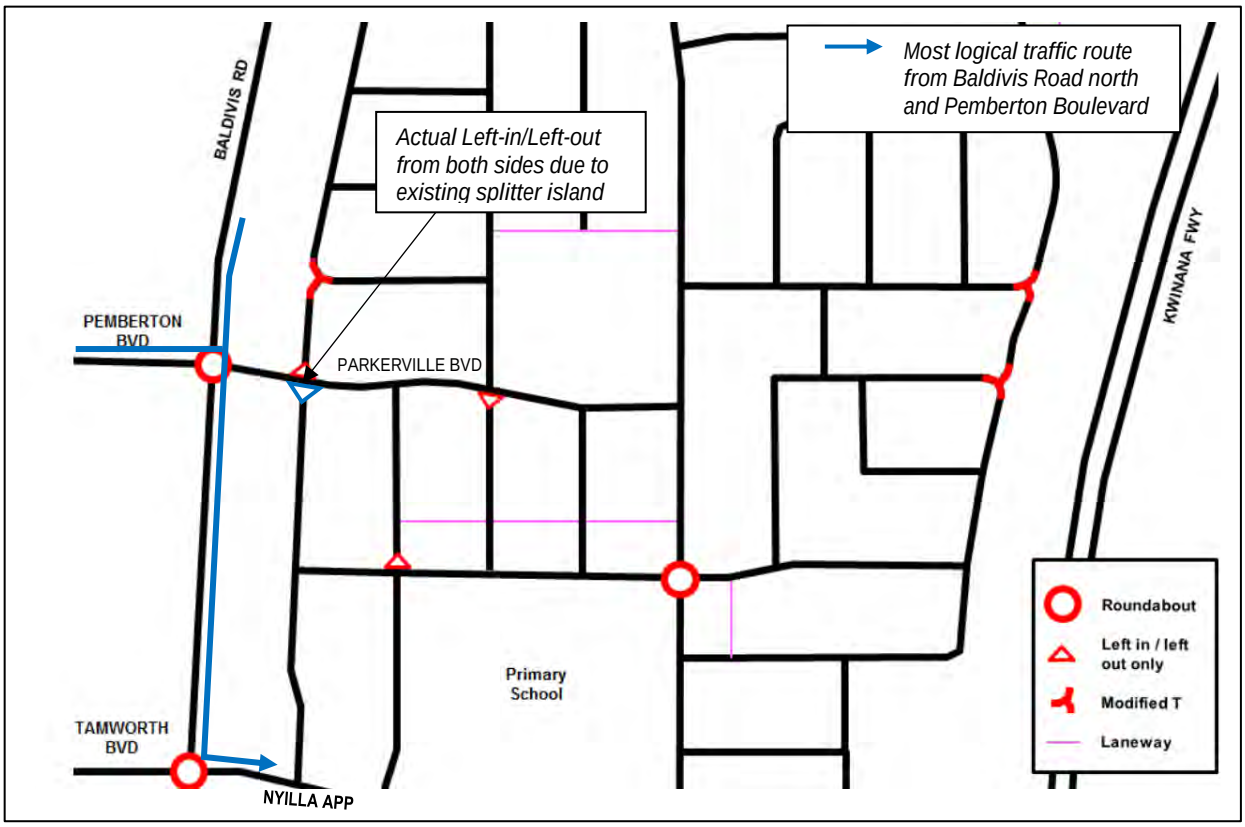


Figure 12: Proposed School Traffic Route from North and West

6. Transport Assessment

6.1. Traffic Generation

The time periods for assessment include the weekday morning peak period (7:30 to 9:00 am) and afternoon peak period (2:30 to 4:00 pm). The morning peak period broadly coincides with the typical weekday road network peak period while the afternoon peak period for the school typically finishes before the time weekday road network afternoon peak period is underway. It is assumed conservatively that all staff will drive to and from school and that staff movements coincide with the peak school movements.

The vehicular traffic generation rates for primary schools according to the Western Australian Planning Commission (WAPC) *Transport Assessment Guidelines* is 0.5 vehicle trips per student to school and 0.5 trips per student from school during each of the morning and afternoon peak hours (i.e. 1 trip per student per peak period) based on the PARTS surveys. The total enrolment population has been used as a conservative assessment, as requested by the City of Rockingham. It is noted that the actual number of students attending on any day will be lower due to kindergarten students who only attend on a part-time basis.

The BMW guidelines also recommends that for new schools, a daily rate of 2.6 trips per student is appropriate. These rates include staff vehicle trips. The school traffic generation is summarised in Table 4.

Table 4: School Traffic Generation

Streams	Units
Student Number (Total)	854
Staff Number	85
Daily Trip Generation Rate	2.6 trips per student
Peak Hour Vehicle Trip Generation Rate	38.5% of the Daily Generation / 1 trip per student
Daily Trips (Staff & Students)	2,220 trips (1,110 in / 1,110 out)
AM Peak Trips (Students and Staff)	856 (428 in / 428 out)
PM Peak Trips (Students and Staff)	856 (428 in / 428 out)

6.2. Distribution

The local intake area for the school is not known at this stage but is expected to include the majority of the Baldivis locality. The distribution of the school generated traffic has been assumed based on the layout of the ultimate surrounding road network and the location of the school crossovers and car parking areas.

The relative attraction to each of the car parks has been based on the most logical route from the origin of the trip, the layout of the road network and the movement restrictions at each crossover. The estimated distribution

of school traffic on the road network is shown in Figure 13.

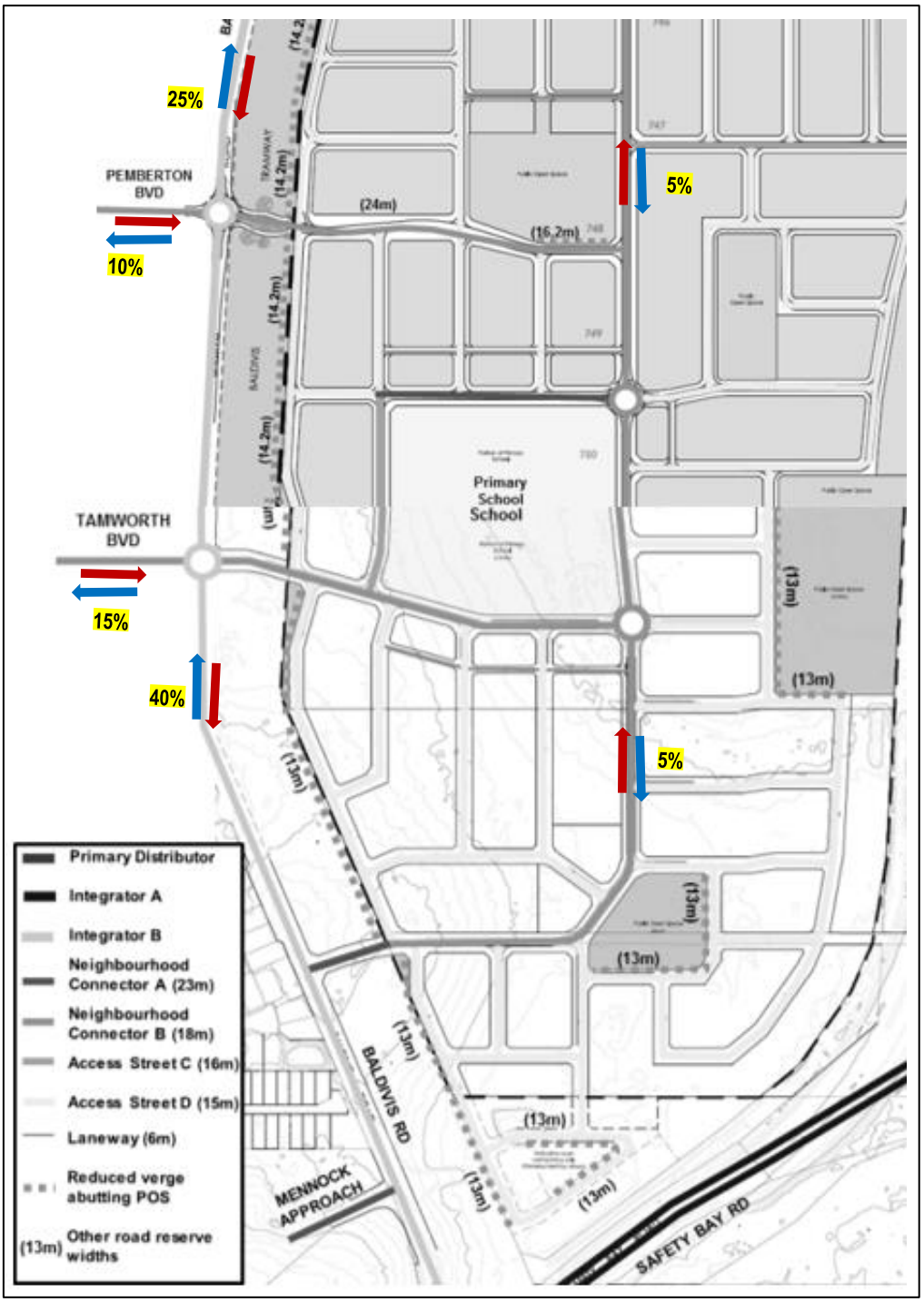


Figure 13: Distribution of School Generated Traffic

6.3. Network Assignment of School Traffic

The assignment of school generated traffic is shown in Figure 14.

