APPLICATION ON NOTIFICATION – CROWN DEVELOPMENT

Applicant:	Department for Education and Child Development C/- Phillips Pilkington Architects
Development Number:	040/V002/18
Nature of Development:	Redevelopment of the Windsor Gardens Secondary School site comprising: refurbishment of existing school Buildings 1 and 1B to accommodate an amalgamation with Gilles Plains Primary School; construction of a new Children's Centre (extension to Building 1); outdoor play spaces; freestanding shelters; removal of two (2) Regulated Trees; landscaping; fencing and associated site works.
Type of development:	State Agency Development
Zone / Policy Area:	Residential Zone (Residential East Policy Area 64)
Subject Land:	Allotment 501 Sudholz Road, Windsor Gardens (CT 6161/815)
Contact Officer:	Laura Kerber
Phone Number:	7109 7073
Start Date:	Wednesday 31 January 2018
Close Date:	Wednesday 21 February 2018

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 Street, 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, faxed or emailed to the State Commission Assessment Panel (SCAP). A representation form is provided as part of this pdf 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:
Development Division
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
ADELAIDE

Email Address: scapadmin@sa.gov.au
Fax Number: (08) 8303 0753

Government of South Australia

Department of Planning, Transport and Infrastructure

DEVELOPMENT ACT 1993

NOTICE OF APPLICATION FOR CONSENT TO DEVELOPMENT

SECTION 49 – STATE AGENCY DEVELOPMENT

Notice is hereby given that an application has been made by **the Department for Education and Child Development C/- Phillips Pilkington Architects** for consent to **redevelop the Windsor Gardens Secondary School site comprising: refurbishment of existing school Buildings 1 and 1B to accommodate an amalgamation with Gilles Plains Primary School; construction of a new Children's Centre (extension to Building 1); outdoor play spaces; freestanding shelters; removal of two (2) Regulated Trees; landscaping; fencing and associated site works** (Development Number: **040/V002/18**).

The land is situated at **Allotment 501 Sudholz Road, Windsor Gardens** being Certificate of Title: Volume 6161 Folio 815.

The subject land is located within **Residential Zone (Residential East Policy Area 64)** of the **Port Adelaide Enfield Council Development Plan Consolidated – 26 September 2017.**

The application may be examined during normal office hours at the office of the State Commission Assessment Panel, Level 5, 50 Flinders Street and at the office of the **City of Port Adelaide Enfield** (163 St Vincent Street, Port Adelaide). Application documentation may also be viewed on the State Commission Assessment Panel (SCAP) website: www.saplanningcommission.sa.gov.au/scap.

Any person or body who desires to do so may make representations concerning the application by notice in writing delivered to the Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide 5001 **NOT LATER THAN Close of Business Wednesday 21 February 2018.**

Each person or body making a representation should state the reason for the representation and whether that person or body wishes to be given the opportunity to appear before the SCAP to further explain the representation.

Submissions may be made available for public inspection. Please indicate in writing if you object to your submission being made available in this way.

Should you wish to discuss the application and the public notification procedure please contact **Laura Kerber** on **7109 7073.**

Alison Gill
SECRETARY
STATE COMMISSION ASSESSMENT PANEL
www.saplanningcommission.sa.gov.au/asap

PN2451

PN2451
21x2 (63mm)
Adelaide Advertiser
North Eastern Weekly Messenger
31 January 2018

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

Applicant:	Department for Education and Child Development C/- Phillips Pilkington Architects
Development Number:	040/V002/18
Nature of Development:	Redevelopment of the Windsor Gardens Secondary School site comprising: refurbishment of existing school Buildings 1 and 1B to accommodate an amalgamation with Gilles Plains Primary School; construction of a new Children's Centre (extension to Building 1); outdoor play spaces; freestanding shelters; removal of two (2) Regulated Trees; landscaping; fencing and associated site works.
Zone / Policy Area:	Residential Zone (Residential East Policy Area 64)
Subject Land:	Allotment 501 Sudholz Road, Windsor Gardens (CT 6161/815)
Contact Officer:	Laura Kerber
Phone Number:	7109 7073
Close Date:	Wednesday 21 February 2018

My name:_____

My phone number: _____

PRIMARY METHOD(s) OF CONTACT: Email address: _____

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:
[ ] 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 .....Postcode.....

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

.....

.....

.....

.....

.....

.....

.....

I
[ ] wish to be heard in support of my submission
[ ] do not wish to be heard in support of my submission
(Please tick one)

by
[ ] appearing personally
[ ] being represented by the following person : .....
(Cross out whichever does not apply)

Date: ..... Signature: .....

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

SECTION 49 & 49A – CROWN DEVELOPMENT
DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: PORT ADELAIDE ENFIELD

APPLICANT: PHILLIPS/PILKINGTON ARCHITECTS

ADDRESS: 165 MACKINNON PDE, NTH ADELAIDE

CROWN AGENCY: DECD

FOR OFFICE USE

DEVELOPMENT No: _____

PREVIOUS DEVELOPMENT No: _____

DATE RECEIVED: / /

CONTACT PERSON FOR FURTHER INFORMATION

Name: ALISON MCFADYEN

Telephone: 82399000 [work] — [Ah]

Fax: — [work] — [Ah]

Email: alison@phillipspilkington.com.au

☐ Complying
☐ Merit
☐ Public Notification
☐ Referrals

Decision: _____

Type: _____

Finalised: / /

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 public notification and advertising fees.
(2) Three copies of the application should also be provided.

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

EXISTING USE: SECONDARY SCHOOL.

DESCRIPTION OF PROPOSED DEVELOPMENT: AMALGAMATION OF GILLES PLAINS PRIMARY & CHILDREN'S CENTRE ON THE WINDSOR GARDENS SECONDARY SCHOOL SITE

LOCATION OF PROPOSED DEVELOPMENT: WINDSOR GARDENS.

House No: — Lot No: — Street: MCKAY AVENUE Town/Suburb: WINDSOR GARDENS

Section No [full/part] — Hundred: OF YATALA Volume: 6161 Folio: 815

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

LAND DIVISION:

Site Area [m²] 83,747.21m². Reserve Area [m²] — No of existing allotments 1

Number of additional allotments [excluding road and reserve]: — Lease: YES ☐ NO ☒

DEVELOPMENT COST [do not include any fit-out costs]: $ 7,650,000.00

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 the DPLG website (www.dac.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.*

SIGNATURE: _____ Dated: 19/12/17

DEVELOPMENT REGULATIONS 1993
Form of Declaration
(Schedule 5 clause 2A)

To:

From:

Date of Application: 19 / 12 / 17.

Location of Proposed Development: WINDSOR GARDENS SECONDARY SCHOOL.

House No: - Lot No: - Street: MCKAY AVE. Town/Suburb: WINDSOR GARDENS

Section No (full/part): ..... Hundred: OF YATALA

Volume: 6161 Folio: 815

Nature of Proposed Development: SCHOOL AMALGAMATION PROJECT

I ALISON MCFADYEN **being the applicant/ a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, 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 1993*.**

Date: 19 / 12 / 17

Signed: .....

Note 1
This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 4(1) of the *Development Act 1993*), other than where the development is limited to –

a) an internal alteration of a building; or
b) an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2
The requirements of section 86 of the *Electricity Act 1996* do not apply in relation to:

a) a fence that is less than 2.0 m in height; or
b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3
Section 86 of the *Electricity Act 1996* refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4
The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually also comply.

Particular care needs to be taken where high voltage powerlines exist; where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5
Information brochures 'Powerline Clearance Declaration Guide' and 'Building Safely Near Powerlines' have been prepared by the Technical Regulator to assist applicants and other interested persons. Copies of these brochures are available from council and the Office of the Technical Regulator. The brochures and other relevant information can also be found at www.technicalregulator.sa.gov.au

Note 6
In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

165 MacKinnon Parade
North Adelaide, South Australia 5006
Phone +61 (8)8239 9000 Fax +61 (8)8239 9099
admin@phillipspilkington.com.au
www.phillipspilkington.com.au

Phillips/Pilkington Architects

17515/AM:sp
19 December 2017

State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5062

Dear Sir / Madam,

WINDSOR GARDENS SECONDARY COLLEGE, GILLES PLAINS CHILDREN'S CENTRE & PRIMARY SCHOOL AMALGAMATION

We are lodging an application for Development Plan Consent on behalf of DPTI and DECD for a major refurbishment to the existing school and new build Children's Centre on the Windsor Gardens Secondary School Campus at McKay Avenue Windsor Gardens.

We have attached the following documentation in support of this application:

- Section 49 Crown Development Application Form
- Powerline Declaration form
- Drawings numbered A000, A101, A102, A103, A104, A105, A114, A200, A201, A202, A300
- Landscape Proposal, Material and Planting Palette
- Traffic Study
- Arborists Report

Windsor Gardens Secondary School and Gilles Plains Primary School are currently located on separate sites in the north eastern metropolitan area. The School's together with the Children's Centre currently on the primary site have elected to amalgamate with the agreed relocation on the Windsor Gardens Secondary College campus.

This project is generally refurbishment of existing facilities to accommodate the amalgamation of secondary and primary school functions and the construction of a Children's Centre including a Preschool on the McKay Avenue site.

The current student numbers at the Secondary College are 320 with 78 students at the Primary School. Once the 44 place Children's Centre is constructed and the schools are amalgamated, there will be approximately 442 students on the school grounds. DECD have aspirations for the School student population to reach 900 students into the future with a staff population estimated at 83 full time equivalent. The Secondary School Campus was originally designed to accommodate in the order of 1000 students.

Windsor Gardens Secondary School is located in the City of Port Adelaide Enfield Residential Zone 'Residential East 64'.

Phillips/Pilkington Architects met with Senior Planning Officer Tim Hicks at the City of Port Adelaide Enfield Council on 23rd October 2017 who reviewed the design proposals and did not forsee any planning issues.

Phillips/Pilkington Architects Pty Ltd
ABN 95 096411 620
SA Registered Architect no. 2503
Member Australian Institute of Architects

Phillips/Pilkington Architects also met with Gabrielle McMahon of SCAP on 15th December 2017 to review the proposals.

SITE

The existing Windsor Gardens Secondary School is a large allotment with frontage to Sudholz Road and the main access into the School via McKay Avenue and Dandy Avenue. The School is within 500 metres of the major arterial North East Road.

The extent of the site is largely flat with minimal falls except at the McKay Avenue entry which ramps down to street level. There are some mounds in the existing typography adjacent the outdoor courts and tree reserve.

The existing campus has numerous established vegetated areas that frame the school buildings and provide what could be described overall as a well vegetated campus.

There is some impact on existing Eucalyptus species fronting Mckay Avenue and several trees set back within the existing school areas as a result of the proposed new facility. An arborist survey has been prepared by Tree Environs assessing those trees that may be impacted by the site works and is included as an attachment to this submission.

The Arborist reviewed 11 trees, of these 5 are regulated and 6 of the trees do not quantity as regulated trees. The trees of high significance include two *Eucalyptus sideroxylons*, located in the rear yard to the north of Building 1, a *Lophosteman conferus* located in the rear yard to the west of Building 1B and a *Eucalyptus sp*. located on the western side of the front entrance. These trees are all to be retained in landscape zones maintaining an adequate tree protection zone. The arborist identified another *Eucalyptus sideroxylons* in the rear yard that while regulated is recommended for removal due to poor structure consisting of codominant stems with bark intrusions which has an increasing potential to fail as the stems continue to enlarge and was assessed as being an unacceptable risk.

The proposed community use area fronting McKay Avenue provides a quality outdoor open space for gathering, children's play and relaxation. It is intended that the perimeter of the area will be planted to provide a semi permeable visual screen to the street with small trees providing shade to seating and play areas. A 1.5m high palisade fence is also proposed to provide a degree of security from the public domain. As a result, it is intended that the existing Palm tree (*Washingtonia robusta*) located within the courtyard will be removed to allow for a higher level of amenity and functionality of the space. The palm is identified in the arborist report as regulated (trunk circumference of 2.05m) and of medium retention value. In line with the proposed planting strategy highlighted above, it is the opinion of the project team that the palm adversely impacts on the potential amenity of this space and as such should be removed.

EXISTING BUILDINGS

The Windsor Gardens Secondary School Campuses' predominant aesthetic is defined by a number of 1960's buildings which have a consistent palette of concrete, exposed steelwork structure, aluminium framed windows, narrow floor plates with single loaded corridors and are two storey in height. These buildings have been on this site since its inception as Gilles Plains High School and remain largely in original condition. These buildings 1, 1A, 1B, 1C and 1D largely house administration areas, general learning areas, recently refurbished science laboratories, toilets and student services. Surrounding these buildings are single storey specialist facilities, constructed between 1960's and 2013.

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ABN 95 096411 620
SA Registered Architect no. 2503

PROPOSAL

The proposal has been developed to maximise utilisation of existing facilities which has been informed by an analysis of the organisation of the Windsor Gardens Campus. The existing campus is laid out with the majority of buildings that support learning in the south west corner of the site. Playing fields and courts are located to the north and east with an unused oval along the northern boundary which is no longer maintained. The amalgamation proposal is based on the demolition of aged timber transportables Building 19 and 20. DECD do not wish to continue to maintain these end of life buildings.

The amalgamation proposal comprises a major internal refurbishment at the northern end of the site to Building 1 and 1B with the Preschool and part of the Children's Centre a new build extension to Building 1. A minor refurbishment on the upper floor of Building 1B is proposed. No other buildings are proposed for renovation as part of this project.

New build is confined to an extension to Building 1 to accommodate part of the Children's Centre and enclosure of the courtyard between the eastern wing of Building 1 and Building 1B to create a Learning Street for Primary students. Reuse of part of Building 1 for the Children's Centre has enabled further refurbishment within Building 1 and 1B benefitting the whole school with an integrated administration area together with an improved Student Services facility.

The amalgamation proposes a centralised entry and amalgamated B-12 reception zone at the intersection of existing Buildings 1, 1A and 1B in the original school entry location off McKay Avenue. A new lift is located outside the existing building line but with direct access from the foyer, a new entry canopy to improve the school's identity is proposed together with a ramped entrance upgrade to provide accessibility. A new landscaped connection will link the reception entry and existing northern carpark.

The single storey Building 1 will include a major internal refurbishment and house the offices, consultation rooms and amenities associated with the Children's Centre and CaFHS. The new extension which includes the Community Group Space and Preschool facilities is directly adjacent these spaces, both with strong connections to outside learning spaces. The Preschool outdoor space maximises connections to the northern aspect and allows for a range of outdoor activities. The Preschool space will allow for maximum flexibility between the small and main activity spaces together with visual connections to the teacher preparation, kitchen space and withdrawal room. Both the Preschool and community room have been located within close proximity to the amalgamated reception space and within walking distance of the existing northern carpark.

The Administration Area is shared between the B-12 school, including Children's Centre and CaFHS. The renovated primary school spaces are adjacent the amalgamated Reception and Preschool. Three general learning areas are proposed in the eastern wing of Building 1 which requires major refurbishment. General learning areas are also located in the ground floor of Building 1B allowing direct connections to outdoor learning areas.

The 'Learning Street' is created with a new building structure spanning Building 1 and 1B linking the primary school GLAs. This space can be used for collaborative activities such as STEM, cooking and art and also function as a breakout space and after school hours care. A

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new toilet block dedicated to primary students is proposed to the end of Building 1 centrally located to the primary school classrooms and outdoor spaces.

The upper floor of Building 1B and foyer space is proposed for refurbishment and prioritises the consolidation of a shared staff lounge, conference room and leadership offices in a central location to the primary and secondary teaching spaces. These areas have been displaced from Building 1 to prioritise student use of ground floor space.

The existing secondary school classrooms and specialist teaching facilities are not proposed for refurbishment as part of this project.

DESIGN INTENT

The proposed redevelopment of the Windsor Gardens campus has no impact on Danby Avenue and minor impact to McKay Avenue and Sudholz Road, the three street frontages of the school. Extensions to the existing buildings are single story matching the scale of Building 1 and significantly lower than Building 1A, 1B, 1C and 1D. These extensions reflect the predominantly single storey scale of adjoining residential properties. The McKay Avenue presentation is improved with a new entrance canopy and recladding of Building 1 to match the proposed extension for the Children's Centre. New landscaping along McKay Avenue will further enhance the streetscape.

Much of the new build work is concealed behind existing elevations and does not impact on the urban design context. The architectural form of the Children's Centre has been developed with due regard for the context of the existing built form. The proposed new roof structure over the eastern tennis court to provide an all-weather Physical Education space for the Primary School will be visible from both McKay Ave and Sudholz Rd, although set well back from both. The form has been broken up into three elements to reduce the scale with cladding proposed on the eastern elevation to provide further articulation and provide a contemporary feel that is contextually appropriate with the BER Music Building 24.

A sense of arrival and identity to the school has been created with a bold new entrance canopy proposed. The form of new build elements such as the northern extension to Building 1 for the Children's Centre and the creation of the 'Learning Street' between Building 1 and 1B have been developed to create light filled spaces that support the functionality and flexibility of these areas.

Both these extensions have skillion roofs to create south lights that maximise daylight penetration while minimising heat gain and provide a sense of volume within large spaces.

Resolution of accessibility to the school's main entrance has resulted in the creation of a ramp to negotiate the difference between the existing buildings finished floor level and the existing ground level.

A striking new canopy is proposed that provides shelter to the ramp and existing entrance creating a sense of identity and arrival.

A robust material palette is proposed that evokes a sense of transformation at the school providing a contemporary forward looking identity. All new construction is lightweight due to the highly reactive nature of the soils. New anodised aluminium window sections are proposed for existing Buildings 1 and 1B and will extend through the new build extensions. Sliding glass door suites are proposed to promote connectivity to outdoor learning spaces.

The western elevation of Building 1 is proposed to be reclad in aluminium faced (non-flammable) cladding such as Alucobond to provide a contemporary feel for the school which

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will extend to the northern wall of the Children's Centre extension. Weathertex (a durable wood composite panelling system) is proposed for the remainder of the Children's Centre elevations and the "Learning Street to create a warmth and tactility that is evocative of the natural environment. Zincalume sheet is proposed for roofing.

LANDSCAPING PROPOSAL

The landscape approach to the campus is founded on the positive qualities inherent in the existing campus setting. With a focus on the provision of a high quality outdoor learning and play environment for the Primary School and new Childcare facilities, new landscaped areas will be provided to the immediate surrounds of the these buildings.

Key landscape proposals include:

- The creation of a dedicated Preschool Outdoor Space. This will include a covered sand pit and other play elements in accordance with DECD guidelines
- A primary years covered play area
- A primary years outdoor landscaped courtyard and outdoor learning areas
- A Community Outdoor Space located along the McKay Avenue frontage and connected to the new facility building. This will have a dual purpose of assisting to identify the primary school and childcare entrances along McKay Avenue
- New landscaping adjacent to car parking areas where significant upgrades will be undertaken
- Existing Nature Play space located amongst the stand of existing trees to the east of the courts and sheds

A new fence is proposed around the Community outdoor playspace and the Preschool outdoor play space. There is an existing 2100 high fence to the perimeter of the school buildings as indicated on the site plan. External lighting is proposed to the external walls of the new build Children's Centre and eastern façade of Building 1 along the main entry path to provide adequate illumination at night.

ESD

ESD principles will be promoted in the design with an emphasis placed on:

- passive design opportunities such as optimal orientation where possible, consideration of sun shading, extent of openings and thermal insulation to the requirements of the Building Code of Australia (BCA) under the National Construction Code
- choice of materials with low embodied energy, low volatile organic compounds (VOCs) emissions and where possible sourced from local suppliers and manufacturers
- Utilising the building and landscape as an environmental education learning experience

-

TRAFFIC

A full Traffic Report completed by Wallbridge Gilbert Aztec is attached to this submission.

Phillips/Pilkington Architects and WGA met with Council's Team Leader of Transport, Kerry McConnell and Hye-Young Ghang on 23rd October 2017 to review parking, drop off and pick up arrangements which were supported in principle.

Site observations confirm there are currently 113 car parking spaces within the School. These are spread out into four different locations.

Current student numbers at the Secondary College are 320, with 78 students at the Primary School. Once the Children's Centre is constructed, there will be approximately 440 students on the school grounds, after the Schools are amalgamated.

There is a requirement to provide bicycle parking areas, with a minimum number based of 15% of Primary students and 10% of Secondary students. Off-street bicycle parking will be provided as part of this project.

