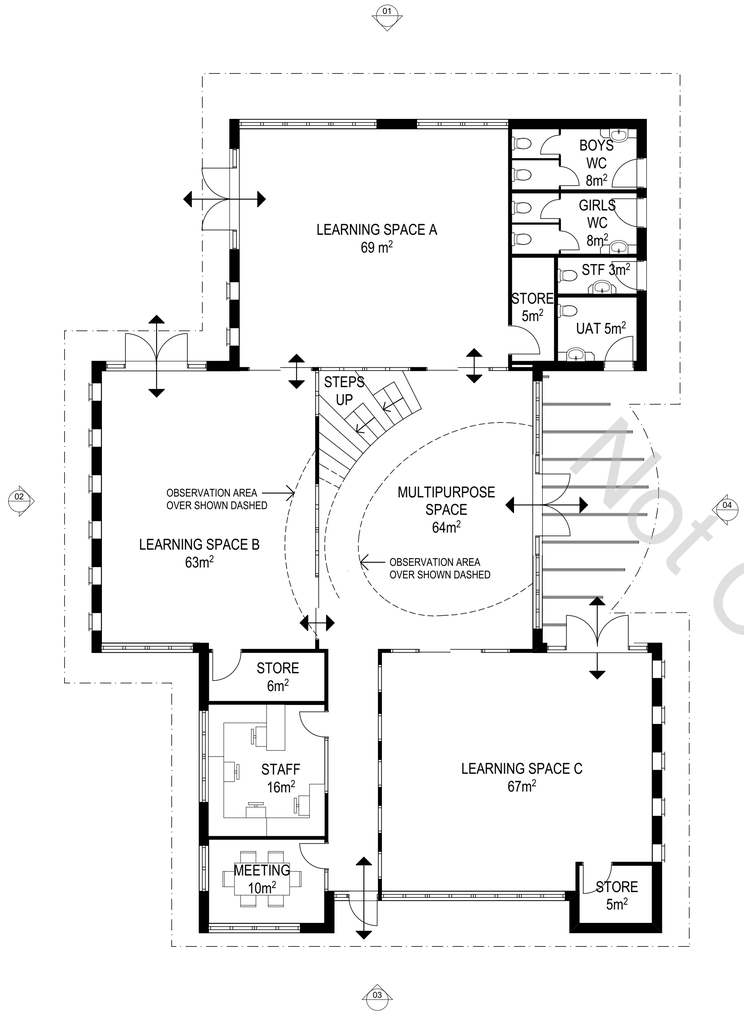

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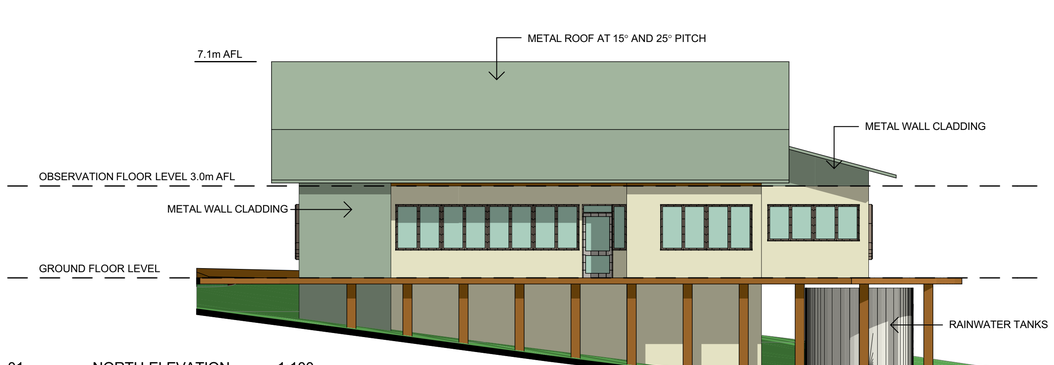

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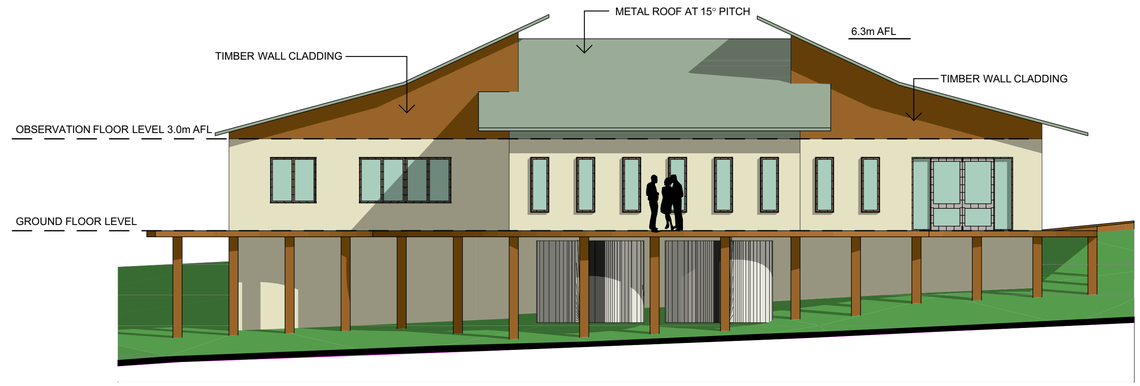

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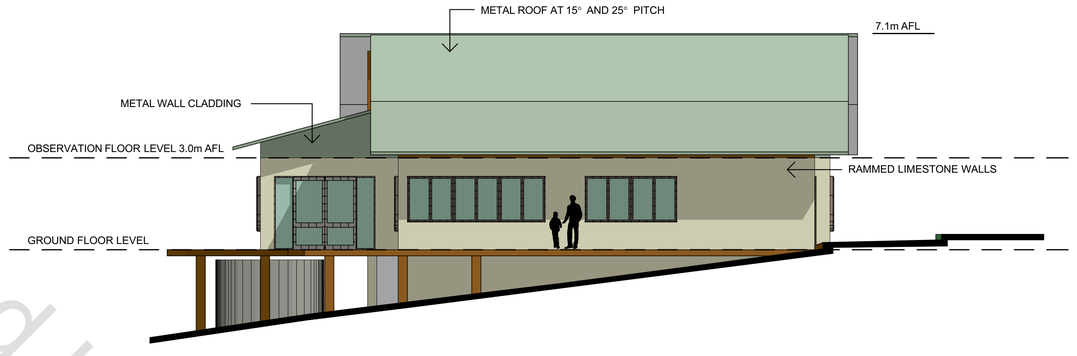

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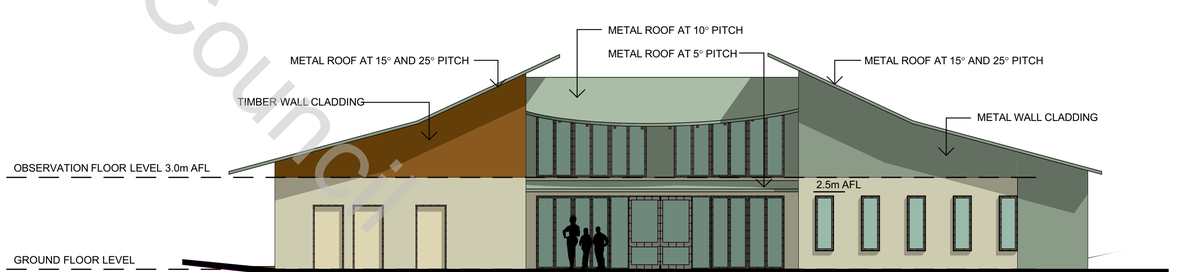

04 EAST ELEVATION 1:100
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N

TYPICAL CLASSROOM BLOCK

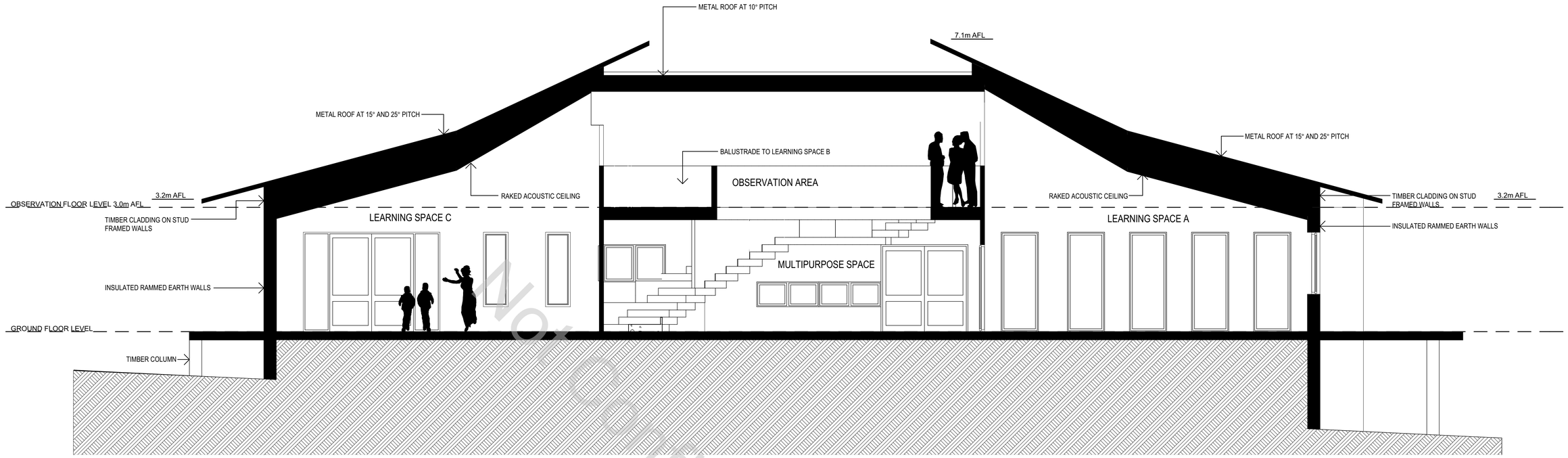
SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK04 REV: B

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas



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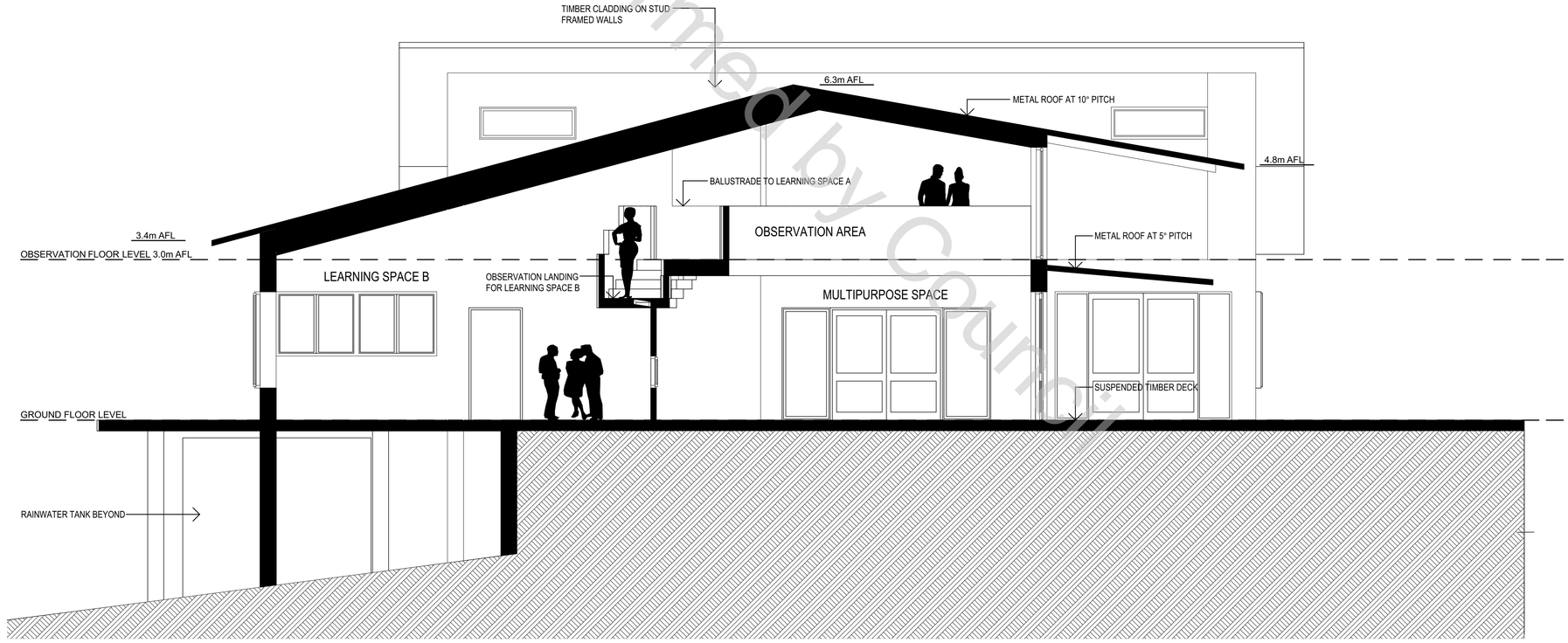

B SECTION B 1:50
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TYPICAL CLASSROOM BLOCK

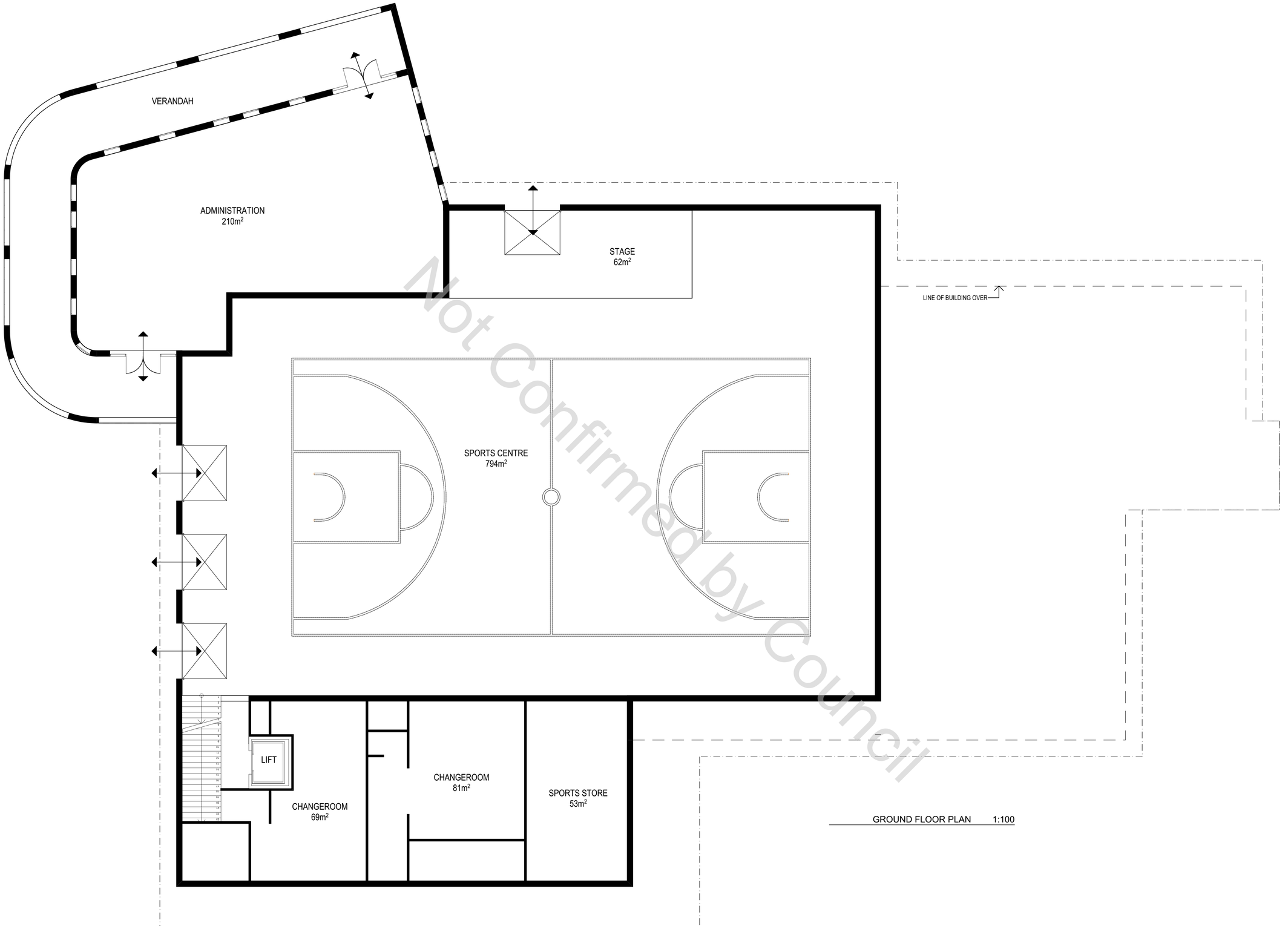
SCALE : 1:50@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK05 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas



GROUND FLOOR PLAN 1:100

N

ADMINISTRATION / SPORTS CENTRE

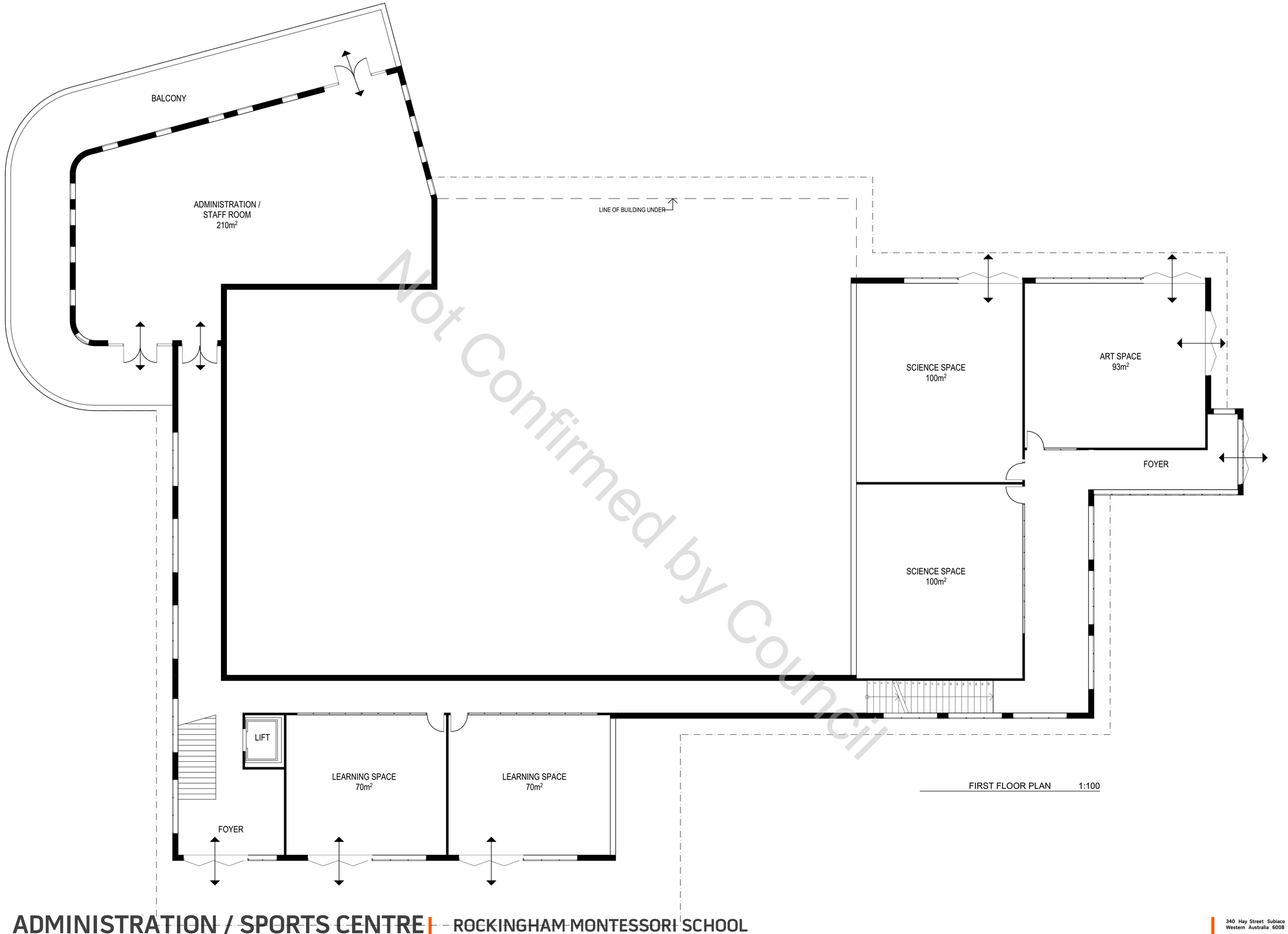
SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK07 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas



FIRST FLOOR PLAN 1:100

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ADMINISTRATION / SPORTS CENTRE

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK08 REV: A

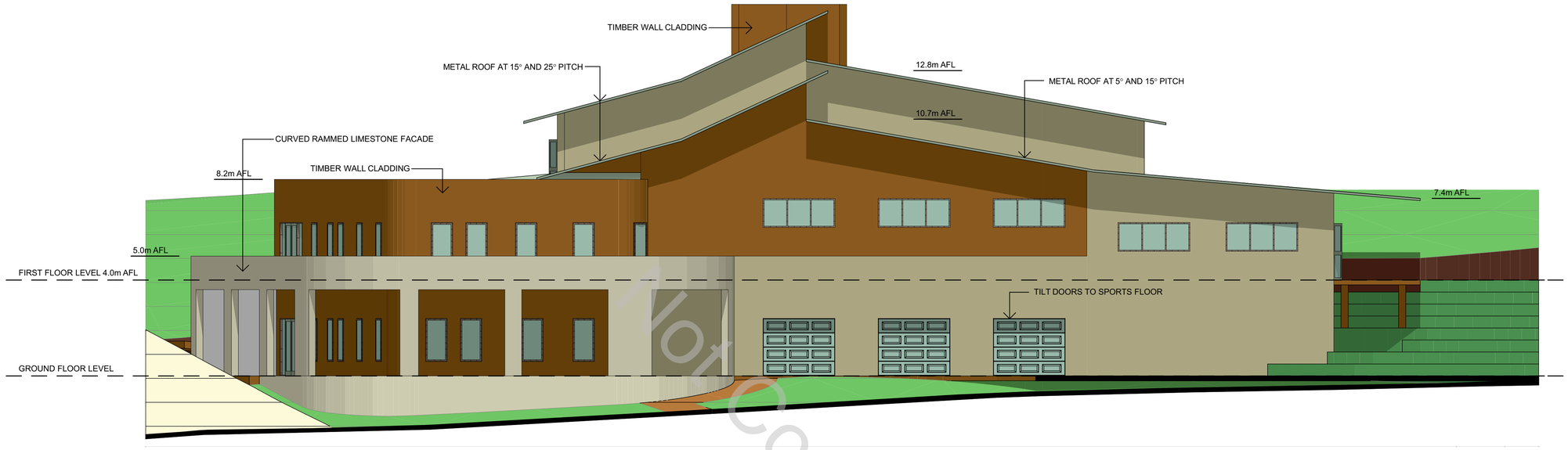
340 Hay Street Subiaco
Western Australia 6008

T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au

ABN 88 1290 054 672

eiw architects

building ideas



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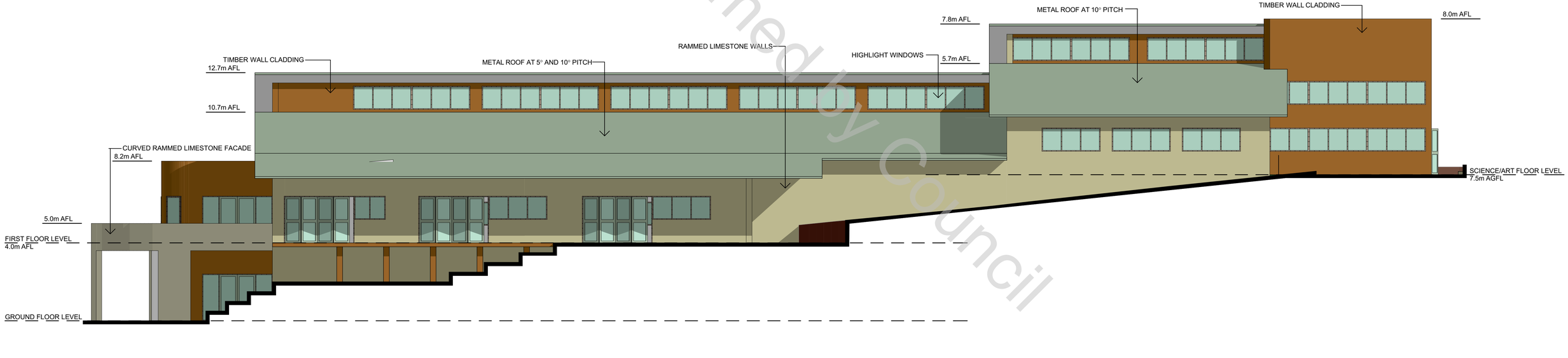

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ADMIN/SPORTS CNTR ELEVATIONS

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK09 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
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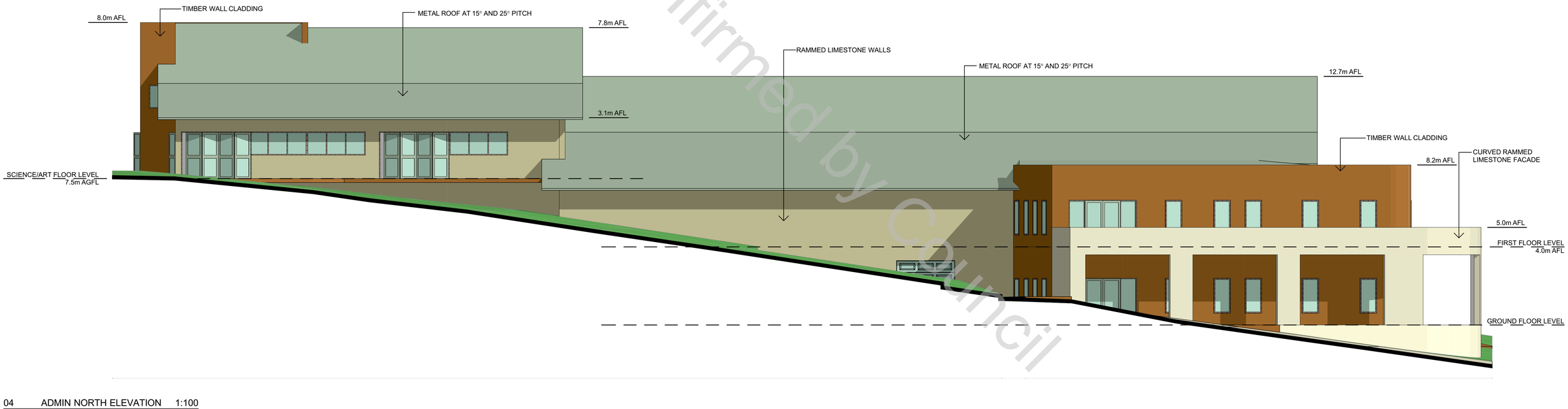
03 ADMIN EAST ELEVATION 1:100
#LayID



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ADMIN/SPORTS CNTR ELEVATIONS

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 27/11/2014 DWG NO. : SK10 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
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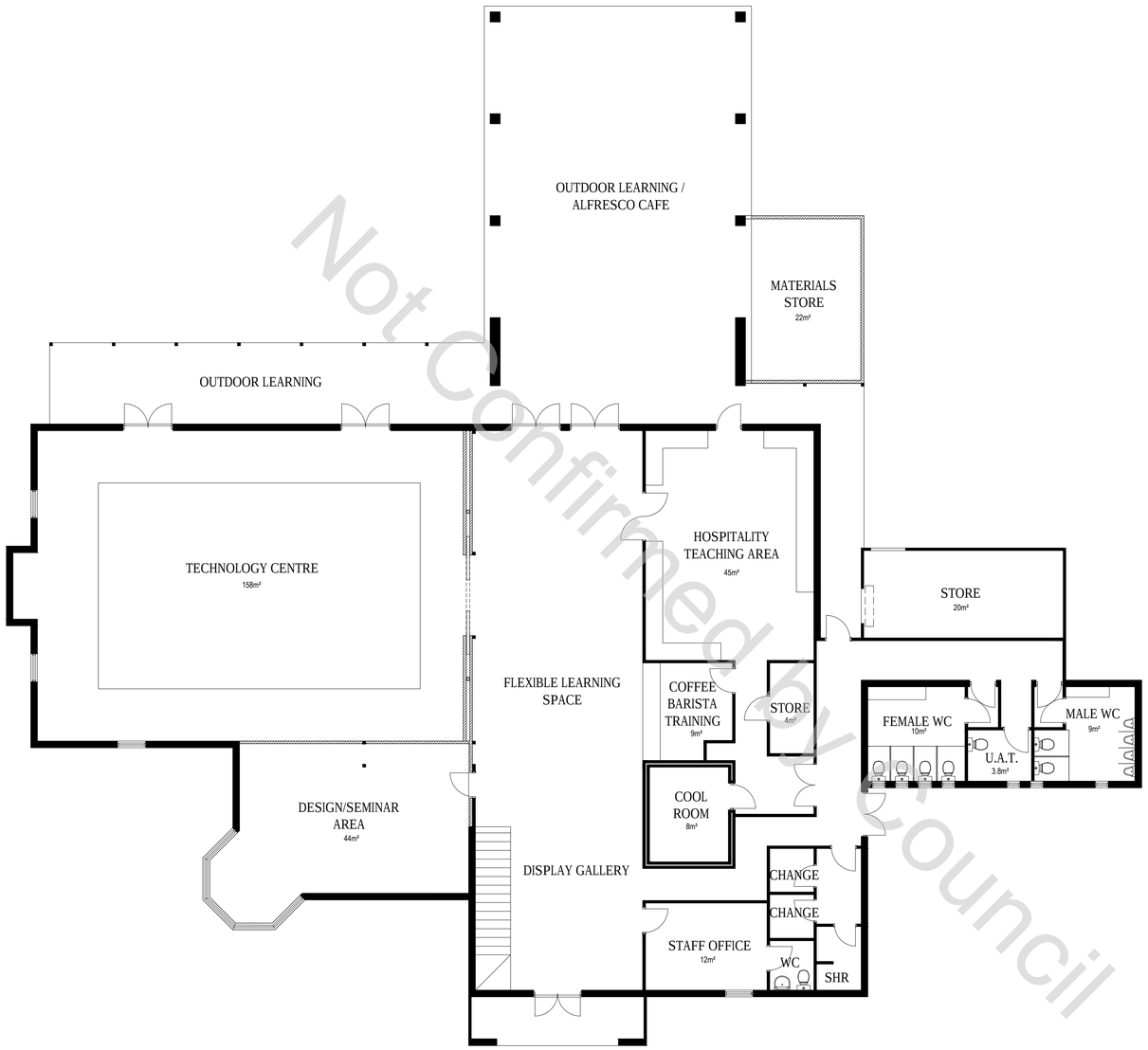


