APPLICATION ON NOTIFICATION – CROWN DEVELOPMENT

Type of development:	SECTION 49 – STATE AGENCY DEVELOPMENT
Development Number:	252/V050/19
Applicant:	Department for Planning, Transport and Infrastructure (on behalf of the Department for Education)
Nature of Development:	Construction of a learning centre, entrepreneurial hub and alterations to Building 2 and undertaking associated infrastructure and landscaping works
Subject Land:	Seaton High School, Glenburnie Street, Seaton, being Allotment 2, DP84989: Certificate of Title: 6066/383
Development Plan:	Charles Sturt Council Development Plan Consolidated 25 July 2019
Zone / Policy Area:	Residential Zone, Mid Suburban Policy Area 16
Contact Officer:	Brianna Fyffe
Phone Number:	7109 7866
Consultation Start Date:	Wednesday 20 November 2019
Consultation Close Date:	Wednesday 18 December 2019

During the notification period, hard copies of the application documentation can be viewed at the Department of Planning, Transport and Infrastructure, Level 5, 50 Flinders St, Adelaide, during normal business hours. Application documentation may also be viewed during normal business hours at the local Council office (if identified on the public notice).

Written representations must be received by the close date (indicated above) and can either be posted, hand-delivered, or emailed to the State Commission Assessment Panel (SCAP). A representation form is provided as part of this document.

Any representations received after the close date will not be considered.

Postal Address:
The Secretary
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Street Address:
Planning and Land Use Services
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
ADELAIDE

Email Address: scapreps@sa.gov.au

DEVELOPMENT ACT, 1993
S49/S49A – CROWN DEVELOPMENT
REPRESENTATION ON APPLICATION

Applicant:	Department of Planning, Transport and Infrastructure (on behalf of the Department for Education)
Development Number:	252/V050/19
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Contact Officer:	Brianna Fyffe
Phone Number:	7109 7866
Close Date:	Wednesday 18 December 2019

My Name: _____ My phone number: _____

Primary method(s) of contact: Email: _____

Postal Address: _____ Postcode: _____

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are: *(please tick one)*

- ☐ owner of local property
- ☐ occupier of local property
- ☐ a representative of a company/other organisation affected by the proposal
- ☐ a private citizen

The address of the property affected is:

_____

My interests are: *(please tick one)*

- ☐ I support the development
- ☐ I support the development with some concerns
- ☐ I oppose the development

The specific aspects of the application to which I make comment on are: _____

_____

_____

_____

_____

I: *(please tick one)*

- ☐ wish to be heard in support of my submission
- ☐ do not wish to be heard in support of my submission *(Please tick one)*

By: *(please tick one)*

- ☐ appearing personally
- ☐ being represented by the following person *(Please tick one)*

Signature: _____

Date: _____

Return Address: The Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide, SA 5001 /or
Email: scapreps@sa.gov.au

FUTURE URBAN

PLANNING REPORT
SEATON HIGH SCHOOL

ALTERATIONS AND ADDITIONS TO THE EXISTING SCHOOL

Prepared for:
JPE Design Studio

Date:
4.11.2019

Proprietary Information Statement

Document Control

Revision	Description	Author	Date
V1	Draft	MN	29/10/2019
V2	Final	MN	04/11/2019

CONTENTS

1. INTRODUCTION

The Department for Education seeks to undertake alterations and additions at Seaton High School at Glenburnie Street, Seaton.

In accordance with Section 49 (2) of the *Development Act 1993*, as the development is to be undertaken by the Department for Education, the State Commission Assessment Panel (SCAP) must assess the development.

To assist the SCAP in its assessment, we provide a description of the development and its site and locality. We have also undertaken an assessment of the relevant aspects of the development against the relevant version of the Charles Sturt Council Development Plan (consolidated version 25 July 2019) as a guide to determine its suitability in its context.

2. BACKGROUND

The proposed alterations and additions are to accommodate additional capacity for the school and to consolidate and formalise other learning spaces.

The Seaton High School is a secondary school that is currently Year 8 – 12 but in 2022 will also include Year 7s.

The school is an Entrepreneurial Specialist School, a specialist baseball & softball school and also specialist art school. The recently completed STEM refurbishments to building 2 encourage 21st century learning and outdoor learning. The remainder of the existing teaching and learning facilities are traditional spaces with little flexibility, variety and interconnection to outdoors.

The school currently exceeds its capacity, with the facilities catering for 900 students and the current enrolment being 917 students. The projected enrolment including year 7s in 2022 will be 1081 with a required built capacity for 1200. The school also seeks to increase its full-time equivalent staff base from 88.5 to 110 staff.

3. SITE AND LOCALITY

The subject site is located on the south-eastern corner of the Glenburnie Street and Fredrick Road intersection in Seaton. It is legally described as Allotment 2 in Certificate of Title Volume 6066 Folio 383.

Figure 3.1 *Site and locality.*

The subject site has a frontage to Glenburnie Street and Fredrick road of approximately 342 metres and 276 metres respectively.

Existing on the subject site are buildings associated with the Seaton High School, including two, two-storey buildings, a large shed (used by the State Baseball Association and the school), a gymnasium, six single storey buildings and ten single storey transportable or "DEMAC" buildings.

To the south-east of these buildings are four tennis/basketball courts within the school's fenced area. Two additional courts used by the community are located within the title boundary, but outside of the fenced area. To the south-west, there is a baseball diamond, baseball practice cages, a small oval used for football and cricket, cricket practice nets and a soccer field.

A large sign identifying the school is located in the north-western corner of the subject site, presenting to Frederick Road and Glenburnie Street. There are a number of other directional and information signs throughout the site.

There are a number of mature trees of varying species across the site. Arborman Tree Solutions have undertaken a survey of these trees and found that a total of 27 are regulated.

Currently onsite there are 116 car parking spaces and 45 bicycle parking spaces.

Access to the site is gained via three existing crossovers from Glenburnie Street, two from Frederick Road and one from Ladd Street/Raymond Avenue. These crossovers are a mix of single and double widths. The eastern and central crossovers from Glenburnie Street provide access to the north-eastern car park. The western crossover from Glenburnie Street and the northern-most crossover from Fredrick Road provide access to the western car park. The southernmost crossover from Fredrick Road and that from Ladd Street/Raymond Avenue provide access to the school oval and are gated to restrict entry.

Parking along Glenburnie Street is unrestricted, aside from a "no stopping zone" which extends for 5 metres either side of the eastern crossover. When children are present, vehicle speeds on Glenburnie Street are restricted to 25km/h, but at all other times a 50km/h speed limit applies.

On Fredrick Road, parking is restricted either side of a pedestrian actuated crossing and in front of a bus stop adjacent the subject site. On school days, the speed limit in this portion of Fredrick Road is reduced to 40km/h during the hours of 8:00am to 9:00am and 2:00pm to 3:30pm. Outside of these times, vehicle speeds are limited to 60km/h.

There are two pedestrian access points along Frederick Road, five along Glenburnie Street and two from the community playground along Raymond Avenue. The main pedestrian arrival point is on Glenburnie Street which is identified by a small wall featuring student artworks.

A 1.8m high perimeter fence surrounds the school on the west and north boundaries. A variety of fences adjoin the residential neighbours along the east and south boundaries. A lower chain wire fence is on the east and south boundaries along Raymond Avenue and adjacent to the community playground.

Mostly residential properties are located to the south and east of Seaton High School. The only exceptions to this land use is the public playground adjoining to the south and the childcare centre adjoining to the east, fronting Glenburnie Street. Extending along the western side of the site, over Fredrick Road, is The Grange Golf Club.

The subject site is well serviced by public transport, with a bus stop located directly to the west and the Seaton Park Railway Station approximately 860 metres (directly) to the south east.

The subject site is not known to have any flood risks.

4. PROPOSAL DESCRIPTION

The Department for Education seeks to undertake alterations and additions at Seaton High School, as detailed below and in the planning drawings prepared by JPE Design Studio included at Appendix 4.

The school is currently over their 900 student capacity (with 917 students currently enrolled). The proposed works are sought to accommodate an increased built capacity for 1200 students and 110 full time equivalent staff.

4.1 LEARNING CENTRE

The new Learning Centre building is proposed to be two storeys or 10.35 metres in height and located in the north-western portion of the subject site, between Building 2 and Glenburnie Street.

This building will comprise the Resource Centre, reception, offices, meeting rooms, staff lounge, classrooms and bathrooms.

The external materials of this building will include:

- glazing;
- metal cladding;
  painted steel shrouds; and
- aluminium louvres.

4.2 ENTREPRENEURIAL HUB

The proposed single storey Entrepreneurial Hub will comprise four smaller buildings with eight flexible teaching spaces within. A large roof covers all built areas and provides outdoor learning areas adjacent teaching spaces. This building will range between 3.2 metres and 5.058 metres in height.

The external materials of this building will include:

- glazing;
- metal cladding;
- a semi-transparent roof; and
- painted steel shrouds.

4.3 GYMNASIUM EXTENSION

The addition proposed to the existing gymnasium will be single storey and up to 4 metres in height. It is to comprise an entrance space and male, female and accessible change facilitates and showers.

The external materials of this building will include:

- precast concrete; and
- painted steel shrouds.

4.4 BUILDING TWO

It is proposed that Building 2 will undergo internal alterations, as well as some external changes to facilitate a connection to the new Learning Centre building.

4.5 ACCESS

The majority of the existing accessways will be adjusted as follows:

- the northern crossover from Fredrick Road is to be extended to the north in order to accommodate two-way traffic flow into the western car park;
- the north-eastern crossover from Glenburnie Street will be extended to allow for two-way access;
- the central crossover from Glenburnie Street will be made redundant;
- the north-western crossover from Glenburnie Street will be extended to allow for two-way access.

4.5.1 DELIVERY ACCESS

Delivery vehicles providing woodwork and metalwork supplies will access the site through Glenburnie Street, into the western car park where they will have temporary access to a service road behind Building 3 and 4, which is closed at all other times.

Canteen deliveries and service vehicles will utilise the eastern crossover from Glenburnie Street to access a designated loading bay.

All vehicles will enter and exit the site in a forward direction.

4.5.2 WASTE ACCESS

The existing waste collection service is undertaken by a private contractor, using a vehicle of 8.8 metres in length. It is proposed that this vehicle will enter and exit the site in a forward direction through the eastern crossover from Glenburnie Street.

As shown in the turn path diagram prepared by Cirqa Traffic Consultants (report enclosed at Appendix 5) there is adequate manoeuvrable area on site to allow this movement.

4.6 CAR PARKING

Alterations to the existing car parking areas are proposed, resulting in an additional 18 spaces, and increasing the total car parking provided onsite from 116 to 134 (including two spaces for persons with a disability).

4.7 WASTE

Waste collection will continue to be undertaken by a private contractor, outside of school hours (as is the existing arrangement).

4.8 LANDSCAPING

Landscaping across the site is intended to be coordinated through the inclusion of complementary plantings, trees, pavement and other amenities. These include (but are not limited to):

- Materials:
  - Insitu Concrete: 'Barossa' or 'Barossa Moonscape';
  - Bitumen;
- Plantings:
  - Austrostipa stipoides;
  - Centaurea cineraria;
  - Chrysocephalum apiculatim;
  - Conostylis candicans;
  - Coastal Pigface (Carpobrotus rossii);
  - Clay Wattle (Acacia glaucoptera);
  - Sea Berry Saltbush (Rhagodia candolleana);
  - Lily Pily (Acmena smithii);
  - Showy Honey Myrtle (Melaleuca nesophila);
  - Spiny Mat Rush (Lomandra longifolia);
- Trees:
  - Chinese Elm (Ulmus parvifolia);
  - Dwarf Blue-Gum (Eucalyptus 'Euky Dwarf');
  - American Sweetgum (Liquidambar styraciflua);
  - SA Blue-Gum (Eucalyptus leucoxylon);
  - Norfolk Island Pine (Araucaria heterophylla);
- Amenities:
  - precast modular seating;
  - tables and benches;
  - table tennis tables; and
  - drinking fountains.

4.9 TREE REMOVAL

The applicant has engaged the services of Arborman Tree Solutions to prepare an Arborist Report, enclosed at Appendix 7.

At this stage, 15 trees are proposed to be removed to facilitate the proposed Learning Centre and formalised car parking area. Only 1 of these trees is regulated (E60 in Arborman's Tree Report at Appendix 7). The remaining trees will be retained and protected during construction in accordance with the arborist's recommendations.

4.10 STORMWATER MANAGEMENT

The applicant has engaged Wallbridge Gilbert Aztec to prepare a Stormwater Management Plan for the proposed development. A copy of this has been included at Appendix 6.

This Plan includes (but is not limited to) the following strategies:

- a 42 cubic metre detention tank will be provided to collect roof runoff from the Learning Centre building, with stormwater then being discharged to a nearby junction box which drains to an existing stormwater entry pit on the corner of Fredrick Road and Glenburnie Street;
- a 30 cubic metre detention tank will be provided to collect roof runoff from Buildings 3 and 23, and will be connected to an existing stormwater pit which connects to the council stormwater system on Glenburnie Street;
- an additional 8.6 cubic metres of surface detention volume can be held in the resigned north-eastern carpark;
- surface runoff will drain towards existing stormwater infrastructure or landscaping.

The above strategies restrict the 1 in 100 year post-development peak flows to the 1 in 5 year pre-development flows.

5. PROCEDURAL MATTERS

5.1 THE RELEVANT AUTHORITY

In accordance with Section 49, Clause 2 of the Development Act 1993, as the development is to be undertaken by the Department for Education, the State Commission Assessment Panel (SCAP) must assess the development.

5.2 THE RELEVANT DEVELOPMENT PLAN

This advice has regard to the Charles Sturt Council Development Plan, consolidated version 25 July 2019.

5.3 KIND OF DEVELOPMENT

As the proposed development is to be assessed under Section 49, the kind and category of development is not relevant. Notwithstanding, we consider it important to use the Development Plan as a guide to determine the suitability of the development in this context.

The nature of the proposed development is not listed as complying or non-complying in the Procedural Matters section of the Residential Zone. As such, it is to be determined on its merits.

5.4 EXCLUDED DEVELOPMENT

Section 49, Clause 3 of the *Development Act, 1993* states that some kinds of development are excluded from requiring any application for approval.

In accordance with Clause 1 (1)(v) of Schedule 14 to the *Development Regulations, 2008*, the removal of a regulated tree on land on which a school is located that is under the care, control or management of the Minister responsible for the administration of that Act is exempt from requiring approval.

Clause 1 (1)(p)(v) of this Schedule also excludes the construction of signage.

Further, the proposed single storey addition to the gym is also, in its own right, exempt from requiring approval in accordance with Clause 1 (1)(b)(viiia).

We also note that "landscaping" does not constitute "development".

Notwithstanding the above, these aspects of the proposal have been included in this application to show the holistic vision for the re-development of the school.

6. DEVELOPMENT ASSESSMENT

We have had regard to the Charles Sturt Council Development Plan (consolidated version 25 July 2019), and consider that the concept design will sufficiently accord with the most pertinent provisions relating to:

- land use;
- building height;
- setbacks;
- landscaping;
- overshadowing; and
- overlooking.

We believe the key planning matters relevant to the development in this particular context include:

- design and appearance;
- interface between land uses;
- car parking; and
- traffic movement.

6.1 DESIGN AND APPEARANCE

Development is envisaged to be of a high architectural standard and appearance that responds to and reinforces the positive aspects of the local environment and built form. Further, roads, open spaces, paths and buildings are to be laid out and linked so that they are easy to navigate and understand.

Whilst matters of architecture and design are highly subjective, the proposed design has been developed in coordination with the Government Architect's Desktop Design Review service and informed by an extensive contextual analysis. We consider that the proposed development achieves the envisaged standard of design and appearance as:

- the built form will be highly articulated to create visual interest and avoid large expanses of blank walling;
- a variety of high-quality external materials will be incorporated which are durable and complementary to the locality;
- pedestrian entrance points will be emphasised through the design of the built form, paving and landscaping;
- existing mature trees on the subject site will be retained and integrated into the building design to provide shade, climatic benefits and soften the built form;
- landscaping proposed throughout the site is to incorporate a variety of tolerant species, including a range of natives, which will be supported by irrigation;

- environmentally sustainable design strategies have been incorporated, including (but not limited to) the creation of shading through the built form, maximisation of northern sunlight penetration and facilitation of natural ventilation;
- the roof forms have been designed to screen rooftop plant areas; and
- outdoor storage, loading and service areas have been screened.

6.2 INTERFACE BETWEEN LAND USES

The subject site is located within Mid Suburban Policy Area 16 of the Residential Zone. Along with low-density residential development, small scale non-residential uses that serve the local community are envisaged in the Zone/Policy Area.

Seaton High School is a long-standing and established land use in the locality, therefore the reasonable expansion (re-development) of this existing use should be generally acceptable. Notwithstanding, the Development Plan seeks that development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:

- noise;
- light spill;
- glare;
- hours of operation; and
- traffic impacts.

6.2.1 Noise

The proposed development is expected to have a negligible impact on existing noise levels associated with the land use and in the locality, as:

- the new buildings proposed incorporate uses such as classrooms, a resource centre, and administrative services which all limit noise;
- the new buildings are located along the northern boundary of the site and are separated from residential properties by either Glenburnie Street or other school buildings;
- the proposed development will not change the existing times for pickup/drop-off, recess or lunch breaks, when noise level associated with children playing outdoors are at their peak;
- mechanical noises (from air conditioning units and the like) will be limited to, and continue to be controlled by the Environment Protection (Noise) Policy 2007 guidelines; and
- vehicle access points and car parking areas will remain to be separated from nearby residential properties.

6.2.2 Light Spill

External lighting will be designed, positioned and directed to comply with *Australian Standard 4282 – Control of the Obtrusive Effects of Outdoor Lighting – 2019* to minimise light spill to neighbouring properties and ensure there is no unreasonable impact.

Whilst this aspect of the proposal is to be finalised during detailed design, we do not consider that light spill will adversely impact neighbouring properties.

6.2.3 Glare

External materials for the proposed development have been selected on the basis that they are not reflective, and therefore will not result in excessive glare.

6.2.4 Hours of Operation

The proposed development does not include any change to the existing land use or the ongoing operational hours of the school.

6.2.5 Traffic

The impacts of the traffic movements and car parking demands for the proposed development are outlined in Section 6.3 and Section 6.4 below, and need not be repeated here.

In concluding these sections, it has been found that the proposed development is not likely to adversely impact the locality.

6.3 CAR PARKING

The applicant has engaged Cirqa Traffic Consultants to prepare a Traffic and Parking Report for the proposed development. A copy of this report is attached at Appendix 5.

Cirqa note that Table ChSt/2 of the Development Plan does not provide an envisaged car parking rate for Educational Establishments. As such, they have relied upon the car parking rate required by the Department for Education's (DfE) policy, as outlined below:

- one car parking space per full time equivalent staff member;
- an additional 10% (of the requirement resulting from the above rate) for visitor car parking; and
- two parking spaces for use by persons with a disability.

The proposed development is to accommodate 1200 students and 110 full time equivalent staff, therefore 110 car parking spaces should be provided for staff, 11 for visitors and two spaces for use by persons with a disability.

Cirqa find that the proposed capacity of the school results in a demand for a total of 123 car parking spaces. As the proposed development provides 134 car parking spaces (including two spaces for use by persons with a disability) onsite, the DfE's policy is exceeded by 11 spaces. Cirqa therefore consider that the onsite car parking provided is appropriate.

In addition to the above, Cirqa acknowledge that the student related car parking and drop-off/pick-up demands would need to be accommodated on street.

Based on similar projects, Cirqa expect that parking demands experienced during the peak morning and afternoon periods would be in the order of one car parking space per seven to ten students, but note that this rate can vary depending on:

- the number of students who walk, ride a bicycle or catch public transport; and
- the socio-economic status of the school (e.g. private schools typically generate a higher demand than public schools).

To this effect, Circa noted through their on-site observations that a relatively high proportion of students walked or caught public transport to the school.

Based on the above rate, the additional capacity for 283 students would theoretically generate a demand for around 29 to 41 additional vehicles distributed across the adjacent road network. Cirqa consider that this additional demand will have a low impact on the streets in the locality. Importantly, they note that the peak demand for drop-off/pick-up will typically occur only for a short period each morning and afternoon and on school days only.

Cirqa also observed onsite that during the afternoon pick-up period (the worst-case time for parking demand), there was ample on-street parking availability adjacent the school, predominately on Glenburnie Street, but also on Fredrick Road, Ladd Street and Raymond Avenue.

Respecting the above, Cirqa consider that the proposed onsite car parking is appropriate and that student and pick-up/drop-off parking demands will not unduly impact the locality.

6.4 TRAFFIC MOVEMENT

Cirqa have assessed the likely traffic movements associated with the increased capacity of the school.

Cirqa have suggested that trip generation associated with public high schools is typically in the order of 0.3 to 0.5 trips per student. This rate also incorporates allowance for staff and visitor trips.

Based on this rate, the increased capacity of 283 students could equate to an additional 85 to 142 trips (associated with students, staff and visitors) during the morning and afternoon peak hours.

Cirqa note that these additional movements would primarily be distributed to Glenburnie Street and Fredrick Road, as well as Ladd Street and Raymond Avenue, and then onto the wider road network. This being the case, the additional trips mentioned above would not impact one section of road, and instead would be spread out across multiple roads. Cirqa consider that the vehicle movements associated with the school would be within the capacity of the adjacent roads and their associated intersections.

Onsite observations of the existing traffic volumes recorded by Cirqa found that the local roads adjacent the school would be able to accommodate the estimated traffic increases.

Cirqa have assessed the impact of the additional movements on the Glenburnie Street and Fredrick Road intersection, and estimate that the development would result in around 10 additional trips during peak hours, per turning movement. These volumes are considered to be low, and onsite observations found that the existing conditions of this intersection (in relation to delays and capacity) were acceptable and could support the additional movements.

7. CONCLUSION

Despite the fact that the proposal is to be determined under Section 49, we consider that it sufficiently accords with the relevant provisions of the Charles Sturt Council Development Plan.

Specifically, we note that the proposal:

- has been architecturally designed to a high standard in order to contribute positively to the streetscape, and integrate with the existing trees on the subject site;
- incorporates environmentally sustainable design strategies;
- re-develops the subject site in a coordinated and efficient manner;
- incorporates high quality landscaping;
- improves the efficiency and safety of pedestrian and vehicle movements through the site;
- accommodates delivery and waste collection movements;
- provides adequate car parking spaces onsite to satisfy DfE's requirements;
- will not adversely impact the surrounding road network or neighbouring properties; and
- appropriately manages its stormwater.

Accordingly, we have formed the opinion that the SCAP should support the proposal.

APPENDIX 1. SECTION 49 APPLICATION FORM

SECTION 49 & 49A – CROWN DEVELOPMENT
DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: **CITY OF CHARLES STURT**

APPLICANT: **DEPARTMENT FOR EDUCATION**

ADDRESS: **C/- FUTURE URBAN PTY LTD**

GPO BOX 2403

ADELAIDE SA 5000

CROWN AGENCY: **DEPARTMENT FOR EDUCATION**

FOR OFFICE USE

DEVELOPMENT No: _____

PREVIOUS DEVELOPMENT No: _____

DATE RECEIVED: / /

CONTACT PERSON FOR FURTHER INFORMATION

Name: Milly Nott

Telephone: (08) 8221 5511 [work] 0450965858 [Ah]

Email: millynott@hotmail.com

NOTE TO APPLICANTS:

(1) All sections of this form must be completed. The site of the development must be accurately identified and the nature of the proposal adequately described. If the expected development cost of this Section 49 or Section 49A application exceeds $100,000 (excl. fit-out) or the development involves the division of land (with the creation of additional allotments) it will be subject to those fees as outlined in Item 1 of Schedule 6 of the *Development Regulations 2008.* Proposals over $4 million (excl. fit-out) will be subject to an advertising fee. (2) Three copies of the application should also be provided.

☐ Complying ☐ Merit ☐ Public Notification ☐ Referrals	Decision: _____ Type: _____ Finalised: / /

	Decision required	Fees	Receipt No	Date
Planning:				
Land Division:				
Additional:				
Minister's Approval				

EXISTING USE: **School**

DESCRIPTION OF PROPOSED DEVELOPMENT: **Alterations and additions**

LOCATION OF PROPOSED DEVELOPMENT: **Seaton High School**

House No: _____ Lot No: 2 Street: Glenburnie Street Town/Suburb: Seaton

Section No [full/part] _____ Hundred: Yatala Volume: 6066 Folio: 383

DEVELOPMENT COST [do not include any fit-out costs]**:** $ 20 million

POWERLINE SETBACKS: Pursuant to Schedule 5 (2a)(1) of the *Development Regulations 2008,* if this application is for a building it will be forwarded to the Office of the Technical Regulator for comment unless the applicant provides a declaration to confirm that the building meets the required setback distances from existing powerlines. The declaration form and further information on electricity infrastructure and clearance distances can be downloaded from sa.gov.au.

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the *Development Act 1993* and meet the requirements for lodgement under s.49 of the Development Act 1993.

SIGNATURE: _____ Dated: 4 November 2019

APPENDIX 2. ELECTRICITY DECLARATION FORM

DEVELOPMENT REGULATIONS 2008

Form of Declaration

(Schedule 5, Clause 2A)

To:	State Commission Assessment Panel
From:	Department for Education c/- Future Urban Pty Ltd
Date of Application:	4 November 2019

Location of Proposed Development:

House Number:		Lot Number:	2
Street:	Glenburnie Street	Town/Suburb:	Seaton
Section No (full/part):		Hundred:	Yatala
Volume:	6066	Folio:	383

Nature of Proposed Development:

Alterations and additions.

I, Milly Nott, in my capacity as a representative of the Applicant, declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the accompanying drawings, not be contrary to the regulations prescribed for the purposes of Section 86 of the *Electricity Act 1996*.

I make this declaration under Clause 2A(1) of Schedule 5 of the *Development Regulations 2008*.

4 November 2019

Date

Signed

APPENDIX 3. CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 6066 Folio 383

Parent Title(s) CT 5812/496

Creating Dealing(s) RTU 11455040

Title Issued 19/10/2010 **Edition** 2 **Edition Issued** 28/06/2012

Estate Type

FEE SIMPLE

Registered Proprietor

MINISTER FOR EDUCATION AND CHILD DEVELOPMENT
OF ADELAIDE SA 5000

Description of Land

ALLOTMENT 2 DEPOSITED PLAN 84989
IN THE AREA NAMED SEATON
HUNDRED OF YATALA

Easements

NIL

Schedule of Dealings

NIL

Notations

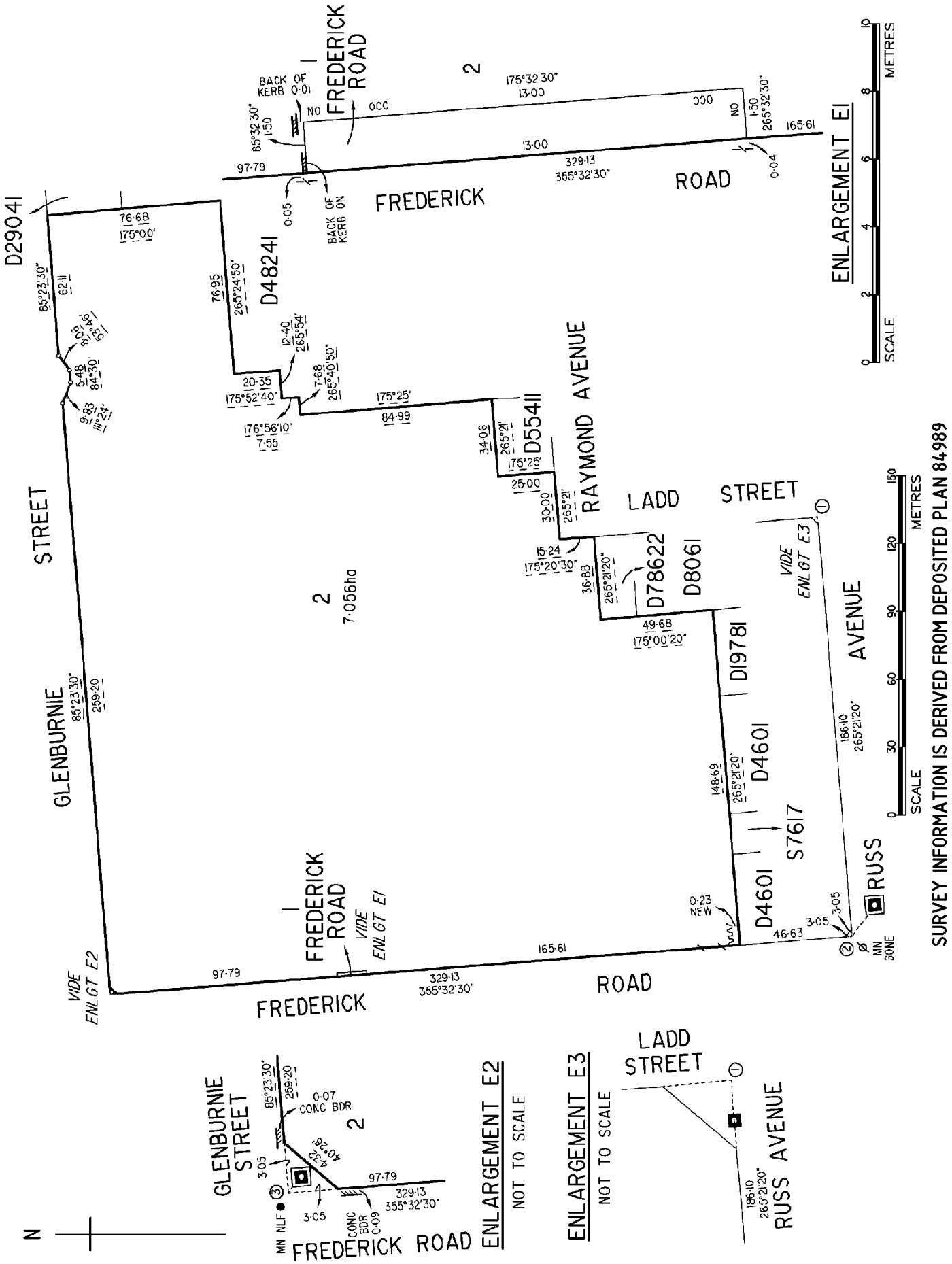
Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes NIL

Administrative Interests NIL



FUTURE URBAN

APPENDIX 4. PLANNING DRAWINGS

PREPARED BY JPE DESIGN STUDIO

Seaton High School Redevelopment

Glenburnie Street, Seaton SA

JPE Design Studio

SCAP Planning Application
4th November 2019

Contact Information

JPE Design Studio Pty Ltd

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Adelaide 5000
South Australia
Australia

Tel 08 8406 4000
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design@jpe.com.au
www.jpe.com.au

Contents

1.0 Executive Summary

Seaton High School is a secondary school that is currently Year 8-12 but in 2022 will also include Year 7s. The school is in the western suburbs of Adelaide and is 11km from the Adelaide CBD.

The school is an Entrepreneurial Specialist School, a specialist baseball & softball school and also a specialist art school. The recently completed STEM refurbishments to building 2 encourage 21st century learning and outdoor learning. The remaining of the existing teaching and learning facilities are traditional spaces with little flexibility, variety and interconnection to outdoors.

The school is currently over 100% capacity with the facilities catering for 900 students and the current enrolment being 917 students. The projected enrolment including year 7s in 2022 will be 1081 with a required built capacity for 1200.

A number of buildings have been identified for refurbishments with different levels of works; buildings 2, 5, 6, 17, 17a and 23. Numerous existing buildings have been identified for demolition; buildings 1, 7, 8, 10, 11, 12, 14, 15, 25, 26 & 27.

A new two storey building will be built to allow for the additional capacity of the school along with the learning spaces that are being removed as part of the demolition works.

A school landscape masterplan has been developed to provide outdoor learning opportunities and to create a permeable landscape with improved circulation and recreation, social and learning nodes located across the site.

Key social and recreational nodes are identified by material, planting and feature furniture selections. This creates a hierarchy of diverse spaces while unifying the landscape through materials and planting.

2.0 Project Team

This document has been prepared as part of the concept report for the proposed redevelopment at Seaton High School incorporating a new two storey building, refurbishment to existing buildings, demolition of existing transportable's and car parking and site works.

The project team comprises of:

Department For Education
Client

JPE Design Studio
Architecture / Interior Design and Landscape Architecture

Future Urban
Planning Consultant

Bestec Engineers
Building Services

Wallbridge Gilbert Aztec
Structural & Civil Engineers

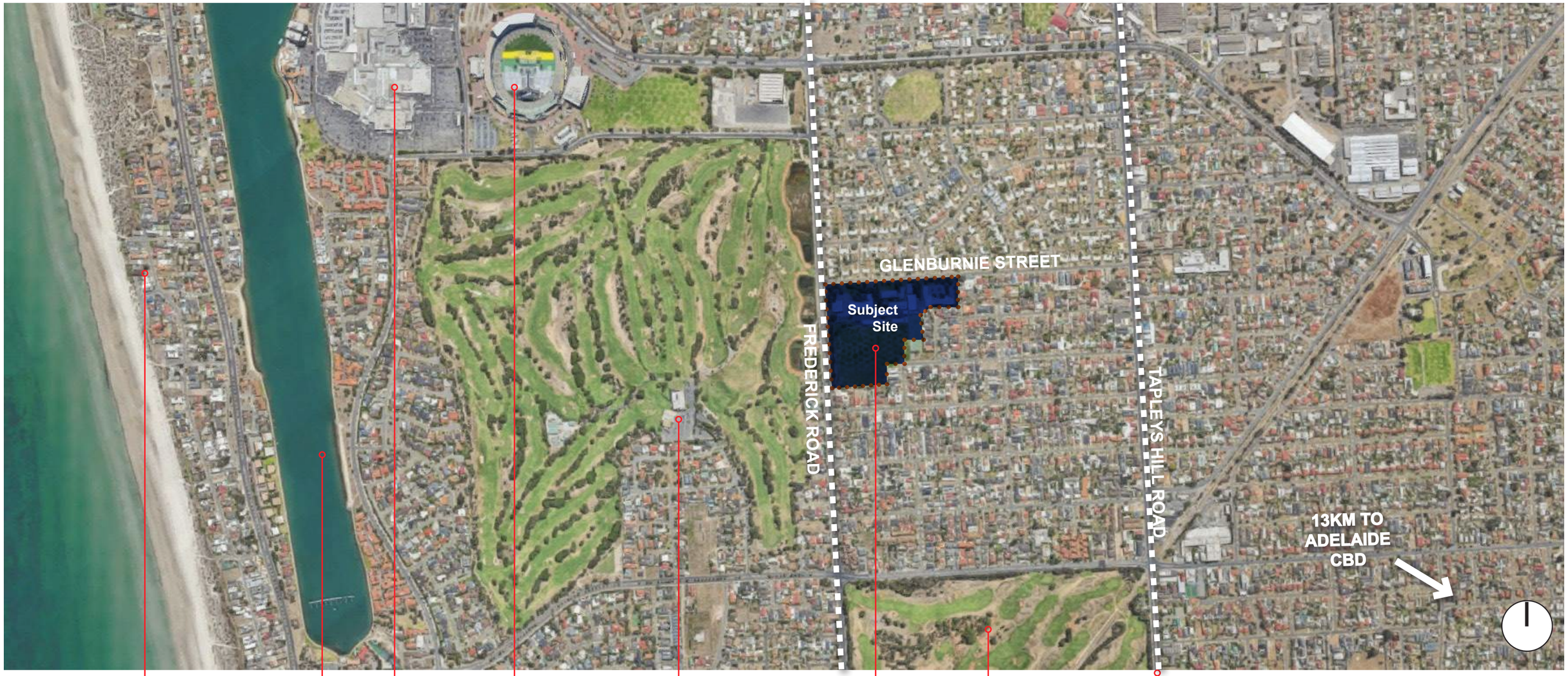
Bestec Engineers
Acoustic Engineering

Buildsurv
Building Certification Advice

Cirqa
Traffic Engineer

3.0 Existing Facilities

Site Context Plan - Macro



3.0 Existing Facilities

Site Context & Locality Plan

The subject site is located on the eastern side of Frederick Road at the corner of Glenburnie Street, Seaton and is bounded by residential properties to the north, south and east. The Grange Golf Club extends along the western side of the site on the opposite side of Frederick Road. The Seaton Community Childcare Centre is along Glenburnie Street immediately to the east of the site.

There are a large number of trees across the site providing generous shade for students. The majority of trees are located along the northern and western boundaries. There are no identified regulated or significant trees on the site. There are three existing crossovers from Glenburnie Street, two existing crossovers from Frederick Road and one from Raymond Avenue. The existing vehicular entry points are a mix of one- and two-lane driveways.

There are two pedestrian access points along Frederick Road, five along Glenburnie Street and two from the community playground along Raymond Street. The main pedestrian arrival point is from Glenburnie Street which is identified by a small wall with students artworks featured on the wall.

There is a large sign on the corner of Frederick Road and Glenburnie Street identifying the school. The signage directing visitors to the administration building is unclear as there are numerous areas to park vehicles and enter the site. There are four tennis/basketball courts within the school fenced area and two courts outside of the fenced area, but still within the title boundary which is used by the community. There is a baseball diamond, baseball practice cages, a small oval used for football and cricket, cricket practice nets and a soccer field on the site.

There are two 2-storey buildings, a large shed used by the State Baseball Association and the school, a gymnasium, six single storey buildings and ten single storey transportable or DEMAC buildings currently on the site. The majority of the buildings axis run east-west and create a number of courtyards between the existing buildings. The layout of the existing buildings restricts access north south throughout the site, effectively cutting off the oval from the rest of the school site. The layout also creates a number of narrow lane ways and areas that are difficult for supervision during break times.

Legend:

1 storey

2 storey

3.0 Existing Facilities

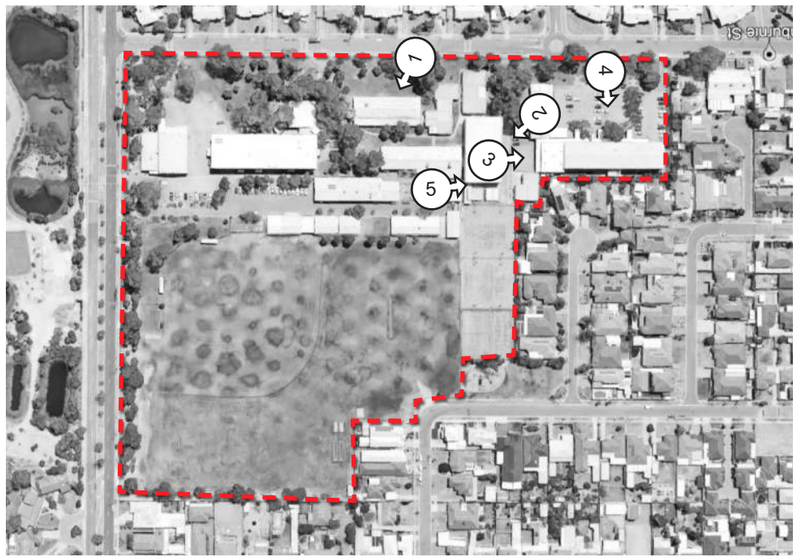
Site Context Photographs

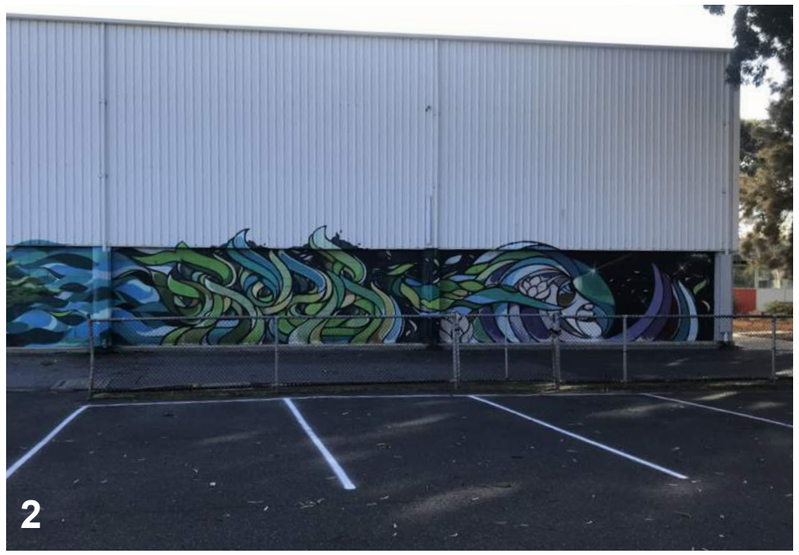
The following images indicate the existing character and context of the built form in the vicinity of the subject site.

3.0 Existing Facilities

Site Context Photographs

The following images indicate the existing character and context of the built form in the vicinity of the subject site.

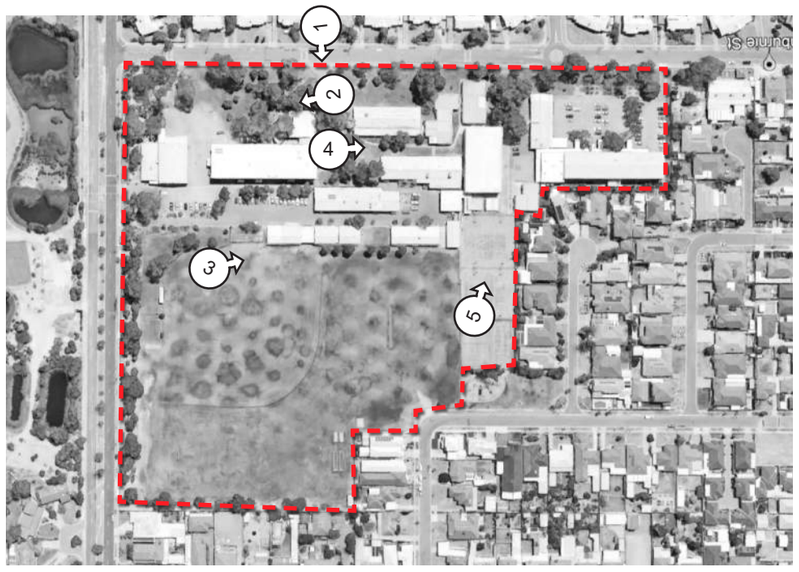




3.0 Existing Facilities

Site Context Photographs

The following images indicate the existing character and context of the built form in the vicinity of the subject site.



3.0 Existing Facilities

Site Context Photographs

The following images indicate the existing character and context of the built form in the vicinity of the subject site.