The current site is impacted by the existence of a "bus only" restriction in McKay Avenue immediately north of Building 1. This has been placed by Council to stop the flow of traffic from Sudholz Road and North East Road via the local road network. Access to the School Administration Building 1 from McKay Avenue requires motorists to execute a three point turn to exit for traffic heading north. No vehicles are able to directly access the Administration Building 1 if travelling south from the direction of North East Road.

In regard to overall car parking numbers for the School, it is understood that DECD have advised that there is likely to be 83 full time equivalent staff members for the 900 student school. There is a requirement for 1 No car parking space to be provided for each full time equivalent staff member plus an additional 10% for visitors. DECD also require Children Centre's to have one parking space for every four students. Based on a likely 44 students, there will need to be a minimum of 11 parking spaces dedicated to the Children's Centre. In total, there is a need for approximately 103 car parking spaces.

The School's preference for a "Kiss and Drop" area is to be installed on the eastern (School) side of McKay Avenue. A proposed widening of McKay Avenue is proposed opposite the new works to enable vehicles traveling north on McKay Avenue to undertake a U-turn to access a kiss and drop zone on the eastern side of McKay Avenue. This has been discussed with Council (at the meeting on 23rd October 2017) and agreed to in principle.
This will facilitate parents dropping their children on the eastern kerb (school side) in a 'kiss and drop' zone, eliminating the need to execute 3 point turns which pose a risk to pedestrians.
In order to achieve the required turning circle a small piece of school property will be encroached upon with the intention of transferring this land from DECD ownership to Council ownership. This has previously happened at a number of school sites and is a straightforward process.

The DECD Property Unit will liaise with the Minister's Office and Port Adelaide Enfield Council to facilitate this transfer of land. The infrastructure works will be undertaken and then surveyed with Certificate of Titles updated.

The Traffic Report attached addresses the traffic issues, including details of the proposed turnaround on McKay Avenue, in more detail.

STORMWATER CATPURE

In regard to the requirements for the proposed new build Children's Centre, Council will require some on-site stormwater detention storage to be provided to reduce the post-development peak stormwater flow rate (1 in 100 year ARI storm event) to the existing pre-development rate (1 in 5 year ARI storm event). Based on the proposed extent of new building and associated landscaping, a detention volume of 10m³ is anticipated. This storage is currently proposed via below ground (over-sized) pipes. Connection to the existing underground system would occur downstream of the detention storage.

COMMUNITY BENEFIT

The refurbished buildings and new build components will improve the visual amenity of the school to the surrounding neighbourhood. The school oval is currently leased by external groups and provides a functional and accessible open space for a range of physical activities and use in the community as does the School Gymnasium.

Please call if you have any queries.

Yours sincerely,



Phillips/Pilkington Architects Pty Ltd
Alison McFadyen
Associate

Encl: Development Application Form
Poweline Declaration Form
DA Drawings
Landscape Proposal
Traffic Study
Arborists Report

Cc: DPTI
DECD

Phillips/Pilkington Architects Pty Ltd
ABN 95 096411 620
SA Registered Architect no. 2503

Scale Bar Units in Millimetres

10 20 50 100 200 300 400 500 600 700

DRAWING LIST

ARCHITECTURALS

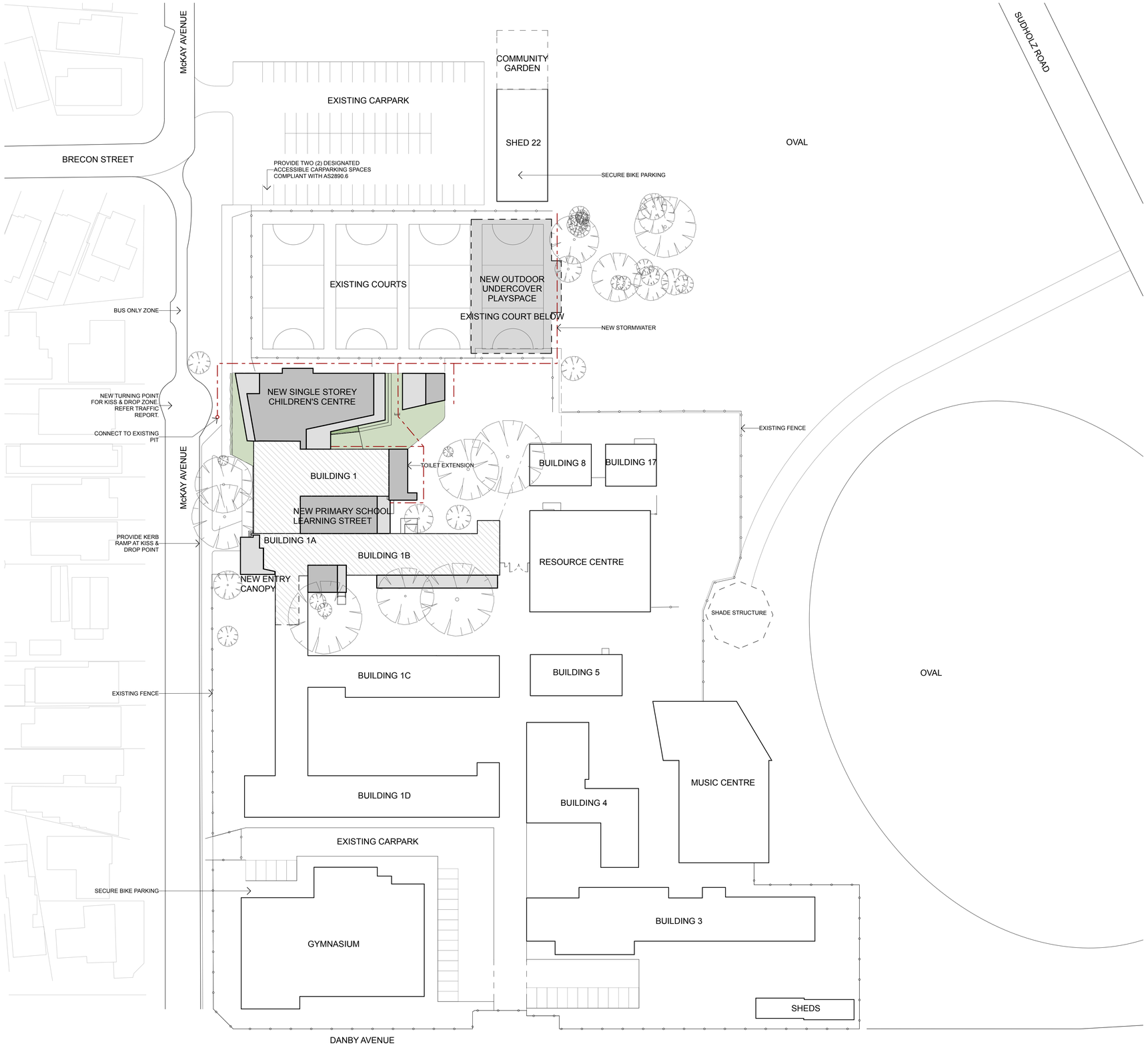
A000 DRAWING REGISTER & SITE PLAN
A101 DEMOLITION PLAN - GROUND FLOOR
A102 DEMOLITION PLAN - UPPER FLOOR
A103 GROUND FLOOR PLAN - CHILDREN'S CENTRE
A104 GROUND FLOOR PLAN - BUILDING 1 & 1B
A105 UPPER FLOOR PLAN - BUILDING 1B
A114 SHADE STRUCTURE - DEMOLITION PLAN, STRUCTURE PLAN & ROOF PLAN

A200 ELEVATIONS 01
A201 ELEVATIONS 02
A202 ELEVATIONS 03

A300 SECTIONS 01



\- / - LOCATION PLAN 1:100



01 / - SITE PLAN 1:500

Phillips / Pilkington Architects

165 MacKinnon Parade, North Adelaide SA 5006
Phone (08) 8239 9000
admin@phillipspilkington.com.au

PLANNING APPROVAL

N

LEGEND

- NEW BUILD
- NEW VERANDAH
- INTERNAL REFURBISHMENT
- CHILDREN'S CENTRE OUTDOOR PLAY
- EXISTING FENCE
- NEW STORMWATER

REV. DATE AMENDMENTS INIT.

Government of South Australia
Department of Planning, Transport and Infrastructure

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SETTING OUT OF THE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR
ALL DIMENSIONS TO BE VERIFIED ON SITE
DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE SUPERINTENDENT
THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS

CONTRACT EXECUTION
CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
DRAWING REGISTER & SITE PLAN

CONTRACT NO.	DRAWN BY - CHECKED BY
6355-PC-2017	AP/ AM SP
PSC JOB NO.	SCALE AND SHEET SIZE
17515	1:500, 1:100 @ A1
DPTI ASSET NO.	SHEET NO.
00906	A000
DPTI DRAWING NO.	REVISION
14551-AR-2017	DA1

Scale Bar Units in Millimetres

10 20 50 100 200 300 400 500 600 700

FENCE & GATE

AC UNIT

OFFICE-GEN

GLA

GLA

GLA

STORE

TEACHER PREP.

AC UNIT

AC UNIT

STUDIO-ART AC01

SS

TEACHER PREP.

HWS

TOILET-UNISEX

WET AREA

HWS

HWS

REMOVE TREE 11

DEMOLISH TRANSPORTABLE 19

DEMOLISH TRANSPORTABLE 20

REMOVE FENCE & GATE

EXISTING FENCE TO BE DEMOLISHED

REMOVE PEBBLECRETE CLADDING

AC UNIT

REMOVE CONC. RAMP

EXISTING FENCE TO BE DEMOLISHED

WET AREA

HWS

BWU

EX. ACU

REMOVE SUNSHADE STRUCTURE

EX. ACU

REMOVE PEBBLECRETE CLADDING

REMOVE PEBBLECRETE CLADDING

REMOVE SUNSHADE STRUCTURE

HWS

STAFF (M) TOILET

LOCKERS

SICK ROOM

OFFICE-GEN

OFFICE-GEN

OFFICE-COUNSLR

STAFF LOUNGE

BUILDING 1

RETAIN ALL EXISTING STRUCTURE

DEMOLISH EXISTING PATH

STAFF (F) TOILET

LOCKERS

OFFICE-GEN

OFFICE - DEPUTY

SS

OFFICE-STUDENT SERVICES

OFFICE-DEPUTY

RETAIN ALL EXISTING STRUCTURE

REMOVE PEBBLECRETE CLADDING

AC UNIT

DATA / COMMS

REMOVE TREE 08

REMOVE TREE 09

REMOVE SHADE STRUCTURE

RETAIN AND PROTECT TREE 05

REMOVE SHADE STRUCTURE

REMOVE TREE 06

RETAIN AND PROTECT TREE 01

RETAIN AND PROTECT TREE 02

REMOVE TREE 03

RETAIN AND PROTECT TREE 09

AC UNIT

OFFICE-GEN

REMOVE CONC. RAMP

EXISTING FENCE TO BE DEMOLISHED

REMOVE TIMBER SCREEN

SS

OFFICE - BUSINESS MANAGER

OFFICE - PRINCIPAL

WITHDRAWAL / OFFICE

GLA - FLEXIBLE LEARNING CENTRE

GLA

GLA MC03

GLA - AUSLAN MC04

GLA MC05

DEMOLISH ENTRY CANOPY FOR NEW

FOYER/ RECEPTION

BUILDING 1B

AC UNIT

AC UNIT

OFFICE GEN

TEACH PREP

ex. dp inset within stone wall

DUCT

EXISTING GARDEN BED

AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT AC UNIT

Phillips / Pilkington Architects

165 MacKinnon Parade, North Adelaide SA 5006
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admin@phillipspilkington.com.au

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CONTRACT EXECUTION

CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME

Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

SITE ADDRESS

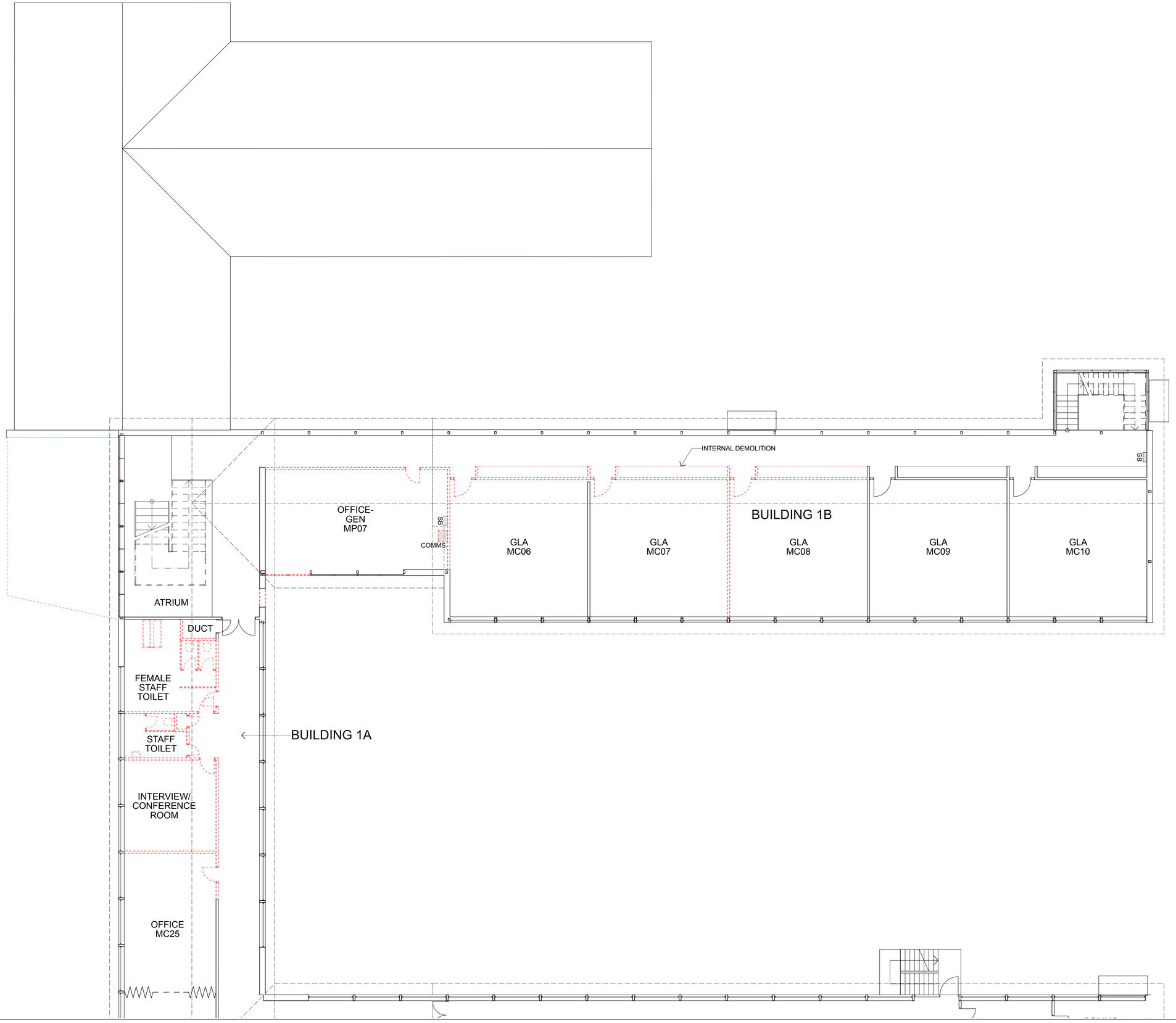
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE

DEMOLITION PLAN - GROUND FLOOR

CONTRACT NO.	DRAWN BY - CHECKED BY
6355-PC-2017	AP/ AM SP
PSC JOB NO.	SCALE AND SHEET SIZE
17515	1:100 @ A1
DPTI ASSET NO.	SHEET NO.
00906	A101
DPTI DRAWING NO.	REVISION
14553-AR-2017	DA1

Scale Bar Units in Millimetres
10 20 50 100 200 300 400 500 600 700



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CONTRACT EXECUTION
CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

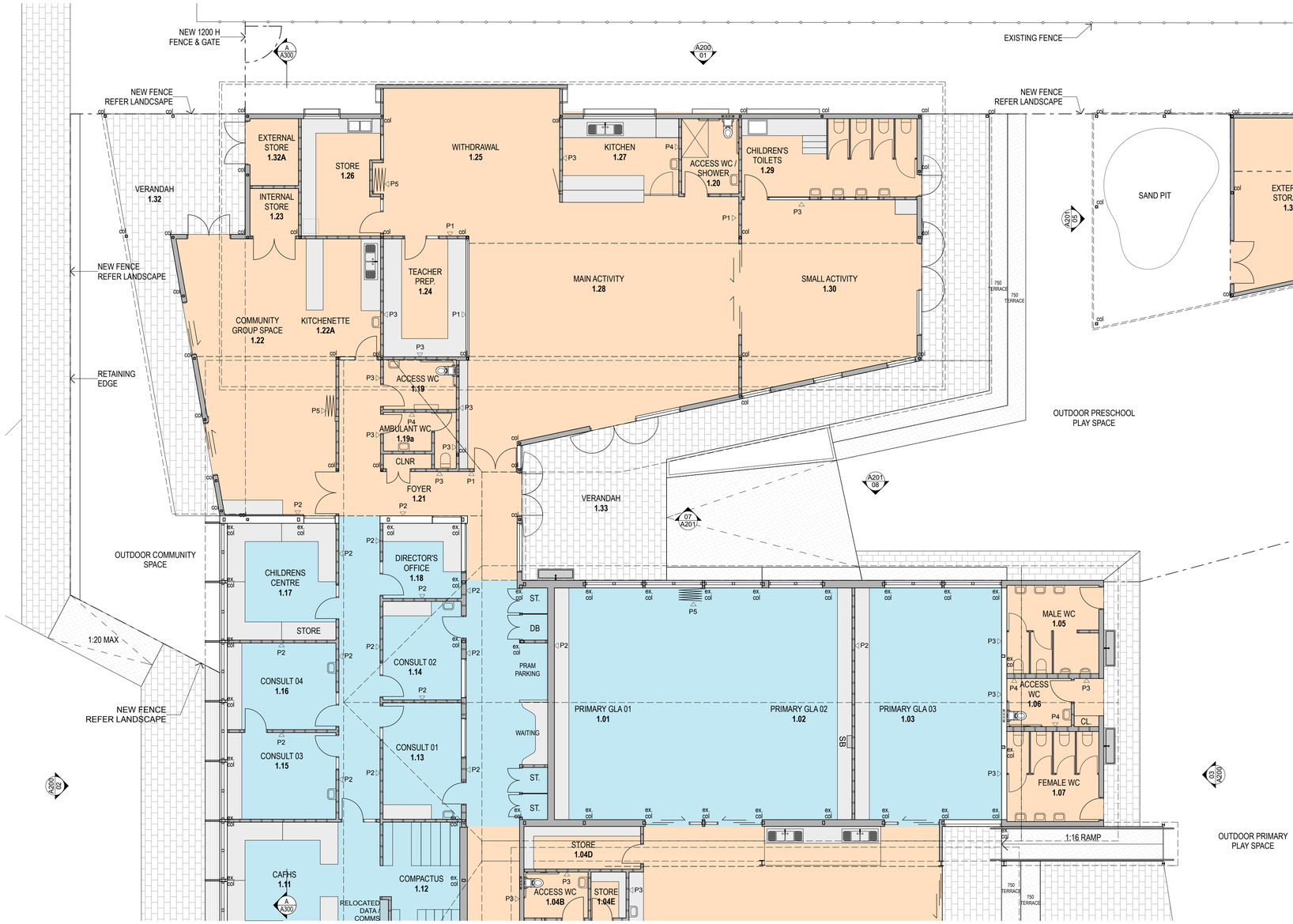
SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
DEMOLITION PLAN - UPPER FLOOR

CONTRACT NO.	DRAWN BY - CHECKED BY
6355-PC-2017	AP/ AM SP
PSC JOB NO.	SCALE AND SHEET SIZE
17515	1:100 @ A1
DPTI ASSET NO.	SHEET NO.
00906	A102
DPTI DRAWING NO.	REVISION
14554-AR-2017	DA1

Scale Bar Units in Millimetres

10 20 50 100 200 300 400 500 600 700



REFER DRAWING A104 FOR FURTHER DETAIL

01 - GROUND FLOOR PLAN - CHILDRENS CENTRE
1:100

NEW BUILD

REFURBISHMENT

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CONTRACT EXECUTION
CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
GROUND FLOOR PLAN CHILDRENS CENTRE

CONTRACT NO. 6355-PC-2017
DRAWN BY - CHECKED BY AP/ AM SP
PSC JOB NO. 17515
SCALE AND SHEET SIZE 1:100 @ A1
DPTI ASSET NO. 00906
SHEET NO. A103
DPTI DRAWING NO. 14555-AR-2017
REVISION DA1

Scale Bar Units in Millimetres

10 20 50 100 200 300 400 500 600 700

REFER DRAWING A103 FOR FURTHER DETAIL

NEW BUILD

REFURBISHMENT

OUTDOOR COMMUNITY SPACE

1:20 MAX

NEW FENCE REFER LANDSCAPE

A200 02

FOYER 1.21

VERANDAH 1.33

A201 08

07 A201

CHILDRENS CENTRE 1.17

STORE

CONSULT 04 1.16

CONSULT 03 1.15

DIRECTOR'S OFFICE 1.18

CONSULT 02 1.14

CONSULT 01 1.13

ST.