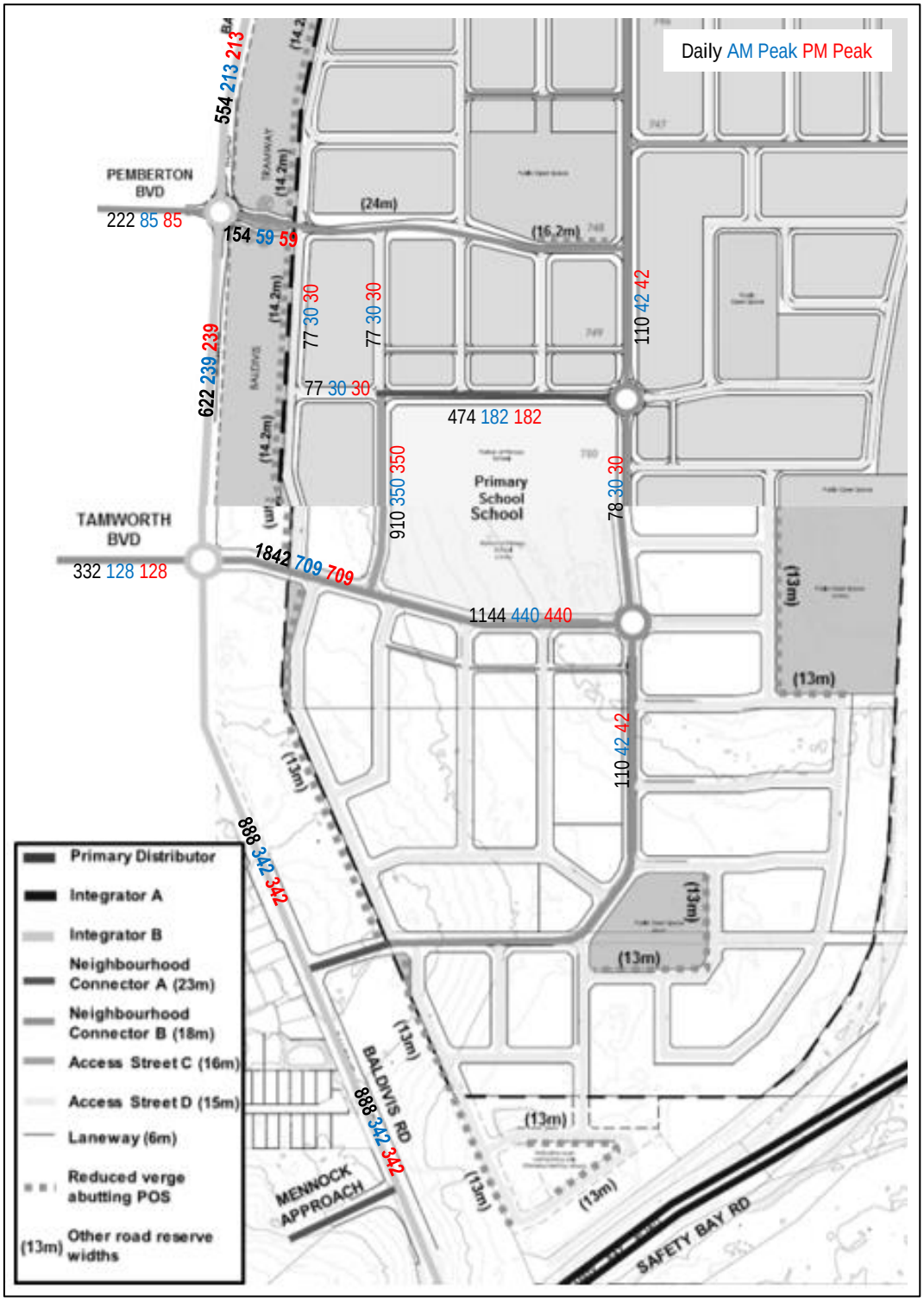


Figure 14: Assignment of School Generated Traffic

6.4. Network Capacity

6.4.1. Roads

As the roads surrounding the school are relatively new and there is ongoing development in the area, the assignment of school traffic onto the existing network does not represent the full development scenario. Therefore, the forecast daily traffic volumes from the traffic assessment for the two structure plans as prepared by Transcore (last updated 2015) were used to assess the adequacy of proposed road network to accommodate the school generated traffic. The Transcore assessment has been based on the 2031 development horizon as guided by the *Directions 2031* planning strategy.

The proposed school site is zoned as "primary school" in the Local Structure Plan and the forecast volumes takes into consideration of the school generated traffic. The Transcore estimated traffic volumes are summarised in Figure 15.

It is noted that the Transcore assessment assumed a student population of 430 students which calculated to 1,160 vehicle trips, or approximately half of the vehicle trips calculated in the current assessment. Based on the location of the car parking and crossovers, the current assessment also assumes a greater proportion of school traffic would use Nyilla Approach and Parkerville Boulevard (and then Pedicel Avenue) instead of Key Avenue. It is likely that at the time of assessment, Transcore would have assumed there would be a crossover to the school on Key Avenue and therefore more school traffic would use Key Avenue from Baldivis Road.

As such, the forecast traffic in Figure 15 has been adjusted to reflect the higher traffic generation from the school and the revised distribution of school traffic.

Notwithstanding this, the transfer of traffic to Nyilla Approach and Pedicel Avenue is not predicted to increase the traffic volume along Nyilla Approach above its expected capacity and the ultimate volume along Key Boulevard is likely to decrease slightly based on the adjusted traffic distribution.

A comparison between school generated traffic, the adjusted forecast volumes and the indicative traffic volumes recommended by WAPC Liveable Neighbourhoods is outlined in Table 5.

Table 5: Network Capacity

Road Name	Liveable Neighbourhood Classification	Indicative Daily Traffic Volumes (vpd)	Forecast Volumes (Including School Traffic) (vpd)	School Generated Daily Traffic Volume (vpd)
Nyilla Approach	Neighbourhood Connector B	3,000	3,042	1,842
Key Avenue	Neighbourhood Connector B	3,000	2,647	110
Gresham Boulevard	Access Street	3,000	657	474
Pedicel Avenue	Access Street	3,000	1,250	910

Based on the traffic generation and the above reasoning, the planned road network is considered to have sufficient capacity to accommodate the school generated traffic at mid-block locations.

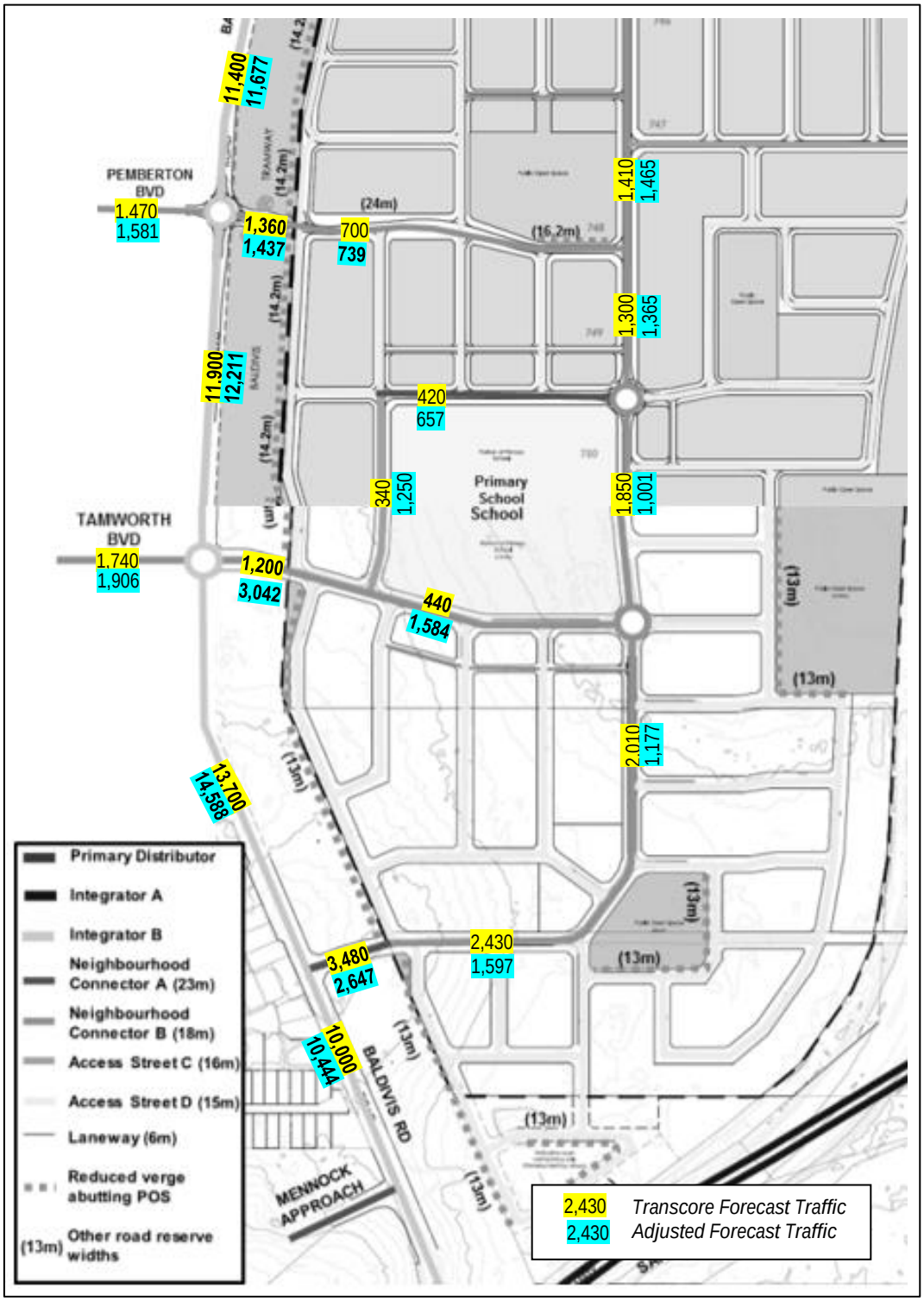


Figure 15: Forecast Daily Traffic Volumes

6.4.2. Intersections

Intersection capacity assessment for the following key intersections in the area surrounding the school has been undertaken using SIDRA Intersection 8.0:

- Baldivis Road / Pemberton Boulevard / Parkerville Boulevard Roundabout;
- Baldivis Road / Tamworth Boulevard / Nyilla Approach Roundabout;
- Baldivis Road / Key Close T-Intersection;
- Nyilla Approach / Pedicel Avenue;
- Nyilla Approach / Key Avenue;
- Gresham Boulevard / Pedicel Avenue; and
- Gresham Boulevard / Key Avenue.