3.0 Existing Facilities

Site Survey

3.0 Existing Facilities

Site Survey

3.0 Existing Facilities

Certificate of Title

Government of South Australia
Department of Planning, Transport and Infrastructure

Product Register Search (CT 6066/383)
Date/Time 16/08/2018 01:00PM

REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 6066 Folio 383

Parent Title(s) CT 5812/496

Creating Dealing(s) RTU 11455040

Title Issued 19/10/2010 **Edition** 2 **Edition Issued** 28/06/2012

Estate Type

FEE SIMPLE

Registered Proprietor

MINISTER FOR EDUCATION AND CHILD DEVELOPMENT
OF ADELAIDE SA 5000

Description of Land

ALLOTMENT 2 DEPOSITED PLAN 84989
IN THE AREA NAMED SEATON
HUNDRED OF YATALA

Easements

NIL

Schedule of Dealings

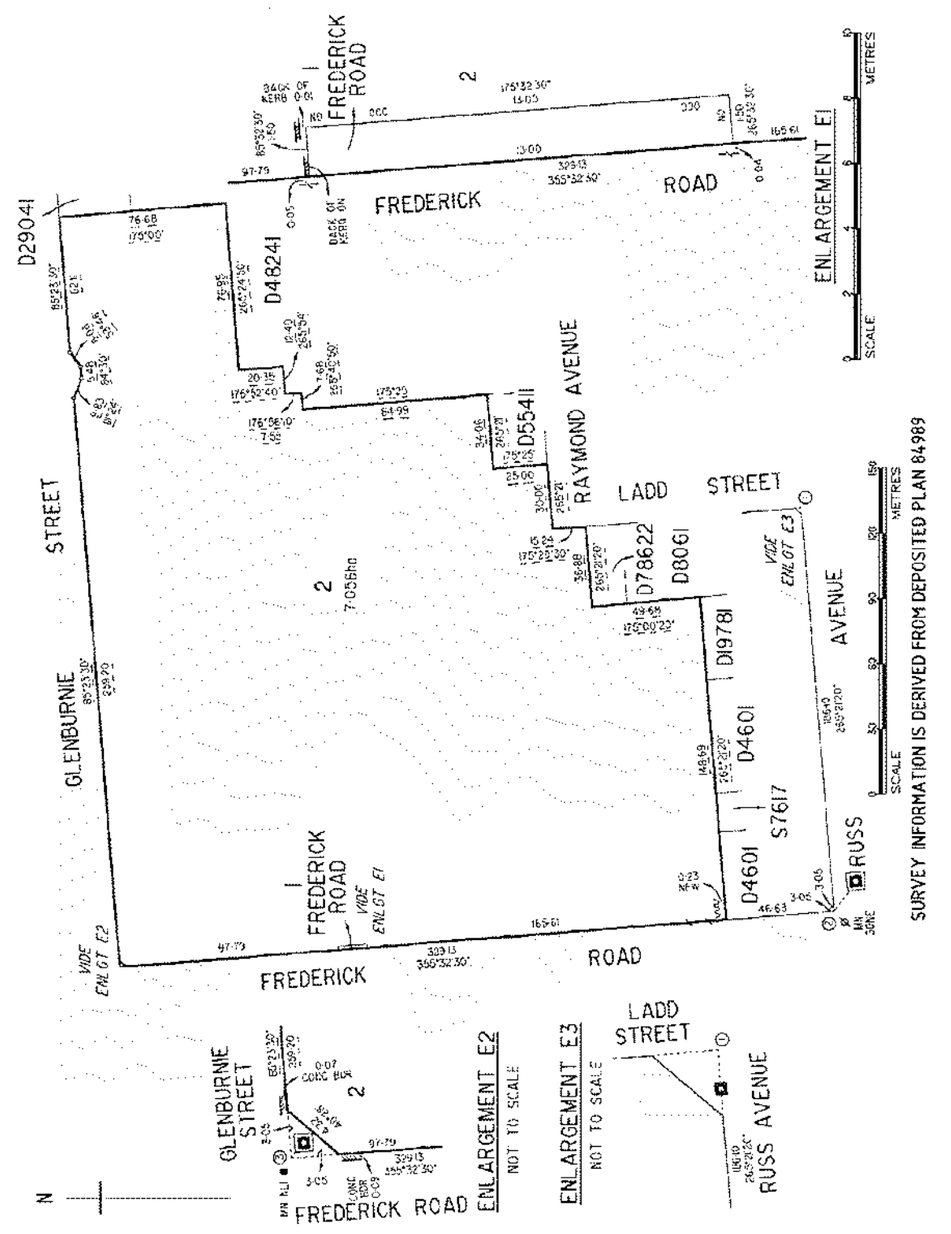
NIL

Notations

Dealings Affecting Title NIL
Priority Notices NIL
Notations on Plan NIL
Registrar-General's Notes NIL
Administrative Interests NIL

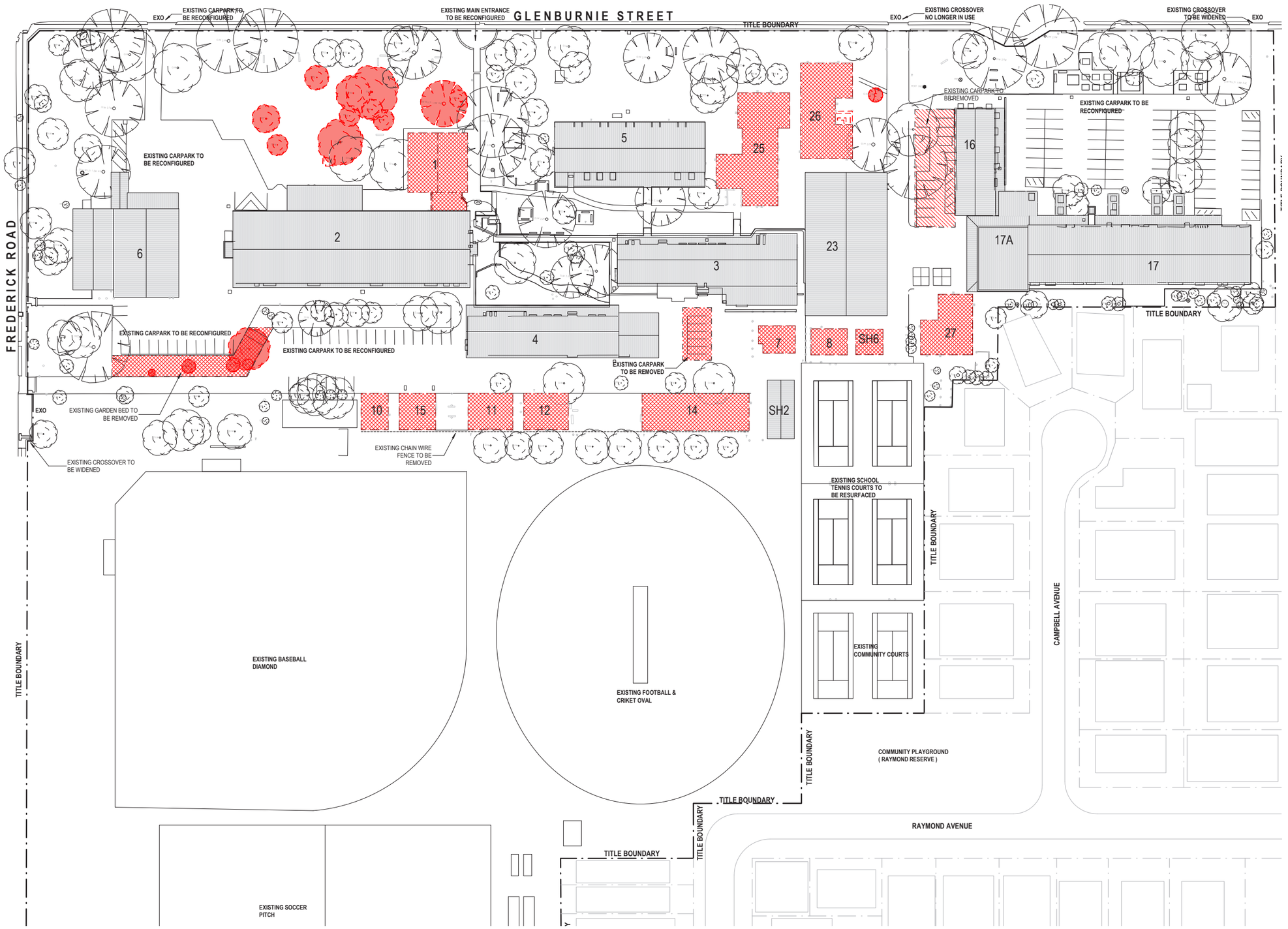
Government of South Australia
Department of Planning, Transport and Infrastructure

Product Register Search (CT 6066/383)
Date/Time 16/08/2018 01:00PM



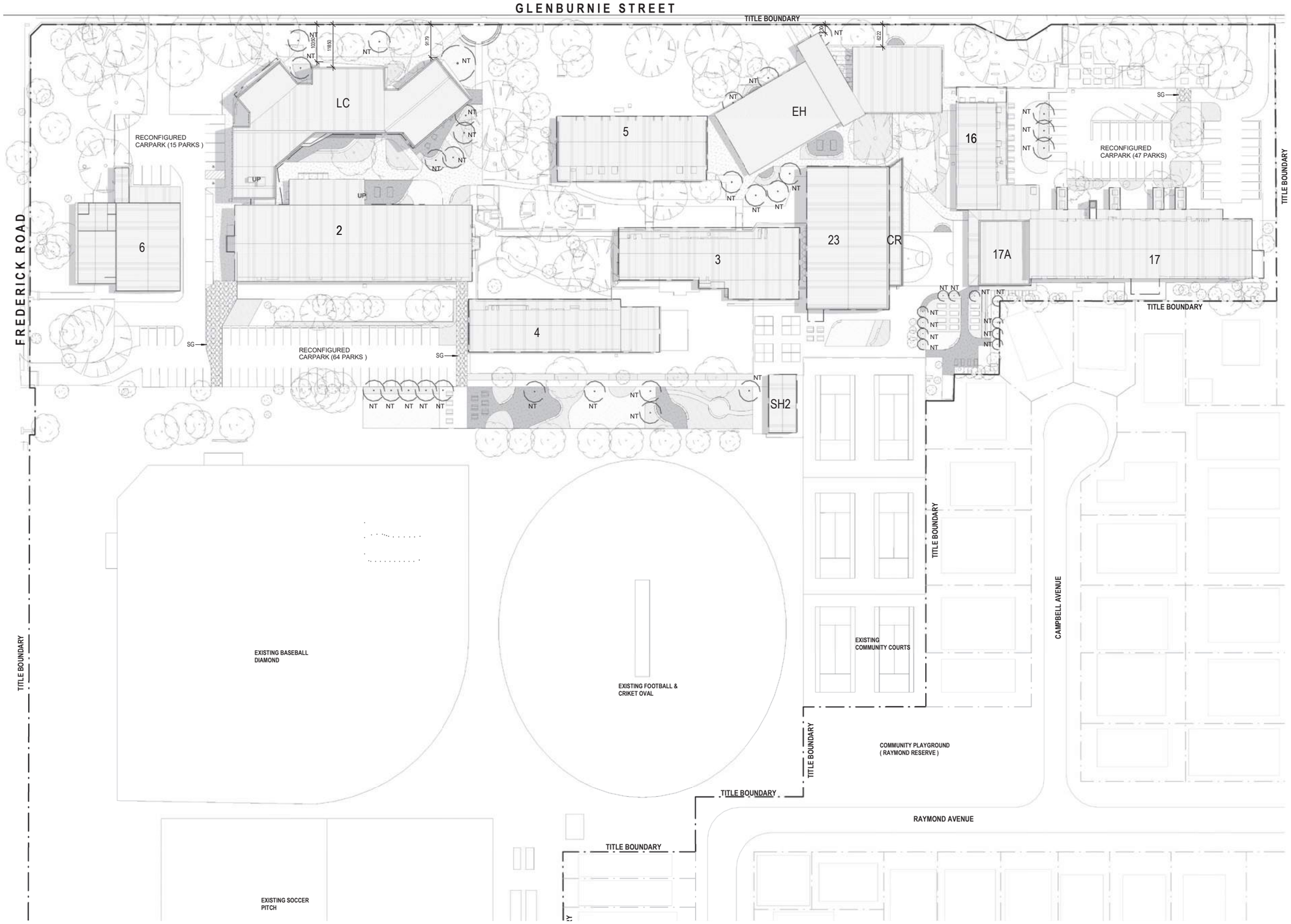
3.0 Existing Facilities

Existing & Demolition Site Configuration Plan



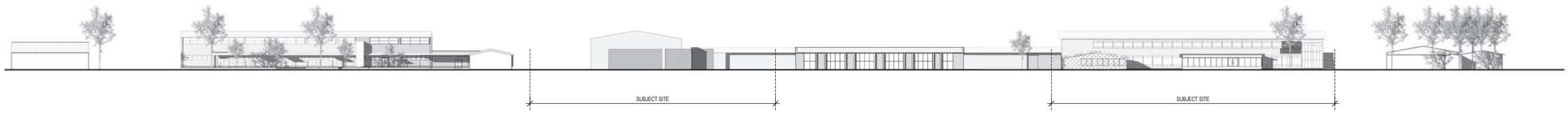
3.0 Existing Facilities

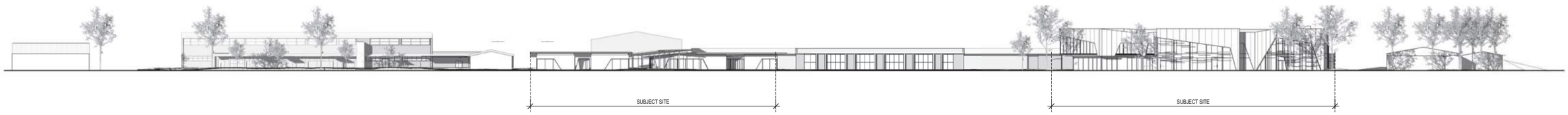
Proposed Site Configuration



3.0 Existing Facilities

Existing & Proposed Streetscape Elevation





4.0 Concept Design Response

Design Drivers - Project Vision

The following themes have been developed in consultation with Seaton High School staff and students, as a way of explaining the key aspirations for the Seaton High School Redevelopment project.

IDENTITY

Unique expression

Active in community

Student Voice

Entrepreneurial Specialist School Status

One School

ENTREPRENEURIAL

Collaborative attitude and spaces

Integration of the parts to encourage cross pollination

Non Traditional

A testing ground for new ideas

Future focused

SUSTAINABLE

Environmental expression

Adaptable & Agile

Economical and Viable

Creative

Socially sustainable

A world view

A LEARNING LANDSCAPE

Learning happens everywhere

Connection to nature

Self directed learning

Porosity

Wellbeing & comfort

CONNECTIVITY

Connection within buildings

Incidental learning and connections between students and teachers

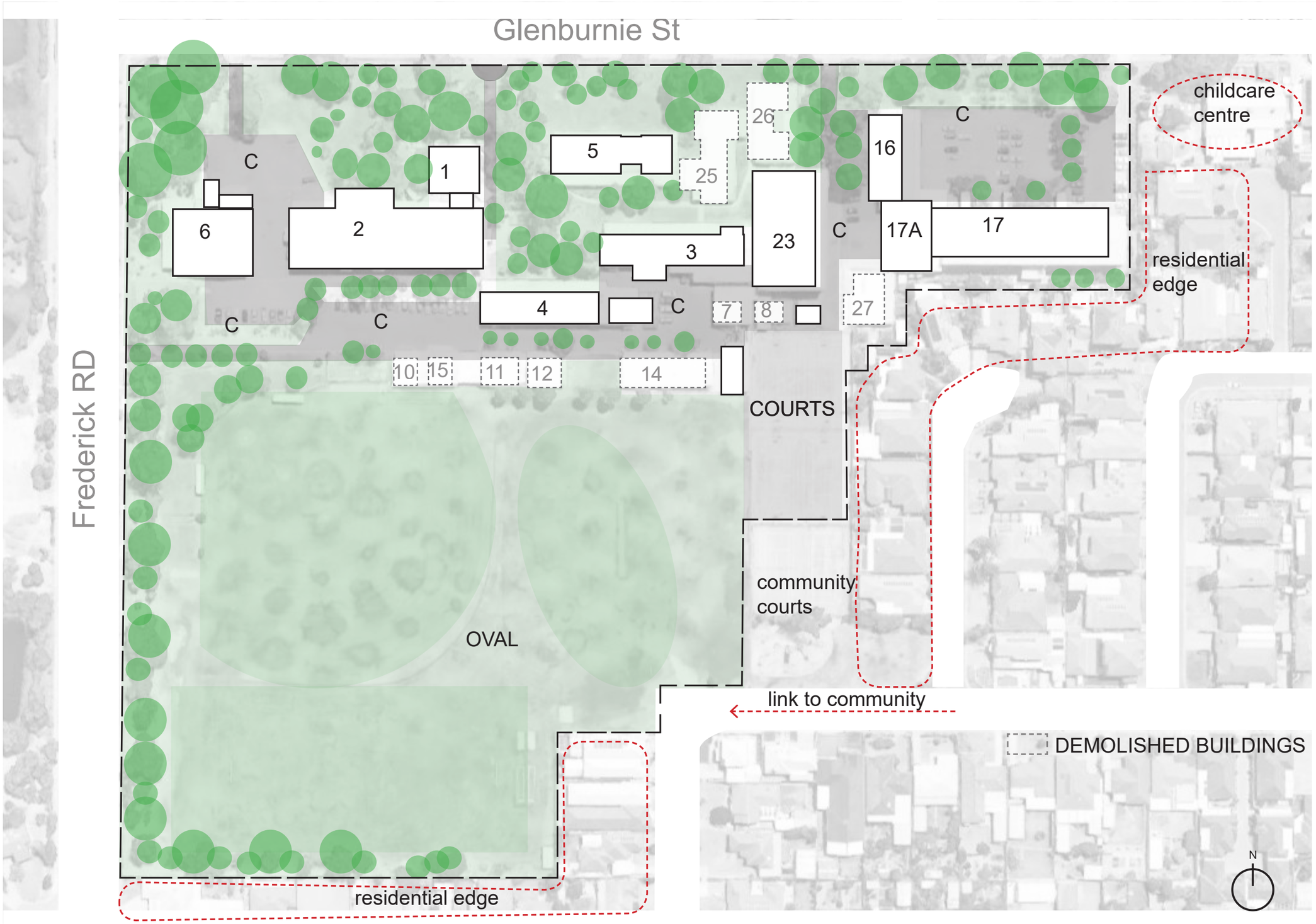
Internal & external connection

Campus connection

Connection to community

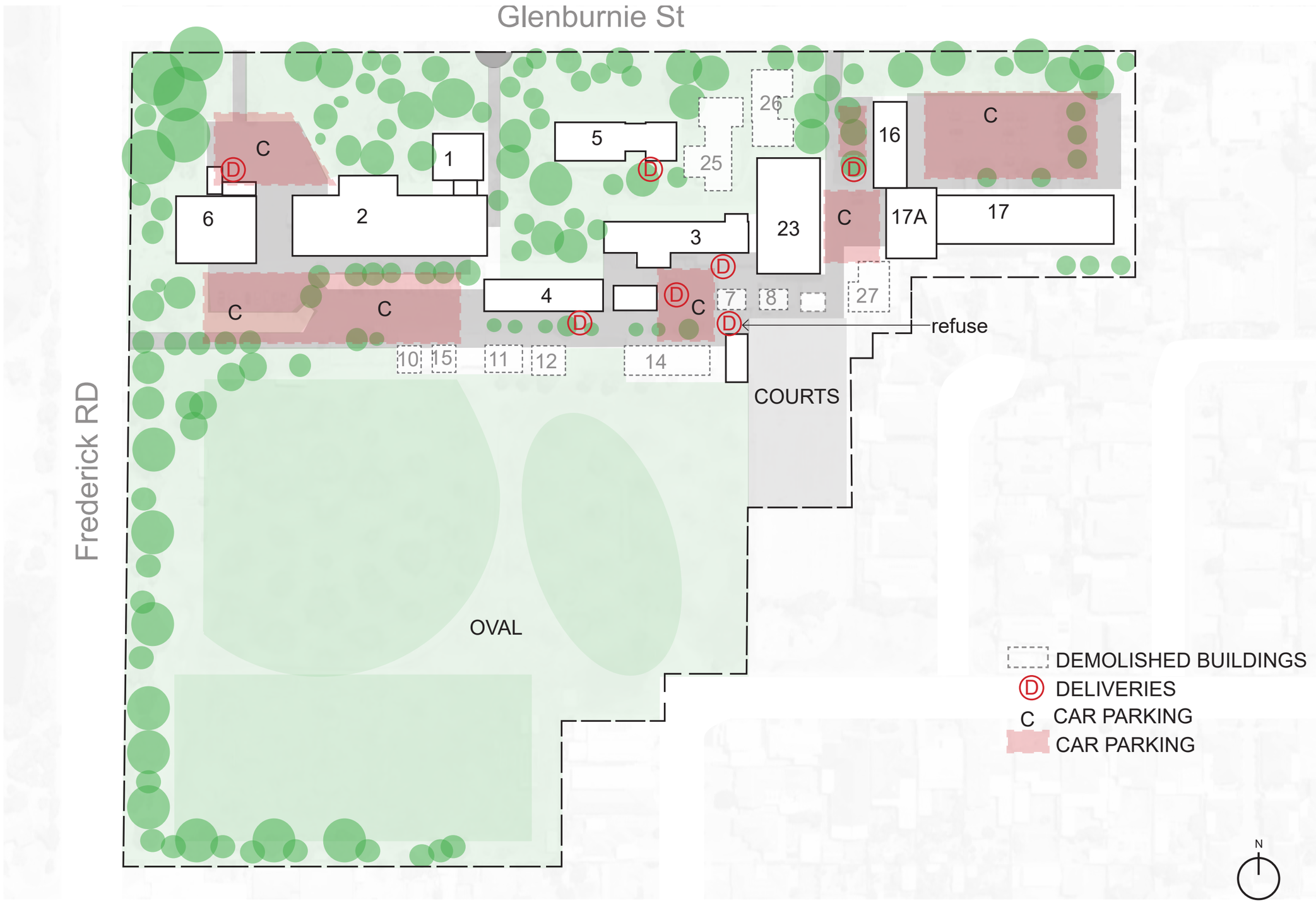
4.0 Concept Design Response

Existing Site Analysis Diagrams - Site Condition



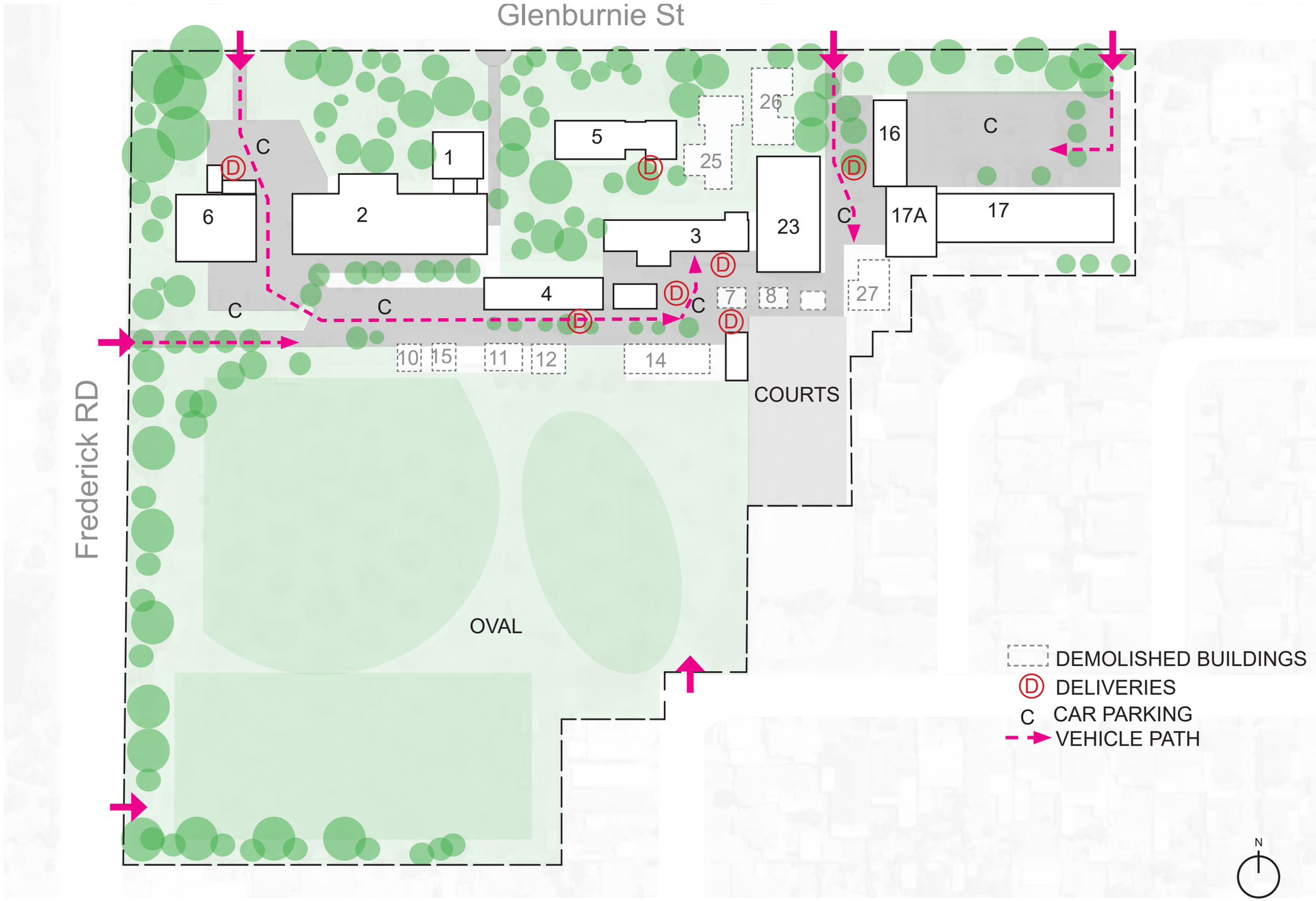
4.0 Concept Design Response

Existing Site Analysis Diagrams - Car Parking



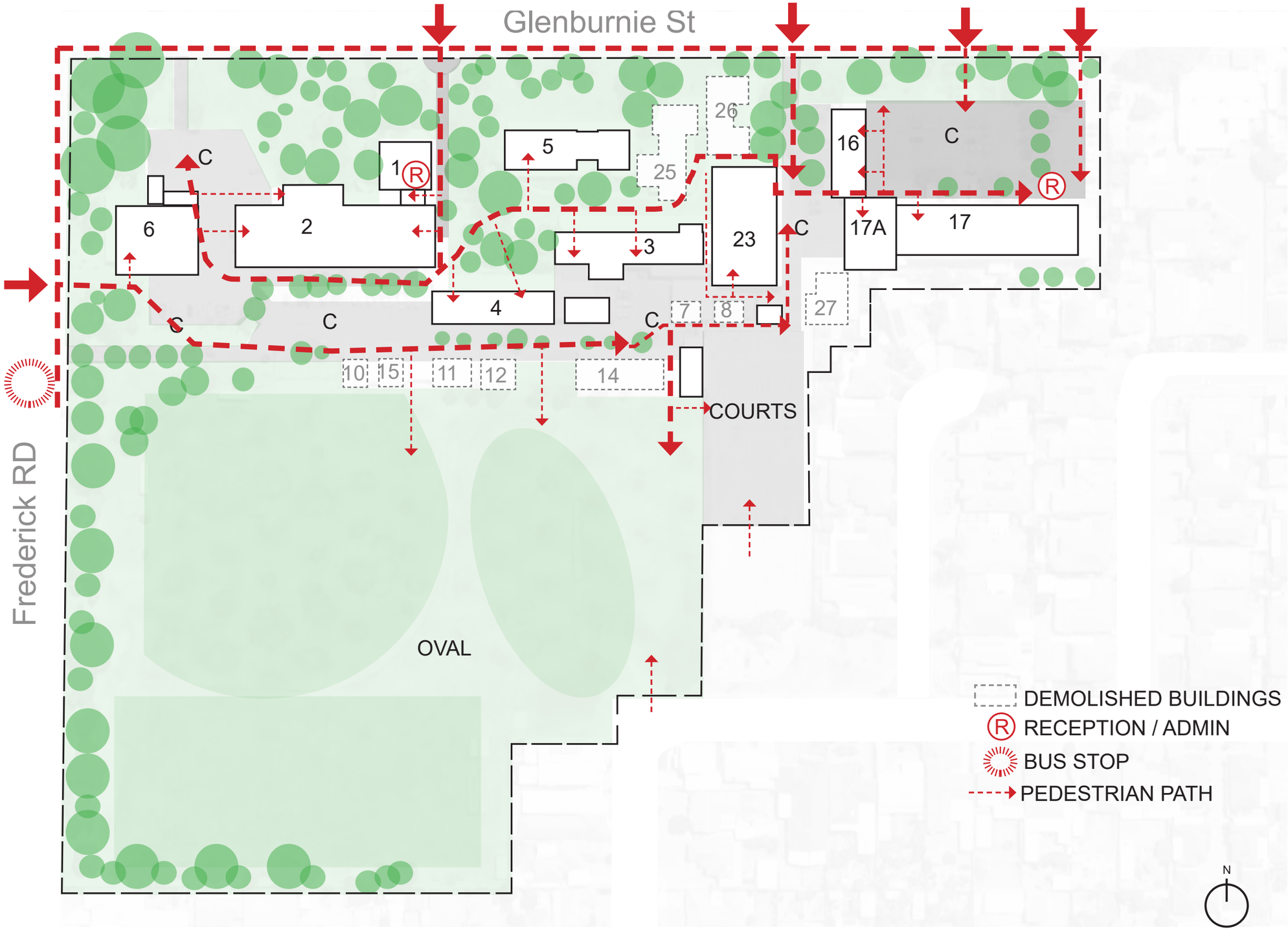
4.0 Concept Design Response

Existing Site Analysis Diagrams - Vehicle Movement



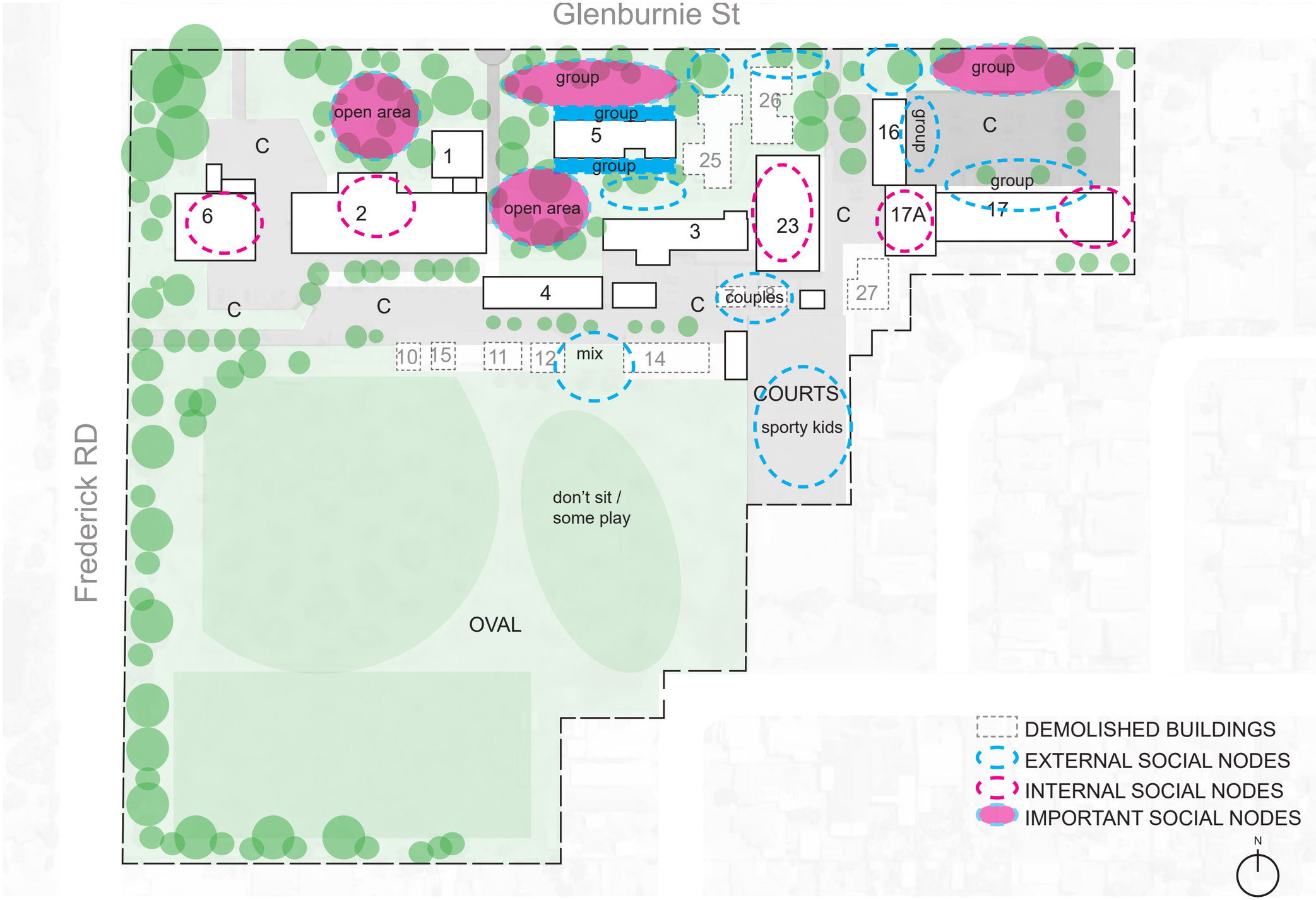
4.0 Concept Design Response

Existing Site Analysis Diagrams - Pedestrian Movement



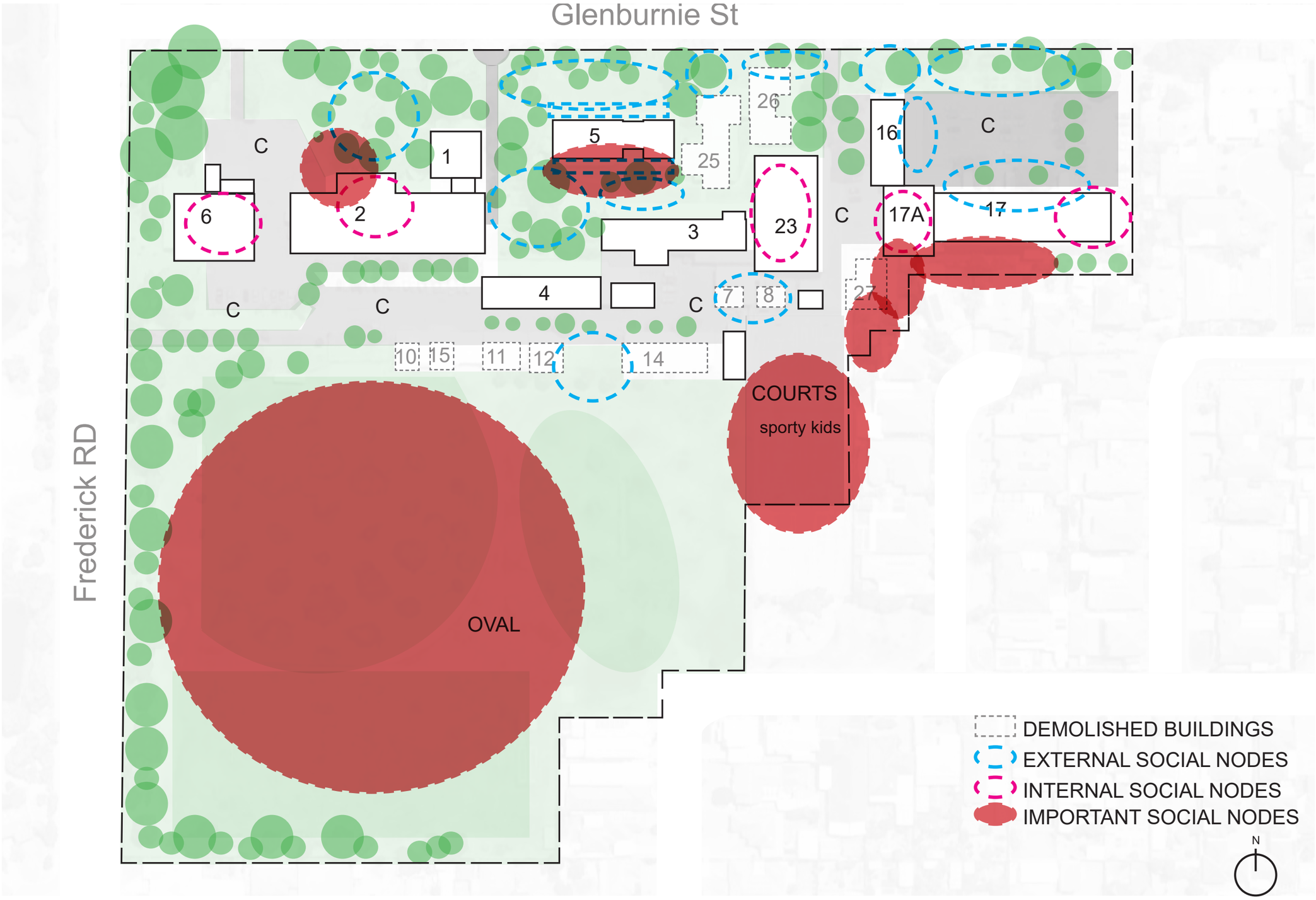
4.0 Concept Design Response

Existing Site Analysis Diagrams - Social Destinations



4.0 Concept Design Response

Existing Site Analysis Diagrams - Outdoor Learning



4.0 Concept Design Response

Architectural Form Inspiration

REACHING OUT TO NATURE

Responding to the site context

Respecting the current landscape

Maintaining the site identity

FILTER OF LIGHT

Connection to the landscape through the play of light and shadow

SCREENING

Creating private spaces through screening

Curated views through facades

A LEARNING LANDSCAPE

Create a playful atmosphere through the architectural form

CONNECTIONS

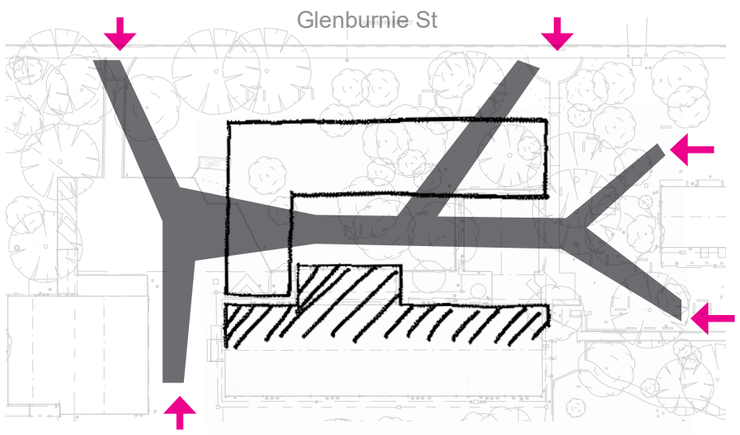
Long distant views

Connections both vertically and horizontally through the buildings

4.0 Concept Design Response

Learning Centre - Form Response To Context

The below diagrams demonstrate how the building form was created by responding to the site context.

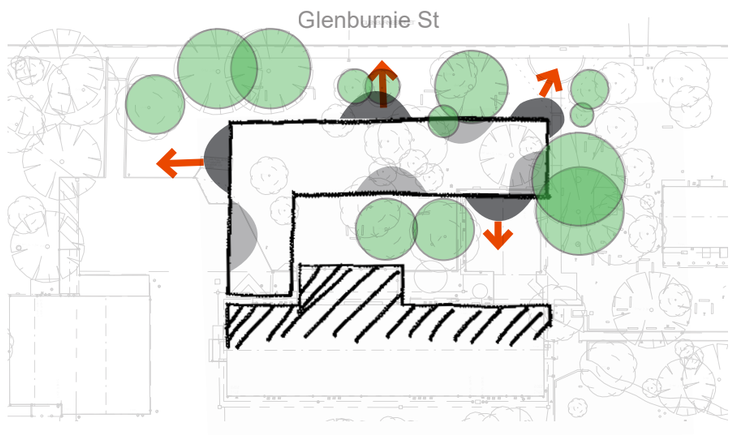


Building circulation

Key circulation paths and desired pathways determine where the building openings are formed

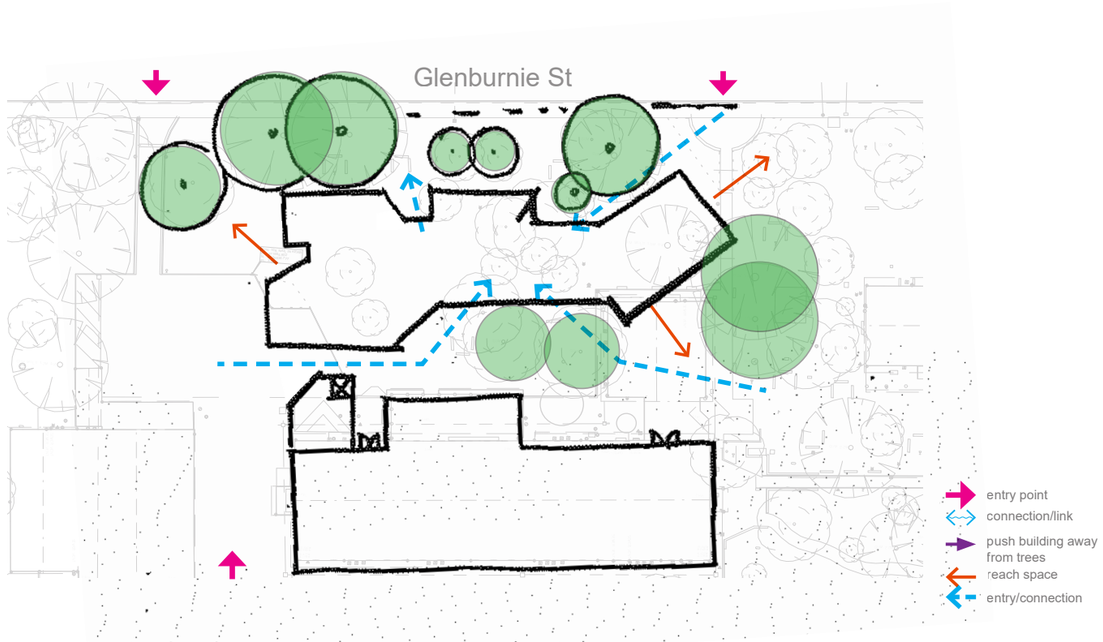
Push building away from trees

The existing trees have been retained wherever possible and the building form is pushed away from the existing tree zones

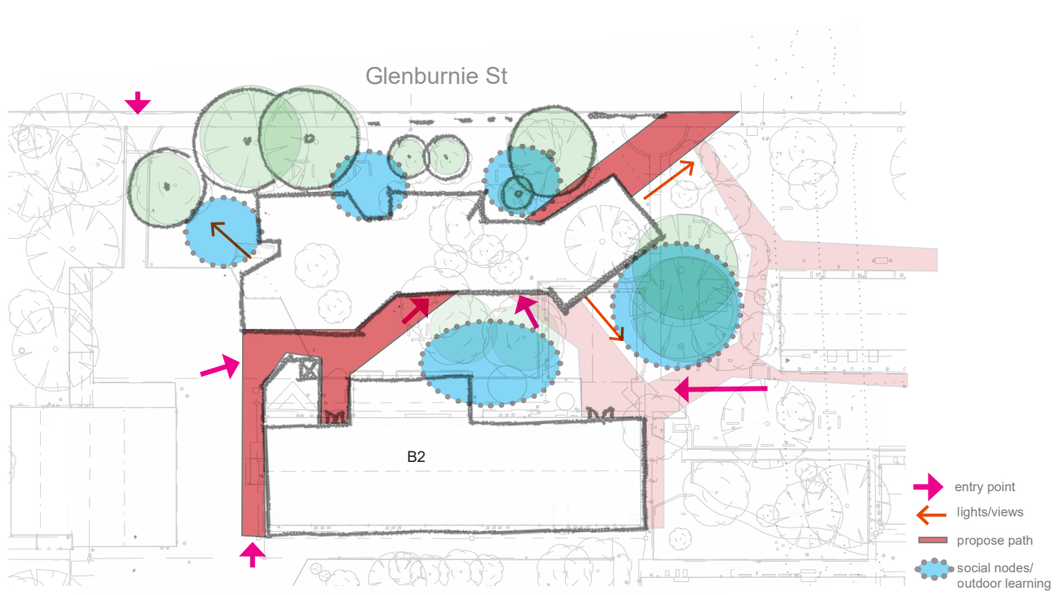


Extend building to open space/street present

The building form utilises the spaces in between the existing trees and as a result begins to reach out and address the street



The above diagram is an indication of the building footprint in response to the site context. The building mass has been pushed and pulled which allows the building to nestle amongst the existing trees and bring the landscape into the internal spaces.

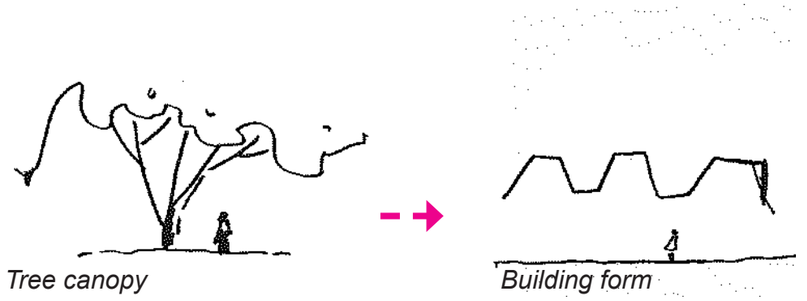


Landscape and built form interaction

The areas created by this building footprint allow different social nodes externally that can provide opportunities for outdoor learning, immediate connection with the internal spaces and smaller more intimate nooks around the perimeter for students to inhabit.

4.0 Concept Design Response

Learning Centre - Form Development & Facade Expression



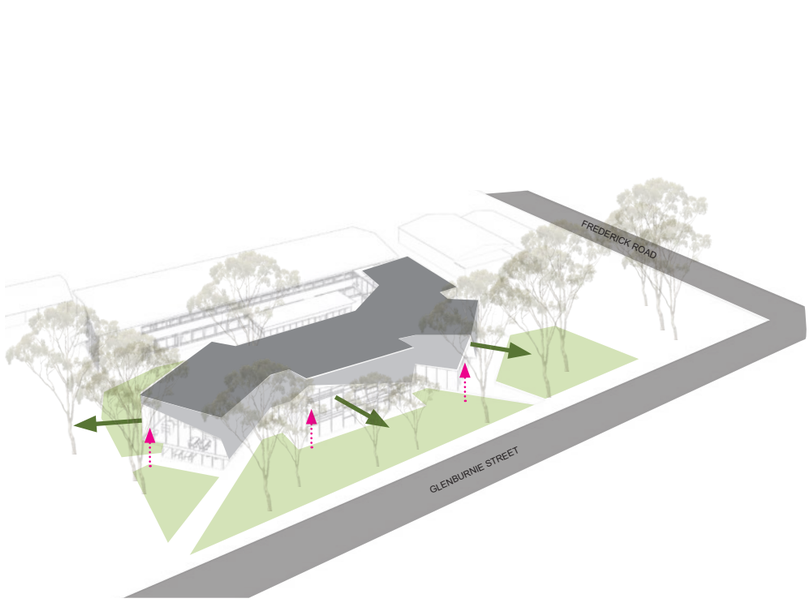
Tree canopy

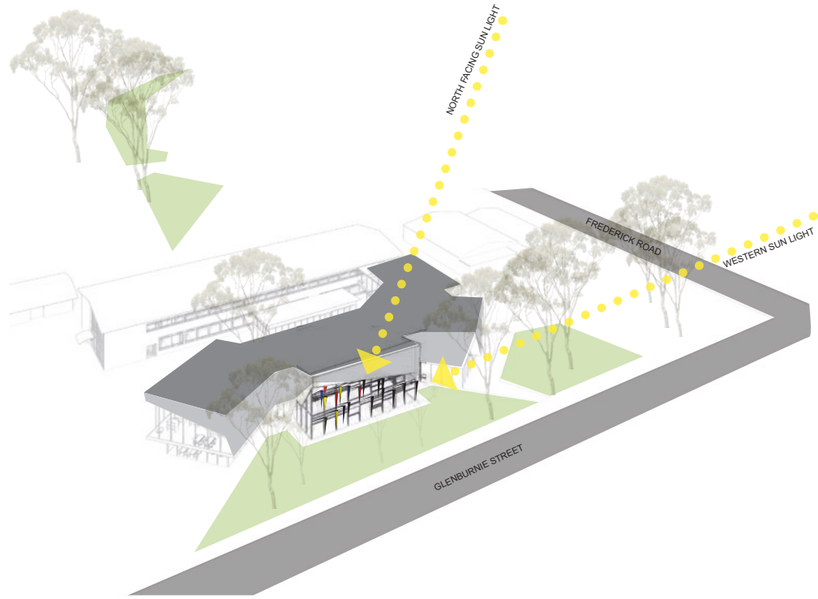
Building form

Building Form

taking the idea of tree canopy which provides shade and protectection, the building form is designed to provide shading and protection to internal spaces.

Transparency and connection to outdoor spaces





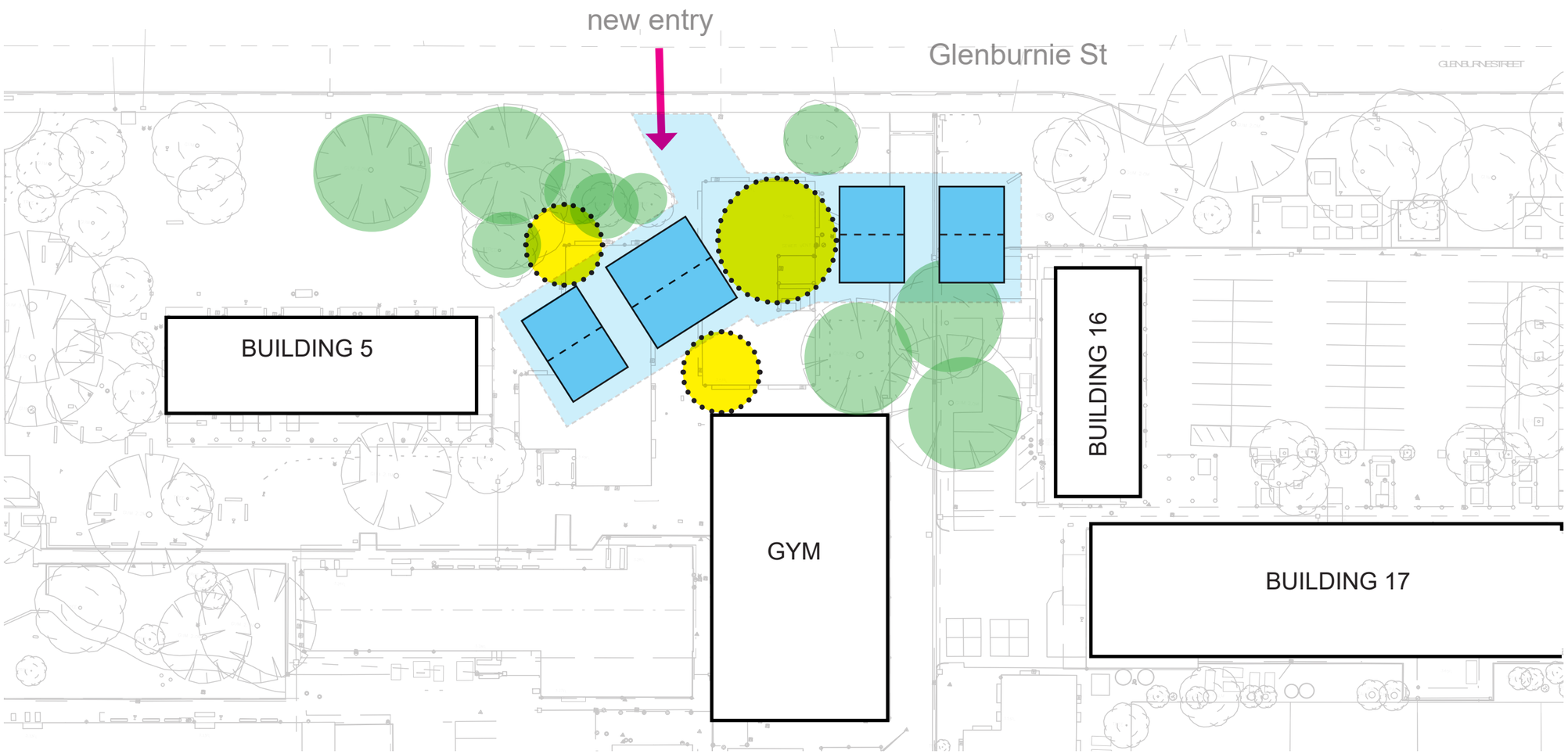
Building Facade Shading Expression

4.0 Concept Design Response

Entrepreneurial Hub

The entrepreneurial hub is a cluster of buildings with covered spaces in between and around the buildings to encourage outdoor learning and interaction with the community. These buildings have been sited to retain the existing trees and utilise the spaces where the existing buildings will be demolished.

The circulation around and through these buildings will be defined and will strengthen the east/west connection across the site.