SENIOR SPECIALIST BLOCK

SCALE. : 1:100@A1

0 1 2 10m

ROCKINGHAM MONTESSORI SCHOOL

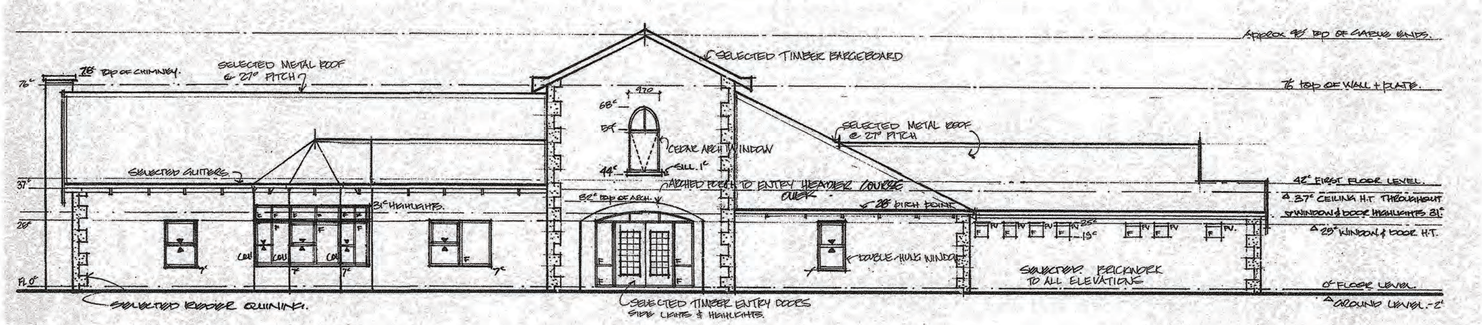
MANDURAH ROAD, KARNUP

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK11 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1290 054 672

eiw architects

building ideas



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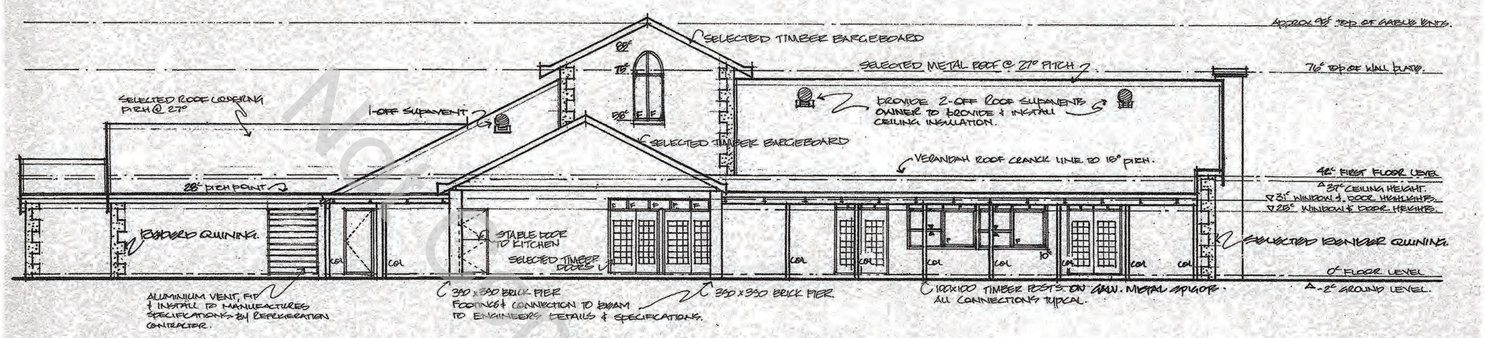

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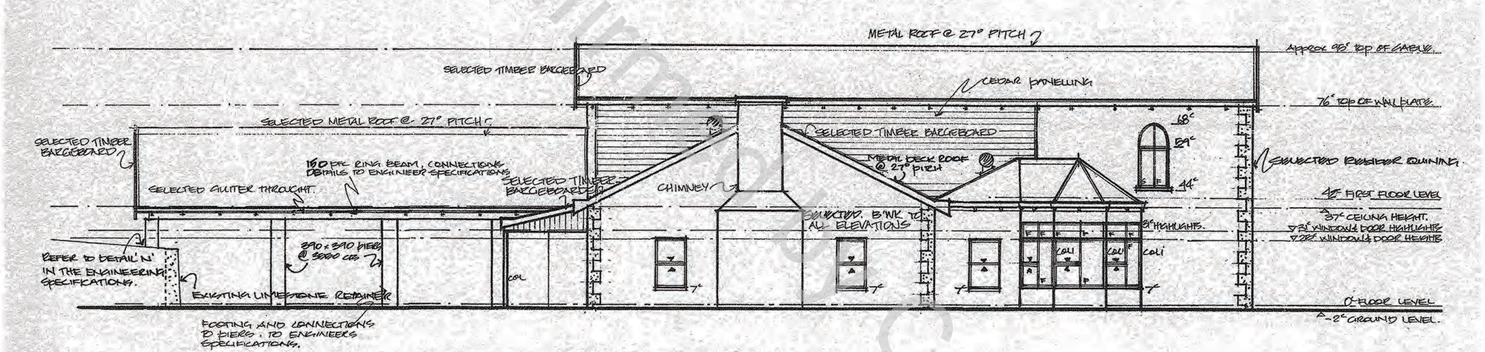

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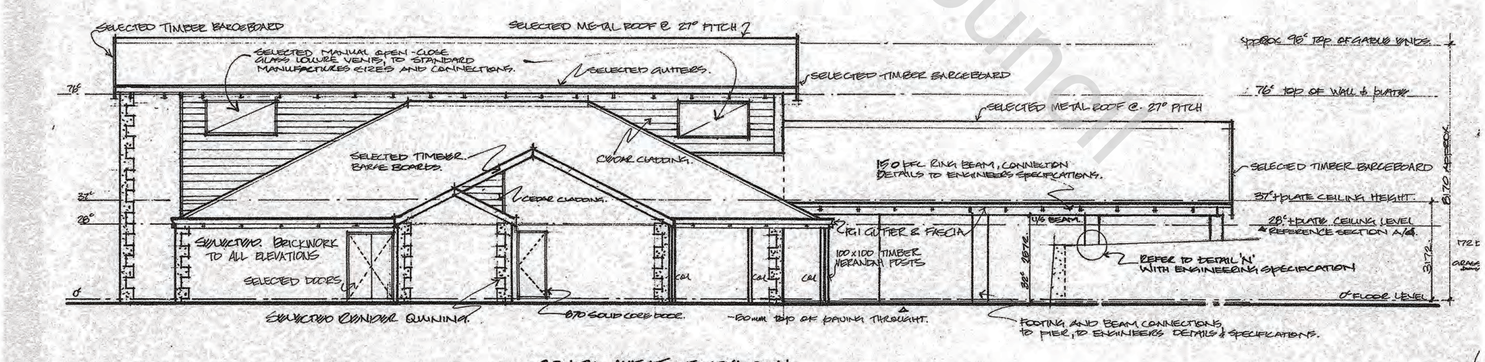


SOUTH WEST ELEVATION 1:100

SENIOR SPECIALIST BLOCK

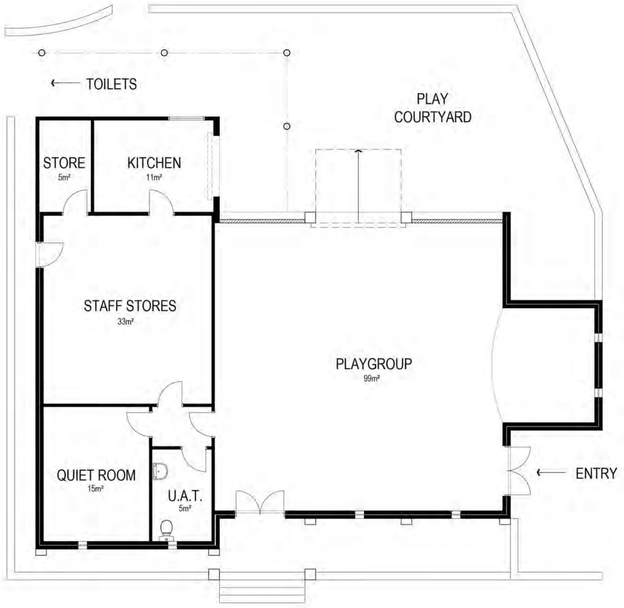
SCALE. : 1:100@A1 0 1 2 10m

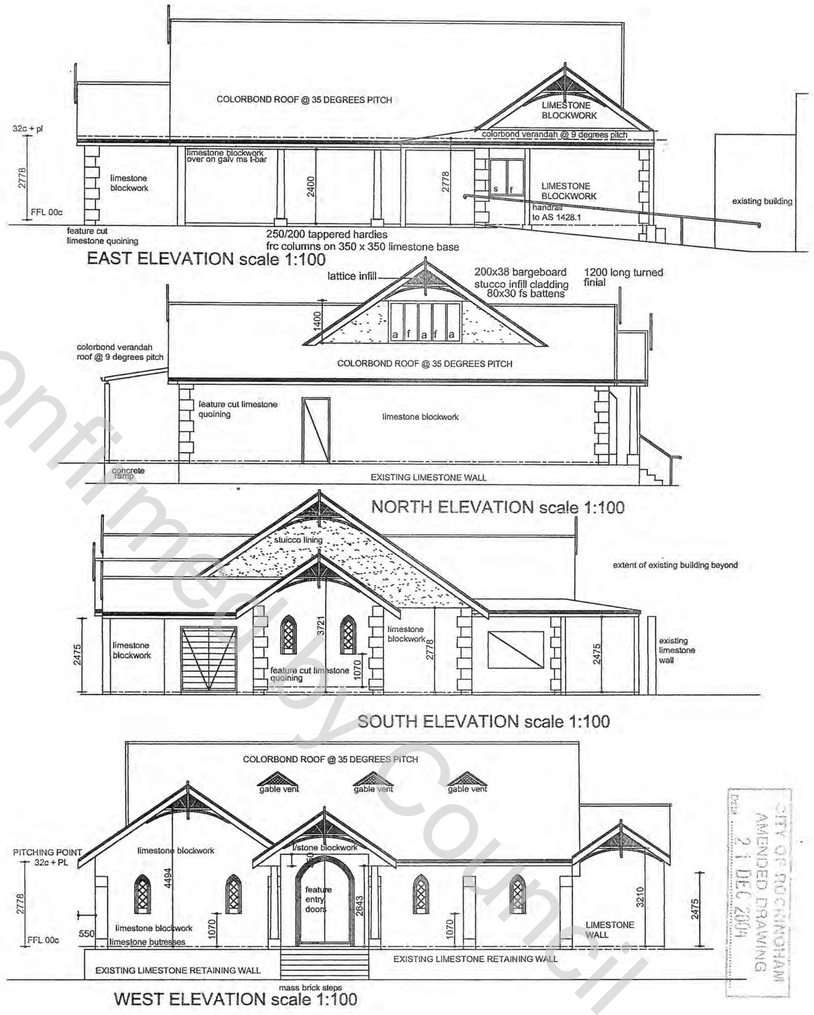
ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK12 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas





N

CHILDRENS HOUSE

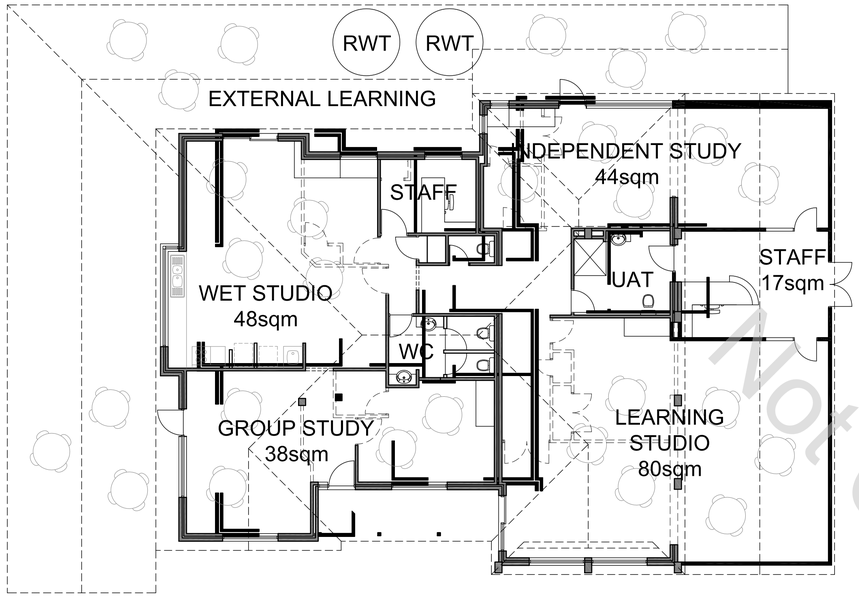
SCALE. : 1:100@A1 0 1 2 10m

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, ROCKINGHAM

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK13 REV : B

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas

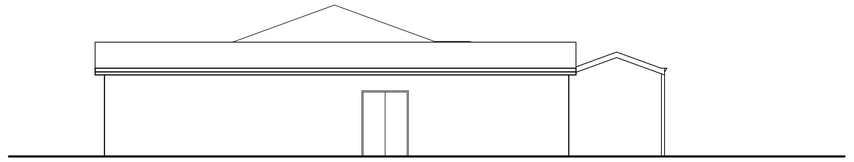


FLOOR PLAN

SCALE 1:100

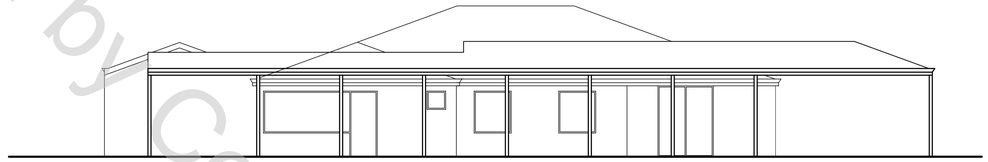
FRONT ELEVATION

SCALE 1:100



SIDE ELEVATION

SCALE 1:100



REAR ELEVATION

SCALE 1:100

N

ENVIRONMENT CENTRE

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

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO. : 1407 DATE : NOVEMBER 2014 DWG NO. : SK14 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas

T: *1300 797 607* **E:** *admin@ruic.net.au*

FIRE MANAGEMENT PLAN

Site: Rockingham Montessori School
Version: 1.6
RUIC Job: 3393

RUIC FIRE

Fire Management Plan

RUIC Fire is a trading name of
Rural Fire Risk Consultancy Pty Ltd
ABN: 48 151 451 713

Disclaimer and Limitation

The mitigation strategies contained in this Fire Management Plan are considered to be prudent minimum standards only, based on the writer's experience as well as standards prescribed by relevant authorities. It is expressly stated that RUIC Fire and the writer do not guarantee that if such standards are complied with or if a property owner exercises prudence, that a building or property will not be damaged or that lives will not be lost in a bush fire.

Fire is an extremely unpredictable force of nature. Changing climatic factors (whether predictable or otherwise) either before or at the time of a fire can also significantly affect the nature of a fire and in a bushfire prone area it is not possible to completely guard against bushfire.

Further, the growth, planting or removal of vegetation; poor maintenance of any fire prevention measures; addition of structures not included in this report; or other activity can and will change the bushfire threat to all properties detailed in the report. Further, the achievement of the level of implementation of fire precautions will depend on the actions of the landowner or occupiers of the land, over which RUIC Fire has no control. If the proponent becomes concerned about changing factors then a new Fire Risk Management Plan should be requested.

To the maximum extent permitted by the law, RUIC Fire, its employees, officers, agents and the writer ("RUIC Fire") excludes all liability whatsoever for:

1. claim, damage, loss or injury to any property and any person caused by fire or as a result of fire or indeed howsoever caused;
2. errors or omissions in this report except where grossly negligent; and

the proponent expressly acknowledges that they have been made aware of this exclusion and that such exclusion of liability is reasonable in all the circumstances.

If despite the provisions of the above disclaimer RUIC Fire is found liable then RUIC limits its liability to the lesser of the maximum extent permitted by the law and the proceeds paid out by RUIC Fire's professional or public liability insurance following the making of a successful claim against such insurer.

RUIC Fire accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report and its supporting material by any third party.

Document Details

ITEM	DETAIL
Project Number	3393
Project Name	Rockingham Montessori School
Approved by	Greg Penney Grad Dip Bushfire Protection. BSc (Director)
Version	1.6
Date of Issue	22nd October 2015

Final Approval

Date: 22/10/2015

In signing the above, I declare the report is true and accurate to the best of my knowledge at the time of issue.

Executive Summary

RUIC Fire was engaged by Rockingham Montessori School Inc to prepare this Fire Management Plan to support the proposed Rockingham Montessori School on Lots 11 & 700 Mandurah Road, Karnup.

In accordance with Planning for Bushfire Protection Guidelines 2nd Edition, Guidance Statements A6, A8 and B6, the original Fire Management Plan (containing multiple performance based solutions) was referred to the Department of Fire and Emergency Services for review. Written advice from DFES on the 23rd of February 2015 advised the Fire Management Plan met the intent of all performance criteria contained within the WAPC and DFES publication "Planning for Bush Fire Protection Guidelines (edition 2). Despite this endorsement, significant additional safety enhancements have been made to this revised Fire Management Plan.

Strategic assessment of the site and surrounding area was completed in accordance with Planning for Bushfire Protection Guidelines 2nd Edition (FESA, 2010). Post implementation of the Building Protection Zones and Hazard Separation Zones prescribed in this report and facilitated by the proposed development, the predominant bushfire hazard rating of the subject lot will reduce from Extreme to Moderate. This reduction in hazard is achieved in conjunction with the protection of environmental assets within the subject lots.

Risk assessment was completed in accordance with ISO31000:2009 and COAG's National Inquiry on Bushfire Mitigation and Management (2004). It is concluded that post implementation of the treatments detailed in this Fire Management Plan, the bushfire related risk is not prohibitive of development.

The proposed development is designed using the performance criteria of Planning for Bushfire Protection Guidelines 2nd Edition (FESA, 2010). In complying with this Fire Management Plan the development will comply with all required bushfire related planning and risk requirements.

Bushfire planning design elements are summarised as:

(i) Future classrooms and the Sports/Administration building shall be constructed to BAL-29 in accordance with AS3959. This is identified as being sufficient to withstand landscape scale bushfire impacts incorporating a significant safety margin including:

   a. CSIRO CAWCR Technical Report No. 10 identifying that this FDI is not achieved in even the 99th percentile of historical weather data for the greater location;

   b. Analysis of weather data (BOM, 2015) identifying that the required winds to support fire impact on the school occur on less than 30% of recorded days;

   c. Bushfire impacts on dwellings calculated using the simple AS3959 First Methodology despite this method overestimating site fuel loads by as much as 250%; and

   d. The Landscaping within the Building Protection Zone being assessed for impact on proposed buildings should a retained tree become involved in fire.

(ii) The Bushfire Emergency Plan incorporating a "Shelter in Place" policy prepared in support of this development must be adhered to;

(iii) Building Protection Zones shall overlap between buildings and shall incorporate specific low threat landscaping designs;

(iv) Reticulated mains firefighting water supply shall be provided inclusive of pillar firefighting hydrants; and

(v) Public access roads and internal road structure shall allow private and emergency vehicles to access, egress and safely move through the site at all times. The additional Emergency Access point at the north of the site provides a second access and egress point to the site.

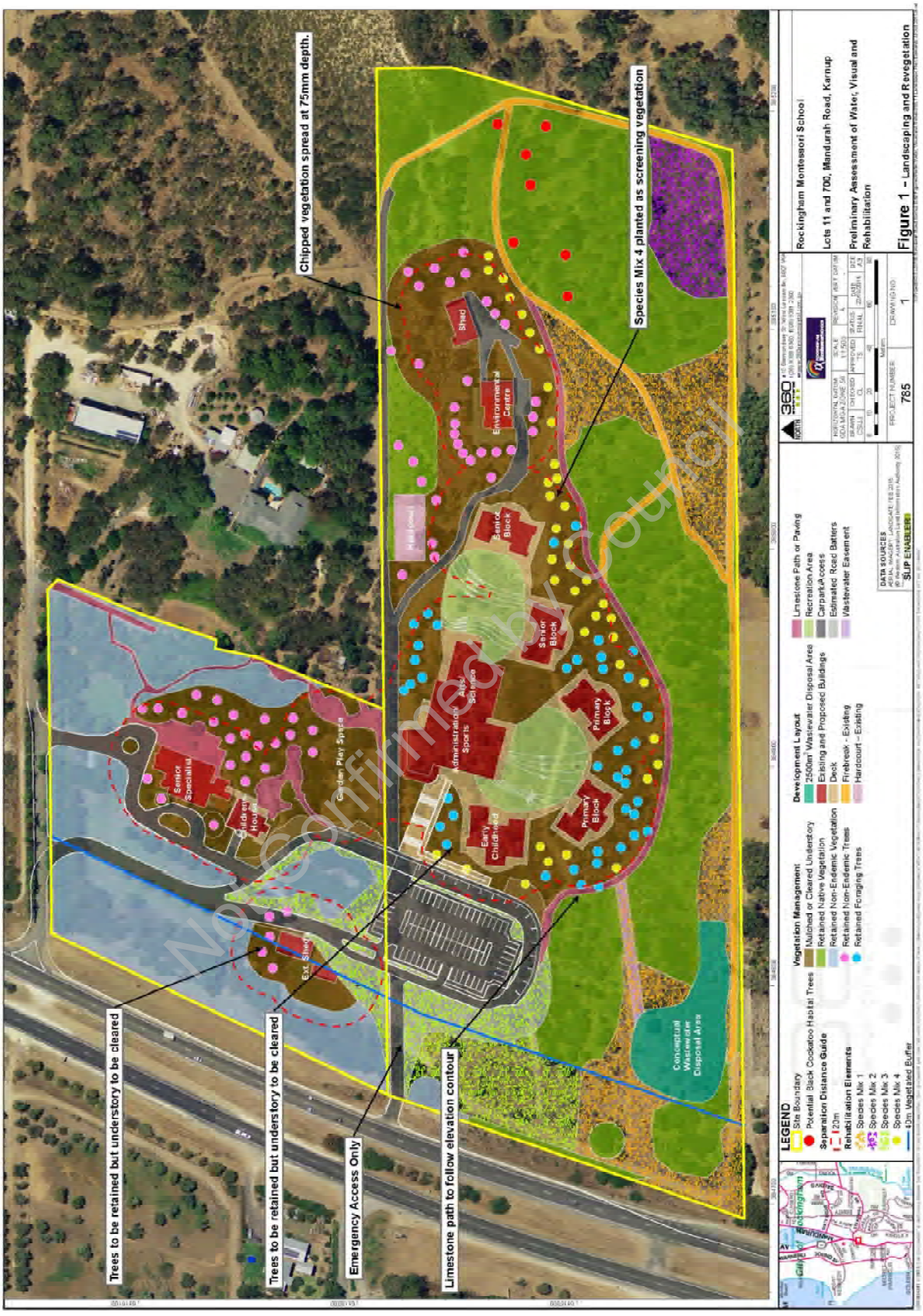


Figure i: Landscaping and Revegetation Plan (360 Environmental, 2015)

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1.0 Introduction

1.1 Scope

The proponent engaged Rural Fire Risk Consultancy Pty Ltd (RUIC Fire) to prepare a site specific Fire Management Plan (FMP) to support the proposed 'Educational Establishment' (Montessori School).

1.2 Objectives

The objectives of the FMP are to:

i. Achieve consistency with objectives and policy measures of the current Planning for Bushfire Protection Guidelines 2nd Edition (PfBPG); and any local planning scheme provisions relating to bushfire;
ii. Understand and document the extent of bushfire risk for the FMP area;
iii. Prepare bushfire risk management measures for bushfire management of all land subject of the Plan, with due regard for people, property, infrastructure and the environment;
iv. Nominate individuals and organisations responsible for fire management and associated works within the plan area (e.g. local government for land vested in it and private property owners for freehold land); and
v. Define an assessment procedure which will evaluate the effectiveness and impact of proposed, as well as existing, bushfire risk management measures and strategies.

1.3 Planning Context

1.3.1 Existing Fire Management Plans

A previous FMP has been endorsed for Munja Gardens (2012) only. This FMP supersedes the previous FMP.

1.3.2 Bushfire Prone Designation

Formal designation of an area as "Bushfire Prone" provides the legislative trigger to enforce all Class 1, 2, 3, and associated Class 10a buildings to be constructed in accordance with AS3959:2009 Construction of buildings in bushfire prone areas.

1.3.2.1 City of Rockingham

The City of Rockingham have advised the subject site is to be assessed, and this report developed in accordance with Planning for Bushfire Protection Guidelines 2nd Edition (PfBPG). The City of Rockingham Town Planning Scheme No.2 does not currently identify the site as "Bushfire Prone."

1.3.2.2 Summary

The site is not currently declared "Bushfire Prone" and the development does not include Class 1, 2 or 3 buildings, and thereby not requiring building construction to comply with AS3959:2009 or the Building Code of Australia Volumes 1 and 2 (2015). As a precautionary principle, all new proposed buildings shall be voluntarily constructed in accordance with AS3959 as detailed further in this report.

Incorporation of enhanced bushfire construction methods into the design is included by agreement of the proponent to increase the resilience of the Rockingham Montessori School

to bushfire and as an additional safety measure for students that may be present should a fire impact the school.

1.4 Bushfire Context

The following documents are identified as being referenced to provide the performance criteria and technical specifications for this Fire Management Plan:

i. City of Rockingham (4/7/14). *Town Planning Scheme 2*
ii. City of Rockingham (27/05/14). *PDS-043/14 Proposed Amendment No.144 to Town Planning Scheme No.2 – Bushfire Prone Areas (Initiation)*
iii. City of Rockingham (2013). *PSPD22 – Fire Management Plans*
iv. DFES (2013). *DFES BEB Guideline No:GL-08 Hard Suction Connections*
v. Ellis, S., Kanowski, P., & Whelan, R. (2004). *National Inquiry on Bushfire Mitigation and Management*. Council of Australian Governments
vi. FESA. (2010). *Planning for Bush Fire Protection Guidelines 2nd Edition* Perth: Western Australian
vii. Standards Australia. (2009). AS 3959:2009 Construction of buildings in bushfire prone areas: SAI Global.
viii. Standards Australia. (2009). ISO AS 31000:2009 Risk management principles and guidelines: SAI Global.
ix. Standards Australia. (2013). HB89:2013 Risk management - Guidelines on risk assessment techniques (Vol. HB 89:2013). Sydney: SAI Global.
x. Standards Australia. (2013). HB 436:2013 Risk management guidelines - Companion to AS/NZS ISO 31000:2009 (Vol. HB436:2013). Sydney: SAI Global.
xi. WAPC. (2013). *Planning Bulletin 111/2013 Planning for Bushfire*. Western Australian Planning Commission.

2.0 Site Details

2.1 Description

2.1.1 Location

The site is located within the Municipality of the City of Rockingham, approximately 50km south of the Perth Central Area, between Stakehill Road and Olive Hill Close (Figure 2A).

2.1.2 Proposed Land Use

Lot 11 (Rural) contains an existing single storey residential building and associated shed located towards the rear of the lot. The building has been extended from its original form.

Lot 700 (Special Rural) contains the 'Munja Gardens Reception Centre', which is comprised of a reception centre building, chapel, storage shed and associated outbuildings.

The Masterplan (Figure 2B), of the proposed campus contains the following buildings and elements that comprise the 'Educational Establishment':

- Senior Specialist Centre;
- Children's House;
- Early Childhood Centre;
- Primary Block Modules;
- Senior Block Modules;
- Environmental Centre;
- Storage Shed;
- Administration Centre and Spots Hall Building;
- Hard courts; and
- Vehicle Parking and Manoeuvring Areas.

The proposed development includes modifying existing buildings on Lot 700 (No. 1791) Mandurah Road from their use as an existing 'Reception Centre', modifying the existing residence and outbuilding on Lot 11 (No. 1809) Mandurah Road and the construction of additional new buildings, car parking areas and recreational facilities.

2.1.3 Assets

Existing buildings within the development site will be retained and modified to suit the proposed purposes. There are no areas of cultural significance identified within the site. Environmental assets are detailed in section 2.1.6.

2.1.4 Access

The site is serviced by an existing major public road network. Immediate access is off Mandurah Road which connects to Stakehill Road to the north and Surf Drive to the south. A detailed Traffic Management Plan prepared and reviewed by two separate Traffic Engineering Consultants (SHAWMAC and Donald Veal Consultants) ensures that alternate egress routes and destinations are available at all times and weather conditions. The associated Traffic Management Plan should be referred to for full details.

As verified by both Traffic Engineering Consultants (Appendix 1), the public access roads and internal road structure shall allow private and emergency vehicles to access, egress and safely move through the site at all times. The additional Emergency Access point in the southern portion of the site provides a second access and egress point to the site.