Capacity assessment of the three intersections along Baldivis Road under the 2031 development scenario were already undertaken as part of Transcore's assessments. The assessment of these intersection has been revised with the school traffic volumes added to the Transcore volumes to be conservative.

For the four intersections along the school boundary, only a single peak hour has been assessed. As the traffic model used in the Transcore assessment is not available, the peak hour traffic flows were derived assuming that peak flows are approximately equal to 10% of the daily flows as projected in Figure 15. Where the school traffic flows were higher than 10% of the daily flows, the school traffic has been added to these to be conservative. To account for the assumptions at these intersections, a sensitivity analysis has also been undertaken where the traffic flows are increased until the intersection reaches the practical capacity based on degree of saturation (degree of saturation 0.9 for signals, 0.85 for roundabouts and 0.8 for unsignalised intersections according to Austroads guidelines).

The results of the assessment are included in Appendix B. Overall, the intersections were assessed as performing within capacity with all measures of performance (average delay, level of service, queue length and degree of saturation) within acceptable levels.

The exception is at the Baldivis / Tamworth / Nyilla intersection during the PM peak hour, where the north approach of Baldivis Road is predicted to have a degree of saturation of 0.918 which is slightly higher than the desirable value of 0.85. This higher degree of saturation is considered to be acceptable in this instance for the following reasons:

- All other measures including average delay (16.1 seconds), level of service (LOS B) and queue length (180 metres) are within acceptable values for this movement.

- The WAPC TIA guidelines suggests that the average delay dictates the threshold of intersection operation requiring remediation with a threshold average delay at roundabouts of 35 seconds for all vehicle movements and 45 seconds for individual movements. The predicted average delay for the north approach is 19.2 seconds and the highest average delay for any individual movement is 23.1 seconds.
- During peak periods when drivers experience congestion, they will tend to seek alternative routes, particularly around schools where drivers are familiar with road conditions and brief periods of larger than typical delays and congestion are common. In this instance, if the north approach to this intersection becomes oversaturated during the afternoon peak, school traffic from the north and west via Baldivis Road and Pemberton Boulevard may choose to use Parkerville Boulevard instead.

Notwithstanding the above, an alternate scenario has been modelled where half of the school traffic from the north and west that would have approached the school from Nyilla Approach, approximately 60 inbound vehicle trips, would instead use Parkerville Boulevard. This redistribution reduces the modelled degree of saturation to 0.867 for the northern approach of the Baldivis / Tamworth / Nyilla intersection which is considered to be close enough to the desirable 0.85 for roundabouts. The Baldivis / Pemberton / Parkerville intersection will still operate within capacity under this scenario. The results from this scenario are attached in Appendix C.

For the sensitivity analysis of the boundary intersections, the traffic flows at the Nyilla Approach / Pedicel Avenue intersection (south-west) could increase by approximately 54% before reaching practical capacity. At the other three boundary intersections, the flows could increase by 4 or 5 times without reaching the practical capacity.

It is therefore concluded that the existing and planned intersections surrounding the school will have sufficient capacity to accommodate the school traffic flows.

7. Parking Assessment

7.1.1. Proposed Car Parking Supply

149 car parking bays are proposed on the school site. A further 41 street parking bays are proposed along the school side of the four boundary roads which would be available during the school peak periods. Although the street parking bays are not technically part of the school site, these bays are unlikely to be occupied by the surrounding residential developments during school peak periods and it is reasonable to count these bays as part of the supply to avoid the oversupply of parking within the school site. The total car parking supply available to the school during peak periods is 190 bays. As mentioned previously, the developers of the boundary road network have advised that the roads adjacent to the school will be completed by June 2019 before the planned school opening date.

7.1.2. BMW Requirements

The minimum car parking requirements as per the BMW *Primary School Brief* are summarised in Table 6 and the required number of bays for the school based on the proposed student population is outlined in Table 7.

Table 6: BMW Car Parking Requirements

Stream	Bay Type	Car Parking Requirement
Early Childhood (Kindergarten)	Pick-up / Drop-off	15 bays
Pre-primary to Year 6	Staff and Visitors	10 bays per 100 PP-Y6 students (includes 3 visitor bays) Minimum 46 bays for new schools
	Pick-up / Drop-off	14 bays per 100 PP-Y6 students Minimum 60 bays for new schools

Table 7: Calculated Car Parking Requirements

Stream	Bay Type	Car Parking Requirement	Students	Bays Required
Early Childhood (Kindergarten)	Pick-up / Drop-off	15 bays	160 (80 FTE)	15
Pre-primary to Year 6	Staff	10 bays per 100 PP-Y6 students Minimum 46 bays for new schools	694	69
	Pick-up / Drop-off	14 bays per 100 PP-Y6 students Minimum 60 bays for new schools		97
Total				188

As shown in Table 7, the total car parking requirement for the school is 188 bays. The overall proposed car parking supply of 190 bays therefore satisfies the BMW minimum requirements.

It is also likely that as the boundary roads are completed, additional street parking will be constructed on the opposite side of the roads. There are 10 existing street bays along the south side of Nyilla Approach.

The *Primary School Brief* also notes the following additional parking requirements:

- 1 bay in every 30 on-site bays is made a universal access bay and that these bays are distributed evenly across the site with at least 1 bay in each discrete parking location; and
- 1 bus bay is to be provided on the street.

Based on the total 149 on-site parking bays, the universal access parking requirement is 5 bays. The existing plan includes 5 universal access bays with at least one bay in each car park which satisfies this requirement.

A bus embayment has also been included on the street along Gresham Boulevard adjacent to the proposed hard courts and cricket nets.

7.2. Bicycle Parking

The bicycle parking requirements for a standard pattern primary school according to BMW guidelines is to provide 48 bicycle parking spaces. It is recommended at this stage to provide 48 spaces to comply with BMW requirements. Two bicycle parking areas are currently shown including one next to the covered assembly and one next to Teaching Block 1.

When the school population increases with the introduction of transportables, additional bicycle racks can be constructed subject to usage and demand.

An estimation of the bicycle parking demand based on the ultimate school population including transportables is summarised in Table 8.

Table 8: Ultimate Bicycle Parking Requirements

Stream	Bay Type	Bicycle Parking Requirement	Quantum	Spaces Required
Primary School (K-Y6)	Students	1 rack or bay per 10 children	774 (FTE)	78
	Staff	1 rack or bay per 25 to 35 staff	77	3
			Total	81 spaces

.

8. Road Safety Assessment

8.1. Crash History

The crash history for the boundary roads at mid-block locations and at intersections for the five-year period ending December 2017 obtained from the MRWA *Reporting Centre* indicated that no crashes have been recorded near the site. This is mostly due to the road being new or incomplete.

8.2. Vehicle Access

The proposed school crossovers have been assessed for sight distance in accordance with Australian Standard AS 2890.1-2004 *Parking Facilities - Off-street car parking*. Based on the frontage road speed of 40 km/h (school zone speed limit) the minimum required sight distance is 35 metres (55 metres desirable). A desktop review of the proposed crossover layout indicates that the minimum required 35 metres would be achieved at all school crossovers.

9. Pedestrians and Cyclists

The planned pedestrian cycle network according to the structure plan transport assessments are shown in Figure 16 and Figure 17. This is shown to include a 2.5 metre shared path around the perimeter of the school and a 2.0m path along one side of all other roads (except laneways).

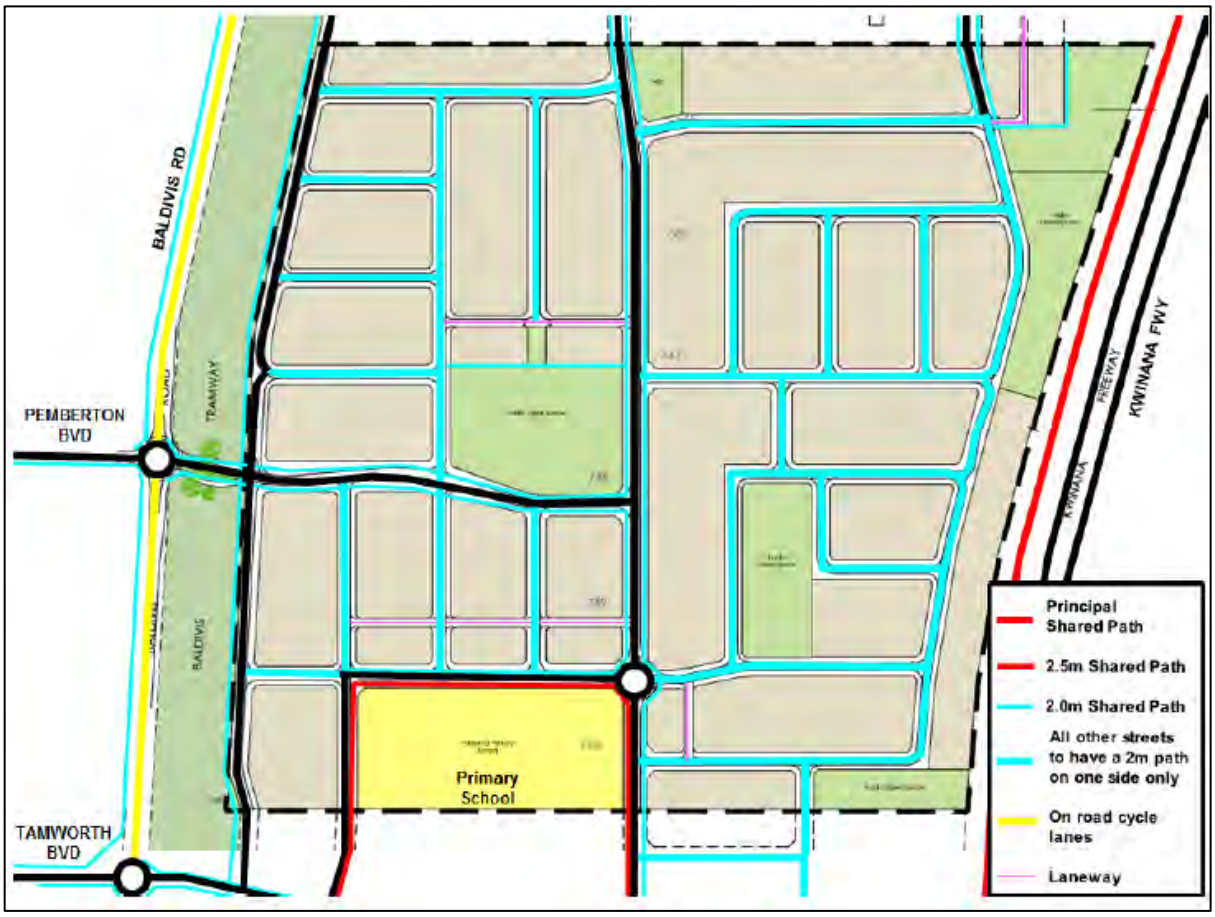


Figure 16: Planned Pedestrian Cyclist Network – One 71 Baldivis LSP (Transcore, 2015)