DB

PRAM PARKING

WAITING

ST.

ST.

PRIMARY GLA 01 1.01

PRIMARY GLA 02 1.02

PRIMARY GLA 03 1.03

SB

MALE WC 1.05

ACCESS WC 1.06

CL.

FEMALE WC 1.07

03 A200

OUTDOOR PRIMARY PLAY SPACE

1:16 RAMP

750 TERRACE

750 TERRACE

STORE 1.04D

ACCESS WC 1.04B

STORE 1.04E

LEARNING STREET 1.04

CAFHS 1.11

A A300

RELOCATED DATA / COMMS

COMPACTUS 1.12

PRINT

ADMIN. 1.09

FINANCE 1.10

RECEPTION 1.08

OFFICE 1.04C

OSHC OFFICE 1.04A

RETAIN EXISTING

NEW PAVING TO PERIMETER OF BUILDING 1B

F.I.P.

MAIN FOYER / ATRIUM 1A.01

LINE OF NEW ENTRY CANOPY ABOVE

NEW ACCESSIBLE ENTRY

WAITING

1:16 RAMP

ex. dp inset within stone wall

DEAN'S OFFICE 1B.01

SS RECEPTION 1B.05

TIME OUT 1B.10

MEDICAL 1B.08

FIRST AID 01 1B.06

FIRST AID 02 1B.07

ACCESS WC / SHOWER 1B.09

LIFT LIFT-01

WAIT. 1B.02

COUNSEL 1B.03

COUNSEL 1B.04

1:16 RAMP

PRIMARY GLA 04 1B.11

PRIMARY GLA 05 1B.12

PRIMARY GLA 06 1B.13

PRIMARY GLA 07 1B.14

VERANDAH 01 1B.15

VERANDAH 02 1B.16

VERANDAH 03 1B.17

VERANDAH 04 1B.18

04 A200

EXTEND FENCE TO MATCH EXISTING

EXISTING GARDEN BED

LINE OF EXISTING FENCE

DUCT

DUCT

FEMALE TOILET

EX. ACU

EX. ACU

HWS

PRINTERY/ PHOTOCOPY ROOM

01 - GROUND FLOOR PLAN - CHILDRENS CENTRE 1:100

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CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME

Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

SITE ADDRESS

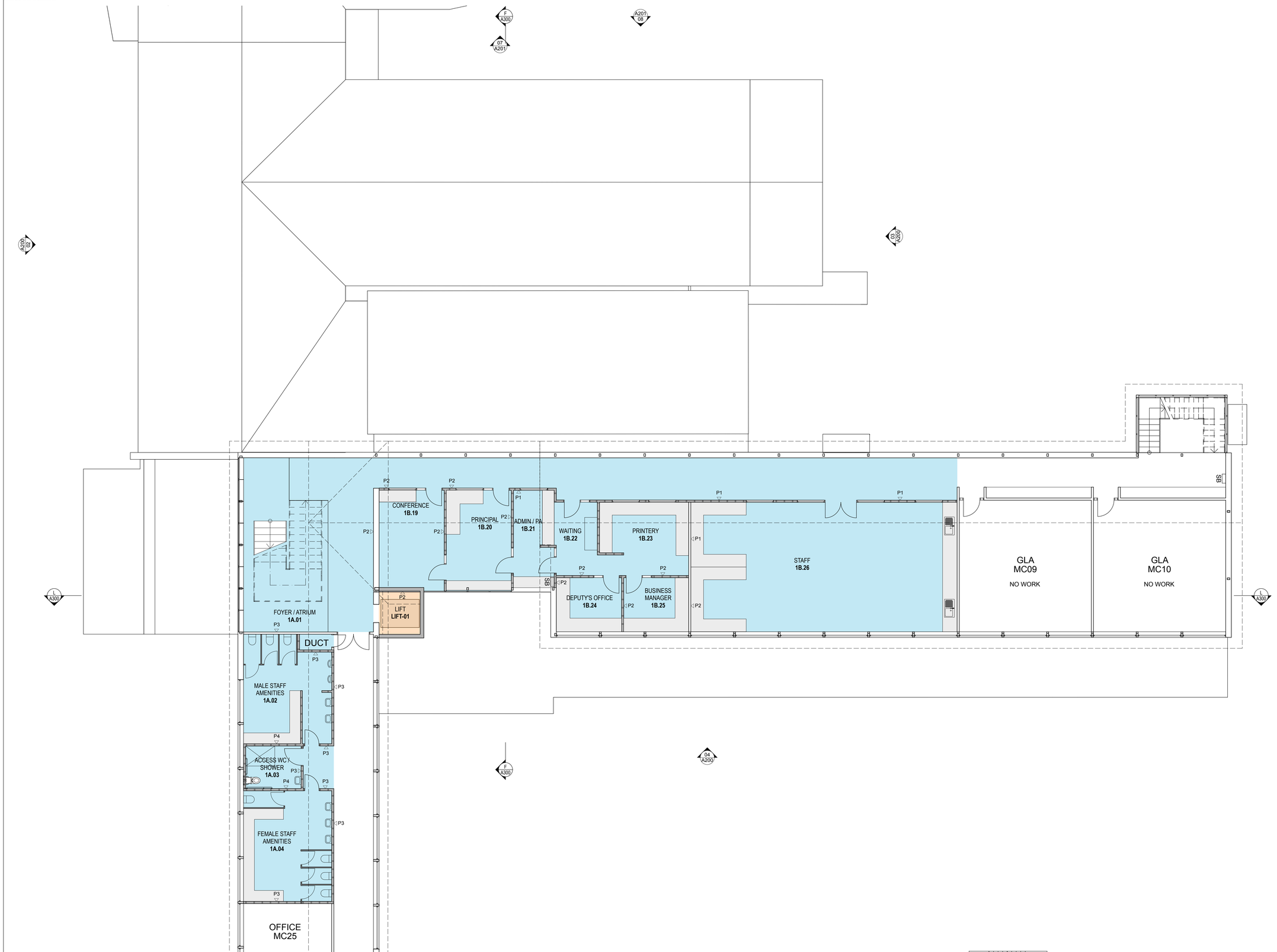
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE

GROUND FLOOR PLAN BUILDING 1 & 1B

CONTRACT NO.	DRAWN BY - CHECKED BY
6355-PC-2017	AP/ AM SP
PSC JOB NO.	SCALE AND SHEET SIZE
17515	1:100 @ A1
DPTI ASSET NO.	SHEET NO.
00906	A104
DPTI DRAWING NO.	REVISION
14556-AR-2017	DA1

Scale Bar Units in Millimetres
10 20 50 100 200 300 400 500 600 700



01 - FIRST FLOOR PLAN - BUILDING 1 & 1B
1:100

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CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
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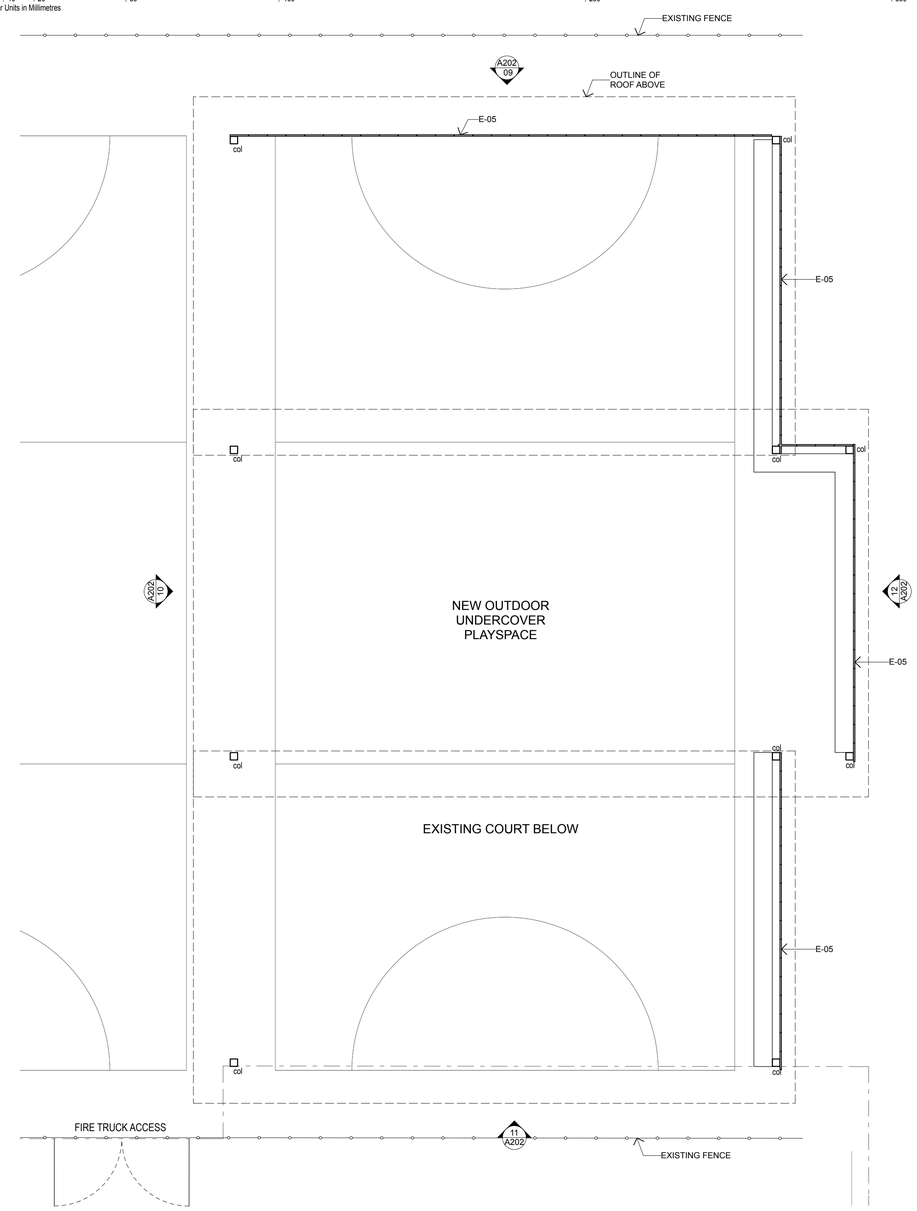
SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
UPPER FLOOR PLAN - BUILDING 1B

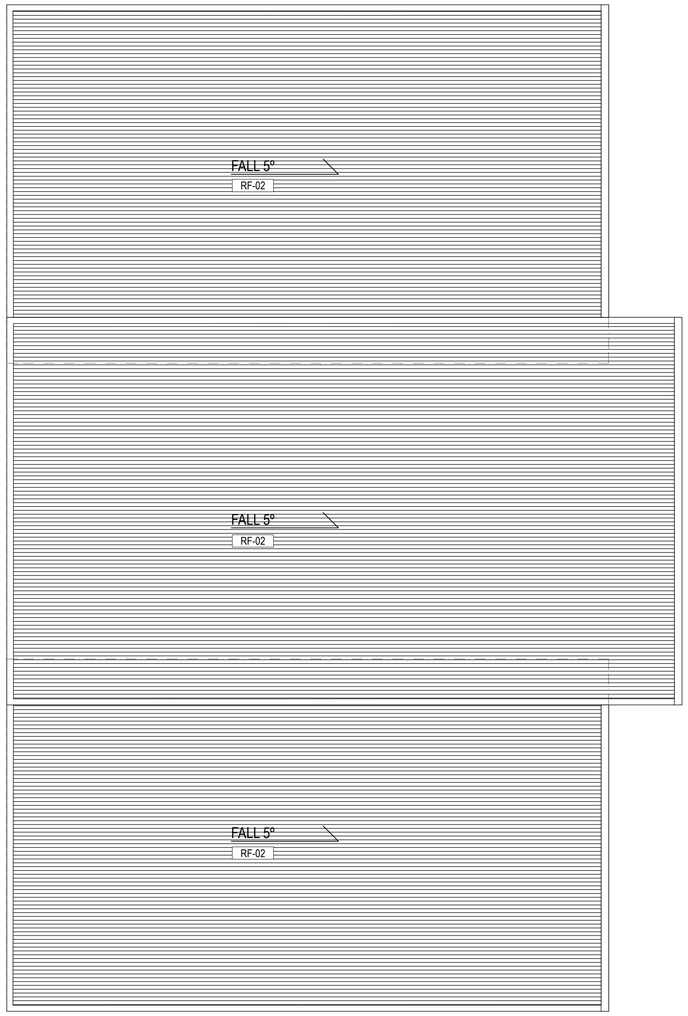
CONTRACT NO.	DRAWN BY - CHECKED BY
6355-PC-2017	AP/ AM SP
PSC JOB NO.	SCALE AND SHEET SIZE
17515	1:100 @ A1
DPTI ASSET NO.	SHEET NO.
00906	A105
DPTI DRAWING NO.	REVISION
14557-AR-2017	DA1

Scale Bar Units in Millimetres

10 20 50 100 200 300 400 500 600 700



01 - GROUND FLOOR PLAN - CHILDRENS CENTRE
1:100



02 - OUTDOOR PLAY STRUCTURE ROOF PLAN
1:100

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CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
SHADE STRUCTURE - DEMOLITION PLAN, STRUCTURE PLAN & ROOF PLAN

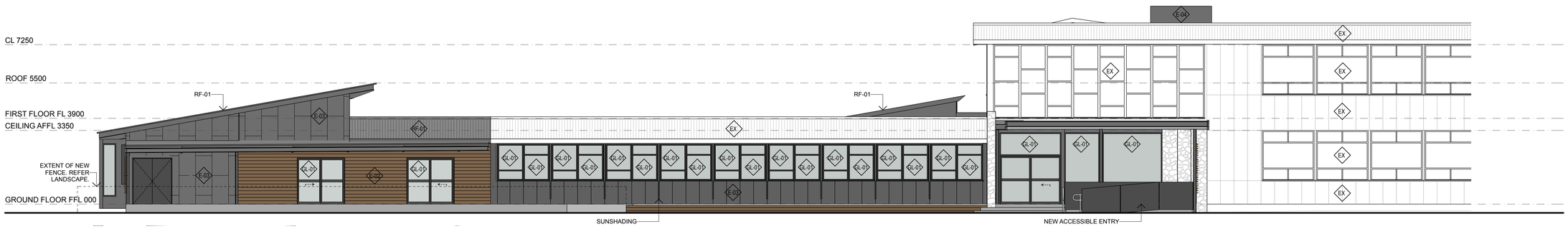
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6355-PC-2017	AP/ AM SP
PSC JOB NO.	SCALE AND SHEET SIZE
17515	1:100 @ A1
DPTI ASSET NO.	SHEET NO.
00906	A114
DPTI DRAWING NO.	REVISION
14566-AR-2017	DA1

Scale Bar Units in Millimetres

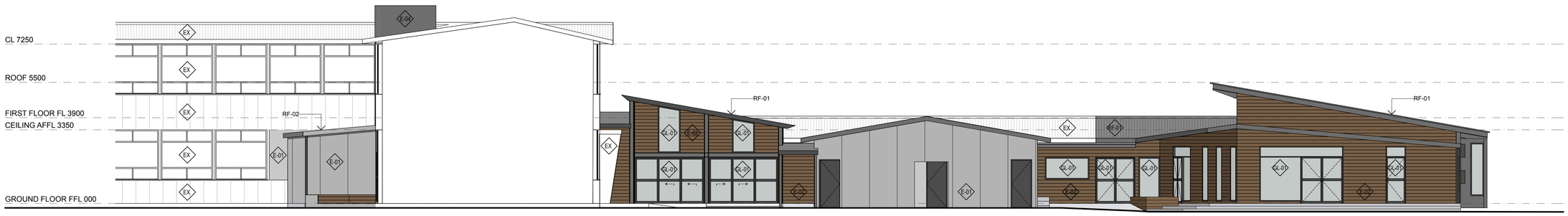
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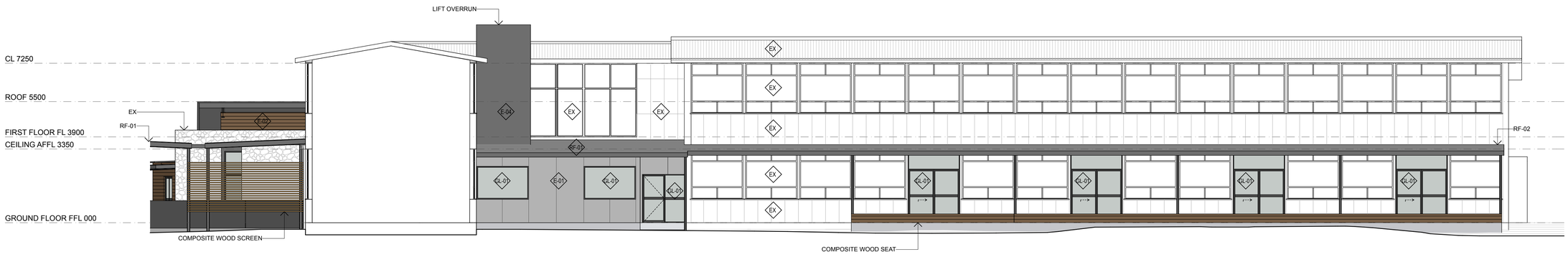
E-01 - NORTH ELEVATION 1:100



E-02 - WEST ELEVATION 1:100



E-03 - EAST ELEVATION 1:100



E-04 - SOUTH ELEVATION 1:100

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PLANNING APPROVAL

LEGEND

E-01	FIBRE CEMENT SHEET CLADDING, PAINTED.
E-02	ALUMINIUM FACED CLADDING.
E-03	WOOD COMPOSITE PANELLING SYSTEM.
E-04	CONCRETE.
E-05	TWIN WALL TRANSLUCENT CLADDING.
EX	EXISTING
RF-01	ZINCALUME ROOF CLADDING
RF-02	INSULATED ROOF PANEL
GL-01	NEW GLAZING

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CONTRACT EXECUTION
CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

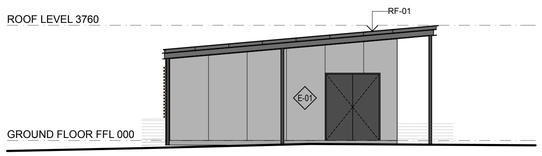
SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
ELEVATIONS

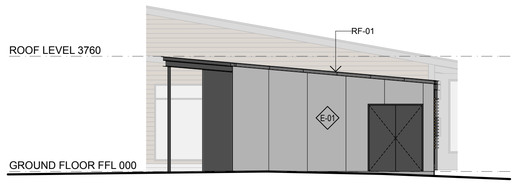
CONTRACT NO.	DRAWN BY - CHECKED BY
6355-PC-2017	AP/ AM SP
PSC JOB NO.	SCALE AND SHEET SIZE
17515	1:100 @ A1
DPTI ASSET NO.	SHEET NO.
00906	A200
DPTI DRAWING NO.	REVISION
14568-AR-2017	DA1