4.0 Concept Design Response

Entrepreneurial Hub

4.0 Concept Design Response

Entrepreneurial Hub

Similar architectural language as the Learning Centre

New pedestrian entrance from Glenburnie Street into Entrepreneurial Hub

Covered walkway between buildings with semi transparent roof to filter light into outdoor space

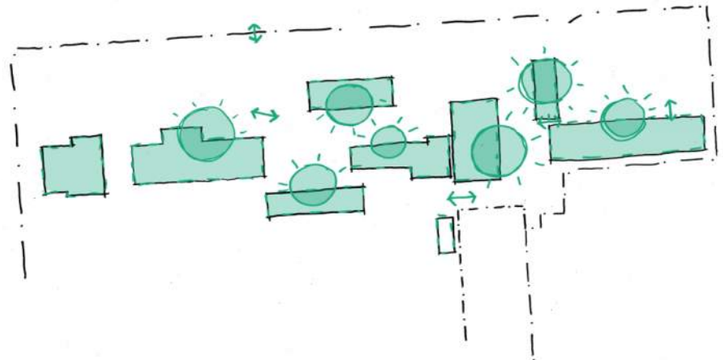
Higher transparency to shop front GLA to display student work

Covered outdoor learning spaces adjacent GLAs to extend learning spaces

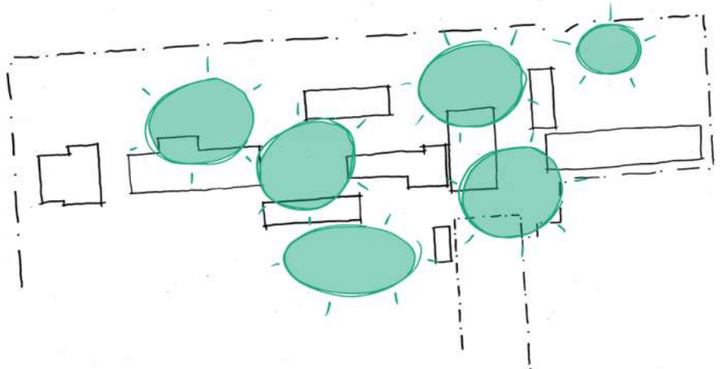
4.0 Concept Design Response

Landscape Design Principles

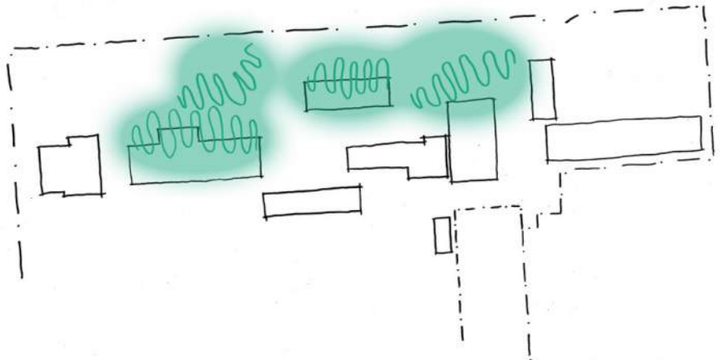
ADAPTABLE AND FUTURE-PROOFED
Buildable, adaptable layout to enable a staged landscape response



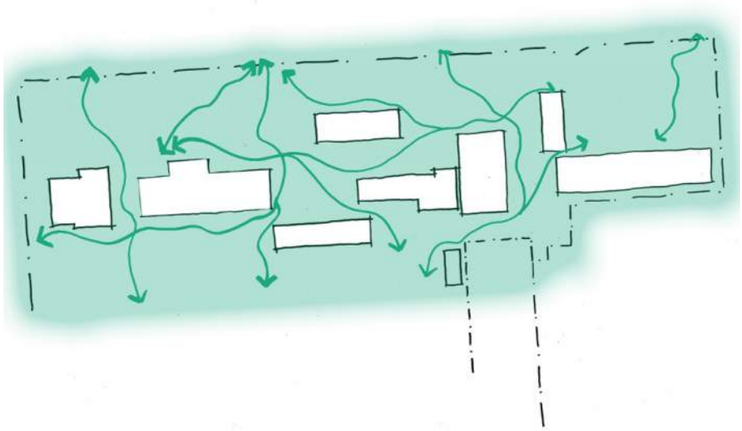
CREATE ACTIVITY NODES
Placement of activity hubs to provide a range of social and learning



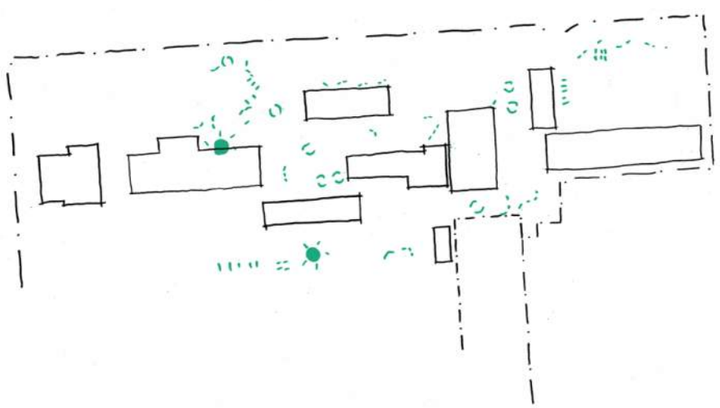
BLENDED INSIDE-OUTSIDE EXPERIENCE
Dissolve the divide between the inside and outside learning spaces



PERMEABILITY
Provide cross-campus links in all directions



A UNIFIED PALETTE
A unified look and feel to provide consistent quality of experience across the site



4.0 Concept Design Response

Landscape Precedents

Incidental Seating Opportunities

Atmosphere / Activity / Fun

Private Spaces / Screening

Interact with Existing Trees

Curvilinear Forms to Reinforce Circulation Network

Immersive Planting

Outdoor Learning Opportunities & Connection to Interiors

Creation of Social Nodes

4.0 Concept Design Response

Landscape Plan

Focusing on high priority areas, the landscape site plan creates a series of nodes across the site to provide teaching, socialising and teaching spaces.

4.0 Concept Design Response

Resource Centre Hub

The Learning Centre hub landscape creates a dialogue between external and internal spaces, maximising versatile and flexible spaces for classes, groups and individuals.

01 Reception entry from Glenburnie Street
02 Retain existing trees
03 Main student entry
04 Student entry from Glenburnie Street
05 Informal social/study space - shaded lawn
06 Breakout space from staff room
07 New step ramp to STEM
08 Education Node: Formal class space with seating
09 Planting to existing trees
10 Recreation Node: Table Tennis
11 Custom modular seating
12 Loose furniture
13 Education Node: Resource Centre breakout and study space
14 Garden bed to resource centre
15 New entrance to existing building

Planting Palette Types
See Planting Palettes for species list

O Ornamental Planting
N Native & Indigenous Planting
P Productive Planting
C Curriculum Planting
W WSUD Planting

4.0 Concept Design Response

Oval Edge Landscape

Creating a permeable threshold from north to south, the oval edge landscape is broken down into smaller spaces, framed with ornamental and educational planting.

01 Link from plaza
02 Retain existing paving/asphalt where possible
03 Social Node: Picnic table seating
04 Informal Social Space
05 Custom modular seating
06 Informal social/study space - shaded lawn Retain existing lawn where possible
07 Formal Education Node: Group Teaching Space
08 WSUD Beds beneath existing trees
09 Yarning Circle: Informal Education / Social Node / Group Activity Node
10 Retain Existing Trees
11 Remove existing fence

Planting Palette Types
See Planting Palettes for species list

O Ornamental Planting
N Native & Indigenous Planting
P Productive Planting
C Curriculum Planting
W WSUD Planting

4.0 Concept Design Response

Horticulture Learning Hub

Blurring the edge of the existing highly successful productive garden, the Horticulture Learning Hub organises and expands this space into a functional learning environment while minimising intervention.

01 Retain existing asphalt where possible

02 Recreation Node: Handball Courts

03 New fencing

04 Social Node: Picnic table seating

05 New changerooms

06 Recreation Node: Basketball Half Court

07 Perennial herb planting

08 Informal social/study space - lawn

09 Custom modular seating

10 Orchard planting

11 Formal Education Node: Outdoor Teaching Space

12 Relocated and new raised garden beds

Planting Palette Types
See Planting Palettes for species list

O Ornamental Planting

N Native & Indigenous Planting

P Productive Planting

C Curriculum Planting

W WSUD Planting

4.0 Concept Design Response

Entrepreneurial Hub

Simple ground planes with opportunities for break out spaces has driven the arrangement of the landscape and buildings in tandem. The resulting spaces are adaptable and versatile.

01 Education / Entrepreneurial Node: Outdoor Teaching and Breakout Space
02 Pathway to Glenburnie Street
03 Formal Education Node: Indoor-Outdoor Teaching Space
04 Social and Study Node: Focus Around Existing Trees
05 Pathway link to existing landscape
06 Pathway link to existing plaza
07 Informal social/study space - shaded seating
08 Informal social space - shaded lawn
09 Recreation Node: Table Tennis
10 New planting beneath existing tree
11 New changerooms
12 Screen planting to canteen back of house
13 Loose furniture
14 Custom modular seating
15 Overhead deciduous climber planting

Planting Palette Types
See Planting Palettes for species list

O Ornamental Planting
N Native & Indigenous Planting
P Productive Planting
C Curriculum Planting
W WSUD Planting

4.0 Concept Design Response

Landscape Long Term Site Plan

The landscape proposal has focused on specific key areas across the site to maximise the contribution to the curriculum and social and recreational environment. The long term site plan outlines areas of medium and low priority to guide future site development.

Planting Palette Types
See Planting Palettes for species list

- I Included
- H High Priority
- M Medium priority
- L Low Priority / undertaken by school

4.0 Concept Design Response

Tree Planting Plan

Consideration has been given to the use of deciduous and evergreen trees across the site, as well as legacy and feature trees, productive and curriculum tree planting.

- Gb Ginkgo biloba
- Li Lagerstoemia indica ‘Natchez’
- Up Ulmus parvifolia
- ED Eucalyptus ‘Euky Dwarf’
- Ls Liquidambar styraciflua
- Ma Morus alba
- Pg Punica granatum
- Ej Eriobotrya japonica
- Fc Ficus carica
- Ot Orchard trees

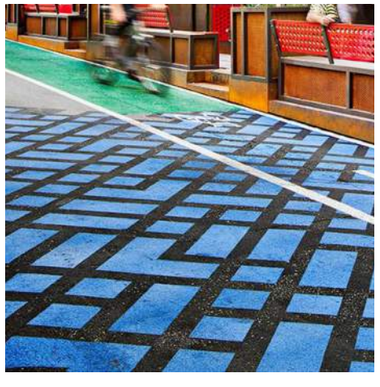
4.0 Concept Design Response

Integrated Art Opportunities

The following pages demonstrate a selection of hardy, ornamental plants that are well suited to a high use, coastal environment.

LEGEND

- CUSTOMISE PROPRIETARY FURNITURE
- CUSTOMISE PRECAST MODULAR FURNITURE
- ROAD GRAPHIC
- MURAL
- SCULPTURE

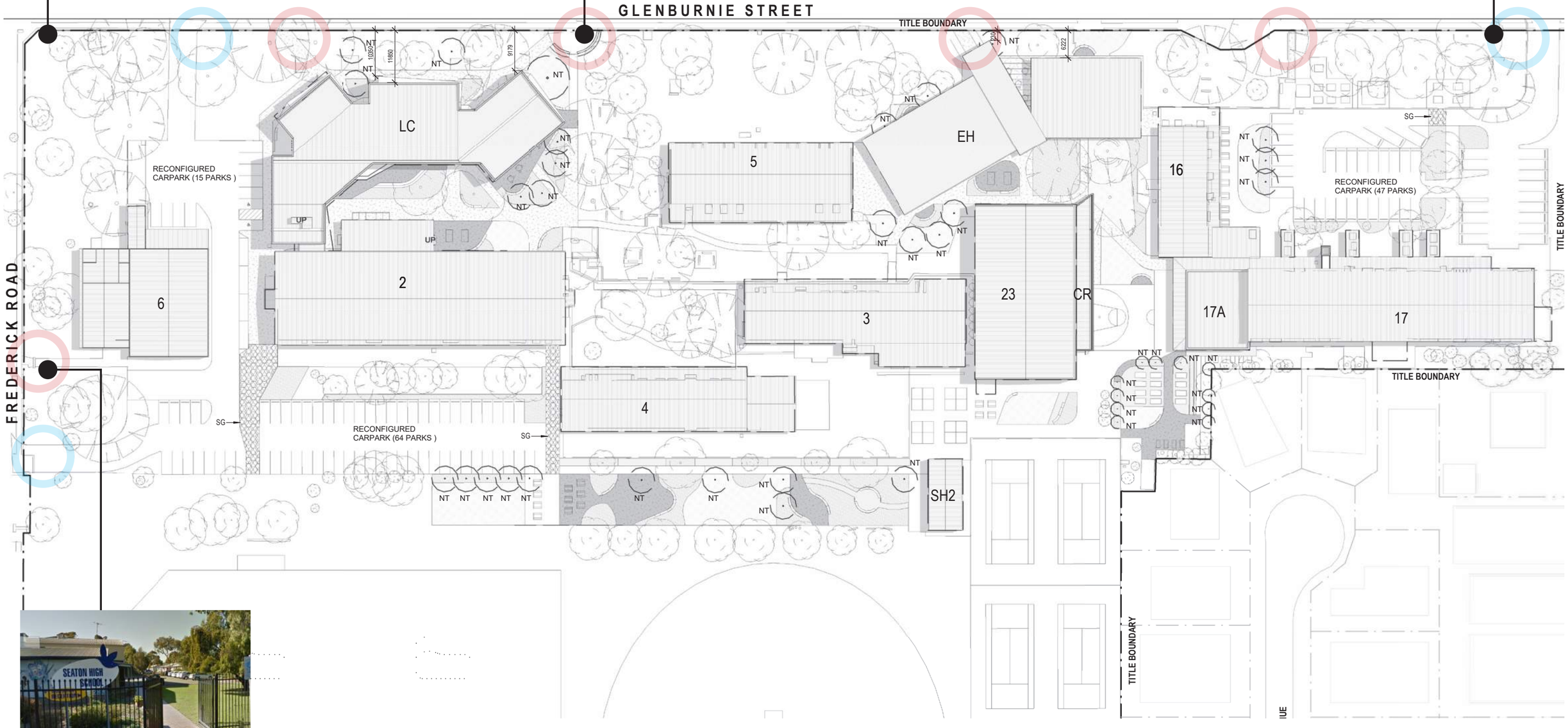


4.0 Concept Design Response

External Signage - Current Signage & Entry Points

Vehicle Entry

Pedestrian Entry



4.0 Concept Design Response

Current Signage - Look & Feel

- Lack of consistency with fonts / colour / style
- Identity of School logo is different between buildings
- Sometimes ‘SEATON’ / Sometimes ‘SEATON HIGH SCHOOL

4.0 Concept Design Response

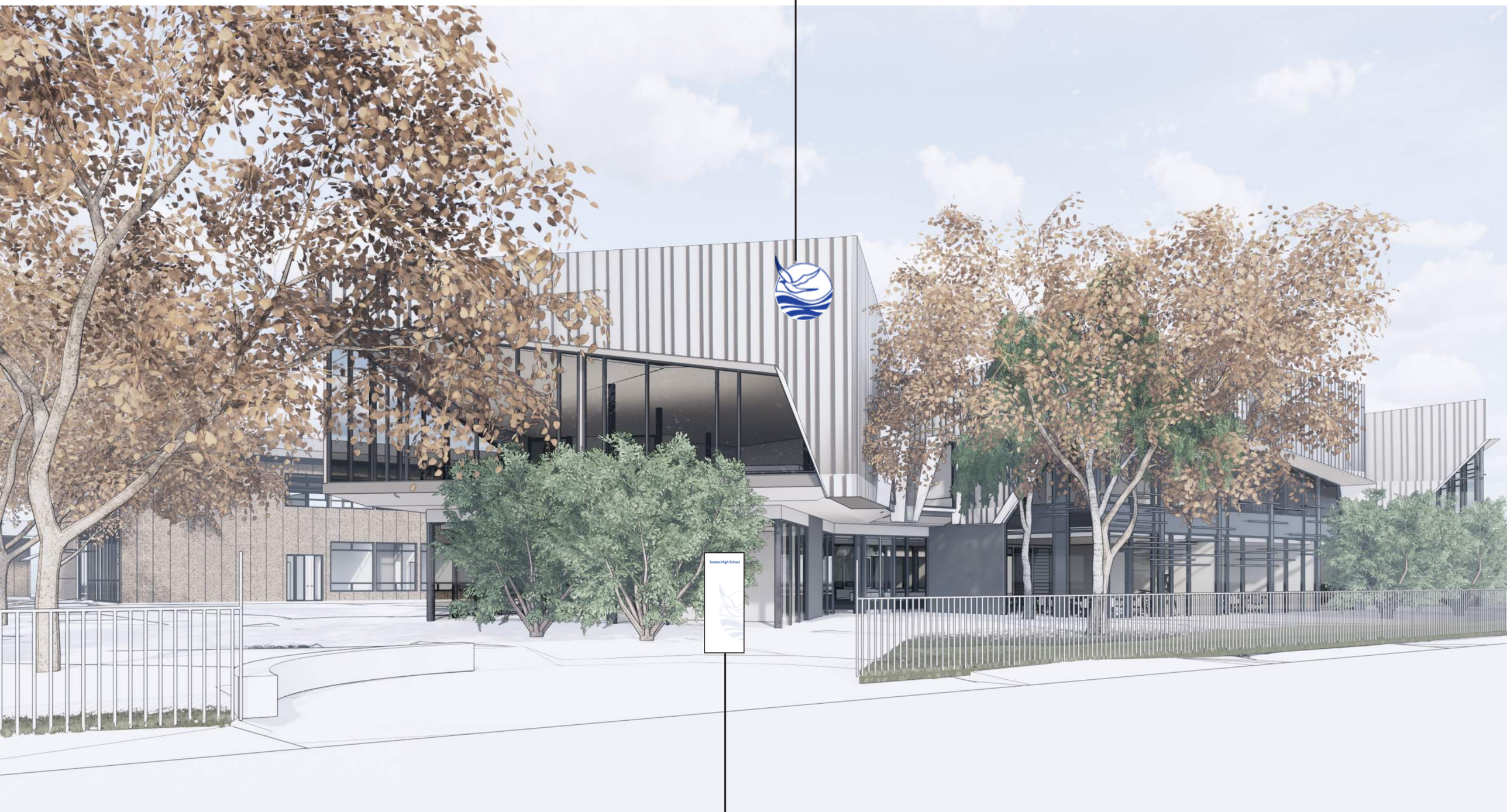
Proposed Signage Location Plan

Signage
(School Logo / Identity)

Wayfinding

4.0 Concept Design Response

Idicative Signage Design



4.0 Concept Design Response

ESD Principles

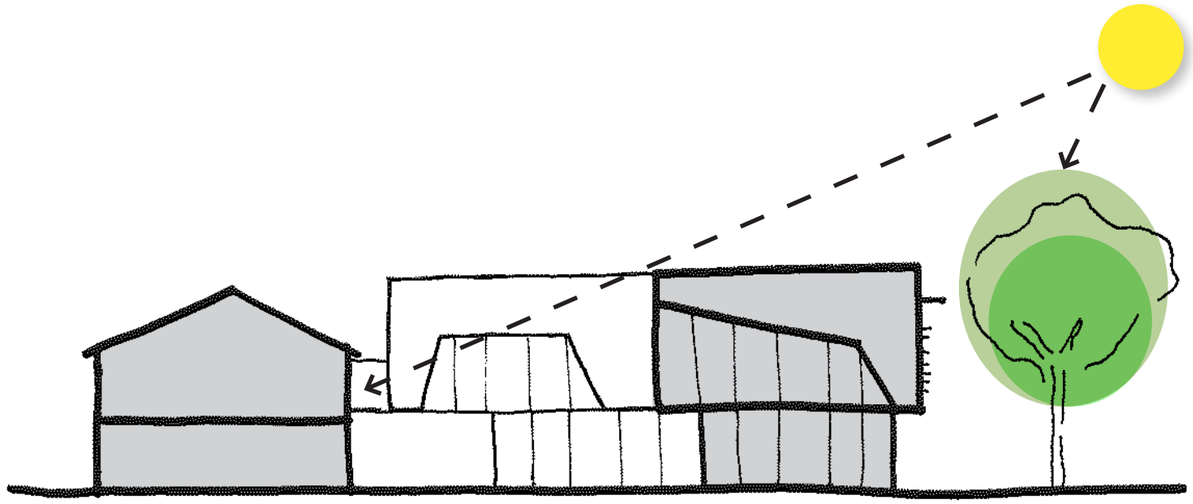
The Seaton High Secondary School development will be implementing a number of ESD Initiatives Included In this Project outlined below

Site General
- Retain as many trees as possible and plant new trees to offset any being demolished
- A 100kw solar panel system was installed in 2018 on Building 23 (Gym), therefore no additional solar panels are proposed for this project
- Rainwater tanks for stormwater detention and water reuse
- Relocation of existing rainwater tank to close proximity of the ‘horticulture garden’ that can be incorporated into the school curriculum
- Landscape nodes with planting for onsite fruit and vegetable production
- Native low maintenance planting
- WSUD initiative to carparks

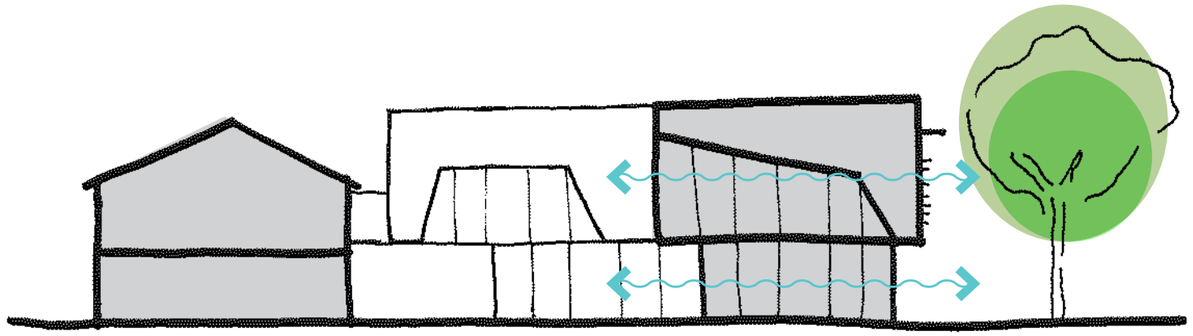
New Learning Centre
- JV3 assessment of the building
- Passive design for heating and cooling through building orientation
- Horizontal external shading fixtures to the north and vertical external shading fixtures to the west
- Reduced number of windows to the west
- Natural cross ventilation via operable windows
- Perimeter natural daylight harvesting
- Natural light to all habitable rooms
- Low VoC materials
- Water efficient taps and fixtures
- Energy efficient light fittings

Entrepreneurial Hub
- Low VoC materials
- Water efficient taps and fixtures
- Energy efficient light fittings
- Rainwater tanks for stormwater detention and water reuse

Buildings 2 & 17 Refurbishments
- Improved natural lighting with windows between rooms and corridors for borrowed light
- Replace existing fixtures with water efficient taps and fixtures
- Replace existing fittings with energy efficient light fittings
- Low VoC materials



Building orientation and setback allows northern sun to still reach the existing building facades.
Existing trees have been retained as much as possible to provide additional shading and cooling.
Sun shading louvres and shrouds have been designed into the facade to provide neccessary shading.



Operable windows and doors at both levels will allow for natural cross ventilation.

4.0 Concept Design Response

CPTD Principles

Seaton High School has recently had a 1.8m high fence installed around the entire perimeter of the school campus. All vehicle and pedestrial entrances have gates that can be locked to fully secure the campus. The school has reported that since the fence has been installed, the amount of break-ins and vandalism has reduced drastically.

The new buildings will encourage passive surveilance through a largly transparent ground level facade. Staff offices have been located close to student social spaces to allow clear lines of sight. Active functions such as student break out areas and stairs are located close to facades to also allow for passive surveilance and active edges.

The school is currently developing their branding and signage which will influence the wayfinding and signage to the new development. Clear directional signage will be located at each vehicle and pedestrian entrance across the campus. The number of vehicle entrances has been reduced in the proposed development and two new pedestrian points have been created to give clear access to the Learning Centre and the Entrepreneurial Hub.

A site-wide landscape masterplan has been developed as part of this redevelopment and will be implimented in stages. The stages have been considered very carefully to integrate into the existing landscape for the short term whilst still also providing clear pathways across the campus in both the east-west and north-south directions.

4.0 Concept Design Response

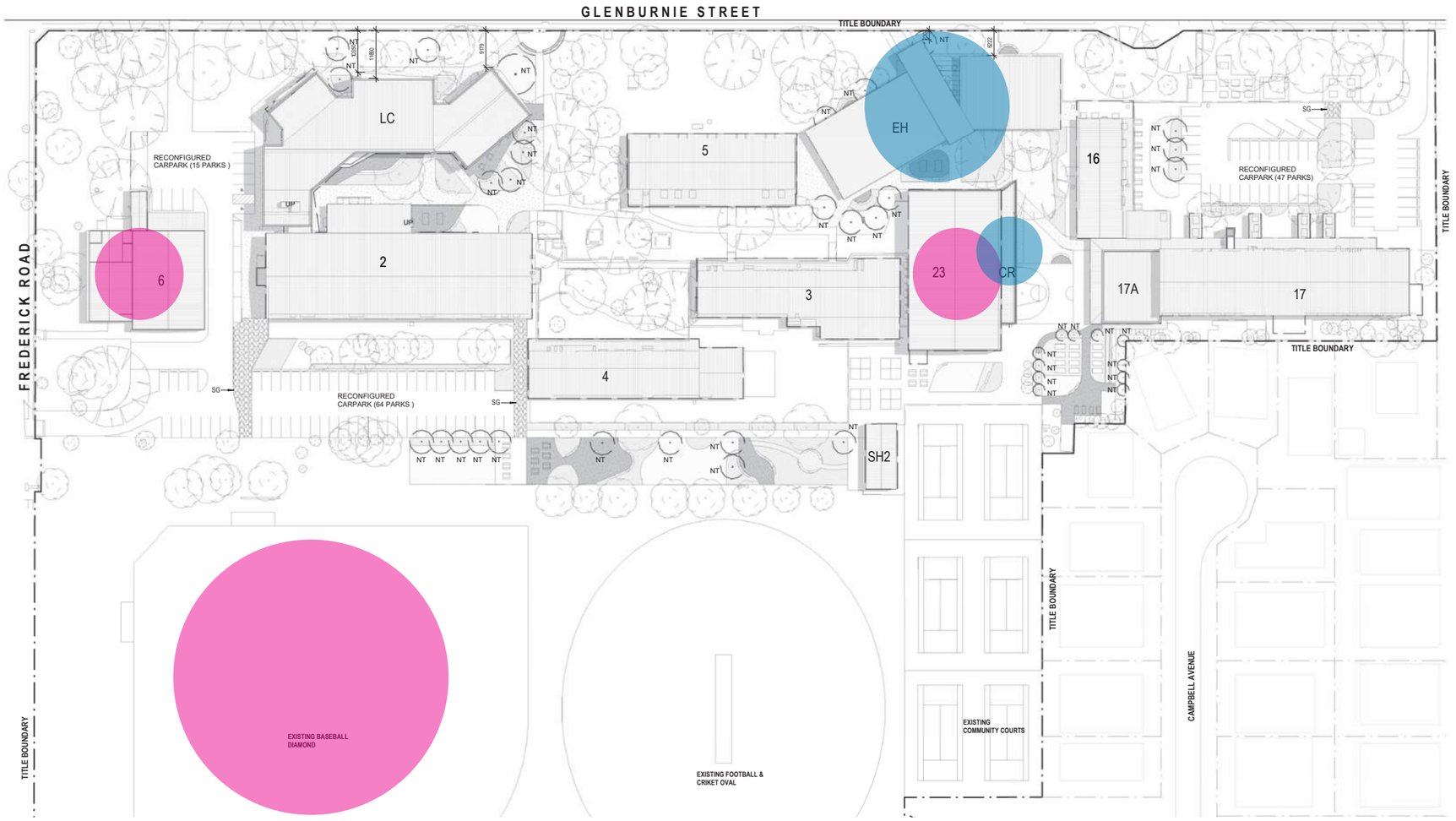
Public Use of School Facilities

The current use of the school facilities are:

- Baseball field and baseball shed are used all year around including weekend.
- The gym is used Monday, Tuesday and Thursday evenings all year round by a variety of sporting clubs.
- The Port Adelaide Greek School currently use the gym however it is understood that they are looking for an alternative facility.

The future use of the school facilities will be:

- Baseball field and baseball shed as per current use. The new change rooms adjacent to the Gym will also become available if/ when required.
- The Gym will continue to be used by different sporting clubs who will also have access to the new change room facilities.
- The Entrepreneurial Hub will be accessible by community groups interacting with the school. The 'shop front' GLA will be open to the public on particular days when students are able to sell the products they have designed/manufactured.
- The Entrepreneurial Hub is a flexible space that could be hired out for meetings, presentation, etc.



Current public use of school facilities

Future public use of school facilities

5.0 Drawings

The following drawings are a preliminary set of architectural concept plans and sections to demonstrate the design intent developed thus far.

GLENBURNIE STREET

FREDERICK ROAD

TITLE BOUNDARY

EXISTING MAIN ENTRANCE TO BE RECONFIGURED

EXO

EXISTING CARPARK TO BE RECONFIGURED

EXISTING CROSSOVER NO LONGER IN USE

EXISTING CROSSOVER TO BE WIDENED

EXISTING CARPARK TO BE REMOVED

EXISTING CARPARK TO BE RECONFIGURED

EXISTING GARDEN BED TO BE REMOVED

EXISTING CROSSOVER TO BE WIDENED

EXISTING CHAIN WIRE FENCE TO BE REMOVED

EXISTING CARPARK TO BE RECONFIGURED

EXISTING CARPARK TO BE REMOVED

EXISTING SCHOOL TENNIS COURTS TO BE RESURFACED

EXISTING COMMUNITY COURTS

EXISTING BASEBALL DIAMOND

EXISTING FOOTBALL & CRIKET OVAL

EXISTING SOCCER PITCH

COMMUNITY PLAYGROUND (RAYMOND RESERVE)

CAMPBELL AVENUE

RAYMOND AVENUE

LADD STREET

1 2 3 4 5 6 7 8 10 11 12 14 15 16 17 17A 23 25 26 27 SH2 SH6

REVISION INFORMATION

Revision	Issue	Date
A	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
B	ISSUE FOR PLANNING	04.11.19

DEMOLITION LEGEND

- DEMO BUILDINGS AND SHEDS
- REMOVE PLANTERS
- REMOVE TREES AND FIXTURE

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Project: Seaton High School Redevelopment

Glenburnie Street,
Seaton 5023,
South Australia

Title: Existing & Demolition Site Plan

Scale @ A1: **As indicated**

Revision: B

Date: **04.11.19**

Project No: 02619

Drawing No: SK-001

FOR APPROVAL

GLENBURNIE STREET

FREDERICK ROAD

TITLE BOUNDARY

LC

EH

5

16

2

6

3

23

CR

17A

17

4

SH2

RECONFIGURED CARPARK (15 PARKS)

RECONFIGURED CARPARK (64 PARKS)

RECONFIGURED CARPARK (47 PARKS)

UP

SG

NT

EXISTING BASEBALL DIAMOND

EXISTING FOOTBALL & CRIKET OVAL

EXISTING COMMUNITY COURTS

COMMUNITY PLAYGROUND (RAYMOND RESERVE)

CAMPBELL AVENUE

RAYMOND AVENUE

LADD STREET

EXISTING SOCCER PITCH

48

REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.09.2019
B	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
C	ISSUE FOR PLANNING	04.11.19

LEGEND

EXO	EXISTING CROSSOVER
NT	NEW TREE
ET	EXISTING TREE
LS	LANDSCAPING BED
XLA	EXISTING LAWN
LA	LAWN
SE	BUILT IN SEATING TO LANDSCAPE
TT	TABLE TENNIS TABLE
B	BOLLARD
BT	BITUMEN
SG	SURFACE GRAPHIC

EXTERNAL FINISHES LEGEND

REFER TO 6.0 EXTERNAL MATERIALS FOR FURTHER DETAILS & COLOURS

PV1	PAVING TYPE 1
PV2	PAVING TYPE 2
M1	POWDERCOATED METAL ROOF
M2	POWDERCOATED METAL WALL CLADDING
M3	PAINTED METAL SHROUD
M4	PERFORATED METAL
L1	VERTICAL ALUMINIUM LOUVRE
L2	HORIZONTAL ALUMINIUM LOUVRE
G1	VISION GLASS
G2	SPANDREL GLAZING
C1	NATURAL GREY PRECAST CONCRETE
C2	PAINTED PRECAST CONCRETE

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Project: Seaton High School Redevelopment

Glenburnie Street,
Seaton 5023,
South Australia

Title: Proposed Site Plan

Scale @ A1: **As indicated**

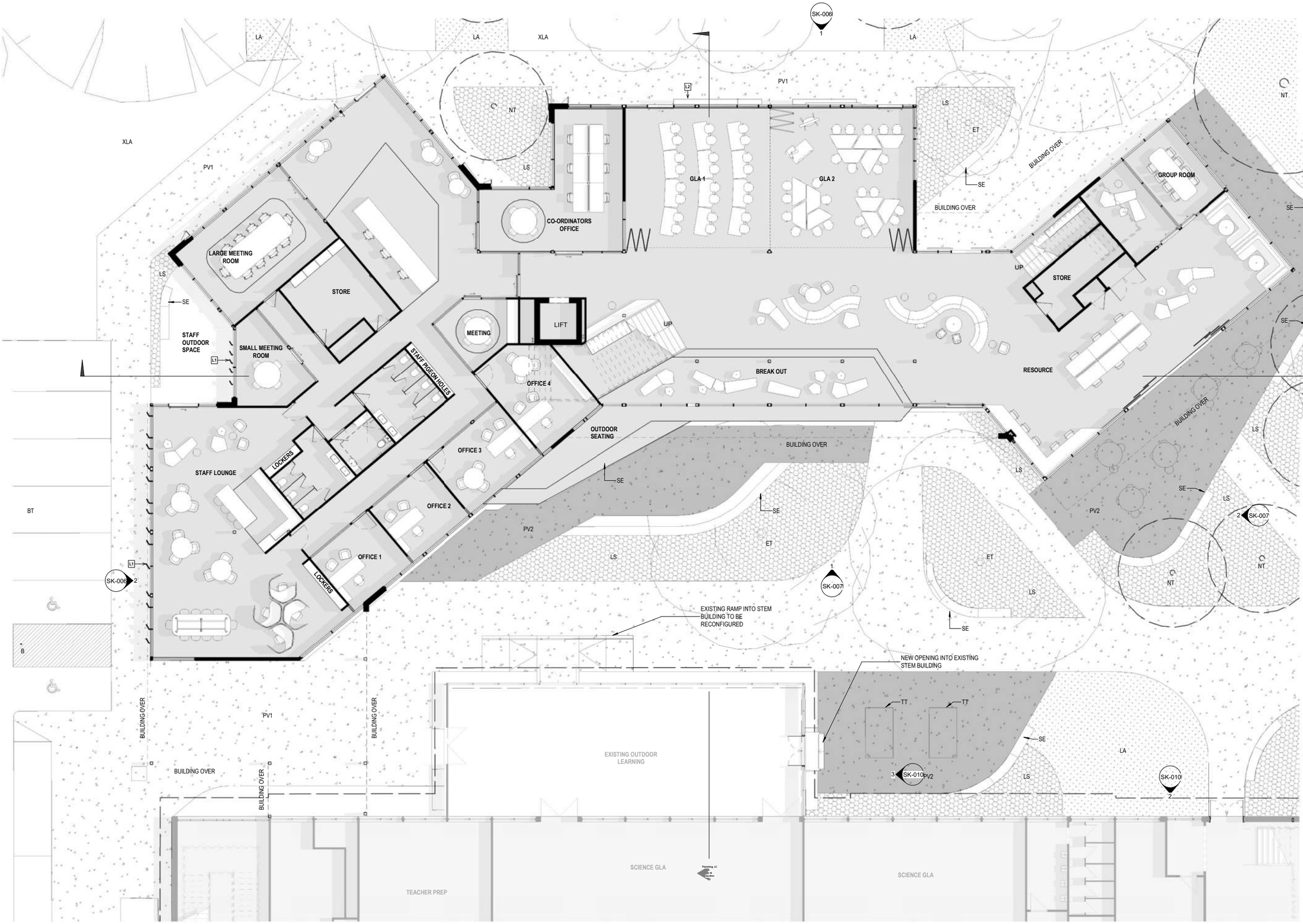
Date: **04.11.19**

Revision: C

Project No: 02619

Drawing No: SK-002

FOR APPROVAL



REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	30.08.2019
B	PRELIMINARY ISSUE	05.09.2019
C	PERLIMINARY ISSUE	16.09.2019
D	PRELIMINARY ISSUE	19.09.2019
E	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
F	PRELIMINARY ISSUE	01.10.2019
G	PRELIMINARY ISSUE	02.10.2019
H	ISSUE FOR PLANNING	04.11.19

LEGEND

EXO	EXISTING CROSSOVER
NT	NEW TREE
ET	EXISTING TREE
LS	LANDSCAPING BED
XLA	EXISTING LAWN
LA	LAWN
SE	BUILT IN SEATING TO LANDSCAPE
TT	TABLE TENNIS TABLE
B	BOLLARD
BT	BITUMEN
SG	SURFACE GRAPHIC

EXTERNAL FINISHES LEGEND

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C1	NATURAL GREY PRECAST CONCRETE
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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

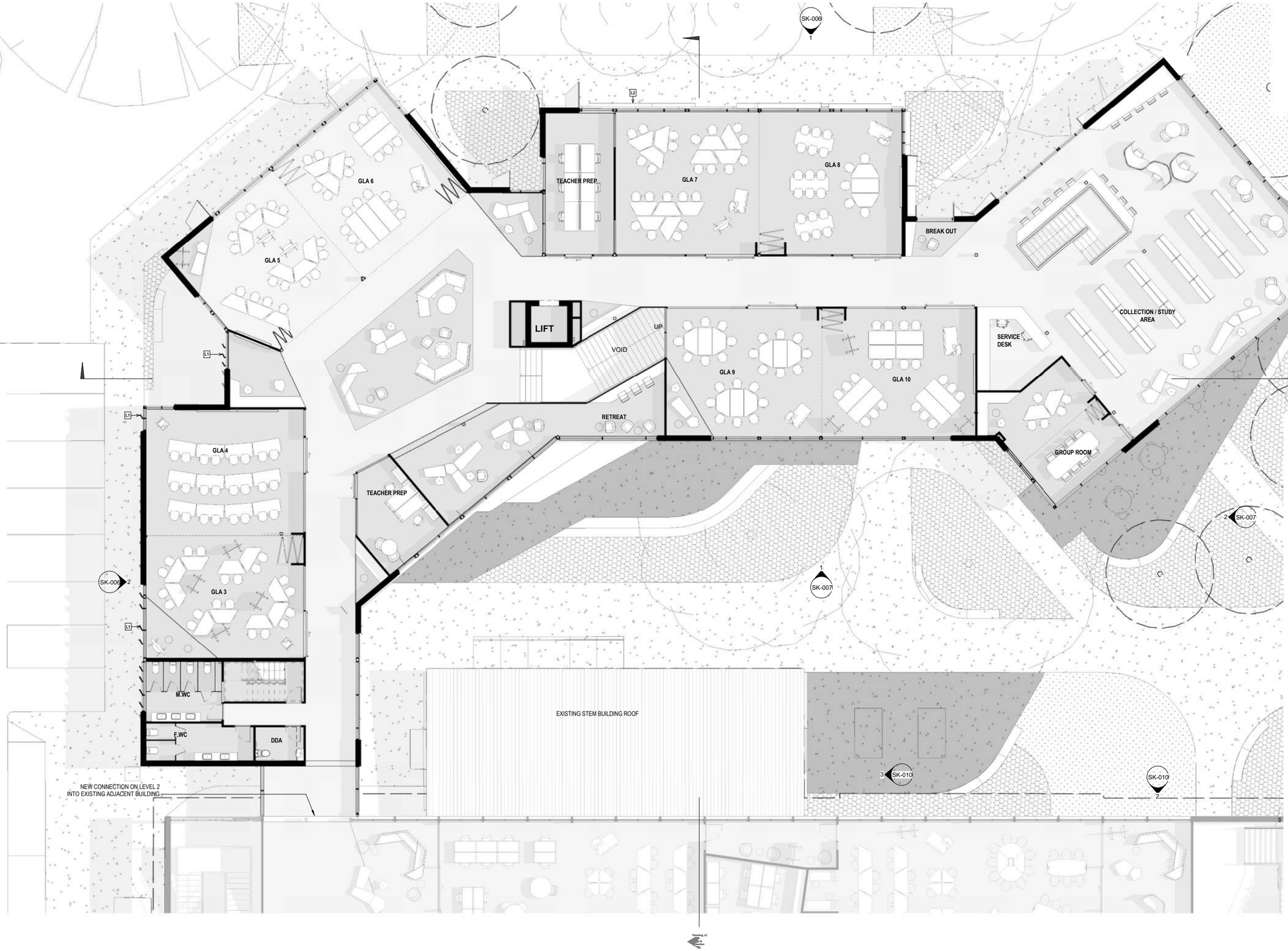
Title: Learning Centre - Level 1 FLoor Plan

Scale @ A1: 1 : 100
Revision: H
Date: 04.11.19

Project No: 02619

Drawing No: SK-003

FOR APPROVAL



REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	30.08.2019
B	PRELIMINARY ISSUE	05.09.2019
C	PERLIMINARY ISSUE	16.09.2019
D	PRELIMINARY ISSUE	19.09.2019
E	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
F	PRELIMINARY ISSUE	01.10.2019
G	PRELIMINARY ISSUE	02.10.2019
H	ISSUE FOR PLANNING	04.11.19

LEGEND

EXO	EXISTING CROSSOVER
NT	NEW TREE
ET	EXISTING TREE
LS	LANDSCAPING BED
XLA	EXISTING LAWN
LA	LAWN
SE	BUILT IN SEATING TO LANDSCAPE
TT	TABLE TENNIS TABLE
B	BOLLARD
BT	BITUMEN
SG	SURFACE GRAPHIC

EXTERNAL FINISHES LEGEND

REFER TO 6.0 EXTERNAL MATERIALS FOR FURTHER DETAILS & COLOURS

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PV2	PAVING TYPE 2
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C2	PAINTED PRECAST CONCRETE

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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

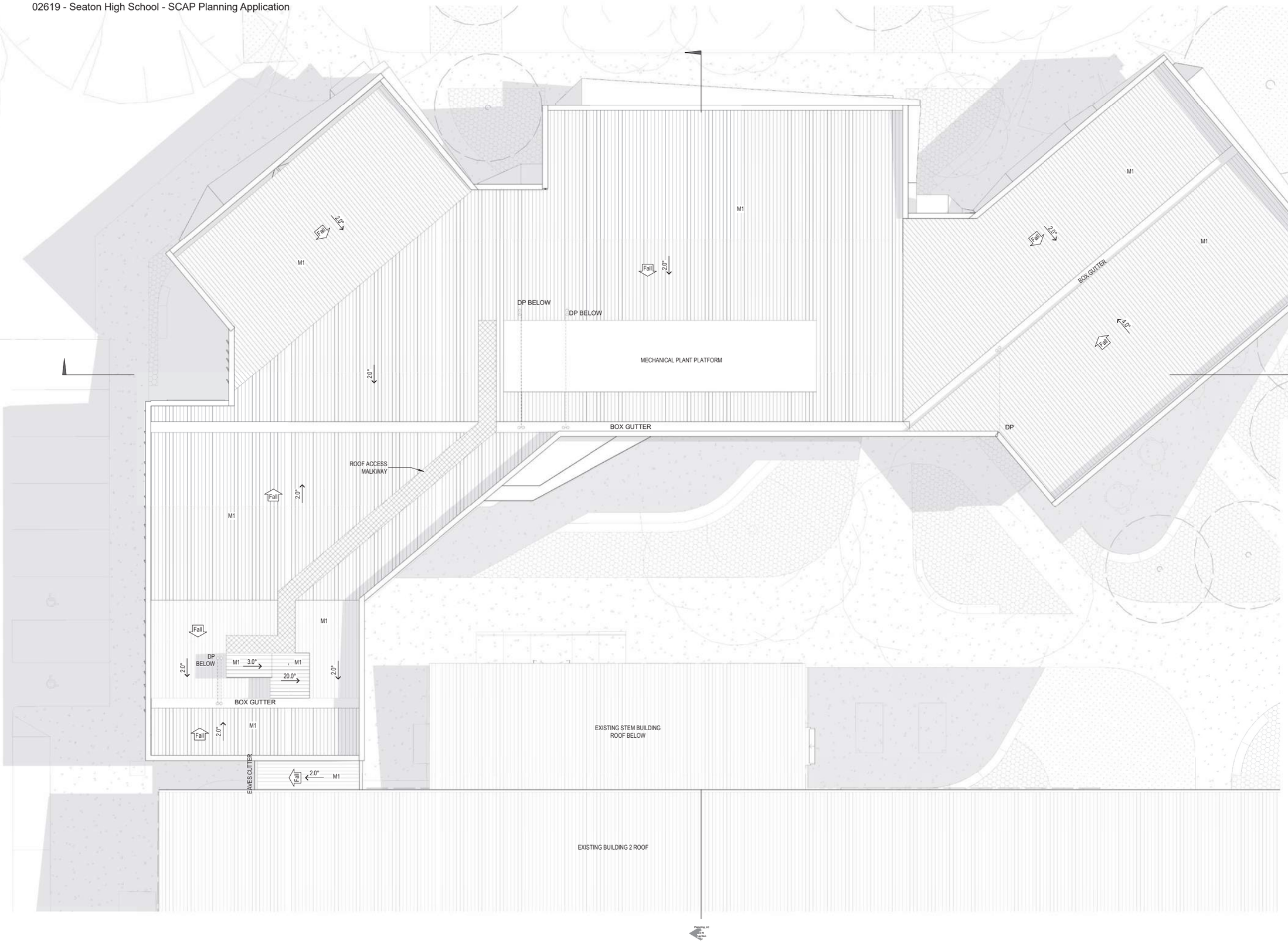
Title: Learning Centre -Level 2 Floor Plan

Scale @ A1: **1 : 100**
Revision: H
Date: **04.11.19**

Project No: 02619

Drawing No: SK-004

FOR APPROVAL



REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	30.08.2019
B	PRELIMINARY ISSUE	16.09.2019
C	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
D	PRELIMINARY ISSUE	01.10.2019
E	PRELIMINARY ISSUE	02.10.2019
F	ISSUE FOR PLANNING	04.11.19

LEGEND

EXO	EXISTING CROSSOVER
NT	NEW TREE
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LS	LANDSCAPING BED
XLA	EXISTING LAWN
LA	LAWN
SE	BUILT IN SEATING TO LANDSCAPE
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B	BOLLARD
BT	BITUMEN
SG	SURFACE GRAPHIC

EXTERNAL FINISHES LEGEND

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C2	PAINTED PRECAST CONCRETE

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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

Title: Learning Centre - Roof Plan

Scale @ A1: 1 : 100
Date: 04.11.19
Revision: F

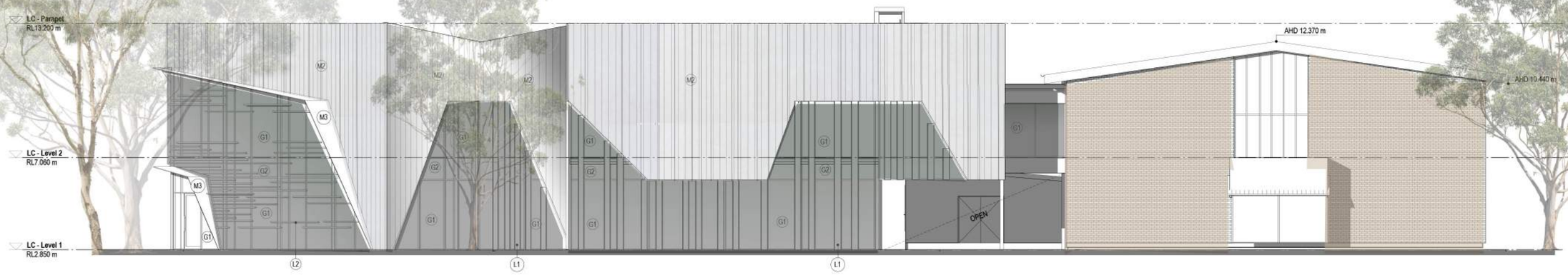
Project No: 02619
Drawing No: SK-005

FOR APPROVAL

REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.10.2019
B	ISSUE FOR PLANNING	04.11.19

1 Learning Centre - Elevation North
Scale 1 : 100



2 Learning Centre - Elevaion West
Scale 1 : 100

LEGEND

EXO	EXISTING CROSSOVER
NT	NEW TREE
ET	EXISTING TREE
LS	LANDSCAPING BED
XLA	EXISTING LAWN
LA	LAWN
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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

Title: Learning Centre - Building Elevations

Scale @ A1: 1 : 100
Revision: B
Date: 04.11.19

Project No: 02619

Drawing No: SK-006

FOR APPROVAL

1 Learning Centre - Elevation South
Scale 1 : 100

2 Learning Centre - Elevation East
Scale 1 : 100

REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.10.2019
B	ISSUE FOR PLANNING	04.11.19

LEGEND

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NT	NEW TREE
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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

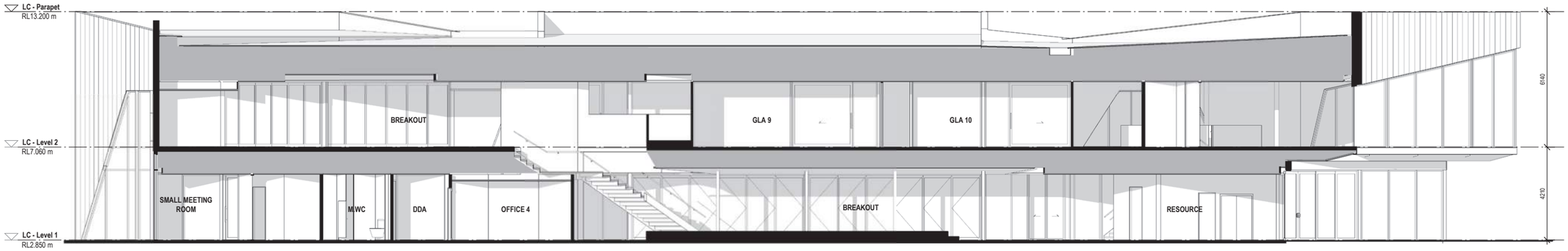
Title: Learning Centre - Building Elevations