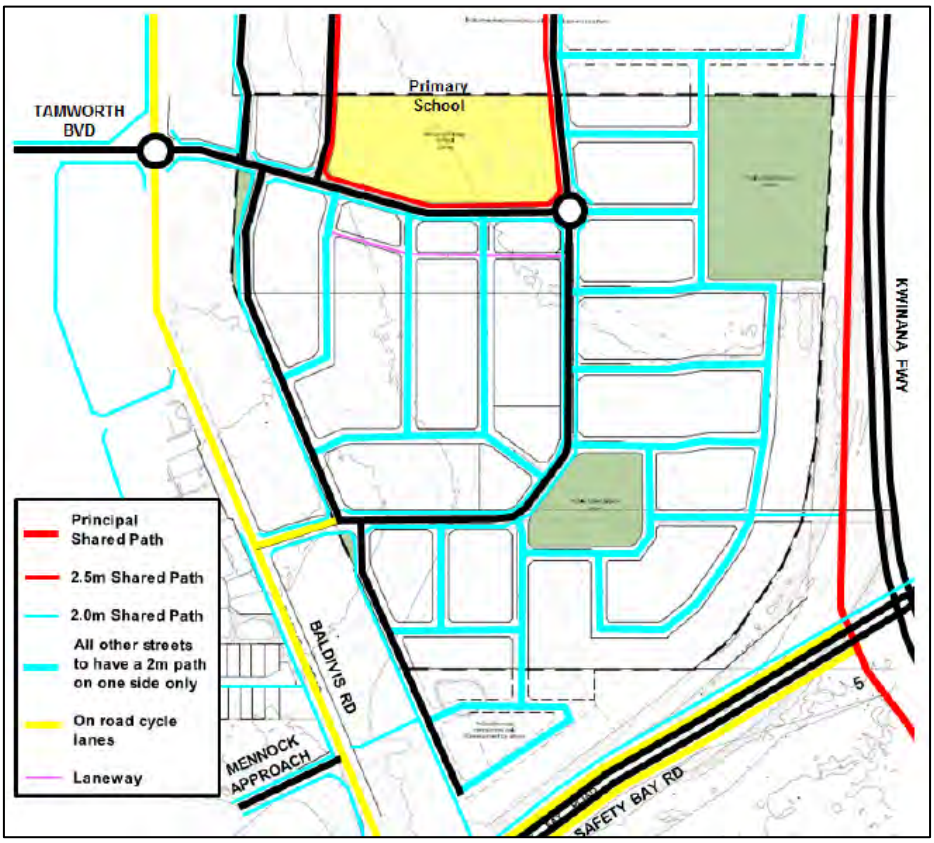


Figure 17: Planned Pedestrian Cyclist Network – The Edge Baldivis LSP (Transcore, 2014)

At locations where pedestrian crossing movements are expected, at least 40 metres forward visibility must be provided for traffic. All pedestrian crossing points shown on the site plan are located on kerb build-outs in order to achieve appropriate visibility where located near parallel parking.

BMW guidelines recommends that roads with a traffic volume greater than 6,000 vpd may require medians to accommodate pedestrian crossing adjacent to schools. Based on the projected traffic volumes in Figure 15, none of the boundary roads are expected to carry volumes above the threshold and therefore no medians are necessary.

9.1. Safe Walk/Cycle to School

The potential walk / cycle catchment to schools is considered to include residential areas within 800 metres of the school. A review of the likely routes to the school within the catchment concluded that the existing and proposed pedestrian and cyclist network would be adequate to allow the safe and efficient movement of students to and from the school and no deficiencies were identified.

10. Public Transport Accessibility

The closest available public transport service is the Transperth Bus Route 568 which operates between Warnbro Station and Baldivis. The closest stop is located on Birdsville Drive approximately 550m walking distance from the boundary of the school site as shown in Figure 18.

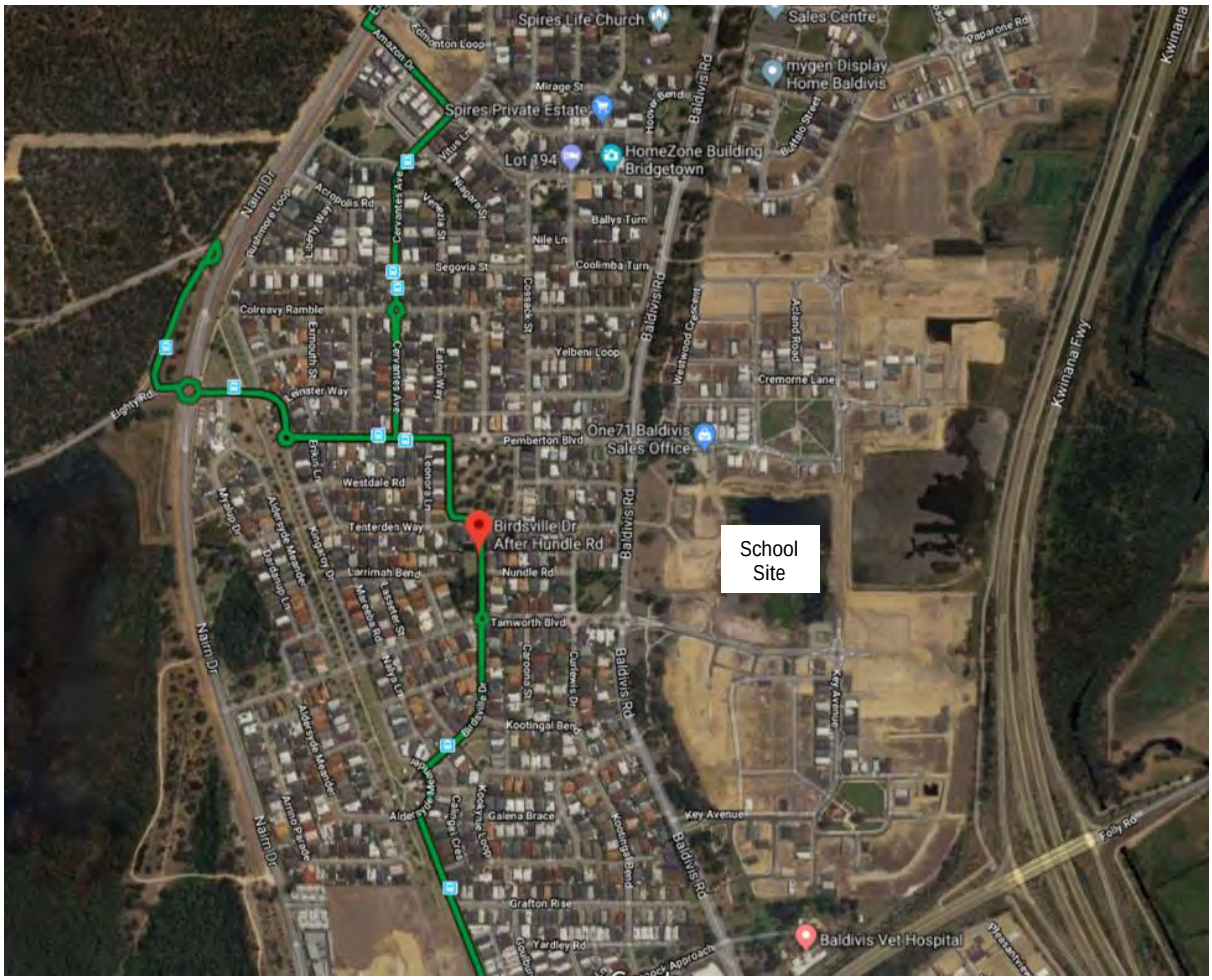


Figure 18: Existing Public Transport Service

PTA advises that there are future plans for a new bus route 569 operating between Warnbro Station and Wellard Station. The service is planned to travel via Safety Bay Road, Baldivis Road and through One 71 and The Edge along the arterial roads (likely Key Avenue and Paparone Road). The timing of the new route will depend on the development of the area and the road network.