This demonstrates compliance with Performance Criteria P2, identified as "The internal layout, design and construction of public and private vehicular access in the subdivision/development allows emergency and other vehicles to move through it easily and safely at all times."

2.1.5 Water Supply

Reticulated mains water, including the provision of firefighting pillar hydrants shall be provided to the site. Specific placement of pillar hydrants to support bushfire and structural firefighting purposes are to be negotiated with the Department of Fire and Emergency Services to ensure maximum benefit is achieved.

Street hydrants are located within the urban area of Secret Harbour, off Surf Road, approximately 1.3km south of the site, allowing for less than 20 minute turnaround time for a 2.4 fire appliance.

This demonstrates compliance with Performance Criteria P3, identified as "The development is provided with a permanent and secure water supply that is sufficient for fire fighting purposes."

2.1.6 Conservation Value

An independent environmental report by 360 Environmental (2014) concluded:

> *The site was also found to contain vegetation potentially consistent with a Priority 3 community. Although PECs have no statutory protection, the proponent has developed the DCP within areas of lesser quality vegetation in order to reduce any impact upon this community.*
>
> *The remnant vegetation within the site was found to contain species which may provide foraging and potential breeding habitat for conservation significant fauna, including Black Cockatoos. The development layout aims to retain areas of better quality vegetation, particularly those that offer future potential habitat to the Black Cockatoos and other conservation significant flora.*
>
> *A targeted flora and vegetation survey may be considered necessary prior to clearing any native vegetation due to the occurrence of potentially suitable habitat for the Threatened Caladenia hueglii and Drakea micrantha. This will be undertaken in accordance with any requirements of the State Clearing Permit approvals process.*
>
> *Any significant impact to federally protected species will be referred to the federal Government under the EPBC Act to be assessed separately. Any impacts to flora and vegetation as a result of clearing for the development will also be assessed through the State Clearing Permit approvals process.*

Development and maintenance of the Building Protection Zone and all other bushfire management strategies detailed in this report are designed to be implemented in a manner that protects the identified priority species. Specific detail is provided in the Landscaping Plan (360 Environmental, 2015).

2.1.7 Climate

Data collected from the Bureau of Meteorology indicates that the site experiences a temperate climate characterised by mild winter periods and hot, dry summers. The bushfire danger period occurs during the dryer summer months where grass curing has occurred and humidity is low. The effect of climate on potential bushfire behaviour is incorporated into modelling of bushfire impact in section 3 of this report in accordance with AS3959 through the selection of a Fire Danger Index of 80 as assigned to Western Australia.

(All design bushfire events are modelled on days having a Fire Danger Index (FDI) of 80 (equivalent to a Severe Bushfire Danger Rating), students being present and required winds occurring, despite:

i. CSIRO CAWCR Technical Report No. 10 identifying that this FDI is not achieved in even the 99th percentile of historical weather data for the greater location; and

ii. Analysis of weather data identifies that the required winds to support fire impact on the school occur on less than 30% of recorded days.

2.1.8 Site Topography

The site inclines from all directions to the top of a sand mound, approximately 230m east of the front (west) boundary. On top of the mound there is gentle undulations.

Topography potentially affecting bushfire behaviour that may impact the site is identified in Figure 2C and incorporated into bushfire modelling provided in section 3 of this report.

2.1.9 Bushfire Hazard Assessment

Strategic Bushfire Hazard Assessment in accordance with PfBPG Appendix 1 on the basis of the "predominant vegetation" identifies that the pre-development site itself as having a low hazard classification over 20% of the site, moderate hazard classification of 72% and extreme hazard classification for the remaining 8% of the site area. Post development the site will be predominantly Low Hazard due to the implementation of additional infrastructure, buildings and associated Building Protection Zones (Figure 2D).

Post development, through implementation of the proposed fire management strategies within this report, detailed in the executive summary, the site will predominantly be moderate to extreme hazard level external to the building protection zones. The site will constitute fuel-controlled Hazard Separation Zones (Moderate); Building Protection Zones (Low) and managed low threat areas such as ovals, driveways, parking bays etc.

It is important to acknowledge the qualitative Bushfire Hazard Assessment methodology (PfBPG Appendix 1, p18) is different to the quantified methodology for determining the Bushfire Attack Level to a building as detailed in AS3959. Under the current PfBPG it is possible for a site to have an elevated BAL rating (if declared bushfire prone) whilst having a Low Bushfire Hazard rating. Further, the methodology for calculating vegetation fuel load is inconsistent between PfBPG and AS3959 meaning that a dwelling may be deemed as not requiring a BAL rating by planning and granted approval, yet be subject to a BAL-FZ rating when it comes to obtaining a building licence. As a result of the inconsistencies between the Bushfire Hazard Assessment and BAL Calculation methodologies and vegetation classifications, discrepancy exists between the associated mapping in this report.

2.1.10 Conclusion

Post development, whilst the highest Bushfire Hazard level within the site is identified as being extreme the hazard level surrounding all existing and proposed buildings is Low. Construction of buildings will occur on land identified as a low hazard level.

The proposed internal road network provides multiple access/egress routes, via areas of low bushfire hazard, to Mandurah Road.

PfBPG Appendix 2 Section 4 "Table 2" page 27 states that for development occurring in areas of moderate bushfire hazard 'Performance Criteria 1 to 5 are to be satisfied.' This is achieved through implementation of the design strategies detailed in Section 4 of this report. The bushfire hazard rating is not prohibitive of development.

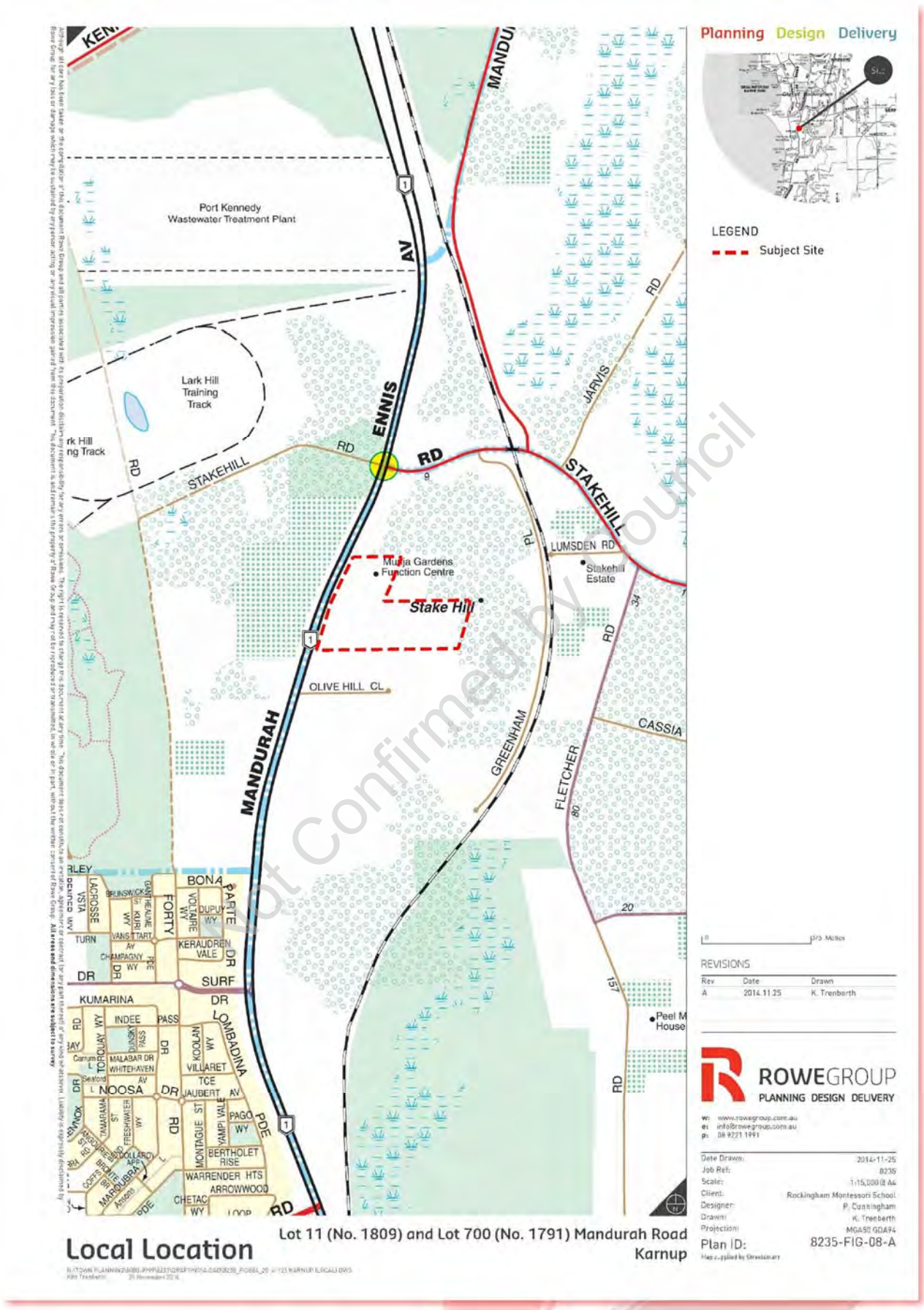

Figure 2A: Site Locality

Figure 2B: Master Plan

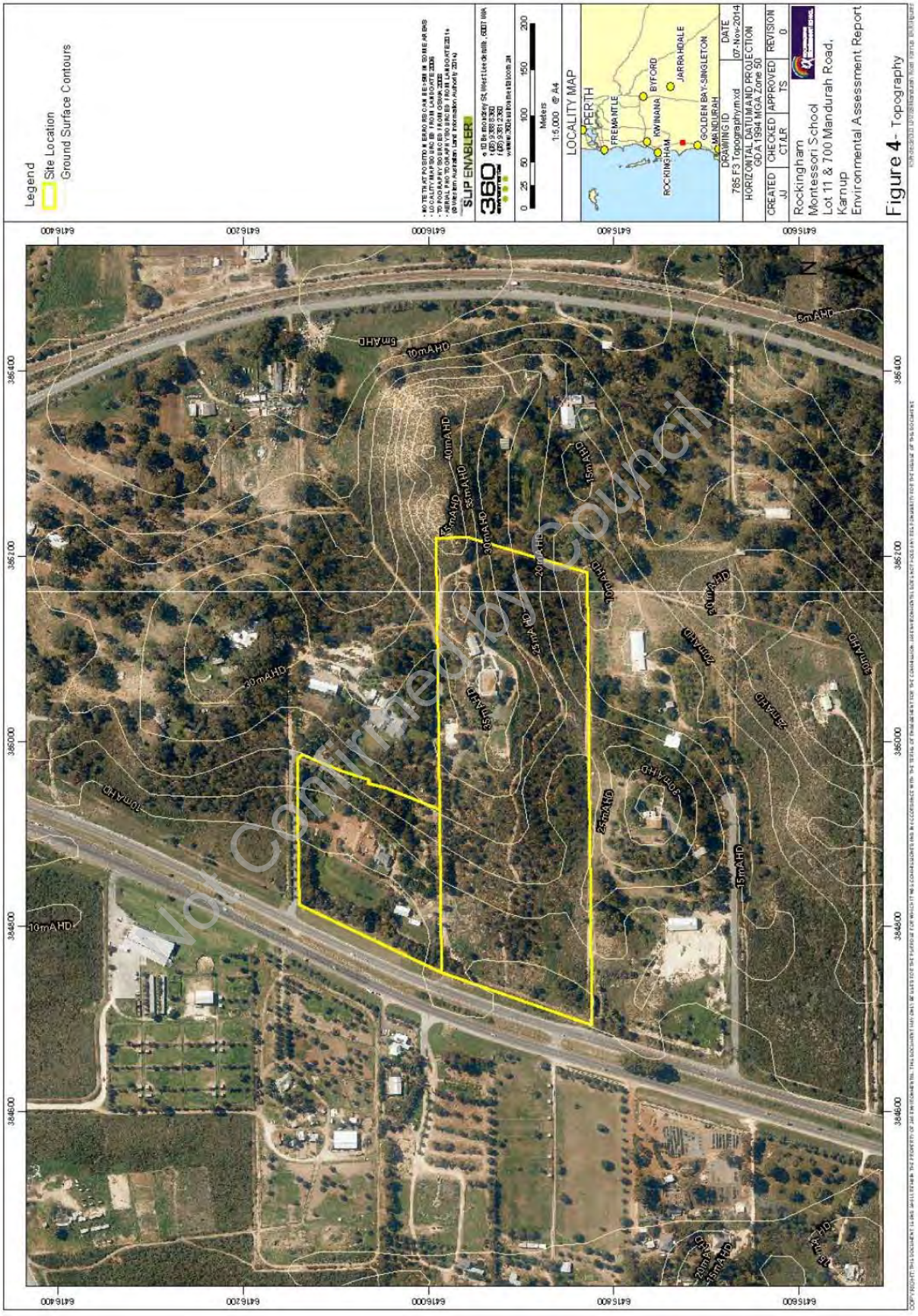

Figure 2C: Topography (360 Environmental, 2015)

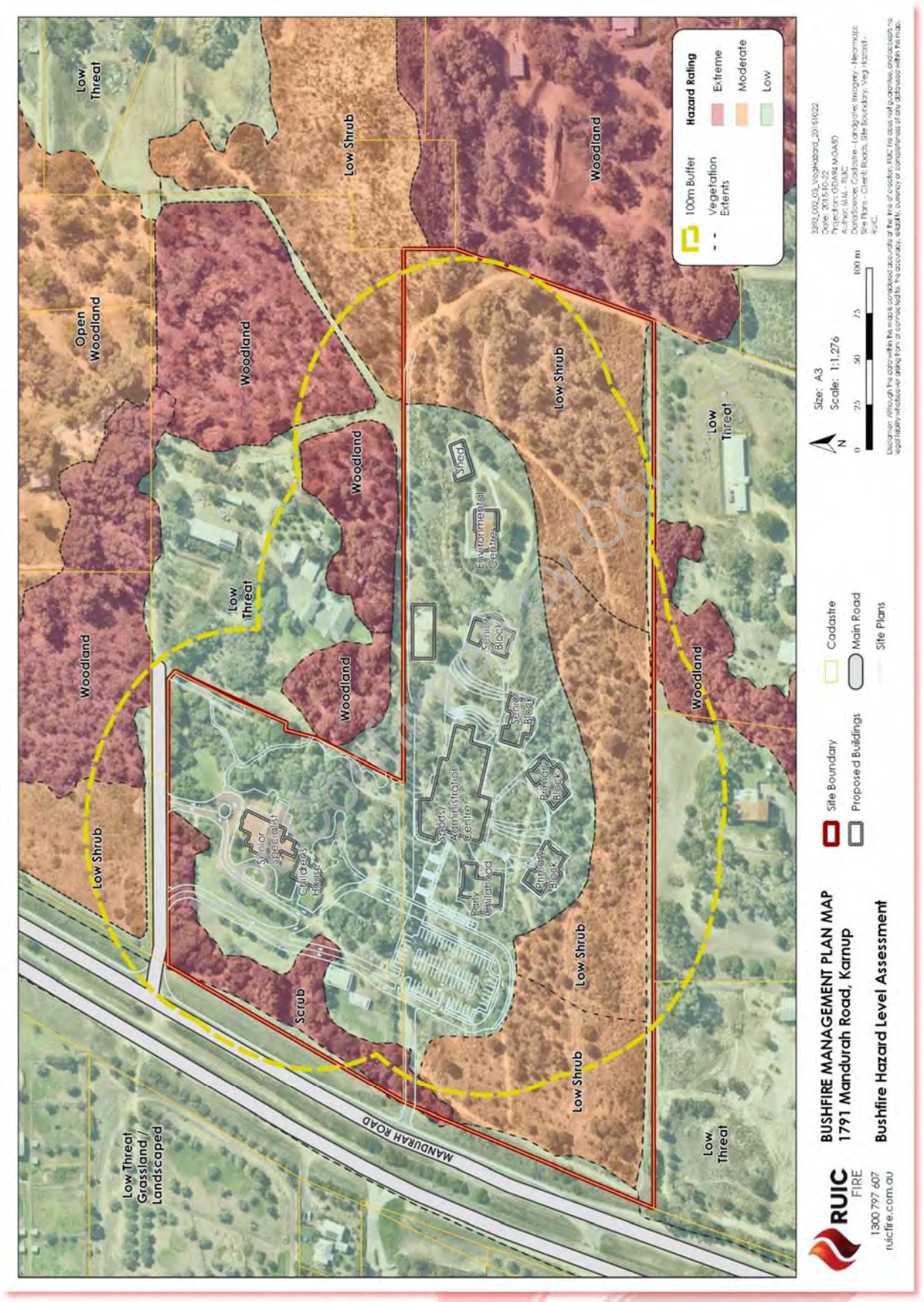

Figure 2D: Bushfire Hazard Assessment

3.0 Bushfire Assessment

3.1 Potential for Bushfire Activity

Vegetation structures that may support the propagation of bushfire will be replaced by low threat landscaping adjacent to and between all buildings. This will essentially elimination of the potential for bushfire ignition occurring within the built environment parts of the development.

A bushfire event may occur within the site vegetation external to the Building Protection Zones, however separation distance between the vegetation and proposed buildings ensures that the radiant heat impact from such an event will not exceed 29 KW/m^2 (BAL-29) on any proposed building. Grassland vegetation west of Mandurah Road, currently managed in a low threat state, provides for minimal potential bushfire impact along the western boundary of the site where emergency access and egress routes are positioned.

A bushfire event may occur through Woodland, scrub and shrub vegetation structures external to the site, as a result of natural ignition (e.g. lightning), accidental ignition (e.g. uncontrolled hazard reduction burn) or deliberate act (arson).

The impact of such an event on the proposed development and the potential for ignition of vegetation from activities within the site itself will be managed through:

i. Education of staff and students regarding potential for bushfire and the adoption of bushfire prevention as a core value of the Rockingham Montessori School;
ii. Development of a detailed and well-rehearsed evacuation plan;
iii. Ensuring the development design complies with all required Performance Requirements / Performance Principles; and
iv. Adherence of occupants to fire restrictions, total fire bans and the City's Fire Control Notice.

These strategies are detailed in section 4 of the report.

3.2 Bushfire Impact Analysis

Bushfire impact analysis was undertaken in accordance with the radiant heat flux calculation methodology detailed in AS3959 to determine the potential radiant heat impact on the site in the event of bushfire within vegetation identified as a bushfire threat. Input parameters and subsequent calculation of all BAL ratings is provided in Appendix 2.

Potential bushfire impact is illustrated in Figure 3A. Maximum ratings on all future proposed buildings is BAL-29, demonstrating compliance with PfBPG Acceptable Solution A1.1. A comprehensive Bushfire Emergency Plan has been developed to ensure all occupants can safely find shelter in the realisation of a bushfire event that may impact the school. This demonstrates compliance with PfBPG Performance Criteria P1. The Bushfire Emergency Plan is provided as Appendix 3 to this report.

3.3 Risk Assessment

Risk is not an event (SAHB 436:2013 s2.1). It is not an explosion, bushfire, flood or other emergency. Risk cannot be expressed as either positive or negative, but rather as the likelihood of a consequence, positive or negative, occurring. In the context of planning for bushfire protection, bushfire is considered a risk source that can impact upon the objectives of preventing damage or loss to life, property and the environmental assets (prioritised in that order).

Management of bushfire related risk is a shared responsibility (Keelty, 2011). Risk criteria are sourced from Emergency Management Australia (2010); FESA (2010); and stakeholder consultation. Residual bushfire related risk to identified assets within the proposed development following implementation of the risk mitigation strategies is summarised in Table 3A in accordance with:

- ISO31000:2009 Risk management – principles and guidelines;
- SAHB 436:2013 Risk management guidelines – Companion to AS/NZS ISO 31000:2009;
- National Inquiry on Bushfire Mitigation and Management (2010).

Risk Number	Risk Statement	Impact Category	Risk Level	Prevention Controls (Planning Specific)	Residual Risk Level
1.	There is the potential that a bushfire will impact the proposed development which in turn will cause death or injury to persons.	People	High	• The development has been designed to withstand a 99th percentile bushfire event. • All proposed buildings will be constructed to AS3959 in accordance with the identified BAL-29 rating. • A comprehensive Bushfire Emergency Plan incorporating a shelter in place strategy has been developed. • The school has adopted a policy where by closure will occur for all days where a Fire Danger Rating of Severe or Catastrophic is forecast. • The development design incorporates easy access for firefighters and permanent firefighting water supplies.	Low
2.	There is the potential that a bushfire will impact the proposed development, which in turn will cause destruction of or damage to the proposed buildings.	Infrastructure	High	• The development has been designed to withstand a 99th percentile bushfire event. • All proposed buildings will be constructed to AS3959 in accordance with the identified BAL-29 rating. • The development design incorporates easy access for firefighters and permanent firefighting water supplies. • Compliance with City's Fire Control Notice • Compliance with fire restrictions and Total Fire Bans for all outdoor activities	Low
3.	There is the potential that a bushfire will impact the proposed development, which in turn will cause destruction of or damage to environmental assets.	Environment	High	• Rehabilitation and landscaping will reduce the potential for fire spread to other areas of unmodified vegetation.	Low

Table 3D: Risk assessment of development

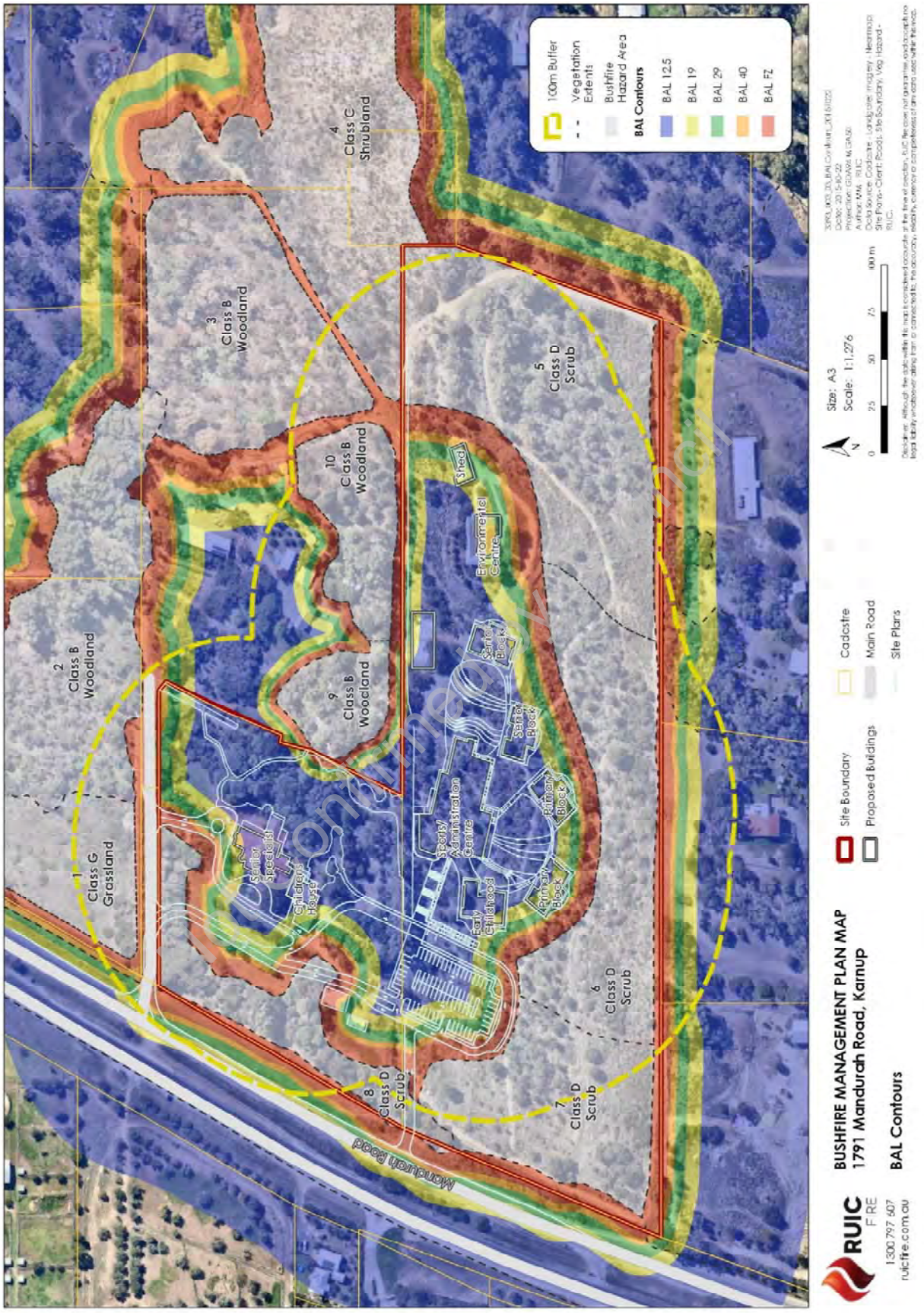

Figure 3A: BAL Contours across the site

3.4 Performance Criteria and Compliance

Due to the nature of the development, Acceptable Solutions and contextualised Performance Based Solutions are utilised to ensure the development meets all required Performance Principles and that the level of bushfire related risk is not unacceptable. Where Performance Based Solutions are utilised, detailed justification is provided in the relevant section of this report. Table 3E identifies the compliance of the development with the all bushfire related planning Elements detailed in Planning for Bushfire Protection Guidelines, 2nd Edition, Appendix 2.

Element	Acceptable Solution	Compliance		Acceptable Solution (AS) or Performance Based Solution (PBS)
1. Location	A1.1 Development location	Does the proposal comply with performance criteria P1 by applying acceptable solution A1.1?	✓	AS 1
2. Vehicular Access	A2.1 Two access routes	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.1?	✓	PBS 1
	A2.2 Public roads	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.2?	N/A	
	A2.3 Cul-de-sacs	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.3?	N/A	
	A2.4 Battle axes	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.4?	N/A	
	A2.5 Private driveways	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.5?	✓	PBS 1
	A2.6 Emergency access ways	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.6?	N/A	
	A2.7 Fire service access routes	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.7?	✓	AS 2
	A2.8 Gates	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.8?	✓	AS 3
	A2.9 Firebreak widths	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.9?	✓	AS 5
	A2.10 Signs	Does the proposal comply with performance criteria P2 by applying acceptable solution A2.10?	✓	AS 4
3. Water	A3.1 Reticulated supply	Does the proposal comply with performance criteria P3 by applying acceptable solution A3.1?	✓	AS 3
	A3.2 Non reticulated areas – water tanks	Does the proposal comply with performance criteria P3 by applying acceptable solution A3.2?	✓	AS 6
	A3.3 Non reticulated areas - dam	Does the proposal comply with performance criteria P3 by applying acceptable solution A3.3?	N/A	
4. Siting	A4.1 Hazard separation – moderate to extreme bush fire hazard level	Does the proposal comply with performance criteria P4 by applying acceptable solution A4.1?	✓	AS 7
	A4.2 Hazard separation – low bush fire hazard level	Does the proposal comply with performance criteria P4 by applying acceptable solution A4.2?	✓	AS 7

	A4.3 Building protection zone	Does the proposal comply with performance criteria P4 by applying acceptable solution A4.3?	✓	PBS 2
	A4.4 Hazard separation zone	Does the proposal comply with performance criteria P4 by applying acceptable solution A4.4?	✓	AS 7
	A4.5 Reduction in bushfire attack due to shielding	Does the proposal comply with performance criteria P4 by applying acceptable solution A4.5?	✓	AS 7
5. Design	A5.1 Compliant development	Does the proposal comply with performance criteria P5 by applying acceptable solution A5.1?	✓	AS 8
	A5.2 Non-compliant development	Does the proposal comply with performance criteria P5 by applying acceptable solution A5.2?	N/A	

Table 3B: Performance Criteria Compliance PfBPG

3.5 Conclusion

The proposed development site does not exhibit physical features, weather conditions or historical incidence of bushfire that suggests the site is at an increased threat from potential bushfire activity.

The development has been specifically designed to reduce the vulnerability of potential bushfire impact in accordance all applicable policy and planning requirements whilst respecting the environmental significant of vegetation external to the site.

All residual bushfire related risk levels affecting the site are identified as low. In accordance with PfBPG, the bushfire risk to the proposed development is not considered unreasonable and should not prohibit development of the site subject to the measures detailed in this Fire Management Plan being complied with.

This Fire Management Plan demonstrates compliance of the development with all relevant performance criteria detailed in PfBPG. The development design bushfire ensures the development is not exposed to an unreasonable level of bushfire related risk or threat.

4.0 Bush Fire Risk Mitigation

The bush fire risk mitigation strategies detailed in this report are designed to comply with the Performance Criteria detailed in PfBPG and WAPC Planning Bulletin 111/2013.

- The notation (P3) refers to Performance Criteria 3 of PfBPG. Where a Performance Based Solution is offered detailed justification is provided.
- The notation (A3.1) refers to Acceptable Solution 3.1 of PfBPG.
- The notation (E3.1) refers to Explanatory Note 3.1 of the PfBPG.
- Where discrepancy occurs between State and Local bushfire planning provisions the higher standard of mitigation has been selected.

Where performance based design solutions are proposed, detailed justification is provided in the relevant section. All design solutions apply to areas of the site within 100m of identified bushfire threats only. Areas separated by more than 100m are deemed to be at an insufficient level of bushfire related risk (PfBPG) and are not subject to enhanced bushfire planning requirements.

4.1 Element 1 - Location

Intent: To ensure that development/intensification of land use is located in areas where the bush fire hazard does not present an unreasonable level of risk to life and property.

Performance Criteria (P1): The subdivision/development is located in an area where the bush fire hazard level is manageable.

Acceptable Solution 1 **Development Location**

All future development shall occur on land having a Low Bushfire Hazard post development as a result of the establishment of low threat Building Protection Zones. The maximum radiant heat flux is not expected to exceed 29 kW/m^2 (BAL-29). This demonstrates compliance with PfBPG Acceptable Solution A1.1. Further, the Bushfire Emergency Plan demonstrates the bushfire hazard in greater area is management and all occupants can seek shelter from a bushfire event. This demonstrates compliance with Performance Principle 1.