Scale @ A1: 1 : 100
Revision: B
Date: 04.11.19

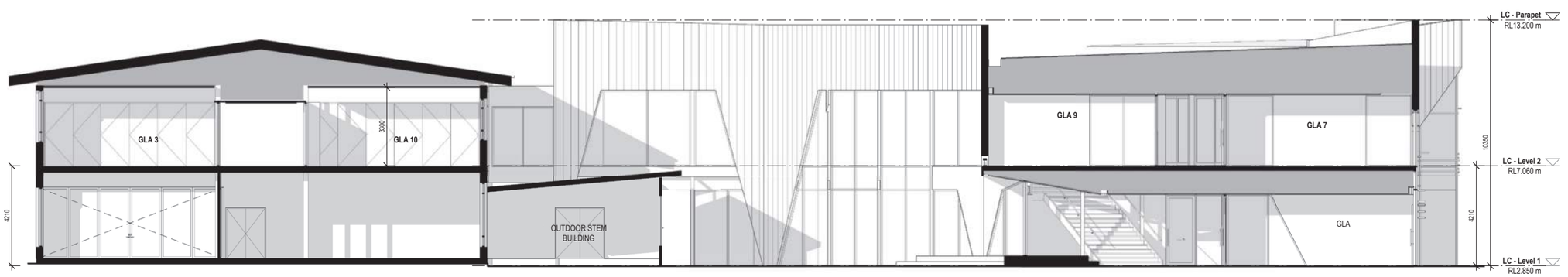
Project No: 02619

Drawing No: SK-007

FOR APPROVAL



1 Learning Centre Section 1
1. A-LC-1-51 Scale 1 : 100



2 Learning Centre Section 2
1. A-B2-1-03 Scale 1 : 100

REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.09.2019
B	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
C	PRELIMINARY ISSUE	01.10.2019
D	PRELIMINARY ISSUE	02.10.2019
E	ISSUE FOR PLANNING	04.11.19

LEGEND

EXO	EXISTING CROSSOVER
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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

Title: Learning Centre - Building Sections

Scale @ A1: **1 : 100**
Revision: E
Date: **04.11.19**

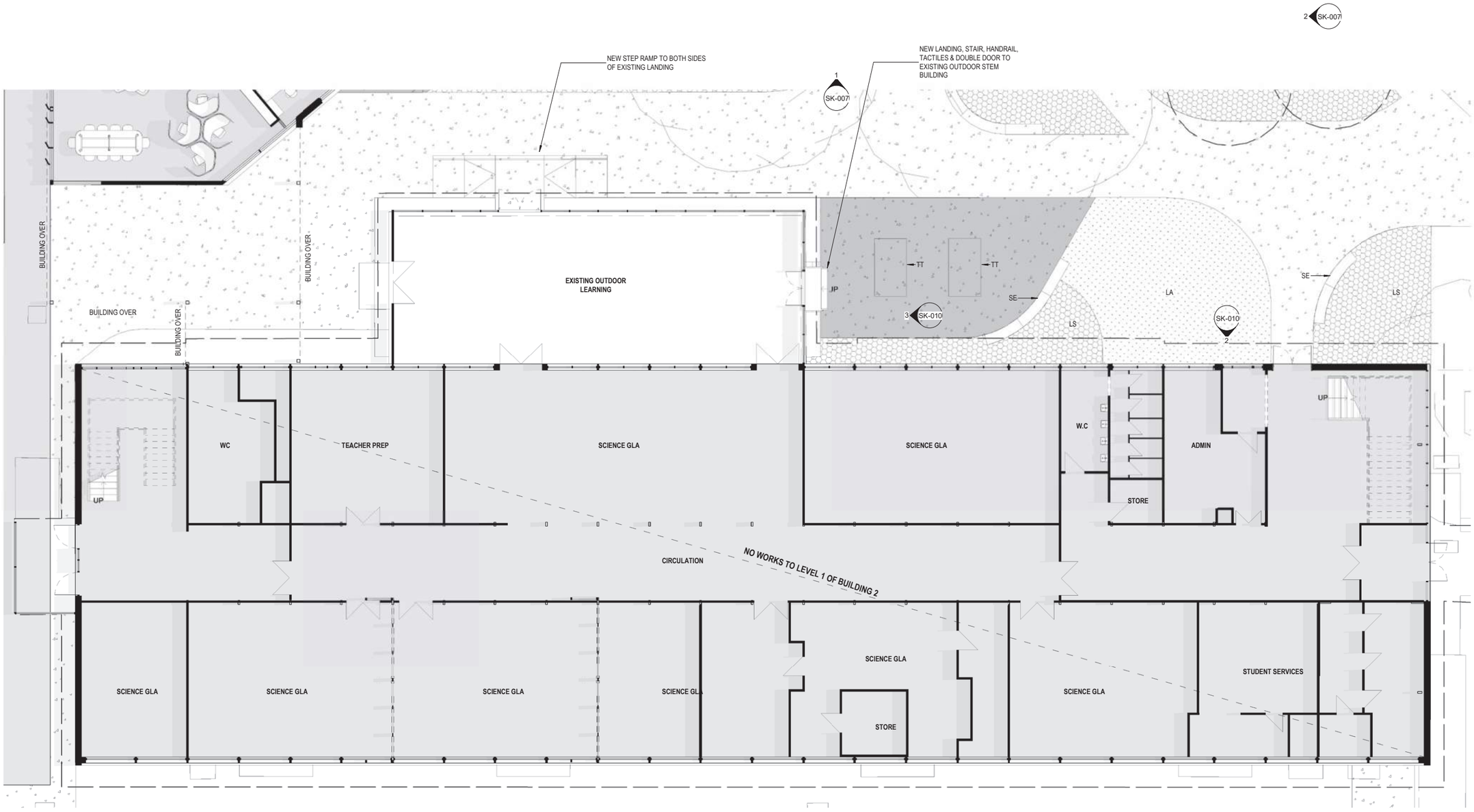
Project No: 02619

Drawing No: SK-008

FOR APPROVAL

REVISION INFORMATION

Revision	Issue	Date
A	ISSUE FOR PLANNING	04.11.19



LEGEND

EXO	EXISTING CROSSOVER
NT	NEW TREE
ET	EXISTING TREE
LS	LANDSCAPING BED
XLA	EXISTING LAWN
LA	LAWN
SE	BUILT IN SEATING TO LANDSCAPE
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B	BOLLARD
BT	BITUMEN
SG	SURFACE GRAPHIC

EXTERNAL FINISHES LEGEND

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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

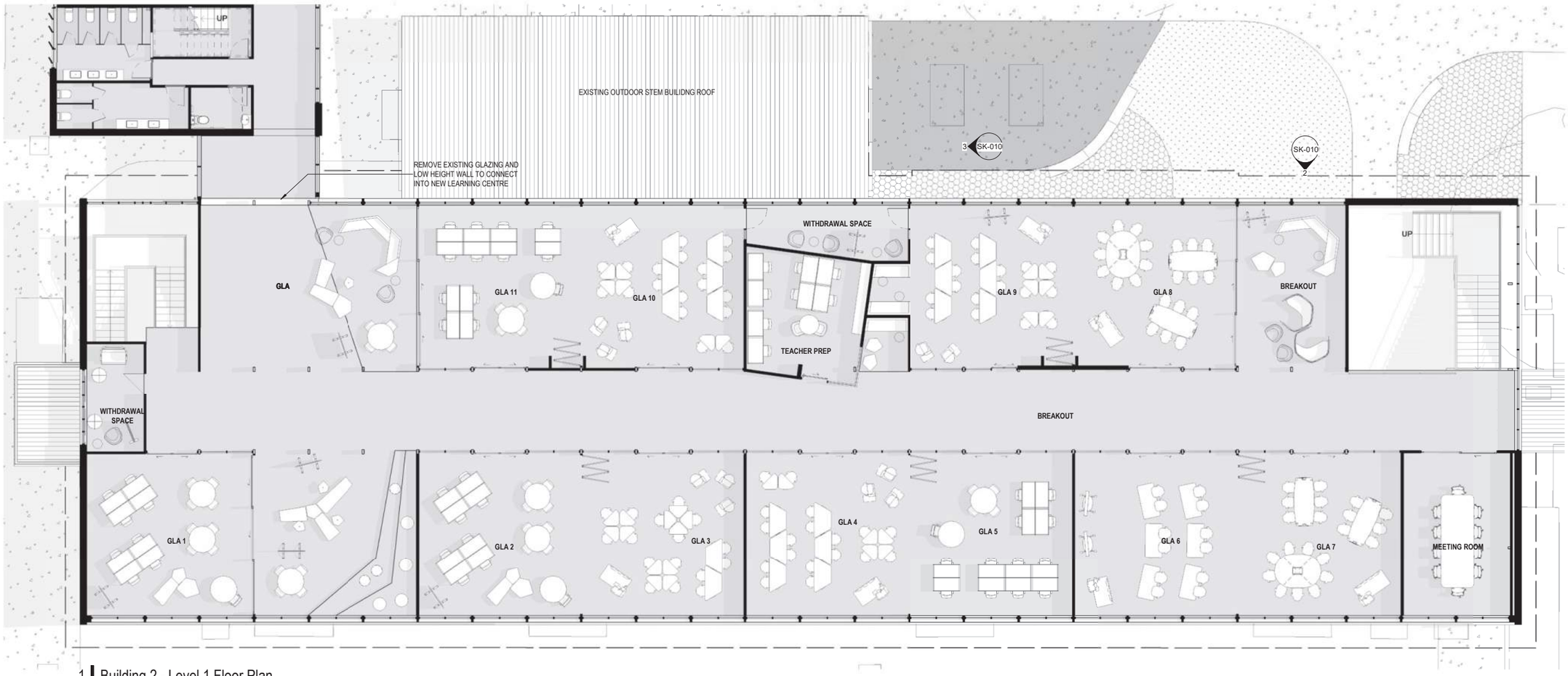
Title: Building 2 - Level 1 Floor Plan

Scale @ A1: 1 : 100
Revision: A
Date: 04.11.19

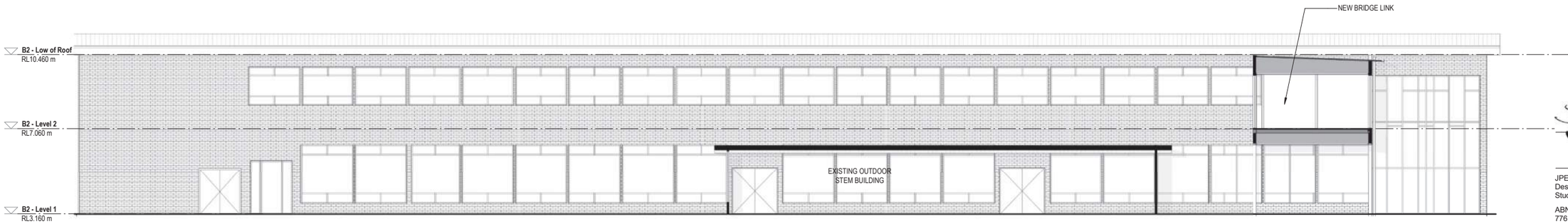
Project No: 02619

Drawing No: SK-009

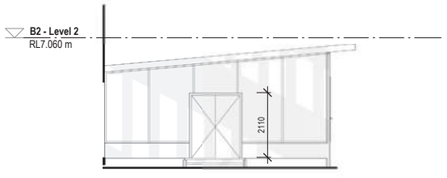
FOR APPROVAL



1 Building 2 - Level 1 Floor Plan
Scale 1 : 100



2 Building 2 - Elevation North
2. A-B2-1-01 Scale 1 : 100



3 Building 2 - elevation East
1. A-B2-1-01 Scale 1 : 100

REVISION INFORMATION

Revision	Issue	Date
A	ISSUE FOR PLANNING	04.11.19

LEGEND

EXO	EXISTING CROSSOVER
NT	NEW TREE
ET	EXISTING TREE
LS	LANDSCAPING BED
XLA	EXISTING LAWN
LA	LAWN
SE	BUILT IN SEATING TO LANDSCAPE
TT	TABLE TENNIS TABLE
B	BOLLARD
BT	BITUMEN
SG	SURFACE GRAPHIC

EXTERNAL FINISHES LEGEND

REFER TO 6.0 EXTERNAL MATERIALS FOR FURTHER DETAILS & COLOURS

PV1	PAVING TYPE 1
PV2	PAVING TYPE 2
M1	POWDERCOATED METAL ROOF
M2	POWDERCOATED METAL WALL CLADDING
M3	PAINTED METAL SHROUD
M4	PERFORATED METAL
L1	VERTICAL ALUMINIUM LOUVRE
L2	HORIZONTAL ALUMINIUM LOUVRE
G1	VISION GLASS
G2	SPANDREL GLAZING
C1	NATURAL GREY PRECAST CONCRETE
C2	PAINTED PRECAST CONCRETE

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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

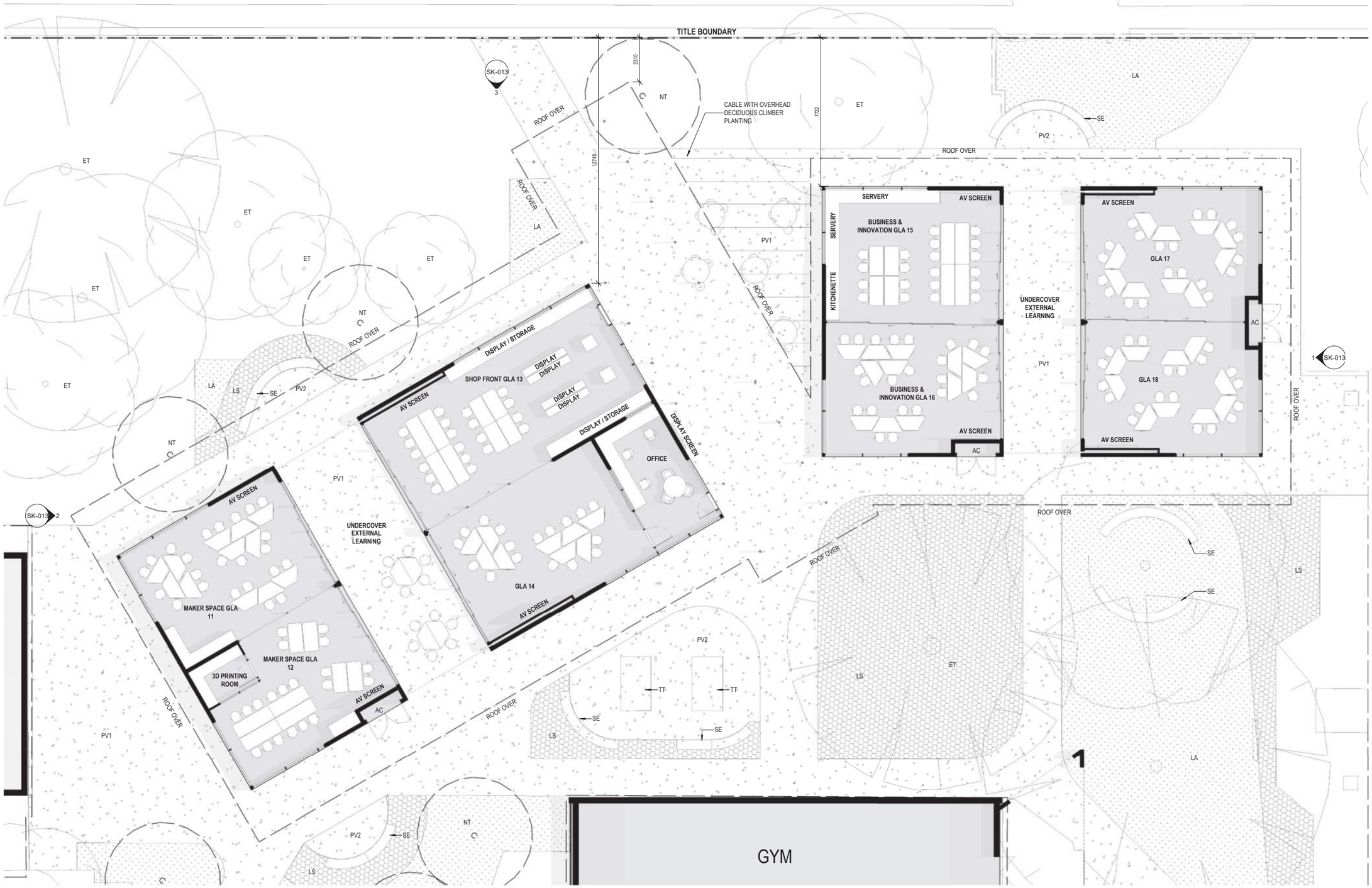
Title: Building 2 - Level 2 Floor Plan

Scale @ A1: 1 : 100
Date: 04.11.19
Revision: A

Project No: 02619
Drawing No: SK-010

FOR APPROVAL

GLENBURNIE STREET



REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.09.2019
B	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
C	ISSUE FOR PLANNING	04.11.19

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XLA	EXISTING LAWN
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SE	BUILT IN SEATING TO LANDSCAPE
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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

Title: Entrepreneurial Hub - Level 1 Floor Plan

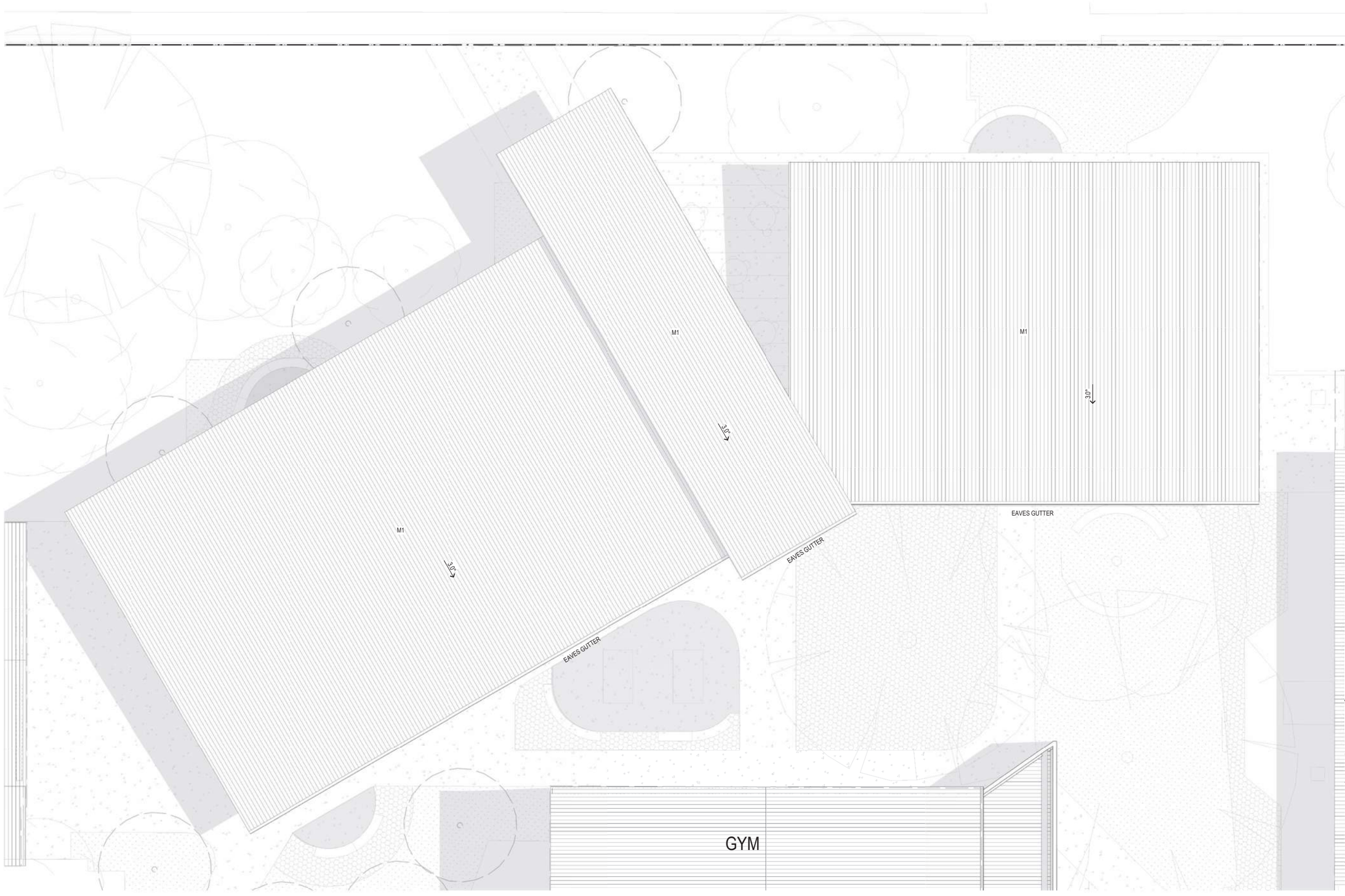
Scale @ A1: 1 : 100
Date: 04.11.19
Revision: C

Project No: 02619
Drawing No: SK-011

FOR APPROVAL

REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.09.2019
B	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
C	ISSUE FOR PLANNING	04.11.19



LEGEND

EXO	EXISTING CROSSOVER
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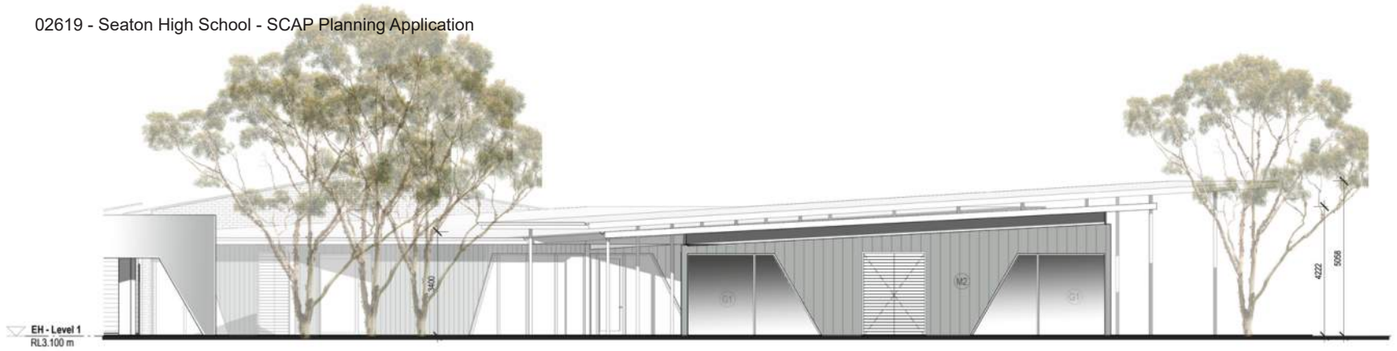
Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

Title: Entrepreneurial Hub - Roof Plan

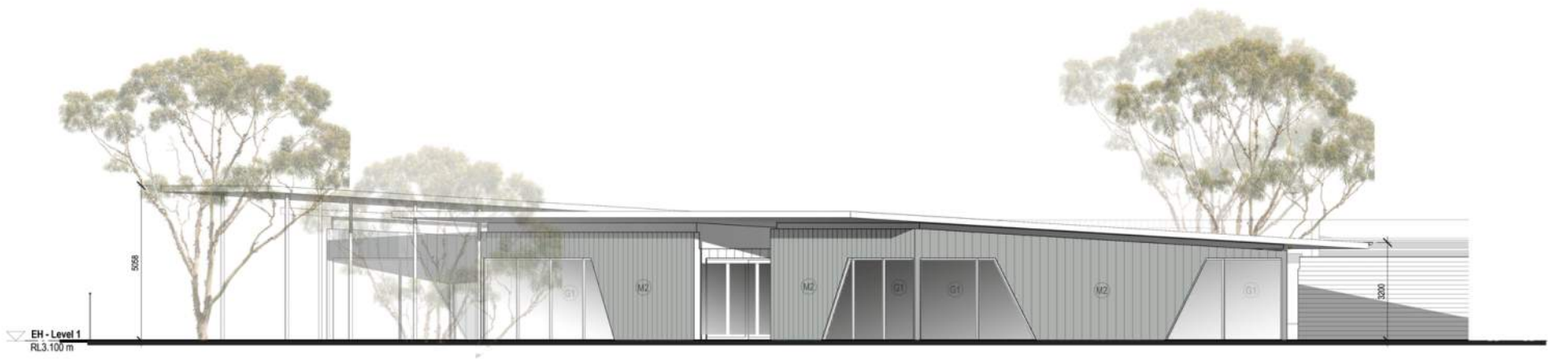
Scale @ A1: **1 : 100**
Date: **04.11.19**
Revision: C

Project No: 02619
Drawing No: SK-012

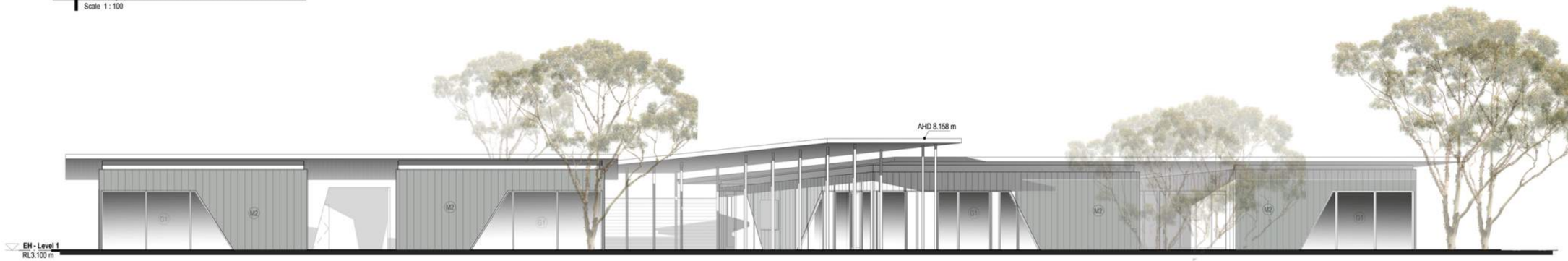
FOR APPROVAL



1 Entrepreneurial Hub - Elevation East
Scale 1 : 100



2 Entrepreneurial Hub - Elevation West
Scale 1 : 100



3 Entrepreneurial Hub - Elevation North
Scale 1 : 100

4 Entrepreneurial Hub - Elevation South
Scale 1 : 100

REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.09.2019
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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

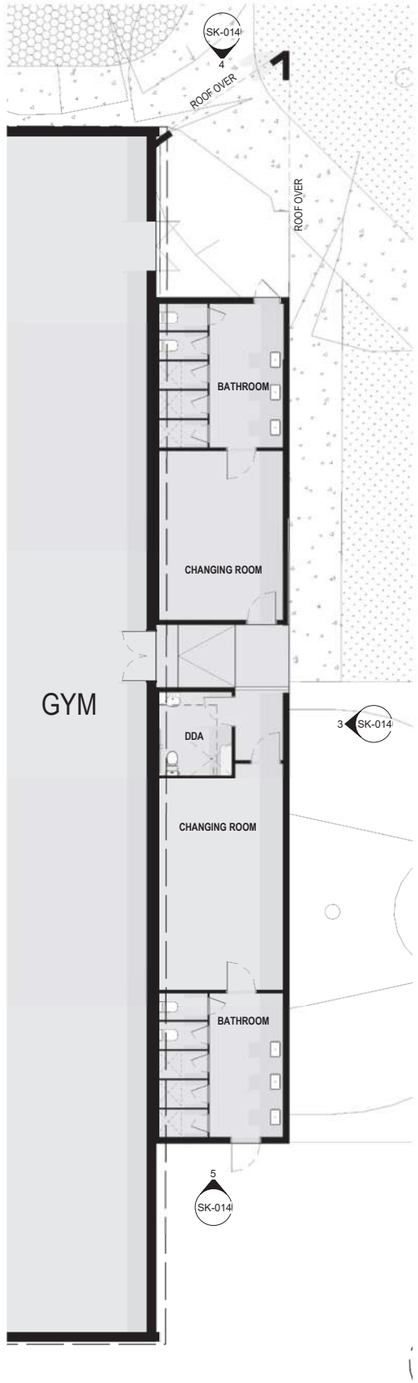
Title: Entrepreneurial Hub - Building Elevations

Scale @ A1: 1 : 100
Date: 04.11.19
Revision: C

Project No: 02619

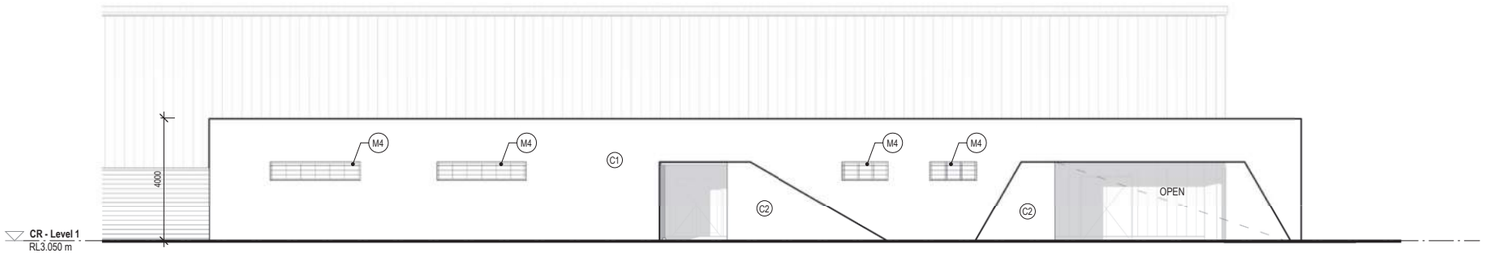
Drawing No: SK-013

FOR APPROVAL

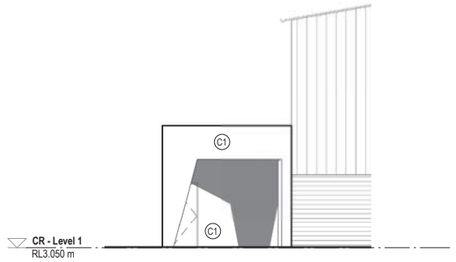


1 Change Room - Level 1 Floor Plan
Scale 1 : 100

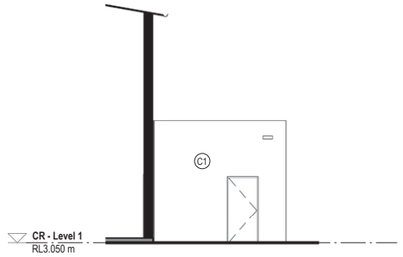
2 Change Room - Roof Plan
Scale 1 : 100



3 Change Room - Elevation East
Scale 1 : 100



4 Change Room - Elevation North
Scale 1 : 100



5 Change Room - Elevation South
Scale 1 : 100

REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	02.09.2019
B	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
C	ISSUE FOR PLANNING	04.11.19

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Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023,
South Australia

Title: Change Room - Level 1 Floor Plan, Roof Plan & Elevations

Scale @ A1: **1 : 100**
Revision: C
Date: **04.11.19**

Project No: 02619
Drawing No: SK-014

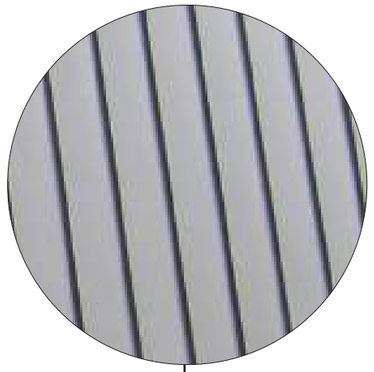
FOR APPROVAL

6.0 External Materials & Palette

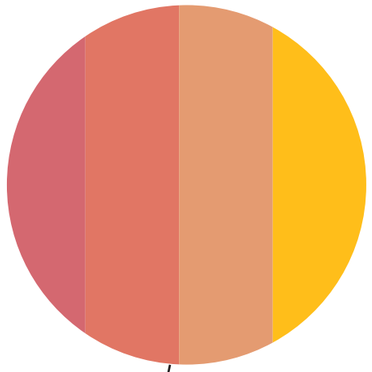
External Building Materials - Learning Centre

L2: Coloured aluminium horizontal louvres. Colour: TBC

M2: Standing seam metal panel facade cladding. Colour: Light Grey



M3: Painted metal shroud. Colour: TBC - gradient of colours around the shroud, inspiration from landscape palette



G2: Spandrel glass / glazing. Colour: Grey tinted to match G1

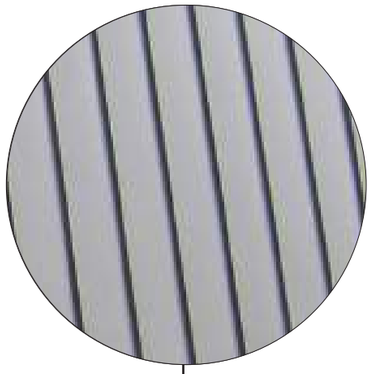
G1: Performance glass / glazing. Colour: Grey tinted

L1: Coloured aluminium vertical louvres. Colour: Dark grey to match glazing framing

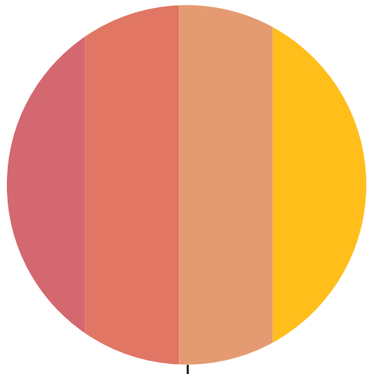
6.0 External Materials & Palette

External Building Materials - Entrepreneurial Hub

M2: Standing seam metal panel facade cladding. Colour: Light grey



M3: Painted metal shroud. Colour: TBC - gradient of colours around the shroud, inspiration from landscape palette



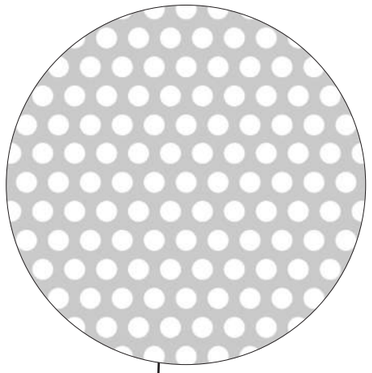
G1: Performance glass / glazing. Colour: Grey tinted

M1: Metal roof sheeting to both sides. Colour: Light Grey

6.0 External Materials & Palette

External Building Materials - Change Rooms

M3: Perforated metal panel.
Colour: Light grey



C1: Precast concrete. Colour: White/grey Concrete

C2: Painted precast concrete.
Colour: TBC - potential artwork by students

6.0 External Materials & Palette

Landscape Materials

The material palette has been chosen to be robust and low maintenance while providing visual interest and functionality. In some areas the existing surface materials will be retained (eg existing asphalt to the car parks).

MATERIALS

FEATURE

Porous Resin Bound Gravel (GR)

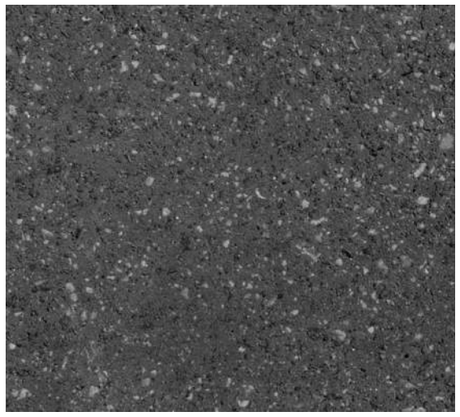
Surface Graphic (SG)

Precast Concrete (SE)

SURFACES

Insitu Concrete (PV1): ‘Barossa Moonscape’

Insitu Concrete (PV2): ‘Barossa’



Bitumen (BT)

Compacted Gravel (CG)

Organic Mulch

EDGES

Steel Edging

Timber Edging

WSUD Concrete Kerb

6.0 External Materials & Palette

Landscape Palette

The furniture has been chosen to be robust and low maintenance while providing a bespoke feel, visual interest and functionality. Where possible the existing removed furniture is to be reused on site.

FURNITURE

FEATURE

Table Tennis with Student Artwork

Kitchen Garden Beds

NATURE

Salvaged Tree Trunks - Seating and Habitat

Boulder Seating

SITE - PROPRIETARY

Proprietary Furniture - Picnic Tables

Proprietary Furniture - Loose Cafe Style

Proprietary - Work Tables

Proprietary - Movable Bin

Proprietary - Cycle Racks

SITE - CUSTOM

Custom - Precast Modular Seating

Custom - Precast Modular Feature Seating

6.0 External Materials & Palette

Planting Palette

The trees palette has been chosen to suit the different environments and needs across the site. Deciduous and evergreen tree species will assist in creating a comfortable environment throughout the year.

TREES

Chinese Elm . Ulmus parvifolia

Dwarf Blue-Gum . Eucalyptus ‘Euky Dwarf’

American Sweetgum . Liquidambar styraciflua

Ginkgo - Ginkgo biloba

Crepe Myrtle - Lagerstroemia indica ‘Natchez’

6.0 External Materials & Palette

Planting Palette

The ornamental planting has been chosen to provide visual interest throughout the seasons while being low maintenance and easy to care for.

PLANTS - ORNAMENTAL

Top Row
Ajuga reptans
Anigozanthos flavidus
Arthropodium cirratum
Austrostipa stipoides
Centaurea cineraria
Chrysocephalum apiculatim
Conostylis candicans
Caspedia glauca
Dampiera linearis
Darwinia ‘Seaspray’

Bottom Row
Dianella Caerulea
Dietes grandiflora
Hardenbergia comptoniana
Isopogon anemonifolius
Leucophyta brownii
Lomandra ‘Tanika’
Myoporum parvifolium
Poa labillardieri ‘Eskadale’
Scaevola aemula
Senecio serpens

6.0 External Materials & Palette

Planting Palette

This palette demonstrates a selection of hardy, ornamental plants that are well suited to a high use, coastal environment. Consideration has been given to plants that can be used in the curriculum.

PLANTS - NATIVE GARDENS

Top Row

Carpobrotus rossii	(Coastal Pigface)
Kunzea pomifera	(Muntries)
Mentha australis	(Native Mint)
Acacia glaucoptera	(Clay Wattle)
Enchylaena tomentosa	(Ruby Saltbush)
Rhagodia candolleana	(Sea Berry Saltbush)
Rhagodia spinescens	(Spiny Saltbush)
Acmena smithii	(Lily Pily)
Melaleuca nesophila	(Showy Honey Myrtle)
Lomandra longifolia	(Spiny Mat Rush)

Bottom Row

Cymbopogon ambiguus	(Native Lemongrass)
Melaleuca alternifolia	(Tea Tree)
Eremophila longifolia	(Emu Bush)
Hibbertia scandens	(Snake Vine)
Apium prostratum	(Native Celery)
Billardiera cymosa	(Sweet Apple Berry)
Tetragonia tetragonoides	(Warrigal Greens)
Nitraria billardierei	(Nitre Bush)
Santalum acuminatum	(Quandong)
Citrus glauca	(Desert Lime)

6.0 External Materials & Palette

Planting Palette

Expanding on the existing FLO productive garden, these plant species have been selected to thrive in the environment and provide seasonal produce. Some species will be grown by students on site prior to the completion of the project.

PLANTS - PRODUCTIVE GARDENS

Top Row

Horticulture Garden

Prunus armeniaca	Apricot Moorpark (D)
Mangifera indica	Mango (E)
Citrus reticulata	Mandarin Imperial (E)
Fortunella margarita	Kumquat Marumi (E)
Prunus persica	Peach ANZAC (D)
Citrus hystrix	Lime Kaffir (E)

Site

Morus alba	White Mulberry (D)
Punica granatum	Pomegranate (D)
Eriobotrya japonica	Loquat (E)
Ficus carica	Fig Genoa (D)

Bottom Row

Trained

Vitis vinifera	Table Grape (D)
Rubus idaeus	Raspberry (D)
Rubus ursinus × Rubus idaeus	Boysenberry (D)

Garden Beds

Annual Vegetables - by school
Perennial Vegetables - by school
Perennial Herbs - by school
Companion Flowers - by school

6.0 External Materials & Palette

Planting Palette

Selected in conjunction with the school these plants have been chosen to contribute to the curriculum in a meaningful way.

PLANTS - CURRICULUM

Top Row		Bottom Row	
Bambusa gracilis	Bamboo	Juncus Pallidus	Pale Rush
Bambusa arnhemica	Bamboo	Indigofera australis	Native Indigo
Salix babylonica	Willow	Buddleja davidii	Butterfly Bush
Linum usitatissimum	Flax	Iresine herbstii	Bloodleaf
Agave sisalana	Sisal	Dodonaea viscoa	Stick Hop-Bush
Iris unguicularis	Algerian Iris	Callistemon	Bottlebrush ‘Green John’
Narcissus spp.	Daffodil	Grevillea	Grevillea ‘Bronze Rambler’
Phormium tenax	New Zealand Flax	Leptospermum laevigatum	Tea Tree ‘Fore Shore’
Lomandra longifolia	Spiny-head Mat-rush	Atriplex semibaccata	Creeping Saltbush
Melaleuca ericifolia	Swamp Paperbark	Betula pendula	Silver Birch

6.0 External Materials & Palette

Planting Palette

Where possible, raingardens will be implemented at the edges of existing car parks. The plant palette is designed to respond to this difficult environment.