Scale Bar Units in Millimetres

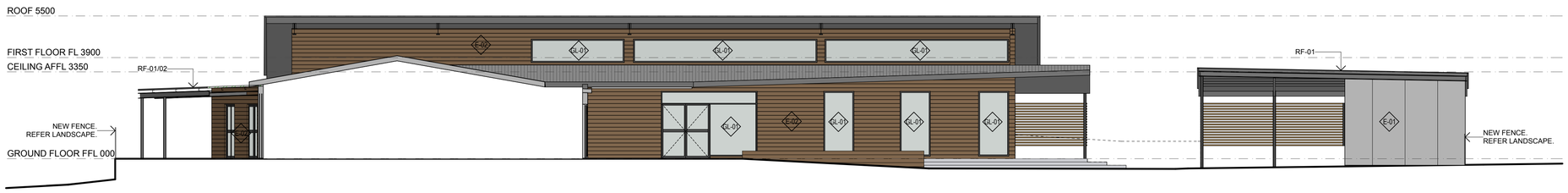
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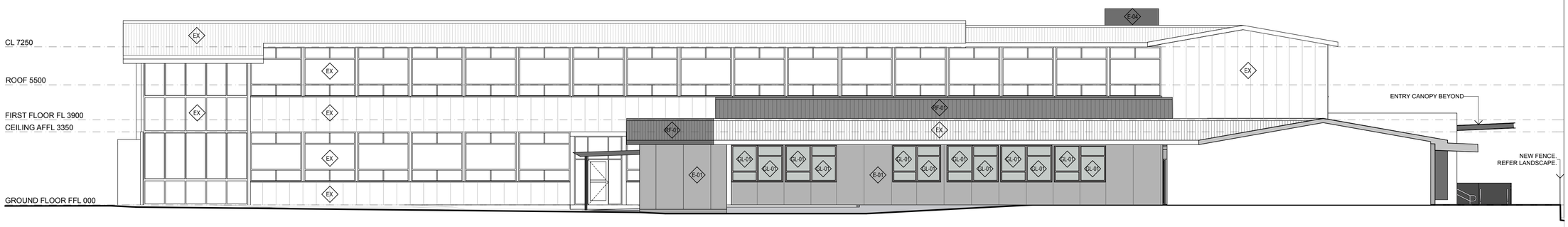
E-05 - STORAGE WEST ELEVATION 1:100



E-06 - EAST STORAGE ELEVATION 1:100



E-07 - PLAY SPACE ELEVATION 1:100



E-08 - PLAY SPACE ELEVATION 1:100

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PLANNING APPROVAL

LEGEND

E-01	FIBRE CEMENT SHEET CLADDING, PAINTED.
E-02	ALUMINIUM FACED CLADDING.
E-03	WOOD COMPOSITE PANELLING SYSTEM.
E-04	CONCRETE.
E-05	TWIN WALL TRANSLUCENT CLADDING.
EX	EXISTING
RF-01	ZINCALUME ROOF CLADDING
RF-02	INSULATED ROOF PANEL
GL-01	NEW GLAZING

REV.	DATE	AMENDMENTS	INIT.
P3	20.12.17	30% COORDINATION ISSUE	AM

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CONTRACT EXECUTION

CONTRACTOR — DATE

WITNESS — DATE

CONTRACT NAME

Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

SITE ADDRESS

McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE

ELEVATIONS

CONTRACT NO. 6355-PC-2017 — DRAWN BY - CHECKED BY

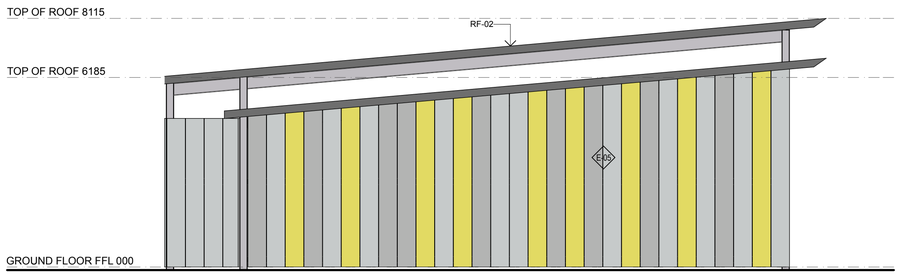
PSC JOB NO. 17515 — SCALE AND SHEET SIZE 1:100 @ A1

DPTI ASSET NO. 00906 — SHEET NO. A201

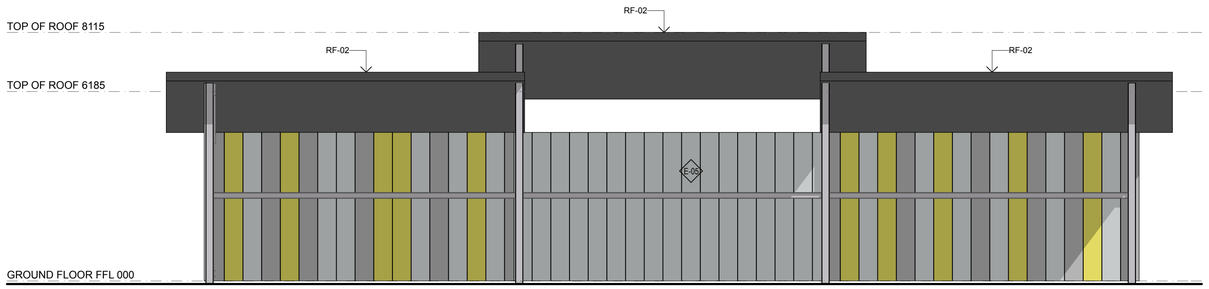
DPTI DRAWING NO. 14569-AR-2017 — REVISION DA1

Scale Bar Units in Millimetres

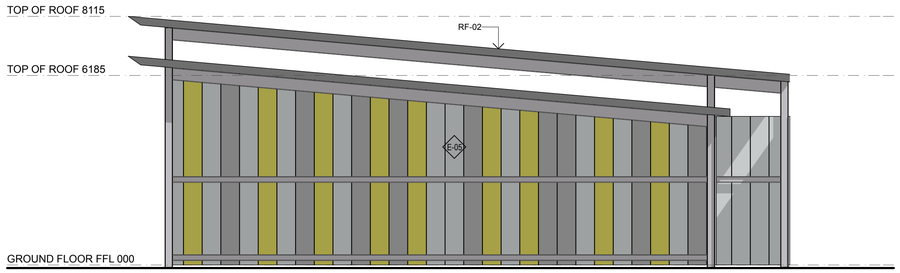
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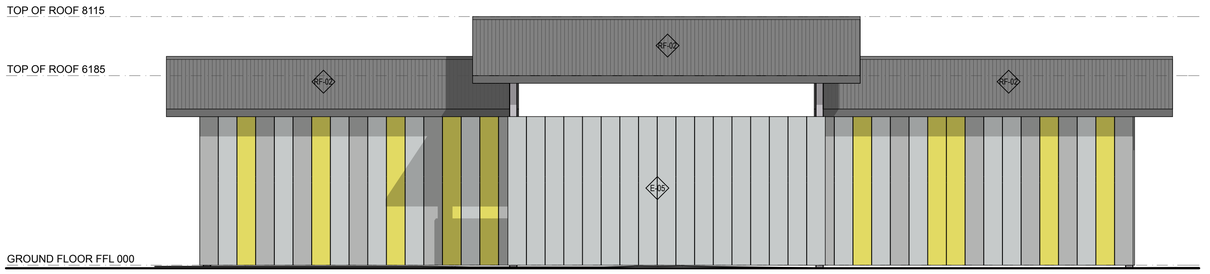
E-09 - SHADE STRUCTURE - NORTH ELEVATION 1:100



E-10 - SHADE STRUCTURE - WEST ELEVATION 1:100



E-11 - SHADE STRUCTURE - SOUTH ELEVATION 1:100



E12 - SHADE STRUCTURE - EAST ELEVATION 1:100

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PLANNING APPROVAL

LEGEND

- E-01 FIBRE CEMENT SHEET CLADDING, PAINTED.
- E-02 ALUMINIUM FACED CLADDING.
- E-03 WOOD COMPOSITE PANELLING SYSTEM.
- E-04 CONCRETE.
- E-05 TWIN WALL TRANSLUCENT CLADDING.
- EX EXISTING
- RF-01 ZINCALUME ROOF CLADDING
- RF-02 INSULATED ROOF PANEL
- GL-01 NEW GLAZING

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CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
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SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
ELEVATIONS

CONTRACT NO. 6355-PC-2017
DRAWN BY - CHECKED BY

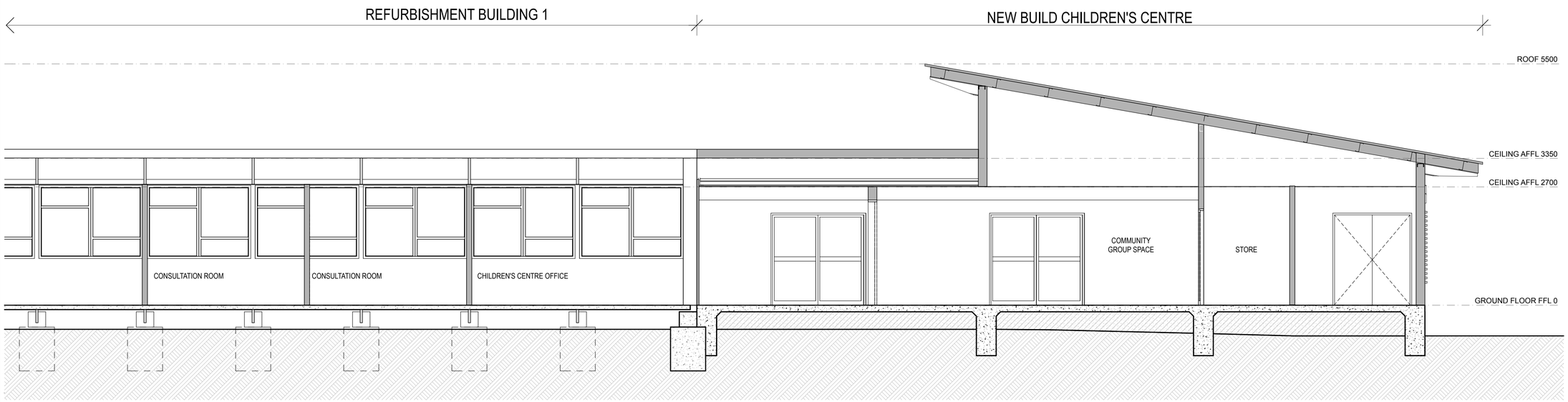
PSC JOB NO. 17515
SCALE AND SHEET SIZE 1:100 @ A1

DPTI ASSET NO. 00906
SHEET NO. A202

DPTI DRAWING NO. 14570-AR-2017
REVISION DA1

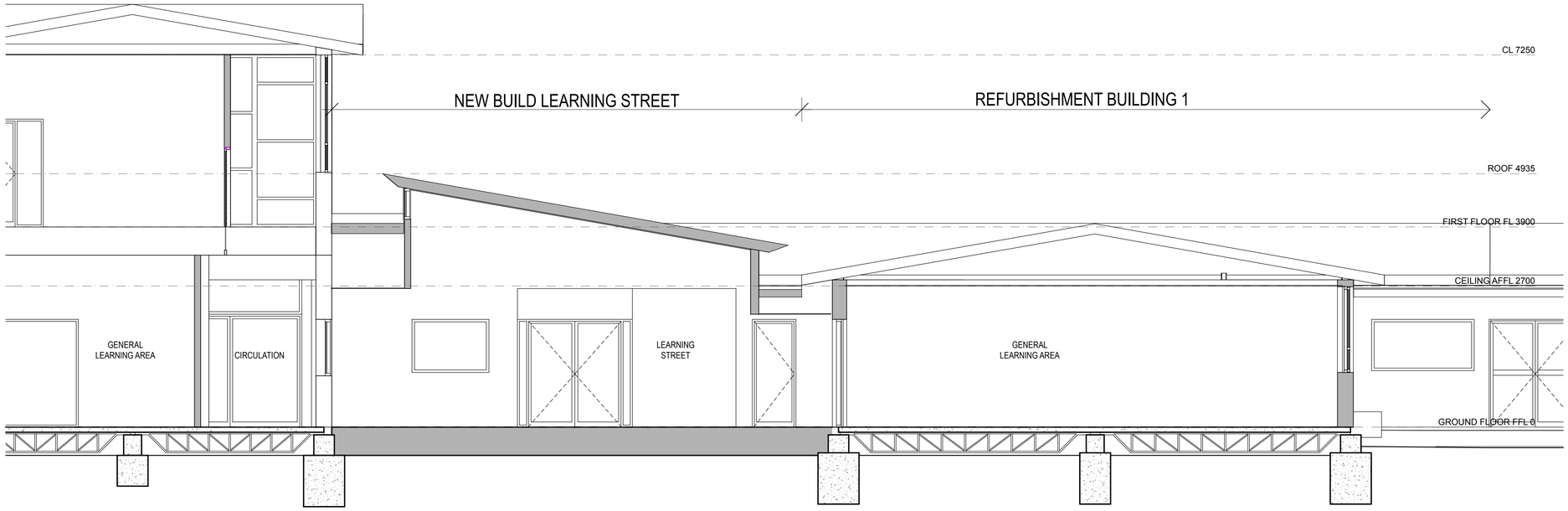
Scale Bar Units in Millimetres

10 20 50 100 200 300 400 500 600 700



A
-

SECTION A-A
1:50



F
-

SECTION F-F
1:50

Phillips / Pilkington Architects

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admin@phillipspilkington.com.au

PLANNING APPROVAL

REV.DATE AMENDMENTS INIT.

Government of South Australia
Department of Planning, Transport and Infrastructure

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CONTRACT EXECUTION
CONTRACTOR DATE

WITNESS DATE

CONTRACT NAME
Windsor Gardens Secondary College, Gilles Plains Children's Centre & Primary School Amalgamation

SITE ADDRESS
McKay Avenue, Windsor Gardens SA 5087

DRAWING TITLE
SECTIONS

CONTRACT NO. 6355-PC-2017
DRAWN BY - CHECKED BY AP/ AM SP
PSC JOB NO. 17515
SCALE AND SHEET SIZE 1:50 @ A1
DPTI ASSET NO. 00906
SHEET NO. A300
DPTI DRAWING NO. 14572-AR-2017
REVISION DA1



LEGEND

01 New cover seating area
02 Rock seating
03 Native gardens with informal log seats & nature play elements
04 Lawn Area
05 Sand pit
06 Kitchen garden
07 Outdoor Community Space with 1.5m high palisade fence
08 Existing wall and fence to be retained
09 Existing palm (Washingtonia species) to be removed
10 New outdoor undercover playspace
11 Preschool playspace
12 Existing Footpath
13 Existing Paving
14 Timber decking verandah
15 Existing regulated tree in poor structural condition to be replaced with new of same species (Eucalyptus sideroxylon - Red Ironbark)
16 Modify existing path to suit McKay Avenue alteration
17 Widened grassed street frontage with new tree planting
18 Playing courts
19 Playspace Safety Fence

KEY

Concrete paver
Exposed aggregate concrete paving
Lawn
Organic mulch
Gravel
Asphalt
Garden bed
Seating log
bench
Decking
Existing tree
Proposed tree
Existing trees to be removed

Windsor Gardens Secondary College Gilles Plains Children's Centre and Primary School Amalgamation | Windsor Gardens

Landscape Master Plan For DA

ASPECT Studios™

In collaboration with: Phillips Pilkington Architects

Drawn: DM/SC/YQ
Checked: TC

Scale: 1:400@A3
Date: December 2017

0 4 8 12 16M

Dwg no. : A17021-SK01
Rev: D

Trees

01. Allocasuarina verticillata
Drooping She-oak

02. Banksia marginata
Silver Banksia

03. Banksia ornata
Desert banksia

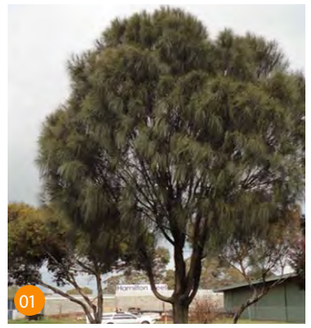
04. Eucalyptus fasiculosa
Pink Gum

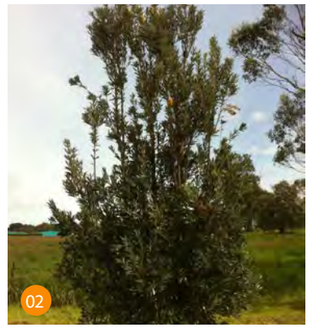
05. Exocarpus cupressiformis
Native Cherry

06. Hakea mitchellii
Desert hakea

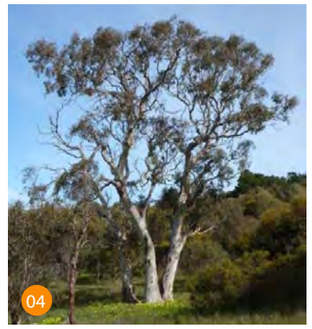
07. Melaleuca lanceolata
Dryland Tea tree

08. Melaleuca halmaturorum
Saltwater paperback

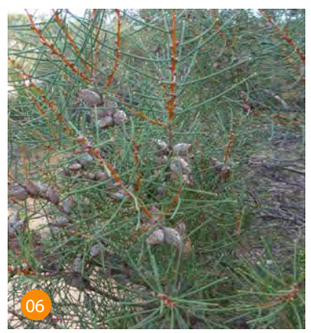


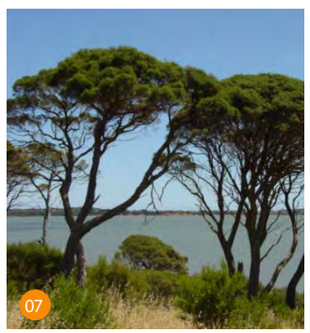


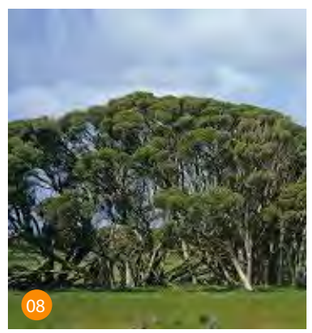












Shrubs

09. Acacia longifolia var. sophorae
Coastal Wattle

10. Acacia ligulata
Umbrella Bush

11. Atriplex cinerea
Coast Saltbush

12. Leucopogon parviflorus
Coast Beard-heath

13. Myoporum insulare
Boobialla

14. Olearia axillaris
Coastal Daisy Bush

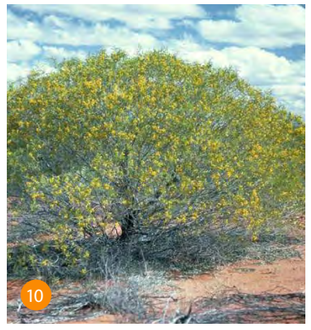
15. Ozothamnus turbinatus
Coast Everlasting

16. Rhagodia candolleana
Coastal Ruby Saltbush

17. Scaevola crassifolia
Cushion Fanflower

18. Solanum laciniatum
Cut-leaf Kangaroo-apple

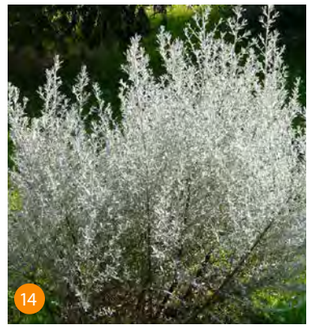






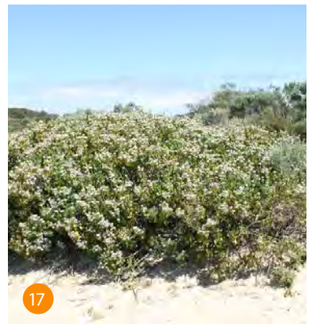














Windsor Gardens Secondary College Gilles Plains Children's Centre and Primary School Amalgamation | Windsor Gardens

Planting Palette: Trees and Shrubs For DA

ASPECT Studios™

In collaboration with: Phillips Pilkington Architects

Drawn: YQ
Checked: TC

Scale: NTS
Date: December 2017

Dwg no. : A17021-SK02
Rev: A

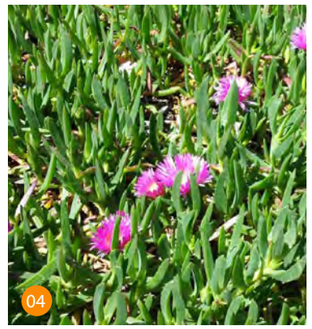
Understory

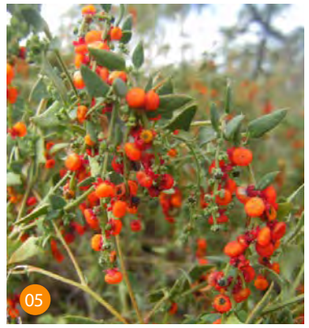
01. Acacia cupularis (prostrate form)
    Prostrate wattle
02. Dianella brevicaulis
    Coast Flax Lily
03. Dianella revoluta
    Black-anther Flax Lily
04. Carpobrotus rossii
    Native pigface
05. Einadia nutans
    Climbing Saltbush
06. Ficinia nodosa
    Knobby Club-rush
07. Leucophyta brownii
    Coast Cushion Bush
08. Kennedia prostrata
    Scarlet Runner
09. Kunzea pomifera
    Muntries