4.2 Element 2 - Vehicular Access

Intent: To ensure that the vehicular access serving a subdivision/ development is safe in the event of a bush fire occurring.

Performance Criteria (P2): The internal layout, design and construction of public and private vehicular access in the subdivision/development allows emergency and other vehicles to move through it easily and safely at all times.

Performance Based Solution 1 **Access and Egress Throughout the Development**

The site is serviced by an existing major public road network. Immediate access is off Mandurah Road which connects to Stakehill Road to the north and Surf Drive to the south. A detailed Traffic Management Plan prepared and reviewed by two separate Traffic Engineering Consultants (SHAWMAC and Donald Veal Consultants) ensures that alternate egress routes and destinations are available at all times and weather conditions. The associated Traffic Management Plan should be referred to for full details.

As verified by both Traffic Engineering Consultants (Appendix 1), the public access roads and internal road structure shall allow private and emergency vehicles to access, egress and safely

move through the site at all times. The additional Emergency Access point in the southern portion of the site provides a second access and egress point to the site.

This demonstrates compliance with Performance Criteria P2, identified as "The internal layout, design and construction of public and private vehicular access in the subdivision/development allows emergency and other vehicles to move through it easily and safely at all times."

Acceptable Solution 2 **Fire Service Access Routes A2.7**

The fire service access route on the northern boundary provides access within and around the edge of the subdivision and links to public roads for firefighting. The fire service access route is to meet the standard of Acceptable Solution A2.7:

a) Standard:
   i. surface: all weather
   ii. dead end: not permitted
   iii. minimum trafficable surface: 6 metres
   iv. horizontal clearance: 6 metres
   v. vertical clearance: 4 metres
   vi. maximum grades: 1 in 7
   vii. maximum grade over <50 metres: 1 in 4
   viii. maximum average grade: 1 in 5
   ix. minimum weight capacity: 15 tonnes
   x. maximum crossfall: 1 in 33
   xi. curves minimum inner radius: 12 metres
   xii. turn around areas designed to accommodate 3.4 appliances and to enable them to turn around safely: every 500 metres (facilitated by the existing turn-around and round about)
   xiii. erosion control measures and long term maintenance arrangements in place
   xiv. access to public road network: (connects to both Mandurah Road and the internal carpark layout)
   xv. allow for two way traffic.

b) Implementation:
   i. Prior to the commencements of the first school term.

c) Development:
   i. It is the responsibility of the developer to ensure the fire services access routes meets the required standard.

d) Maintenance:
   i. It is the responsibility of the individual land owner to ensure the fire service access routes continue to meet the required standard.

Acceptable Solution 3 **Gates A2.8**

Where gates are used to restrict traffic on fire service access routes, emergency access routes or firebreaks they shall meet the requirements of Acceptable Solution A3.8.

a) Construction Standards (minimum):
   i. Width 3.6m;
   i. Design and construction to be approved by the Local Government;
   ii. Gates services emergency access ways must not be locked; and
   iii. If they are locked, only a common lock with a common key available to the local fire service must be used;

b) Implementation:
   i. When fire service access is to be restricted across the access route.

c) Development:
   i. It is the responsibility of the developer to ensure gates meet the required construction standards.

d) Maintenance:
   i. It is the responsibility of the individual land owner to ensure gates continue to meet the required construction standards.

Acceptable Solution 4 **Signage A2.10**

Signage is are to be erected where emergency access ways and fire services access routes adjoin public roads, including driveways that are used as fire service access routes. Signs are to meet the following requirements. Where gates are installed signage meeting the following requirements must be installed (A2.10).

a) Construction Standards (minimum):
   i. minimum height above ground: 0.9 metres;
   ii. design and construction: to be approved by relevant local government
   iii. lettering height: 100 millimetres
   iv. to display the following wording: 'Fire Service Access – No Public Access'

b) Implementation:
   i. When required in conjunction with a gate used to restrict traffic on the fire service access routes.

c) Development:
   i. It is the responsibility of the developer to ensure signs meet the required construction standards.

d) Maintenance:
   i. It is the responsibility of the individual land owner to ensure signs continue to meet the required construction standards.

Acceptable Solution 5 **Firebreak Widths**

Internal Firebreaks shall be a minimum of 3m in width with total vertical clearance. Firebreak locations shall be as detailed in the Landscaping and Revegetation Map (Executive

Summary). Additional limestone paths around retained vegetation to be provided to enable expedient suppression of fires within protected vegetation. (A2.9)

Internal private roads and driveways may also serve as firebreaks.

4.3 Element 3 – Water

Intent: To ensure that water is available to the development to enable life and property to be defended from bush fire.

Performance Criteria (P3): The development is provided with a permanent and secure water supply that is sufficient for firefighting purposes.

Acceptable Solution 6 **Reticulated Firefighting Water Supply**

Reticulated mains water, including the provision of firefighting pillar hydrants shall be provided to the site. Specific placement of pillar hydrants to support bushfire and structural firefighting purposes are to be negotiated with the Department of Fire and Emergency Services and City of Rockingham to ensure maximum benefit is achieved.

Street hydrants are located within the urban area of Secret Harbour, off Surf Road, approximately 1.3km south of the site, allowing for less than 20 minute turnaround time for a 2.4 fire appliance.

This demonstrates compliance with PfBPG Acceptable Solution A3.1 and Performance Criteria P3, identified as "The development is provided with a permanent and secure water supply that is sufficient for fire fighting purposes."

4.4 Element 4 – Siting of Development

Intent: To ensure that the siting of development minimises the level of bush fire impact.

Performance Criteria (P4): The siting (including paths and landscaping) of the development minimises the bush fire risk to life and property.

Acceptable Solution 7 **Hazard Separation - Moderate & Extreme Hazards**

Whilst separation of 100m from vegetation having a moderate or extreme hazard rating cannot be achieved, all future proposed building shall be constructed to BAL-29, demonstrating compliance with PfBPG Acceptable Solution A1.1 and A4.1. A comprehensive Bushfire Emergency Plan has been developed to ensure all occupants can safely find shelter in the realisation of a bushfire event that may impact the school. Should the school operate in a staged capacity prior to the development of new buildings identified as suitable shelters, the existing buildings to be used shall be upgraded to ensure compliance with AS3959.This demonstrates compliance with PfBPG Performance Criteria P1. The Bushfire Emergency Plan is provided as Appendix 3 to this report.

Performance Based Solution 2 **Building Protection Zone**

The Building Protection Zone is a low fuel area immediately surrounding a building and is designed to minimise the likelihood of flame contact with buildings. Features such as driveways, footpaths, roads, vegetable patches, lawn or landscaped garden (including deciduous trees and fire resistant plant species) may form part of building protection zones. Areas of vegetation deemed Low Threat Vegetation and managed in a reduced fuel state

inclusive of Public Open Space and nature strips may form part of a building's defendable space. Isolated shrubs and trees may be retained within building protection zones.

AS3959:2009 s2.2.3.2 (f) Low Threat Vegetation is subsequently used to define the standard required for vegetation within the building protection zone. This clause requires that the landscaped vegetation shall not contribute to the severity of a bushfire event. The landscaping achieves this as demonstrated in the modelling below.

The Building Protection Zone shall overlap between buildings, in conjunction with enhanced construction standards this eliminates the need for Hazard Separation Zones. The full Landscaping Plan (360 Environmental, 2015) in Appendix 4 details the low threat landscaping to be retained within the BPZ.

The modelling of ignition and burning individual groups of trees within the landscaped Building Protection Zone separate to the identified greater bushfire events were also assessed to determine the impact on structures and occupants. Calculation inputs: FDI 80, flat slope, flame width 5m, 2t/ha understory, 4t/ha total fuel load, Class A Forest). The radiant heat impact as shown in Figure 4A demonstrates that all buildings will be sufficiently constructed to withstand group tree ignition within the BPZ as well the radiant heat levels being below 5kW/m² at the entrances to buildings where occupants are queuing, 8m from the closest tree and sheltered behind subject building (reduction of configuration factor ignored to ensure conservative modelling). Modelling identifies flame length of less than 1.73m shall occur from the group tree ignition. All trees will be separated from the closest point of the nearest building by at least 4m to ensure flame impingement does not occur.

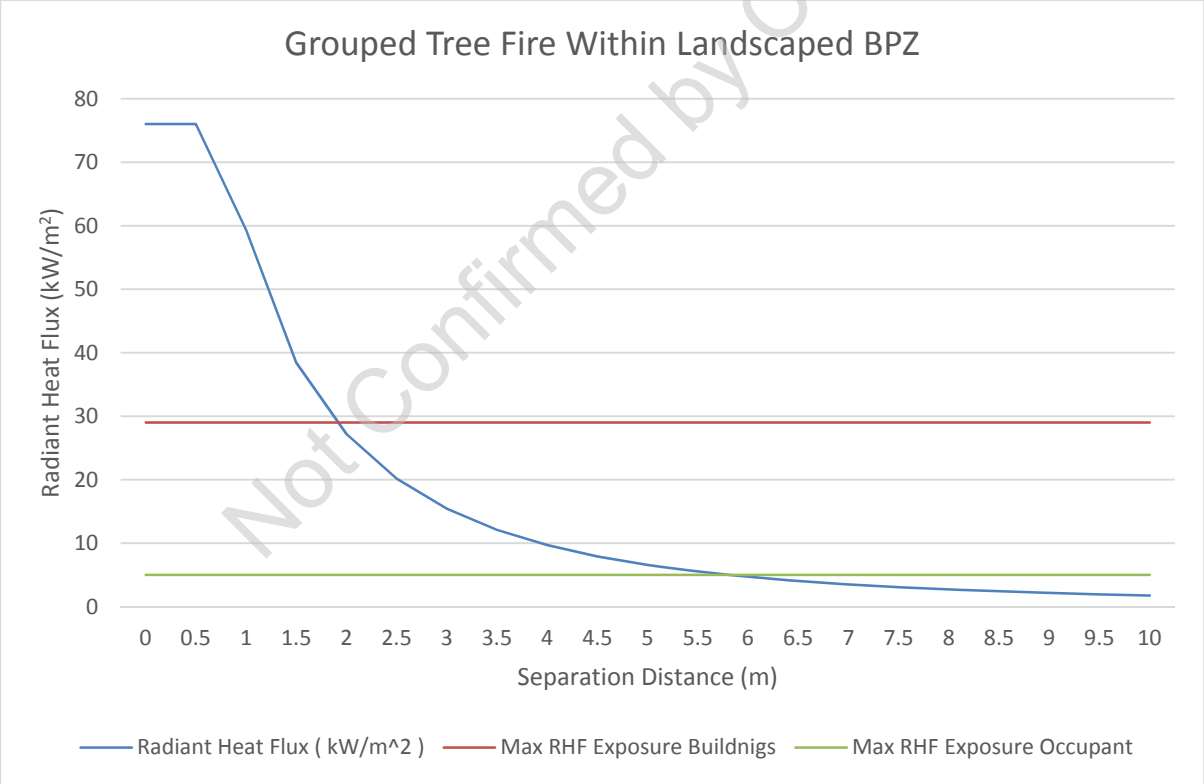

Figure 4A: Fire event within the BPZ

The width of the BPZ is enhanced to ensure a maximum BAL-29 rating applies to all new buildings. The performance based design solution exceeds the requirements of Acceptable Solution A4.4. It also disregards concessions provided by AS3959c3.5 Shielding, resulting in an enhanced level of safety.

a) Design Standard

i. width: up to 27 metres measured from any external wall of the building

ii. location: within the boundaries of the lot on which the building is situated

a. fuel load: reduced to and maintained at 2 tonnes per hectare and maintained in accordance with AS3959:2009 s2.2.3.2 (f) stated here as:

"Including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks. NOTE: Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100 mm)."

Note: priority species may be retained within the BPZ as part of an overall Low Threat landscaping design.

iii. trees are low pruned at least to a height of 2 metres

iv. no tall shrub or tree is located within 4 metres of a building (including windows)

v. there are no tree crowns overhanging the building

vi. fences and sheds within the building protection zone are constructed using non-combustible materials(e.g. colourbond iron, brick, limestone)

vii. shrubs in the building protection zone have no dead material within the plant

viii. tall shrubs in the building protection zone are not planted in clumps close to the building i.e. within 3 metres

ix. trees in the building protection zone have no dead material within the plant's crown or on the bole.

b) Implementation

Prior to use of future buildings.

c) Development

It is the responsibility of the developer to ensure the design standard is established.

d) Maintenance

It is the responsibility of the Rockingham Montessori School to ensure the design standard continues to be achieved at all times post completion of the development.

4.5 Element 5 – Design of Development

Intent: To ensure that the siting of development minimises the level of bush fire impact.

Performance Criteria (P4): The design of the development is appropriate to the level of bush fire hazard that applies to the development site. Notes to P5: One way for residential development to meet this performance criterion would be compliance with AS 3959.

Acceptable Solution 8 **Compliant Development**

The proposed development complies or exceeds the standards of A4.1,4.2,4.3 and 4.4 thereby complying with A5.1.

4.6 Works and Responsibilities

Table 4B summarises the responsible party for each mitigation strategy and the time frame in which it must be completed.

Strategy	Implementation		Maintenance	
	Responsible	Time Frame	Responsible	Time Frame
Amendments to FMP	Any amendments to this FMP shall be approved by the relevant Jurisdiction Having Authority.			
Building Protection Zones	Developer	Prior to completion of building construction, or use of existing buildings.	Rockingham Montessori School	Ongoing
Firebreaks	Developer	Prior to 30 November of each year	Rockingham Montessori School	Ongoing
Firefighting Water	Developer	Prior to use of buildings.	Rockingham Montessori School	Ongoing
Firefighting Services & Response	DFES and Local Government	Ongoing	DFES and Local Government	Ongoing
Fuel Load Reduction and Fire Break Notice	Local Government	Annually	Local Government	Annually
Inspection and Issue of Works Orders or Fines.	Local Government	Ongoing	Local Government	Ongoing
Private Driveways	Developer	Prior to use of buildings.	Rockingham Montessori School	Ongoing
Vehicle Access (Public Roads)	Developer	Prior to use of buildings	Local Government	Ongoing
Landscaping	Developer	Prior to use of buildings.	Rockingham Montessori School	Ongoing

Table 4B: Developer Schedule of Works

5.0 References

BOM (2014). *Climate Data Online, www.bom.gov.au Bureau of Meteorology*

City of Rockingham (4/7/14). *Town Planning Scheme 2*

City of Rockingham (27/05/14). *PDS-043/14 Proposed Amendment No.144 to Town Planning Scheme No.2 – Bushfire Prone Areas (Initiation)*

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6.0 Appendix 1 – Traffic Engineering Assessment

7.0 Appendix 2 – BAL Calculations

7.1 Introduction

Modelling of potential radiant heat flux impact on the site is completed using AS3959 Methodology 1 for Plots 1-8. Where the assumptions of AS3959 are inappropriate for determining the potential bushfire impact on the site, alternative modelling is provided with full justification. Alternative modelling is utilised for Plots 9 and 10. Plots are illustrated in Figure 7A (numbers represent plot locations).

The methodology adopted for the analysis detailed in this report is derived from the International Fire Engineering Guidelines (1) and modified to the bushfire context and project.

7.2 Deviations from Deemed to Satisfy Requirements

Potential bushfire behaviour within plots 9 and 10 are not consistent with the assumptions utilised in AS3959 listed here as:

(i) The physical dimensions of the plots does not facilitate a continuous bushfire front of landscape scale extending from other areas of classified vegetation;
(ii) The density of fuel load per hectare per unit area is significantly reduced by the physical fuel load available compared to that detailed in AS3959 Table B2; and

The separation from other larger areas of vegetation will not facilitate the continuation of a united fire front, but rather the ignition of a new bushfire event within the identified plots. Standard inputs from AS3959 Table 2.4.1 unless otherwise stated.

7.3 Factors of Safety

The following factors of safety are included in the alternate modelling:

1. The proposed dwelling is assumed to be a black box receiver that does not reflect any of the radiant heat flux received. In reality the building is a grey surface that will reflect some of the received radiation;
2. The calculations assume no fire brigade or resident intervention whilst the fire is developing;
3. AS3959 assigns an FDI of 80 for Western Australia. An FDI of 100 is used for all calculations in this report. This safety factor is compounded through subsequent calculation phases. CSIRO CAWCR Technical Report No. 10 (3) identifies that an FDI above 60 is not achieved for the study area except for the 99th percentile of historical weather data;
4. Despite literature (4-7) identifying fire development in treed fuels may take between 200-300m of fire run and the unrestricted head fire width development to 100m, any fire with a single run of 100m or more is calculated using the quasi-steady Rate of Spread (RoS); and
5. Radiant heat flux shielding in accordance with AS3959:2009 c3.5 is ignored.

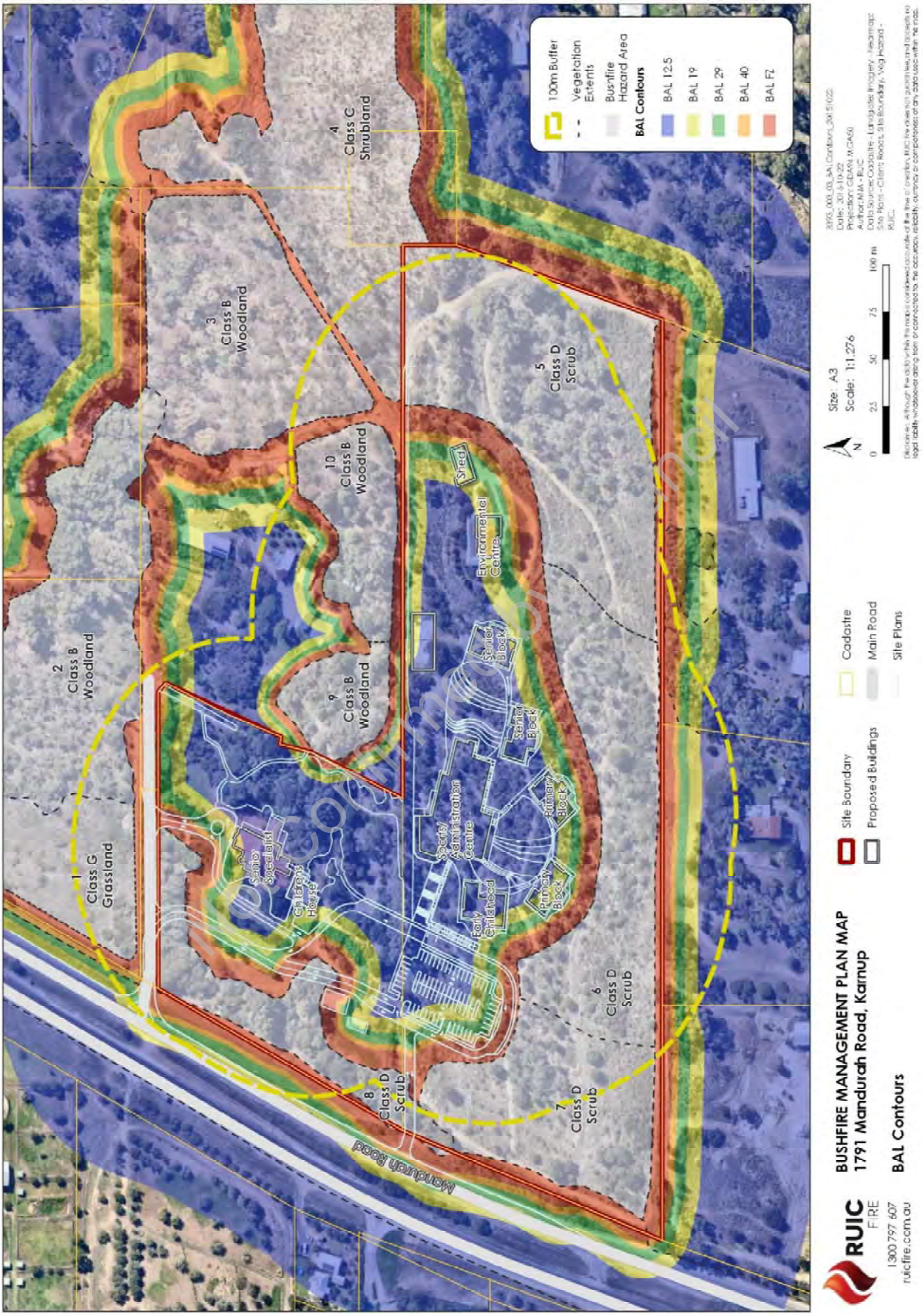

Figure 7A: BAL Contours and Plot Locations

7.4 BAL Ratings

7.4.1 Plots 1-8

AS3959 Methodology 1 is used for the calculation of radiant heat flux for Plots 1-8. Results are detailed in Table 7A.

Table 7A: BAL Ratings and Setbacks Plots 1-8

PLOT	Vegetation Classification	Effective Slope	BAL Ratings and Setbacks (m)					
			FZ	40	29	19	12.5	LOW
1	CLASS G GRASSLAND	FLAT	<6	6-<9	9-<13	13-<19	19-<50	>50
2	CLASS B WOODLAND	FLAT	<12	12-<16	16-<24	24-<33	33-<100	>100
3	CLASS B WOODLAND	>0-5	<15	15-<21	21-<29	29-<41	41-<100	>100
4	CLASS C SHRUBLAND	>15-20	<10	10-<15	15-<22	22-<31	31-<100	>100
5	CLASS D SCRUB	>10-15	<14	14-<19	19-<28	28-<39	39-<100	>100
6	CLASS D SCRUB	FLAT	<10	10-<13	13-<19	19-<27	27-<100	>100
7	CLASS D SCRUB	>0-5	<11	11-<15	15-<22	22-<31	31-<100	>100
8	CLASS D SCRUB	FLAT	<10	10-<13	13-<19	19-<27	27-<100	>100

7.4.2 Plots 9-10

7.4.2.1 Modelling Parameters

- Homogenous Class B Woodland fuel structure
- Point ignition;
- Restricted fire run less than 100m;
- Restricted head width development to 70m (restricted to 50m by fire run potential);
- AS3959 McArthur fire model;
- No firefighting intervention.

7.4.2.2 Fuel Load

Class B understory fuel load assigned from AS3959 Table B2 as 15t/ha; total fuel load of 25t/ha in accordance with AS3959 Table B2. Fuel structure is restricted by land area surrounding the available fire run path, resulting in a reduced fuel load density per 1ha unit area.

Plot 9

Fuel structure available for consumption in fire by land area is 36% of 1ha fuel area used for AS3959 Table B2. Calculated fuel load available for consumption is therefore 5.47t/ha understory; 9.12t/ha total fuel load.

Plot 10

Fuel structure available for consumption in fire by land area is 46% of 1ha fuel area used for AS3959 Table B2. Calculated fuel load available for consumption is therefore 6.95t/ha understory; 11.59t/ha total fuel load.

7.4.2.3 Rate of Spread

Rate of spread (RoS) for the accelerating point ignition fires shall be calculated using the standing eucalypt forest equation (Cheney & Bary, 1969 as cited in (1)):

$$RoS = 70.13e^{-2.1645/t} \quad [1]$$

Where:

RoS = head fire rate of spread at time t (requires conversion from feet to meters)

t = the time elapsed since ignition in minutes

Distance of head fire forward spread calculated using a summation of RoS using minute time steps until the maximum potential fire run is achieved. RoS converted to kph for input into McArthur model. The proportion of equilibrium RoS as a function of fire spread post ignition was calculated and is illustrated in Figure 7B.

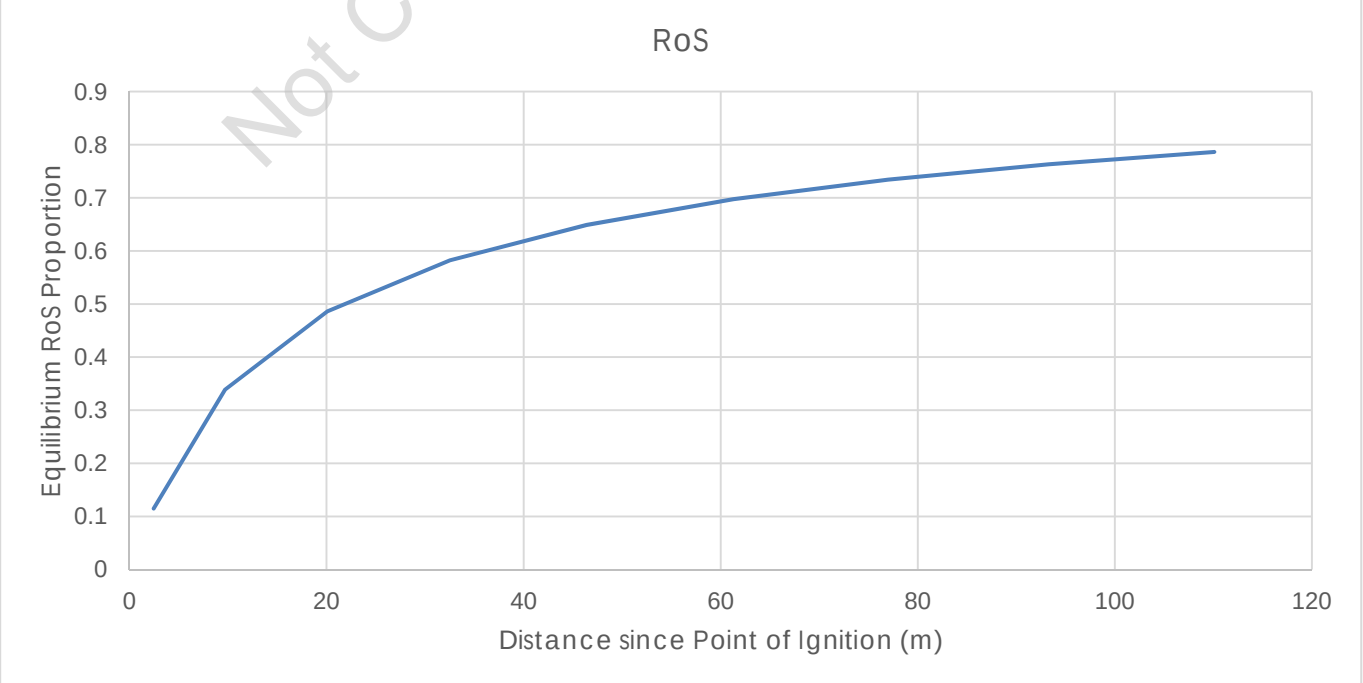

Figure 7B: Calculated RoS achieved at maximum fire run.

Plot 9

Fire development in vegetation of restricted width does not achieve the quasi-steady state of wildland fires (1-4). The restricted available fire run is considerably less than the fire run required to develop the 100m head width required to attain a quasi-steady bushfire rate of spread. The available fire run equates to a Equilibrium RoS factor of 0.7. Equilibrium RoS using an FDI of 100 in Class B Woodland structure with an effective 1° downslope, 1° site slope and identified fuel loads is 0.70kph, therefore potential RoS is calculated at 0.49kph.

Plot 10

The available fire run equates to a Equilibrium RoS factor of 0.75. Equilibrium RoS using an FDI of 100 in Class B Woodland structure with an effective 4° downslope, 4° site slope and identified fuel loads is 1.1kph, therefore potential RoS is calculated at 0.825kph.

7.4.2.4 Modelling Outputs

BAL ratings as a function of separation distance for Plots 9 and 10 are illustrated in Table 7B.

Table 7B: BAL Ratings and Setbacks Plots 9-10

PLOT	Vegetation Classification	BAL Ratings and Setbacks (m)					
		FZ	40	29	19	12.5	LOW
9	CLASS B WOODLAND	<4	4-<5	5-<7.5	7.5-<12	12-<100	>100
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1. MCALPINE, R. 1988. Acceleration of point source fire to equilibrium spread Thesis Master of Science, University of Montana.
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8.0 Appendix 3 – Bushfire Emergency Plan

9.0 Appendix 4 – Landscaping Plan

To:	Nathan Stewart, Greg Penney
From:	Tony Shaw
Date:	22/10/15
Subject:	Rockingham Montessori School Site

We have reviewed the internal road layout shown on the master plan for the Rockingham Montessori School as shown on eiw drawing number SK01 dated the 21st October 2015 and are satisfied that the internal layout, design and construction of the public and private vehicular accesses within the site will allow emergency and other vehicles to move through easily and safely.

Additionally, the alternate emergency service access at the common centre boundary of the site will assist in ensuring internal permeability and will contribute to achieving the performance requirement.