PLANTS - WSUD

Top Row
Baumea juncea
Carex appressa
Juncus krausii
Juncus pallidus
Cyperus gymnocaulos
Ficinia nodosa
Gahnia filum
Calocephalus citreus
Wahlenbergia luteola
Xerochrysum bracteatum

Bottom Row
Goodenia ovata
Microlaena stipoides
Poa labillardieri
Mimulus repens
Selliera radicans
Glycine tabacina
Mentha satureioides
Melaleuca ericifolia
Dianella revoluta
Banksia marginata

7.0 Model Views & Perspectives

Perspective 01 - Learning Centre

7.0 Model Views & Perspectives

Perspective 02 - Learning Centre

7.0 Model Views & Perspectives

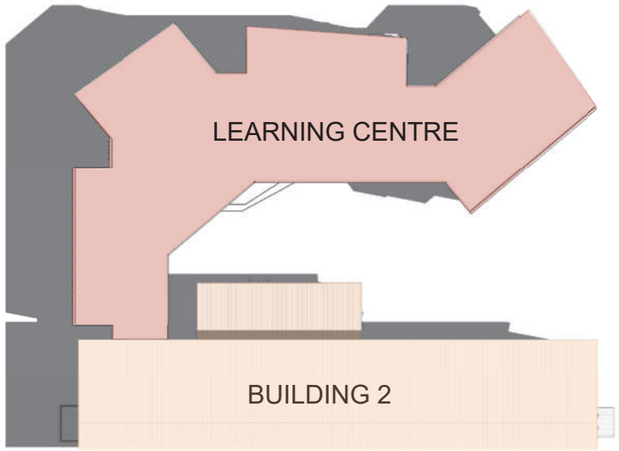
Perspective 03 - Entrepreneurial Hub

7.0 Model Views & Perspectives

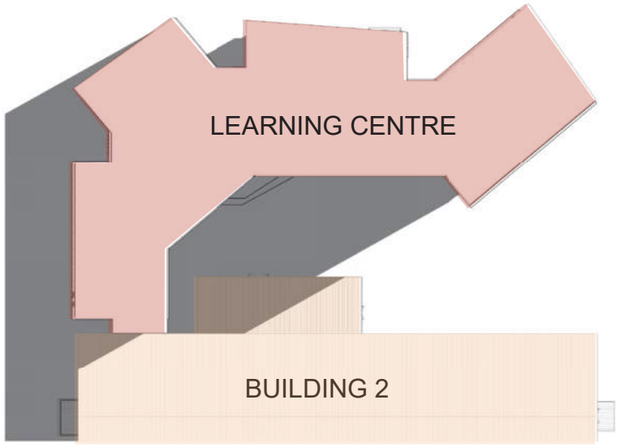
Perspective 04 - Change Rooms

8.0 Shadow Diagrams

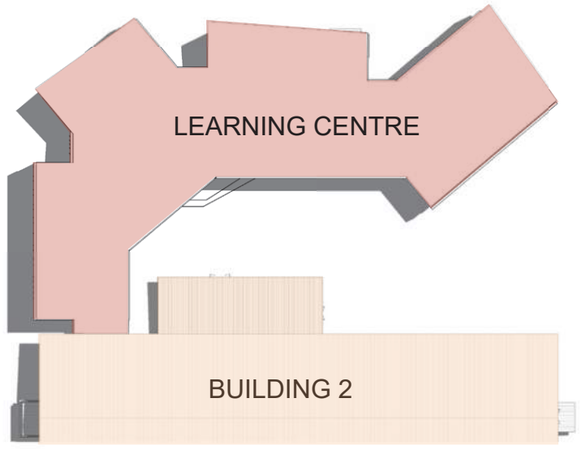
Learning Centre



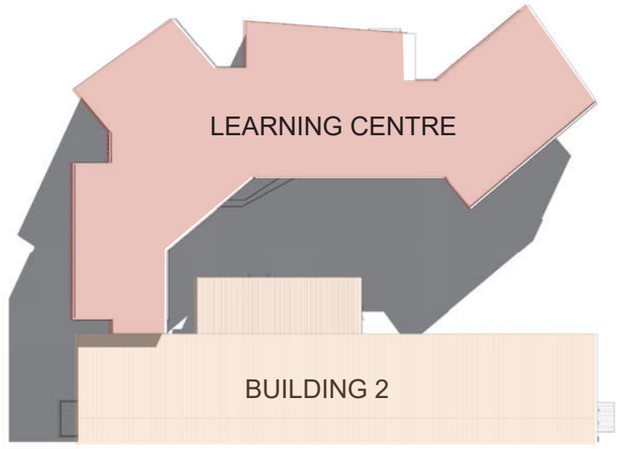
Learning Centre - Summer Solstice 10.30am



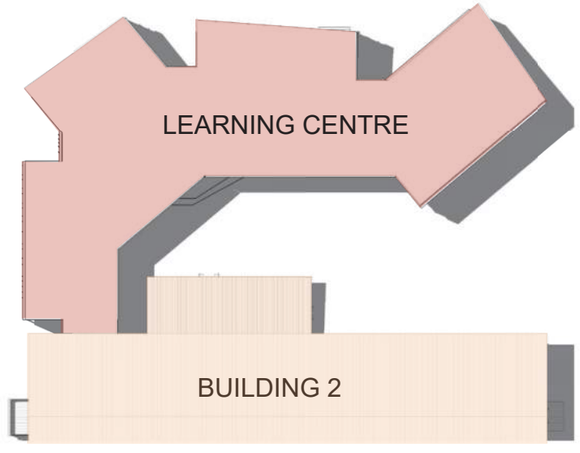
Learning Centre - Winter Solstice 9.00am



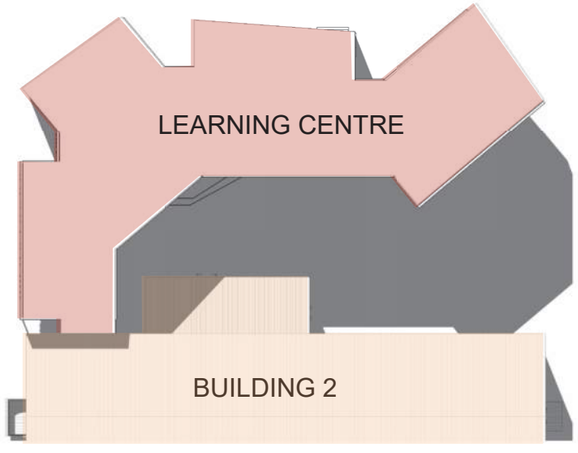
LC_Sun Diagram - Summer 12noon



Learning Centre - Winter Solstice 12noon



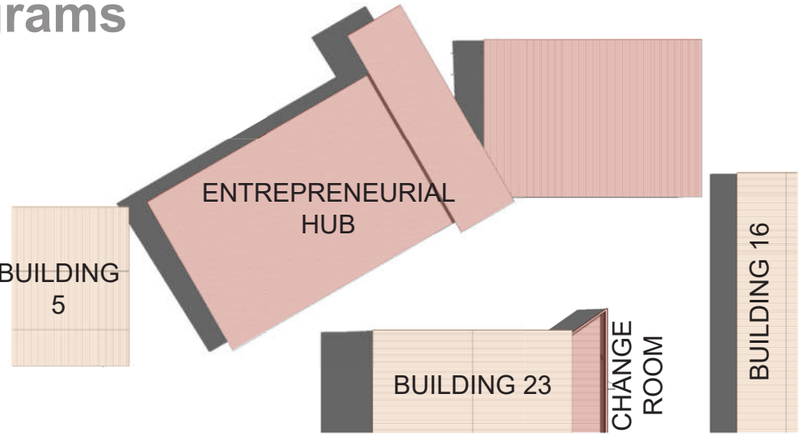
LC_Sun Diagram - Summer 15.00pm



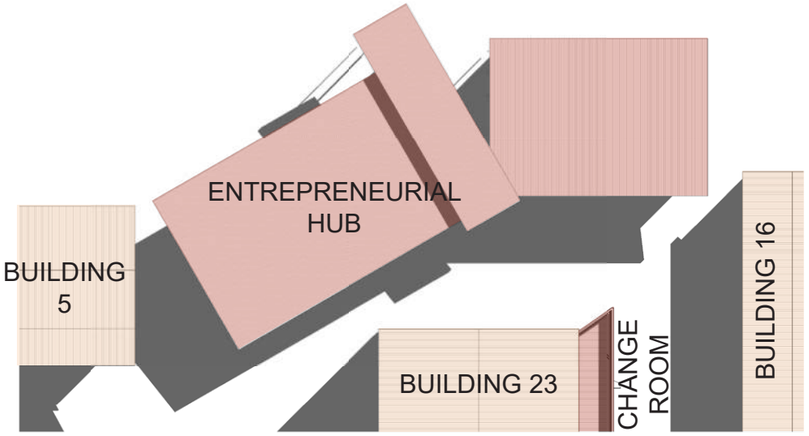
Learning Centre - Winter Solstice 3.00pm

8.0 Shadow Diagrams

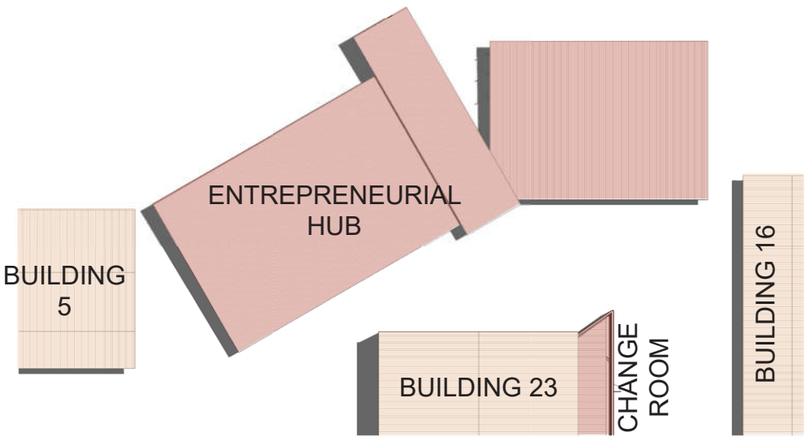
Entrepreneurial Hub



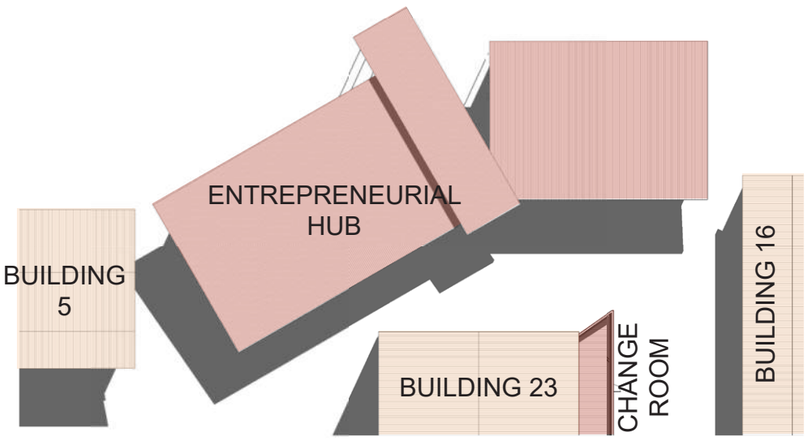
1 EH_Sun Diagram - Summer 10.30
Scale 1 : 350



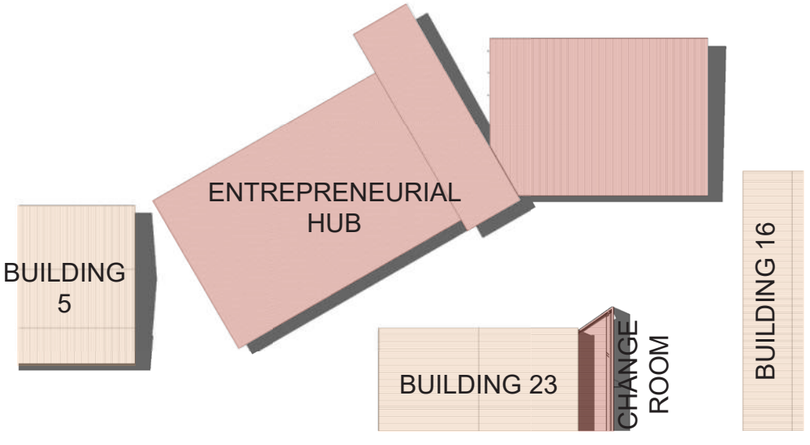
4 EH_Sun Diagram - Winter 10.30am
Scale 1 : 350



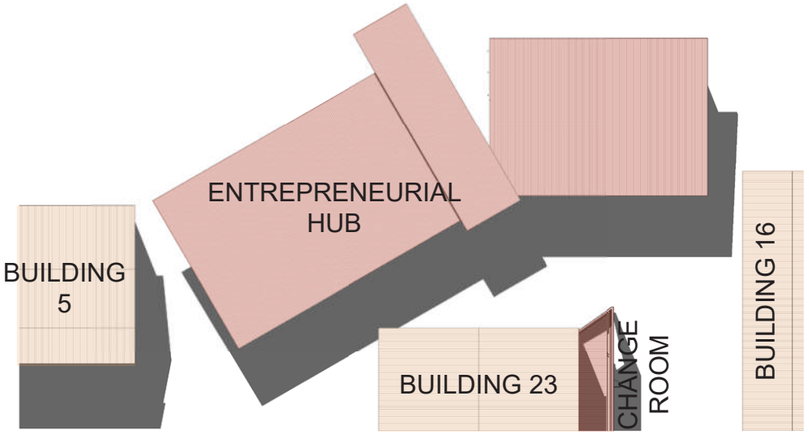
2 EH_Sun Diagram - Summer 12noon
Scale 1 : 350



5 EH_Sun Diagram - Winter 12noon
Scale 1 : 350



3 EH_Sun Diagram - Summer 15.00pm
Scale 1 : 350



6 EH_Sun Diagram - Winter 15.00pm
Scale 1 : 350

9.0 Appendix

- ODASA Desktop Review - 9th October 2019
- Traffic and Parking Report
- Stormwater Management Report
- Services Infrastructure Plan

ODASA Desktop Review - 9th October 2019

Seaton High School Redevelopment

Glenburnie Street, Seaton SA

JPE Design Studio

Concept Design Report
19th September 2019

1.0 Executive Summary

Seaton High School is a secondary school that is currently Year 8-12 but in 2022 will also include Year 7s. The school is in the western suburbs of Adelaide and is 11km from the Adelaide CBD.

The school is an Entrepreneurial Specialist School, a specialist baseball & softball school and also a specialist art school. The recently completed STEM refurbishments to building 2 encourage 21st century learning and outdoor learning. The remaining of the existing teaching and learning facilities are traditional spaces with little flexibility, variety and interconnection to outdoors.

The school is currently over 100% capacity with the facilities catering for 900 students and the current enrolment being 917 students. The projected enrolment including year 7s in 2022 will be 1081 with a required built capacity for 1200.

A number of buildings have been identified for refurbishments with different levels of works; buildings 2, 5, 6, 17, 17a and 23. Numerous existing buildings have been identified for demolition; buildings 1, 7, 8, 10, 11, 12, 14, 15, 25, 26 & 27.

A new two storey building will be built to allow for the additional capacity of the school along with the learning spaces that are being removed as part of the demolition works.

A school landscape masterplan has been developed to provide outdoor learning opportunities and to create a permeable landscape with improved circulation and recreation, social and learning nodes located across the site.

Key social and recreational nodes are identified by material, planting and feature furniture selections. This creates a hierarchy of diverse spaces while unifying the landscape through materials and planting.

2.0 Project Team

This document has been prepared as part of the concept report for the proposed redevelopment at Seaton High School incorporating a new two storey building, refurbishment to existing buildings, demolition of existing transportable's and car parking and site works.

The project team comprises of:

Department For Education
Client

JPE Design Studio
Architecture / Interior Design and Landscape Architecture

Future Urban
Planning Consultant

Bestec Engineers
Building Services

Wallbridge Gilbert Aztec
Structural & Civil Engineers

Bestec Engineers
Acoustic Engineering

Buildsurv
Building Certification Advice

Cirqa
Traffic Engineer

3.0 Existing Facilities

Site Context Plan - Macro

3.0 Existing Facilities

Site Context & Locality Plan

The subject site is located on the eastern side of Frederick Road at the corner of Glenburnie Street, Seaton and is bounded by residential properties to the north, south and east. The Grange Golf Club extends along the western side of the site on the opposite side of Frederick Road. The Seaton Community Childcare Centre is along Glenburnie Street immediately to the east of the site.

There are a large number of trees across the site providing generous shade for students. The majority of trees are located along the northern and western boundaries. There are no identified regulated or significant trees on the site. There are three existing crossovers from Glenburnie Street, two existing crossovers from Frederick Road and one from Raymond Avenue. The existing vehicular entry points are a mix of one- and two-lane driveways.

There are two pedestrian access points along Frederick Road, five along Glenburnie Street and two from the community playground along Raymond Street. The main pedestrian arrival point is from Glenburnie Street which is identified by a small wall with students artworks featured on the wall.

There is a large sign on the corner of Frederick Road and Glenburnie Street identifying the school. The signage directing visitors to the administration building is unclear as there are numerous areas to park vehicles and enter the site. There are four tennis/basketball courts within the school fenced area and two courts outside of the fenced area, but still within the title boundary which is used by the community. There is a baseball diamond, baseball practice cages, a small oval used for football and cricket, cricket practice nets and a soccer field on the site.

There are two 2-storey buildings, a large shed used by the State Baseball Association and the school, a gymnasium, six single storey buildings and ten single storey transportable or DEMAC buildings currently on the site. The majority of the buildings axis run east-west and create a number of courtyards between the existing buildings. The layout of the existing buildings restricts access north south throughout the site, effectively cutting off the oval from the rest of the school site. The layout also creates a number of narrow lane ways and areas that are difficult for supervision during break times.

Legend:
- 1 storey
- 2 storey

3.0 Existing Facilities

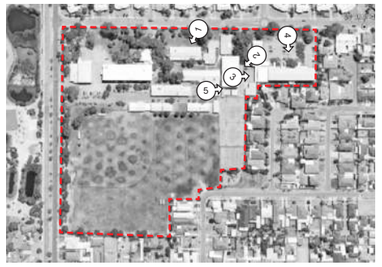
Site Context Photographs

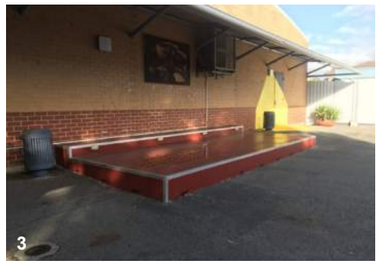
The following images indicate the existing character and context of the built form in the vicinity of the subject site.

3.0 Existing Facilities

Site Context Photographs

The following images indicate the existing character and context of the built form in the vicinity of the subject site.





3.0 Existing Facilities

Site Context Photographs

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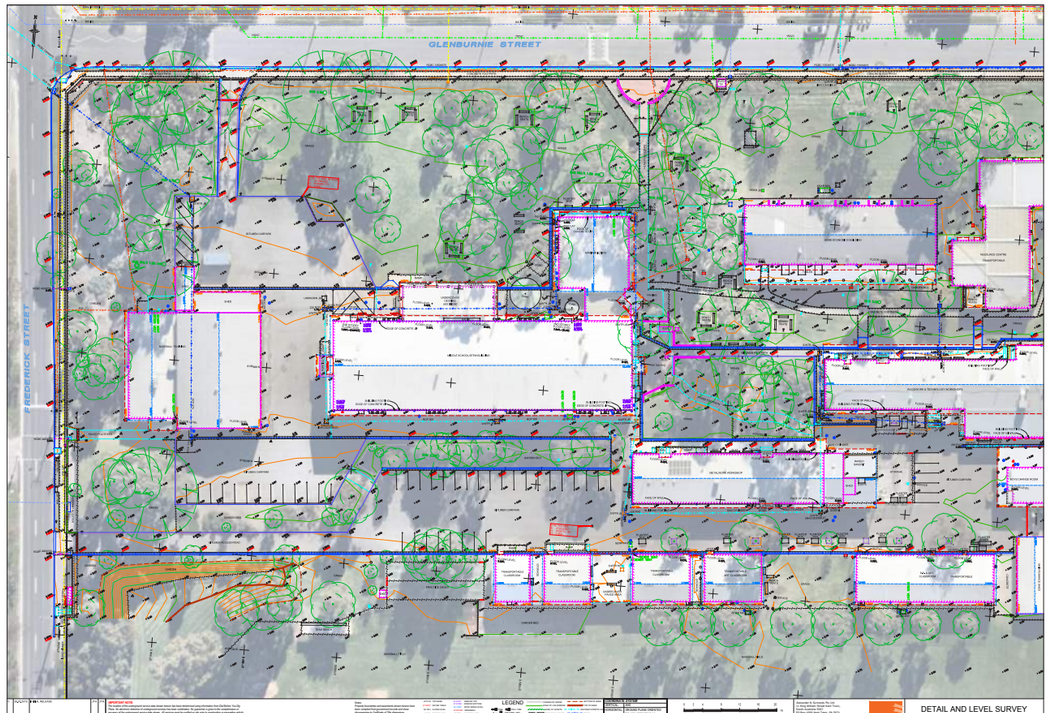
3.0 Existing Facilities

Site Context Photographs

The following images indicate the existing character and context of the built form in the vicinity of the subject site.

3.0 Existing Facilities

Site Survey



3.0 Existing Facilities

Certificate of Title

Government of South Australia
Department of Planning, Transport and Infrastructure

Product Register Search (CT 6066/383)
Date/Time 16/08/2018 01:00PM

REAL PROPERTY ACT, 1886 South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 6066 Folio 383

Parent Title(s) CT 5812/496

Creating Dealing(s) RTU 11455040

Title Issued 19/10/2010 **Edition** 2 **Edition Issued** 28/06/2012

Estate Type

FEE SIMPLE

Registered Proprietor

MINISTER FOR EDUCATION AND CHILD DEVELOPMENT
OF ADELAIDE SA 5000

Description of Land

ALLOTMENT 2 DEPOSITED PLAN 84989
IN THE AREA NAMED SEATON
HUNDRED OF YATALA

Easements

NIL

Schedule of Dealings

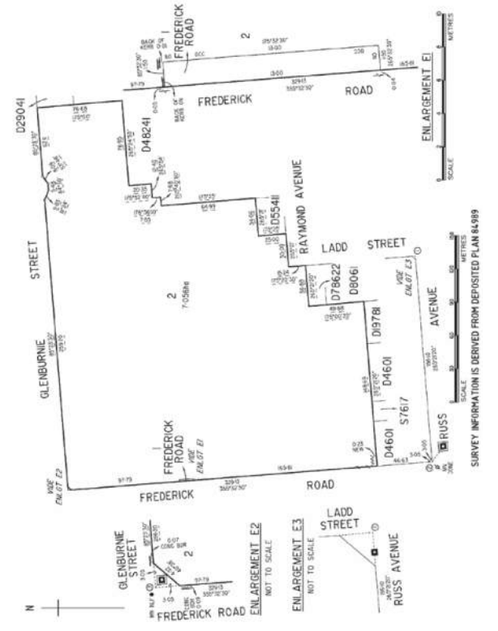
NIL

Notations

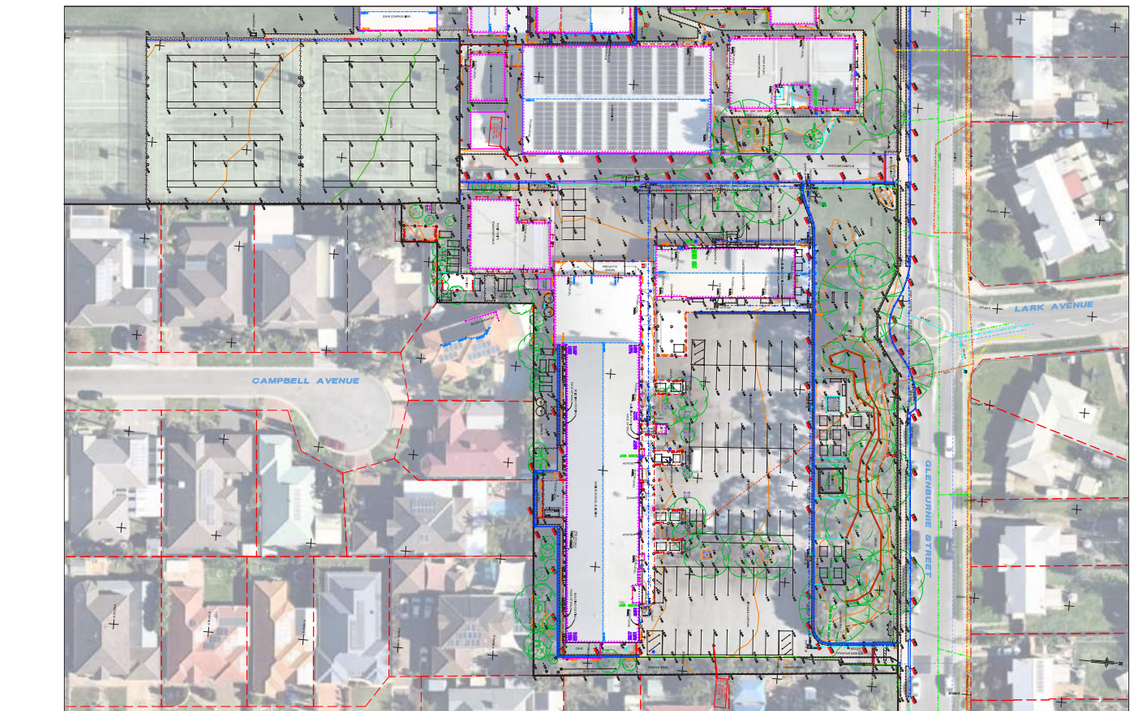
Dealings Affecting Title NIL
Priority Notices NIL
Notations on Plan NIL
Registrar-General's Notes NIL
Administrative Interests NIL

Government of South Australia
Department of Planning, Transport and Infrastructure

Product Register Search (CT 6066/383)
Date/Time 16/08/2018 01:00PM



3.0 Existing Facilities



3.0 Existing Facilities

Existing Site & Demolition Plan

4.0 Concept Design Response

Design Drivers - Vision

The following themes have been developed in consultation with Seaton High School staff and students, as a way of explaining the key aspirations for the Seaton High School Redevelopment project.

DESIGN THEME 1

IDENTITY

Unique expression

Active in community

Student Voice

Entrepreneurial Specialist School Status

One School

DESIGN THEME 2

ENTREPRENEURIAL

Collaborative attitude and spaces

Integration of the parts to encourage cross pollination

Non Traditional

A testing ground for new ideas

Future focused

DESIGN THEME 3

SUSTAINABLE

Environmental expression

Adaptable & Agile

Economical and Viable

Creative

Socially sustainable

A world view

DESIGN THEME 4

A LEARNING LANDSCAPE

Learning happens everywhere

Connection to nature

Self directed learning

Porosity

Wellbeing & comfort

DESIGN THEME 5

CONNECTIVITY

Connection within buildings

Incidental learning and connections between students and teachers

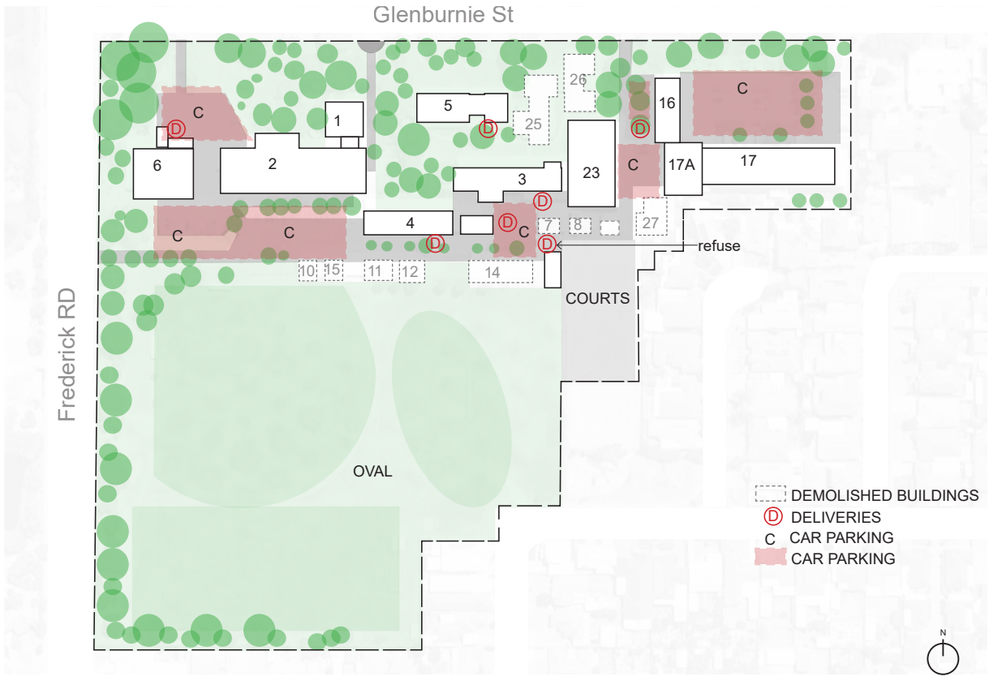
Internal & external connection

Campus connection

Connection to community

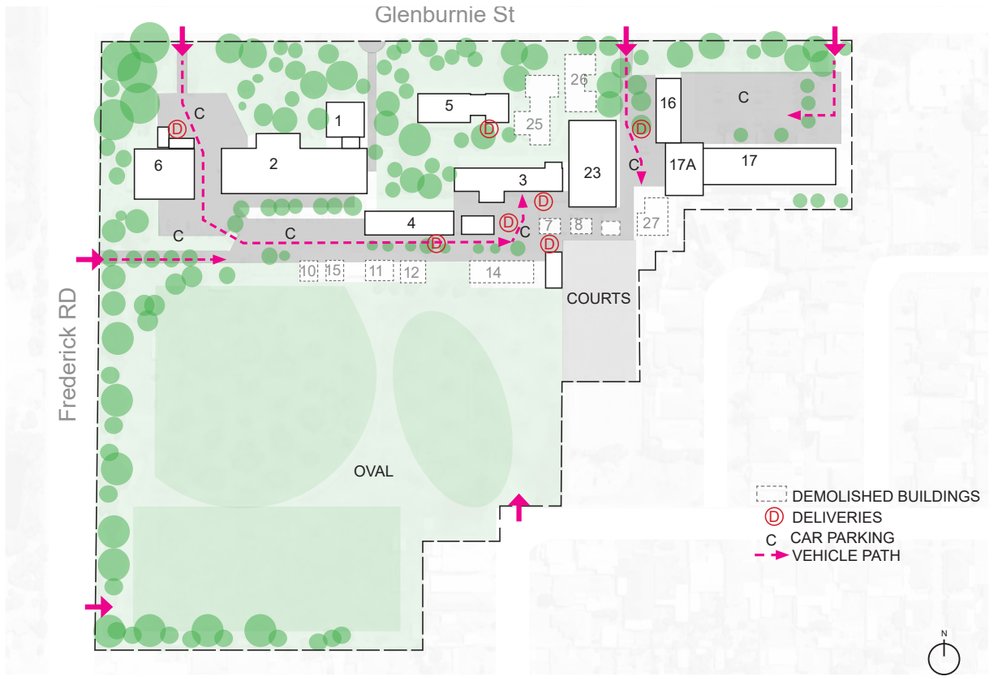
4.0 Concept Design Response

Existing Site Analysis Diagrams - Car Parking



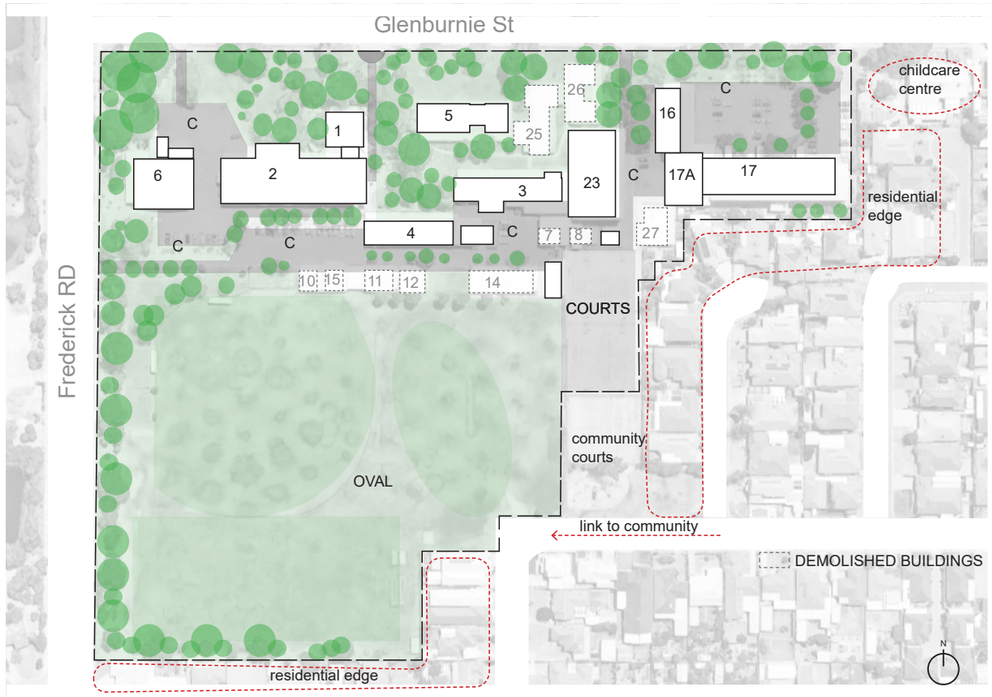
4.0 Concept Design Response

Existing Site Analysis Diagrams - Vehicle Movement



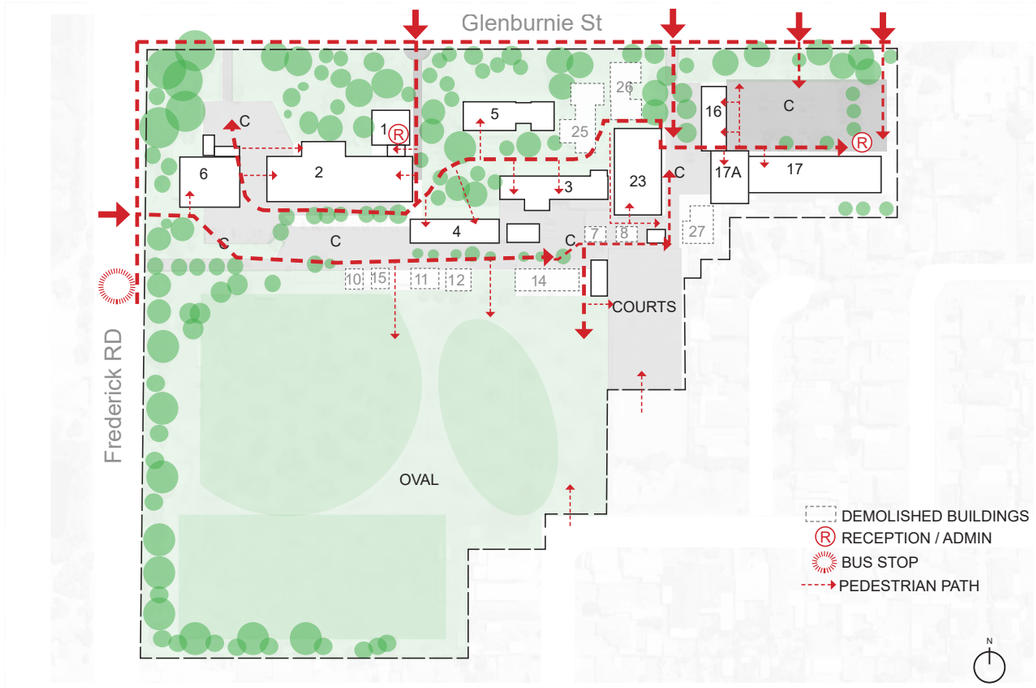
4.0 Concept Design Response

Existing Site Analysis Diagrams - Site Condition



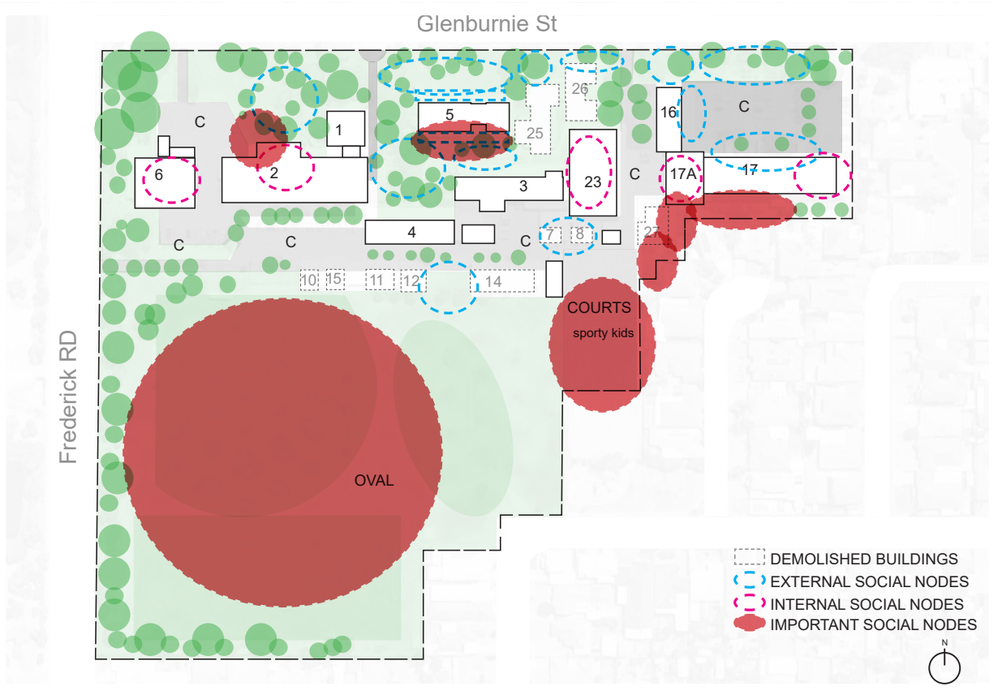
4.0 Concept Design Response

Existing Site Analysis Diagrams - Pedestrian Movement



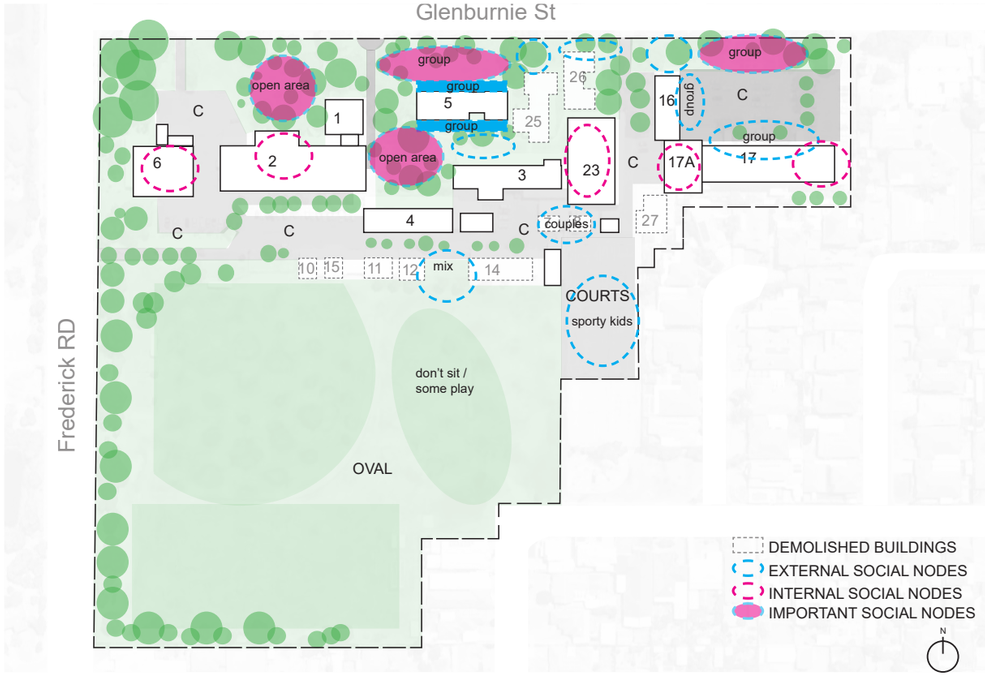
4.0 Concept Design Response

Existing Site Analysis Diagrams - Outdoor Learning



4.0 Concept Design Response

Existing Site Analysis Diagrams - Social Destinations

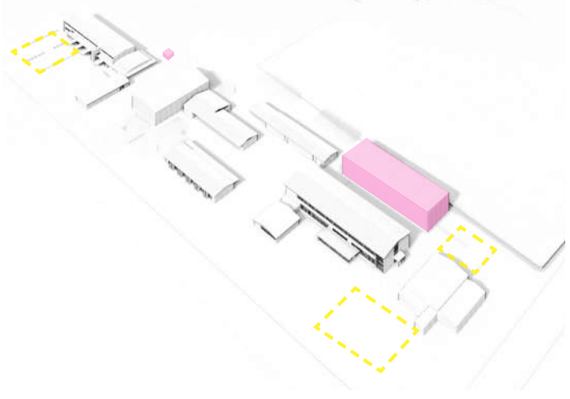


4.0 Concept Design Response

Master Planning Option Study

The following options were explored to understand the most suitable siting of the new 2 storey building. The school's brief, building orientation, site context and construction staging was considered when reviewing each option.

Option 1



Pros

- Good views to oval from new building
- Courtyard created between new and existing buildings

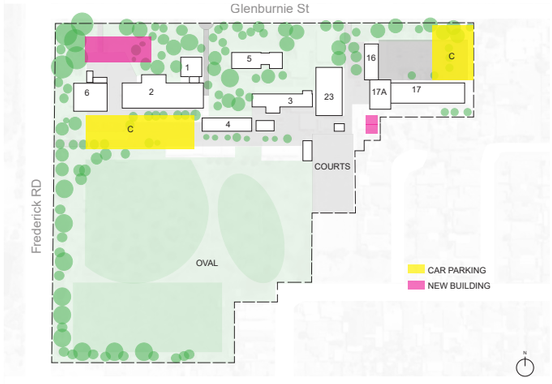
Cons

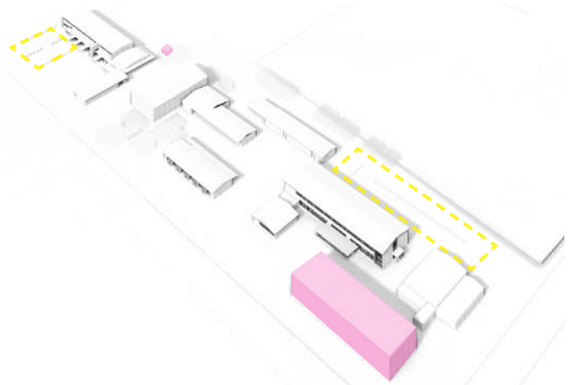
- New building location does not improve the street & arrival presence as per brief
- Car parking will need to be increased along the street at key intersection
- Not an obvious destination behind existing building
- Courtyard created will be windy as not protected from the south westerly winds
- Does not connect to campus
- Building 2 will lose views to oval

4.0 Concept Design Response

Master Planning Option Study

Option 2





Pros

- Improved street presence to both Glenburnie Street and Frederick Road
- Flow of space retained
- Location of new building on existing carpark and grassed area, low impact to existing trees
- Construction zone can be separated from remaining school
- New face to the school

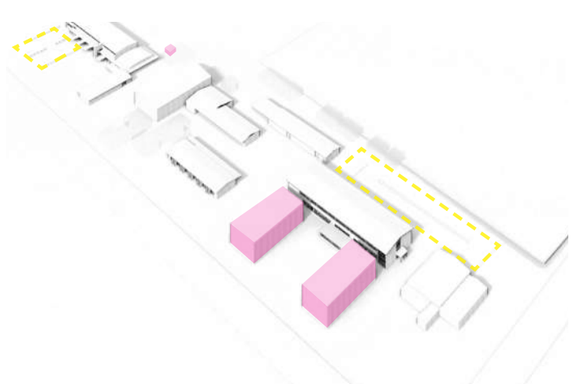
Cons

- Isolated from the rest of the school
- Carpark arrival experience

4.0 Concept Design Response

Master Planning Option Study

Option 3



Pros

- Two smaller buildings will reduce the bulk of the extension
- Improved street presence to both Glenburnie street and Frederick Road
- New admin can be located closer to visitor parks
- Library/resource centre located central to campus
- Linking into existing circulation stairways
- Construction can be staged

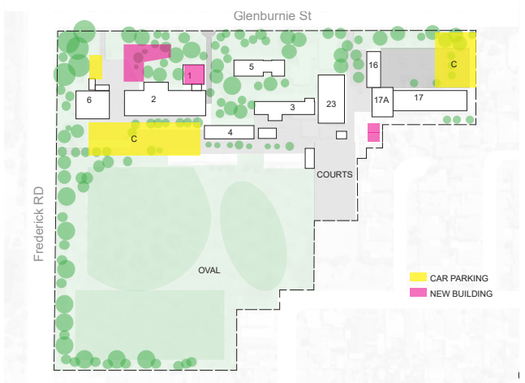
Cons

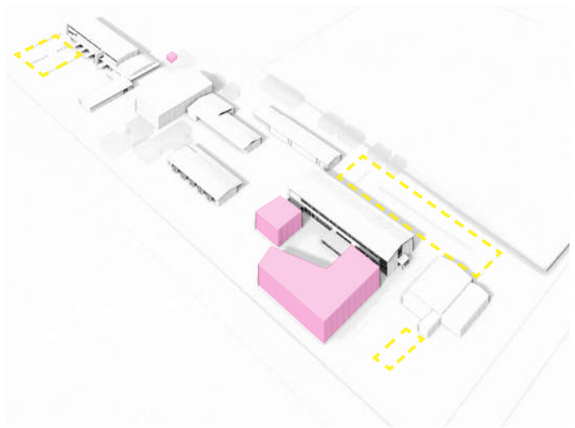
- Demolition of admin building
- More external walls
- Building into existing green space will need to be offset and create new to the west
- Courtyard blocked from the rest of the school

4.0 Concept Design Response

Master Planning Option Study

Option 4





Pros

- Create courtyard protected from the south westerly winds
- Improved street presence to both Glenburnie Street and Fredrick Road
- Courtyard will provide spaces for outdoor learning and provide connection to recent STEM addition
- New admin building will improve sense of arrival
- One location to house all admin areas
- Create a student hub both internally and externally
- Two building can be staged
- Location of building allows carpark area at the rear of building 2 to be retained

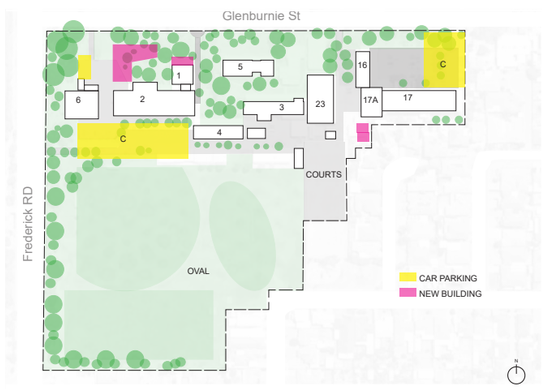
Cons

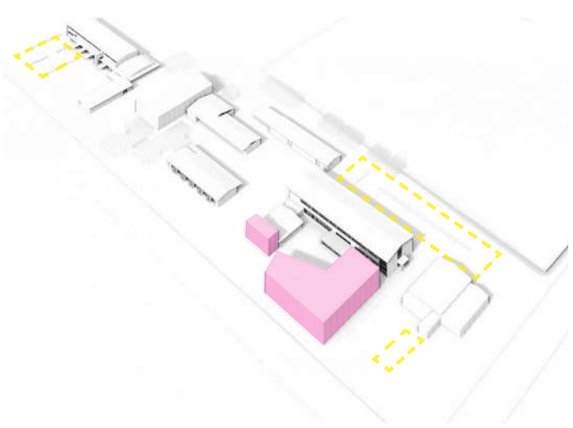
- Demolition of admin building

4.0 Concept Design Response

Master Planning Option Study

Option 4b





Pros

- Create courtyard protected from the south westerly winds
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- Courtyard will provide spaces for outdoor learning and provide connection to recent STEM addition
- New admin building will improve sense of arrival
- One location to house all admin areas
- Create a student hub both internally and externally
- Two building can be staged
- Location of building allows carpark area at the rear of building 2 to be retained

Cons

- More renovations required externally to admin building to incorporate extension

4.0 Concept Design Response

Proposed Site Plan

The below site plan indicates the relationship of the built form across the entire site and the landscape.

4.0 Concept Design Response

Form Inspiration

Connection to trees / Filter of Light

Atmosphere / Activity / Fun

Private Spaces / Screening

Connection Through Building

Vertical Connections

Reaching to Nature

Covered Space

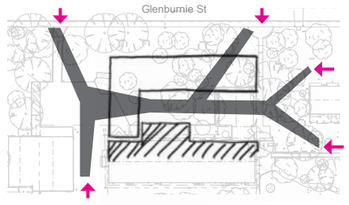
Outdoor Space

Weaving Through Nature

4.0 Concept Design Response

Form Response To Context

The below diagrams demonstrate how the building form was created by responding to the site context.

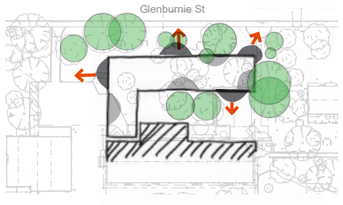


Building circulation

Key circulation paths and desired pathways determine where the building openings are formed

Push building away from trees

The existing trees have been retained wherever possible and the building form is pushed away from the existing tree zones



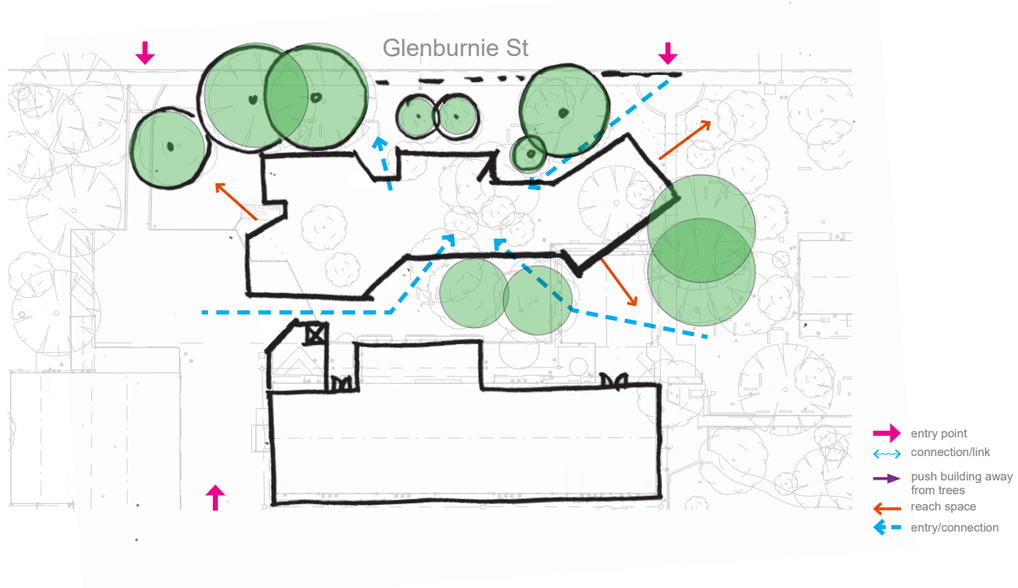
Extend building to open space/street present

The building form utilises the spaces in between the existing trees and as a result begins to reach out and address the street

4.0 Concept Design Response

Form Response To Context

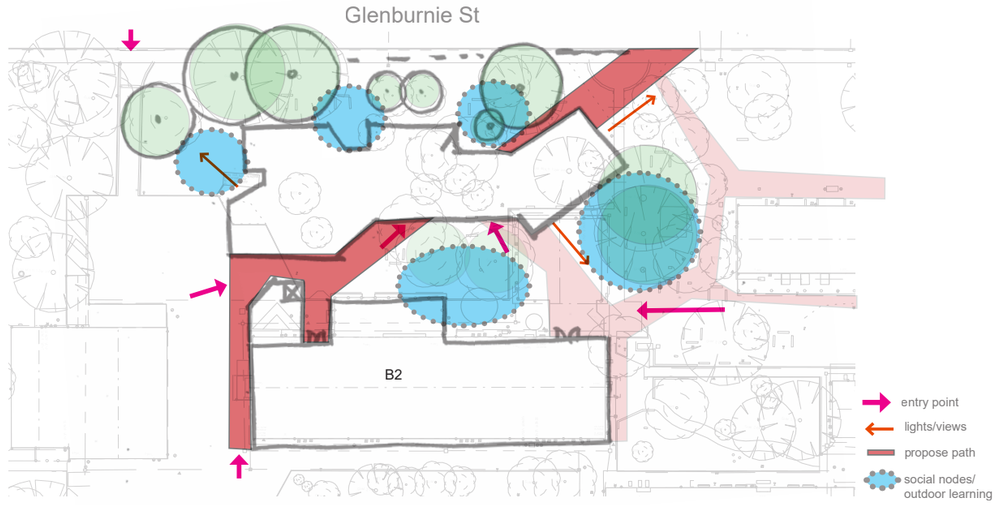
The below diagram is an indication of the building footprint in response to the site context. The building mass has been pushed and pulled which allows the building to nestle amongst the existing trees and bring the landscape into the internal spaces.



4.0 Concept Design Response

Form Response To Context

The areas created by this building footprint allow different social nodes externally that can provide opportunities for outdoor learning, immediate connection with the internal spaces and smaller more intimate nooks around the perimeter for students to inhabit.



Landscape and built form interaction

Materials

Cemintal cladding- Barestone /Trespa meteon cladding panel

Aluminium vertical louvres

Glazing

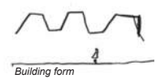
Materials

Pattern & Color

4.0 Concept Design Response

Form Development & Facade Expression

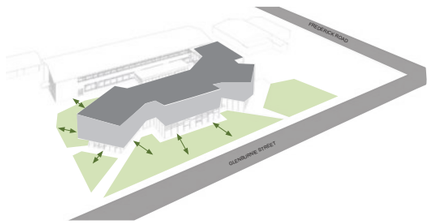
Tree canopy

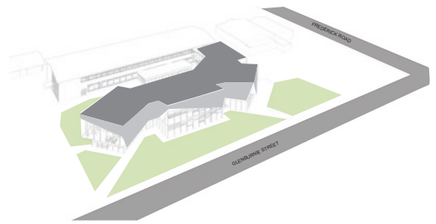


Building form

Building Form

taking the idea of tree canopy which provides shaded and protectected space, the building form is designed to provide shading to the building and internal spaces.





4.0 Concept Design Response

Interior Design Opportunities

Connection to Architectural & Lanscape Form

Interior form to both influence the architectural form as well as visually connect to it

Artwork / Display Opportunities

Possibility to display of student artwork through various methods

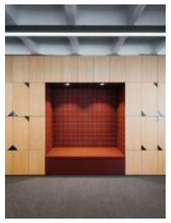
Interactive

providing vertical surfaces both static and digital for collaborative usability and a greater sense of student interaction to the visual of the space

4.0 Concept Design Response

Materiality Concept

Connection to Landscape
Material selections to provide a connection to the surrounding landscape



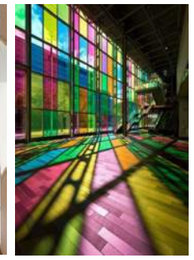
Student Engagement
opportunities to engage with students to form a indentity throughout the interior spaces.