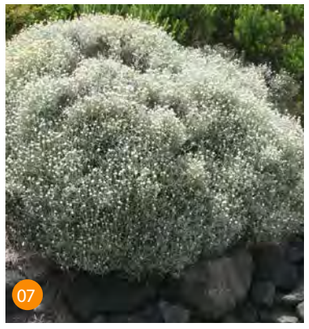




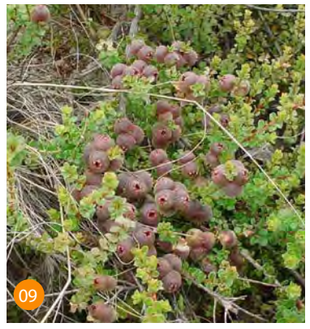






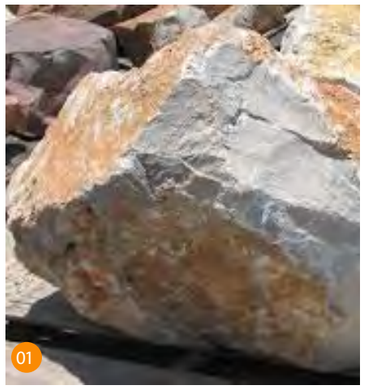


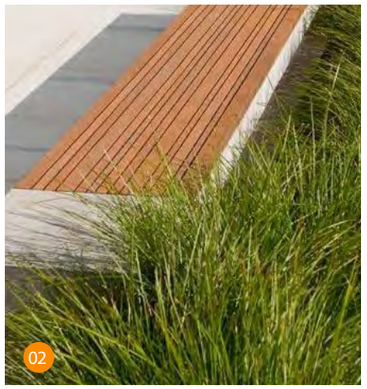


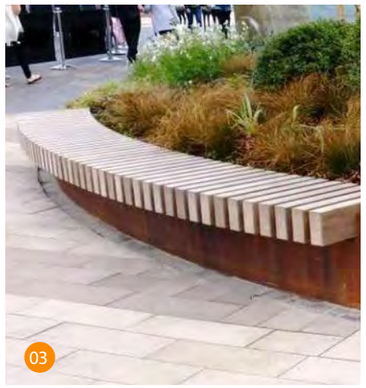


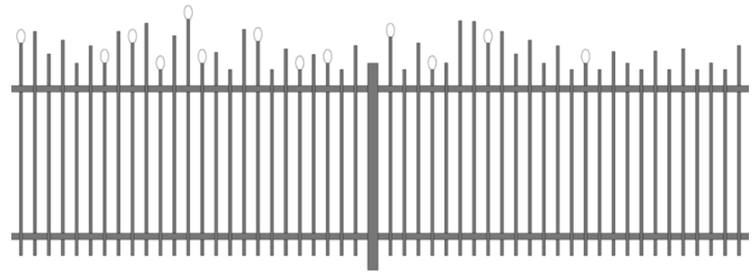
Materials

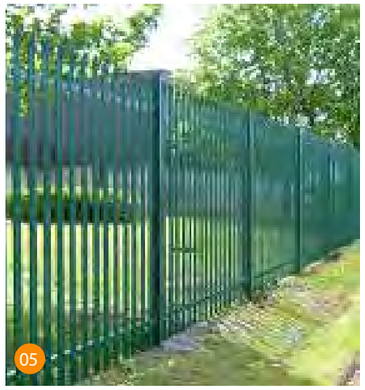
01. Limestone Boulder/Rocks
02. Timber Seat Garden Edge
03. Timber Seat Planter Pod
04. Playspace Safety Fence
05. Palisade Fence
06. Timber Deck
07/08. Exposed Aggregate Concrete Path
09. Timber Log/Seat
10. Timber Stepping Stumps
11/12. Nature Play


01

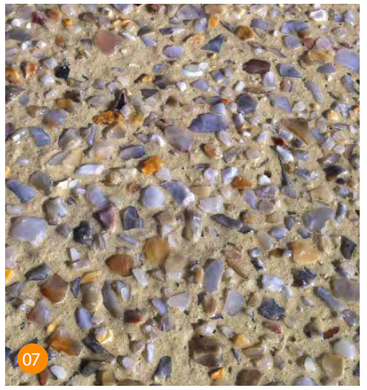

02


03


04

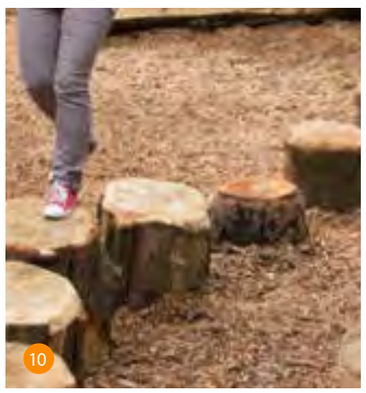

05


06


07


08


09


10


11


12

tree environs

managing trees in the urban landscape

TREE REPORT

Survey of 11 trees at Windsor Gardens Secondary School

Prepared for:
Tim Conybeare
Aspect Studios
9-11 Bailey St
Adelaide SA 5000

7 November 2017

Prepared by:
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Consulting Arborist
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Table of Contents

SUMMARY **3**

INTRODUCTION **4**

- QUALIFICATIONS 4
- DOCUMENTS AND INFORMATION PROVIDED 4
- RELEVANT BACKGROUND INFORMATION 4
- SCOPE OF THIS SURVEY 4

SURVEY METHOD **5**

OBSERVATIONS **9**

- SITE DESCRIPTION 9
- TREE DATA 11
- TREE SPECIES 11
- TRUNK CIRCUMFERENCE 12
- TREE HEIGHT 12
- AGE 12
- ATTRIBUTES 12
- TREE HEALTH/VIGOUR 12
- TREE STRUCTURE 13
- RETENTION VALUE 13
- PROPOSED DEVELOPMENT ACTIVITIES 13

APPRAISAL **14**

- TREE SPECIES AND BENEFITS 14
- TREE CONDITION 14
- RETENTION VALUE 16
- MAINTENANCE 16
- DESIGN CONSIDERATIONS 17
- GENERAL TREE PROTECTION MEASURES 18
- PROTECTIVE FENCING 18
- DEMOLITION ACTIVITIES 18
- SITE PREPARATION AND EARTHWORKS 18
- CONSTRUCTION ACTIVITIES 19
- UNDERGROUND SERVICES 19
- PAVING 19
- LANDSCAPING 19
- FENCING 19

CONCLUSIONS **20**

ENDNOTES **21**

Appendices:
Tree Survey Data Table
Tree Images

Summary

A survey of 11 trees was undertaken by Tree Environs in the Windsor Gardens Secondary School project site. 5 of these trees qualify as regulated trees. These trees provide a wide range of human, environmental and ecological benefits. 6 of the trees do not qualify as regulated trees but contribute to local character and amenity. Most trees exhibit average to good health and structure. The survey identified that 4 trees on the project site have a high retention value, 4 trees a medium retention value and 3 trees with a low retention value. Regulated tree 3 has poor structure and has been recommended to be removed based on unacceptable risk. Non-regulated trees 4 and 6 have a limited future at the site and have also been recommended to be removed. Pruning us recommended for three trees. The tree protection zone and structural root zone were calculated for each tree. General guidelines are provided to minimise the impacts on those trees to be retained, both during the design and construction phase. Some tree removals may be necessary to facilitate the design solution for the site. Those trees with a low retention value should be considered for removal first. A more detailed assessment of tree impacts should be undertaken when a design proposal is available.



Introduction

Tree Environs carried out a survey of 11 selected trees at Windsor Gardens Secondary School, McKay Avenue, Windsor Gardens on the 23 October 2017 following a request from Tim Conybeare of Aspect Studios.

The purpose of the survey is to identify regulated and significant trees, tree condition, tree protection zone areas, tree retention value and to provide guidelines to the design team to preserve trees to be retained on the site in relation to proposed building works.

Qualifications

I have based this report on site observations and the information provided to me. I have twenty-five years' experience in the field of landscape architecture. A summary of his qualifications includes:

- Bachelor of Architecture, University of Adelaide 1991.
- PhD, School of Earth and Environmental Sciences, University of Adelaide 2010. '*Integrating Trees into the Design of the City: Developing More Sustainable Practices for Planting Street Trees in Australian Cities'*.
- Dip. Horticulture (Arboriculture)
- Member Australian Institute of Landscape Architects (AILA).
- Registered landscape Architect.

Documents and information provided

Tree Environs was provided with the following documents to assist in the preparation of this report;

- *Windsor Gardens B-12 Amalgamation 177515-Sk 11* by Phillips Pilkington Architects dated 15/09/2017.
- *Windsor Gardens Secondary College Tree Assessment* by Aspect Studios dated October 2017.

Relevant background information

Phillips Pilkington Architects and Aspect Studios are preparing plans for redevelopment of part of the Windsor Gardens Secondary School at McKay Avenue, Windsor Gardens. The proposed works include new buildings, outdoor play spaces and landscaping. A number of existing trees may be impacted by the proposed works. A tree survey and preliminary assessment is required to provide the design team with guidance in developing the initial concept designs for the site.

Scope of this survey

This report is concerned only with the 11 trees located on the defined site within the school grounds.

Survey method

The survey collected the following information on the subject trees. I had full access to the trees in question and observations were from what was visible from within the site. I carried out a level 2 assessment of all trees[i] and all observations were visual from ground level[ii].

Tree number

Tree numbers have been plotted on an aerial image contained in this report.

Tree species

Tree names are given as botanical names and common names. Most names are given to species level while one is noted only to generic level where species is uncertain.

Trunk circumference

Trunk circumference is measured 1m above natural ground level. The trunk circumference class is noted as follows:

- 2.0-3.0m - Regulated Trees[iii] under the *Development Act 1993*
- >3.0m - Significant Trees[iv] under the *Development Act 1993*

Trunk circumference classes are colour coded in the survey data for easy clarification by the design team.

Diameter at Breast Height (DBH)

Diameter at Breast Height (DBH) is the diameter of the trunk measured at 1.40m above ground level as per the Australian Standard[v] method. When calculating a DBH for a tree with multiple stems, the combined DBH do not accurately represent the root volume or area and the TPZ becomes exaggerated. Combining DBH in the following formula results in a revised total DBH that better represents the total stem cross sectional area as if it were 1 stem. From this a more proportional TPZ can then be calculated.

$$\text{Combined DBH} = \sqrt{(A^2 + B^2 + C^2 \text{ etc.})}$$

(A, B and C etc. are the DBH of each individual stem)

Trunk diameter at ground level

This measurement is taken at the base of the tree, just above the root flare. This value is used to determine the structural root zone[vi].

Tree height

Tree height is estimated and noted in the following classes:

- Small tree (<10m)
- Medium tree (10-20m)
- Large tree (>20m)

Age estimate

The age of each tree is estimated to within ±10 years for younger trees and ±20 years for older trees. Tree age can be difficult to determine for very old trees. Tree age may not be accurate as growing conditions vary at each planting site and the trees may be younger or older than reflected by their actual size. Tree age may be determined more accurately from reliable historical data where available.

Attributes

For regulated trees any attributes worthy of preservation have been identified. These are as listed under Objective 2 of the *Port Adelaide Enfield Council Development Plan.*

> *Objective 2 Development in balance with preserving regulated trees that demonstrate one or more of the following attributes:*
> *(a) significantly contributes to the character or visual amenity of the locality*
> *(b) indigenous to the locality*
> *(c) a rare or endangered species*
> *(d) an important habitat for native fauna.*

Attributes have been assessed within the context of the school environment. These attributes may diminish outside the school site, especially for smaller stature trees.

Tree health /vigour

Tree health/vigour is noted in the following classes:

- **Good**. Tree has a full and healthy canopy, leaves have good colour, evidence of strong annual growth, and minimal deadwood present.
- **Average**. Tree has medium crown density, some signs of deficiency in leaf colour, and moderate deadwood present.
- **Poor**. Tree has low crown density, leaves show poor colour/vigour, and a high percentage of dead wood present.

Tree Structure

Tree structure is noted in the following classes:

- **Good Structure.** Sound branch attachments, no large structural failures, evidence of good wound wood development, no hollowing, and a regular crown and branch scaffold.
- **Average Structure.** Small Failures, crown mostly regular, some minor hollowing acceptable and sound branch attachments throughout tree's structure. Where pollarding/coppicing is likely to have taken place it has not compromised the tree structurally.
- **Poor Structure.** Evidence of medium to large diameter failures, poor branch attachments, included bark unions, co-dominant and bifurcated structure, and excessive hollowing. Where pollarding/coppicing is likely to have taken place, it may have compromised the tree structurally.

Retention value

The retention value of the trees will be noted as;

- High
- Medium
- Low

For a tree to qualify as having **high retention value** it meets the following criteria. These are trees that should be preserved and the project modified to work around the trees where possible.

- It qualifies as a regulated or significant tree under the *Development Act 1993,* and
- It is in average to good health, and
- It has average to good structure, and
- It possesses one or more attributes worthy of preservation under the *Port Adelaide Enfield Council Development Plan*

For a tree to qualify as having **medium retention value** it meets the following criteria. These trees should be considered to be retained on site to enhance the development if the proposed master plan allows, or could be removed to facilitate the proposed works.

- It does not qualify as a regulated or significant tree under the *Development Act 1993*.
- It is in average to good health, and
- It has average to good structure, and
- It is likely to provide long term benefits in the local landscape.

For a tree to qualify as having **low retention value** it meets the following criteria.
These are trees that are recommended for removal (subject to development approval if they are regulated or significant)

- The tree may or may not be a regulated or significant tree, and
- The tree is in poor health (has a short life expectancy), or
- The tree has poor structure (represents an unacceptable risk to public or private safety), or
- It possesses no attributes worthy of preservation under the principles of Development Control of the *Port Adelaide Enfield Council Development Plan.*

The retention value of trees has been colour coded in the tree survey data table.

Maintenance

Following the assessment of each tree, management recommendations are given. Tree management is required to maintain acceptable levels of risk for the construction workers and for future users of the site.

Crown maintenance pruning[vii] may be recommended for trees in good health and with good structure to improve tree aesthetics and to reduce any risks that may be present in the tree.
Trees with an average structure may require more extensive pruning to improve tree safety and aesthetics which may include crown maintenance, reduction pruning[viii], crown lifting[ix], remedial pruning[x] or other such specified pruning.
Those trees that cannot have their risks reduced to an acceptable level through pruning may be recommended for removal.

Tree Protection Zone radius

The Tree Protection Zone (TPZ) radius is calculated by multiplying the trunk diameter at 1.4m by a factor of 12. The radius is measured from the centre of the trunk at ground level. A TPZ should not be less than 2m nor greater than 15m (except where crown protection is required). This method is outlined in the Australian Standard AS 4970 – 2009 *Protection of trees on development sites.*

The extent of tree protection zones for each tree is shown on Tree Survey Data table.

Structural Root Zone radius

The Structural Root Zone (SRZ) is the area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold a tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed as a radius in metres. This zone considers the tree's structural stability only, not the root zone required for the tree's vigour and long-term viability, which will usually be a much larger area. There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the following formula. Root investigations may provide more information on the extent of these roots. From AS 4970-2009 *Protection of Trees on Development Sites.*

$$\text{SRZ radius} = (Dx50)^{0.42} \times 0.64$$

(D= trunk diameter in metres when measured above the root buttress)

Any work within the SRZ should be avoided. Where no alternative exists, the work must be supervised by a qualified Arborist and approved by Local Council. Tree removal may be required depending upon the size and number of roots affected.

The extent of structural zones for each tree is shown on Tree Survey Data table.

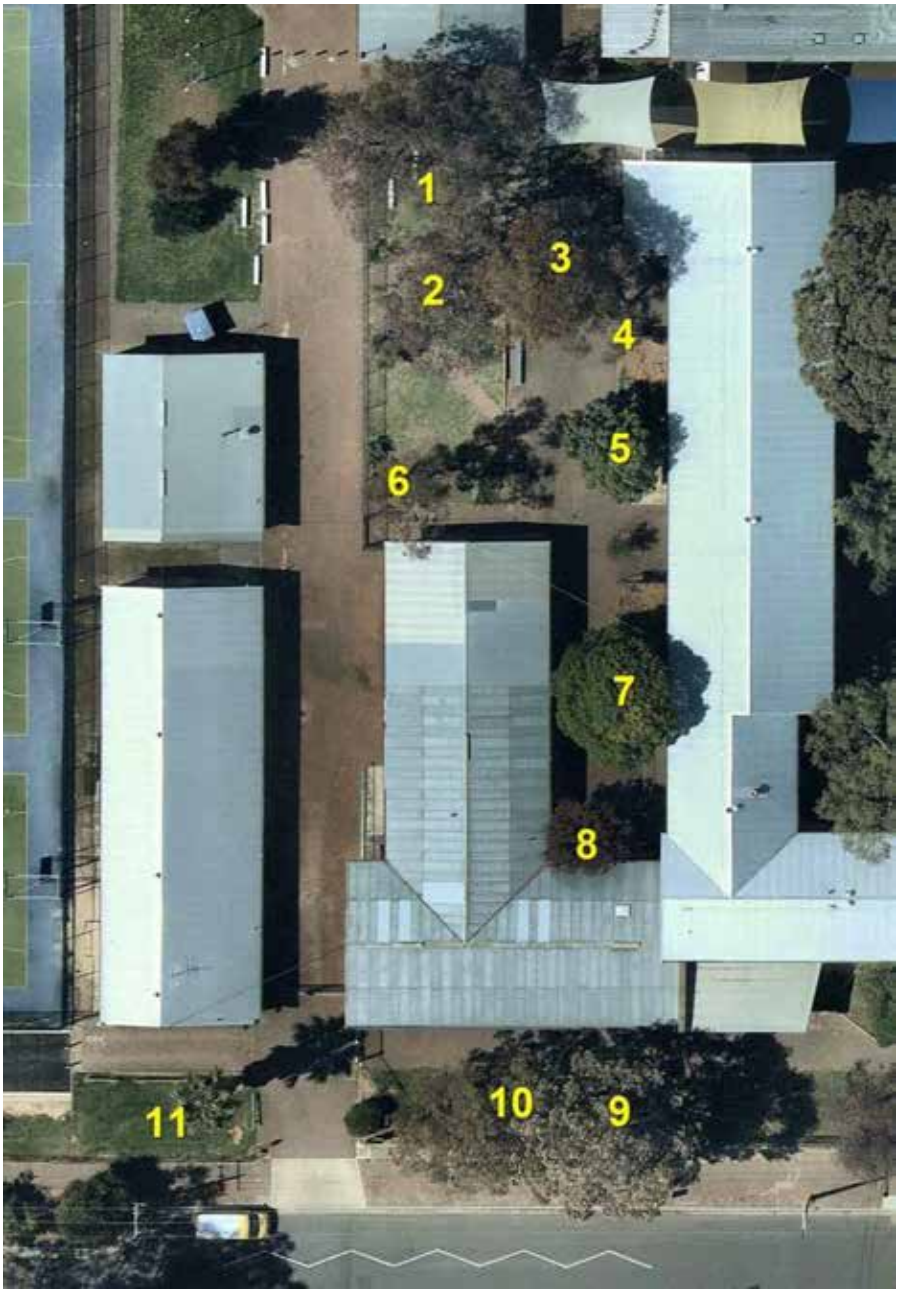
Notes

Some relevant notes are recorded for specific trees in the survey data table.

Observations

Site description

The site comprises part of the Windsor Gardens Secondary School campus accessed from McKay Avenue. The site is occupied by the existing two storey school buildings, a brick paved courtyard, areas of lawn and the grassed frontage to McKay Avenue. Please refer to the aerial photo below.





School site viewed from McKay Avenue.



Photo of internal paved courtyard.



Photo of internal lawn area.

Tree data

The data collected on the trees is compiled in a Tree Survey table attached at the end of the report. A photographic record of each tree is also included at the end of this report.