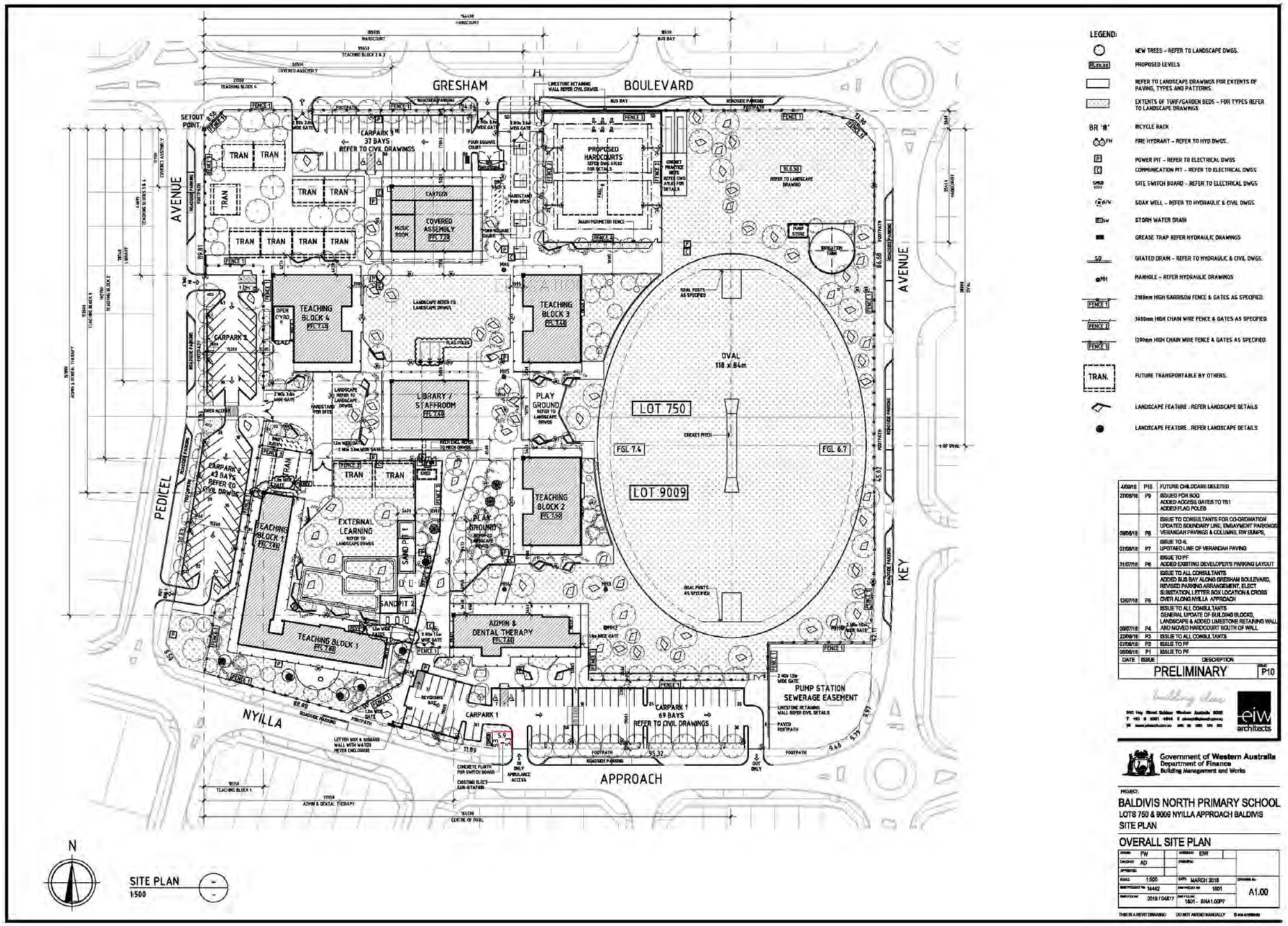
Considering the nature of primary schools where students, especially early childhood students, are mainly relying on pick-up and drop-off, the existing public transport service is considered sufficient to accommodate the expected demand if no future services become available by the time the school opens.

11. Conclusion

A detailed Transport Impact Assessment of the proposed Baldivis North Primary School in accordance with the BMW *Primary School Brief* concluded the following:

- The adjacent road network has been planned and constructed to a suitable standard to accommodate the traffic generated by the school on a daily and peak hour basis;
- The available on-site and street parking satisfies the minimum car parking requirements of BMW. The parking assessment will be reviewed again once the boundary road network design is completed;
- All proposed vehicle crossovers are expected to achieve the minimum required sight distance.
- The existing and proposed path network is adequate for the safe and efficient movement of pedestrians and cyclists travelling to and from the school.
- The existing public transport service is considered sufficient to accommodate the expected demand for this service.

Appendix A - School Site Plan



LEGEND:

- NEW TREES – REFER TO LANDSCAPE DWGS.
- RL xx.xx – PROPOSED LEVELS
- REFER TO LANDSCAPE DRAWINGS FOR EXTENTS OF PAVING, TYPES AND PATTERNS.
- EXTENTS OF TURF/GARDEN BEDS – FOR TYPES REFER TO LANDSCAPE DRAWINGS
- BR "#" – BICYCLE RACK
- FH – FIRE HYDRANT – REFER TO HYD DWGS.
- P – POWER PIT – REFER TO ELECTRICAL DWGS
- C – COMMUNICATION PIT – REFER TO ELECTRICAL DWGS
- SWB – SITE SWITCH BOARD – REFER TO ELECTRICAL DWGS
- SW – SOAK WELL – REFER TO HYDRAULIC & CIVIL DWGS.
- SWD – STORM WATER DRAIN
- GREASE TRAP REFER HYDRAULIC DRAWINGS
- GD – GRATED DRAIN – REFER TO HYDRAULIC & CIVIL DWGS.
- MH – MANHOLE – REFER HYDRAULIC DRAWINGS
- FENCE 1 – 2100mm HIGH GARRISON FENCE & GATES AS SPECIFIED.
- FENCE 2 – 3400mm HIGH CHAIN WIRE FENCE & GATES AS SPECIFIED.
- FENCE 3 – 1200mm HIGH CHAIN WIRE FENCE & GATES AS SPECIFIED.
- TRAN. – FUTURE TRANSPORTABLE BY OTHERS.
- LANDSCAPE FEATURE . REFER LANDSCAPE DETAILS
- LANDSCAPE FEATURE . REFER LANDSCAPE DETAILS

DATE	ISSUE	DESCRIPTION
4/09/18	P10	FUTURE CHILDCARE DELETED
27/08/18	P9	ISSUED FOR SOQ ADDED ACCESS GATES TO TB1 ADDED FLAG POLES
09/08/18	P8	ISSUE TO CONSULTANTS FOR CO-ORDINATION UPDATED BOUNDARY LINE, EMBAYMENT PARKINGS VERANDAH PAVINGS & COLUMNS, RW SUMPS,
07/08/18	P7	ISSUE TO 4L UPDATED LINE OF VERANDAH PAVING
31/07/18	P6	ISSUE TO PF ADDED EXISTING DEVELOPER'S PARKING LAYOUT
12/07/18	P5	ISSUE TO ALL CONSULTANTS ADDED BUS BAY ALONG GRESHAM BOULEVARD, REVISED PARKING ARRANGEMENT, ELECT SUBSTATION, LETTER BOX LOCATION & CROSS OVER ALONG NYILLA APPROACH
09/07/18	P4	ISSUE TO ALL CONSULTANTS GENERAL UPDATE OF BUILDING BLOCKS), LANDSCAPE & ADDED LIMESTONE RETAINING WALL AND MOVED HARDCOURT SOUTH OF WALL
22/06/18	P3	ISSUE TO ALL CONSULTANTS
07/06/18	P2	ISSUE TO PF
05/06/18	P1	ISSUE TO PF

PRELIMINARY P10

eiw architects

Government of Western Australia
Department of Finance
Building Management and Works

PROJECT:
BALDIVIS NORTH PRIMARY SCHOOL
LOTS 750 & 9009 NYILLA APPROACH BALDIVIS
SITE PLAN

OVERALL SITE PLAN

DRAWN	FW	DESIGNED	EIW
CHECKED	AD	PROJECT No	
APPROVED			
SCALE	1:500	DATE	MARCH 2018
SHEET PROJECT No	14442	DRAWING No	1801
SHEET FILE No	2018 7 04877	SHEET FILE NAME	1801 - BNA1.DGPY

A1.00

THIS IS A REVIT DRAWING DO NOT AMEND MANUALLY

MOVEMENT SUMMARY

Site: 1 [Baldivis / Tamworth / Nyilla - 2031 AM Peak]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
1	L2	10	1.0	0.774	10.8	LOS B	11.7	82.9	0.91	0.85	1.09	35.7
2	T1	637	2.0	0.774	11.3	LOS B	11.7	82.9	0.91	0.85	1.09	51.3
3	R2	181	2.0	0.774	15.6	LOS B	11.7	82.9	0.91	0.85	1.09	46.8
Approach		828	2.0	0.774	12.2	LOS B	11.7	82.9	0.91	0.85	1.09	50.2
East: Nyilla Approach (E)												
4	L2	189	1.0	0.432	5.2	LOS A	2.7	19.2	0.61	0.68	0.61	47.9
5	T1	103	1.0	0.432	5.0	LOS A	2.7	19.2	0.61	0.68	0.61	25.8
6	R2	142	1.0	0.432	9.2	LOS A	2.7	19.2	0.61	0.68	0.61	47.1
Approach		434	1.0	0.432	6.4	LOS A	2.7	19.2	0.61	0.68	0.61	43.2
North: Baldivis Road (N)												
7	L2	142	1.0	0.489	7.1	LOS A	3.9	27.7	0.66	0.67	0.66	46.5
8	T1	335	2.0	0.489	7.5	LOS A	3.9	27.7	0.66	0.67	0.66	54.8
9	R2	35	1.0	0.489	11.8	LOS B	3.9	27.7	0.66	0.67	0.66	38.2
Approach		512	1.7	0.489	7.7	LOS A	3.9	27.7	0.66	0.67	0.66	51.9
West: Tamworth Boulevard (W)												
10	L2	24	1.0	0.219	8.9	LOS A	1.5	10.5	0.88	0.87	0.88	41.8
11	T1	74	1.0	0.219	8.8	LOS A	1.5	10.5	0.88	0.87	0.88	32.8
12	R2	16	1.0	0.219	13.0	LOS B	1.5	10.5	0.88	0.87	0.88	45.7
Approach		114	1.0	0.219	9.4	LOS A	1.5	10.5	0.88	0.87	0.88	37.5
All Vehicles		1888	1.6	0.774	9.5	LOS A	11.7	82.9	0.77	0.76	0.85	48.8