Soft & Hard Finishes
Combination of timber, tile and carpet throughout as well as concrete mixed with fabrics

Warm & Neutral Palette
Creating a warm palette through the clever use of simple neutral materials with pops of colour throughout the floor finishes & soft furnishings

4.0 Concept Design Response

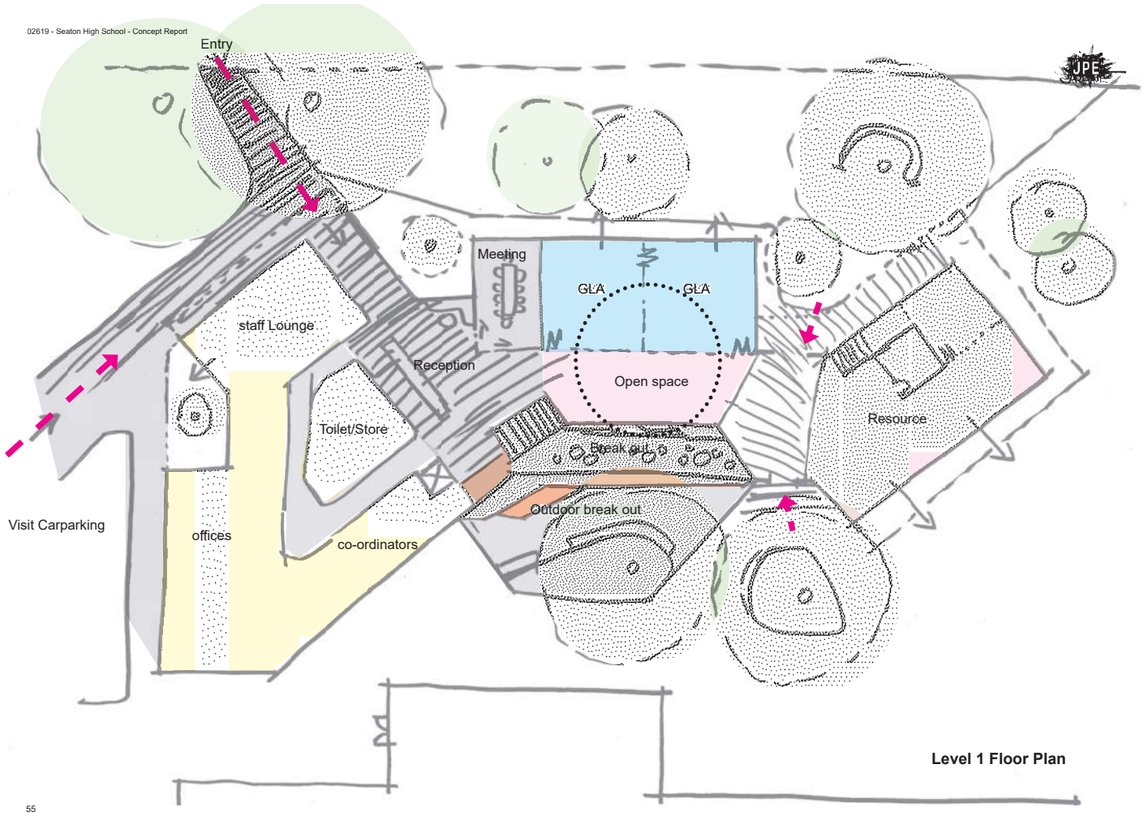
Interior Design Opportunities



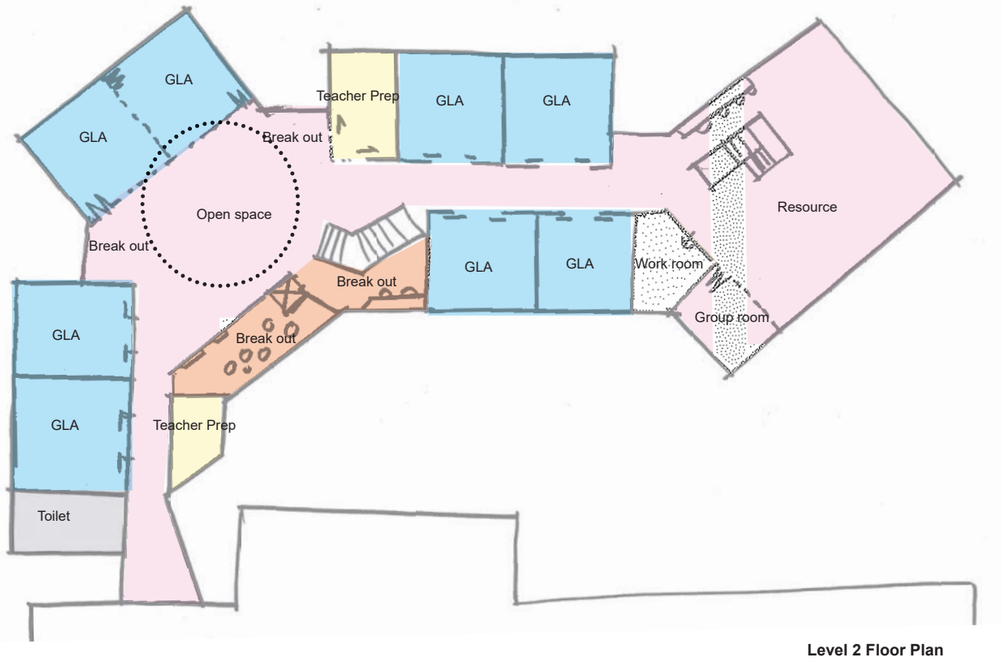
Filtering of Light
the use of glazing and solid form screening to provide access to natural light throughout the spaces whilst maintaining usability and reducing glare

Adaptable / Modular Furniture
soft and hard modular furniture enabling complete flexibility throughout large open spaces to provide both intimate private settings as well as collaborative settings

Fixed Seating Opportunities
providing seating to all areas within the space including corridors and under stairs



Level 1 Floor Plan



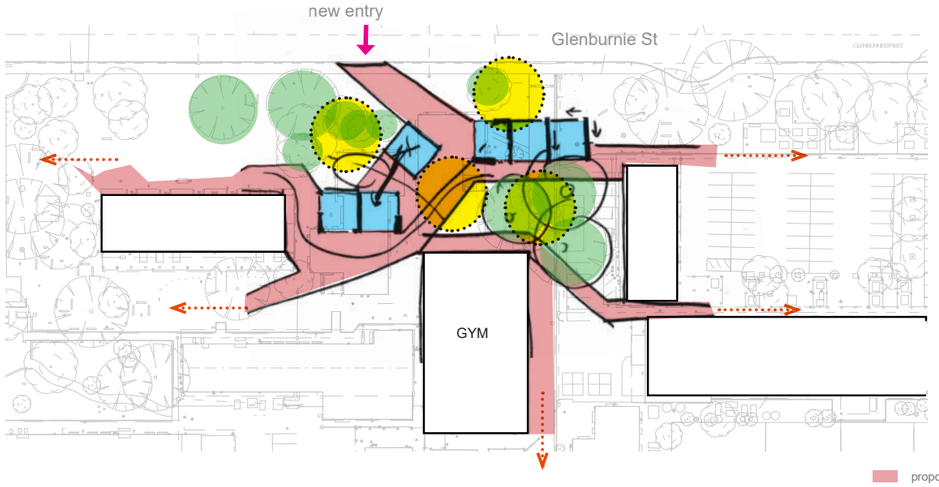
Level 2 Floor Plan

4.0 Concept Design Response

Entrepreneurial Hub

The entrepreneurial hub is a cluster of prefabricated, permanent modules with covered spaces in between and around the buildings to encourage outdoor learning and interaction with the community. These modules are sited to retain the existing trees and utilise the spaces where the existing buildings will be demolished.

The circulation around and through these modules will be define and strengthen the east/west connection across the site.



4.0 Concept Design Response

Landscape Precedents


Incidental Seating Opportunities


Atmosphere / Activity / Fun


Private Spaces / Screening


Interact with Existing Trees


Curvilinear Forms to Reinforce Circulation Network


Immersive Planting


Outdoor Learning Opportunities & Connection to Interiors

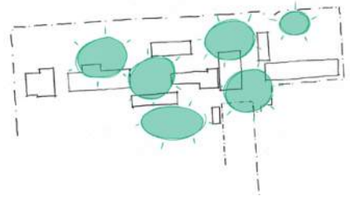

Creation of Social Nodes

4.0 Concept Design Response

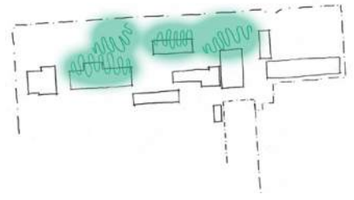
Landscape Design Principles

ADAPTABLE AND FUTURE-PROOFED
Buildable, adaptable layout to enable a staged landscape response

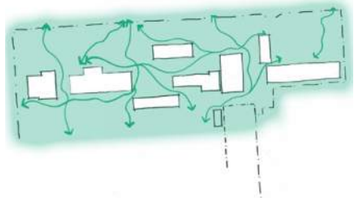
CREATE ACTIVITY NODES
Placement of activity hubs to provide a range of social and learning



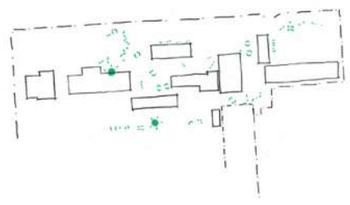
BLENDED INSIDE-OUTSIDE EXPERIENCE
Dissolve the divide between the inside and outside learning spaces



PERMEABILITY
Provide cross-campus links in all directions



A UNIFIED PALETTE
A unified look and feel to provide consistent quality of experience across the site



4.0 Concept Design Response

Proposed Landscape Plan

4.0 Concept Design Response

Proposed Landscape Priorities

H - High
M - Medium
L - Low

4.0 Concept Design Response

Proposed Landscape Material Palette

MATERIALS

FEATURES

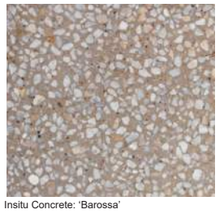
Table Tennis with Student Artwork

Kitchen Garden

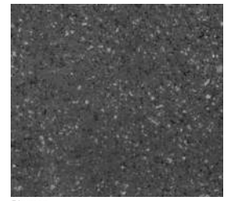
Precast Modular Feature Seating

SURFACES

Insitu Concrete: 'Barossa Moonscape'



Insitu Concrete: 'Barossa'



Bitumen

Verge Planting

WSUD

FURNITURE

Proprietary Furniture - Drinking Fountain

Proprietary Furniture - Tables and Benches

Precast Modular Seating

4.0 Concept Design Response

Proposed Planting Palette

The following pages demonstrate a selection of hardy, ornamental plants that are well suited to a high use, coastal environment.

TREES

Chinese Elm . Ulmus parvifolia

Dwarf Blue-Gum . Eucalyptus 'Euky Dwarf'

American Sweetgum . Liquidambar styraciflua

SA Blue-Gum . Eucalyptus leucoxylon

Norfolk Island Pine . Araucaria heterophylla

4.0 Concept Design Response

Proposed Planting Palette

PLANTS

Top Row
Ajuga reptans
Anigozanthos flavidus
Arthropodium cirratum
Austrostipa stipoides
Centaurea cineraria
Chrysocephalum apiculatim
Conostylis candicans
Caspedia glauca
Dampiera linearis
Darwinia 'Seaspray'

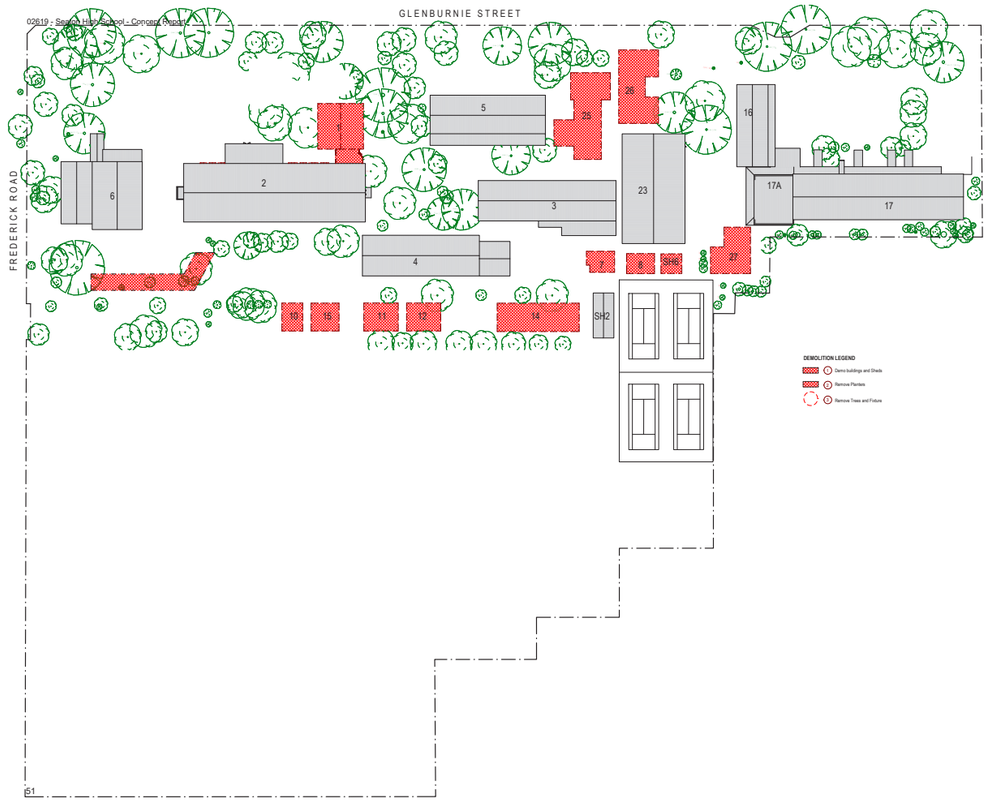
Bottom Row
Dianella Caerulea
Dietes grandiflora
Hardenbergia comptoniana
Isopogon anemonifolius
Leucophyta brownii
Lomandra 'Tanika'
Myoporum parvifolium
Poa labillardieri 'Eskadale'
Scaevola aemula
Senecio serpens

4.0 Concept Design Response

Proposed Planting Palette

PLANTS - NATIVE GARDENS

Top Row		Bottom Row	
Carpobrotus rossii	(Coastal Pigface)	Cymbopogon ambiguus	(Native Lemongrass)
Kunzea pomifera	(Muntries)	Melaleuca alternifolia	(Tea Tree)
Mentha australis	(Native Mint)	Eremophila longifolia	(Emu Bush)
Acacia glaucoptera	(Clay Wattle)	Hibbertia scandens	(Snake Vine)
Enchylaena tomentosa	(Ruby Saltbush)	Apium prostratum	(Native Celery)
Rhagodia candolleana	(Sea Berry Saltbush)	Billardiera cymosa	(Sweet Apple Berry)
Rhagodia spinescens	(Spiny Saltbush)	Tetragonia tetragonoides	(Warrigal Greens)
Acmena smithii	(Lily Pily)	Nitraria billardierei	(Nitre Bush)
Melaleuca nesophila	(Showy Honey Myrtle)	Santalum acuminatum	(Quandong)
Lomandra longifolia	(Spiny Mat Rush)	Citrus glaucа	(Desert Lime)



REVISION INFORMATION

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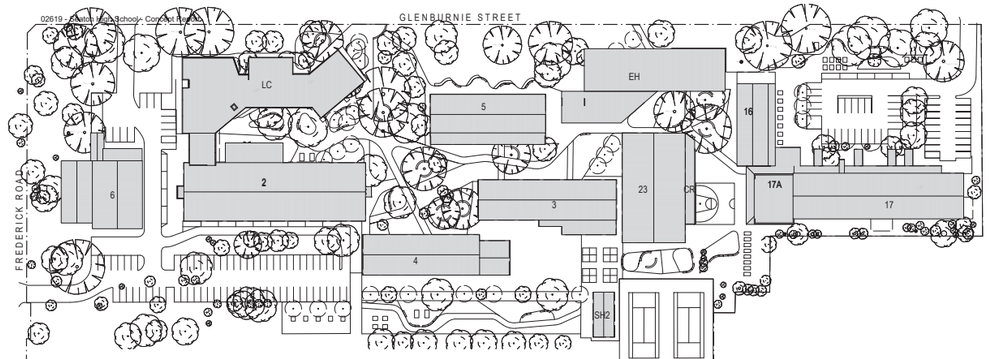
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

Title: Existing & Demolition Site Plan

Scale @ A1: As indicated — Revision: A
Date: 19.09.2019
Project No: 02619
Drawing No: SK-001

PRELIMINARY ISSUE



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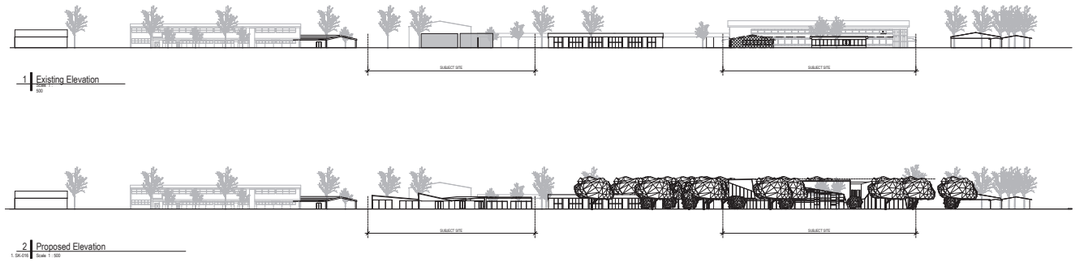
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

Title: Proposed Site Plan

Scale @ A1: 1 : 500 — Revision: B
Date: 19.09.2019
Project No: 02619
Drawing No: SK-002

PRELIMINARY ISSUE



1 Existing Elevation
Scale 1 : 500

2 Proposed Elevation
1. SK-019 Scale 1 : 500

REVISION INFORMATION

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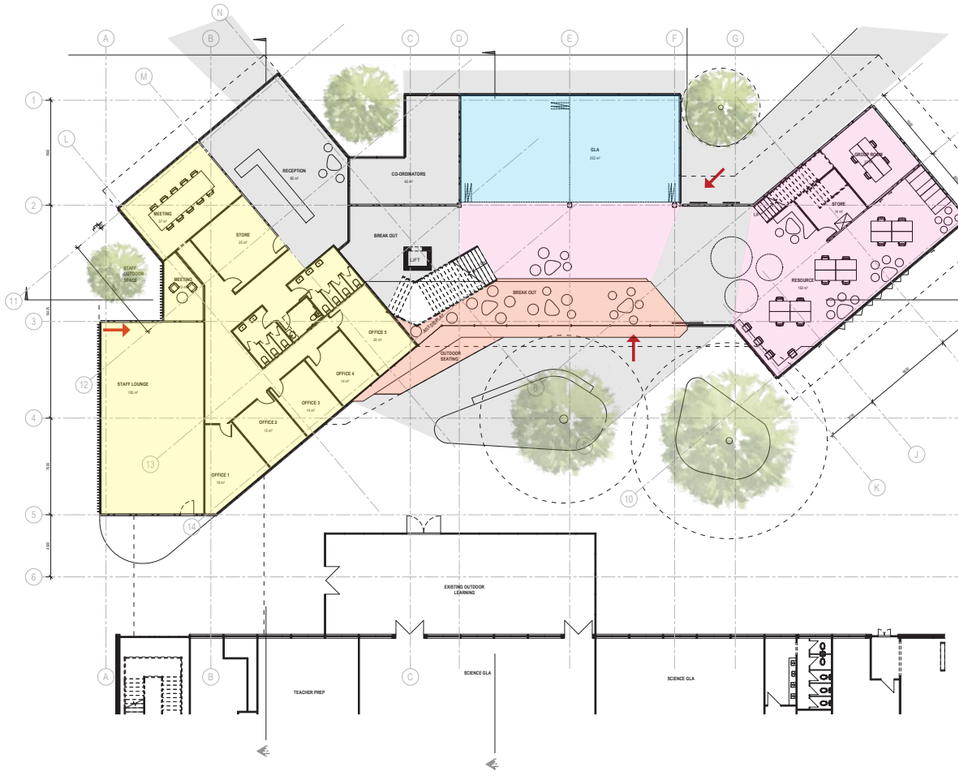
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

Title: Streetscape Elevation

Scale @ A1: 1 : 500 — Revision:
Date:
Project No: 02619
Drawing No: SK-051

PRELIMINARY ISSUE



REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	30.08.2019
B	PRELIMINARY ISSUE	05.09.2019
C	PERLIMINARY ISSUE	16.09.2019
D	PRELIMINARY ISSUE	19.09.2019
E	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
F	PRELIMINARY ISSUE	01.10.2019

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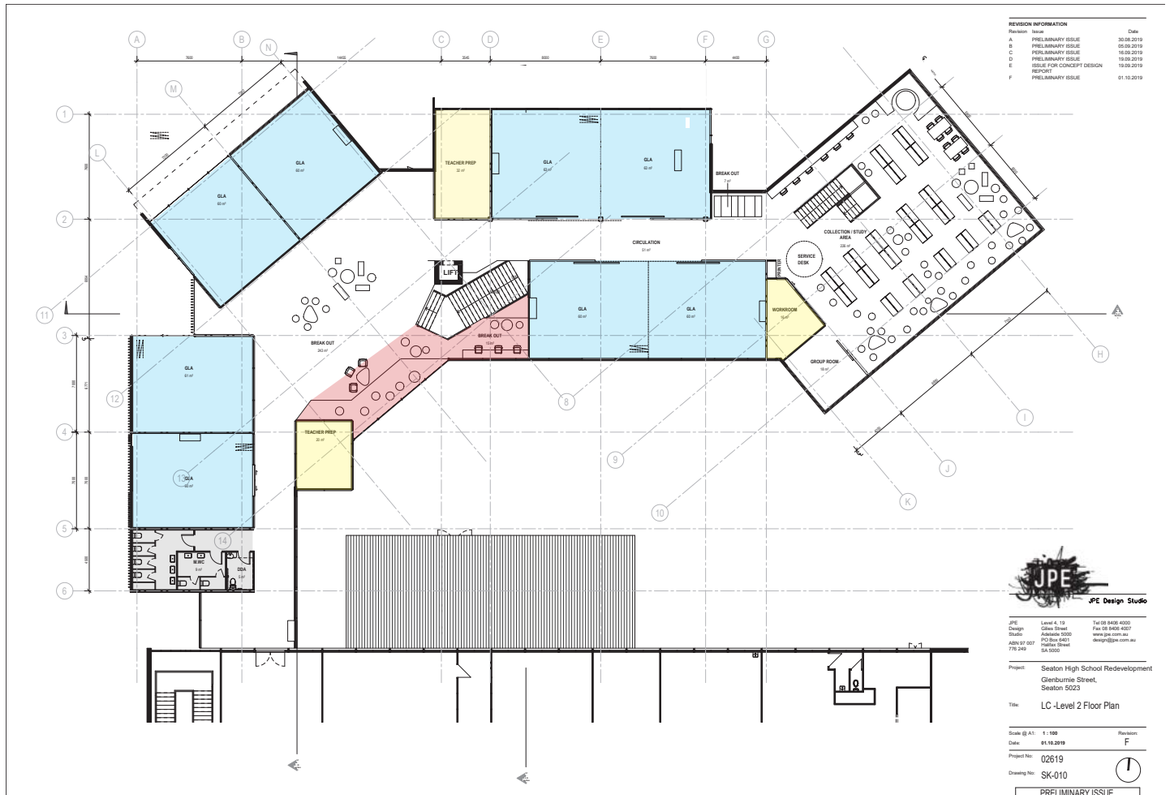
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

Title: LC - Level 1 FLoor Plan

Scale @ A1: 1 : 100
Revision: F
Date: 01.10.2019
Project No: 02619
Drawing No: SK-009

PRELIMINARY ISSUE



REVISION INFORMATION

Revision	Issue	Date
A	PRELIMINARY ISSUE	30.08.2019
B	PRELIMINARY ISSUE	05.09.2019
C	PERLIMINARY ISSUE	16.09.2019
D	PRELIMINARY ISSUE	19.09.2019
E	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
F	PRELIMINARY ISSUE	01.10.2019

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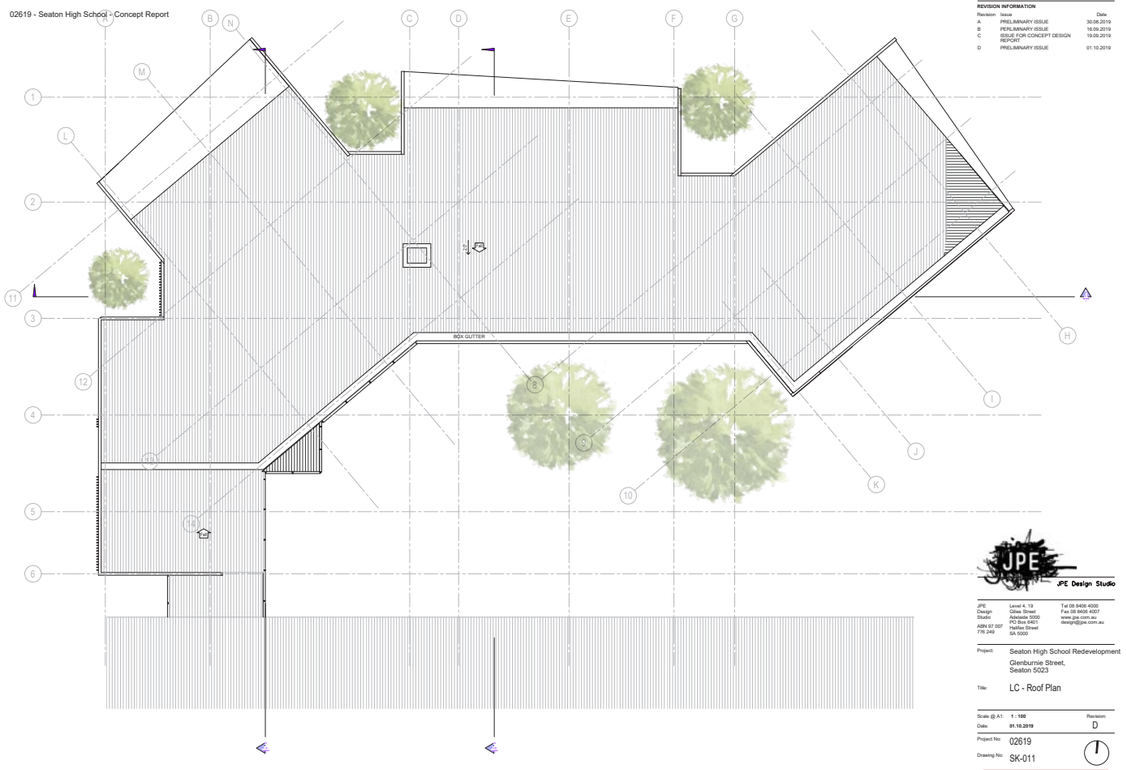
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

Title: LC -Level 2 Floor Plan

Scale @ A1: 1 : 100
Revision: F
Date: 01.10.2019
Project No: 02619
Drawing No: SK-010

PRELIMINARY ISSUE



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A	PRELIMINARY ISSUE	30.08.2019
B	PERLIMINARY ISSUE	16.09.2019
C	ISSUE FOR CONCEPT DESIGN REPORT	19.09.2019
D	PRELIMINARY ISSUE	01.10.2019

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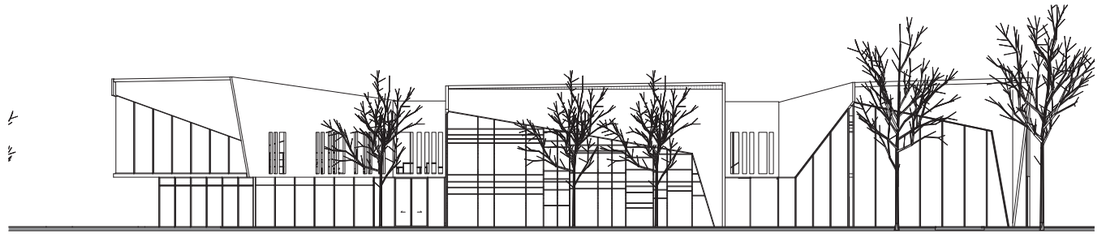
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

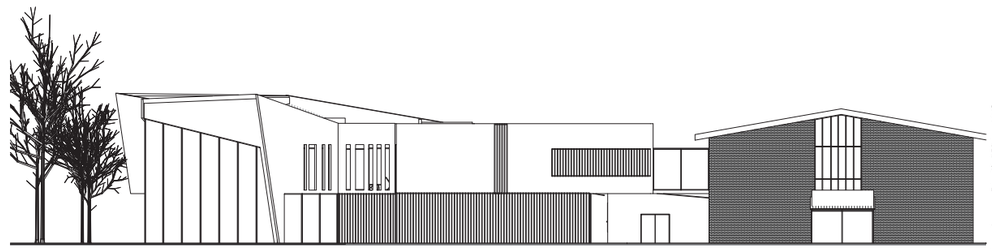
Title: LC - Roof Plan

Scale @ A1: 1 : 100
Revision: D
Date: 01.10.2019
Project No: 02619
Drawing No: SK-011

PRELIMINARY ISSUE



1 LC- Elevation North
1 : 04.10.2019 Scale 1 : 100



2 LC- Elevation West
1 : 04.10.2019 Scale 1 : 100

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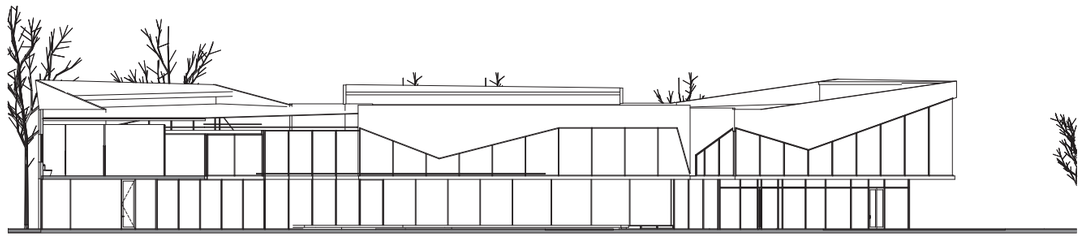
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

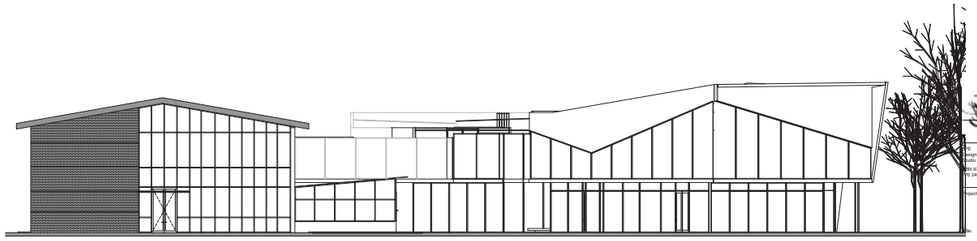
Title: LC - Building Elevations

Scale @ A1: 1 : 100
Revision:
Date:
Project No: 02619
Drawing No: SK-012

PRELIMINARY ISSUE



1 LC-Elevation South
1 : 00 001 Scale 1 : 100



2 LC-Elevation East
1 : 00 002 Scale 1 : 100

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Revision Issue Date

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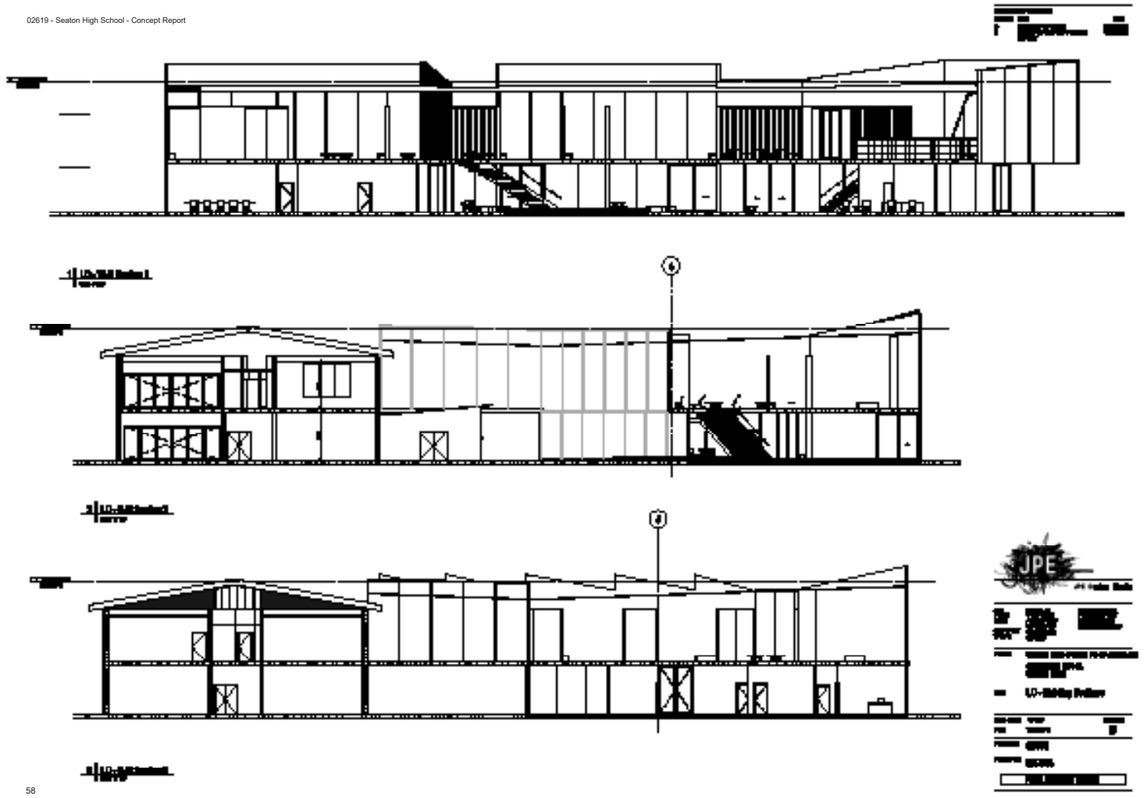
Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

Title: LC - Building Elevations

Scale @ A1: 1 : 100 Revision:
Date:
Project No: 02619
Drawing No: SK-013

PRELIMINARY ISSUE



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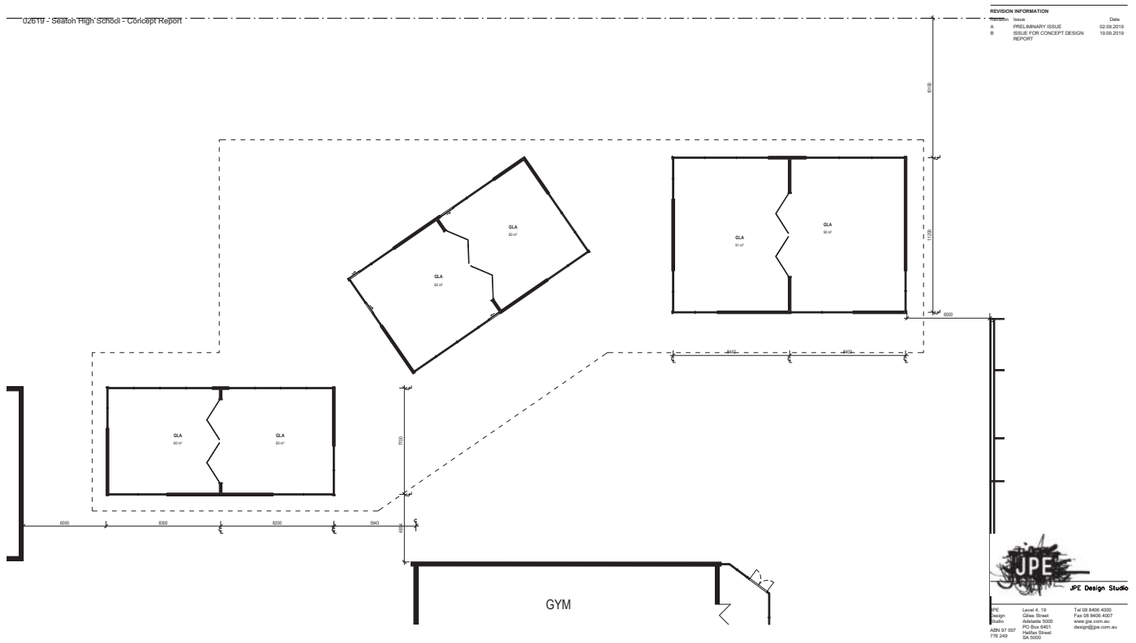

1 EH - Level 1 Floor Plan
1 : SK-014 Scale 1 : 100

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Project: Seaton High School Redevelopment
Glenburnie Street, Seaton 5023

Title: EH - Level 1 Floor Plan

Scale @ A1: 1 : 100 Revision: B
Date: 19.09.2019
Project No: 02619
Drawing No: SK-015

PRELIMINARY ISSUE

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Revision	Issue	Date
A	PRELIMINARY ISSUE	02.09.2019
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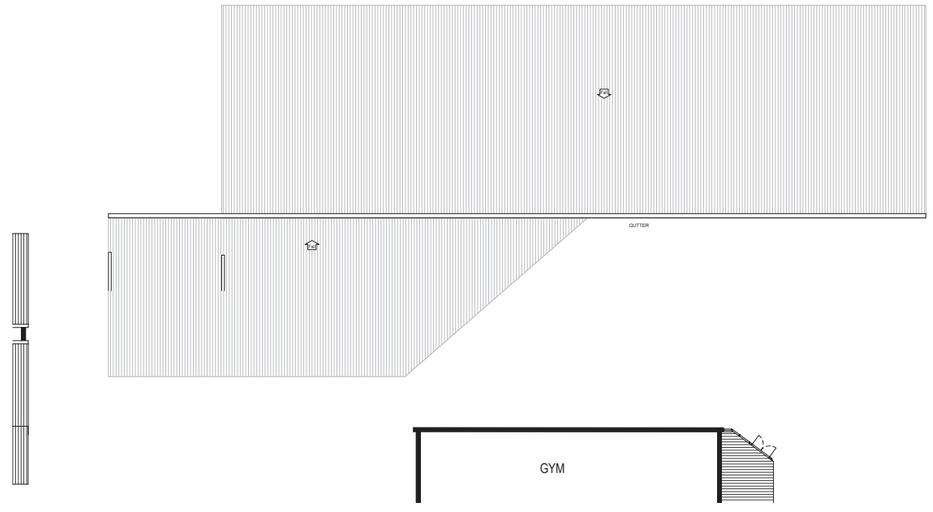

1 EH - Roof Plan
1 : SK-014 Scale 1 : 100

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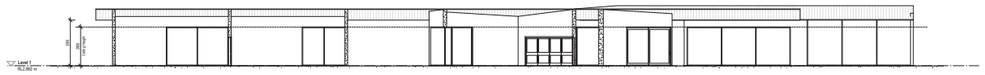
Glenburnie Street, Seaton 5023

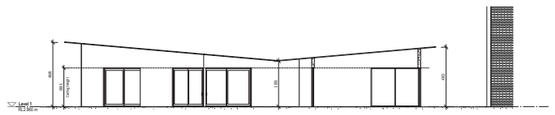
Title: EH - Roof Plan

Scale @ A1: 1 : 100 Revision: B
Date: 19.09.2019
Project No: 02619
Drawing No: SK-016

PRELIMINARY ISSUE



1 EH - E-W Section
1. A-1-01 Scale 1 : 100



2 EH - N-S Section
1. 0A-010 Scale 1 : 100

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Project: Seaton High School Redevelopment
Glenburnie Street,
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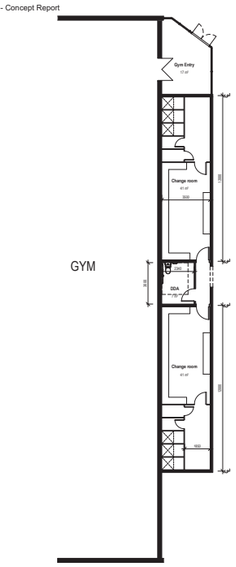
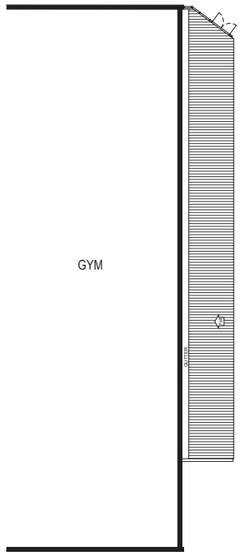
Title: EH - Building Sections

Scale @ A1: 1 : 100
Revision: A
Date: 02.09.2019
Project No: 02619
Drawing No: SK-017

PRELIMINARY ISSUE



1 CR - Level 1 Floor Plan
1. SK-014 Scale 1 : 100



2 CR - Roof Plan
1. SK-014 Scale 1 : 100

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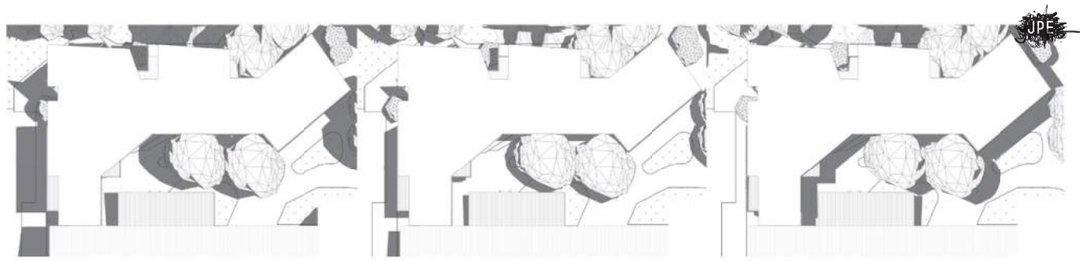
Project: Seaton High School Redevelopment
Glenburnie Street,
Seaton 5023

Title: CR - Level 1 Floor Plan & Roof Plan

Scale @ A1: 1 : 100
Revision: B
Date: 19.09.2019
Project No: 02619
Drawing No: SK-018

PRELIMINARY ISSUE



1 Sun Diagram - Summer 10.30am
Scale 1 : 300

2 Sun Diagram - Summer 12noon
Scale 1 : 300

3 Sun Diagram - Summer 15.00pm
Scale 1 : 300

4 Sun Diagram - Winter 10.30am
Scale 1 : 300

5 Sun Diagram - Winter 12noon
Scale 1 : 300

6 Sun Diagram - Winter 15.00pm
Scale 1 : 300

Sun Diagrams

Scale: 1 : 300 @A1

Date: 09/23/19

Internal Perspective

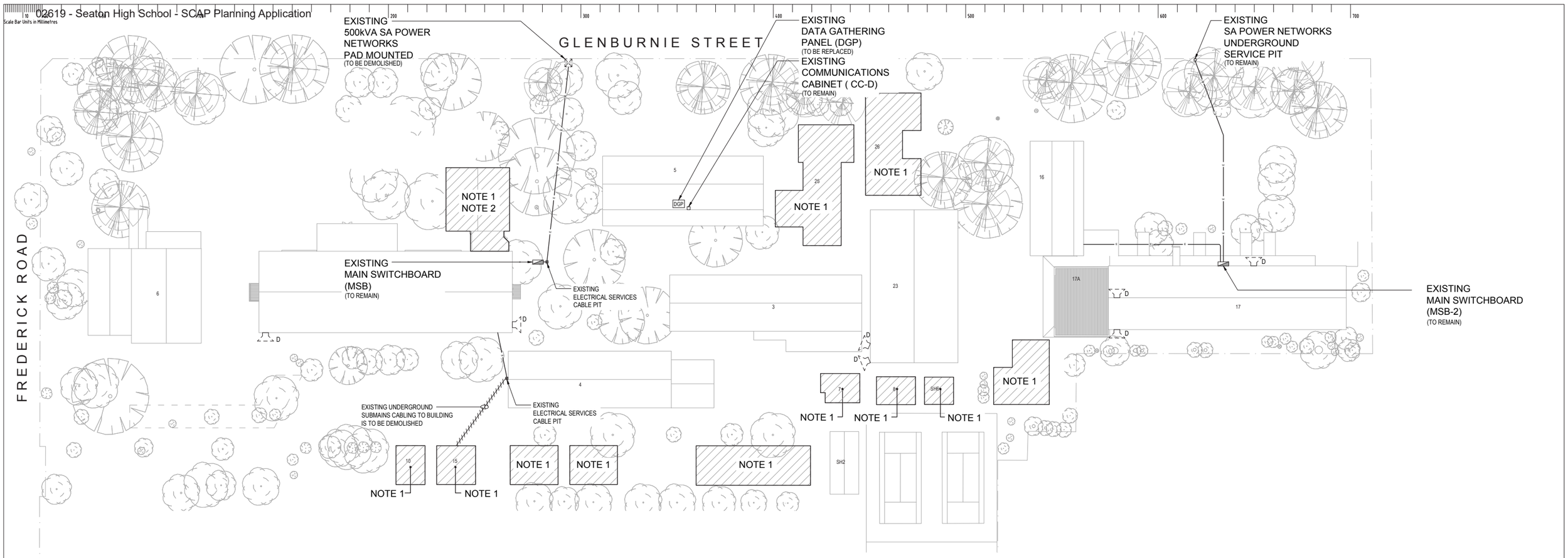
Internal Perspective

Building Perspective

9.0 Appendix

Services Infrastructure Plans

Scale Bar Units in Millimetres



NOTES

1. ALLOW TO ISOLATE, MAKE SAFE AND DEMOLISH THE EXISTING ELECTRICAL SUB-MAINS AND COMMUNICATIONS CABLING SERVING BUILDINGS TO BE DEMOLISHED.
2. BUILDING CONTAINS EXISTING SECURITY CONTROL PANEL (SCP) FOR THE SITE. ALLOW TO UNDERTAKE WORKS TO ESTABLISH NEW SECURITY SYSTEM PRIOR TO DEMOLITION OF BUILDING.
3. THE LOCATIONS SHOWN FOR EXISTING UNDERGROUND SERVICES ARE BASED ON UNVERIFIED SURVEY DATA & SITE OBSERVATIONS & ARE TO BE CONSIDERED NOTIONAL ONLY. CARRY OUT UNDERGROUND ELECTRONIC SURVEYS ON SITE PRIOR TO UNDERTAKING ANY NEW TRENCHING WORKS & TO LOCATE EXISTING SERVICES FOR DEMOLITION. ARRANGE & PAY ALL ASSOCIATED COSTS. SHOW SURVEYED LOCATIONS OF ALL NEW & IDENTIFIED EXISTING SERVICES ON AS BUILT DRAWINGS.