Tree species

The trees on the site comprised a mix of native and exotic tree species falling into the following categories. The only locally indigenous species is *Eucalyptus leucoxylon* (**SA Blue Gum).**

Locally indigenous (2)	Australian native (7)	Exotic (2)
Eucalyptus leucoxylon (x2) **SA Blue Gum**	*Eucalyptus sp.* (x2)	*Prunus sp. (x1)* **Ornamental plum**
	Eucalyptus sideroxylon (x3) **Red ironbark**	*Washingtonia robusta (x1)* **Mexican fan palm**
	Lophostemon confertus (x2) **Queensland brush box**	

Trees 9 and 10 have characteristics similar to *Eucalyptus polyanthemos* (Red box) and *Eucalyptus melliodora* (Honey box). However, species identification could not be confirmed and they are noted as *Eucalyptus sp.* A hybrid of these two is possible.

Trunk circumference

A breakdown of the trunk circumference on site is as follows (with colour coding in the Survey Data Table noted);

- There are 5 trees with a trunk circumference less than 2.0m and do not qualify as regulated trees under the *Development Act 1993*.
- There are 6 trees with a trunk circumference between 2.0m and 3.0m and qualify as regulated trees under the *Development Act 1993* (Coloured orange). This includes trees 1, 2, 3, 5, 9 and 11.

Tree height

The majority of trees on site are relatively young small to medium sized trees. A breakdown of the tree height on site is as follows;

- 5 small trees below 10m
- 6 medium trees between 10-20m

Age

The majority of trees on site are relatively young trees. A breakdown of the tree age on site is as follows;

- 3 trees are 10-20 years old
- 8 trees are 30-40 years

Attributes

5 regulated trees were identified as contributing to the character or visual amenity of the school site.

For the purposes of this assessment, attributes have been assessed within the context of the school environment. These attributes may diminish outside the school site, especially for smaller stature trees.

No attributes were identified for non-regulated trees; however, these trees may still make a contribution to site amenity.

Tree health/vigour

The majority of trees on site exhibit average to good health and vigour. A breakdown of tree health and vigour is as follows;

- 6 trees exhibit good health and vigour.
- 5 trees exhibit average health and vigour

Tree structure

The majority of trees on site exhibit average to good health and vigour. A breakdown of tree structure is as follows;

- 3 trees have a good structure.
- 5 trees have an average structure.
- 3 trees have poor structure (regulated tree 3 and non-regulated trees 4 and 6).

Tree 3 exhibits poor structure with codominant stems with bark inclusions between them.

Trees 4 and 6 are locally indigenous trees, but have a very irregular form and will become increasingly difficult to manage.

Retention value

The majority of trees on site have a high to medium retention value. A breakdown of tree retention value is as follows (with colour coding in the Survey Data Table noted);

- 4 trees have a high retention value (marked green).
- 4 trees have a medium retention value (marked blue).
- 3 trees have a low retention value (marked red).

One regulated tree (tree 3) has a low retention value. This tree meets the relevant criteria for removal in the Port Adelaide Enfield *Development Plan.*

Proposed development activities

Detailed plans for the proposed redevelopment activities were not provided at this stage of the tree survey work. The development proposal includes the follow elements:

- New buildings.
- New play spaces,
- New landscaping.

Appraisal

Tree species and benefits

Eleven trees were identified within the proposed development area at the school. These trees comprise a mix of native and exotic tree species, but only one is a locally indigenous species. The trees provide a wide range of human benefits within the school environment[xi].

6 trees qualify as regulated trees. The remaining 5 trees are smaller non-regulated trees. These non-regulated trees also contribute to local amenity.

Tree condition

Most of these trees are relatively young specimens of small to medium size.

Most trees exhibit average to good health and vigour. Tree 3 (*Eucalyptus sideroxylon*) exhibits chlorotic foliage. This is an indication the tree is under some stress, which may be related to the level of surface sealing around the tree.

Most trees exhibit average to good structure.

Tree 3 exhibits poor structure with codominant[xii] stems with bark inclusions[xiii] between them. This defect has an increasing likelihood of failure as the stems continue to enlarge. In my view, the opportunity to prune the tree to rectify this defect has long gone. This tree is considered to represent an unacceptable risk to the users of the site and is recommended for removal.



Photo showing codominant stems on tree 3 with bark inclusions.

Trees 4 and 6 are locally indigenous trees, but have a very irregular form and will become increasingly difficult to manage. The level of amenity they provide is limited. They are not suitable to retain at the site long term. These trees are recommended to be removed. New tree plantings should occur to offset the removal of these trees.



Tree 4



Tree 6

Retention value

Four trees were identified as having **high retention value** (trees 1, 2, 5 and 9). These are regulated trees which contribute to the character and amenity of the local area. They are likely to provide long term benefits at the site.

These are trees that should be preserved and the project modified to work around the trees where possible. These trees should be retained in garden beds where possible.

Development approval will be required to remove any of these regulated trees.

Four trees were identified as having **medium retention value** (trees 7, 8, 10 and 11). Trees 7, 8 and 10 are non-regulated trees in acceptable condition that could be retained where possible. Tree 11 is a regulated palm which makes some contribution to local amenity, but this is not considered to be significant.

It is understood that trees 7 and 8 are to be removed to facilitate the construction of a new building.

Trees 4 and 6 (*Eucalyptus leucoxylon*) are non-regulated trees have a **low retention value** and are recommended for removal due to their irregular form and replacement with new trees. Development approval will not be required to remove any of these trees.

One regulated tree (tree 3) has been identified as having a **low retention value**. This tree is recommended for removal on the basis of unacceptable risk. This tree removal could occur under the Port Adelaide Enfield *Development Plan* (consolidated 26 September 2017) as follows:

PDC Regulated trees 2 A regulated tree should not be removed or damaged other than where it can be demonstrated that one or more of the following apply:

(b) the tree represents a material risk to public or private safety

Maintenance

The following maintenance is recommended:

	None	Prune	Remove
Non-regulated	7, 8, 10		4, 6
Regulated	5, 9	1, 2, 11	3

Design considerations

Below are some general points that will need to be considered by the design team when in refining the designs for the site. This must include consideration of the following, and the potential impacts they may have on the various trees:

- New buildings
- Various infrastructure (drainage, sewer, service supply etc.)
- Paving
- Landscaping

These factors should be considered in greater detail as the design progresses in consultation with the project arborist.

Any development activities in the vicinity of trees should consider their root systems, and the area required for general tree health (tree protection zone) and tree stability (structural root zone). The Australian Standard AS 4970 – 2009 *Protection of trees on development sites* provides guidance on how to best carry out such works. This is discussed in general detail in the following sections of this report.

Trees can tolerate some encroachment into their standard TPZ[xiv]. Encroachment into the TPZs could potentially impact on the health of the subject trees, and must be considered during the design development for the site. Encroachment into the SRZ can adversely affect tree stability and must be avoided.

Where the encroachment is considered minor (less than 10% of the area of the TPZ and outside the SRZ) detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ.

Where the encroachment is considered major (greater than 10%), the project arborist must demonstrate that the tree would remain viable. This will require consideration of relevant factors listed in Section 3.3.4. of *AS4970-2009* including the tolerance of tree species to disturbance, and 'design factors' which may involve 'tree sensitive construction measures' which can minimize the impacts of any encroachment.

It is recommended that TPZ encroachments for each tree be limited to 10% of their TPZ area.

If an encroachment greater than 10% is proposed (major encroachment), then 'tree sensitive construction methods' should be adopted in accordance with section 3.3.4 of AS 4970-2009. This could include the use of pier and beam footings for buildings within the TPZ or the use of permeable paving for example.

No development should be permitted within the SRZ of any tree.

AS4970-2009 *Protection of trees on development sites* states that the TPZ of palms, other monocots, cycads and tree ferns should not be less than 1m outside the crown projection (for the purposes of protecting the fronds from building damage). Palms are generally more tolerant of development activities, and works can often occur much closer than to other types of trees.

Some tree removals may be required to facilitate reasonable development of the site. The design team should aim to remove trees with lower retention values over other trees.

Where there are no reasonable design modifications available to minimise the impacts on all trees, then some tree removals may be permitted to facilitate the proposal under the Port Adelaide Enfield *Development Plan* (consolidated 26 September 2017) as follows.

PDC Regulated trees 2 A regulated tree should not be removed or damaged other than where it can be demonstrated that one or more of the following apply:

(d) development that is reasonable and expected would not otherwise be possible.

General tree protection measures

To protect those trees to be retained on a development site, consideration must be given to the various activities that are occurring within the vicinity of these trees. Modifications to the design and methodology of installing any structures and surfaces must be considered. In addition, protective fencing and other protective measures may be required during the entire development process. In relation to the proposed development at this site, the following general guidelines are provided.

Protective fencing

Protective fencing is recommended around any trees to be retained on site in close proximity to any development activities. Ideally the TPZ fence should be set up at the standard TPZ radius. Where this is not practical, the TPZ fence may be reduced in consultation with the project arborist. A range of other ground and tree protection measures may be required in these situations. Once erected, protective fencing must not be removed or altered without approval by the project arborist. The fencing should be secured to restrict access. Appropriate signage must be placed on the TPZ fence.

Demolition activities

Demolition activities generally require heavy machinery to move about on the site. Damage to tree roots, trunks, branches and the growing environment often occurs, even when the machinery operators have the best intentions and take reasonable care. These activities can cause a range of potential damage to trees. All trees to be retained on site must have protective fencing, ground protection and other tree protection measures in place prior to demolition activities commencing.

Site preparation and earthworks

Any earthworks or the removal of existing structures, surfaces and/or vegetation will require heavy machinery to move about on the site. If they work within any TPZ area, they can potentially compact the soil and damage tree roots, trunks and branches. Heavy machinery should remain outside of all TPZs. Any machinery must work with caution within the tree protection zone under the supervision of the project arborist where necessary.

Construction activities

Construction activities at this site will be varied. These activities require a range of different contractors accessing the site, receiving and storing materials, generating waste and spoil etc. If these activities occur unchecked within a tree protection zone, the cumulative effects of these activities may cause harm to the trees and their root systems. The trees must be well protected with fencing and other suitable ground protection during all phases of the construction process. Areas for parking, storage, waste disposal, mixing and wash out areas must be clearly defined, well away from the tree protection zone. These should be considered during the design phase of the project.

Underground services

New or relocated underground services may be required as part of the project. These should be routed outside of all TPZ areas. If underground services must pass through any TPZ, they must utilise underground boring methods or hydro excavated trenches.

Paving

Some paving activities may be required as part of the project. Typical paving profiles often require excavation works, soil compaction and the installation of impervious surfaces. These can all have an adverse impact on the soil and the trees root system which can adversely affect tree health. Paving should be kept to a minimum in any TPZ. Any paving works that must occur within any TPZ must utilize a no dig method, use permeable sub base preparations and permeable paving materials.

Landscaping

It is anticipated that a range of landscaping activities will form part of the project. These also have the potential to cause harm to the soil and roots of the trees. These include but are not limited to; grade changes up or down, soil compaction from heavy machinery and stockpiling of materials, damage to tree trunks and branches from machinery, soil contamination from improper chemical use, root cutting from trenching activities for underground services and retaining walls, root damage from soil cultivation and planting and from paving activities. Landscaping works must minimise any impacts on the soil and root zones of trees to be retained on site. Landscaping works should aim to improve the growing conditions for these trees.

Fencing

Fencing works may be required in some areas. Any fencing works within any TPZ must not use continuous trenching, as would be the case for a masonry wall, concrete plinth or other similar fence construction. It is recommended that fencing for the project use lightweight panel/mesh fencing on a post and rail support system with concrete pads to support the posts.

Conclusions

- A survey of 11 trees was undertaken by Tree Environs in the Windsor Gardens Secondary School project site.
- 5 of these trees qualify as regulated trees.
- These trees provide a wide range of human, environmental and ecological benefits.
- 6 of the trees do not qualify as regulated trees but contribute to local character and amenity.
- Most trees exhibit average to good health and structure.
- The survey identified that 4 trees on the project site have a high retention value, 4 trees a medium retention value and 3 trees with a low retention value.
- Regulated tree 3 has poor structure and has been recommended to be removed based on unacceptable risk. Non-regulated trees 4 and 6 have a limited future at the site and have also been recommended to be removed.
- Pruning is recommended for three trees.
- The tree protection zone and structural root zone were calculated for each tree.
- General guidelines are provided to minimise the impacts on those trees to be retained, both during the design and construction phase.
- Some tree removals may be necessary to facilitate the design solution for the site. Those trees with a low retention value should be considered for removal first.
- A more detailed assessment of tree impacts should be undertaken when a design proposal is available.



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Endnotes

[i] Tree and risk assessments can be conducted at different levels and may employ various methods and tools. The level of assessment applied should be appropriate for the circumstances.

Level 1 - Limited visual assessment.

- A visual assessment from a specified perspective, near specified targets.
- The aim is to identify obvious defects or specified conditions.
- Typically identifies trees with imminent or probable likelihood of failure.
- This is the fastest and least thorough form of assessment intended for larger populations of trees.
- This can be carried out as a walkover, drive-by or fly-over inspection.

Level 2 - Standard assessment.

- A level 2 assessment is a detailed ground based visual tree inspection of a tree and its surroundings.
- The use of simple tools (mallet, binoculars, probes, spades), may be required.
- In some instances only limited information may be gained on specific internal, below ground or upper crown factors.
- For the majority of tree assessments the standard assessment provides adequate information to guide tree management.

Level 3 - Advanced assessment.

- A level 3 assessment is performed to provide detailed information about specific tree parts, defects, targets or site conditions.
- This assessment is usually conducted after a standard assessment has undertaken if additional information is required and with the approval of the client.
- Specialised equipment is often required for advanced assessment.
- The assessments are generally more time intensive and expensive.
- Advanced assessment techniques may include; aerial inspection, detailed target analysis, detailed site evaluation, decay testing, health evaluation, root inspection, tree stability monitoring and load testing.

NOTE: If tree condition cannot be adequately assessed at the specified level a higher level of assessment may be required.

[ii] A visual tree assessment (VTA) is an analytical process undertaken by a qualified Arborist or other suitably trained person to determine the structural soundness of a tree. Biological and mechanical components of trees are assessed, including tree health; presence of pests and diseases, die-back, foliage density and distribution, and vitality; growth rate, wound wood development and the trees capacity to respond to improved conditions. Mechanical components include trunk lean, crown bias, bark inclusions, wounds, hollowing, trunk bulges, ribs, cracks, branch form, failure history, pruning history, condition of trunk flare, and other existing defects. All these factors are examined to determine if internal weaknesses or abnormalities may be present. If abnormalities are detected, we may conduct further investigations using a range of tools. These include soft faced sounding mallets, long thin drill bits, Resistograph, Sonic Tomograph, Air spade and other tools as required. Ref: Mattheck. Claus & Breloer, Helga. *The Body Language of Trees. A Handbook for Failure Analysis*. Department of the Environment. London 1997.

[iii]**Regulated tree means— (as defined in Section 4 Interpretation (1) of the Development (Regulated Trees) Amendment Act 2009)**

(a) a tree, or a tree within a class of trees, declared to be regulated by the regulations (whether or not the tree also constitutes a significant tree under the regulations); or
(b) a tree declared to be a significant tree, or a tree within a stand of trees declared to be significant trees, by a Development Plan (whether or not the tree is also declared to be a regulated tree, or also falls within a class of trees declared to be regulated trees, by the regulations);

Section 6A—Regulated and significant trees (as defined in the *Development (Regulated Trees) Variation Regulations 2011*)

(1) Subject to this regulation, the following are declared to constitute classes of regulated trees for the purposes of paragraph (a) of the definition of ***regulated tree*** in section 4(1) of the Act, namely trees within the designated area under subregulation (3) that have a trunk with a circumference of 2 metres or more or, in the case of trees with multiple trunks, that have trunks with a total circumference of 2 metres or more and an average circumference of 625 millimetres or more, measured at a point 1 metre above natural ground level.

[iv] ***Significant tree*** means **(as defined in Section 4 Interpretation (1) of the *Development (Regulated Trees) Amendment Act 2009*)**

(a)a tree declared to be a significant tree, or a tree within a stand of trees declared to be significant trees, by a Development Plan (whether or not the tree is also declared to be a regulated tree, or also falls within a class of trees declared to be regulated trees, by the regulations); or

(b)a tree declared to be a regulated tree by the regulations, or a tree within a class of trees declared to be regulated trees by the regulations that, by virtue of the application of prescribed criteria, is to be taken to be a significant tree for the purposes of this Act;

6A—Regulated and significant trees (as defined in the *Development (Regulated Trees) Variation Regulations 2011*)

(1) Subject to this regulation, the following are declared to constitute classes of regulated trees for the purposes of paragraph (a) of the definition of ***regulated tree*** in section 4(1) of the Act, namely trees within the designated area under subregulation (3) that have a trunk with a circumference of 2 metres or more or, in the case of trees with multiple trunks, that have trunks with a total circumference of 2 metres or more and an average circumference of 625 millimetres or more, measured at a point 1 metre above natural ground level.

(2) Subject to this regulation—
  (a) a prescribed criterion for the purposes of paragraph (b) of the definition of ***significant tree*** in section 4(1) of the Act is that a regulated tree under subregulation (1) has a trunk with a circumference of 3 metres or more or, in the case of a tree with multiple trunks, has trunks with a total circumference of 3 metres or more and an average circumference of 625 millimetres or more, measured at a point 1 metre above natural ground level; and
  (b) regulated trees under subregulation (1) that are within the prescribed criterion under paragraph (a) are to be taken to be significant trees for the purposes of the Act.

[v] The Australian Standard: AS 4970 – 2009, *Protection of trees on development sites* provides guidelines to protecting trees in and around development.

[vi] The Structural Root Zone (SRZ) is the area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold a tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed as a radius in metres. This zone considers the tree's structural stability only, not the root zone required for the tree's vigour and long-term viability, which will usually be a much larger area. There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the following formula. Root

investigations may provide more information on the extent of these roots. From AS 4970-2009 *Protection of Trees on Development Sites.*

$$SRZ\ radius = (Dx50)^{0.42} \times 0.64$$

(D= trunk diameter in metres when measured above the root buttress)

Any work within the SRZ should be avoided. Where no alternative exists, the work must be supervised by a qualified Arborist and approved by Local Council. Tree removal may be required depending upon the size and number of roots affected.

[vii] 7.2 Crown maintenance

7.2.1 General

Crown maintenance is pruning according to the growth habit of the tree. It includes dead wooding, crown thinning, selective pruning and formative pruning.

It does not reduce the volume of the crown and retains the structure and size of the tree.

From Australian Standard AS4373 – 2007 'Pruning of Amenity Trees'

[viii] For reduction pruning the ends of branches are removed to internal lateral branches or stems. The extent of crown or limb reduction shall be specified at the time of assessment. The lateral branch to which the final cut is made should be at least one third of the diameter of the branch being reduced at the point of the final cut. This may be difficult to achieve in remedial pruning and line clearance work. Reduction pruning is not lopping or topping. **Australian Standard: AS 4373 – 2007**. 'Pruning of amenity trees'

[ix] Crown lifting is the removal of the lower branches. Clearances shall be specified. The maximum diameter and location of the branches to be removed should be specified. **The Australian Standard: AS 4373 – 2007**. 'Pruning of amenity trees'

[x] This type of pruning shall only be carried out on trees which have lost their natural form and structure through storm damage, mechanical damage, vandalism, lopping, dieback or disease. This method is usually only used when all other approaches have failed and replacing the tree is difficult. The purpose of this pruning is to prolong the useful life expectancy of such trees and to reduce their hazard potential.

This type of pruning removes damaged, diseased or lopped branches back to undamaged or healthy tissue. The final cut may not necessarily be at the branch collar. The aim is to induce the production of epicormic shoots from which a new crown is intended to be established. To achieve this, regrowth should be managed by reduction pruning or crown thinning.

This type of pruning should be done in several stages in an attempt to induce stable and successful regrowth. Consideration should be given to removing dangerous trees. Remedial pruning may create hazards from weak branch attachment. Trees should be carefully monitored.

AS 4373-2007 *Pruning of Amenity Trees* section 7.3.5.

[xi] Trees and shrubs are proven to provide a range of social, environmental, economic and psychological benefits that improve the pleasantness of a local area that positively affect human wellbeing. The amenity value of trees include gaseous and particulate pollution mitigation, amelioration of climatic extremes (shading, cooling and wind speed reduction), mitigation of heat islands, attenuation of noise pollution, store and sequester carbon (reducing greenhouse gasses), improve air quality, improve water quality, stormwater mitigation and erosion control, visual screening of undesirable views, aesthetically enhance local areas, aesthetically enhance urban structures, improve property values, reduce urban glare, improve human health, wellbeing and relaxation, reduce stress and anxiety, reduce crime and improve healing rates of patients.