MOVEMENT SUMMARY

Site: 1B [Baldivis / Tamworth / Nyilla - 2031 PM Peak]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
1	L2	20	1.0	0.475	7.0	LOS A	3.7	26.0	0.66	0.71	0.66	37.5
2	T1	273	2.0	0.475	7.5	LOS A	3.7	26.0	0.66	0.71	0.66	53.7
3	R2	194	1.0	0.475	11.7	LOS B	3.7	26.0	0.66	0.71	0.66	49.5
Approach		487	1.6	0.475	9.1	LOS A	3.7	26.0	0.66	0.71	0.66	51.5
East: Nyilla Approach (E)												
4	L2	181	1.0	0.736	17.9	LOS B	8.5	59.8	1.00	1.22	1.49	36.5
5	T1	81	1.0	0.736	17.8	LOS B	8.5	59.8	1.00	1.22	1.49	18.3
6	R2	130	1.0	0.736	22.0	LOS C	8.5	59.8	1.00	1.22	1.49	34.8
Approach		392	1.0	0.736	19.3	LOS B	8.5	59.8	1.00	1.22	1.49	32.7
North: Baldivis Road (N)												
7	L2	153	1.0	0.918	18.4	LOS B	25.3	179.7	1.00	1.07	1.59	36.0
8	T1	782	2.0	0.918	18.9	LOS B	25.3	179.7	1.00	1.07	1.59	44.7
9	R2	82	1.0	0.918	23.1	LOS C	25.3	179.7	1.00	1.07	1.59	29.8
Approach		1017	1.8	0.918	19.2	LOS B	25.3	179.7	1.00	1.07	1.59	42.6
West: Tamworth Boulevard (W)												
10	L2	10	1.0	0.115	5.7	LOS A	0.6	4.5	0.64	0.65	0.64	45.9
11	T1	74	1.0	0.115	5.7	LOS A	0.6	4.5	0.64	0.65	0.64	37.6
12	R2	10	1.0	0.115	9.8	LOS A	0.6	4.5	0.64	0.65	0.64	49.8
Approach		94	1.0	0.115	6.1	LOS A	0.6	4.5	0.64	0.65	0.64	40.6
All Vehicles		1990	1.5	0.918	16.1	LOS B	25.3	179.7	0.90	0.99	1.30	42.5

MOVEMENT SUMMARY

Site: 2 [Baldivis / Pemberton / Parkerville - 2031 AM Peak]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
1	L2	56	1.0	0.615	5.8	LOS A	6.2	45.5	0.52	0.52	0.52	48.3
2	T1	751	5.0	0.615	6.3	LOS A	6.2	45.5	0.52	0.52	0.52	56.4
3	R2	17	1.0	0.615	10.9	LOS B	6.2	45.5	0.52	0.52	0.52	50.7
Approach		824	4.6	0.615	6.4	LOS A	6.2	45.5	0.52	0.52	0.52	55.8
East: Parkerville Boulevard (E)												
4	L2	32	1.0	0.149	5.8	LOS A	0.9	6.1	0.63	0.68	0.63	46.7
5	T1	50	1.0	0.149	5.8	LOS A	0.9	6.1	0.63	0.68	0.63	44.2
6	R2	50	1.0	0.149	10.3	LOS B	0.9	6.1	0.63	0.68	0.63	50.6
Approach		132	1.0	0.149	7.5	LOS A	0.9	6.1	0.63	0.68	0.63	47.4
North: Baldivis Road (N)												
7	L2	33	1.0	0.378	5.4	LOS A	2.9	20.9	0.38	0.50	0.38	52.1
8	T1	449	5.0	0.378	5.9	LOS A	2.9	20.9	0.38	0.50	0.38	57.8
9	R2	17	1.0	0.378	10.5	LOS B	2.9	20.9	0.38	0.50	0.38	54.7
Approach		499	4.6	0.378	6.1	LOS A	2.9	20.9	0.38	0.50	0.38	57.2
West: Pemberton Boulevard (W)												
10	L2	7	1.0	0.147	8.3	LOS A	1.0	6.8	0.80	0.81	0.80	46.4
11	T1	21	1.0	0.147	8.3	LOS A	1.0	6.8	0.80	0.81	0.80	41.3
12	R2	67	1.0	0.147	12.8	LOS B	1.0	6.8	0.80	0.81	0.80	43.8
Approach		95	1.0	0.147	11.5	LOS B	1.0	6.8	0.80	0.81	0.80	43.4
All Vehicles		1550	4.1	0.615	6.7	LOS A	6.2	45.5	0.50	0.54	0.50	54.7

MOVEMENT SUMMARY

Site: 2B [Baldivis / Pemberton / Parkerville - 2031 PM Peak]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
1	L2	86	1.0	0.370	5.4	LOS A	2.7	19.7	0.35	0.50	0.35	49.3
2	T1	371	5.0	0.370	5.9	LOS A	2.7	19.7	0.35	0.50	0.35	57.4
3	R2	39	1.0	0.370	10.5	LOS B	2.7	19.7	0.35	0.50	0.35	51.6
Approach		496	4.0	0.370	6.2	LOS A	2.7	19.7	0.35	0.50	0.35	55.7
East: Parkerville Boulevard (E)												
4	L2	14	1.0	0.155	11.4	LOS B	1.1	7.7	0.92	0.87	0.92	42.3
5	T1	27	1.0	0.155	11.3	LOS B	1.1	7.7	0.92	0.87	0.92	39.9
6	R2	33	1.0	0.155	15.8	LOS B	1.1	7.7	0.92	0.87	0.92	46.3
Approach		74	1.0	0.155	13.3	LOS B	1.1	7.7	0.92	0.87	0.92	43.4
North: Baldivis Road (N)												
7	L2	49	1.0	0.741	6.0	LOS A	9.3	67.8	0.61	0.53	0.61	50.9
8	T1	933	5.0	0.741	6.6	LOS A	9.3	67.8	0.61	0.53	0.61	56.2
9	R2	39	1.0	0.741	11.1	LOS B	9.3	67.8	0.61	0.53	0.61	53.2
Approach		1021	4.7	0.741	6.7	LOS A	9.3	67.8	0.61	0.53	0.61	55.8
West: Pemberton Boulevard (W)												
10	L2	3	1.0	0.076	5.0	LOS A	0.4	2.9	0.55	0.64	0.55	49.1
11	T1	22	1.0	0.076	5.0	LOS A	0.4	2.9	0.55	0.64	0.55	43.8
12	R2	48	1.0	0.076	9.5	LOS A	0.4	2.9	0.55	0.64	0.55	46.9
Approach		73	1.0	0.076	8.0	LOS A	0.4	2.9	0.55	0.64	0.55	46.0
All Vehicles		1664	4.1	0.741	6.9	LOS A	9.3	67.8	0.54	0.54	0.54	54.7

MOVEMENT SUMMARY

Site: 3 [Baldivis / Key - 2031 AM Peak]

Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
2	T1	808	2.0	0.420	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.8
3	R2	10	1.0	0.013	8.8	LOS A	0.0	0.3	0.50	0.66	0.50	48.5
Approach		818	2.0	0.420	0.2	NA	0.0	0.3	0.01	0.01	0.01	69.4
East: Key Avenue (E)												
4	L2	18	1.0	0.124	7.2	LOS A	0.4	3.1	0.75	0.85	0.75	42.6
6	R2	22	1.0	0.124	22.8	LOS C	0.4	3.1	0.75	0.85	0.75	42.6
Approach		40	1.0	0.124	15.8	LOS C	0.4	3.1	0.75	0.85	0.75	42.6
North: Baldivis Road (N)												
7	L2	14	1.0	0.008	6.4	LOS A	0.0	0.0	0.00	0.61	0.00	58.1
8	T1	506	2.0	0.263	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach		520	2.0	0.263	0.2	NA	0.0	0.0	0.00	0.02	0.00	69.5
All Vehicles		1378	2.0	0.420	0.6	NA	0.4	3.1	0.03	0.04	0.03	68.0

MOVEMENT SUMMARY

Site: 3B [Baldivis / Key - 2031 PM Peak]

Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
2	T1	444	2.0	0.232	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
3	R2	23	1.0	0.065	15.3	LOS C	0.2	1.5	0.76	0.91	0.76	44.1
Approach		467	2.0	0.232	0.8	NA	0.2	1.5	0.04	0.04	0.04	67.7
East: Key Avenue (E)												
4	L2	10	1.0	0.090	13.6	LOS B	0.3	2.1	0.85	0.93	0.85	39.9
6	R2	10	1.0	0.090	28.1	LOS D	0.3	2.1	0.85	0.93	0.85	39.9
Approach		20	1.0	0.090	20.9	LOS C	0.3	2.1	0.85	0.93	0.85	39.9
North: Baldivis Road (N)												
7	L2	33	1.0	0.018	6.4	LOS A	0.0	0.0	0.00	0.61	0.00	58.1
8	T1	953	2.0	0.495	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.8
Approach		986	2.0	0.495	0.3	NA	0.0	0.0	0.00	0.02	0.00	69.2
All Vehicles		1473	1.9	0.495	0.7	NA	0.3	2.1	0.02	0.04	0.02	67.9

MOVEMENT SUMMARY

Site: 4 [Nyilla / Pedicel - 2031 Peak]

Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Nyilla Approach (E)												
5	T1	254	0.0	0.149	0.3	LOS A	0.2	1.6	0.11	0.04	0.11	39.2
6	R2	20	0.0	0.149	5.8	LOS A	0.2	1.6	0.11	0.04	0.11	38.8
Approach		274	0.0	0.149	0.7	NA	0.2	1.6	0.11	0.04	0.11	39.1
North: Pedicel Avenue (N)												
7	L2	32	0.0	0.318	5.0	LOS A	1.3	9.3	0.54	0.79	0.64	33.6
9	R2	193	0.0	0.318	8.0	LOS A	1.3	9.3	0.54	0.79	0.64	31.5
Approach		225	0.0	0.318	7.5	LOS A	1.3	9.3	0.54	0.79	0.64	31.9
West: Nyilla Approach (W)												
10	L2	211	0.0	0.264	3.4	LOS A	0.0	0.0	0.00	0.19	0.00	38.6
11	T1	294	0.0	0.264	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	38.3
Approach		505	0.0	0.264	1.4	NA	0.0	0.0	0.00	0.19	0.00	38.4
All Vehicles		1004	0.0	0.318	2.6	NA	1.3	9.3	0.15	0.29	0.17	36.9

MOVEMENT SUMMARY

Site: 4 [Nyilla / Pedicel - 2031 Peak – Sensitivity Analysis]

Site Category: (None)
Giveway / Yield (Two-Way)
Flow Scale Analysis (Practical Capacity): Results for Flow Scale (chosen as largest for any movement) = 154.0 %

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Nyilla Approach (E)												
5	T1	391	0.0	0.244	0.9	LOS A	0.6	4.3	0.17	0.04	0.18	38.3
6	R2	31	0.0	0.244	8.9	LOS A	0.6	4.3	0.17	0.04	0.18	38.1
Approach		422	0.0	0.244	1.5	NA	0.6	4.3	0.17	0.04	0.18	38.3
North: Pedicel Avenue (N)												
7	L2	49	0.0	0.785	13.7	LOS B	5.6	39.1	0.87	1.44	2.18	26.1
9	R2	297	0.0	0.785	21.6	LOS C	5.6	39.1	0.87	1.44	2.18	23.5
Approach		347	0.0	0.785	20.4	LOS C	5.6	39.1	0.87	1.44	2.18	23.9
West: Nyilla Approach (W)												
10	L2	325	0.0	0.407	3.4	LOS A	0.0	0.0	0.00	0.19	0.00	38.6
11	T1	453	0.0	0.407	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	38.3
Approach		778	0.0	0.407	1.4	NA	0.0	0.0	0.00	0.19	0.00	38.4
All Vehicles		1546	0.0	0.785	5.7	NA	5.6	39.1	0.24	0.43	0.54	33.9

MOVEMENT SUMMARY

Site: 5 [Nyilla / Key - 2031 Peak]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Key Avenue (S)												
1	L2	40	0.0	0.045	3.3	LOS A	0.2	1.5	0.13	0.45	0.13	45.9
2	T1	10	0.0	0.045	3.2	LOS A	0.2	1.5	0.13	0.45	0.13	47.0
3	R2	10	0.0	0.045	7.3	LOS A	0.2	1.5	0.13	0.45	0.13	44.2
Approach		60	0.0	0.045	3.9	LOS A	0.2	1.5	0.13	0.45	0.13	45.8
East: Nyilla Approach (E)												
4	L2	5	0.0	0.012	3.5	LOS A	0.1	0.4	0.21	0.47	0.21	44.3
5	T1	5	0.0	0.012	3.4	LOS A	0.1	0.4	0.21	0.47	0.21	42.7
6	R2	5	0.0	0.012	7.4	LOS A	0.1	0.4	0.21	0.47	0.21	42.4
Approach		15	0.0	0.012	4.8	LOS A	0.1	0.4	0.21	0.47	0.21	43.4
North: Key Avenue (N)												
7	L2	5	0.0	0.039	3.4	LOS A	0.2	1.3	0.17	0.50	0.17	39.6
8	T1	20	0.0	0.039	3.3	LOS A	0.2	1.3	0.17	0.50	0.17	45.9
9	R2	25	0.0	0.039	7.3	LOS A	0.2	1.3	0.17	0.50	0.17	43.6
Approach		50	0.0	0.039	5.3	LOS A	0.2	1.3	0.17	0.50	0.17	44.5
West: Nyilla Approach (W)												
10	L2	35	0.0	0.058	3.2	LOS A	0.3	1.9	0.11	0.51	0.11	42.4
11	T1	10	0.0	0.058	3.2	LOS A	0.3	1.9	0.11	0.51	0.11	42.7
12	R2	35	0.0	0.058	7.2	LOS A	0.3	1.9	0.11	0.51	0.11	46.4
Approach		80	0.0	0.058	5.0	LOS A	0.3	1.9	0.11	0.51	0.11	44.6
All Vehicles		205	0.0	0.058	4.7	LOS A	0.3	1.9	0.14	0.49	0.14	44.9

MOVEMENT SUMMARY

Site: 5 [Nyilla / Key - 2031 Peak – Sensitivity Analysis]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout
Flow Scale Analysis (Capacity): Results for Flow Scale (chosen as largest for any movement) = 500.0 %

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Key Avenue (S)												
1	L2	200	0.0	0.258	4.1	LOS A	1.6	10.9	0.41	0.53	0.41	45.0
2	T1	50	0.0	0.258	4.1	LOS A	1.6	10.9	0.41	0.53	0.41	46.1
3	R2	50	0.0	0.258	8.1	LOS A	1.6	10.9	0.41	0.53	0.41	43.3
Approach		300	0.0	0.258	4.8	LOS A	1.6	10.9	0.41	0.53	0.41	45.0
East: Nyilla Approach (E)												
4	L2	25	0.0	0.079	5.2	LOS A	0.4	2.9	0.52	0.61	0.52	43.1
5	T1	25	0.0	0.079	5.1	LOS A	0.4	2.9	0.52	0.61	0.52	40.7
6	R2	25	0.0	0.079	9.2	LOS A	0.4	2.9	0.52	0.61	0.52	40.3
Approach		75	0.0	0.079	6.5	LOS A	0.4	2.9	0.52	0.61	0.52	41.7
North: Key Avenue (N)												
7	L2	25	0.0	0.238	4.7	LOS A	1.4	9.7	0.49	0.62	0.49	37.9
8	T1	100	0.0	0.238	4.7	LOS A	1.4	9.7	0.49	0.62	0.49	44.8
9	R2	125	0.0	0.238	8.7	LOS A	1.4	9.7	0.49	0.62	0.49	42.1
Approach		250	0.0	0.238	6.7	LOS A	1.4	9.7	0.49	0.62	0.49	43.2
West: Nyilla Approach (W)												
10	L2	175	0.0	0.317	3.9	LOS A	2.1	14.4	0.36	0.54	0.36	41.4
11	T1	50	0.0	0.317	3.8	LOS A	2.1	14.4	0.36	0.54	0.36	41.4
12	R2	175	0.0	0.317	7.8	LOS A	2.1	14.4	0.36	0.54	0.36	45.6
Approach		400	0.0	0.317	5.6	LOS A	2.1	14.4	0.36	0.54	0.36	43.7
All Vehicles		1025	0.0	0.317	5.7	LOS A	2.1	14.4	0.42	0.56	0.42	43.9

MOVEMENT SUMMARY

Site: 6 [Gresham / Key - 2031 Peak]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Key Avenue (S)												
1	L2	25	0.0	0.038	3.3	LOS A	0.2	1.2	0.13	0.42	0.13	43.7
2	T1	20	0.0	0.038	3.2	LOS A	0.2	1.2	0.13	0.42	0.13	45.5
3	R2	5	0.0	0.038	7.3	LOS A	0.2	1.2	0.13	0.42	0.13	45.5
Approach		50	0.0	0.038	3.7	LOS A	0.2	1.2	0.13	0.42	0.13	44.6
East: Gresham Boulevard (E)												
4	L2	5	0.0	0.012	3.4	LOS A	0.1	0.4	0.18	0.47	0.18	42.2
5	T1	5	0.0	0.012	3.3	LOS A	0.1	0.4	0.18	0.47	0.18	44.3
6	R2	5	0.0	0.012	7.4	LOS A	0.1	0.4	0.18	0.47	0.18	44.2
Approach		15	0.0	0.012	4.7	LOS A	0.1	0.4	0.18	0.47	0.18	43.6
North: Key Avenue (N)												
7	L2	10	0.0	0.044	3.2	LOS A	0.2	1.4	0.11	0.49	0.11	42.4
8	T1	25	0.0	0.044	3.2	LOS A	0.2	1.4	0.11	0.49	0.11	44.2
9	R2	25	0.0	0.044	7.2	LOS A	0.2	1.4	0.11	0.49	0.11	44.4
Approach		60	0.0	0.044	4.9	LOS A	0.2	1.4	0.11	0.49	0.11	44.0
West: Gresham Boulevard (W)												
10	L2	10	0.0	0.023	3.2	LOS A	0.1	0.7	0.12	0.47	0.12	42.9
11	T1	10	0.0	0.023	3.2	LOS A	0.1	0.7	0.12	0.47	0.12	44.6
12	R2	10	0.0	0.023	7.2	LOS A	0.1	0.7	0.12	0.47	0.12	44.6
Approach		30	0.0	0.023	4.6	LOS A	0.1	0.7	0.12	0.47	0.12	44.0
All Vehicles		155	0.0	0.044	4.4	LOS A	0.2	1.4	0.12	0.46	0.12	44.1

MOVEMENT SUMMARY

Site: 6 [Gresham / Key - 2031 Peak – Sensitivity Analysis]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout
Flow Scale Analysis (Practical Capacity): Results for Flow Scale (chosen as largest for any movement) = 500.0 %