N

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Department of Planning, Transport and Infrastructure

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REV.	DATE	AMENDMENTS	INIT.
01	01.11.19	PRELIMINARY ISSUE	RM

CONTRACT EXECUTION
CONTRACTOR ____ DATE ____
WITNESS ____ DATE ____

CONTRACT NAME: SEATON HIGH SCHOOL

SITE ADDRESS: GLENBURNIE STREET, SEATON, SA 5023

DRAWING TITLE: ELECTRICAL SERVICES
EXISTING SITE PLAN

CONTRACT NO.	XXXX-A-20XX
DRAWN BY - CHECKED BY	RM - MBR
PSC JOB NO.	56320
SCALE AND SHEET SIZE	1:500 @ A1
DPTI ASSET NO.	XXXXX
SHEET NO.	E-01
DPTI DRAWING NO.	E01-EE-2019
REVISION	01

Scale Bar Units in Millimetres

EXISTING
SA POWER NETWORKS
500kVA PAD MOUNTED
TRANSFORMER
(TO BE DEMOLISHED AFTER INSTALLATION OF NEW TRANSFORMER. REFER NOTE 1)

NEW
SA POWER NETWORKS
750kVA PAD MOUNTED
TRANSFORMER

NEW
900mm x 900mm x 800mmD
ELECTRICAL SERVICES
CABLE PIT
(NOTE 1)

4E100

NEW
SITE MAIN SWITCHBOARD
(SMSB-1)

3E100

4E100

2E100

NEW
900mm x 900mm x 800mmD
ELECTRICAL SERVICES
CABLE PIT
(NOTE 1)

2E100

NEW
600mm x 600mm x 800mmD
COMMUNICATIONS
SERVICES
CABLE PIT
(NOTE 1)

1C100

NEW
SECURITY
CONTROL
PANEL (SCP)
(TO REPLACE EXISTING
DATA GATHERING PANEL)

SCP

EXISTING
COMMUNICATIONS
CABINET (CC.D)
(TO REMAIN)

EXISTING
ELECTRICAL SERVICES
CABLE PIT

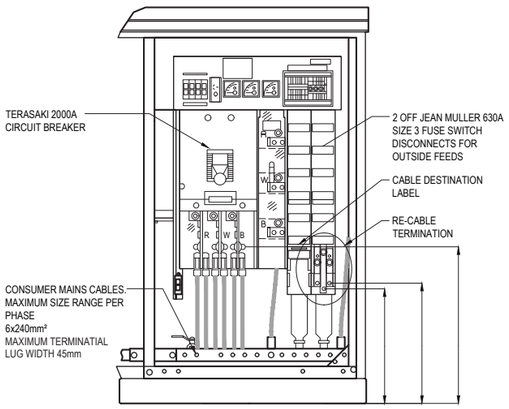
EXISTING
MAIN SWITCHBOARD
(MSB-1)
(TO REMAIN & BE RE-FED BY NEW SMSB-1)

EXISTING
MAIN DISTRIBUTION
BOARD (MDB.1)
(TO REMAIN)

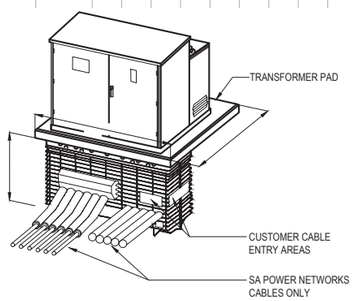
EXISTING
ELECTRICAL SERVICES
CABLE PIT

LC
UP
UP
1
2
3
4
5
6
7

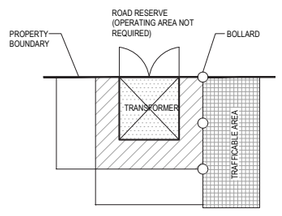
REFER DRAWING E03-EE-2019 FOR CONTINUATION



STANDARD LV COMPARTMENT FOR
750kVA Mk7 PADMOUNT TRANSFORMER
NOT TO SCALE



TYPICAL FOOTING
ARRANGEMENT FOR MK7
PADMOUNT TRANSFORMER
NOT TO SCALE



TYPICAL LAYOUT OF SITE PLAN
EASEMENT DIMENSIONS
FOR 750kVA TRANSFORMER
SCALE: 1:10

NOTES

1. ALLOW TO LOCATE AND INTERCEPT EXISTING CONSUMER MAINS CONDUITS. CUT, LABEL AND PULL BACK EXISTING CONSUMER MAINS CABLING FROM TRANSFORMER AND RE-ROUTE THROUGH NEW CONDUIT PATHWAYS TO NEW SITE MAIN SWITCHBOARD, CONNECT EXISTING CONSUMER MAINS CABLING TO NEW SITE MAIN SWITCHBOARD TO BACKFEED THE EXISTING MAIN SWITCHBOARD.
2. THE LOCATIONS SHOWN FOR EXISTING UNDERGROUND SERVICES ARE BASED ON UNVERIFIED SURVEY DATA & SITE OBSERVATIONS & ARE TO BE CONSIDERED NOTIONAL ONLY. CARRY OUT UNDERGROUND ELECTRONIC SURVEYS ON SITE PRIOR TO UNDERTAKING ANY NEW TRENCHING WORKS & TO LOCATE EXISTING SERVICES FOR DEMOLITION. ARRANGE & PAY ALL ASSOCIATED COSTS. SHOW SURVEYED LOCATIONS OF ALL NEW & IDENTIFIED EXISTING SERVICES ON AS BUILT DRAWINGS.

N

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Department of Planning,
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REV.	DATE	AMENDMENTS	INIT.
01	01.11.19	PRELIMINARY ISSUE	RM

CONTRACT EXECUTION
CONTRACTOR DATE
WITNESS DATE

CONTRACT NAME
SEATON HIGH SCHOOL

SITE ADDRESS
GLENBURNIE STREET, SEATON, SA 5023

DRAWING TITLE
ELECTRICAL SERVICES
PROPOSED PART SITE PLAN 1 OF 2

CONTRACT NO. XXXX-A-20XX
DRAWN BY - CHECKED BY RM MBR
PSC JOB NO. 56320
SCALE AND SHEET SIZE 1:250 @ A1
DPTI ASSET NO. XXXXX
SHEET NO. E-02
DPTI DRAWING NO. E02-EE-2019
REVISION 01

Scale Bar Units in Millimetres

GLENBURNIE STREET

FREDERICK ROAD

LC BUILDING

BUILDING 2

EH BUILDING

CR

BUILDING 17

NEW LOCATION OF RELOCATED EXISTING RAINWATER TANKS & PUMP SETS.

EXISTING APA GROUP GAS METER TO REMAIN.

EXISTING FIRE HYDRANTS AND ASSOCIATED PIPEWORK TO BE DECOMMISSIONED

EXISTING 150mm SA WATER CORPORATION SEWER CONNECTION TO REMAIN.

EXISTING 50mm SA WATER CORPORATION WATER METER TO REMAIN.

EXISTING APA GROUP GAS METER TO REMAIN. MAKE APPLICATION TO APA GROUP & NATURAL GAS RETAILER & PAY ALL ASSOCIATED FEES FOR THE UPGRADE OF EXISTING GAS METER PRESSURE TO 2.75kPa. ALLOW TO ADJUST ALL REGULATORS OF ALL GAS APPLIANCES DOWNSTREAM OF METER.

EXISTING 150mm SA WATER CORPORATION SEWER CONNECTION TO REMAIN.

EXISTING 50MM SA WATER CORPORATION WATER METER TO REMAIN.

NEW 100 DIA. DOUBLE HEADED EXTERNAL FIRE HYDRANT STANDPIPE

CAP, SEAL & REMOVE EXISTING GAS PIPEWORK TO ALLOW FOR NEW LC BUILDING. ALLOW TO REDIRECT NEW PIPEWORK IN-GROUND & RECONNECT TO EXISTING AS SHOWN.

CAP, SEAL & REMOVE EXISTING WATER PIPEWORK TO ALLOW FOR NEW LC BUILDING. ALLOW TO REDIRECT NEW PIPEWORK IN-GROUND & RECONNECT TO EXISTING AS SHOWN.

EGAS.80 (TO BE REMOVED)

ECW.80 (TO BE REMOVED)

NEW 100 DIA. DOUBLE HEADED EXTERNAL FIRE HYDRANT STANDPIPE

NEW 100 DIA. DOUBLE HEADED EXTERNAL FIRE HYDRANT STANDPIPE

NEW 100 DIA. DOUBLE HEADED EXTERNAL FIRE HYDRANT STANDPIPE

LOCATE AND CONNECT TO EXISTING UNDERGROUND HYDRANT MAIN AND EXTEND/ RE-ROUTE AROUND THE FOOTPRINT OF THE NEW BUILDING

DISCONNECT EXISTING RAINWATER TANKS & PUMP SETS FOR RELOCATION. CAP, SEAL & MAKE GOOD EXISTING REDUNDANT PIPEWORK.

DISCONNECT & REMOVE ALL EXISTING GAS PIPEWORK & FIXTURES IN TRANSPORTABLE BUILDINGS.

EXCAVATE FOR, LOCATE, CAP & SEAL EXISTING IN-GROUND GAS PIPEWORK.

EXISTING 2x2 SAMFS BOOSTER FACILITY. UPGRADE THE BOOSTER TO INCORPORATE NEW SA WATER APPROVED TESTABLE SINGLE CHECK VALVE BACKFLOW ASSEMBLY.

REDUNDANT GAS PIPE TO REMAIN IN GROUND.

ESD.200.uPVC
ESD.525.AC
ECW.150.CICL
ECW.80.CICL
ESD.150.VC
EGAS.80
EGAS.40

N

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REV.	DATE	AMENDMENTS	INT.
01	01.11.19	PRELIMINARY ISSUE	JVE

CONTRACT EXECUTION
CONTRACTOR DATE
WITNESS DATE

CONTRACT NAME: SEATON HIGH SCHOOL

SITE ADDRESS: GLENBURNIE STREET, SEATON, SA 5023

DRAWING TITLE: HYDRAULIC SERVICES
SITE PLAN

CONTRACT NO.: XXXX-A-20XX
DRAWN BY - CHECKED BY: JVE - WKR
PSC JOB NO.: 56320
SCALE AND SHEET SIZE: 1:500 @ A1
DPTI ASSET NO.: XXXXX
SHEET NO.: H-01
DPTI DRAWING NO.: H01-ME-2019
REVISION: 01

FUTURE URBAN

APPENDIX 5. TRAFFIC AND PARKING REPORT

PREPARED BY CIRQA

SEATON HIGH SCHOOL REDEVELOPMENT
GLENBURNIE STREET, SEATON

TRAFFIC AND PARKING REPORT

CIRQA™

DISCLAIMER

DOCUMENT CONTROL

Report title:	Seaton High School Redevelopment, Glenburnie Street, Seaton – Traffic and Parking report
Project number:	19078
Client:	JPE Design Studio Pty Ltd
Client contact:	Michelle Male/Kate Dekok

Version	Date	Details/status	Prepared by	Approved by
Draft	24 Oct 19	For review	JJB	BNW
V1	25 Oct 19	For submission	JJB	BNW
V1.1	13 Nov 19	Minor Update	JJB	BNW

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1. INTRODUCTION

CIRQA has been engaged to provide design and assessment advice for the Seaton High School redevelopment at Glenburnie Street, Seaton. Specifically, CIRQA has been engaged to provide advice in respect to traffic and parking aspects of the proposal.

This report provides a review of the subject site, the proposed development, its access and parking provisions and the associated traffic impact on the adjacent road network. The traffic and parking assessments have been based upon plans prepared by JPE Design Studio (drawing no. 02619 SK-LA-01, dated 23/10/19, refer Appendix A).

2. BACKGROUND

2.1 SUBJECT SITE

Seaton High School is located on the corner of Glenburnie Street and Frederick Road, Seaton. The site is bound by Glenburnie Street to the north, Frederick Road to the west, the Seaton Community Child Care Centre and residential housing to the east, and residential housing to the south. The City of Charles Sturt's Development Plan identifies that the site is located within a Residential Zone.

The School currently comprises Years 8 to 12 with 917 students and 88.5 full-time equivalent (FTE) staff.

Vehicular access is provided to/from the School via three (3x) two-way access points on Glenburnie Street. All movements are accommodated at each of the access points. The eastern and central crossovers provide the only access points into the north eastern staff car park and central parking/service area, respectively. The western crossover is one of two access points into the western car park. An additional access point on Frederick Road provides a second access point into the western car park.

Two crossovers provide site access from Fredrick Road. The northern access point is a single width crossover providing access to the western car park (as previously mentioned). Only left-in and left-out movements are permitted at this location. The southern access point is of two-way width, providing access to the school oval. All movements other than right out are permitted at this access point. An additional crossover on Ladd Street provides a second school oval access point. All movements are permitted at the access point. It is noted that both school oval access points are gated, restricting access.

A total of 116 parking spaces are provided within the site (which accommodate staff and visitor demands). Additional set-down/pick-up parking demands are accommodated on street (primarily in Glenburnie Street). Inspection of existing conditions identified that existing parking demands and traffic movements were relatively easily accommodated on the adjacent roads (with additional capacity available).

2.2 ADJACENT ROAD NETWORK

Glenburnie Street is a local road under the care and control of the City of Charles Sturt. The road comprises a single unmarked traffic lane in each direction with a carriageway width of 8.9m (approximate). Adjacent the school on Glenburnie Street, a school zone and road humps are installed to manage traffic speeds. An urban speed limit of 50km/h applies on Glenburnie Road albeit when children are present (25km/h school zone). In the vicinity of the site, there are no parking restrictions on Glenburnie Street other than a short 'No Stopping' zone. The 'No Stopping' zone extends approximately 5 m either side of the eastern crossover into Seaton High School. Sealed footpaths are provided on both sides of Glenburnie Street providing access for cyclists and pedestrians. Cyclists are also able to share the road with motorists, with Glenburnie Street being classified as a 'secondary road' in the BikeDirect network.

Frederick Road is an arterial road under the care and control of the Department of Planning, Transport and Infrastructure (DPTI). The road comprises two traffic lanes in each direction with a wide (4.6 m approximate) central median. The outer and inner lanes have an approximate width of 4.1 m and 3 m, respectively. Adjacent the site, 'No Stopping' zones extend on both sides of the pedestrian actuated crossing. Bus stops restrict areas of parking on both sides of Frederick Road with a signed bus zone on the eastern side and Australian Road Rules restricting parking on either side of the western bus stop. The remaining areas of Frederick Road is unrestricted (other than where the Australian Road Rules apply). Footpaths are provided on both sides of Frederick Road with a signalled pedestrian actuated crossing provided for pedestrians crossing Frederick Road. A part time speed limit of 40 km/h applies on school days between 8 to 9 am and 2 to 3.30 pm. Outside of these times a 60km/h speed limit applies on Frederick Road.

Figure 1 illustrates the location of the subject site and associated access with respect to the adjacent road network.

Figure 1 – Location of the subject site and existing access with respect to the adjacent road network

2.3 WALKING AND CYCLING

As noted above, footpaths are provided adjacent the school on Frederick Road and Glenburnie Street with connections to the broader road network. There are no formal cycling facilities on the adjacent roads, however cyclists could either share the roads with vehicles or footpaths with pedestrians. Once on-site, cyclists are able to park on-site in one of the 45 bicycle parking spaces provided.

2.4 PUBLIC TRANSPORT

Public transport services operate frequently along Frederick Road. Adjacent the site, bus stops 32A (east and west) are serviced by the following bus routes:

- 110 - West Lakes to City
- 653 – Alberton to St Michael's Senior College & Nazareth (School)
- 660 - St Michael's Senior College to West Lakes (School)
- 665 - Seaton High School to Port Adelaide (School)

Seaton Park Railway Station is located approximately 860 m from Seaton High School. Train services frequently operate along the Grange line between Adelaide and Grange.

3. PROPOSED DEVELOPMENT

3.1 LAND USE AND YIELD

The proposed redevelopment comprises the demolition of a number of the existing buildings and infrastructure on the subject site, refurbishment of existing facilities and construction of new facilities to increase the School's student capacity.

The proposal will result in an increase in the School's capacity to 1,200 students. An increase to 110 staff (FTE) will also result from the proposal.

3.2 ACCESS AND PARKING DESIGN

Access arrangements for the site will generally remain as per the current situation. The only alterations to access arrangements are:

- the Frederick Road access will be widened to provide improved accommodation of two-way flow. The widening will be undertaken to the north to avoid impact on the adjacent existing bus stop; and
- the central access on Glenburnie Street will be closed (allowing for additional on-street parking to be accommodated).

Alterations will also be undertaken to the existing parking areas. The altered parking arrangements will result in a total of 123 parking spaces being provided within the site including two spaces for use by persons with disabilities.

The parking areas will comply with the requirements of Australian/New Zealand Standard, *Parking Facilities Part 1: Off-street car parking* (AS/NZS 2890.1:2004) and Australian/New Zealand Standard, *Parking Facilities Part 6: Off-street parking for people with disabilities* (AS/NZS 2890.6:2009) in that:

- staff parking spaces (User Class 1A) will be a minimum of 2.4 m wide and 5.4 m long;
- visitor parking spaces (User Class 3) will be a minimum of 2.6m wide and 5.4m long;
- disabled parking spaces will be 2.4 m wide and 5.4 m long (with an adjacent shared space of the same dimension);
- the parking aisles will be at least 5.8 m wide;
- parallel parking spaces will be at least 2.1m wide and 6.3m long;
- 1.0 m end-of-aisle extension will be provided beyond the last parking space in dead-end aisles; and
- 0.3 m clearance will be provided to all objects greater than 0.15 m in height.

3.3 REFUSE COLLECTION & SERVICE VEHICLES

Refuse collection will occur outside of school hours by a private contractor. Provisions have been made for an 11m refuse collection vehicle to manoeuvre on-site and collect the refuse from the western car park (at the waste storage area). Refuse vehicles will be able to enter and exit the site in a forward direction as illustrated in Figure 2.

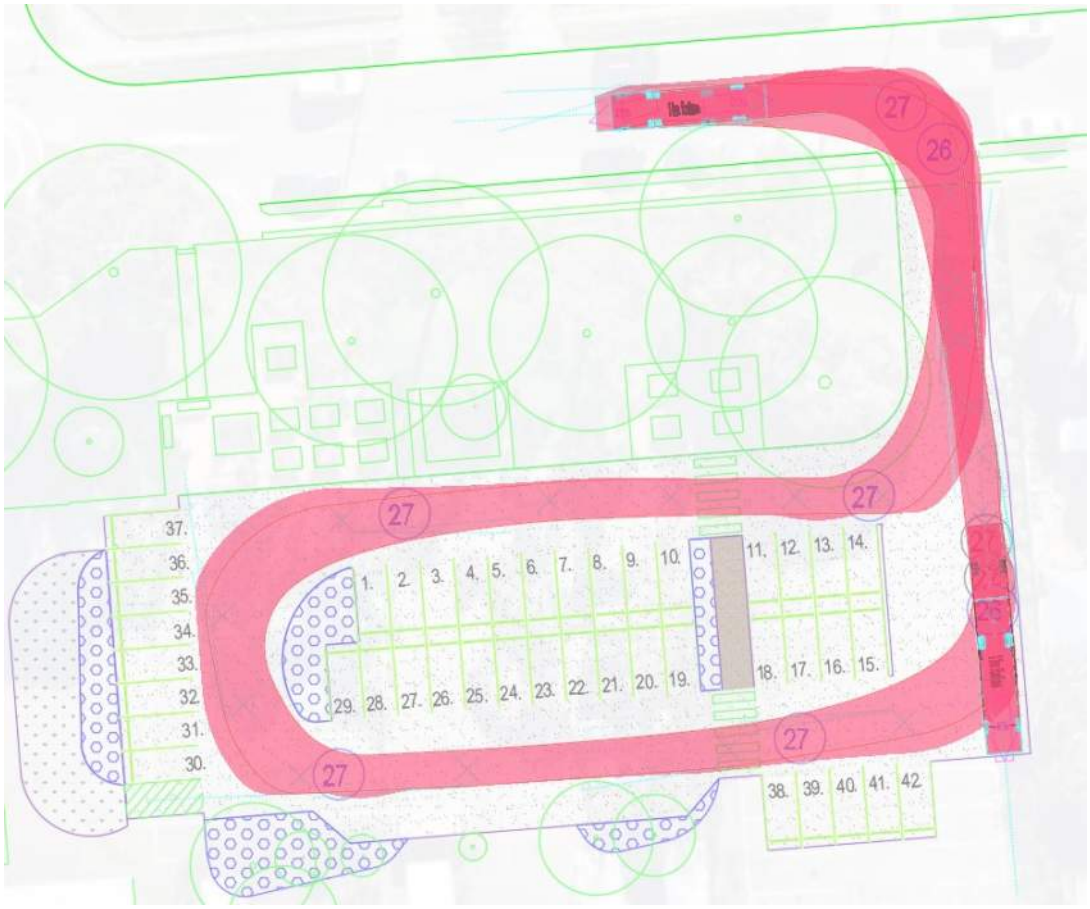


Figure 2 – The turn path of an 11m refuse collection vehicle into and out of the site.

Service vehicles associated with deliveries to the woodwork and metalwork workshops (Building 3) as well as the maintenance shed (SH2), will be able to access the site via Frederick Road or Glenburnie Street. Service vehicles associated with the canteen will access the site via the site's eastern crossover on Glenburnie Street. All service vehicles will be able to enter and exit the site in a forward direction.

Emergency vehicles are able to enter the site via the multiple access points on both Glenburnie Street and Frederick Road. Emergency vehicles will be able to manoeuvre within car park and delivery areas as required.

4. PARKING ASSESSMENT

4.1 CAR PARKING

The City of Charles Sturt's Development Plan does not identify a parking provision requirement for schools or educational establishments. The Department for Education (DfE), however, have a policy to provide the following parking arrangements at high schools:

- one parking space per FTE staff member;
- an additional 10% (of the requirement resulting from the above rate) for visitor parking; and
- two parking spaces for use by persons with disabilities.

The above rates would result in a requirement for 123 parking spaces. The proposed provision of 123 spaces will therefore meet the DfE requirement.

In addition to the above parking provisions, it is acknowledged that the majority of student related parking (other than staff, disabled and visitor parking) would be accommodated on-street. Based on similar projects, it is anticipated that additional set-down/pick-up and student parking demands experienced during the peak morning and afternoon periods would be in the order of one parking space per seven to ten students. Actual rates realised are dependent on a variety of factors including accessibility by walking, cycling and public transport and socio-economic considerations (with private schools typically generating at the higher demand rate than public schools). Based on on-site observations, the School has a relatively high proportion of students accessing the site by walking and public transport.
Given the student capacity will increase by 283 students, there would therefore be in the order of 29 to 41 additional vehicles distributed onto the adjacent road network as a result of the proposed redevelopment. The additional parking demand would be distributed to Frederick Road, Glenburnie Street and other surrounding side streets with the impact on any one location (compared to current conditions) being relatively low. Of particular note, the peak demands would typically occur for short periods each morning and afternoon on school days. Outside of these times, there would be minimal impact on parking conditions as a result of the proposal.

It is also noted that on-site observations of an afternoon pick-up period (the worst-case time for parking demand accumulation) identified that there was ample on-street parking available adjacent the School. The adjacent road network will readily accommodate the increased on-street parking demand.

4.2 BICYCLE PARKING

Based on the existing student population of 917 students and the existing number of bicycle parking spaces (45), the school provides approximately one bicycle park per 20.3 students. Based upon this rate, the school would require 60 bicycle parking spaces to service 1200 students (i.e. 15 additional bicycle parking spaces). The bicycle parking provisions can be identified during detailed design and there is ample room on-site to accommodate such numbers.

5. TRAFFIC ASSESSMENT

Trip generation associated with public high schools is typically in the order of 0.3 to 0.5 trips per student (this includes allowance for staff and visitor trips). It is therefore forecast that the additional student (and staffing) population resulting from the redevelopment could generate in the order of 85 to 142 additional movements during the morning and afternoon peak hours.

As with parking demands, the additional movements would primarily be distributed to Glenburnie Street and Frederick Road, as well as a smaller proportion to Ladd Street and Raymond Avenue. These movements would then distribute into the wider road network. The additional movements on any one section of road would therefore be less than the above forecasts. The additional movements would be within the capacity of the adjacent roads and their associated intersections.

The number of movements forecast to be distributed to the Frederick Road/Glenburnie Street intersection would equate to approximately 10 additional peak hour trips per turning movement. Such additional volumes are low. On-site observations of conditions at the Frederick Road/Glenburnie Street intersection operated with acceptable delays and within capacity. Vehicles were able to perform both right-in and right-out movements (as well as left turn movements) from Glenburnie Street onto Frederick Road with relative ease and minimal delay. In addition, it was observed that the traffic on the local roads adjacent the school were operating within capacity and would readily accommodate the forecast increase in traffic. Outside of the peak set-down and pick-up hours, the number of additional traffic movements would be minimal.

6. SUMMARY

The proposed redevelopment of the Seaton High School will result in an increase of 283 students and 20.5 FTE staff.

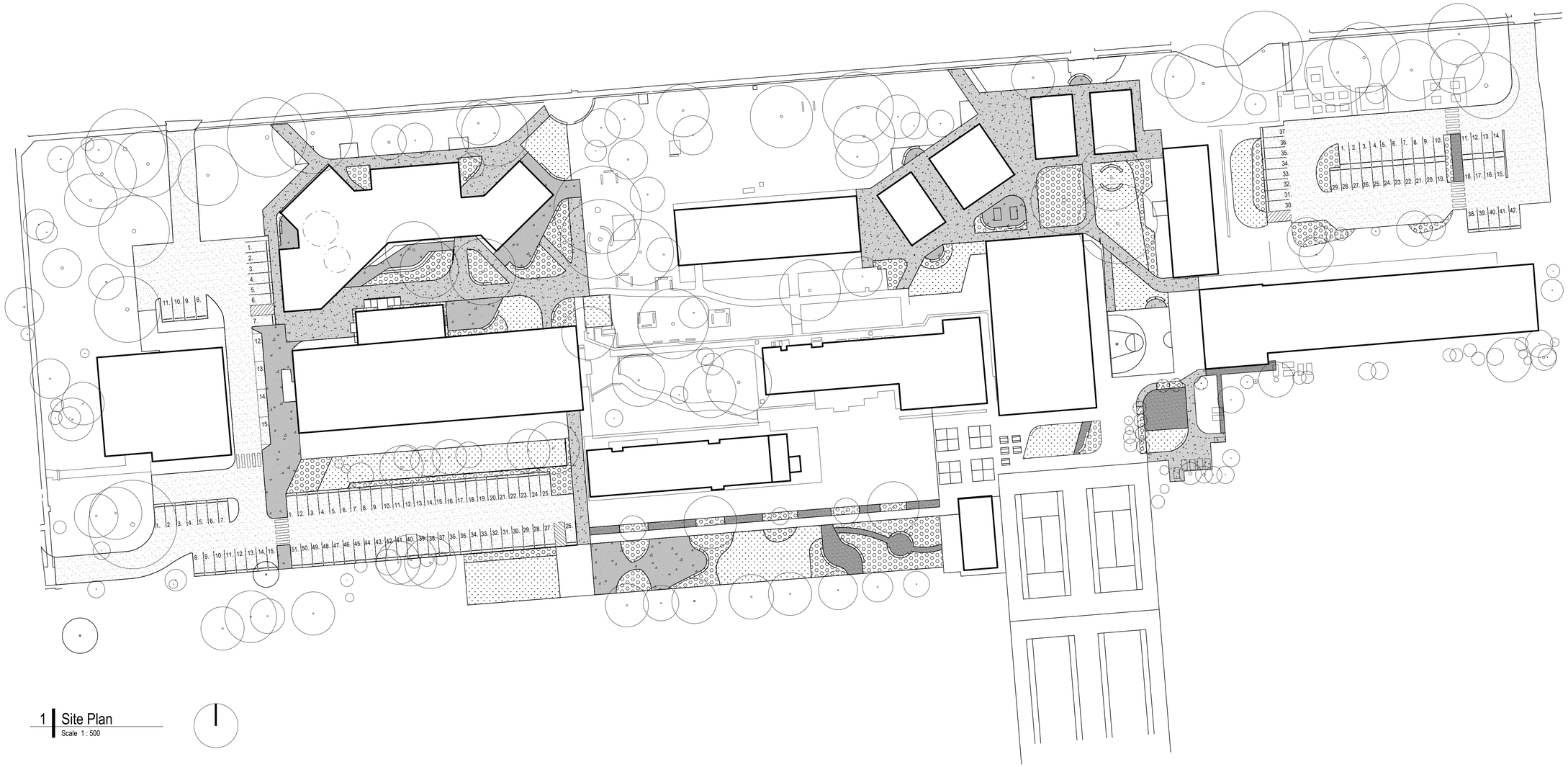
Additional parking will be provided on-site in accordance to the Department for Education's policy requirements. Additional set-down/pick-up and student parking demands will be distributed to the surrounding street network. During

the peak morning and afternoon periods, it is forecast that a demand of approximately 29 to 41 additional vehicles will be associated with the redevelopment. Such additional demand will occur for short periods (10 or so minutes) in the set-down and pick-up peak periods with limited impact at other times of day.

The proposal will also result in an increase in traffic generation associated with the School. It is forecast that approximately 85 to 142 additional trips would be generated during the morning and afternoon peak hours. These movements would be distributed to Frederick Road, Glenburnie Street and other adjacent side streets. It is considered that there is adequate capacity to accommodate the increase in movements and that there will be minimal impact on existing traffic conditions as a result of the proposal.

APPENDIX A

JPE DESIGN STUDIO PLANS



1 Site Plan
Scale 1 : 500

SK-LA-01

Scale: 1 : 500 @A1

Date: 10/23/19

APPENDIX 6. STORMWATER MANAGEMENT PLAN

PREPARED BY WGA

WALLBRIDGE GILBERT AZTEC

JPE DESIGN STUDIO PTY LTD

SEATON HIGH SCHOOL

STORMWATER MANAGEMENT PLAN

Project No. WGA190535
Doc No. WGA190535-RP-CV-0001
Rev. C

01 November 2019

Revision History

Rev	Date	Issue	Originator	Checker	Approver
A	26 August 19	Council Approval	ASF	CH	CH
B	28 October 19	SCAP Approval	ASF	CH	CH
C	01 November 19	SCAP Approval	ASF	CH	CH

CONTENTS

Appendices

1 INTRODUCTION

1.1 BACKGROUND

WGA has been engaged by JPE Architects to prepare a Stormwater Management Plan for the proposed development at Seaton High School. The school is located west of Adelaide and is situated on the intersection of Frederick Rd and Glenburnie St. The key focus for the program is to provide learning areas more suited for contemporary education.

This report is intended to conceptually outline the stormwater management design for the proposed development and detail the stormwater management methodology. A final detailed design should be carried out to provide construction documentation and incorporate the stormwater design principles outlined in this report. The final documentation is considered to be beyond the scope of this report.

1.2 SCOPE OF THE ASSESSMENT

The preparation of the plan comprises the scope of services listed below:

- Site visit
- Liaise with the City of Charles Sturt (Council) to determine appropriate stormwater requirements for the site
- Prepare a Stormwater Management Plan detailing the proposed method of collection and the disposal of site generated stormwater runoff
- Prepare preliminary sketch plans showing possible site drainage infrastructure and nominal design pavement grade based on Council and client requirements

1.2.1 Documentation

The client has provided preliminary Architectural plans for the development.

2 DETAILED REPORT

2.1 DEVELOPMENT DESCRIPTION

The proposed development is located at Seaton High School, Seaton. It is understood the proposed development will include the demolition of several buildings, construction of a new two-storey GLA/Library building, new prefab building, reconstruction of carparking, refurbishment of learning areas in several buildings and the resurfacing of the tennis courts.

Stormwater management will be required for the GLA/Library building and prefab building. As there will be no extension of impermeable areas in the carparks, detention for these areas will not be required.

Refer to Appendix A for JPE Architect's site plan for the proposed development.

2.2 CATCHMENT DESCRIPTION

The proposed GLA/Library building is currently occupied by undeveloped land while the prefab building area will be built over mostly existing developed areas.

The GLA/Library building will capture approximately 1060m² with the area being mostly undeveloped. The Prefab building area will capture approximately 1170m² with the area being mostly developed.

An aerial photograph of the site and survey is shown in Appendix B and C.

Refer to Appendix D for current site photos.

2.3 EXISTING STORMWATER DRAINAGE

The site has existing stormwater infrastructure throughout the school grounds including downpipes, PVC and RCP pipes, stormwater pits and spoon drains. Each area proposed for development has stormwater infrastructure located nearby for connection.

The school boundary is abutted by Frederick Rd and Glenburnie St which both have existing stormwater infrastructure.

Flood mapping has been provided by council and does not indicate any flood risk on site.

Refer to Appendix E for the location of existing council stormwater infrastructure and flood mapping.

2.4 COUNCIL REQUIREMENTS

The City of Charles Sturt have provided a stormwater management guide (D34) which was utilised in the development of this stormwater management plan. The key requirements being:

- Drainage shall be designed to provide 100-year ARI protection
- All finished floor levels minimum 0.3m above the highest adjacent water table
- Peak runoff must not exceed that from the pre development site from a 5 year ARI storm

Refer to Appendix F for council's stormwater management guidelines.

2.5 STORMWATER MANAGEMENT METHODOLOGY

Based on Council's requirements, the following stormwater management methodology is proposed.

GLA/Library Building

In order to meet councils' requirements to restrict the 1 in 100-year post-development peak flows to the 1 in 5 year pre-development flows, stormwater detention storage will be required.

Roof runoff will be collected by downpipes located around the building and will discharge to a 42m³ stormwater detention tank (Humes StormTrap or similar). The detention tank will discharge to a nearby existing junction box which drains to an existing SEP on the corner of Frederick Rd and Glenburnie St. In addition to the detention tank, the redesigned carpark to the east will have 8.6 m³ of surface detention volume.

Surface runoff will grade away from the building towards landscaped areas.

Prefab Building

In order to meet councils' requirements to restrict the 1 in 100-year post-development peak flows to the 1 in 5 year pre-development flows, stormwater detention storage will be required.

It is calculated that approximately 26.93m³ of detention is required for roof runoff. Due to spatial restrictions for rainwater tanks in the immediate area, it is proposed to capture and detain stormwater from the existing gymnasium and workshop buildings which has currently un-detained roof runoff and is of equivalent area to the proposed Prefab building. Eight 4000L stormwater detention tanks (Bushmans 4000L round tanks or similar) will capture runoff from the roof of these buildings.

Surface runoff will grade away from the building towards landscaped areas.

Refer to Appendix G and Appendix H for a copy of all stormwater calculations and preliminary Stormwater Management Plan.

Carpark Redesign

Surface runoff from redesigned carparks will drain towards stormwater infrastructure or garden beds as required. Where surface stormwater may be trapped due to new carpark geometry, pits will be constructed, or levels adjusted to allow for appropriate drainage.

2.6 SUMMARY

The Preliminary sketch plans contained within this report has been prepared to demonstrate the philosophy behind proposed management of the stormwater runoff from the development. The information provided is preliminary and will be subject to detailed design and documentation.

APPENDIX A

ARCHITECTURAL SITE PLAN

APPENDIX B

AERIAL PHOTOGRAPHY

Aerial Photo - 2019

APPENDIX C

SURVEY

REV	DATE	DESCRIPTION	CALC	FIELD
0	26.07.2019	INITIAL RELEASE	JTH	JTH

ADDITIONS, AMENDMENTS AND APPROVALS

IMPORTANT NOTE:
The location of the underground service data shown hereon has been determined using information from Dial Before You Dig Plans. No electronic detection of underground services has been undertaken. No guarantee is given to the completeness or accuracy of the underground service data shown. All services must be verified on site prior to construction or excavation activity using the "Dial Before You Dig" service.

Notes:
Property boundaries and easements shown hereon have been compiled from government records and show discrepancies to Certificate of Title dimensions. Boundaries have not been verified by field survey. Construction or design on or near boundaries or easements will require additional survey work.

Aerial photography supplied by NearMap, date 22/06/2019.

LEGEND

47.51TK TOP KERB; 47.36WT WATER TABLE; 45.16FL FLOOR LEVEL; 48.12IL INVERT LEVEL; TAP; WATER METER; SPRINKLR / IRRIG VALVE; HYDRANT; DOMESTIC OUTLET; DOWNPIPE; DOMESTIC SUMP; STORMWATER M'HOLE; SEP / GRATING; 47.51WT WINDOW TOP; 47.51WB WINDOW BOTTOM; 45.16RR ROOF RIDGE LEVEL; 47.87VER VERANDAH; 47.87OH OH WIRE LEVEL; 48.12GU GUTTER LEVEL; TEL. COMM. PILLAR / PIT; TRAFFIC LIGHT; SIGN / BUS SIGN; LITTER BIN; ROAD / SERVICE; WATER SV / FP; ELEC. / GAS METER; GAS SERVICE; PSM; PEG / TBM; AIR COND. UNIT; SURVEY MARKS; BOREHOLE; POWER / LIGHT POLE; ELEC. CABLE MARKR PLATE; STOBIE / WOODEN POLE; POST / BOLLARD; SEWER MH / IO / SIP; UNKNOWN POINT / SERVICE; SEWER VENT; CHANGE OF GRADE; EDGE OF LOG BORDER; EDGE OF VEGETN; ROAD SIGN / HOARD.; TREE / SHRUB; Possible REGULATED / SIGNIFICANT TREE by measurement only (trunk greater than 2.0m circumference). Professional advice from council / arborist required.; SPOON DRAIN; ROCK OUTCROP; ROOF RIDGE; DCDB LINE; BOTTOM OF BANK; TOP OF BANK; DIGITISED STMWTR UG; DRAIN; DIGITISED SEWER PIPE UG; DIGITISED TEL. COMM. UG; DIGITISED WATER PIPE UG; BUILDING; WALL; GI BUILDING; CONCRETE; FENCE; GATE

COORDINATE SYSTEM	
VERTICAL:	AHD
HORIZONTAL:	GROUND PLANE ORIENTED TO: MGA 2020 ZONE 54
SCALE: GROUND	(CSF = 1.00023952)

ADOPTED STATION & AUTHORITY		
PSM 6628/9871	RL:	2.344 SDB
PSM 6628/9871	E:	271913.320 SDB
	N:	6136856.582 SDB

SDB denotes SA Government survey data base values (Dated: 24 / 11 / 2004)

0 2 4 8 12 16 20 m

1:200

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ORIGINAL SHEET SIZE A0

Notes:
Property boundaries shown hereon as DCDB have been sourced from the relevant government authority and may be of poor accuracy. DCDB data has been provided for general information only.

CONTOUR INTERVAL:	0.2m	
SURVEY:	JTH	JULY 2019
DRAWN:	JTH	JULY 2019
CHECKED:	CB	31.07.2019

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+ Property + Land Development +
+ Construction + Mining +
+ Spatial Information Management +

Alexander Symonds Surveying Consultants

DETAIL AND LEVEL SURVEY SEATON HIGH SCHOOL SEATON

DRAWING No. A066019-Detail(0)_MGA20P

SHEET 1 OF 2

REVISION 0

REV	DATE	DESCRIPTION	CALC	FIELD
0	26.07.2019	INITIAL RELEASE	JTH	JTH

ADDITIONS, AMENDMENTS AND APPROVALS

IMPORTANT NOTE:
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Aerial photography supplied by NearMap, date 22/06/2019.

LEGEND

47.517K TOP KERB
47.284T WATER TABLE
45.16FL FLOOR LEVEL
48.12IL INVERT LEVEL
PL TAP
WATER METER
SPRINKLER / IRRIG VALVE
HYDRANT
DOMESTIC OUTLET
DOWNPIPE
DOMESTIC SUMP
STORMWATER MHOLE
SEP / GRATING
47.51WT WINDOW TOP
47.51WB WINDOW BOTTOM
45.16RB ROOF RIDGE LEVEL
47.87VER VERANDAH
47.87OH OH WIRE LEVEL
48.10GU GUTTER LEVEL
TEL COMM. PILLAR / PIT
TRAFFIC LIGHT
SIGN / BUS SIGN
LITTER BIN
ROAD / SERVICE
WATER SV / PP
ELEC. / GAS METER
GAS SERVICE
PSM PEG / ITRM
AIR-COND. UNIT
SURVEY MARKS
BOREHOLE
POWER / LIGHT POLE
ELEC. CABLE MARKR PLATE
STOBIE / WOODEN POLE
POST / BOLLARD
SEWER MH / IO / SIP
UNKNOWN POINT / SERVICE
SEWER VENT
CHANGE OF GRADE
EDGE OF LOG BORDER
EDGE OF VEGETN
ROAD SIGN / HOARD
TREE / SHRUB
Possible REGULATED / SIGNIFICANT TREE by measurement only (trunk greater than 2.0m circumference). Professional advice from council / arborist required.
SPOON DRAIN
ROOF OUTCROP
ROOF RIDGE
KERB LINE
BOTTOM OF BANK
TOP OF BANK
DIGITISED STMWTR U/G
DRAIN
DIGITISED SEWER PIPE U/G
DIGITISED TEL. COMM. U/G
DIGITISED WATER PIPE U/G
BUILDING
WALL
G BUILDING
CONCRETE
FENCE
GATE

COORDINATE SYSTEM

VERTICAL:	AHD
HORIZONTAL:	GROUND PLANE ORIENTED TO: MGA 2020 ZONE 54
SCALE: GROUND	(CSF = 1.00022992)

ADOPTED STATION & AUTHORITY

PSM 6628/9871	RL:	3.344 SDB
PSM 6628/9871	E:	271913.320 SDB
	N:	6136856.582 SDB

SDB denotes SA Government survey data base values (Dated: 24 / 11 / 2004)

0 2 4 8 12 16 20 m

1:200

ORIGINAL SHEET SIZE A0

Notes:
Property boundaries shown hereon as DCDB have been sourced from the relevant government authority and may be of poor accuracy. DCDB data has been provided for general information only.

CONTOUR INTERVAL:	0.2m	
SURVEY:	JTH	JULY 2019
DRAWN:	JTH	JULY 2019
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DETAIL AND LEVEL SURVEY
SEATON HIGH SCHOOL
SEATON

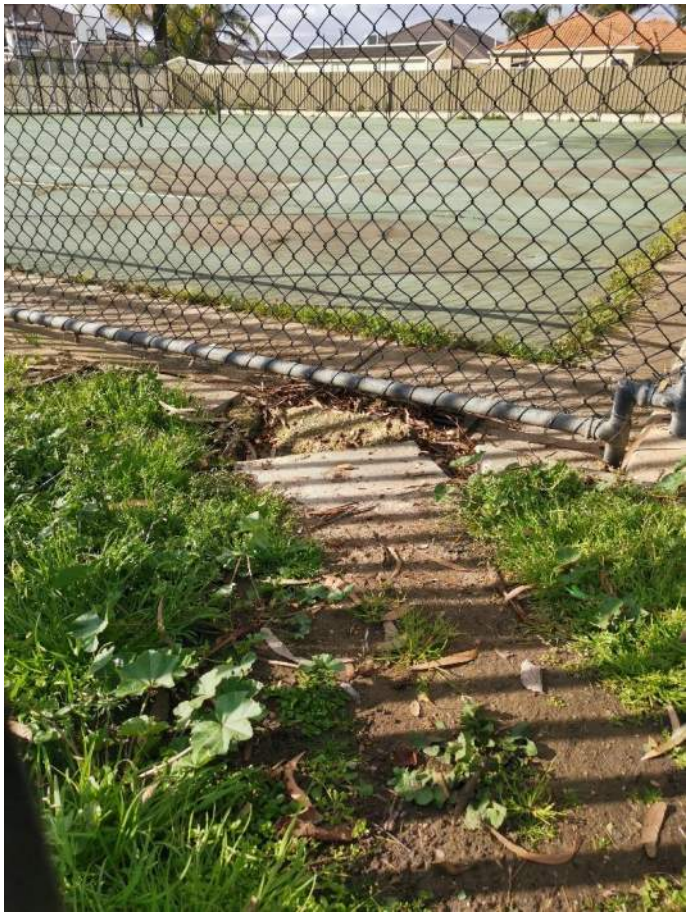
DRAWING No. A066019-Detail(0)_MGA20P

SHEET 2 OF 2

REVISION 0

APPENDIX D

SITE PHOTOS



APPENDIX E

EXISTING COUNCIL STORMWATER DRAINAGE AND FLOOD MAPPING

Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

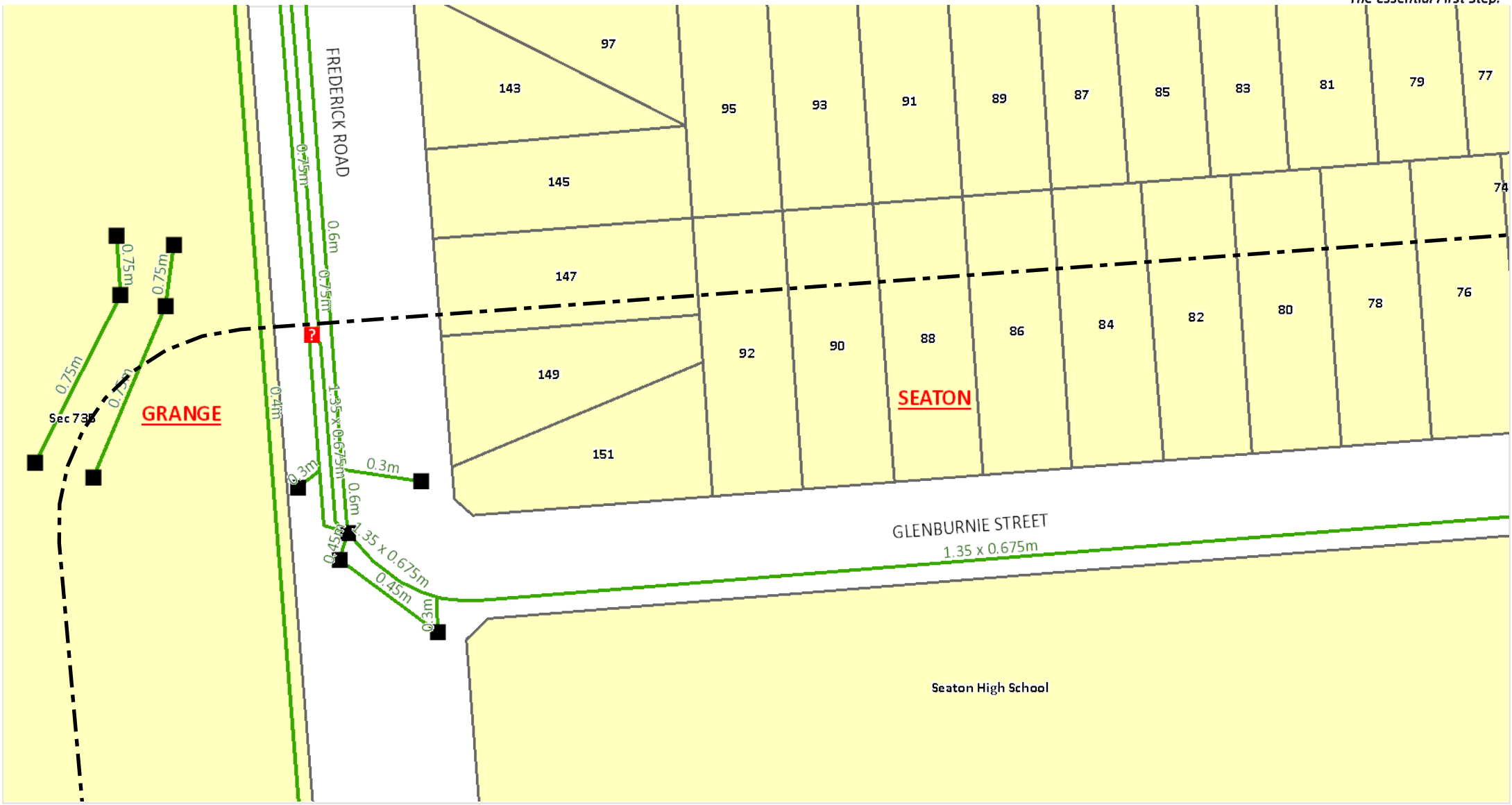
Legend | Scale: 1:3280 | Overview

- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend | Scale: 1:800 | Tile No: 1

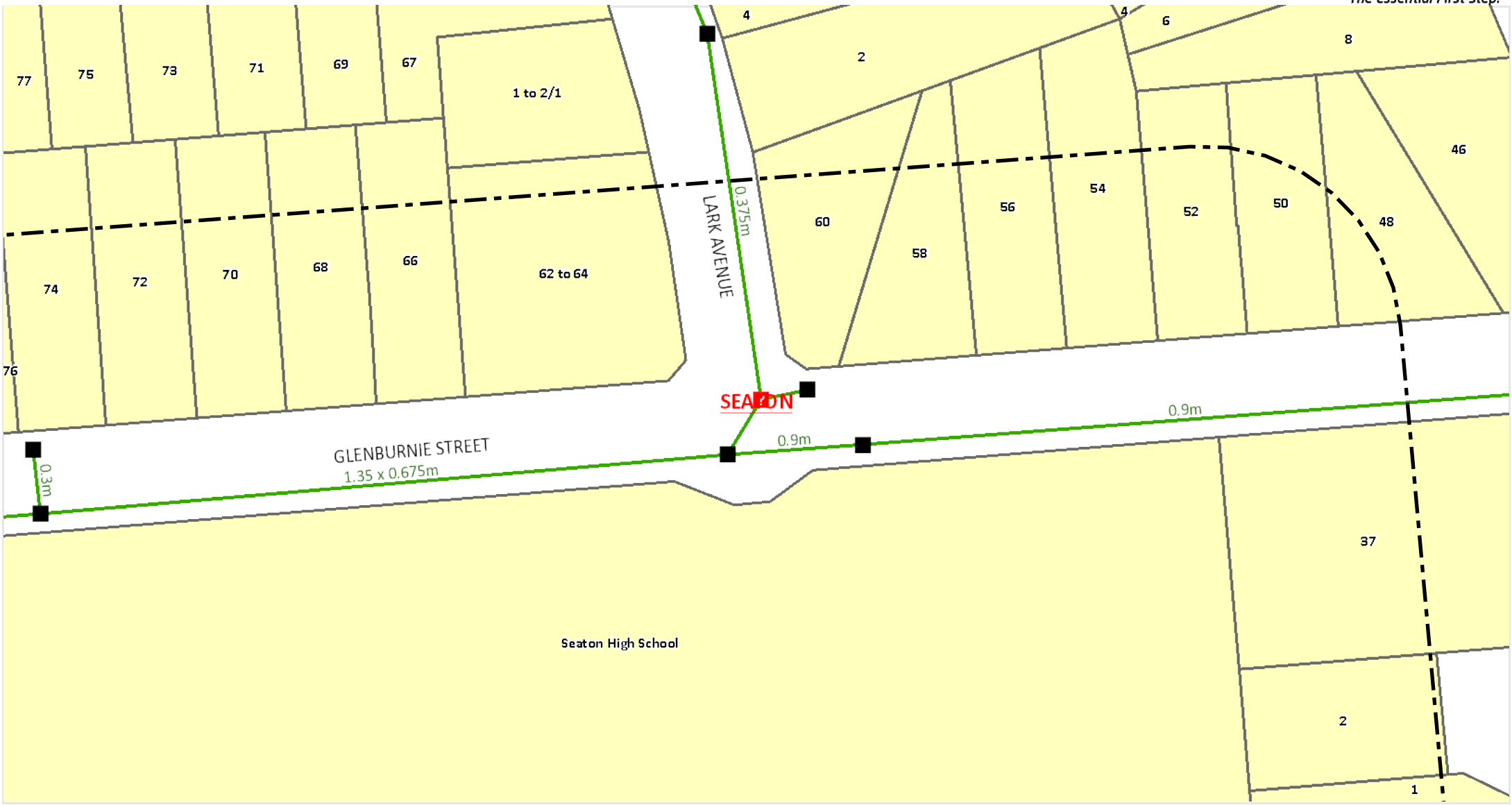
- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