[xii] Co-dominant stems are stems or trunks of about the same size originating from the same position by division of the main stem. When the stem bark ridge turns upwards the union is strong and when the ridge turns inwards the union is potentially weak.

[xiii] Included Bark Crotches are potential structural weaknesses that occur in trees between the main stem and a branch or between stems of equal size (co dominant stems). Bark between the stems turns downwards and prevents the interlocking of wood fibres rather than upwards (as in structurally sound crotches) to form a branch bark ridge. This defect is under genetic control and may be repeated throughout the tree, or occur in only one crotch. The position of an included bark crotch in the main framework plays an important part in the tree's overall structural stability. Low included bark crotches may be more serious than those higher in a tree. Depending upon the severity of the defect, the tree's age and the species involved, it may be possible to prune the affected portion and/or install protective cables in trees with bark inclusions in order to reduce the risk of failure. Bark inclusions that do not display signs of structural instability, or occur in species known to be resistant to IBC failure and/or are in trees at sheltered locations are unlikely to fail and may not warrant Arboricultural intervention.

[xiv] It may be possible to encroach into or make variations to the standard Tree Protection Zone (TPZ). Encroachment includes excavation, compacted fill and machine trenching. **Minor encroachment -** If the encroachment is less than 10% of the TPZ area and is outside the Structural Root Zone (SRZ), detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. Variations must be made by the project arborist considering relevant factors listed on section 3.3.4 of the standard. **Major encroachment -** If the proposed encroachment is greater than 10% of the TPZ area or inside the SRZ, the project arborist must demonstrate that the tree would remain viable. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. This may require root investigation by non-destructive methods and consideration of relevant factors including: location and distribution of roots, the potential number and size of root loss, tree species and tolerance to root disturbance, age, vigour and size of tree, lean and stability of the tree, soil characteristics, volume, topography and drainage, the presence of existing or past structures or obstacles and design factors. From Australian Standard AS 4970 – 2009 *Protection of trees on development sites,* section 3.3.

Windsor Gardens Secondary School
Tree survey in relation to B-12 amalgamation proposal

Tree #	Species	Circumf. @ 1m (m)	DBH @ 1.4m (mm)	Dia. @ GL (m)	Height (m)	Age	Attributes	Health	Structure	Maintenance	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	Retention value	Notes
1	*Eucalyptus sideroxylon*	2.38 Regulated	770	0.73	medium (10-20m)	30-40	(a) character/ visual amenity	Good	Average	Reduce leverage of over extended branches through reduction pruning by 5-15%	9.24	268	2.9	High	retain in garden area or playspace. Protect TPZ.
2	*Eucalyptus sideroxylon*	2.20 Regulated	670	0.76	medium (10-20m)	30-40	(a) character/ visual amenity	Good	Average	Reduce leverage of over extended branches through reduction pruning by 5-15%	8.04	203	2.9	High	retain in garden area or playspace. Protect TPZ.
3	*Eucalyptus sideroxylon*	2.17 Regulated	690	0.77	medium (10-20m)	30-40	(a) character/ visual amenity	Average foliage chlorotic, paving around tree,	Poor, codominant stems with bark inclusions	Remove tree due to unacceptable risk to site.	8.28	215	3.0	Low	Not suitable to retain due to risk issues.
4	*Eucalyptus leucoxylon*	0.75	240	0.29	small (<10m)	10-20	Not applicable	Average	Poor, irregular form, difficult to manage in the long term. Limited future at site.	remove tree.	2.88	26	2.0	Low	Consider removal due to irregular form. Replace with new trees.

Windsor Gardens Secondary School
Tree survey in relation to B-12 amalgamation proposal

Tree #	Species	Circumf. @ 1m (m)	DBH @ 1.4m (mm)	Dia. @ GL (m)	Height (m)	Age	Attributes	Health	Structure	Maintenance	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	Retention value	Notes
5	*Lophostemon confertus*	2.10 Regulated	390	0.42	small (<10m)	30-40	(a) character/ visual amenity	Good	Average co-dominant stems,	none	4.68	69	2.3	High	Ongoing disruption to pavers and conrete. New design should incorporate tree into garden area if possible. Remove pavers and concrete with care.
6	*Eucalyptus leucoxylon*	1.20	360	0.45	small (<10m)	10-20	Not applicable	Average	Poor, irregular form, difficult to manage in the long term. Limited future at site.	remove tree.	4.32	59	2.4	Low	Consider removal due to irregular form. Replace with new trees.
7	*Lophostemon confertus*	1.85	660	0.66	small (<10m)	30-40	None	Good	Average co-dominant stems,	none	7.92	197	2.8	Medium	To be removed for new building
8	*Prunus sp.*	0.67	240	0.27	small (<10m)	10-20	Not applicable	Good	Good	none	2.88	26	1.9	Medium	To be removed for new building
9	*Eucalyptus sp.*	2.25 Regulated	680	0.83	medium (10-20m)	30-40	(a) character/ visual amenity	Good	Good	none	8.16	209	3.1	High	Retain in landscape zone. Minimise hard surfaces. Protect TPZ.
10	*Eucalyptus sp.*	1.99	680	0.64	medium (10-20m)	30-40	Not applicable	Average	Average	none	8.16	209	2.7	Medium	Retain in landscape zone. Minimise hard surfaces. Protect TPZ.

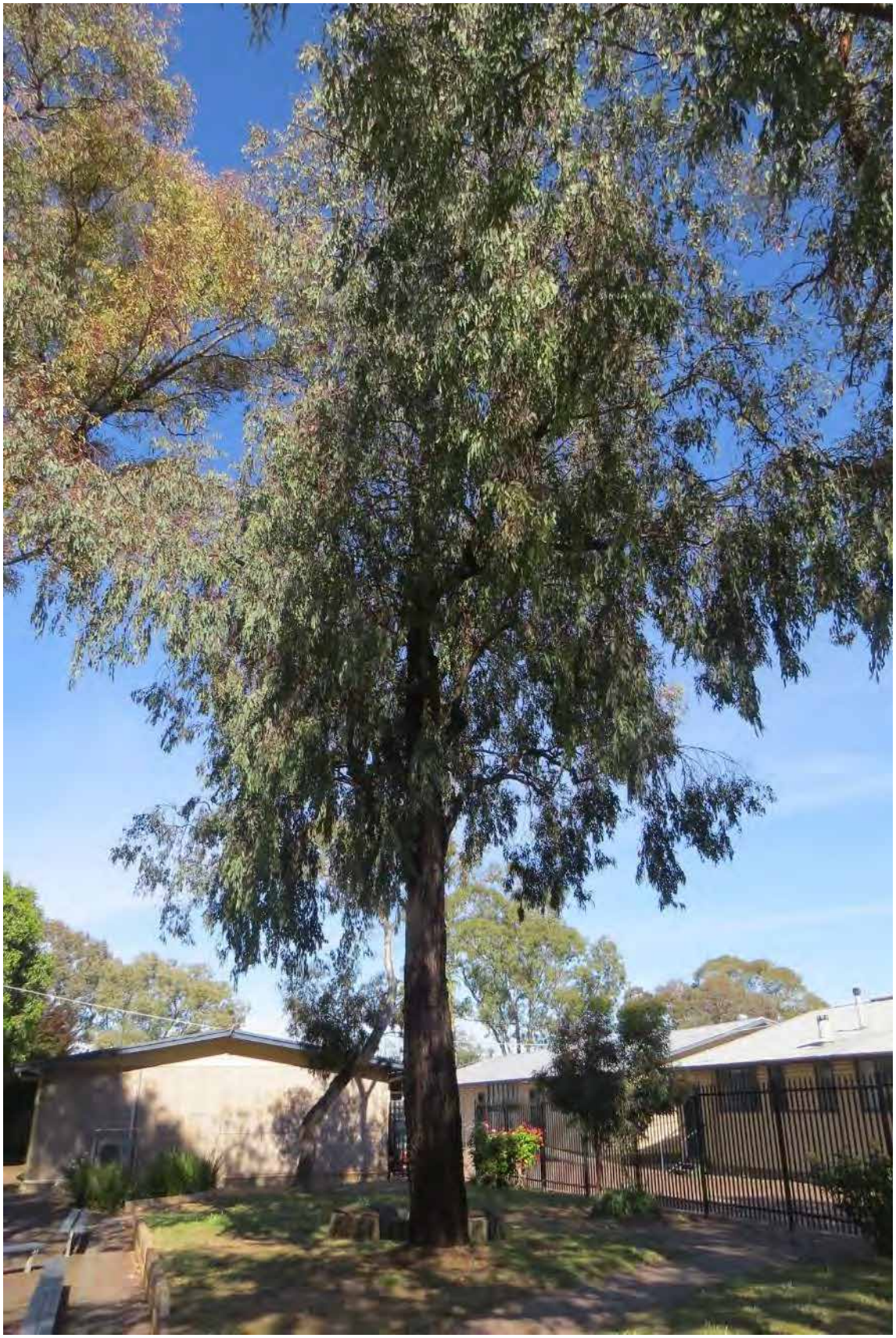
Windsor Gardens Secondary School
Tree survey in relation to B-12 amalgamation proposal

Tree #	Species	Circumf. @ 1m (m)	DBH @ 1.4m (mm)	Dia. @ GL (m)	Height (m)	Age	Attributes	Health	Structure	Maintenance	TPZ radius (m)	TPZ area (m^2)	SRZ radius (m)	Retention value	Notes
11	*Washingtonia robusta*	2.05 Regulated			medium (10-20m)	30-40	None. Provides some amenity value but not significant	Average	Good	prune to remove petticoat of dead fronds due to potential fire risk.	3.00	27	1.2	Medium	Retain in landscape zone if possible.

Windsor Gardens Secondary School- Tree Images



Tree 1



Tree 2



Tree 3



Tree 4



Tree 5



Tree 6



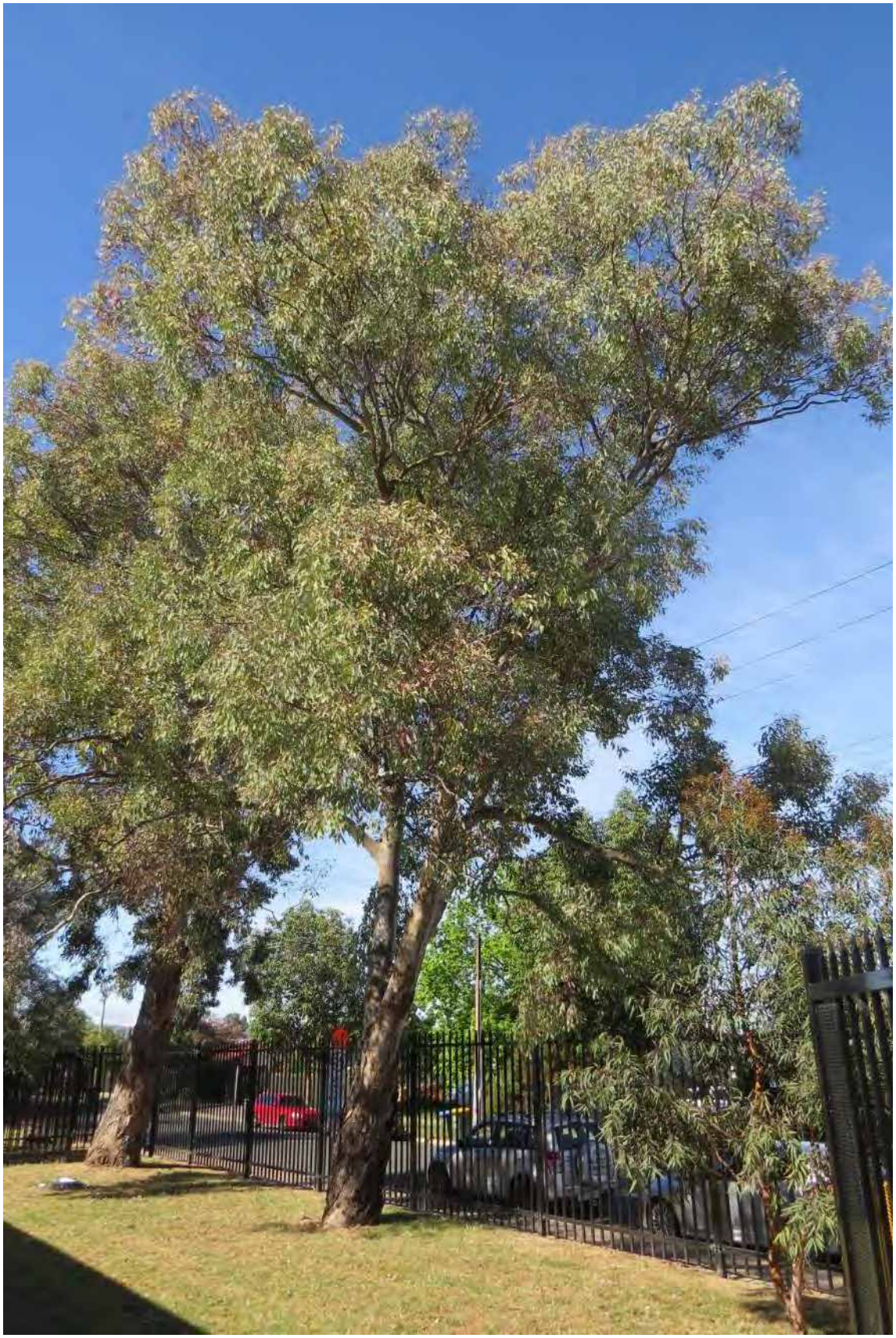
Tree 7



Tree 8



Tree 9



Tree 10


RESTRICTED AREA
DO NOT ENTER
AUTHORISED PERSONNEL ONLY
RESTRICTED AREA
NO THOROUGHFARE

Tree 11

WALLBRIDGE GILBERT AZTEC

Phillips Pilkington Architects

Windsor Garden Secondary College, Gilles Plains Primary School & Children's Centre Amalgamation

TRAFFIC STUDY

Job No. ADL170444 / Rev B
10 November 2017

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Rev	Date	Issue	Originator	Checker	Approver
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CONTENTS

1 Introduction **1**
1.1 Background 1
1.2 Study Purpose and Scope 2
1.3 Report Organisation and Summary 2
2 Existing Roadway & Traffic Conditions **3**
2.1 Existing Road Network 3
2.2 Existing PM Peak Hour Parking Demand 4
2.3 Existing AM Peak Hour Traffic Situation 4
3 Planned Roadway Improvements **5**
4 Parking Demand and Supply **6**
4.1 Proposed Development Plan 6
4.2 On-Site Parking Requirements 6
4.3 On site Parking Supply 7
4.4 Short Term On-Street Parking Demand 8
4.5 Kiss n Drop Demand 8
4.6 On Street Parking Supply 9
4.7 McKay Avenue Kiss and Drop Arrangement 10
5 Traffic Generation and Analysis **12**
5.1 Peak Trip Generation 12
6 Private Bus Access **14**
7 Pedestrian Access **15**
8 Summary **16**
9 References **17**

Appendices

Appendix A McKay Avenue Kiss and Drop Turnaround Sketch

1 INTRODUCTION

1.1 BACKGROUND

The Windsor Gardens Secondary School and Gilles Plains Primary School are currently located on separate sites. Following consultation with the schools' governing councils and parents, Gilles Plains Primary School and Children's Centre, on Beatty Avenue, will move 1 km east to amalgamate with the Windsor Gardens Secondary College site, on McKay Avenue.

The existing Windsor Gardens High School Campus currently comprises:

- A Secondary School accommodating approximately 370 students
- 55 Full Time Equivalent Staff comprising of 35 staff and 20 support staff
- Provision for 120 on site parking spaces

The initial size of the new amalgamated B-12 school will comprise of:

- A Children's Centre accommodating 44 placements
- A Primary School accommodating the existing 80 Students
- A High School accommodating the existing 370 Students
- 74.5 Full Time Equivalent Staff comprising of 46 teachers and 24.5 support staff

The final amalgamated arrangement will comprise of:

- A Children's Centre accommodating 44 placements
- A Primary School accommodating up to 300 Students
- A High School accommodating the existing 600 Students
- 83 Full Time Equivalent Staff

Phillips/Pilkington Architects was commissioned to prepare the Master Plan for the development and to manage the progression of the project from inception to completion.

WGASA Pty Ltd (WGA) was engaged to review the traffic related aspects of the amalgamation. This report documents the traffic study for the amalgamation, and discusses the anticipated demands and traffic related recommendations.

1.2 STUDY PURPOSE AND SCOPE

The purpose and key elements of the study are to review and assess the:

- Existing traffic flow and parking conditions within the defined study area.
- Future background traffic conditions and any programmed roadway improvements.
- The traffic impact of the proposed development, with a primary focus on the morning and afternoon peak conditions.
- Capacity, safety, and / or operational constraints to the proposal, as well as potential measures to mitigate such constraints, where appropriate.
- The methodology used in this analysis has been primarily based on the NSW Road Traffic Authority's Guide to Traffic Generating Developments, 2002.

1.3 REPORT ORGANISATION AND SUMMARY

This report is organised into the following eleven (11) sections:

- Section 2 identifies existing roadway, traffic conditions and parking and traffic aspects of the existing development;
- Section 3 discusses planned transportation improvement projects and their potential impacts on travel within the vicinity of the development;
- Section 4 discusses parking demands of the proposed development and the parking supplied;
- Section 5 discusses analysis of the traffic generated by the development;
- Section 6 provides a short clarification on the use and parking arrangement of private buses for the school
- Section 7 discusses the pedestrian access arrangements for the amalgamated site;
- Section 8 provides a summary and key findings of the study;
- Section 9 lists the references sourced in the study.

2 EXISTING ROADWAY & TRAFFIC CONDITIONS

2.1 EXISTING ROAD NETWORK

This study has focused primarily on key traffic related areas of McKay Avenue, Danby Avenue and Sudholz Road and the Danby Avenue / Sudholz Road Junction. The following figure provides the layout of the road network within the vicinity of the Windsor Gardens Secondary College.



Figure 1 Road Network Plan

The general physical characteristics and traffic operational functions of the key roads are presented below:

- Sudholz Road: This is a six-lane divided arterial road under the care and control of the Department of Planning, Transport and Infrastructure (DPTI). Daily traffic volumes are in the order of 40,000 vehicles per day (vpd) and the posted speed limit is 60 kph.
- McKay Avenue: Is a local access road that provide access to residential properties and Windsor Gardens High School, and falls under the care and control of the City of Port Adelaide Enfield. McKay Avenue is a two way undivided road and nominally 9 m wide. Based on site observations we anticipate daily traffic volumes to be in the order of 750 vehicles per day. McKay Avenue is a through road for buses only, and which has been in place for approximately 30 years. This restriction is aimed to limit traffic volumes along McKay Avenue to local access traffic only.
- Danby Avenue: Is a local access road that provide access to residential properties and the Windsor Gardens High School, and falls under the care and control of the City of Port Adelaide Enfield.

Danby Avenue is a two way undivided road and nominally 9 m wide. Based on site observations we anticipate daily traffic volumes to be in the order of 750 vehicles per day.

2.2 EXISTING PM PEAK HOUR PARKING DEMAND

The peak afternoon student pick up period is considered to be critical parking demand period for a school. Typically in the morning students are dropped off over a 15 minute period and the parking demand is spread over this period. In the afternoon, the majority of students are picked up at the same time and the demand period is shorter and the peak demands higher.

The peak afternoon car parking demands of the two existing sites have been recorded to estimate the total parking demand of the amalgamated school. Recorded car parking demands are as per the following tables.

Table 1, Recorded Existing Parking Demand

Land Use		**Peak Parking Demand**
Gilles Plains Primary School		
	Staff (Long Term), off street	25
	Pick Up (Short Term), off and on street	10
	Sub-Total	40
Windsor Gardens Secondary School		
	Staff and Students (Long Term), off street	75
	Pick Up (Short Term), off and on street	10
	Sub-Total	85
Total		**125**

The combined peak level of on-street parking demand for both existing schools is estimated to be 20 spaces.