T Shaw

7.0 Appendix 2 – BAL Calculations

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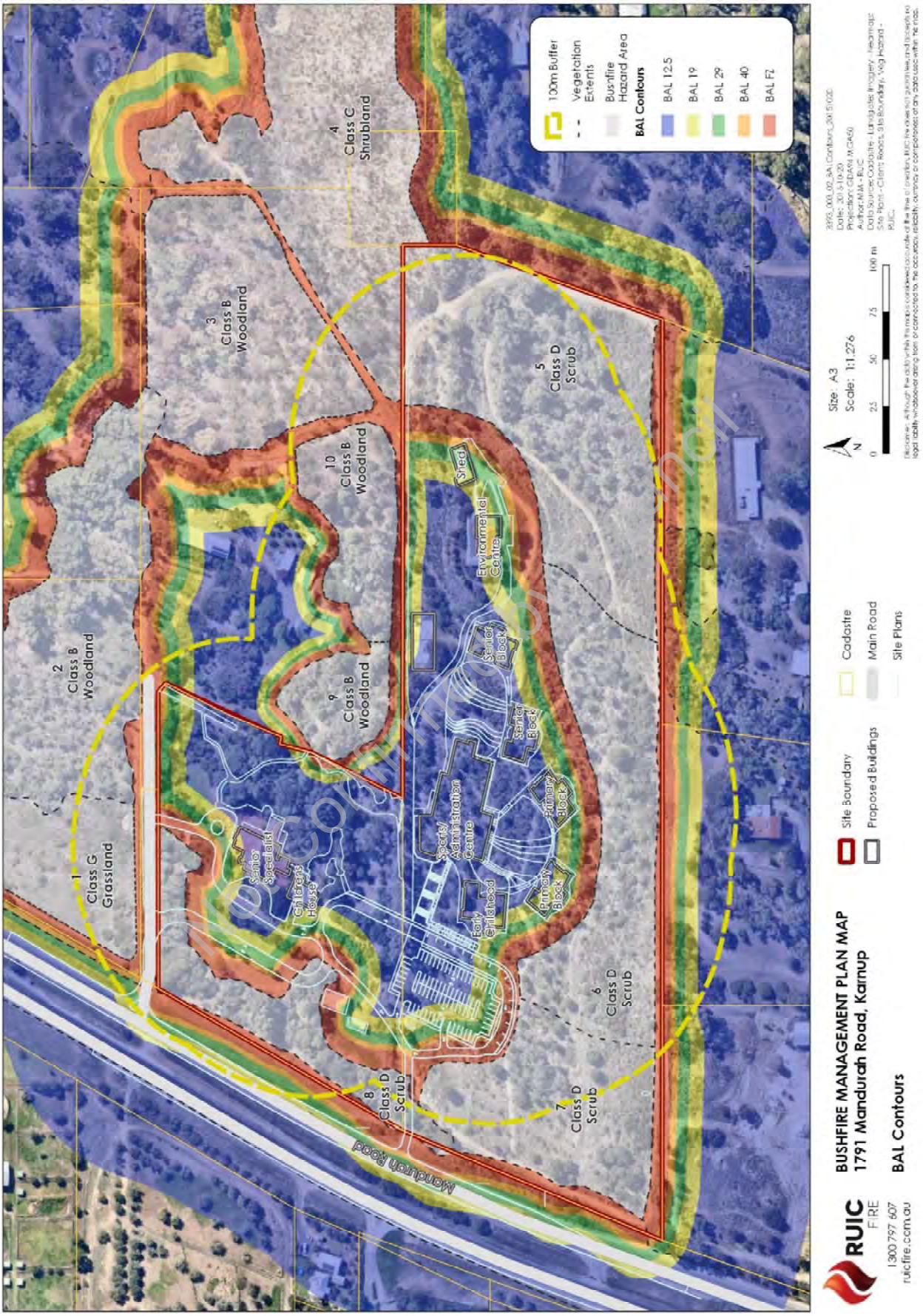

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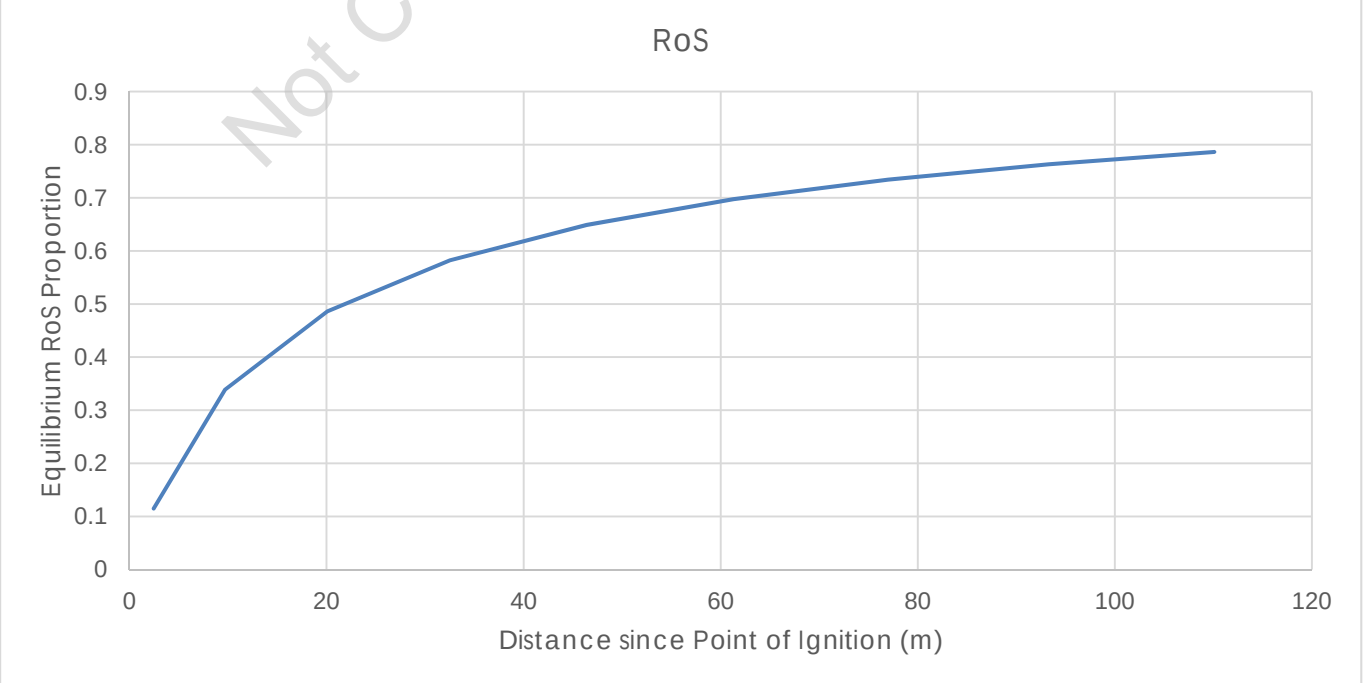

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APPENDIX 3

T: *1300 797 607* **E:** *admin@ruic.net.au*

BUSHFIRE EMERGENCY PLAN

Site: Rockingham Montessori School

Version: 1.3

RUIC Job: 3393

RUIC FIRE

Bushfire Emergency Plan

RUIC Fire is a trading name of
Rural Fire Risk Consultancy Pty Ltd
ABN: 48 151 451 713

Disclaimer and Limitation

The mitigation strategies contained in this report are considered to be prudent minimum standards only, based on standards prescribed by relevant authorities. It is expressly stated that RUIC Fire and the writer do not guarantee that if such standards are complied with or if a property owner exercises prudence, that a building or property will not be damaged, occupants will not be injured or that lives will not be lost in a bush fire.

Fire is an extremely unpredictable force of nature. Changing climatic factors (whether predictable or otherwise) either before or at the time of a fire can also significantly affect the nature of a fire and in a bushfire prone area it is not possible to completely guard against bushfire.

Further, the growth, planting or removal of vegetation; poor maintenance of any fire prevention measures; addition of structures not included in this report; or other activity can and will change the bushfire threat to all properties detailed in the report. Further, the achievement of the level of implementation of fire precautions will depend on the actions of the landowner or occupiers of the land, over which RUIC Fire has no control. If the proponent becomes concerned about changing factors then a new report and analysis should be requested.

To the maximum extent permitted by the law, RUIC Fire, its employees, officers, agents and the writer ("RUIC Fire") excludes all liability whatsoever for:

1. claim, damage, loss or injury to any property and any person caused by fire or as a result of fire or indeed howsoever caused;
2. errors or omissions in this report except where grossly negligent; and

the proponent expressly acknowledges that they have been made aware of this exclusion and that such exclusion of liability is reasonable in all the circumstances.

If despite the provisions of the above disclaimer RUIC Fire is found liable then RUIC limits its liability to the lesser of the maximum extent permitted by the law and the proceeds paid out by RUIC Fire's professional or public liability insurance following the making of a successful claim against such insurer.

RUIC Fire accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report and its supporting material by any third party.

Document Details

ITEM	DETAIL
Project Number	3393
Project Name	Rockingham Montessori School
Version	1.3
Date of Issue	20th August 2015

_____

Final Approval

Date: 5/7/2015

Executive Summary

RUIC Fire was engaged by Montessori School Ltd to prepare the Fire Management Plan to support the proposed Rockingham Montessori School on Lots 11 & 700 Mandurah Road, Karnup. This Bushfire Emergency Plan is designed to address the additional requirements of the City of Rockingham in considering the proposed development.

This plan is to be viewed as an addendum to the Fire Management Plan which addresses the bushfire related planning requirements of Planning for Bushfire Protection Guidelines 2nd Edition. It has been produced on instruction from the City of Rockingham that a "Shelter In Place" strategy is preferred.

Design bushfire events as agreed by the City of Rockingham were analysed for potential impact on the proposed school and the staff, children and visitors (the occupants). This analysis was used to determine the Available safe evacuation time (ASET).

Required safe evacuation times (RSET) for each occupancy group were modelled in accordance with accepted practices of the International Fire Engineering Guidelines (IFEG), The SFPE Handbook of Fire Safety Engineering (SPFE Handbook) and published academia.

A precautionary approach is adopted in all modelling undertaken in this report. The safety factors incorporated into the analysis are detailed in Section 4 of this report but are summarised here as:

(i) This Bushfire Emergency Plan shall be implemented at any visual or olfactory report of smoke by students or teachers, with normal proceedings (being the recommencement of normal school operations) only commencing on written approval by the school Principal.

(ii) All design bushfire events are modelled on days having a Fire Danger Index (FDI) of 80 (equivalent to a Severe Bushfire Danger Rating), students being present and required winds occurring, despite:

  a) CSIRO CAWCR Technical Report No. 10 identifying that this FDI is not achieved in even the 99th percentile of historical weather data for the greater location;

  b) Students and teachers being absent from the 4th December to the 2nd February each year (being 2 of the 3 months of highest bushfire danger). Of the remaining month, students will be present only 20 of the possible 28 days; and

  c) Analysis of weather data identifies that the required winds to support fire impact on the school occur on less than 30% of recorded days.

(iii) The performance requirement adopted in this report is an acceptable radiant heat impact of 5kW/m^2 , being 17% of the maximum permissible impact identified in Planning for Bushfire Protection Guidelines is 29kW/m^2 and 50% of the maximum impact identified in Planning for Bushfire Protection New South Wales (2006); and

(iv) Student movement speeds are based on the 15th percentile for each age group, with the slowest movement identified for boys and girls applied.

Conclusions of this report are:

(i) The minimum ASET is 346 seconds for a bushfire originating south of the site. The maximum RSET is 335 seconds for occupants sheltering in Classrooms. Occupants from

the Playgroup will complete relocation in a maximum of 435 seconds but will not be exposed to radiant heat flux greater than 2kW/m^2 at any time. This is well below the safe levels identified for human exposure.

(ii) No occupant will be exposed to radiant heat flux greater than 5kW/m^2 at any time.

(iii) The ASET far exceeded the RSET for all other fire scenarios, demonstrating all occupants shall be safely sheltered prior to the arrival of damaging effects of a fire event.

(iv) The maximum radiant heat flux impact from fire scenarios did not exceed 29kW/m2 , demonstrating the BAL-29 construction rating applicable to all buildings is sufficient.

(v) The maximum radiant heat flux impact from group tree fires within the Building Protection Zone did not exceed 10kW/m2, demonstrating the BAL-29 construction rating applicable to the buildings is sufficient.

(vi) The separation of retained trees within the landscaped Building Protection Zone is shown to prevent flame impingement on buildings.

Essential Safety Practices to be implemented are:

(i) The school shall adopt a formal policy to close for any school day where a Fire Danger Rating of Severe or higher is forecast for the Perth Metropolitan area;

(ii) The school shall implement a communication system to ensure all parents are advised of the closure of the school elevated bushfire danger periods;

(iii) This BEP is to be directly enforced through a formal school policy endorsed by the Rockingham Montessori School Board.

(iv) This plan is to be rehearsed by the entire school once every four weeks during the school year when the school operates during Summer.

(v) This plan is to be rehearsed and updated after each stage of completion.

(vi) The school principal is personally responsible for the completion, review and updating of this BEP.

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1.0 Introduction

1.1 Scope

The proponent engaged Rural Fire Risk Consultancy Pty Ltd (RUIC Fire) to prepare a site specific Bushfire Emegency Plan (BEP) to support the proposed Montessori 'Educational Establishment' (the School).

1.2 Objectives

The objectives of the BEP are to:

i. Provide a comprehensive plan, incorporating a high factor of safety, to preserve the life of all occupants in the realisation of an agreed design bushfire event.

1.3 Document Review

The Principle is responsible for ensuring the currency of this Bushfire Emergency Plan.

1.4 Performance Requirement

The required standard to be achieved is:

i. for all students to be sheltered in a building compliant with AS3959 Construction of buildings in bushfire prone areas without being exposed to radiant heat greater than 5kW/m^2 (this is sourced from the RAR report where CoR identified vulnerable land use limits as recommended as 10kW/m^2; as a safety factor 50% of this limit was selected for this report); and

ii. for all students to remain protected from the effects of bushfire for the full duration of a bushfire event.

The school and individual buildings within the school has been specifically designed to withstand bushfire events twice the potential magnitude of the 99th percentile of historical bushfire weather records for the area. For this reason occupants shall be sheltered at the school until safe and managed transport off site can be facilitated.

It is noted that transport of occupants off the school grounds shall be coordinated in conjunction with the West Australian Police Service and Department of Fire and Emergency Services post the passage of the bushfire front.

2.0 Bushfire Emergency Plan

2.1 Overarching Principle

The school has adopted a "Shelter in Place" principle for ensuring the highest level of safety for all occupants from the threat of bushfire. All new buildings used for administration, sporting or teaching purposes shall be constructed to exceed the requirements of AS3959 Construction of buildings in bushfire prone areas.

Staff, children and other occupants of the school are required to shelter in their normal buildings with the exception of the Senior Specialist, Children's House and Environmental Centre. Occupants of these buildings are required to safety relocate as detailed in this Bushfire Emergency Plan.

2.2 Essential Safety Measures

The following safety measures must be complied with to ensure the maximum level of safety for all occupants is achieved during a bushfire event.

i. The school shall adopt a formal policy to close for any school day where a Fire Danger Rating of Severe or higher is forecast for the Perth Metropolitan area;

ii. The school shall implement a communication system to ensure all parents are advised of the closure of the school elevated bushfire danger periods;

iii. This Bushfire Emergency Plan (BEP) is to be directly enforced through a formal school policy endorsed by the Rockingham Montessori School Board.

iv. This plan is to be rehearsed by the entire school once every four weeks during the school year when the school operates during the Summer.

v. This plan is to be rehearsed and updated after each stage of completion.

vi. The school principal is personally responsible for the completion, review and updating of this BEP.

vii. All buildings are to be inspected annually to ensure continued compliance with AS3959, any maintenance issues that affect the bushfire resilience of the structure shall be rectified as a priority.

2.3 Principal's Responsibilities

The Principal is directly responsible for the implementation and execution of the Bushfire Emergency Plan and associated procedures.

i. To ensure all Essential Safety Measures are completed as detailed.

ii. To ensure a duty officer is appointed for each school day and that person is aware of their responsibilities.

iii. To ensure the forecast Fire Danger Rating is known by the school – this may be satisfied by ensuring staff members check the Department of Fire and Emergency Services Fire Danger Rating each day.

iv. To ensure all parents are informed of the Bushfire Emergency Plan, inclusive of the school closure on days forecast to have a Fire Danger Rating of Severe or Catastrophic.

v. To ensure all directions provided by the Department of Fire and Emergency Services and Western Australian Police Service are adhered to at all times.

vi. To immediately contact the Department of Fire and Emergency Services and Western Australian Police Service in the event of a missing occupant.

vii. To provide the "All Clear" message to the school once the bushfire threat has passed once confirmation has been received from the relevant Incident Controller.

viii. To ensure the entire school grounds are checked after a bushfire event within the school grounds to identify any areas of hot ground. School shall not recommence until all such areas are deemed safe.

2.4 Duty Officer Responsibilities

i. To ensure communication is maintained between the Principal and all other staff members.

ii. To record all radio communications including time and message.

iii. To record all movements of occupants throughout the school during a bushfire event.

2.5 Communication

ix. The school shall provide a two-way radio communications system between all staff and the Principal's duty officer.

x. During summer months the each teacher shall keep the communications radio in their presence at all times. During other periods the radios may be stored in the teacher's classroom.

xi. Coordination of movements shall be coordinated and confirmed by the Principal's duty officer.

xii. Teachers in each classroom shall be responsible for the movement of children during the activation of the Bushfire Emergency Plan.

xiii. Teachers are responsible for the confirmation of student presence following initiation of the BEP.

2.6 Initiation

i. The BEP shall be initiated at the first report of bushfire smoke visible from the school. During summer months this may be enhanced to include reported smells of bushfire smoke at the discretion of the Principal.

ii. The BEP should also be initiated on the receipt of a Bushfire Alert or Advice for the area from DFES or the CoR.

iii. On report of smoke the duty staff member shall visually confirm the presence of smoke in the greater area.

iv. On confirmation of the presence of smoke the duty staff member shall activate the school siren using the agreed bushfire alert signal.

2.7 Teacher Responsibilities

2.7.1 If located in designated shelters

i. Teachers must ensure all students are accounted and immediately report any missing persons as an emergency message.

ii. Teachers must ensure all students remain in the designated shelter until the "All Clear" is provided by the Principal.

iii. Teachers are to respond to all communications messages appropriately and encourage other occupants to remain calm.

iv. Turn off air conditioners.

v. Ensure all doors and windows are closed.

vi. In the event of building fire initiate orderly evacuation to Sports/Administration Building, ensuring message is communicated to duty staff member.

vii. Post passage of the bushfire front, ensure all children remain in the designated shelter building until the all clear is provided by the Principal.

2.7.2 Senior Specialist Building

i. Teachers must ensure all students are accounted and immediately report any missing persons as an emergency message.

ii. Facilitate orderly and controlled safe relocation of students to the Sports/Administration Building.

iii. Should the Senior Specialist Building be upgraded to comply with AS3959, no relocation is necessary.

iv. Post passage of the bushfire front, ensure all children remain in the designated shelter building until the all clear is provided by the Principal.

2.7.3 Environmental Centre

i. Teachers must ensure all students are accounted and immediately report any missing persons as an emergency message.

ii. Facilitate orderly and controlled safe relocation of students to the Sports/Administration Building.

iii. Post passage of the bushfire front, ensure all children remain in the designated shelter building until the all clear is provided by the Principal.

2.7.4 Playgroup / Children's House

i. Chief Fire Warden don tabard and assume command and responsibility for communication with the duty staff member.

ii. Children shall be relocated by their parents under the control of the Chief Fire Warden using the shortest route to the Administration & Sports Hall.

iii. Should the Playgroup be upgraded to comply with AS3959, no relocation is necessary.

iv. Post passage of the bushfire front, ensure all children remain in the designated shelter building until the all clear is provided by the Principal.

2.8 Student Responsibilities

i. To safely comply with all directions provided by staff members.

2.9 Staging Considerations

i. Should the school operate in a staged capacity prior to the development of new buildings identified as suitable shelters, the existing buildings to be used shall be upgraded to ensure compliance with AS3959.

3.0 Analysis

3.1 Building Characteristics

The following building characteristics are identified:

i. The Senior Specialist Block is an existing building and is not constructed to AS3959 and shall not be used as a shelter*;
ii. The Playgroup is an existing building and is not constructed to AS3959 and shall not be used as a shelter*;
iii. The Sheds are existing buildings and are not constructed to AS3959 and shall not be used as shelters;
iv. All proposed Classroom Blocks shall be constructed to AS3959, have double outwardly opening doors (1.8m total width) for each learning space and have attached toilet facilities;
v. The proposed Administration/Sports Centre shall be constructed to AS3959, has numerous double outwardly opening doors (1.8m total width) and has internal toilet facilities; and
vi. The Environment Centre is an existing building and is not constructed to AS3959 and shall not be used as a shelter. It has numerous double outwardly opening doors (1.8m total width) and has internal toilet facilities.

** Should the school operate in a staged capacity prior to the development of new buildings identified as suitable shelters, the existing buildings to be used shall be upgraded to ensure compliance with AS3959.*

3.2 Occupant Characteristics

The following occupant characteristics are identified:

3.2.1 Numbers of students:

Table 3A: Occupant Numbers by Category

Category	Total Students* (Future Maximum) across all spaces	Students per Learning Space	Occupants per Learning Space Including Teachers
Playgroup	72	24	26
Lower Primary Classes	72	24	25
Upper Primary Classes	72	24	25
Adolescent Programme (Middle)	150	50	51
Adolescent Program (Upper)	150	50	51
Totals	516	516	534

**Note: Actual student numbers will be reduced by one learning space due to the removal of a classroom from the northern lot. The Bushfire Emergency Plan is utilises the original student numbers to incorporate an additional safety margin.*

Table 3B: Occupant Numbers by Classroom

Occupant Group	Occupants per Learning Space Including Teachers
Playgroup	72
Lower Primary A	25
Lower Primary B	25
Lower Primary C	25
Upper Primary A	25
Upper Primary B	25
Upper Primary C	25
Adolescent Middle A	51
Adolescent Middle B	51
Adolescent Middle C	51
Adolescent Upper A	51
Adolescent Upper B	51
Adolescent Upper C	51
Totals	534

3.2.2 Movement characteristics:

The following movement characteristics are used for free flow movement of students[1]. Use of the 15th percentile ensures those students whom are mobility impaired (on crutches, wheelchairs etc) are suitably taken into account. Occupants of the Playgroup will be evacuated by their parents. As movement shall occur within 60 seconds of visual smoke confirmation, visibility and tenability shall not restrict movements during bushfire emergency procedures.

Occupant groups shall walk to their designated shelter point. Where occupants are initially located in the Environmental Centre they shall walk to the Administration/Sports Centre.

Travel distances are taken from the furthest point for each play space, Senior Specialist Area, Playgroup and Environmental Centre to the relevant shelters (Figure 1B). Occupant movements calculated in accordance with IFEG Chapter 13 Section 3.

3.2.2.1 Flow out of initial buildings

The Playgroup, Senior Specialist and Environmental Centre buildings are to be evacuated so that occupants can move to buildings constructed to AS3959. Should the Senior Specialist Building and Playgroup be upgraded to comply with AS3959, they will become a shelter and therefore not required to be evacuated. This will only further reduce the RSET.

Senior Specialist Building & Environmental Centre

A total of 55 occupants are allocated to the Senior Specialist Building and Environmental Centre at any time (students plus teachers and resident staff). Worst case scenario is identified as all students having to exit through a single set of external double doors. Travel time within the building is deemed to be less than queuing time at the doors.

$$F_c = SDW_e \qquad [1]$$

Where:
F_c is calculated flow (m/s)
S is walking speed (calculated using [2])
D is density[2] (taken at 1 persons/m^2)
W_e is effective width of doorways (taken as door width – 0.3m) i.e. 1.5m

$$S = k - akD \qquad [2]$$

Where:
k is 1.45 (taken as the slowest 15% percentile for males and females of all ages 14 to 17 years)
a is 0.266 (constant IFEG Table 3-13.2)

$$\therefore S = 1.45 - (0.266 \times 1.45 \times 1)$$

$$\therefore S = 1.06$$

$$F_c = (0.68 \times 1.06 \times 1.5)$$
$$\therefore F_c = 1.08 m/s$$

Queuing time calculated as:

$$t_q = \frac{N}{F_c}$$

Where:

[1] VAUGHAN, R. & BAIN, J. 2001. Speeds and accelerations of school children. Road & Transport Research, 10.

[2] Note density increases as occupants move through doors and confined spaces and decreases as occupants move across open areas.

t_q is queuing time per door (seconds)
N is number of occupants

$$t_q = \frac{55}{1.08}$$

$$t_q = 50.9\ seconds$$

Playgroup

A total of 72 occupants are allocated to the Playgroup at any time (children plus teachers and resident staff). Worst case scenario is identified as all students having to exit through a single set of external double doors. Travel time within the building is deemed to be less than queuing time at the doors.

$$F_c = SDW_e \qquad [1]$$

Where:
F_c is calculated flow (m/s)
S is walking speed (calculated using [2])
D is density (taken at 3 persons/m^2 due to the use of trolleys)
W_e is effective width of doorways (taken as door width – 0.3m) i.e. 1.5m

$$S = k - akD \qquad [2]$$

Where:
k is 1.33 (taken as the slowest 15% percentile for males and females of all ages 5 years)
a is 0.266 (constant IFEG Table 3-13.2)

$$\therefore S = 1.33 - (0.266 \times 1.33 \times 3)$$

$$\therefore S = 0.27$$

$$F_c = (0.27 \times 3 \times 1.5)$$
$$\therefore F_c = 1.21 m/s$$

Queuing time calculated as:

$$t_q = \frac{N}{F_c}$$

Where:
t_q is queuing time per door (seconds)
N is number of occupants

$$t_q = \frac{72}{1.21}$$

$$t_q = 59.5\ seconds$$

3.2.2.2 Travel time

Travel time is calculated for each occupant group from the furthest point of the origin area to the far door of the learning space (Figure 3A). Each group will enter the shelters via separate access points and therefore have different destinations. The worst case scenario for each occupant group is utilised for calculation purposes.

Figure 3A: Occupant Relocation Distances

$$t_m = \frac{d}{S}$$

t_m is movement time (seconds)
d is distance (m)
S is speed (m/s) (1.45 for senior students, 1.33 for all other occupant groups)

Table 3C: Movement times by Occupant Group

Occupant Group	Distance to shelter (m)	t_m (sec)
Children's House	77	57.9
Lower Primary	55	41.4
Upper Primary	55	41.4
Adolescent Middle	48.4	36.4
Adolescent Upper	48.4	36.4
Senior Specialist	99	68.3
Environmental Centre	187	129

3.2.2.3 Flow into shelters

$$F_c = SDW_e \qquad [1]$$

Where:
F_c is calculated flow (m/s)
S is walking speed (calculated using [2])
D is density (taken at 3 persons/m^2 for open areas, 0.5 persons/m^2 for doorways)
W_e is effective width of doorways (taken as door width – 0.3m) i.e. 1.5m

$$S = k - akD \qquad [2]$$

Where:
k is 1.33 (taken as the slowest 15% percentile for males and females of all ages 5 to 17 years)
a is 0.266 (constant IFEG Table 3-13.2)

$$S = 1.33 - (0.266 \times 1.33 \times 3)$$

$$\therefore S = 0.27$$

$$F_c = 0.27 \times 0.5 \times 1.5$$
$$\therefore F_c = 0.2 people/sec$$

Queuing time calculated as:

$$t_q = \frac{N}{F_c}$$

Where:
t_q is queuing time per door (seconds)
N is number of occupants (being 75 for occupants of the Playgroup, 55 occupants for all other occupant groups)

$$t_q = \frac{75}{0.2}$$

$$t_q = 375 \ seconds$$

$$t_q = \frac{55}{0.2}$$

$$t_q = 275 \ seconds$$

3.3 Required Safe Evacuation Time

RSET is calculated as:

$$t_e = t_{pm} + t_m$$

Where:

t_e is total evacuation time (seconds), calculated from the commencement of the bushfire event until the last occupant of that group enters the refuge shelter.

t_{pm} is total pre-movement time (agreed with CoR as 60 seconds)

t_m is total movement time, calculated from the first occupant movement until the last occupant of that group enters the refuge shelter.

Table 3D: Occupant Group Movement Components

Occupant Group	t_q Exit (sec)	t_m (sec)	t_q Shelter (sec)
Playgroup	59.5	57.9	375
Lower Primary	n/a	41.4	275
Upper Primary	n/a	41.4	275
Adolescent Middle	n/a	36.4	275
Adolescent Upper	n/a	36.4	275
Senior Specialist	50.9	68.3	275
Environmental Centre	50.9	129	275

The Shelter t_q is identified as greater than both the exit t_q and the t_m. This means that the queue at the shelter entry will still be present by the time the last occupant from that group arrives. The queue forms the moment the second occupant of that group arrives at the entry door.

For the Playgroup

$$\therefore t_e = 60 + 375$$

$$\therefore t_e = 435$$

Total RSET for the occupants of the Playgroup is therefore 435 seconds from the commencement of the design bushfires. Occupants from the Playgroup shall shelter in the Sports/Administration Building. Should the Playgroup be upgraded to comply with AS3959, they will become a shelter and therefore not required to be evacuated.

For Other Occupant groups

$$\therefore t_e = 60 + 275$$

$$\therefore t_e = 335$$

Total RSET for all other occupant groups is therefore 335 seconds from the commencement of the design bushfires. Should the Senior Specialist Building be upgraded to comply with AS3959, they will become a shelter and therefore not required to be evacuated.

3.4 Agreed Design Bushfires

3.4.1 Bushfire Events

The following design bushfires (Figure 3B) were selected for assessing the trial designs.

Figure 3B: Design bushfires

3.4.1.1 Excluded Fire Events

i. Fire Event A – (**Excluded)** Scrub fire event that will not impact the site due to the separation distance of more than 600m. Fire behaviour through the scrub structure will be insufficient to result in a continued fire event across both Stakehill Road and Greenham Place.

ii. Fire Event B – (**Excluded)** Scrub fire event that will not impact the site due to the separation distance of more than 700m.

iii. Fire Event C – **(Excluded)** Forest fire event that will not impact the site due to the separation distance of more than 500m.

iv. Fire Event E – **(Excluded)** will not impact the site due to the separation distance of more than 500m.

v. Fire Event F – **(Excluded)** will not impact the site due to separation distance of more than 250m.

The excluded design bushfires are identified as having less of an impact and resulting in a far greater Available Safe Evacuation Time (ASET) than those included. Bushfire emergency procedures will still be initiated should one of the design bushfires excluded from analysis occur. As a result, correct assessment of the included design bushfires will ensure achievement of the performance requirements against the excluded design bushfires.

3.4.1.2 Included Fire Events

i. Fire Event D – **(Included)** Scrub fire event that may impact the site through vegetation north of Olive Hill Close. Design fire parameters of FDI 80, single point ignition 200m south of the school site. Evacuation procedures commenced as soon as smoke is visible (pre-movement time of 60 seconds, quasi-steady RoS established after 90 seconds – 50% RoS during development).