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Key Avenue (S)												
1	L2	125	0.0	0.216	4.1	LOS A	1.2	8.5	0.38	0.50	0.38	42.4
2	T1	100	0.0	0.216	4.1	LOS A	1.2	8.5	0.38	0.50	0.38	44.1
3	R2	25	0.0	0.216	8.1	LOS A	1.2	8.5	0.38	0.50	0.38	44.0
Approach		250	0.0	0.216	4.5	LOS A	1.2	8.5	0.38	0.50	0.38	43.2
East: Gresham Boulevard (E)												
4	L2	25	0.0	0.072	4.6	LOS A	0.4	2.6	0.45	0.57	0.45	40.9
5	T1	25	0.0	0.072	4.6	LOS A	0.4	2.6	0.45	0.57	0.45	43.0
6	R2	25	0.0	0.072	8.6	LOS A	0.4	2.6	0.45	0.57	0.45	42.9
Approach		75	0.0	0.072	5.9	LOS A	0.4	2.6	0.45	0.57	0.45	42.2
North: Key Avenue (N)												
7	L2	50	0.0	0.241	3.8	LOS A	1.4	9.9	0.33	0.52	0.33	41.3
8	T1	125	0.0	0.241	3.8	LOS A	1.4	9.9	0.33	0.52	0.33	43.1
9	R2	125	0.0	0.241	7.8	LOS A	1.4	9.9	0.33	0.52	0.33	43.4
Approach		300	0.0	0.241	5.5	LOS A	1.4	9.9	0.33	0.52	0.33	42.9
West: Gresham Boulevard (W)												
10	L2	50	0.0	0.129	3.9	LOS A	0.7	4.8	0.34	0.52	0.34	41.9
11	T1	50	0.0	0.129	3.9	LOS A	0.7	4.8	0.34	0.52	0.34	43.5
12	R2	50	0.0	0.129	7.9	LOS A	0.7	4.8	0.34	0.52	0.34	43.6
Approach		150	0.0	0.129	5.2	LOS A	0.7	4.8	0.34	0.52	0.34	43.0
All Vehicles		775	0.0	0.241	5.1	LOS A	1.4	9.9	0.36	0.52	0.36	43.0

MOVEMENT SUMMARY

▽Site: 7 [Gresham / Pedicel - 2031 Peak]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pedicel Avenue (S)												
1	L2	32	0.0	0.106	5.6	LOS A	0.4	2.7	0.15	0.58	0.15	30.5
3	R2	85	0.0	0.106	6.1	LOS A	0.4	2.7	0.15	0.58	0.15	45.0
Approach		117	0.0	0.106	6.0	LOS A	0.4	2.7	0.15	0.58	0.15	41.2
East: Gresham Boulevard (E)												
4	L2	86	0.0	0.063	5.5	LOS A	0.0	0.0	0.00	0.42	0.00	49.0
5	T1	33	0.0	0.063	0.0	LOS A	0.0	0.0	0.00	0.42	0.00	49.2
Approach		119	0.0	0.063	4.0	NA	0.0	0.0	0.00	0.42	0.00	49.0
North: Pedicel Avenue (N)												
7	L2	36	0.0	0.022	5.6	LOS A	0.1	0.6	0.06	0.55	0.06	45.1
Approach		36	0.0	0.022	5.6	LOS A	0.1	0.6	0.06	0.55	0.06	45.1
West: Gresham Boulevard (W)												
10	L2	11	0.0	0.019	5.0	LOS A	0.1	0.5	0.16	0.33	0.16	43.1
11	T1	13	0.0	0.019	0.2	LOS A	0.1	0.5	0.16	0.33	0.16	50.2
12	R2	11	0.0	0.019	5.0	LOS A	0.1	0.5	0.16	0.33	0.16	44.1
Approach		35	0.0	0.019	3.2	NA	0.1	0.5	0.16	0.33	0.16	46.2
All Vehicles		307	0.0	0.106	4.9	NA	0.4	2.7	0.08	0.49	0.08	45.0

MOVEMENT SUMMARY

▽Site: 7 [Gresham / Pedicel - 2031 Peak – Sensitivity Analysis]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)
Flow Scale Analysis (Practical Capacity): Results for Flow Scale (chosen as largest for any movement) = 458.0 %

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pedicel Avenue (S)												
1	L2	147	0.0	0.795	12.4	LOS B	9.4	65.9	0.62	1.11	1.62	22.6
3	R2	389	0.0	0.795	19.1	LOS C	9.4	65.9	0.62	1.11	1.62	33.8
Approach		536	0.0	0.795	17.2	LOS C	9.4	65.9	0.62	1.11	1.62	30.8
East: Gresham Boulevard (E)												
4	L2	394	0.0	0.290	5.6	LOS A	0.0	0.0	0.00	0.42	0.00	49.0
5	T1	151	0.0	0.290	0.0	LOS A	0.0	0.0	0.00	0.42	0.00	49.2
Approach		545	0.0	0.290	4.0	NA	0.0	0.0	0.00	0.42	0.00	49.0
North: Pedicel Avenue (N)												
7	L2	165	0.0	0.106	5.7	LOS A	0.5	3.2	0.15	0.54	0.15	44.5
Approach		165	0.0	0.106	5.7	LOS A	0.5	3.2	0.15	0.54	0.15	44.5
West: Gresham Boulevard (W)												
10	L2	50	0.0	0.107	6.5	LOS A	0.5	3.8	0.44	0.32	0.44	40.1
11	T1	60	0.0	0.107	1.7	LOS A	0.5	3.8	0.44	0.32	0.44	47.2
12	R2	50	0.0	0.107	7.1	LOS A	0.5	3.8	0.44	0.32	0.44	41.5
Approach		160	0.0	0.107	4.9	NA	0.5	3.8	0.44	0.32	0.44	43.3
All Vehicles		1406	0.0	0.795	9.4	NA	9.4	65.9	0.31	0.69	0.68	39.1

MOVEMENT SUMMARY

Site: 1B [Baldivis / Tamworth / Nyilla - 2031 PM Peak - Alternate Scenario]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
1	L2	20	1.0	0.475	7.0	LOS A	3.7	26.0	0.66	0.71	0.66	37.5
2	T1	273	2.0	0.475	7.5	LOS A	3.7	26.0	0.66	0.71	0.66	53.7
3	R2	194	1.0	0.475	11.7	LOS B	3.7	26.0	0.66	0.71	0.66	49.5
Approach		487	1.6	0.475	9.1	LOS A	3.7	26.0	0.66	0.71	0.66	51.5
East: Nyilla Approach (E)												
4	L2	181	1.0	0.736	17.9	LOS B	8.5	59.7	1.00	1.22	1.49	36.5
5	T1	81	1.0	0.736	17.8	LOS B	8.5	59.7	1.00	1.22	1.49	18.3
6	R2	130	1.0	0.736	22.0	LOS C	8.5	59.7	1.00	1.22	1.49	34.8
Approach		392	1.0	0.736	19.2	LOS B	8.5	59.7	1.00	1.22	1.49	32.7
North: Baldivis Road (N)												
7	L2	93	1.0	0.867	14.0	LOS B	18.0	127.7	1.00	0.95	1.35	39.8
8	T1	782	2.0	0.867	14.5	LOS B	18.0	127.7	1.00	0.95	1.35	48.5
9	R2	82	1.0	0.867	18.7	LOS B	18.0	127.7	1.00	0.95	1.35	33.0
Approach		957	1.8	0.867	14.8	LOS B	18.0	127.7	1.00	0.95	1.35	46.7
West: Tamworth Boulevard (W)												
10	L2	10	1.0	0.115	5.7	LOS A	0.6	4.5	0.64	0.65	0.64	45.9
11	T1	74	1.0	0.115	5.7	LOS A	0.6	4.5	0.64	0.65	0.64	37.6
12	R2	10	1.0	0.115	9.8	LOS A	0.6	4.5	0.64	0.65	0.64	49.8
Approach		94	1.0	0.115	6.1	LOS A	0.6	4.5	0.64	0.65	0.64	40.6
All Vehicles		1930	1.5	0.867	13.8	LOS B	18.0	127.7	0.90	0.93	1.17	44.8

MOVEMENT SUMMARY

Site: 2B [Baldivis / Pemberton / Parkerville - 2031 PM Peak - Alternate Scenario]

Roundabout with 1-lane approaches and circulating road
MUTCD (FHWA 2009) example number: 2B-22
Roundabout Guide (TRB 2010) example number: A-1
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Baldivis Road (S)												
1	L2	86	1.0	0.370	5.4	LOS A	2.7	19.6	0.35	0.50	0.35	49.3
2	T1	371	5.0	0.370	5.9	LOS A	2.7	19.6	0.35	0.50	0.35	57.4
3	R2	39	1.0	0.370	10.5	LOS B	2.7	19.6	0.35	0.50	0.35	51.6
Approach		496	4.0	0.370	6.2	LOS A	2.7	19.6	0.35	0.50	0.35	55.7
East: Parkerville Boulevard (E)												
4	L2	14	1.0	0.143	10.3	LOS B	1.0	7.0	0.89	0.84	0.89	43.1
5	T1	27	1.0	0.143	10.2	LOS B	1.0	7.0	0.89	0.84	0.89	40.7
6	R2	33	1.0	0.143	14.7	LOS B	1.0	7.0	0.89	0.84	0.89	47.1
Approach		74	1.0	0.143	12.2	LOS B	1.0	7.0	0.89	0.84	0.89	44.2
North: Baldivis Road (N)												
7	L2	92	1.0	0.740	6.0	LOS A	9.3	67.5	0.61	0.53	0.61	50.9
8	T1	890	5.0	0.740	6.6	LOS A	9.3	67.5	0.61	0.53	0.61	56.3
9	R2	39	1.0	0.740	11.1	LOS B	9.3	67.5	0.61	0.53	0.61	53.3
Approach		1021	4.5	0.740	6.7	LOS A	9.3	67.5	0.61	0.53	0.61	55.6
West: Pemberton Boulevard (W)												
10	L2	3	1.0	0.076	5.0	LOS A	0.4	2.9	0.55	0.61	0.55	49.8
11	T1	39	1.0	0.076	5.0	LOS A	0.4	2.9	0.55	0.61	0.55	44.5
12	R2	31	1.0	0.076	9.5	LOS A	0.4	2.9	0.55	0.61	0.55	47.7
Approach		73	1.0	0.076	6.9	LOS A	0.4	2.9	0.55	0.61	0.55	46.0
All Vehicles		1664	4.0	0.740	6.8	LOS A	9.3	67.5	0.54	0.54	0.54	54.6