DISCLAIMER: While every care is taken by City of Charles Sturt to ensure the accuracy of this data, City of Charles Sturt makes no representation or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which may be incurred as a result of the data being inaccurate or incomplete in any way and for any reason. **Exact positions of any assets shown on this map report should be confirmed on site.**

Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend | Scale: 1:800 | Tile No: 2

- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

Legend | Scale: 1:800 | Tile No: 3

City of Charles Sturt

- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

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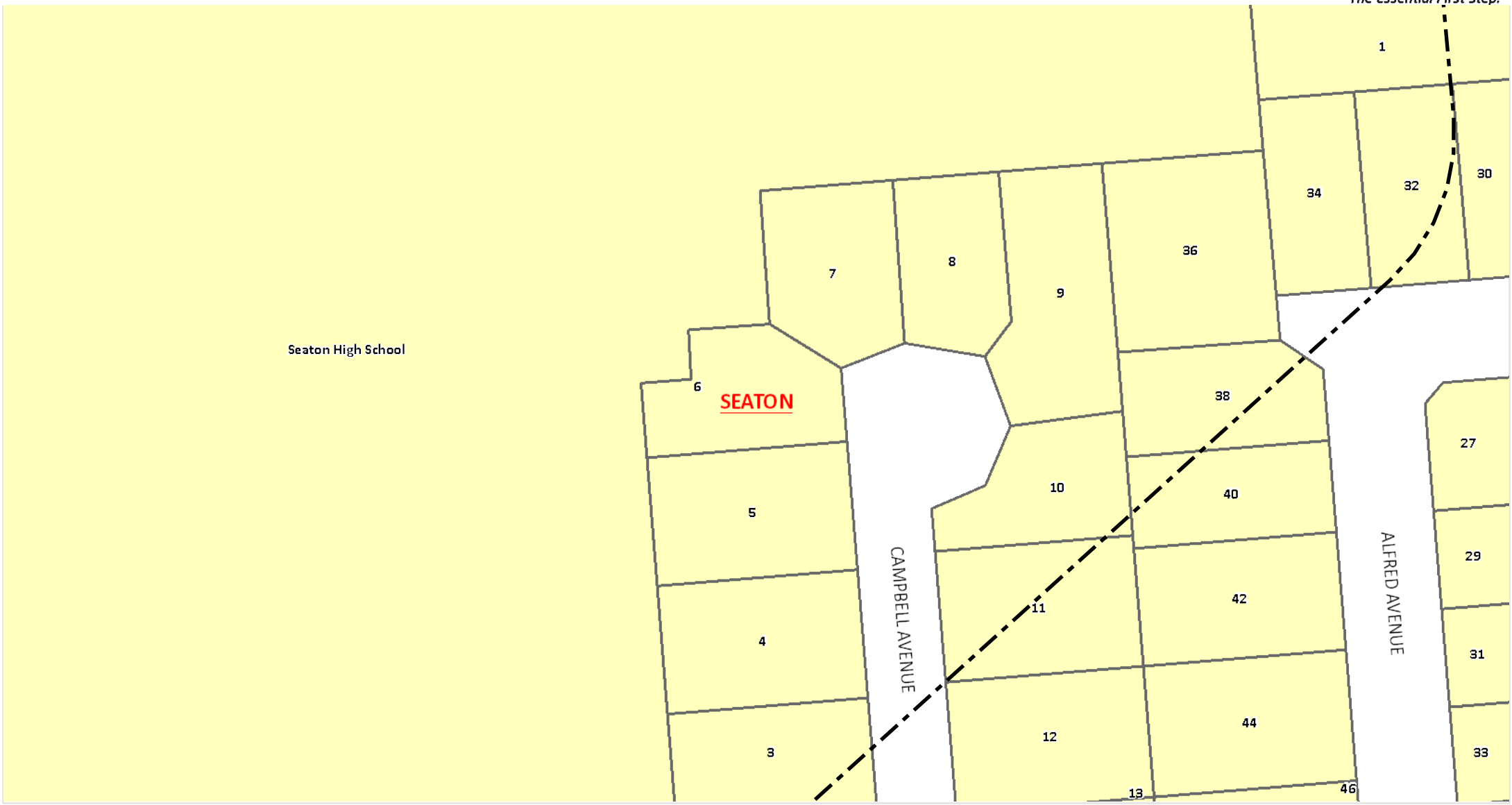
Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend | Scale: 1:800 | Tile No: 4

- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

Legend | Scale: 1:800 | Tile No: 5

City of Charles Sturt

- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

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Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

Legend | Scale: 1:800 | Tile No: 6

City of Charles Sturt

- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

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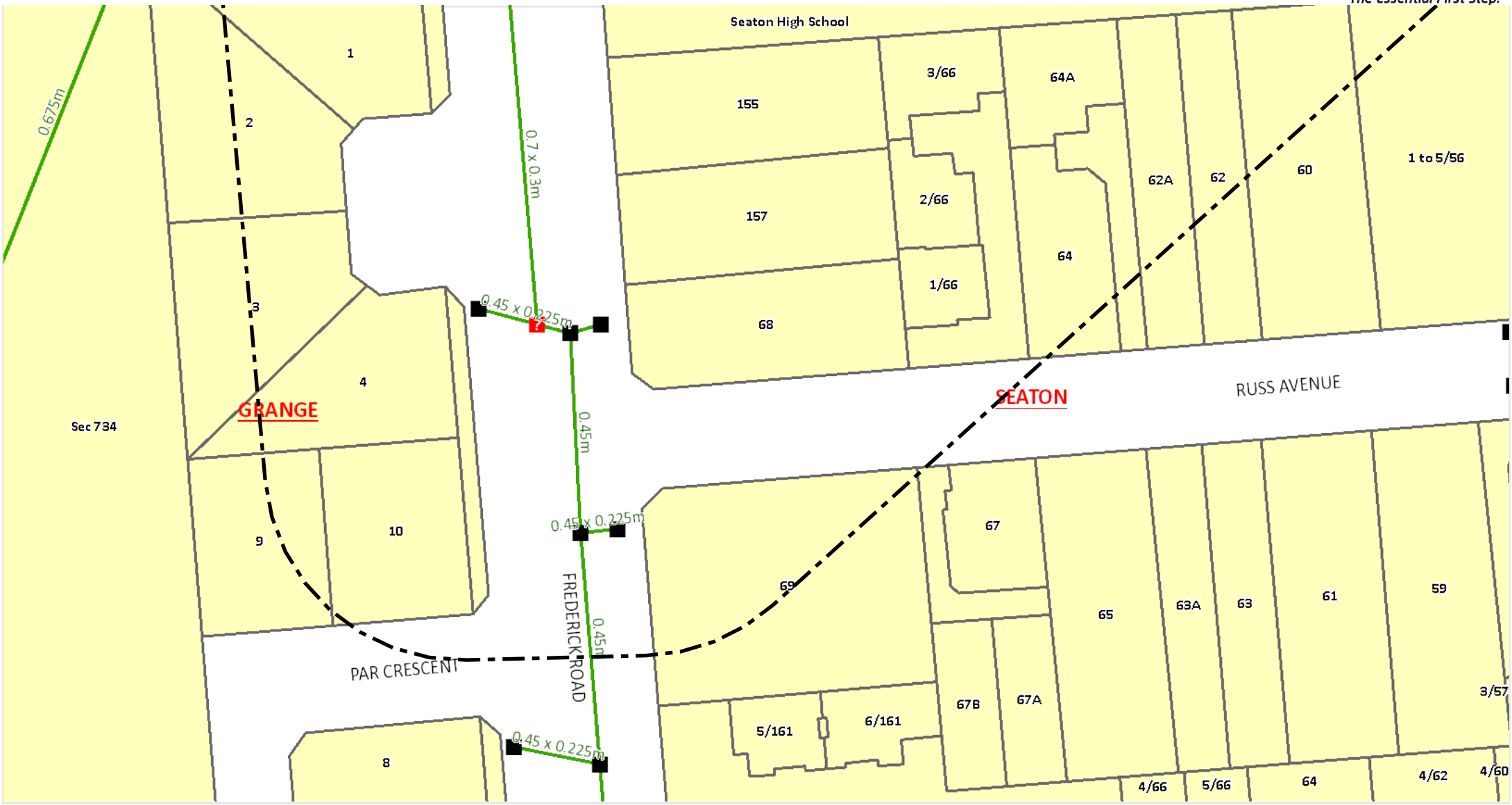
Sequence No: 88027022
Job No: 17942125
Location: Glenburnie Street, Seaton, SA 5023

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend | Scale: 1:800 | Tile No: 7

City of Charles Sturt

- DBYD Enquiry Area
- Stormwater Pits
- Unconfirmed Pits
- Stormwater Drains
- Gross Pollutant Trap
- Valve
- Water Meter
- RW Supply Main
- RW Supply Connection
- Communications & Electrical
- Cadastre
- Council Boundary
- State Council Boundaries

N

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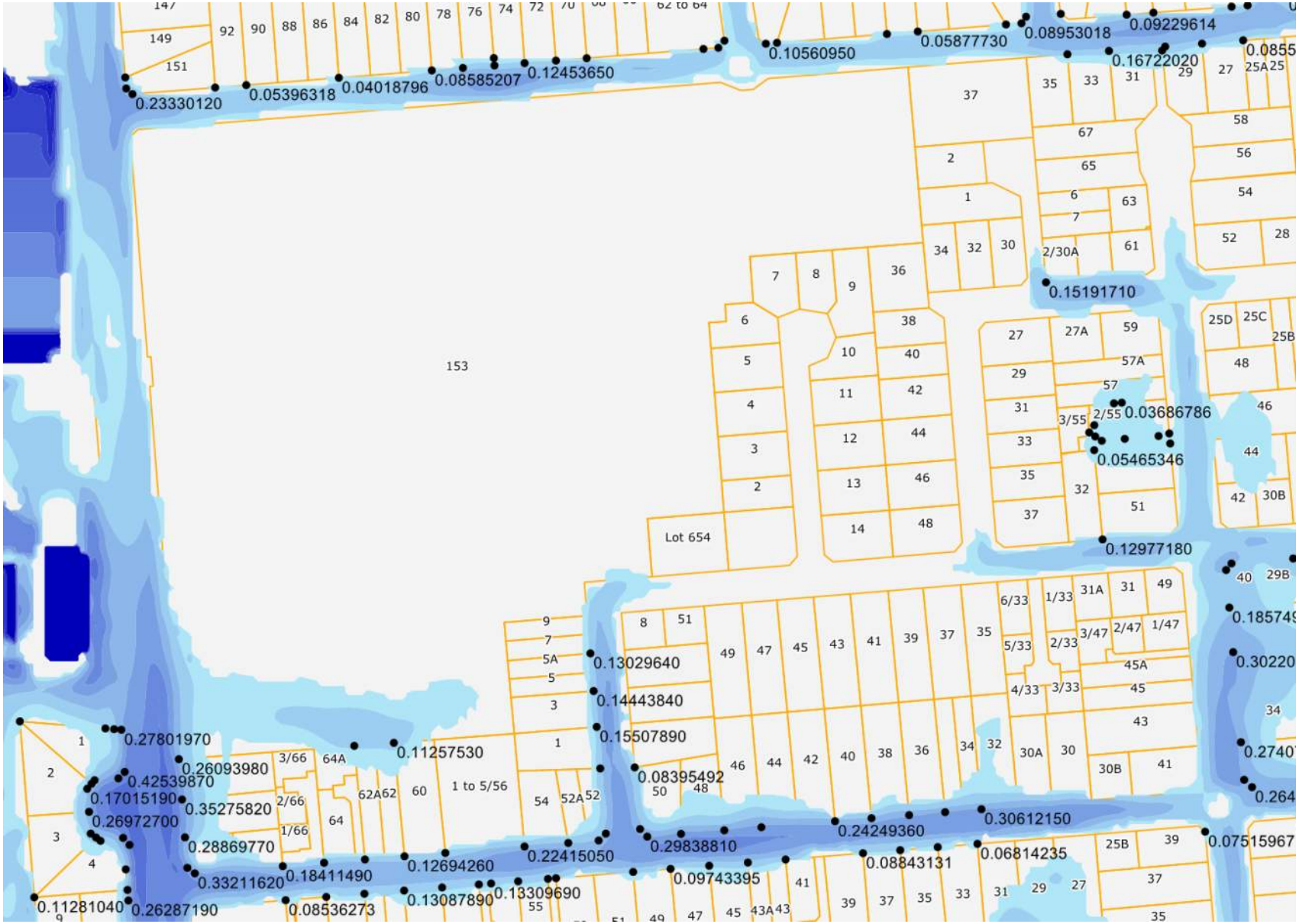


Flood Mapping - 2019

APPENDIX F

COUNCIL REQUIREMENTS

D34 Stormwater Management Plan

What is a Stormwater and Siteworks Plan?

All applications must identify the method of stormwater disposal. Plans, specifications and computations must be provided to demonstrate compliance with the requirements in *Table 1: Requirements and Guidelines*. This is a requirement for planning approval.

The following check list is provided to assist in identifying and specifying components of the proposed stormwater systems:

- Pervious and impervious area identification
- Existing site and adjacent road levels
- Existing and proposed floor levels
- Proposed site levels
- Directions of flow
- Pollutant control devices
- All proposed drainage lines
- Pipe sizes
- Pipe gradients
- Pipe levels
- Collection points
- Discharge points
- Pits, sumps
- Soakage systems

Table 1: Requirements and Guidelines

Requirements	Guidelines
1. No run-off shall be directed from the development site to adjacent properties.	Runoff from the whole site shall be directed to the street gutter via one or more of the following: • Gravity drains • Sealed pressure drains • Overflows from soakage pits • Overflows from detention/retention systems • Pump systems • Site-works grading • Overflow paths.
2. The floor levels, site works and drainage system shall be designed to provide 100-year ARI protection against inundation of buildings and any flood intolerant structures.	• This applies to a 1 in 100 year ARI storm over the development site. • This is to be achieved by a combination of the above drainage systems and the setting of safe floor and site-works levels. • All finished floor levels (excluding under croft car park) shall be a minimum of 0.3m above the highest adjacent street water table level. • It is required to be demonstrated that driveway profile(s) comply with the vehicle clearance and grade requirements of AS2890. The levels, distances, gradients and any required transitions for the entire driveway (from the roadway crossfall and including the footpath) are required to be specified. Any required alterations to a footpath are required to be detailed, must comply with AS1428 (limiting longitudinal gradient 1 in 14) and Council's requirement for a maximum crossfall of 2.5%. • Reference must also be made to the Development Information Guide Stormwater Inundation Mitigation for requirements for dwellings at risk to stormwater inundation in a 1 in 100 year ARI event. These requirements may exceed the requirements here in this document.
3. Measures shall be incorporated within the site-works along the property boundary to contain gutter flows.	• Driveway and property levels along the property/road reserve boundary shall be specified at least 225mm above the adjacent street gutter levels (unless in a flood zone, refer to Development Information Guide D33 – Stormwater Inundation). • If the property falls away from the roadway or the floor levels are less than 0.3m above the highest adjacent street

Requirements	Guidelines
	gutter level, measures are to be specified to form a continuous (including its driveway) barrier along or near the lot frontage at a minimum of 0.3m above adjacent street gutter levels.
4. Measures shall be incorporated in all development to ensure no stormwater borne pollutants (including litter, silt and any harmful substances) are discharged into Council's drainage system.	• For Residential development: by the provision of silt and litter traps. • For Commercial/Industrial development: by the provision of devices to remove solid and liquid pollutants, prior to discharge to Council's drainage system. (For Commercial/Industrial development at risk to large fuel spills additional EPA requirements may be applicable.)
5. Soakage systems shall be safely located, shall provide effective detention and shall be environmentally appropriate.	Soakage systems: • Shall be located only class A and S sites OR alternatively borelog testing is required for council assessment to determine if the site soil conditions are sufficient for soakage system. • Shall be designed for a 1 in 100 year ARI. • Shall not be located within 3m of any footing or property boundary and not be located on ground sloping more than 30 degrees. • Shall collect only roof and surface runoff from clean, non-vehicular areas and comply with EPA requirements. • For Detention purposes systems shall be demonstrated to be empty within 24 hours of a storm. • Shall incorporate an overflow for when/if the storage capacity is exceeded.
6. Pump System Design and pump system failure. When pump system failure may result in inundation of any building or adjacent property, measures shall be incorporated to minimise the risk of failure during a storm.	If failure of the pump system is likely to result in flooding of a building, under-croft or adjacent properties then the following shall apply: • Two pumps shall be provided, each capable of the design flow rate. • The pumps shall be configured to automatically alternate as the duty pump. • The system shall be configured to automatically revert to the alternate pump should the duty pump fail. • An Audible Alarm system must be provided • Either a back-up power supply or a safe power failure storage (below and/or above ground) with a volume equal

Requirements	Guidelines
	to a 5 year ARI, 4 hour duration storm run-off without pump operation and without flooding of buildings, under-crofts or any properties shall be provided.
7. When a development property abuts a Council laneway, buildings shall be located safely and have safe floor levels to reduce flood risk from the laneway.	Where a building or structure is proposed at a location abutting a Council lane-way, the following additional minimum requirements apply: • Proposed buildings and structures shall be set back a minimum distance of 2m from the property/laneway boundary. • Proposed floor levels shall comply with other applicable requirements and shall be a minimum of 0.20m above the highest adjacent laneway level, whichever is the highest. • No stormwater is permitted to discharge to a laneway.
8. All works necessary beyond the property boundaries shall be to Council's requirements and standard details.	All works (e.g. connections across Council's footpath, connection to Council's drains, new entranceways and removal and reinstatement of abandoned entranceways) shall be specified on the plan to meet Councils requirements and standard details.
9. Discharge rates	• The maximum discharge rate per development to council street water table is 10L/s. • All residential development is required to be discharge stormwater to the street water table. • Development with large pre development flows will be assessed on their own merits.
10. Maintenance	It is the responsibility of the property owner to ensure all Drainage Infrastructure within the development site shall be maintained, serviced, cleaned and sustained operational as required by the stormwater design.

Note: Further requirements will apply for sites identified as flood prone. See City of Charles Sturt Development Information Guide D33 – Stormwater Inundation.

What are the requirements for stormwater detention on site?

For some development, Council requires the discharge of stormwater from the site to Council's drainage system to be restricted. The objectives are to minimize flooding and the impact of increased runoff from infill development within catchments. Compliance with Council's requirements can require detailed engineering analysis and computations. To simplify this process for Applicants, two options are provided. Option 1 is a simplified requirement which can be applied for specific conditions. All other development or Applicants not choosing to comply with Option 1, are required to comply with Option 2.

Option 1

For new dwellings or extensions to a dwelling, with total proposed roof area up to 400 m2 and a street frontage of more than 5m, provision of an above ground rainwater detention tank, collecting a minimum 90% of the total proposed roof area, draining to Council's drainage system or street gutter via a 20mm orifice restriction such that the volume is available at all times, will be considered as complying with Council's detention requirements without computations.

The minimum detention tank volumes are:

Total proposed roof area (m^2):	Detention volume (litres):
Up to 50 m^2	Nil
Up to 200 m^2	2000 litres
Up to 300 m^2	4000 litres
Up to 400 m^2	6000 litres
Greater than 400 m^2	Option 2 applies

For underground detention tank(s) and all other development, stormwater detention systems and computations are required as per Option 2.

Option 2

- All commercial and industrial development
- Sites identified as at risk of flooding (as defined by City of Charles Sturt to Development Information Guide D33 – Stormwater Inundation)
- Development Applications for more than two dwellings
- Sites which abut laneways
- Vacant Land
- Sites which; form part of a larger development, where detention has already been incorporated, may be exempt from this requirement. Please refer to Council's Planning Department for advice regarding exemptions.
- Note development of less than 50 square meters is excluded from this requirement.

For the above identified development, the post development peak rate of runoff from the development site from the "design" storm must not exceed that from the pre development site from a 5 year ARI storm.

Note:

- The critical storm duration must be identified.
- For residential development of less than 3 dwellings and more than 50m^2, the "design" storm is 5 year Average Recurrence Interval (ARI).
- For all other development the "design" storm is 100 year ARI.

- Any required detention storage can be either above or below ground tanks, soakage systems or graded site areas or any combination.
- Any outflow restriction device shall be calculated and specified on the plan.
- Computations shall be provided to demonstrate compliance with the requirements.
- Impervious, detained and un-detained catchments shall be identified.
- Detention storages must be available at all times and must be demonstrated to be emptied within 24 hours of a storm.
- Retention storages for re-use or plumbing to a dwelling are not permitted for detention purposes. Detention tanks must be empty at the beginning of a rain event.

What are the requirements for stormwater retention on site?

Requirements: An additional water supply must supplement mains water:

- For all new dwellings; and
- For extensions and additions which include a toilet, laundry or water heater.

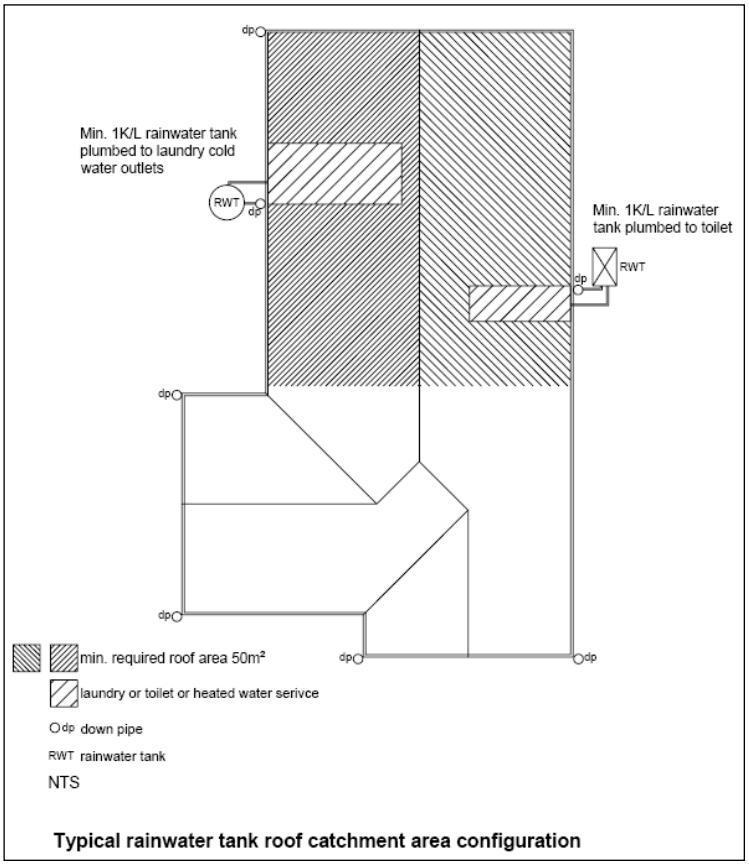
What minimum size rainwater tank do I require and does it need to be plumbed into my house?

Rainwater from a minimum of 50m^2 of the roof catchment area must be collected by gutters and downpipes; stored in a rainwater tank with a minimum capacity of 1 kilolitre (1000 litres) and plumbed to either:

- A toilet; water heater; or all cold water laundry outlets.

The Floor Plan / Plan View must include:

- Roof layout showing catchment area and location of downpipes and water tanks.
- An overflow device must be fitted to the tank and to ensure water quality a mosquito proof, non-degradable screen must be attached.



Typical rainwater tank roof catchment area configuration

Example of roof water re-use plan provided by Department of Planning and Local Government above.

Where multiple dwellings utilise a communal rainwater tank, the minimum capacity of the tank must be multiplied by the number of dwellings contributing to it. Plumbing work must be done by a licensed plumber and comply with AS/NZS 3500:2003, the National Plumbing and Drainage Code and any SA variations published by SA Water. The technical requirements of rainwater tanks are contained in Section 14 of AS/NZS 3500:2003 and the SA Water variations.

Further Information:

Department of Planning, Transport and Infrastructure
*Web: **http://www.dpti.sa.gov.au/***

Department of Environment, Water and Natural Resources
*Web: **http://www.environment.sa.gov.au***

SA Water
*Web: **www.sawater.com.au***
Phone: 1300 650 950

EPA
*Web: **www.epa.sa.gov.au***
Phone: 8204 2004

APPENDIX G

CALCULATIONS

Seaton High School - Stormwater Design Calcs

Two Storey GLA / Library Building

Pre-development Flow

Impermeable Area = 101.3 m^2, c = 0.9

Permeable Area = 958.7 m^2, c = 0.1

$$c = \frac{(101.3 \times 0.9) + (958.7 \times 0.1)}{1060} = 0.18$$

5yr ARI, 15min $\Rightarrow I_5 = 47.5$ mm/hr (Refer IFD Table)

$$\therefore Q_{pre} = \frac{1060 \times 0.18 \times 47.5}{3600} = 2.52 \text{ L/s}$$

Post-development Flow

Impermeable Area = 1060 m^2, c = 0.9

100yr ARI, 15min $\Rightarrow I_{100} = 105$ mm/hr (Refer IFD Table)

$$\therefore Q_{post} = \frac{1060 \times 0.9 \times 105}{3600} = 27.83 \text{ L/s}$$

$Q_{post} > Q_{pre}$ $\therefore$ Detention required

Refer detention assessment $\Rightarrow$ 49.29 m^3 storage required

Prefab Building

Pre-development Flow

Impermeable Area = 797.6 m^2, c = 0.9

Permeable Area = 371.1 m^2, c = 0.1

$$c = \frac{(797.6 \times 0.9) + (371.1 \times 0.1)}{1168.7} = 0.65$$

$$\therefore Q_{pre} = \frac{1168.7 \times 0.65 \times 47.5}{3600} = 10.02 \text{ L/s}$$

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Date 28/10/19
Page Number (2)

Post - development Flow

Impermeable Area = 1168.7 m^2 , C = 0.9

$\therefore Q_{post} = \frac{1168.7 \times 0.9 \times 105}{3600} = 30.68$ L/s

$Q_{post} > Q_{pre}$ $\therefore$ Retention required

Refer detention assessment $\Rightarrow$ 26.93 m^3 storage required

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60 Wyatt Street
Adelaide SA 5000

Basic Stormwater Detention Assessment

Title **Seaton High School Development - GLA Building**

Job No WGA190535

Area	1060	m²		
Coeff Permeability	0.9		Location:	Adelaide
Time of conc.	15	min		
ARI Storm	100 Year			
Max Outflow Qp	2.52	l/sec		

Duration min	Intensity mm/hr	Inflow rate Ip l/sec	Inflow Vol Vi m3	Max Storage Smax m3
60	46.6	12.3	44.46	38.79
75	40.2	10.7	47.94	41.13
90	35.5	9.4	50.80	42.86
105	31.9	8.5	53.26	44.19
120	29.1	7.7	55.52	45.32
135	26.8	7.1	57.53	46.19
150	24.9	6.6	59.39	46.91
165	23.3	6.2	61.13	47.52
180	21.9	5.8	62.68	47.94
195	20.8	5.5	64.49	48.61
210	19.7	5.2	65.78	48.77
225	18.8	5.0	67.26	49.11
240	17.9	4.7	68.31	49.03
270	16.5	4.4	70.83	49.29
300	15.4	4.1	73.46	49.64
360	13.5	3.6	77.27	48.92
420	12.1	3.2	80.80	47.92
480	11.1	2.9	84.72	47.29
540	10.2	2.7	87.58	45.62
600	9.47	2.5	90.34	43.85
660	8.86	2.3	92.98	41.95
720	8.34	2.2	95.48	39.91
840	7.44	2.0	99.37	34.73
960	6.74	1.8	102.88	29.17
1080	6.17	1.6	105.95	23.17
1200	5.7	1.5	108.76	16.90
1320	5.3	1.4	111.24	10.31

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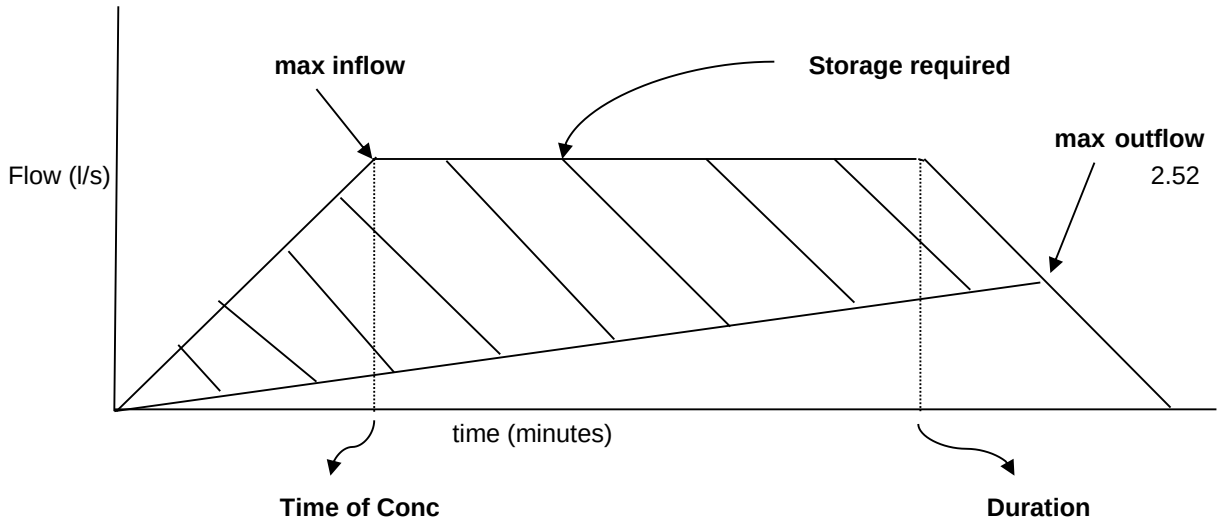
Wallbridge and Gilbert
60 Wyatt Street
Adelaide SA 5000



Wallbridge and Gilbert
60 Wyatt Street
Adelaide SA 5000

Basic Stormwater Detention Assessment

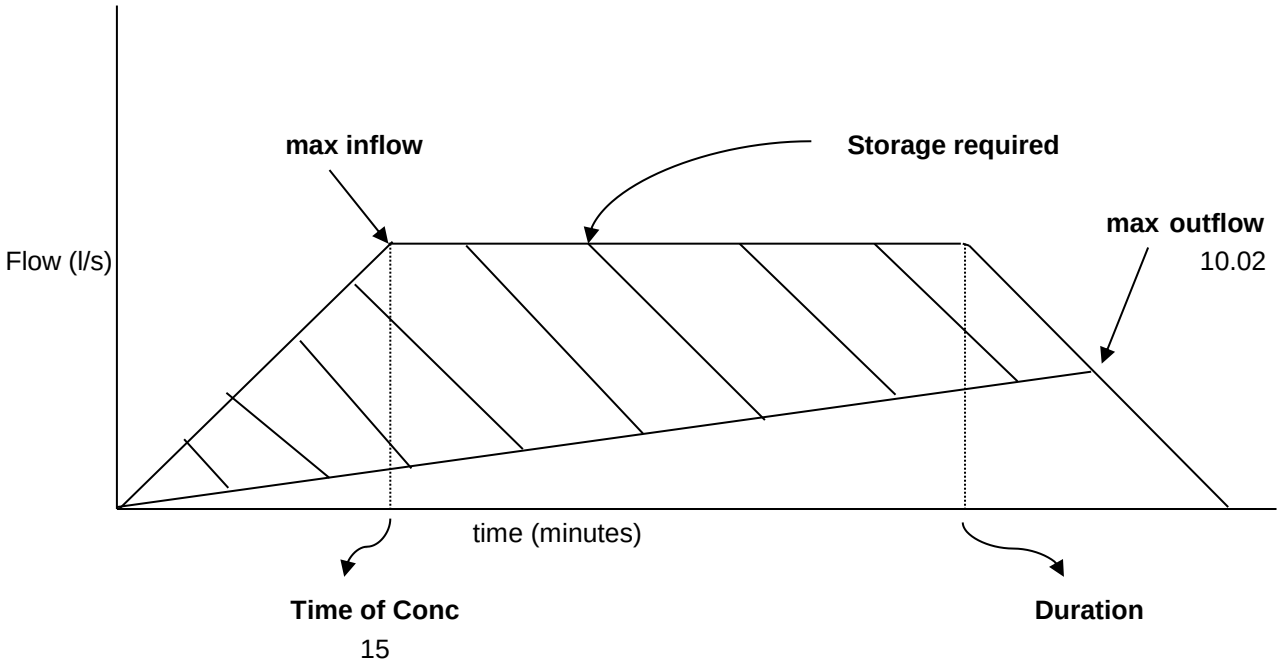
Title **Seaton High School Development - Prefab Building**

Job No WGA190535

Area	1168.7	m²
Coeff Permeability	0.9	
Time of conc.	15	min
ARI Storm	100 Year	
Max Outflow Qp	10.02	l/sec

Location: Adelaide

Duration min	Intensity mm/hr	Inflow rate Ip l/sec	Inflow Vol Vi m3	Max Storage Smax m3
5	186	54.3	16.30	10.29
10	136	39.7	23.84	16.33
15	110	32.1	28.93	19.91
20	94	27.5	32.96	22.44
25	82	24.0	35.94	23.91
30	73	21.3	38.39	24.86
35	66.5	19.4	40.80	25.77
40	61	17.8	42.77	26.24
45	57	16.7	44.97	26.93
50	53	15.5	46.46	26.92



Print Date : 28/10/2019

IFD Design Rainfall Intensity (mm/h)

Issued: 16 August 2019

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

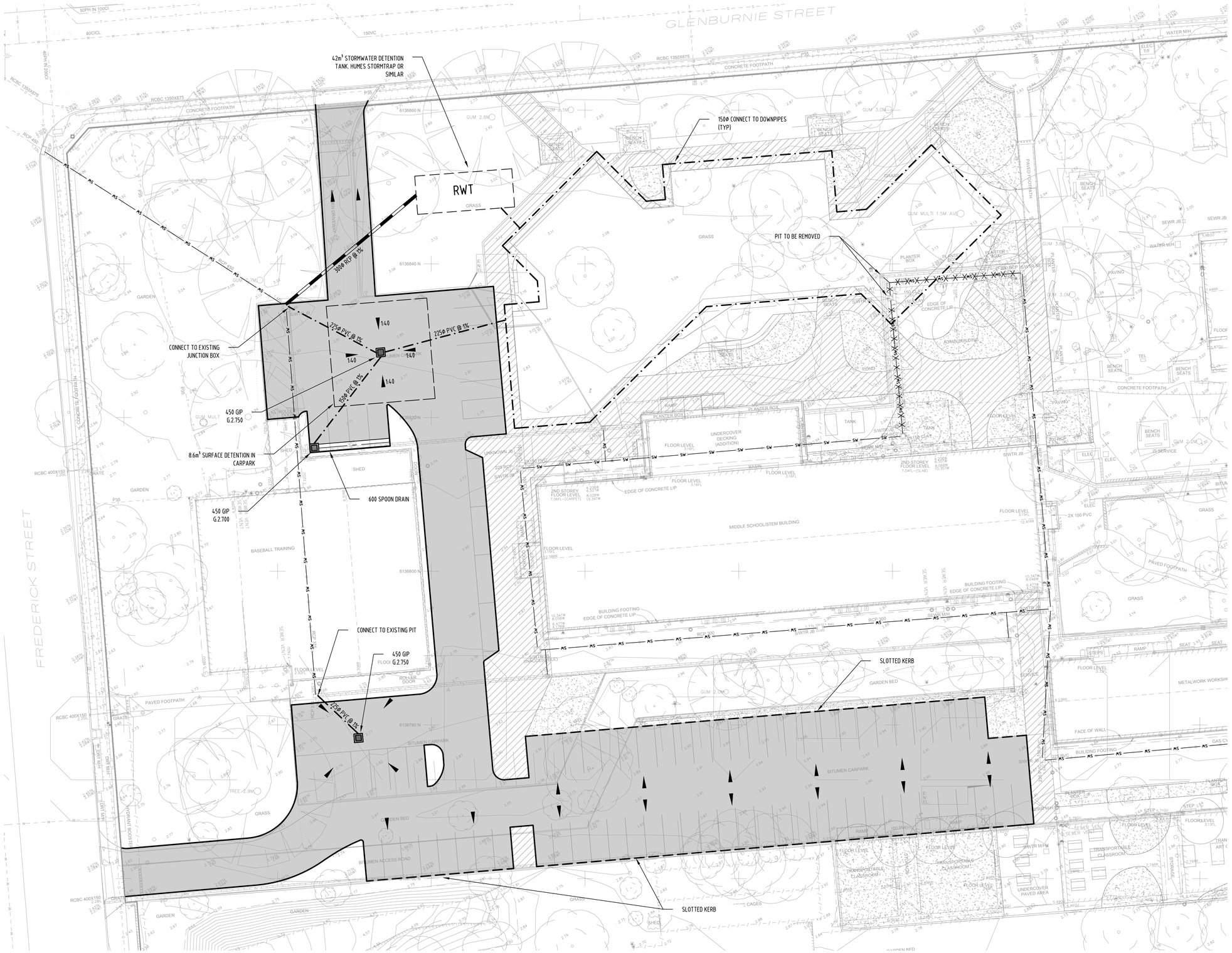
Table | Chart

Unit: mm/h

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	74.9	86.2	126	156	188	236	278
2 min	65.8	75.7	110	137	166	210	247
3 min	58.7	67.5	98.3	122	148	186	219
4 min	53.1	61.1	88.9	110	134	168	198
5 min	48.7	56.0	81.5	101	122	154	181
10 min	35.3	40.6	59.1	73.2	88.5	111	130
15 min	28.4	32.7	47.5	59.0	71.3	89.4	105
20 min	24.1	27.7	40.3	50.0	60.5	76.0	89.1
25 min	21.1	24.3	35.3	43.9	53.1	66.6	78.2
30 min	18.9	21.7	31.6	39.3	47.5	59.7	70.1
45 min	14.6	16.9	24.6	30.5	36.9	46.4	54.6
1 hour	12.2	14.0	20.4	25.4	30.7	38.6	45.4
1.5 hour	9.36	10.8	15.7	19.4	23.5	29.6	34.8
2 hour	7.75	8.91	12.9	16.0	19.4	24.4	28.6
3 hour	5.92	6.80	9.85	12.2	14.7	18.4	21.6
4.5 hour	4.51	5.17	7.45	9.20	11.1	13.8	16.2
6 hour	3.71	4.25	6.10	7.51	9.02	11.2	13.1
9 hour	2.80	3.20	4.57	5.60	6.71	8.27	9.58
12 hour	2.29	2.61	3.70	4.53	5.41	6.62	7.63
18 hour	1.71	1.94	2.73	3.33	3.96	4.80	5.48

APPENDIX H

STORMWATER MANAGEMENT PLAN



LEGEND:

- KERB ONLY
- SLOTTED KERB
- SPOON DRAIN
- STORMWATER PIPE - PVC
- STORMWATER PIPE - RCP
- SW — EXISTING STORMWATER
- SW — EXISTING STORMWATER TO BE REMOVED
- DIRECTION OF FALL TO PAVEMENT

NOTES:

1. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH THE ARCHITECTS DRAWINGS, OTHER CONSULTANTS DRAWINGS & THE SPECIFICATION.
2. ALL UPVC STORMWATER PIPES ARE TO BE SEWER CLASS 'SN4'.
3. ALL R.C. STORMWATER PIPES ARE TO BE CLASS '2' WITH BEDDING TYPE 'HS2'. U.N.O.
4. **ALL EXISTING SERVICES ARE TO BE LOCATED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.**
5. **CONTRACTOR TO CONFIRM INVERTS OF ALL EXISTING PIPES & SUMPS PRIOR TO CONNECTING & LAYING OF ALL NEW PIPEWORK.**
6. WALLBRIDGE GILBERT AZTEC ARE NOT RESPONSIBLE FOR DIMENSIONAL SET OUT AND THESE DRAWINGS ARE BASED ON BACKGROUNDS PRODUCED BY OTHER PARTIES. WE ACCEPT NO RESPONSIBILITY FOR ERRORS AND OMISSIONS RELATED TO DIMENSIONAL SET-OUT.

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STORMWATER PLAN (1 OF 3)

A1

DOCUMENT NUMBER
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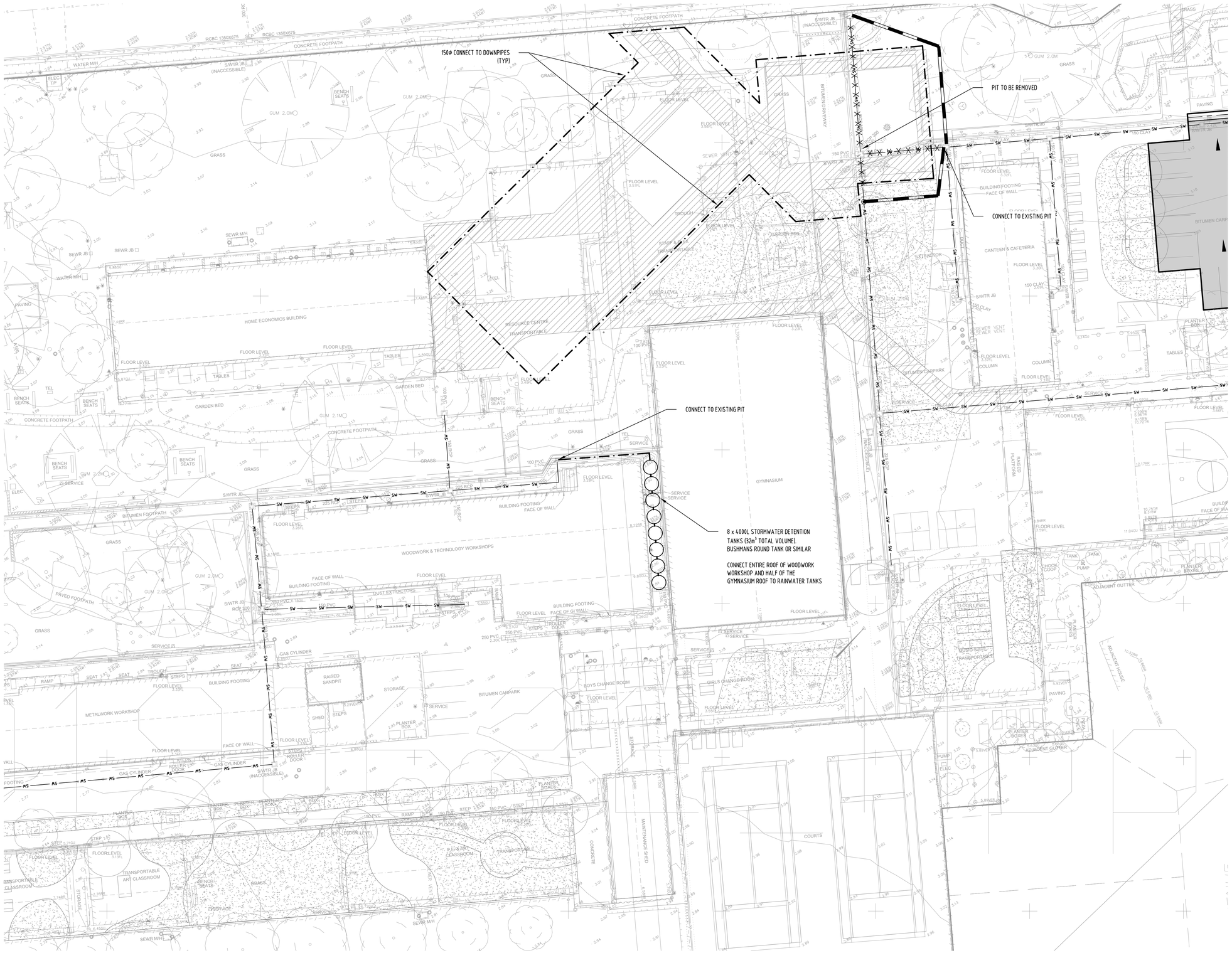
Sheet No. / Rev.

Design: ASF
Drawn: ASF



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C	01.11.19	PRELIMINARY ISSUE	ASF	ASF	C.HILL

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STORMWATER PLAN (2 OF 3)

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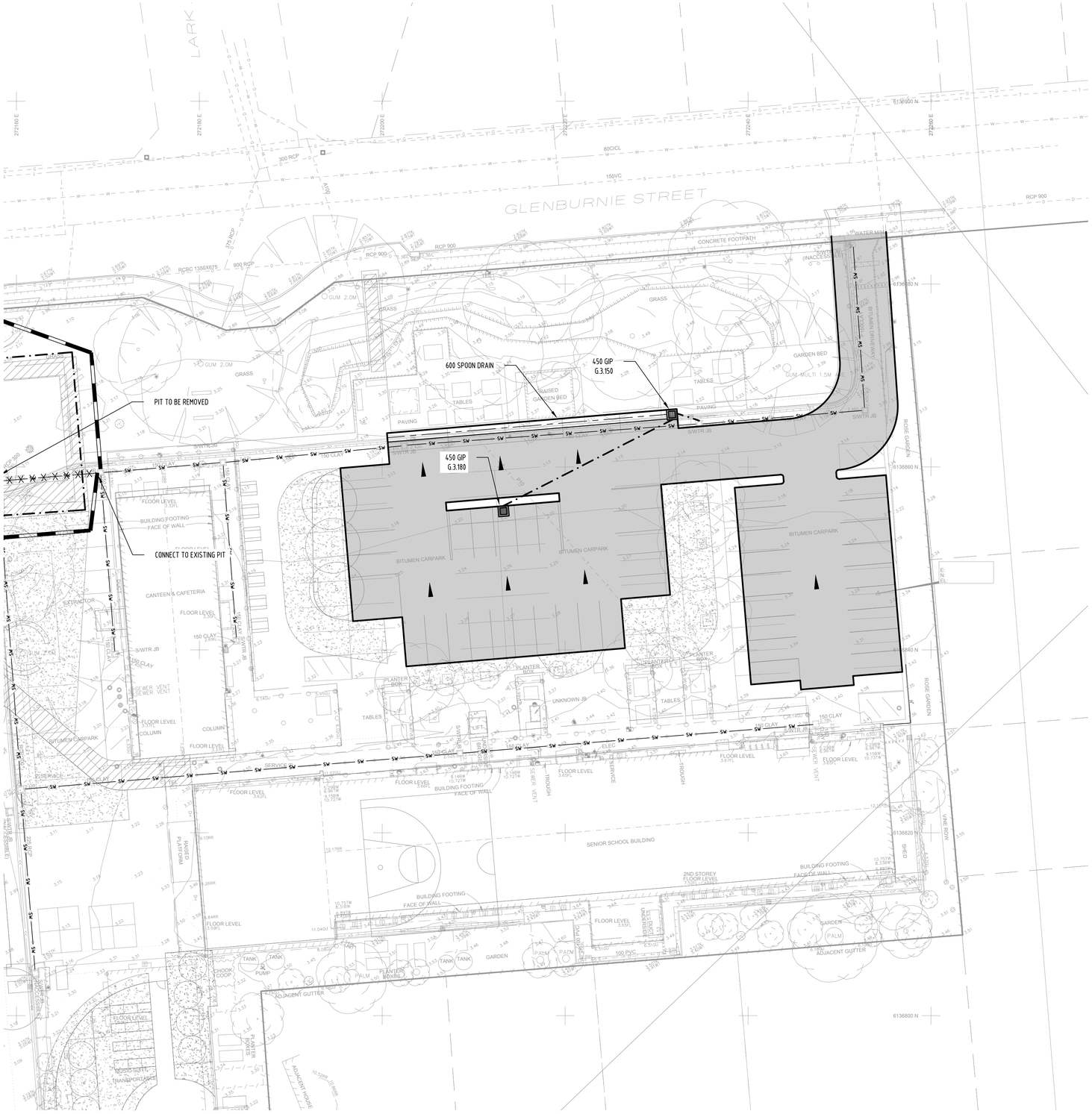

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STORMWATER PLAN (3 OF 3)

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FUTURE URBAN

APPENDIX 7. ARBORIST REPORT

PREPARED BY ARBORMAN TREE SOLUTIONS