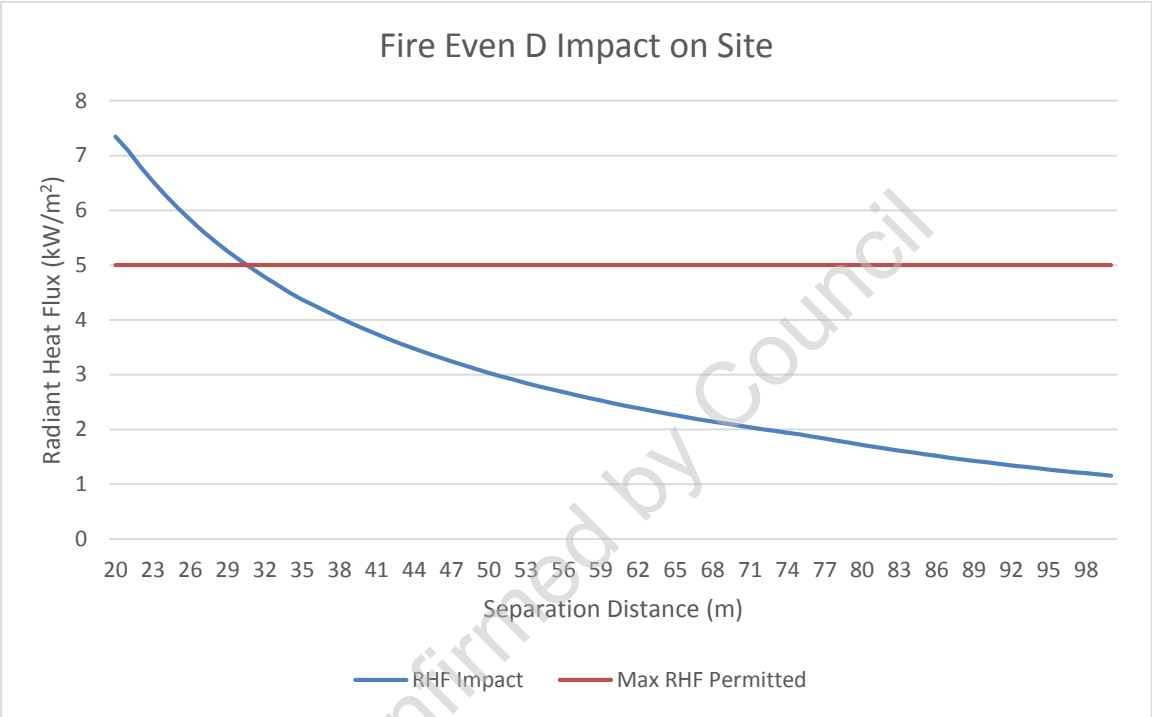
Fire will progress through the scrub vegetation (maximum 60m) wide on lot immediately south of the site before resulting in a new fire ignition in scrub vegetation along the southern boundary of the subject lot. Fire will not propagate through Building Protection Zone but may continue to spread to lots to the northeast and east of the site. Travel of bushfire from point ignition is detailed in Table 3E.

Radiant heat impact on the school as a function of separation distance is illustrated in Figure 1B (aligned to AS3959 Methodology B, effective slope 8°, site slope 0° as impact is human, reduction in configuration factor from classrooms modelled using 10m depth, 2.8m height for conservative calculations (separation to students 60m Phase 3; 30m Phase 4, vegetation fuel load calculated as potential fuel load area consumed using density detailed in AS3959). The minimum distances afforded by the Building Protection Zones and classrooms ensure that all occupants are not exposed to greater than 5kW/m^2 at any time during the evacuation. These calculations are considered conservative as the occupants will be afforded additional thermal protection from the entry doors for each structure that are undercover.

Table 3E Fire Event D

Phase	Bushfire Event	Travel	Distance	Time	Duration
1	Point source ignition 200m south of the site	0m	Nil	30 sec	30 sec
2	Development of fire	Burning downhill 18° slope at 50% potential ROS of 1.59kph (0.44 m^{s-1}), being 0.8kph (0.22m^{s-1}) for 60 seconds, then ROS for remaining time.	42m	125 sec	155 sec

3	Fire travel through lots south of site	Burning uphill 1° slope ROS 4.46kph (1.24 ms^{-1}).	158m	127 sec	282 sec
4	Fire spots across firebreaks and ignites site vegetation on southern boundary. Burns to the edge of the Building Protection Zone	Burning across flat ground at 50% potential ROS of 4.17kph (1.15 ms^{-1}), being 2.09kph (0.58ms^{-1}) for 60 seconds, then ROS for remaining time.	40m	64 sec	346 sec



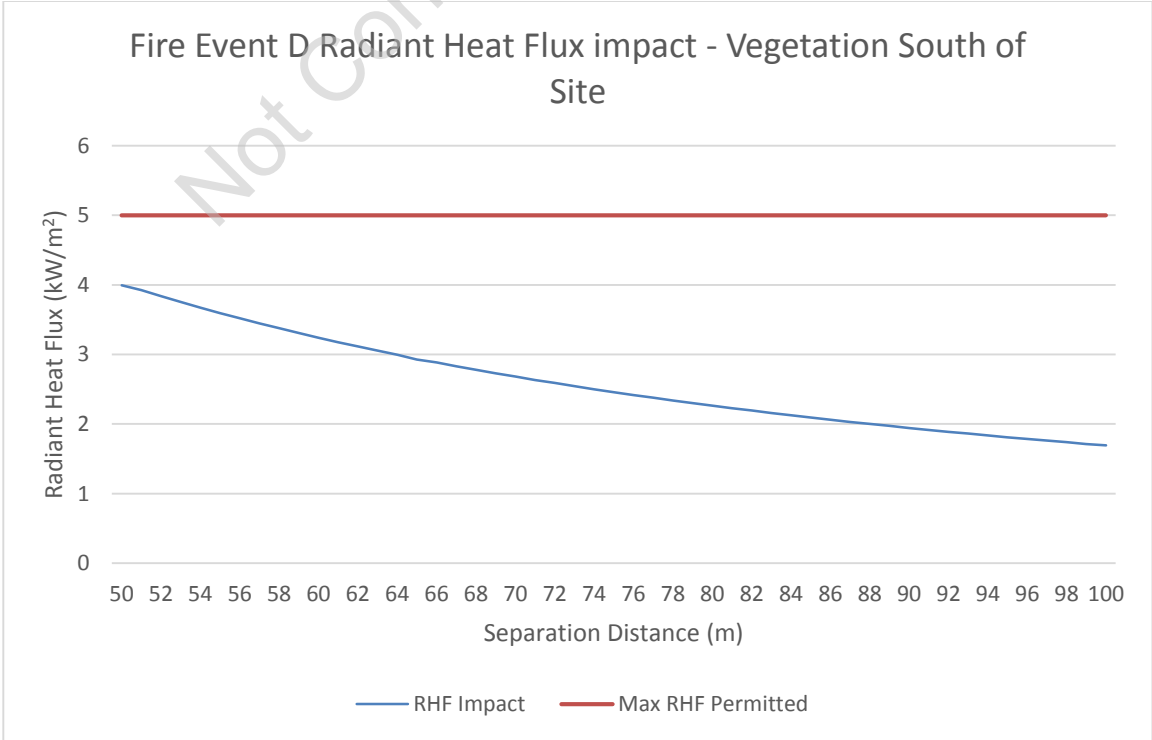


Figure 3C: Radiant heat flux impact on occupants

ii. Fire Event G – **(Included)** Woodland fire event that will impact the northern lot but will not the southern lot due to landscaping within the school grounds and separation from the southern lot of more than 100m. Evacuation procedures commenced as soon as smoke is visible (pre-movement time of 60 seconds, quasi-steady RoS established after 90 seconds – 50% RoS during development). Fire will progress through the woodland vegetation on lot immediately north of the site. Fire will not propagate through the subject lot but may continue to flank it to the east. Travel of bushfire from point ignition is detailed in Table 3F:

Table 3F Fire Event G

Bushfire Event	Travel	Distance	Time	Duration
Point source ignition 283m north of the site	0m	Nil	30 sec	30 sec
Development of fire	Burning uphill 2° slope at 50% potential ROS of 1.65kph (0.46 ms^{-1}), being 0.825kph (0.23ms^{-1}) for 60 seconds, then ROS for remaining time.	284m	647.5 sec	677.5 sec

iii. Fire Event H & I - **(Included)** Woodland fire event that may impact the site through vegetation west of Greenham Place. Design fire parameters of FDI 80, single point ignition 250m east of the school site. Evacuation procedures commenced as soon as smoke is visible (pre-movement time of 60 seconds, quasi-steady RoS established after 90 seconds – 50% RoS during development). Fire will not propagate through Building Protection Zone but may continue to spread through the site revegetation areas. Travel of bushfire from point ignition is detailed in Table 3G:

Table 3G Fire Event H

Bushfire Event	Travel	Distance	Time	Duration
Point source ignition 250m east of the site	0m	Nil	30 sec	30 sec
Development of fire	Burning uphill average 4° slope at 50% potential ROS of 1.90kph (0.52 ms^{-1}), being 0.85kph (0.255ms^{-1}) for 60 seconds, then ROS for remaining time.	250m	451.3 sec	481.3 sec

3.4.1.3 Available Safe Evacuation Time

The minimum ASET occurs during Fire Event D and is identified as 346 seconds.

3.4.2 Ignitions of Retained Trees in Landscaped Building Protection Zone

The modelling of ignition and burning individual groups of trees within the landscaped Building Protection Zone separate to the identified greater bushfire events were also assessed to determine the impact on structures and occupants. Calculation inputs: FDI 80, flat slope, flame width 5m, 2t/ha understory, 4t/ha total fuel load, Class A Forest). The radiant heat impact as shown in Figure 3D demonstrates that all buildings will be sufficiently constructed to withstand group tree ignition within the BPZ as well the radiant heat levels being below 5kW/m^2 at the entrances to buildings where occupants are queuing, 8m from the closest tree and sheltered behind subject building (reduction of configuration factor ignored to ensure conservative modelling). Modelling identifies flame length of less than 1.73m shall occur from the group tree

ignition. All trees will be separated from the closest point of the nearest building by at least 4m to ensure flame impingement does not occur.

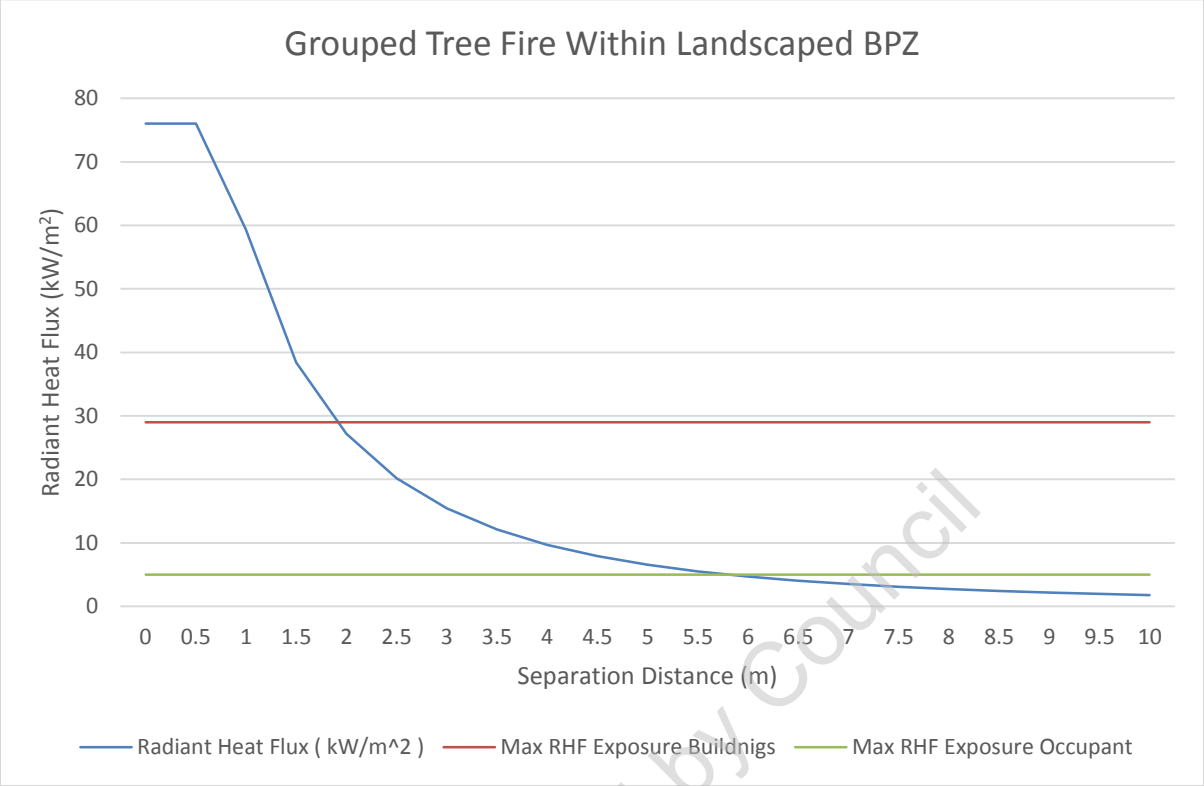


Figure 3D: Radiant heat impact from group tree fire

3.5 Summary

From the analysis conducted the following conclusions are identified:

i. The minimum ASET is 346 seconds for a bushfire originating south of the site. The maximum RSET is 335 seconds for occupants sheltering in Classrooms. Occupants from the Playgroup will complete relocation in a maximum of 435 seconds but will not be exposed to radiant heat flux greater than 2kW/m^2 at any time. This is well below the safe levels identified for human exposure[3,4].

ii. The ASET far exceeded the RSET for all other fire scenarios, demonstrating all occupants shall be safely sheltered prior to the arrival of damaging effects of a fire event.

iii. The maximum radiant heat flux impact from fire scenarios did not exceed 29kW/m^2 , demonstrating the BAL-29 construction rating applicable to all buildings is sufficient.

iv. The maximum radiant heat flux impact from group tree fires within the Building Protection Zone did not exceed 10kW/m^2, demonstrating the BAL-29 construction rating applicable to the buildings is sufficient.

v. The separation of retained trees within the landscaped Building Protection Zone is shown to prevent flame impingement on buildings.

[3] RAJ, P. K. 2008. A review of the criteria for people exposure to radiant heat flux from fires. Journal of Hazardous Materials, 159, 61-71.

[4] RAJ, P. K. 2008. Field tests on human tolerance to (LNG) fire radiant heat exposure, and attenuation effects of clothing and other objects. Journal of Hazardous Materials, 157, 247-259.

APPENDIX 5

Government of **Western Australia**
Department of **Fire & Emergency Services**

DFES
Department of Fire & Emergency Services

20 Stockton Bend
Cockburn Central WA 6164
PO Box 1174 Perth WA 6844
Telephone (08) 9395 9300
Facsimile (08) 9395 9341
Email dfes@dfes.wa.gov.au
www.dfes.wa.gov.au

23rd February 2015

DEPT OF PLANNING
26 FEB 2015
FILE

Mr Neil Thomson
Western Australian Planning Commission
140 William Street
PERTH WA 6000

Dear Mr Thomson

REFERRAL RESPONSE – WAPC 28-50175-2 LOT NO 11,700 MANDURAH ROAD, KARNUP

I refer to your letter dated 21st January 2015 regarding the above referral.

The Department of Fire and Emergency Services has reviewed the application and it appears that the application as submitted meets the intent of all of the performance criteria contained within the WAPC and DFES publication 'Planning for Bush Fire Protection Guidelines (edition 2)'.

Should you require further information relating to this application please telephone DFES South Coastal Regional Office on 9395 9300.

Yours sincerely

PAUL SOUTHAM
A/DISTRICT OFFICER SOUTH COASTAL

Our Ref: K08515/ARW:ARW
Date: 3/07/2015

BPA Engineering
Civil & Structural Consultants

460 Roberts Road
Subiaco Western Australia 6008
PO Box 1308
Subiaco Western Australia 6904
Telephone: 61 8 9382 8008
Facsimile: 61 8 9382 8006
Email: bpa@bpaeng.com.au

Rockingham Montessori School Inc
C/- Rowe Group
Level 3, 369 Newcastle Street
Northbridge
WA 6003

Attention: Mr. Paul Cunningham

Dear Paul

Rockingham Montessori School Inc
Lot 11 (#1809) and Lot 700 (#1791) Mandurah Road, Karnup
Proposed Water Supply

BPA Engineering have been requested by the Rowe Group, on behalf of the Rockingham Montessori School Inc, to investigate the supply of water reticulation to Lots 11 and 700 Mandurah Road, Karnup. This advise has been prepared in support of an application for an 'Educational Establishment' accommodating approximately 550 staff and students at the site.

We have contacted Water Corporation Network Expansion and they have provided the following preliminary high level information:

- the site is within the Karnup Reservoir water zone however no planning information was available to confirm the required pipe size to be extended to the site. We were advised that the likely size would be a 200P water main.
- it was confirmed that the only connection at present was to an existing 100P water main located in Surf Drive (approx 1325m to the south west). Note a section of 63PE water main servicing existing houses would need to be removed and re-laid with a 200P pipe and associated services reconnected.

Note this information needs to be confirmed with a formal application to Water Corporation.

The proposed water main would most likely be laid on the standard 2.1m alignment along the west side of the Mandurah Road reserve. The alignment would need to be checked for existing services and to minimise clearing of vegetation. The main would need to be bored under the Mandurah Road

Our Ref: K08515/ARW:ARW
Date: 3/07/2015

BPA Engineering
Civil & Structural Consultants

460 Roberts Road
Subiaco Western Australia 6008
PO Box 1308
Subiaco Western Australia 6904
Telephone: 61 8 9382 8008
Facsimile: 61 8 9382 8006
Email: bpa@bpaeng.com.au

pavement (dual carriage way) and then extended a minimum of 6.0m along the frontage of Lot 11 to allow provision of a service to the site.

BPA have provided an opinion of probable cost in the order of $220,000 + GST. This figure needs to be confirmed following a feature survey, detailed design, approval by relevant authorities and pricing by civil contractors.

In our opinion there are no impediments to the proposal from an engineering point of view to extend the water main to service the proposed Rockingham Montessori School's Karnup Campus site.

Should you require any further information please do not hesitate to contact this office.

Yours faithfully
BPA ENGINEERING

ARWilliams

Richard Williams
Director

CONSULTING CIVIL & TRAFFIC ENGINEERS, RISK MANAGERS.

Project:	Rockingham Montessori School, Mandurah Road, Karnup – Transport Assessment
Client:	Rockingham Montessori School
Author:	Tony Shaw
Signature:	
Date:	21/10/15

1 ST. FLOOR, 908 ALBANY HIGHWAY, EAST VICTORIA PARK WA 6101.
PHONE +61 8 9355 1300
FACSIMILE +61 8 9355 1922
EMAIL admin@shawmac.com.au

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SHAWMAC PTY LTD
ABN 51 828 614 001
PO BOX 937
SOUTH PERTH WA 6951
T: + 61 8 9355 1300
F: + 61 8 9355 1922
E: tshaw@shawmac.com.au

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1 Introduction and Background

This report assessed the traffic impacts associated with the proposed Montessori School located on lots 1791 and 1809 Mandurah Road in Karnup, in the City of Rockingham.

This report was commissioned by the Rockingham Montessori School, and has been prepared by Shawmac Pty Ltd.

The master plan includes new teaching blocks, offices and paved areas together with site access roads and parking areas.

According to data provided by the School, the ultimate enrolment is expected to be as shown below.

Category	Students (current)	Teaching and other staff (current)	Students (future)	Teaching and other staff (future)
Children's House Classes	72 children	3 Teachers / 3 Education Assistants	72 children	3 Teachers / 3 Education Assistants
Lower Primary Classes	72 children	3 Teachers / 3 Education Assistants	72 children	3 Teachers / 3 Education Assistants
Upper Primary Classes	24 Children	1 Teacher / 1 Education Assistant	72 children	3 Teachers / 3 Education Assistants
Adolescent Program (Middle school) Classes	50 Students	3 Teachers / 1 Education Assistant	150 Students	9 Teachers / 3 Education Assistants
Adolescent Program (Senior school) Classes	50 Students	3 Teachers / 1 Education Assistant	150 Students	9 Teachers / 3 Education Assistants
Total	268	22	516	42

Table 1. School Population

Key transport issues focus on the increased traffic generated from the use of the proposed facility and the attraction of that traffic onto roads adjacent to the school

The pedestrian and cycle movements are expected to be adequately accommodated on proposed infrastructure surrounding the school site.

2 Transport Assessment Objective

This Transport Assessment outlines the likely impact of the proposed Rockingham Montessori School expansion on network traffic flows, public transport availability, parking facilities, safe access, pedestrian and cycle facilities and local amenity.

The Transport Assessment considers aspects associated with:

- Additional generation of traffic including impacts on the road network
- School access and egress issues

- Internal and external parking needs
- Any potential conflicts between vehicles, pedestrians and cyclists.

3 Location

The proposed school site is located on the east side of Mandurah Road approximately 500 metres south of Stakehill Road. The subject site is bounded by semi-rural land to the north, south and east. Mandurah Road forms the western boundary of the site. Figure 1 shows the site location with respect to the Karnup locality while Figure 2 shows the site in more detail in its local context.

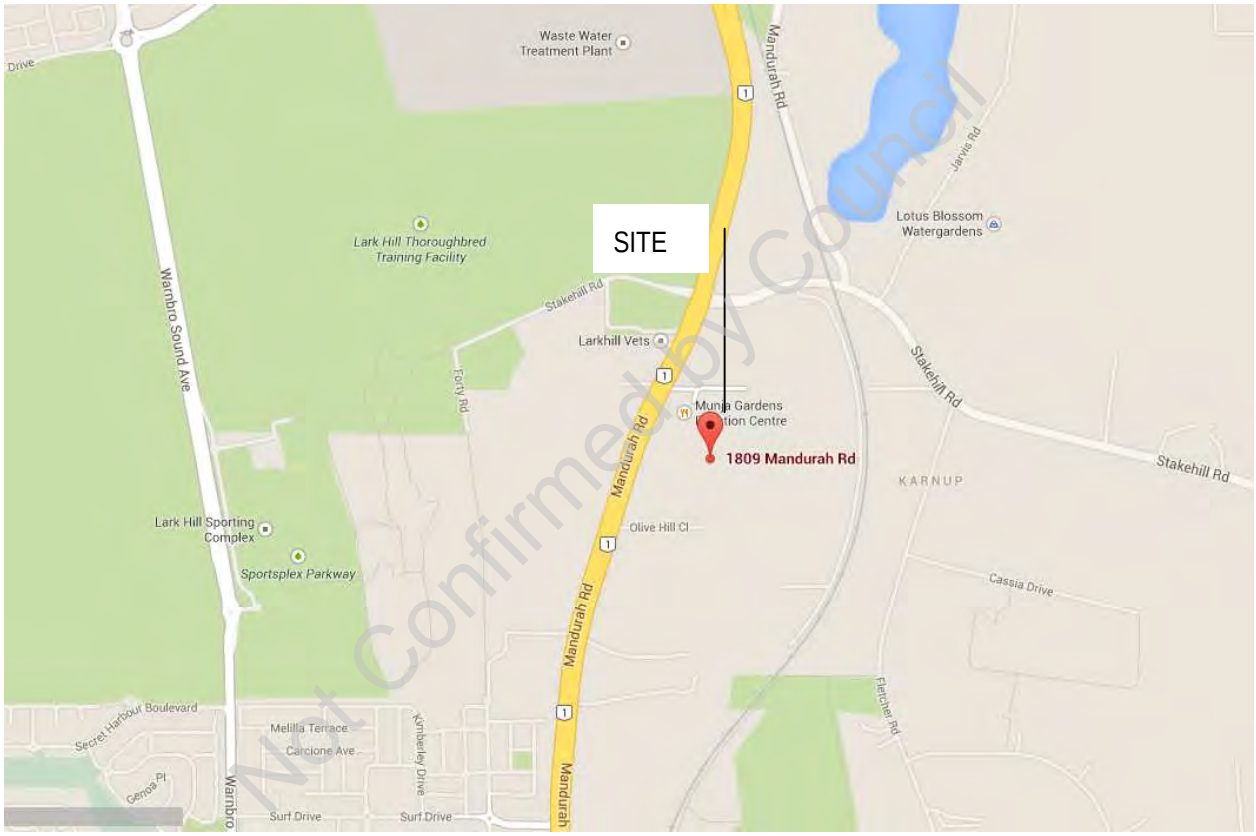

Figure 1 - Regional Context

Figure 2 - Local Context

4 Proposed Development

4.1 Regional Context

The site use as an "Educational Establishment" can comply with City of Rockingham *Town Planning Scheme No. 2;* the relevant extract is shown in Figure 3. The TPS shows that the subject site is zoned rural (southern lot) and Special Rural (northern lot).

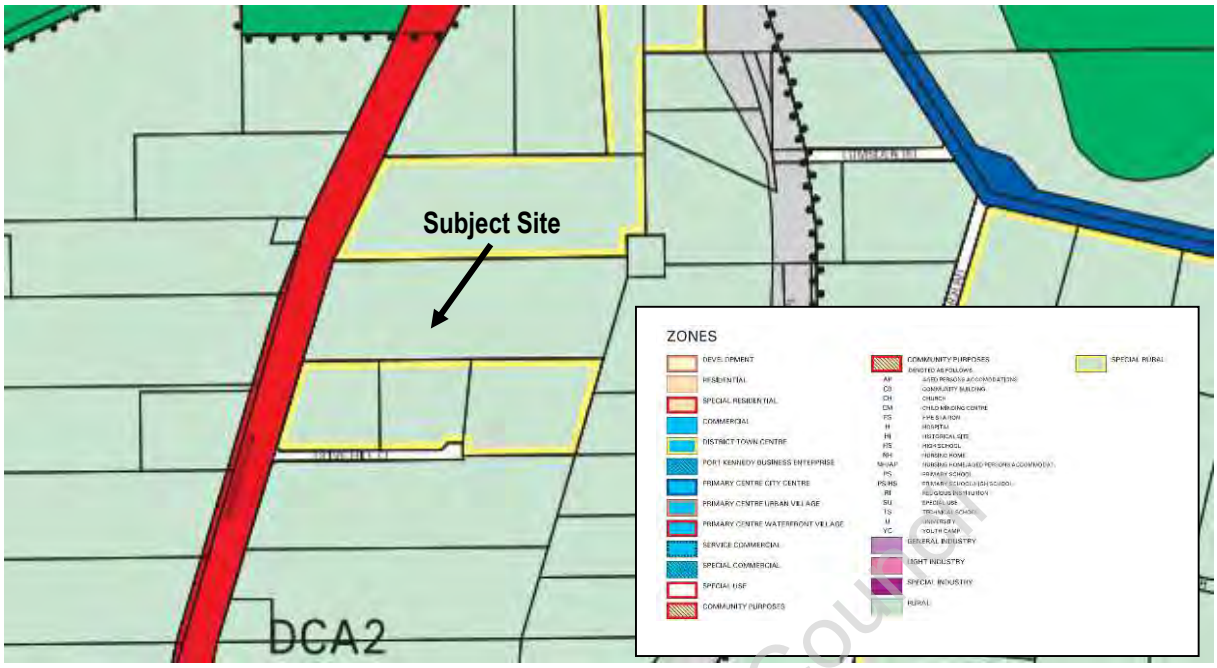

Figure 3 - Extract From City of Rockingham Town Planning Scheme

4.2 Existing Situation

The southern lot is currently developed as a rural single residential lot with access from Mandurah Road, while the northern lot is developed as a reception centre with access off a battle axe lot access which connects to Mandurah Road. Both accesses onto Mandurah Road comprise left in – left out movements only. The properties to the north and south are zoned rural and special rural and developed as a single residential property. To the east the land is zoned rural and developed as a single residential property.

4.3 Proposed Development

The proposed development as shown on the Master Plan includes the following:

- Construction of car park and access roads with connection off Mandurah Road;
- Construction of teaching blocks with support facilities.

The development is planned to be constructed in a number of stages with various streams added to an ultimate population of 516 students.

The layout plan of the school in its ultimate development is shown in Figure 4.

Figure 4 - Rockingham Montessori School - Proposed Ultimate Layout

5 Existing Traffic Environment

5.1 Road Hierarchy

The road classification for current roads surrounding the Rockingham Montessori School site is shown in Figure 5 and Table 2 below, based on information obtained from Main Roads WA Functional Road Hierarchy and WAPC – "*Liveable Neighbourhood Community Design Codes*".