Based on the current student enrolments, the parking rates for on-street parking is therefore estimated to be:

- Primary school children, 1 space per 8 students
- Secondary school children, 1 space for 37 students

2.3 EXISTING AM PEAK HOUR TRAFFIC SITUATION

From a traffic flow perspective, the morning peak (8:30 am to 9:00 am) of the existing development would be the critical period for its operation. This is due to the morning peak for commuter traffic generally coinciding closer with the student drop offs and teacher arrivals of the existing development.

During the afternoon, the existing development's peak does not correspond with the significant commuter peak, and hence the traffic impacts generated by the development do not compound or exceed the afternoon commuter peak.

Traffic data sourced from the adjacent signalised junctions indicate the peak period for the adjacent road network to be just prior (7:30 am to 8:30am) to when parents and carers will arrive to drop off students.

A review on site during the morning drop off period indicates traffic movement within the adjacent road network occurs with limited delays.

3 PLANNED ROADWAY IMPROVEMENTS

It is understood that there are no planned roadway improvements programmed within the immediate road network. DPTI has undertaken recent major upgrade works at the North East Road / Sudholz Road to improve capacity and travel times on North East Road.

4 PARKING DEMAND AND SUPPLY

4.1 PROPOSED DEVELOPMENT PLAN

As discussed in Section 1.1 of this report, the development is the consolidation of two separate schools:

- A Children's Centre accommodating 44 placements
- A Primary School accommodating the existing 80 Students
- A High School accommodating the existing 370 Students
- 74.5 Full Time Equivalent Staff comprising of 46 teachers and 24.5 support staff

4.2 ON-SITE PARKING REQUIREMENTS

The Department for Education and Child Development (DECD) specifies on site parking requirements of one car parking space for each staff member (full time equivalent) plus 10% for visitors (or five spaces whichever is greater).

DECD indicates that pick up and set down provisions shall not be provided on primary or secondary school sites unless there is an exceptional circumstance which has written approval from DECD.

In regard to senior student parking DECD does not provide an area for student car parking on the school site, even in instances where the local council prohibits parking in the surrounding streets.

Based on DECD requirements the following on site parking requirements are outlined in the following table.

Table 2, On site Parking Demand Initial Amalgamated School (494 Students Enrolled)

Land Use		Days of Use	Period of Use	Parking Rate	Number	Reference
Amalgamated Windsor Gardens B-12 School						
	Staff	Mon-Fri	All Day	1 per Full Time Staff	75	DECD Requirements
	Visitor	Mon-Fri	All Day	10 % of Staff Demand	8	DECD Requirements
	Disabled	Mon-Fri	All Day	2 spaces	2	DECD request
	Children's Centre	Mon-Fri	Morning and Afternoon	1 per 4 children	11	Planning SA
	Total				96	

Table 3, On site Parking Demand Final Amalgamated School (944 Students Enrolled)

Land Use	Days of Use	Period of Use	Parking Rate	Number	Reference
Amalgamated Windsor Gardens B-12 School					
Staff	Mon-Fri	All Day	1 per Full Time Staff /	83	DECD Requirements
Visitor	Mon-Fri	All Day	10 % of Staff Demand	9	DECD Requirements
Disabled	Mon-Fri	All Day	2 spaces	2	DECD request
Children's Centre	Mon-Fri	Morning and Afternoon	1 per 4 children	11	Planning SA
Total				105	

4.3 ON SITE PARKING SUPPLY

The existing senior school has a relatively high level of on site parking due to it previously having a higher amount of enrolments. On site parking is provided in two separate areas, and as shown in the following figure.



Figure 2 On-site Parking Supplied

Total on-site parking supplied is 120 spaces plus 2 disabled spaces

Our assessment indicates there is anticipated to be surplus parking on site for the amalgamated site at both the initial (494 students) and final (944 students) enrolment and staff levels. Surplus parking is anticipated to be in the order of 15 spaces for the final arrangement.

4.4 SHORT TERM ON-STREET PARKING DEMAND

As indicated previously DECD requires pick up and set down provisions to be provided on the adjacent road network. As part our assessment we have estimated the likely parking demands and reviewed the impacts this parking may have on the adjacent road network.

Based on our survey of the existing schools (refer to Section 2.2), the following tables indicate the estimated short term on-street parking demand for the initial and final arrangements.

Table 4, Short Term On-Street Parking Demand Initial Amalgamated School (494 Students Enrolled)

Age Group		Parking Rate	Number of Students	Amount of Parking
Amalgamated Windsor Gardens B-12 School				
	Primary School	1 per 8 Students	80	10
	Secondary School	1 per 37 Students	370	10
	Total			20

Table 5, Short Term On-Street Parking Demand Final Amalgamated School (944 Students Enrolled)

Age Group		Parking Rate	Number of Students	Amount of Parking
Amalgamated Windsor Gardens B-12 School				
	Primary School	1 per 8 Students	300	38
	Secondary School	1 per 37 Students	600	16
	Total			54

4.5 KISS N DROP DEMAND

An important element for short term parking around schools is considered to be the provision of No Parking areas, that are signed as Drop-off and Pick-up, Kiss and Ride, or Kiss and Drop zones, to provide parents and carers with a safe environment to drop off and collect their children from school by car.

These zones need to be on the school side of the road, and provide convenience for drivers and improve children's safety. Parents and carers are able to legally drop off or pick up their children within a two-minute timeframe.

The school Drop-off and Pick-up initiative is recommended to include a volunteer adult supervisor, who assists children in and out of the vehicle. The Drop-off and Pick-up initiative allows:

- Drivers to drop off or pick up students legally at busy times at the beginning and end of the school day
- A volunteer adult supervisor to marshal the students at the designated school gate

- The driver is to pull into the Drop-off and Pick-up zone and remain in control of the vehicle while a volunteer adult supervisor assists the school student to exit or enter the vehicle

The advantages of this type of parking is it:

- Provides a designated zone at a school access point for drivers to stop and drop off or pick up their children
- Relieves traffic congestion around the school by reducing the risk that cars park illegally
- Provides adult supervision for students being dropped off and picked up from school by car
- Allows smaller children to remain secured in the car while school age children are dropped off and picked up from school
- Reinforces road safety messages and safe passenger behaviour to parents and children

It is considered that the amount of parking assigned to Kiss and Drop zones should be in the order of 20 percent of the short term parking demands. Based on a total short term parking demand estimated for the amalgamated site, the amount of Kiss and Drop parking recommended is:

- Initial Arrangement, 4 spaces (494 Students Enrolled)
- Final Arrangement, 14 spaces (944 Students Enrolled)

Through our assessment, discussions with stakeholders, and taking into considerations the elements described above, it is recommended McKay Avenue be used as the initial Kiss and Drop zone.

4.6 ON STREET PARKING SUPPLY

The current Windsor Gardens Secondary College site is considered to provide reliable on street parking opportunities based on long and multiple frontages to roads that are relatively wide. The following figure indicates the short term on street parking locations, and the section of McKay Avenue recommended to be used for Kiss and Drop parking.



Figure 3 On Street Parking Locations and Current Potential Levels

Current on-street parking along the frontage of the school is in the order of 65 spaces and 9 Kiss n Drop spaces. This level of parking would exceed the estimated final arrangement for the site based on 944 students enrolled.

The 9 Kiss and Drop spaces are less than estimated final demand of 14 spaces. The additional demand could be supplied on Danby Avenue, and which is currently provided with parking restrictions from 8:00 am to 4:30 pm. The need, however, for Danby Avenue would be based on the actual demand generated as enrolments increase.

4.7 MCKAY AVENUE KISS AND DROP ARRANGEMENT

As indicated we recommend the Kiss and Drop zone for the amalgamated school be provided on McKay Avenue. The location is immediately adjacent the school and administration building and the adjacent footpath is relatively wide (4 m).

McKay Avenue does not provide through access for vehicles due to a bus only section mid-way along the frontage of the school. The bus only section is nominally 30 m long and has been in place for approximately 30 years. The aim of the bus only section is to limit non local traffic from using McKay Avenue as an alternative route to the adjacent arterial roads.

In development of the turnaround arrangement, consultation with officers from the City of Port Adelaide Enfield has been undertaken. Through this process in principle support has been received on the proposal.

Removal of the bus only section would assist the Kiss and Drop proposal by allowing traffic to enter from the northern section of McKay Avenue and exit to the south. Through consultation with

stakeholders we consider a turnaround area on the southern side of the bus only section would also be a recommended alternative to removing the bus only section. This approach would enable traffic to enter from the south turnaround and drop off / pick up on the school side and then exit via the south. The following figure describes this approach in further detail.

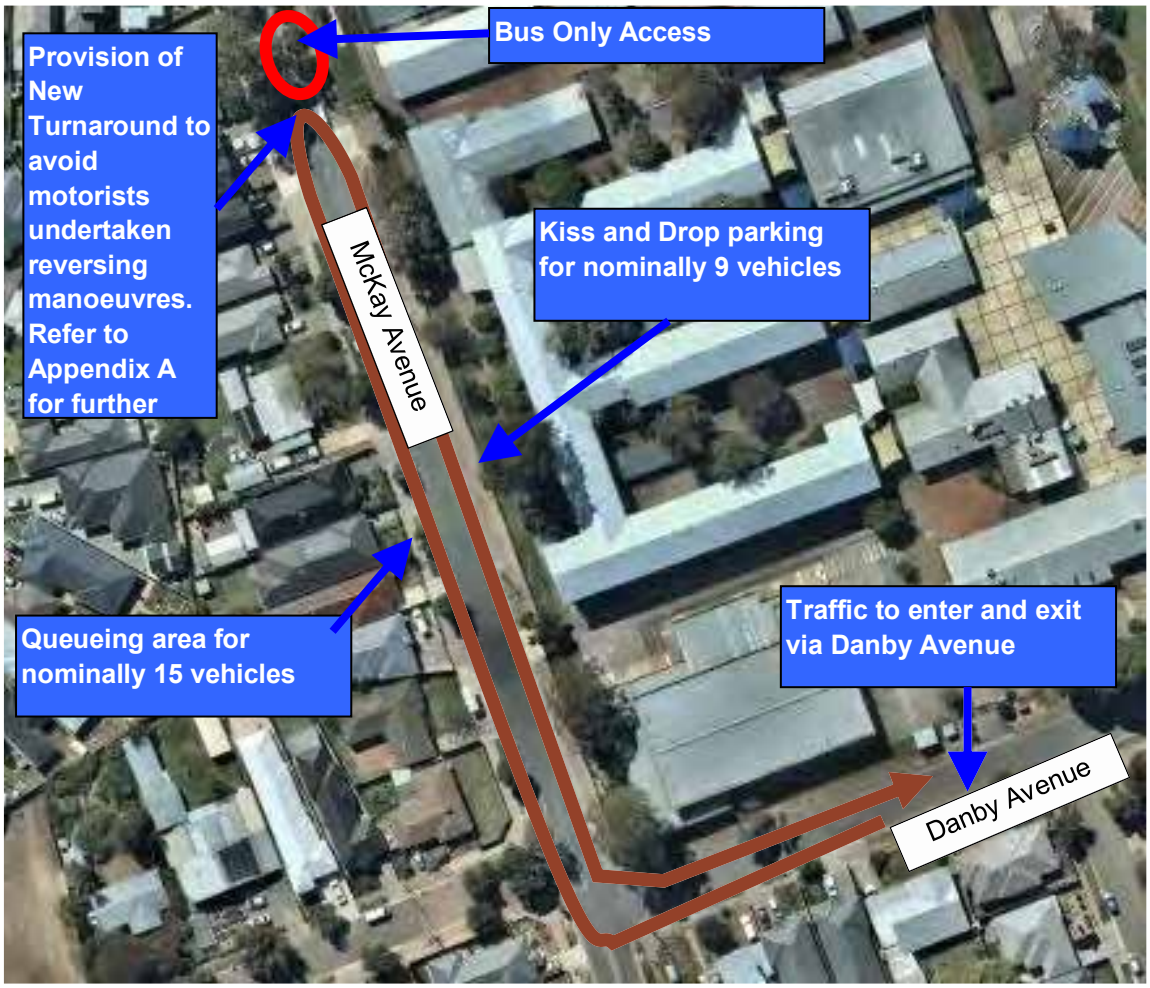


Figure 4 McKay Avenue Kiss and Drop Arrangement

McKay Avenue is 9 m wide and enables a vehicles to queue on the western (non school side kerb) a Kiss and Drop school side stopping lane and nominally a 4 m wide centre area for buses and vehicles to travel along. The peak period for the Kiss and Drop will nominally be a 10 to 15 minute period during the afternoon peak pick up period.

Based on the current timetables bus movements in the afternoon peak hour there would likely be one south bound bus that would coincide with the afternoon pick up period from nominally 2:55pm to 3:10pm.

5 TRAFFIC GENERATION AND ANALYSIS

5.1 PEAK TRIP GENERATION

The peak traffic period for the development will occur during the morning peak (8:30 am to 9:00 pm) when parents are dropping off children and staff are arriving. This period also corresponds closer to the corresponding commuter peak.

The following table provides a breakdown of travel modes estimated to be occurring for the existing development and the corresponding traffic generation of the amalgamated site.

Table 6, Estimated Vehicle Initial Trip Demand of Amalgamated Site in Morning Peak Hour (494 Students Enrolled)

Travel Mode	Percent Arriving by Vehicle	Staff or Students per Car	Number	Vehicles Entering	Vehicles Exiting
Vehicle, Staff	100%	1	75	75	0
Vehicle, Children Centre	50%	1	44	22	22
Vehicle, Primary Students	50%	1.5	80	27	27
Vehicle, Secondary Students	15%	1.5	370	37	37
Total Trips Generated				161	86

Table 7, Estimated Vehicle Final Trip Demand of Amalgamated Site in Morning Peak Hour (944 Students Enrolled)

Travel Mode	Percent Arriving by Vehicle	Staff or Students per Car	Number	Vehicles Entering	Vehicles Exiting
Vehicle, Staff	100%	1	83	83	0
Vehicle, Children Centre	50%	1	44	22	22
Vehicle, Primary Students	50%	1.5	300	100	100
Vehicle, Secondary Students	15%	1.5	600	60	60
Total Trips Generated				265	182

Based on our assessment of the adjacent road network during the morning peak period indicates the traffic generated by the amalgamated site can be accommodated by the existing road network. The level of delays during the schools peak traffic periods will also fall within the current delays experienced during the commuter peaks of the adjacent road network.

6 PRIVATE BUS ACCESS

Private access to the site for the purposes of picking up and dropping off students will continue to occur from the McKay Avenue car park, and which is accessed via North East Road. This arrangement is understood to be operating effectively with minimal impact to the local road network.

If, for unforeseen reasons, bus access to the McKay Avenue car park was not sufficient, the use of the Sudholz Road would be considered a reasonable alternative, providing direct and safe access for students.

7 PEDESTRIAN ACCESS

There are five signalised pedestrian crossing points currently in place for students to cross the major arterial routes surrounding the site, and as shown in the following figure.



Figure 5 Adjacent Signalised Pedestrian Crossing Locations

This level of access is considered adequate and appropriate to enabling safe and convenient access for students separated from the site by North East Road and Sudholz Road.

Crossing of the local road network was observed to be less channelised, and the need for additional specific crossing facilities is not considered warranted at this stage.

8 SUMMARY

Our assessment indicates:

- There is adequate on site parking to cater for the amalgamated schools at the initial stage of 494 enrolled students and at the full enrolment stage of 944 enrolled students.
- On street parking supply to accommodate short term parking requirements are considered sufficient to meet the current and future requirements of the amalgamated schools. Expansion of the Kiss and Drop to Danby Avenue may be required in the future, however, this would need to be evaluated on as enrolments increase. The current proposal for Kiss and Drop parking along the southern end of McKay Avenue is anticipated to provide adequate capacity for the short to medium term.
- The adjacent road network is considered to be adequate to accommodate the increase in traffic volumes for the amalgamated schools at the initial stage and at the full enrolment stage. The school is also considered to be well placed with relatively wide roads providing frontage to the school and key adjacent intersections being controlled by traffic signals.

9 REFERENCES

Australian Standards, AS1742.2 Manual of uniform traffic, 1994

Australian Standards, AS2890.1 Parking facilities, Part 1: Off-street car parking, 2004

Australian Standards, AS2890.5 Parking facilities, Part 1: On-street car parking, 1993

DECD Design Standards July 2015

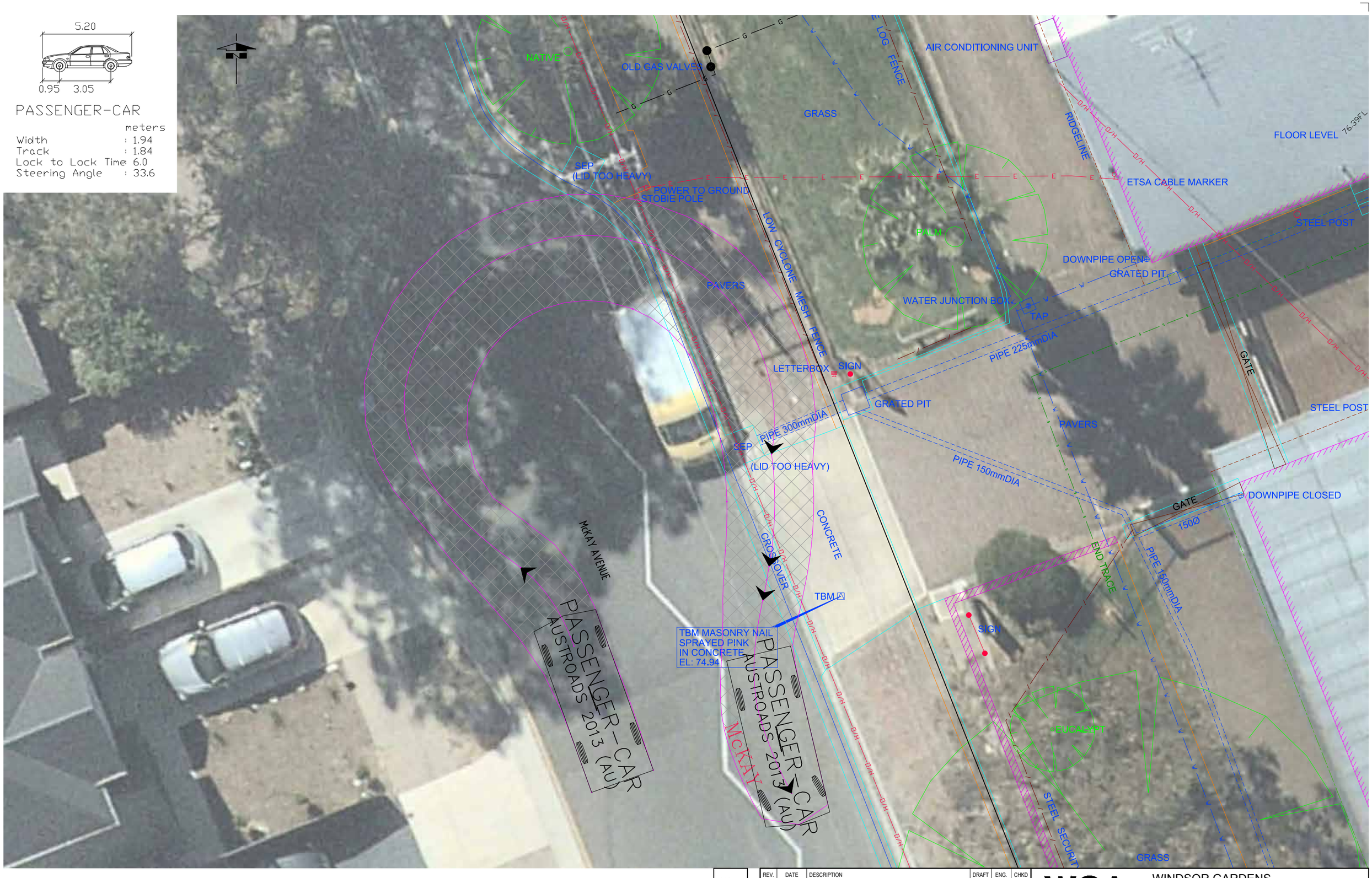
City of Port Adelaide Development Plan, September 2017.

NSW's Road Traffic Authority, Guide to Traffic Generating Developments, 2002

Planning SA, Planning Bulleting – Parking Provisions for Selected Land Uses (Suburban Metropolitan Adelaide) 2001

APPENDIX A

MCKAY AVENUE KISS AND DROP TURNAROUND SKETCH



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McKAY AVENUE

TURN PATH ANALYSIS

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