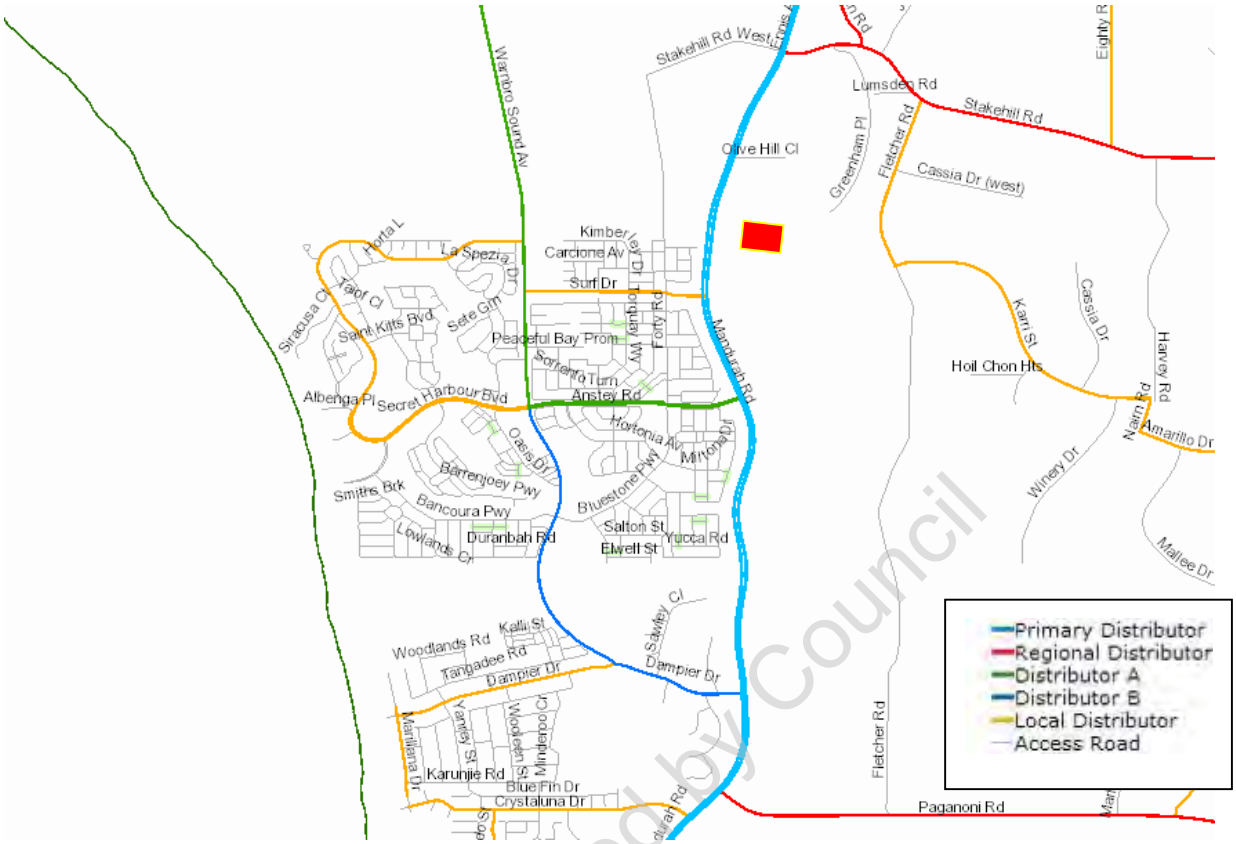

Figure 5 - Road Hierarchy

Road Category.	Road Name.	Desirable Max. Traffic Volume. (vpd)
Primary Distributor	Mandurah Road	>15,000 vpd

Table 2. Road Classification and Indicative Maximum Traffic Volume

The road network surrounding the site supports the road hierarchy categories and their associated function.

5.2 Traffic Volumes and Flows

5.2.1 Mandurah Road

Mandurah Road is a 4 lane divided carriageway with each carriageway approximately 7.4 metres wide and flanked by sealed shoulders. Mandurah Road provides an important link between Perth to the north and Mandurah and its suburbs to the south. No paths are provided along Mandurah Road.

Based on the latest traffic data available from Main Roads WA, recorded in May 2013, the traffic volumes south of Stakehill Road were 14,424 vpd northbound and 14,039 vpd southbound with 1,540 vph northbound in the AM peak period, 908 vph southbound and 1,027 vph northbound in the PM peak period, and 1,668 vpd southbound.

5.2.2 Summary of Traffic Flows

Based on the information outlined above, the network flows are within the maximum desirable limits for each road category. This information is summarised in Table 3 below.

Road Name	Road Characteristics		Road Volumes		
	Indicative Traffic Volume. (vpd)	Road Width	Daily	A.M. Peak	P.M. Peak
Sixty Eight Road	Primary Distributor >15,000 vpd	2 X 7.4 m wide unkerbed carriageways.	28,548 vpd	2,424 vph	2,586 vph

Table 3. Summary of Boundary Road Characteristics Adjacent to School Site

5.2.3 Speed-Zone

Mandurah Road is subject to a 100 km/h speed zone reduced to 80 km/h north and south of the intersection with Stakehill Road.

5.3 Public Transport

5.3.1 Bus Transport

The subject site is not served by a public transport bus route, with the nearest service located to the west as shown in Figure 6.

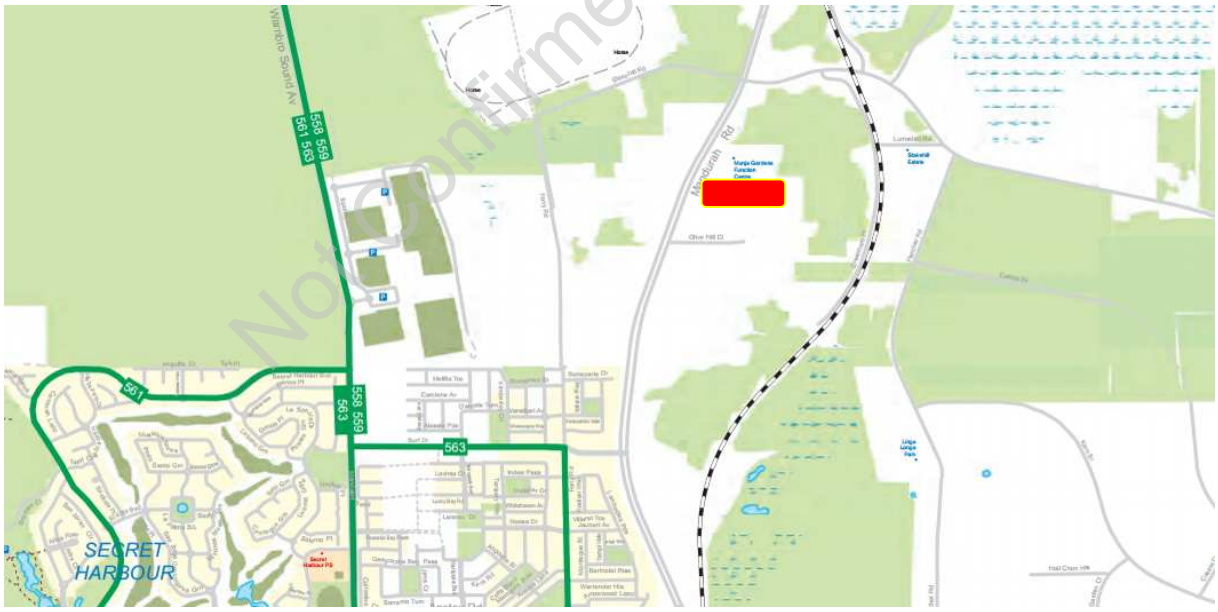

Figure 6 - Public Transit Services Adjacent to the Subject Site

5.4 Pedestrian and Cycle Facilities

The school site is located within a pre-existing rural area adjacent to a Primary Distributor and as such no formal path or cycle facilities exist. The master plan for the school indicates an extensive network of internal paths. It is

anticipated that all arrivals and departures to and from the school would be by private car or bus.

5.5 Changes to Surrounding Transport Networks

No changes to the adjacent network that would impact on the proposed school are known.

6 Integration with surrounding area

The development integrates with the future land use planning for the area and the intended road network.

7 Period of Assessment

In terms of traffic impacts, based on previous Transport Assessments of Primary Schools, the morning school drop-off period, which coincides with the commuter peak, will have the greatest impact on the operations of the road network.

In terms of parking impacts, the afternoon pick-up period puts greatest demand on available parking spaces as parents arrive prior to the finish of the school day.

8 Transport Analysis

8.1 Trip Generation

The proposed development site contains the following land uses and expected operation times.

Use	Operating Times	Peak Traffic Movements	Parking Requirements
Students	8.30am to 3.00pm Monday to Friday	8.00 to 8.30 am 2.45 to 3.30pm	Short term drop-off and pick up
Staff	8.30am to 3.00pm Monday to Friday	7.30 am to 8.30 am 3.30 pm to 4.30pm	Long term day parking

Table 4. Proposed School Use

Vehicular traffic generation has been linked through established studies to the student numbers and the type of school facility. The Western Australian Planning Commission Transport Assessment Guidelines recommends school traffic generation is based upon data from the PARTS surveys that indicate around 65% to 70% of children are driven to primary school, with an average occupancy of around 1.4 to 1.5 children per car. This equates to approximately 0.5 vehicle movements per child to school and 0.5 vehicle movements per child from school in each of the morning and afternoon peak hours. Given the location on a Primary Distributor Road, and the concern regarding access, the School has indicated that private car use will be minimised and initiatives such as requiring students to use School busses will be implemented to reduce traffic generation and minimise the

impact typically associated with school traffic.

The student and staff numbers for various the current and predicted phases and streams are summarised in Table 5.

Development Stage	Total Student Numbers	Staff
Initial	268	22
Ultimate	516	42

Table 5. Summary of Estimated and Future Student and Staff Numbers

Based on the above student and staff numbers, and advice from the School with respect to modal split, the predicted traffic generation is as shown on Table 6.

Category	Students (Future Maximum)	Students attending Baldivis	Car Usage Rate	Occupancy Rate	# Vehicles	Morning / Afternoon Trip Ends New Site	Teacher traffic (morning only)	Total Daily Traffic
Children's House	72	48	100%	1.5	32	64		128
Lower Primary Classes	72	48 (bus 7)	85%	1.5	27	54		108
Upper Primary Classes	72	36 (bus 5)	85%	1.5	20	40		80
Adolescent Programme (Middle)	150	150 (bus 60)	60%	1.5	60	120		240
Adolescent Program Upper)	150	150 (bus 120)	20%	1.5	20	40		80
Students in other modes of transport (Assumed small buses)		Bus 228	100%	25	9	9		18
Totals	516				1	327	42	696

Table 6. Summary of Trip Generation

The current site operates as a single residential land use (southern lot) and reception centre (northern lot) with the former generating about 10 movements a day. The reception centre is licensed to 200 patrons and as such has the potential to generate significant traffic volumes at times when in use.

A review of the crash history for the section of road between Stakehill Road and Greenham Place indicates a total of 21 crashes have occurred between January 2009 and December 2013, all of which were at the intersection of Stakehill Road and Mandurah Road.

8.2 Trip Distribution

Based on the access and egress proposed arrangements, distribution will see traffic arrive from the north and south and depart to the south. The distribution of traffic has been assessed on the basis of geographic distribution of students as advised by the School and shown on Table 7.

SUBURB	No of Families	Arrive from	Depart to
Halls Head	1	South	South
Leeming	1	North	North (via south)
Bertram	2	North	North (via south)
Singleton	3	South	South
Palm Beach	3	North	North (via south)
Baldivis	25	North	North (via south)
Safety Bay	17	North	North (via south)
Wellard	6	North	North (via south)
San Remo	1	South	South
Secret Harbour	10	South	South
Parmelia	2	North	North (via south)
Shoalwater	18	North	North (via south)
Rockingham	15	North	North (via south)
Lakelands	1	North	North (via south)
Warnbro	17	North	North (via south)
Samson	1	North	North (via south)
Golden Bay	3	South	South
Calista	2	North	North (via south)
Orelia	4	North	North (via south)
Waikiki	23	North	North (via south)
Medina	1	North	North (via south)
Port Kennedy	9	North	North (via south)
Success	2	North	North (via south)
Leda	3	North	North (via south)
Mandurah	3	South	South
Byford	2	North	North (via south)
Madora Bay	3	South	South
Stakehill	2	North	North (via south)
Spearwood	1	North	North (via south)
Mundijong	1	North	North (via south)
Cooloongup	4	North	North (via south)

Table 7. Geographic Location of Students

The traffic generated from the teachers of the school will coincide with the AM drop off period and they will generally leave after the afternoon pick up period.

Assuming desire lines to the north and the south based on the geographic location shown above, predicted he resultant proposed ultimate development site-generated traffic volumes for a school day, including morning and afternoon pick-up and drop-off periods are shown in Figure 7.

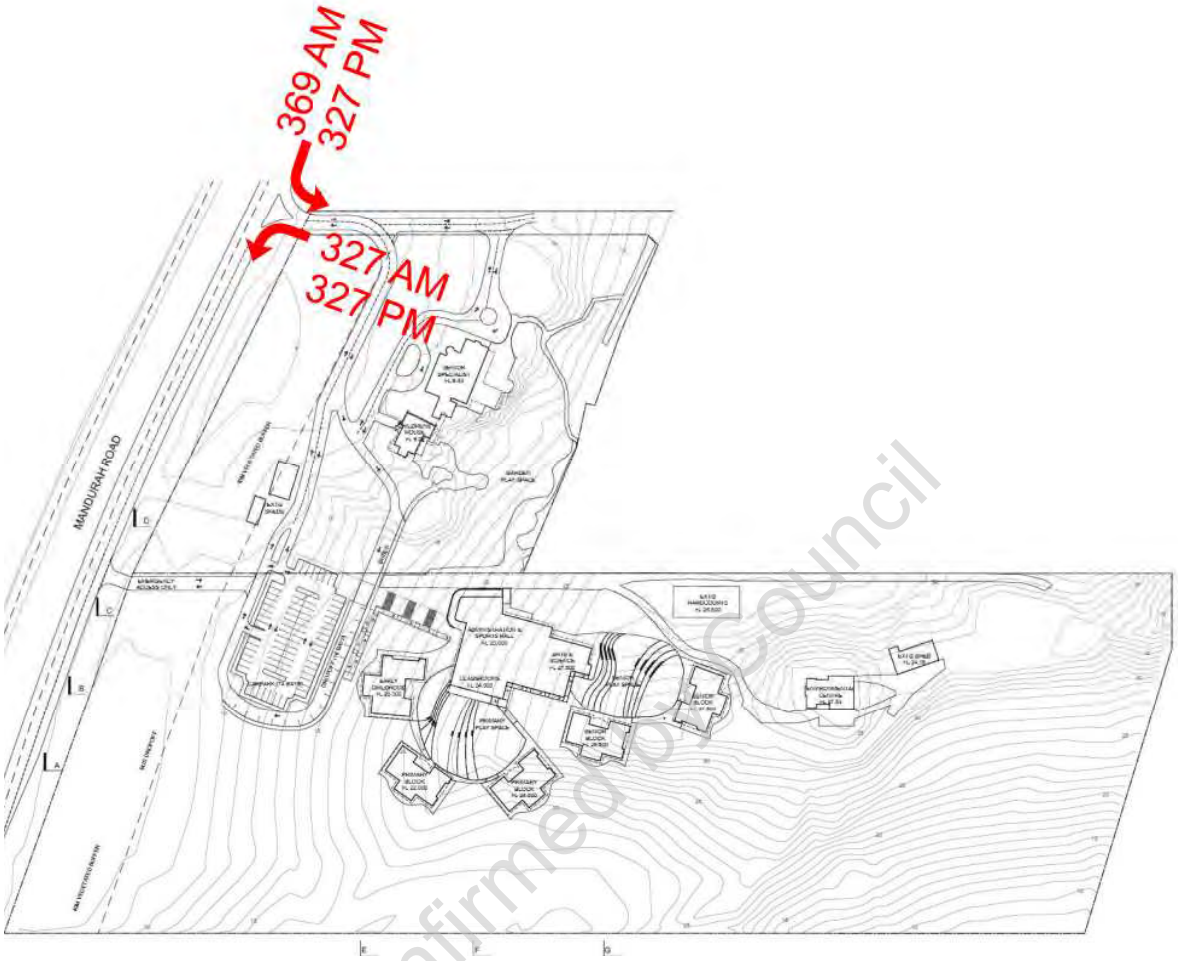

Figure 7 - Estimated Future Traffic Volumes

8.3 Impact on the Adjacent Road Network

The predicted increase in traffic volumes on the roads surrounding the school is shown on Figure 7.

In terms of midblock performance, the existing road network is predicted to cater for total flows associated with the development of the School traffic with assessment using the LOSPLAN software indicating that Mandurah Road southbound will operate at a Level of Service "C" and a volume to capacity ratio of 0.51.

8.4 Intersection Performance Capacity

Austroads Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections, includes warrants for the provision of major road turn treatments for auxiliary lanes and provide guidance on where a full-length deceleration lane must be used and where a shorter lane, may be acceptable based on traffic volume. Based on the Austroads warrants, a deceleration left turn lane and an acceleration lane is likely to be justified. To this end, extensive liaison with MRWA has been undertaken both informally and formally through the State Administrative Tribunal (SAT) mediation process and this has resulted in MRWA suggesting the geometry

generally as shown on Figure 8.

Figure 8 - Concept Entry Geometry

Given that egress from the site is to the south only, and there is a strong demand for traffic to exit to the north, there is potential for some drivers to undertake "U" turns at undesirable and potentially hazardous locations if these are not managed. As such, it is recommended that the existing median break located immediately to the south of the proposed entry be closed to traffic. Given the demand for "U" turns to be made by southbound traffic exiting the school, a formal "U" turn facility similar to that provided north of Stakehill Road should be provided south of the school site and north of Surf Drive.

8.5 Pedestrian /Cycle Trips

8.5.1 Pedestrian volumes and facilities

Given the location on a high speed, high volume road, there is unlikely to be pedestrian and cycle movements to and from the site.

9 Parking

It is estimated that the future staff number for the school is anticipated to increase from an initial staff number of 22 to an ultimate number of about 42.

Parking requirements based upon the WAPC guidelines are 14 bays per 100 students plus staff parking. The BMW requirements are the same base level plus 1 bay per 8 children in the kindergarten and 1 bus bay. For the design student population of this school the parking demand calculates to a need to have approximately 114 bays.

	Student numbers	Staff Numbers	Parking demand
Initial development	268	22	60
Ultimate development	516	42	114

Figure 9 - Parking Demand and Supply

A review of the proposed ultimate car parking supply in the context of the anticipated demand indicates that adequate parking supply to cater for the anticipated demand associated with activities on the site can be accommodated in the master plan.

10 Safety and Traffic Management

In order to provide an acceptable risk profile, it is recommended that the strategies outlined below be considered:

- Reduce the speed zone on Mandurah Road adjacent to the proposed school site to 80 km/h by extending the existing 80 km/h zone further south. This would require application to MRWA.

- Actively pursue the option of providing and alternative access to the school site from the east. The school board has indicated that they are pursuing this option; however this may take time and may not eventuate so the access off Mandurah Road will continue to be required pending outcome of the investigation.

- Provide a shuttle service between Rockingham and the school. It is understood that the school support this initiative.

- Stagger start and finish times for the upper and lower schools.

- Implement the Traffic and Parking Management Plan shown in appendix A to advise parents of the arrangements in place.

11 Traffic Noise and Vibration

The proposed development is not likely to generate any changed traffic noise pattern or result in any unacceptable vibration issues.

12 Conclusions

The Transport Assessment determined that the increase in vehicular traffic flows associated with the Rockingham Montessori School will have minimal overall impact on the surrounding road network and can be managed within the existing road carriageway.

The resultant daily traffic flows on the adjacent road after the completion of the school construction program fall within the indicative road capacity as detailed in the Liveable Neighbourhood Guidelines.

Proposed access to the School is from one point only located on the southbound carriageway of Mandurah Road.

Whilst currently there are no dedicated pedestrian or cycle facilities adjacent to the school, it is unlikely that pedestrian or cycle access to the school will occur and as such formal facilities are unlikely to be required.

With the implementation of the recommendations and proposals outlined above, the proposed development of the school should not have an adverse impact on the traffic flow on the surrounding road network.

13 Appendix A – Traffic Management Plan and Parking

Rockingham Montessori School Incorporated

ABN: 68115 270 695

PROCEDURE TITLE: Traffic Management Plan

BOARD APPROVAL DATE: June 2015 **SIGNED BY CHAIR:**

BOARD REVIEW DATE: June 2018

All children have a right to be protected from harm. Rockingham Montessori School and its teachers owe a duty of care to all children at the school.

Rockingham Montessori School is situated on Mandurah Road and in conjunction with local authorities RMS encourages all members to abide by safe vehicular usage to ensure the safety of the general public. The School has a special responsibility to protect children when they are on, entering or exiting school premises and also to intervene when they believe the welfare of a child is at risk outside the School.

The safety of all School families, staff and the wider community is the priority of the School. It is mandatory that School families and staff model safe behaviour by adhering to the Rockingham Montessori School Traffic Management Plan.

Traffic Management Procedures

Speed Limit on School Site and in Car Parks 10km per hour at all times.

1. **Entering and Exiting School Site**

Access to and from the school site is by motor vehicle only. Pedestrian and bicycle access is NOT PERMITTED. This is due to the high speed of traffic on Mandurah Road and our commitment to safety.

A Traffic Warden is located at the entrance to the School site before and after each school day to monitor traffic and parking and to ensure compliant behaviour and to report to the Principal any

abuse of the Traffic Management Plan.

Families or Staff that alight vehicles on Mandurah Road or the surrounding areas will be referred to the Principal and may face disciplinary action.

All students and staff are to board or alight vehicles on the School site either in the Kiss N Drive area or the designated carpark areas.

2. **Kiss N Drive**

The Kiss N Drive zone has been established to provide an efficient drop off and pick up facility and is not to be used for parking.

Safe footpaths are provided for students entering or exiting vehicles in the "Kiss N Drive" area and all carpark areas such that there is no need to cross the internal circulation roads.

3. **Parking Areas**

Ample parking is provided for all parents and visitors. Parking is only permitted in designated bays. On road parking and verge parking are not permitted unless otherwise signposted.

Parents and visitors must observe the **"Staff Only"**, **"Disabled Access"** and **"Delivery Only"** signs and not to park in such bays at any time.

All members of our community are instructed to use the car parks with consideration and adhere to the speed limit of 10km per hour for the SAFETY of all students.

4. **Bus Bays**

Marked Bus Bays are strictly for Bus parking only.

Students boarding or alighting buses must only do so in designated Bus Bays.

Safe footpaths are provided for students entering or exiting buses in the bus bays such that there is no need to cross the internal circulation roads.

Administration Procedures:

1. Administration to remind all visitors and families to abide by the RMS Traffic Management Plan.
2. Administration to include regular traffic safety reminders in the School Newsletter.

Traffic Warden Procedures:

1. The Traffic Warden to stand where they can monitor the Mandurah Road entrance to the School site wearing high visibility vest.
2. The Traffic Warden to maintain a visible and friendly demeanor with families, visitors and staff at all times.
3. If the Traffic Warden observes non-compliant behavior he or she shall request the errant driver to correct the behavior.
4. The Traffic Warden to immediately inform Principal of any infringements of the RMS Traffic Management Plan.

Principal Procedures:

1. Families or Staff that board or alight vehicles on Mandurah Road or the surrounding areas will be referred to the Principal.

2. If a member of the Rockingham Montessori School community breaches the Traffic Management Plan they will, in the first instance, be issued with a copy of the Traffic Management Plan and the Code of Conduct Policy whilst being reminded of their agreement to this code. If the breach continues, or is of a particularly serious nature, they will be informed in writing by the Rockingham Montessori School Board. Further action may be taken, if the breach is not resolved, including a request or requirement to leave the School. The School Board will have the final say on whether a breach has occurred.

July 2015

Final

Rockingham Montessori School Bus Transport Opportunities

Prepared For:

Rockingham Montessori School

Technical Note 2

T: +61 8 9274 7076
F: +61 8 9274 4854
E: Admin@dvcworld.com

6 Burgess St Midland WA 6056
PO Box 5060 Midland WA 6056
www.dvcworld.com

DOCUMENT ISSUE AUTHORISATION

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0	0	2/07/2015	Draft	DNV	SGY	DNV
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Donald Veal Consultants Pty Ltd

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1 INTRODUCTION

1.1 BACKGROUND

Rockingham Montessori School has submitted a Development Application for a new school on Lots 1791 and 1809 Mandurah Road, Karnup in the City of Rockingham. The Development Application submission was supported by a Transport Assessment report (TA Report) prepared by Shawmac. The application was considered by the Metro South-West Joint Development Assessment Panel (JDAP) on 10th March 2015 and refused for a range of reasons including environmental, planning and transport related matters as set out in its Determination Notice.

The Rockingham Montessori School has exercised its right for a review of the decision by the State Administrative Tribunal (SAT). Donald Veal Consultants (DVC) was initially commissioned by the Rockingham Montessori School to review the TA Report. As a result of that review DVC has been requested to provide further details of how a significant proportion of students could be transported to and from the school site by bus.

2 DEMAND POTENTIAL

2.1 LIKELY CATCHMENT AREA

The TA Report lists the residential suburbs of current students attending the Montessori School in Rockingham. It lists 31 different suburbs of 186 families with students attending the school. These suburbs cluster around the City of Rockingham, City of Kwinana and the City of Mandurah. Isolated suburbs in the City of Cockburn and Shire of Serpentine Jarrahdale also feature in the list.

The proposed school site in Karnup is likely to attract more students from the City of Mandurah as it is much closer to this population than the current site in Rockingham. Notwithstanding this, the list of suburbs in which current student families reside provides some catchment area data that we can explore as an example of how buses could be used to transport students to and from the proposed new school. **Table 1** shows the current suburbs in which students reside.

It is acknowledged that with two schools operating the catchment areas would change, with students gravitating towards the nearer school over time. In such cases the bus routes would be redrawn to meet the modified catchment areas.

2.2 ATTRACTING STUDENTS TO USE BUSES

The Rockingham Montessori School is considering how best to attract students onto buses thereby seeking to minimise the number of car trips to and from the proposed school. We have suggested that the cost of operating school buses be included in the school fees rather than make these optional additions. This will mean that families already pay for the bus services and are more likely to use them than if the payment were additional.

2.3 ESTIMATE OF POTENTIAL DEMAND

The TA report describes the current school, located at 7 Attwood Way in the centre of Rockingham, as being attended by 268 students and 22 staff. The Karnup site is expected to ultimately attract some 516 students and 42 staff; almost double the current school.

Initially, the proposed school at Karnup is likely to be attended by a similar number of students as the current school, namely 268 students. With the cost of school bus travel to and from the school included in fees, we would expect to attract possibly 50% of the students onto the school bus services. This would translate into some 134 students. Depending upon the size of bus operated, this number of students would require a minimum of 3 buses if 45-seaters

were used or more buses if vehicles with less capacity were operated. It would also be dependent upon the route configurations that are achievable.

In the ultimate scenario the number of buses can be doubled, with routes refined to meet the geographic spread of students.

Suburb	No. of Families	Bus Route	Families per Route	%age
Secret Harbour	10	1	25	13%
Singleton	3	1		
Golden Bay	3	1		
Madora Bay	3	1		
Mandurah	3	1		
Halls Head	1	1		
San Remo	1	1		
Lakelands	1	1		
Waikiki	23	2	82	44%
Shoalwater	18	2		
Safety Bay	17	2		
Rockingham	15	2		
Cooloongup	4	2		
Palm Beach	3	2		
Stakehill	2	2		
Baldivis	25	3	71	38%
Warnbro	17	3		
Port Kennedy	9	3		
Wellard	6	3		
Oreila	4	3		
Leda	3	3		
Calista	2	3		
Parmelia	2	3		
Bertram	2	3		
Medina	1	3		
Byford	2	Not on Bus Route	8	4%
Success	2	Not on Bus Route		
Mundijong	1	Not on Bus Route		
Spearwood	1	Not on Bus Route		
Leeming	1	Not on Bus Route		
Samson	1	Not on Bus Route		
Total	186		186	100%

Table 1: Current Residential Suburbs of Rockingham Montessori School Students

3 POSSIBLE BUS OPERATION

3.1 POSSIBLE COLLECTION POINTS

Typical major collection points to pick up and set down students would include the major shopping centres where parking is available to congregate, bus stations and the current school site. Other locations may include existing bus stops albeit their use would need to be approved by the Public Transport Authority. Pick up and drop off locations would need to be discussed with parents such that services can be modified to best suit the particular needs of parents whilst optimising the bus routes.

3.2 POSSIBLE BUS ROUTES AND TIMETABLES

The school bus routes should be carefully devised to enable students and staff to gather at key locations to make the bus journeys efficient. To provide coverage for approximately 95% of current student residences, we suggest that three bus routes are adopted in the initial stage. Additional services should be considered if demand warrants.

Route 1 should operate from Mandurah, possibly starting at the Mandurah railway station, then calling at the Mandurah Forum and working its way along Mandurah Road, servicing San Remo, Madora Bay, Singleton, Secret Harbour and other suburbs on this route. This route can be undertaken in about 35 minutes by car hence, allowing for a school bus to make scheduled stops to pick up or set down students, the route should be completed in approximately one hour. **Table 1** shows that 25 families with students currently at the school reside in the suburbs served by this route, equating to some 13% of the school intake. We anticipate that this proportion would increase due to the closer proximity of the proposed school to Mandurah than the current Rockingham campus. This route may be suitable for a small school bus with a seating capacity of say 20 students. If demand from this catchment area is increased then a school bus with a capacity for 45 students may be warranted. An indicative bus route for Route 1 is shown in **Figure 1** of **Appendix A**.

Route 2 should operate from the Rockingham area, possibly starting at Shoalwater then calling at the Rockingham Shopping Centre, the established Montessori school site and working its way southwards, servicing Cooloongup, Safety Bay, Waikiki and other suburbs on this route. This route can be undertaken in about 28 minutes by car hence, allowing for a school bus to make scheduled stops to pick up or set down students, the route should be completed in approximately one hour. **Table 1** shows that 82 families with students currently at the school reside in the suburbs served by this route, equating to some 44% of the school intake. This route could be serviced by a larger school bus with a seating capacity for say 45 students. An indicative bus route for Route 2 is shown in **Figure 2** of **Appendix A**.

Route 3 should operate from Kwinana, possibly starting at the Kwinana Shopping Centre, then calling at Wellard and working its way through Parmelia to Baldivis, Warnbro, Port Kennedy and other suburbs on this route. This route can be undertaken in about 36 minutes by car hence, allowing for a school bus to make scheduled stops to pick up or set down students, the route should be completed in approximately one hour. **Table 1** shows that 71 families with students currently at the school reside in the suburbs served by this route, equating to some 38% of the school intake. This route could also be serviced by a larger school bus with a seating capacity for say 45 students. An indicative bus route for Route 3 is shown in **Figure 3** of **Appendix A**.

4 CONCLUSIONS

The catchment area for the new school, acknowledging the retention of the existing Rockingham Montessori School, is not known at this stage and too early to determine with any reliability. It is anticipated that over time the catchments will gravitate around the nearer school with more focus on the area south of Warnbro being attracted to the proposed new site.

Notwithstanding the issue of catchment, this technical note provides an indication of how school bus services could be structured to meet the majority of demand that may arise and how school bus patronage can be stimulated.

Further work will be needed when the enrolment details are available.

APPENDIX A: INDICATIVE BUS ROUTES

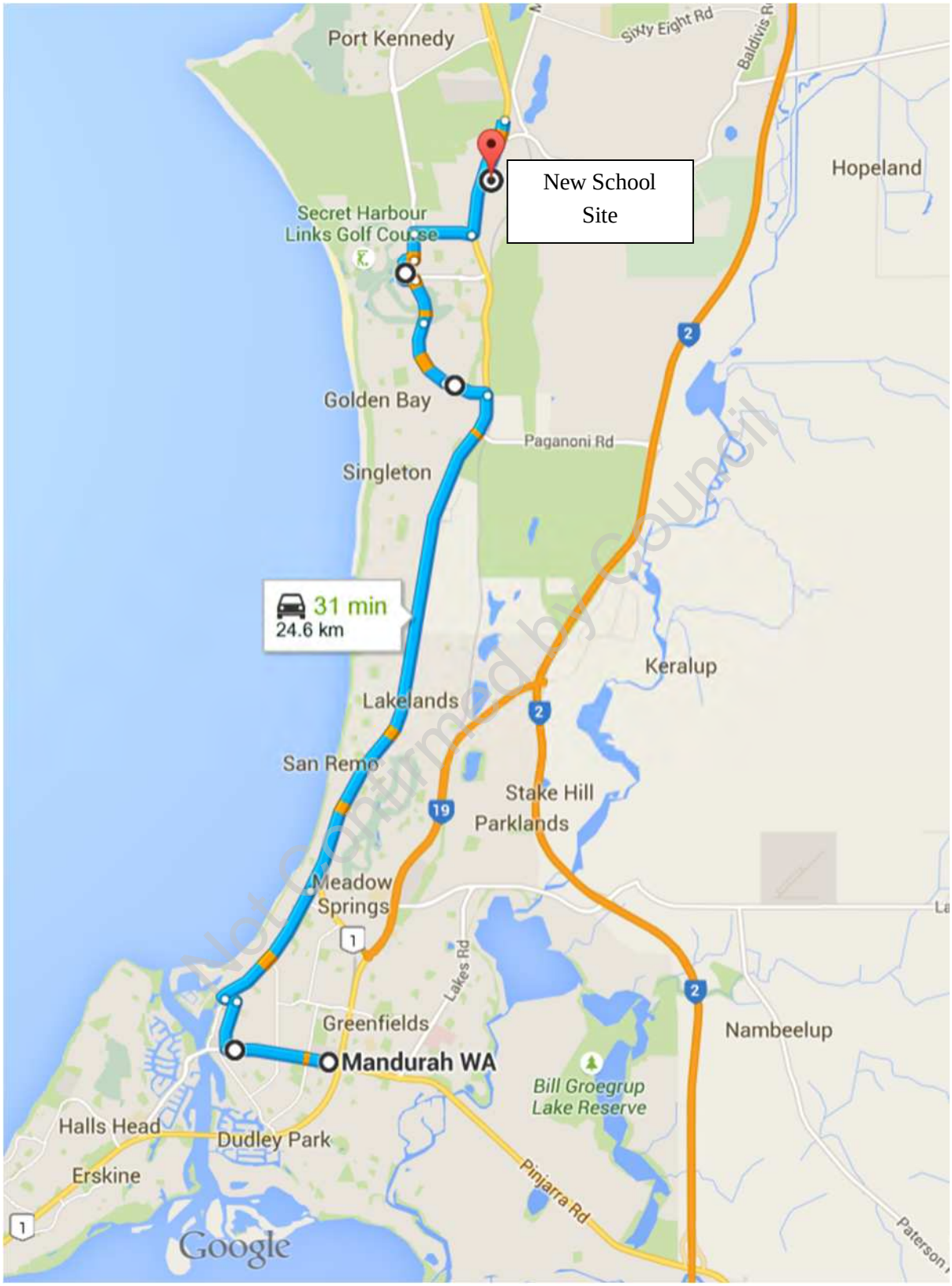

Figure 1: Indicative Bus Route 1 servicing 13% plus of Demand

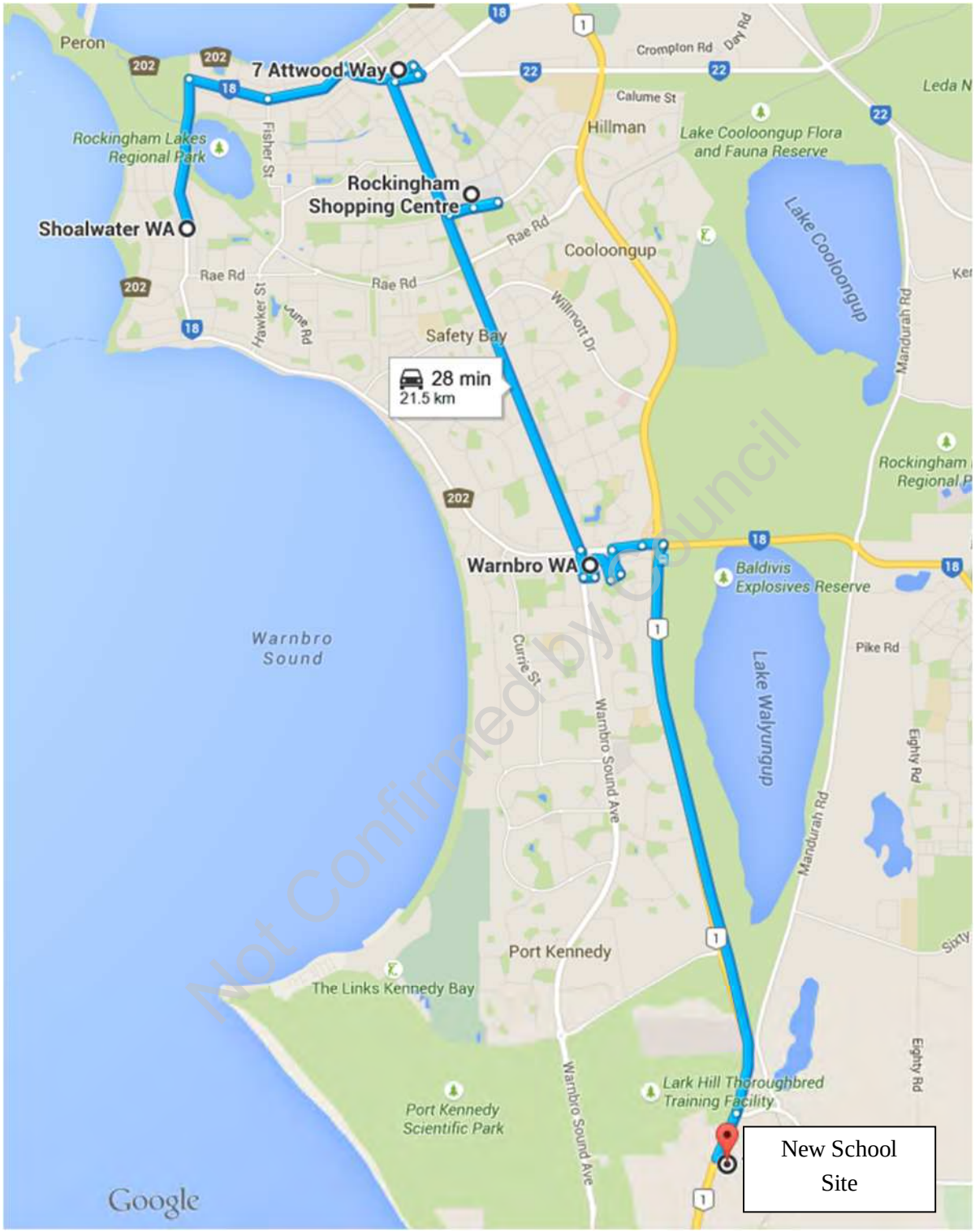

Figure 2: Indicative Bus Route 4 servicing 44% of Demand

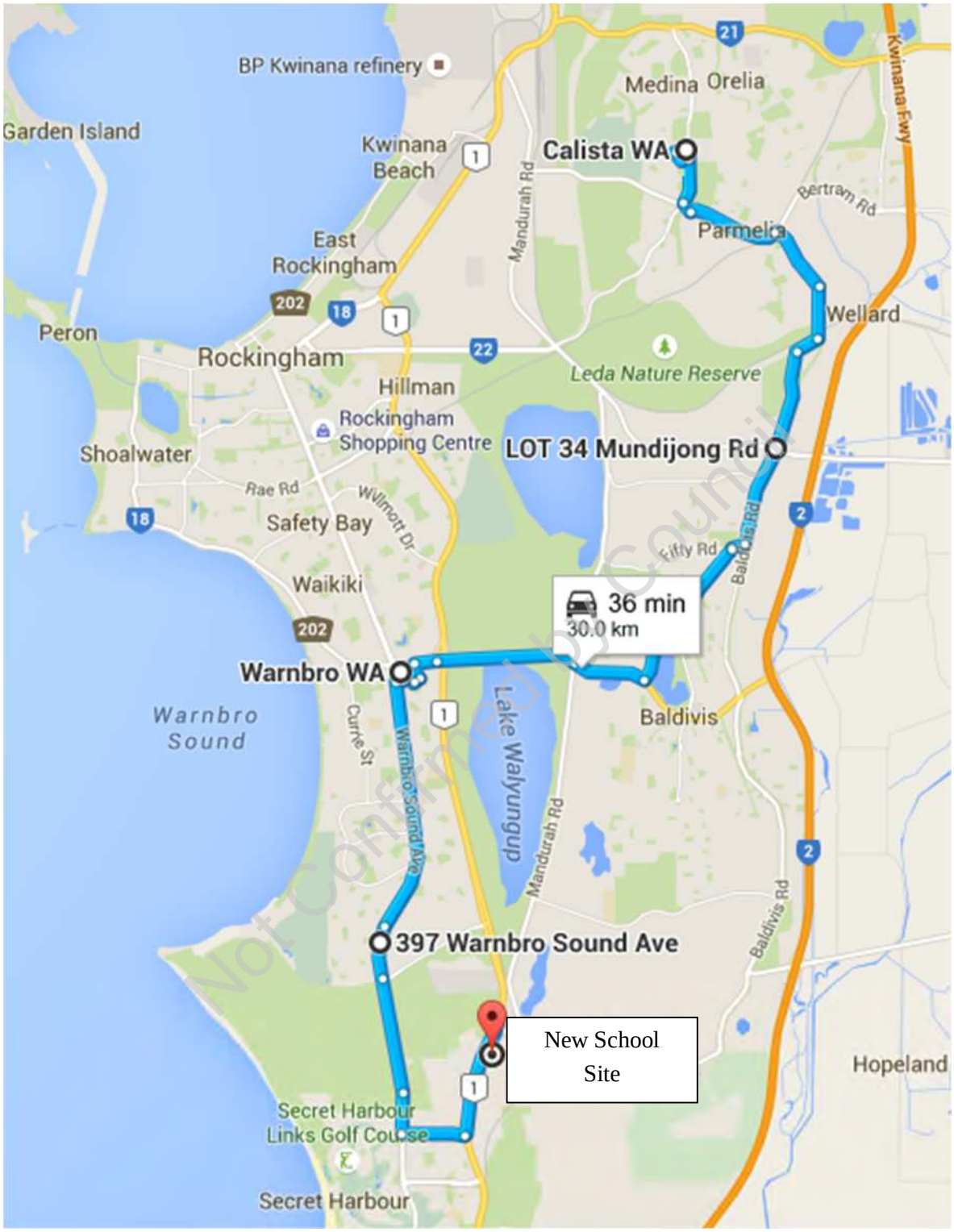

Figure 3: Indicative Bus Route 3 servicing 38% of Demand

360 environmental

Lot 11 and 700 Mandurah Road, Karnup

Clearing Permit Application

Prepared for:

Rockingham Montessori School

October 2015

people • planet • professional

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Appendix B: Naturemap Flora Search Report

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1 Introduction

1.1 Background

360 Environmental Pty Ltd (360 Environmental) was commissioned the Rockingham Montessori School to develop this Clearing Permit Application to enable the development of a Montessori School at Lot 11 and 700 Mandurah Road, Karnup (Figure 1). This development will require a construction and bushfire protection footprint of approximately 5.13 ha which in turn requires the clearing of approximately 2.35 ha of native vegetation (Figure 2).

Lot 11 and 700 are currently zoned as 'Rural' under the Metropolitan Region Scheme (MRS). Lot 11 is zoned as 'Rural' and Lot 700 as 'Special Rural' under the City of Rockingham's Local Planning Scheme No. 2. A Flora, Vegetation and Black Cockatoo Habitat Survey was undertaken by 360 Environmental within Lot 11 in November 2014 and Lot 700 in February 2015 (Appendix A). One native vegetation type was identified within the proposed clearing footprint (Figure 3). This vegetation type is *Banksia attenuata, Banksia menziesii* woodland (2.35 ha).

1.2 Purpose of Document

The purpose of this document is to present the results of an assessment of the proposal against the ten clearing principles as outlined in the Department of Environment and Regulation (DER, previously Department of Environment and Conservation (DEC)) *Guide to Assessment: Clearing of Native Vegetation* under the EP Act. This report will also identify the potential environmental impacts associated with the clearing phase of the project based on the best available data.

1.3 Responsible Person

The Rockingham Montessori School is responsible for implementation of the clearing described within this document.

The contact person for this assessment is:

JJ Rao
Environmental Scientist/ GIS Specialist
360 Environmental Pty Ltd
10 Bermondsey St, West Leederville
6007 WA

2 Assessment Methodology

2.1 Desktop Assessment

An initial desktop assessment included a review of current and relevant literature sources, databases and GIS Information (constraints mapping) to determine:

- The possible impacts, environmental sensitivities and the environmental risk associated with the proposed clearing; and
- Whether the proposed clearing is exempt under the EP Act or the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

Included in the desktop work was the assessment of the likely impacts to native vegetation clearing against the ten clearing principles applicable to the Permit, contained in the EP Act. The ten clearing principles are as follows:

- Principle (a) – Native vegetation should not be cleared it if comprises a high level of biological diversity;
- Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia;
- Principle (c) – Native vegetation should not be cleared if it includes, or is necessary for the continued existence of rare flora;
- Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a Threatened Ecological Community (TEC);
- Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared;
- Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland;
- Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation;
- Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area;
- Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water; and
- Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

2.2 Black Cockatoo Habitat Assessment

A Black Cockatoo Habitat Assessment was undertaken by 360 Environmental across Lot 11 in November 2014 and Lot 700 in February 2015. The survey included assessing the site for both potential foraging and breeding habitat for Black Cockatoos. The assessment also comprised a significant tree survey which involved the identification of suitable species and the recording of their location, species type, number of hollows and other descriptive information for trees which exceeded a Diameter at Breast Height (DBH) of 500 mm.

The assessment was conducted in accordance with the Department of the Environment (formally SEWPaC) EPBC Act referral guidelines for three threatened black cockatoo species. A copy of this report can be found in Appendix A.

2.3 Botanical Field Assessment

A botanical assessment of the site was undertaken by 360 Environmental in November 2014 and February 2015 which consisted of a Level 2 Flora and Vegetation Survey (360 Environmental 2014). The survey was conducted within Lot 11 in November 2014 and Lot 700 in February 2015. The survey was undertaken by qualified and experienced botanists from 360 Environmental. The surveys included:

- Mapping vegetation types, including vegetation condition in the survey area; and
- Assessment of the flora and vegetation values in the survey area.

The Level 2 Flora and Vegetation Survey was conducted in accordance with the *Environmental Protection Authority's (EPA) Guidance for the Assessment of Environmental Factors No. 51, Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA, 2004a).*

A copy of this report can be found in Appendix A.

3 Assessment against the Ten Clearing Principles

The proposed clearing activities were assessed against the ten clearing principles with regard to the DEC's (now DER) *A guide to the assessment of applications to clear native vegetation under Part V of the Environmental Protection Act 1986*, and in consideration of the current extent and condition of the native vegetation on the site. This assessment is summarised in the table below.

Table 1: Assessment of the Clearing Footprint against the Ten Clearing Principles

CLEARING PRINCIPLE	ASSESSMENT
Principle (a) – Native vegetation should not be cleared it if comprises a high level of biological diversity	A Level 2 Flora Survey recently undertaken identified a total of 59 flora taxa (including species, subspecies, varieties and forms) from 49 genera and 31 families across the survey Area (360 Environmental 2015) (Appendix A). The commonly occurring families were; *Fabaceae* (9 taxa), *Poaceae* (7 taxa), *Proteaceae* (5 taxa) and *Asteraceae* (5 taxa). The survey concluded that the flora species richness of the site is low. The flora inventory is provided in Appendix A. The clearing footprint also falls within the following broad Shepherd vegetation mapping unit (Figure 4) (DAFWA 2012);998- Medium woodland: Tuart. This unit has approximately 38.08 per cent of its Pre-European vegetation remaining in the SWA02 sub-region (Government of Western Australia 2013). EPA Position Statement No.9 identifies vegetation complexes with 30 per cent or less or their pre-clearing extent remaining in a bioregion to be critical assets and may require formal assessment for any clearing of that critical asset. Given that the vegetation complex mapped within the site is above this threshold it is not considered a critical asset and therefore. It is estimated that 12% of the remaining 998 association is protected for conservation (Government of Western Australia 2013).

Clearing Principle	Assessment
	A large portion of the native vegetation proposed to be cleared (60%) is classified as being in a 'Degraded' condition or worse in accordance with the Bush Forever Classification Scale as summarized in Bush Forever (Department of Environmental Protection (DoEP), 2000) (Figure 5). The proposed clearing area comprises *Banksia* woodland vegetation with condition ranging from 'Good' to 'Completely Degraded'. The proposed clearing area has limited native species diversity and disturbances including cleared tracks, invasive weed species and areas of non-endemic vegetation. The native vegetation area proposed to be cleared can be broken down into the following conditions: • Good: 0.62 ha; and, • Degraded: 1.35 ha • Completely Degraded: 1.75 ha A search undertaken by the Department of Parks and Wildlife (DPaW) did not identify any Priority Ecological Communities (PECs) within the clearing footprint, however the Level 2 Flora and Vegetation Survey identified the following PEC as occurring within the clearing footprint: • *Banksia dominated woodlands of the Swan Coastal Plain IBRA region*; A total of 2.35 ha of this PEC in a 'Good' to 'Completely Degraded' condition is proposed to be cleared in order to facilitate the development of the site. Bush Forever site 356 is located approximately 200 meters north of the site and contains areas of *Banksia attenuata* and *B. menziesii* woodland communities. Greater than 60% of this BF site is classified as being in a Very Good to Pristine condition (DoEP 2000). The nearest mapped PEC is Priority 3 (P3) Ecological community 'SCP25' located approximately 1.3 km south-east of the clearing footprint. SCP25 is characterised by Southern *Eucalyptus gomphocephala* and *Agonis flexuosa* woodlands (DoEP, 2000) which is not a vegetation community identified within the clearing

CLEARING PRINCIPLE	ASSESSMENT
	footprint however this PEC may be present within the property boundary as suggested in the Level 2 Flora and Vegetation Survey (360 Environmental 2014). This PEC is not expected to be impacted. The inferred Floristic Community Type analysis undertaken as part of the Level 2 Flora and Vegetation Survey suggests that the site the site also potentially contains P3 Ecological Communities '*Northern Spearwood shrublands and woodlands'* and 'Southern Swan Coastal Plain *E. gomphocephala – A. flexuosa* woodlands', however these communities were not identified within the clearing footprint and will not be impacted by the proposed clearing. A search of the Department of Parks and Wildlife (DPaW) *NatureMap* carried out within a five kilometre radius of the centre point of the site returned a total of 284 flora taxon (none listed as Threatened and eight as Priority flora) and 132 fauna taxon (three listed as Threatened and 10 as either Priority or protected under International Agreement) (Appendix B). The Department of Parks and Wildlife conducted a database search for conservation significant flora within 5 km of the site (Figure 6). The search returned a total of 7 conservation significant flora as having been previously recorded within this radius however no records were identified within the site boundary (DPAW 2014). The DPaW database search did not return any Declared Rare Flora or Priority 1 species. The conservation significant flora recorded within 5 km of the site boundary are as follows: ● P2-*Acacia benthamii* ● P3-*Beyeria cinerea subsp. cinerea* ● P3-*Calandrinia oraria* ● P3-*Dillwynia dillwynioides* ● P4-*Dodonaea hackettiana*

CLEARING PRINCIPLE	ASSESSMENT
	• P4- *Jacksonia sericea* • P3-*Schoenus capillifolius* • P3-*Sphaerolobium calcicola* • P3-*Stylidium longitubum* • P3-*Thelymitra variegata* No Threatened or Priority flora were encountered during the Level 2 Flora and Vegetation Survey. However, of those species listed above for which suitable habitat occurs within the site, one species, *Thelymitra variegata* (P3), may not have been detectable at the time of the survey. Potentially suitable habitat occurs for this species within the site given the sandy nature of the soil. During non-flowering periods this species becomes a tuber under the ground surface and will not be detectable until its flowering period (June-September). Given that the survey was undertaken in November, this species may be present within the clearing footprint and may have been undetected. In addition, limited information on preferred habitat and flowering is available on the Priority 3 species *Calandrinia oraria* however all records of these species appear to be associated with the coastline with the closest recorded occurrence of this species located over 4 km west of the site (DPaW 2014a). Given this, it is considered unlikely that this species would occur within the clearing footprint. The native vegetation within the clearing footprint is considered to be of a mostly degraded nature. The regional vegetation mapping units retain more than 30% of their Pre-European extent which is above the threshold which the EPA consider to be critical assets and therefore clearing of these units are not considered to be significant. Furthermore surrounding conservation areas exist which contain similar vegetation communities as those mapped within the clearing footprint. In addition, the timing of the Flora

CLEARING PRINCIPLE	ASSESSMENT
	and Vegetation Survey captured the detectable period for all flora species excluding *Thelymitra variegata* and therefore rare and priority flora are unlikely to exist within the clearing footprint. The total number of flora taxa recorded at the site is relatively low and is not indicative of a high level of biological diversity. However, given that the clearing area contains 2.35 ha of vegetation which represents a Priority 3 Community it is expected that clearing **may be at variance to principle (a)**.
Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia	A search based on a five kilometre buffer around the site utilising the *NatureMap* search tool identified 13 conservation significant fauna species and 119 non-conservation fauna species as potentially occurring within the site (DPaW 2014a) (Appendix B). The 13 conservation significant fauna are listed below. **Rare or likely to become extinct** ● *Bettongia penicillata* subsp. *ogilbyi* (Woylie, Brush-tailed Bettong); ● *Calyptorhynchus banksii* subsp. *naso* (Forest Red-tailed Black-Cockatoo); ● *Calyptorhynchus latirostris* (Carnaby's Cockatoo (short-billed black-cockatoo, Carnaby's Black Cockatoo); **Protected Under International Agreement** ● *Ardea modesta* (Eastern Great Egret); ● *Calidris ruficollis* (Red-necked Stint); ● *Limosa lapponica* (Bar-tailed Godwit); ● *Merops ornatus* (Rainbow Bee-eater); ● *Pluvialis squatarola* (Grey Plover)

CLEARING PRINCIPLE	ASSESSMENT
	Other specially protected fauna • *Morelia spilota* subsp. *imbricata* (Carpet Python) **Priority 3** • *Lerista lineata* (Perth Slider, Lined Skink); **Priority 4** • *Synemon gratiosa* (Graceful Sunmoth) **Priority 5** • *Isoodon obesulus* (Southern Brown Bandicoot); • *Isoodon obesulus* subsp. *fusciventer* (Quenda, Southern Brown Bandicoot). Many of species protected under International Agreement are most likely associated with the wetlands (Figure 7) to the north-east of the site and are not well suited to the mostly degraded habitat of the proposed clearing area. Given this and the fact that the proposed clearing area is isolated from these wetlands by constructed roads and areas devoid of vegetation, the actions are not considered likely to impact these species. Of the species listed above, five were identified as potentially utilising the site based on their habitat preferences, distribution and knowledge of the habitat types within the site. Details on these five species that potentially utilise the site are listed below: ***Calyptorhynchus latirostris* (Carnaby's Black Cockatoo) and *Calyptorhynchus banksii subsp. naso* (Forest Red-tailed Black-Cockatoo)** A field survey was conducted across Lot 11 in November 2014 and Lot 700 in February 2015 targeting Black Cockatoos, identified suitable foraging species (Marri, Jarrah, *Banksia* spp.) and potential breeding habitat

Clearing Principle	Assessment
	within the property boundary (Figure 8, Appendix A). The application area contains 2.35 ha of *Banksia* vegetation which provide suitable foraging habitat for both Carnaby's Cockatoos and Forest Red-tailed Black Cockatoos (Figure 8). A total seven significant trees were identified within the cadastral boundary (Figure 8), all of which were in the north east corner of Lot 11 and outside of the clearing footprint. The trees (including one dead tree), were all Tuarts (*Eucalyptus gomphocephela*) which had a diameter at breast height (DBH) measurements from 570 mm to 830 mm. No hollows were identified and there was no evidence of foraging. The proposed clearing area does not contain any significant trees (Tuart >500 mm DBH). The areas of suitable habitat within the clearing footprint range from 'Good' to 'Completely Degraded' in condition and the development has been strategically located in the most degraded areas of habitat where possible. *Merops ornatus (Rainbow Bee-eater)* Habitat for the Rainbow Bee-eater is found throughout much of Western Australia, with sandy habitats being used for the construction of nesting burrows (Johnstone and Storr 1998). Impacts to the species habitat are expected to be minimal but may potentially occur due to the development of the degraded areas of the site. However, the cosmopolitan distribution of the species and its preferred breeding habitat throughout Western Australia indicates that the clearing of 2.35 ha of native vegetation would have a negligible impact on the conservation status of the species. *Lerista lineata (Perth Slider, Lined Skink)* Favouring sandy soils on linear dune systems, this species has been recorded from locations from Bunbury in the South to the Peron Peninsula in the north, with a concentration of records on the Swan Coastal Plain around Perth (How and Dell 1994; 2000). The Priority 3 listing recognizes the wide distribution of the species and its preferred habitat. It is therefore considered unlikely that the small scale of clearing will result in

CLEARING PRINCIPLE	ASSESSMENT
	significant impacts to the species conservation status. *Isoodon obesulus subsp. fusciventer* (Quenda, Southern Brown Bandicoot) Quenda remain relatively widely distributed through the southwest of Western Australia and are known to persist in pockets of the Perth metropolitan area. It is likely that individuals may forage at the Site periodically. However, their preferred habitat comprises dense undergrowth, typically in swampy to riparian areas and they are prone to predation in open habitats (Van Dyck and Strahan 2008). Given the degraded condition of much of the proposed clearing area and low density understory, development of the Site is unlikely to impact the species core habitat, and is not expected to significantly impact the species conservation status. This species is most likely to favour the conservation areas in the vicinity of the site such as the conservation category wetlands to the north-east. As discussed under 'principle h', clearing of 2.35 ha of mostly degraded vegetation is not considered likely to fragment wildlife corridors and ecological linkages given the existing surrounding conservation areas such as nearby Bush Forever sites and conservation category wetlands. Given that the proposal involves clearing native vegetation (2.35 ha) which is considered suitable foraging habitat for Carnaby's Black Cockatoo and the Forest Red-Tailed Black Cockatoo, it is expected that the project will be **at variance** with this clearing principle. However, these areas are the most degraded areas of the site and areas of 'Good' and 'Excellent' condition vegetation of value to Black Cockatoos will be retained onsite including all seven significant trees.
Principle (c) – Native vegetation should not be cleared if it includes, or is	A search for Declared Rare Flora (DRF) species undertaken by DPaW within a 5km radius of the site returned no recorded occurrence of DRF within the clearing footprint (DPaW 2014) (Figure 6). The search returned a total of 7 conservation significant flora as having been previously recorded within this radius (Figure 6). The DPaW database search did not return any Declared Rare Flora or Priority 1 species. Those species which were identified during the search are listed below.

CLEARING PRINCIPLE	ASSESSMENT
necessary for the continued existence of rare flora.	• *Acacia benthamii;* • *Beyeria cinerea subsp. cinerea;* • *Calandrinia oraria;* • *Dillwynia dillwynioides;* • *Jacksonia sericea;* • *Schoenus capillifolius;* • *Sphaerolobium calcicola;* • *Dodonaea hackettiana;* • *Stylidium longitubum; and ,* • *Thelymitra variegate.* A search of the Department of the Environment's *Protected Matters Search Tool* (PMST) was also undertaken for conservation significant flora potentially occurring within 5 km of the site (DotE 2014) (Appendix C). The PMST search returned 9 threatened species as likely to occur or with suitable habitat likely to occur within the search radius. These are listed below: • *Andersonia gracilis;* • *Caladenia huegelii;* • *Centrolepis caespitosa;* • *Darwinia foetida;*

Clearing Principle	Assessment
	• *Diuris micrantha;* • *Diuris purdiei;* • *Drakaea elastica;* • *Drakaea micrantha;* • *Lepidosperma rostratum* None of the species returned by the PMST have been recorded within a 5 km radius of the site, as indicated by the DPaW data. Furthermore the Level 2 flora and vegetation survey did not identify any species of conservation significance as occurring within the site. No wetlands are mapped within the site (Figure 7) and data for WIN bores in the vicinity of the site suggest that at least 3 meters separation to groundwater exists in the region (Figure 9) (DoW 2012). Many of the species listed above prefer damper habitat to that which exists on the site and are most likely located within the surrounding wetland areas. The survey was undertaken during the flowering period (identifiable) for all of the species listed above for which suitable habitat occurs within the site, with the exclusion of *Caladenia huegelii* and *Drakaea micrantha.* It is therefore concluded that these two species are the only two rare flora which potentially occur within the site as discussed below. *Caladenia huegelii (Grand Spider Orchid)* This species occurs in well-drained, deep sandy soils in low mixed woodlands of Coast Banksia (*Banksia attenuata*), Firewood Banksia (*B. menziesii*), Holly-leaved Banksia (*Banksia ilicifolia*), Western Sheoak (*Allocasuarina fraseriana*) and Jarrah (*Eucalyptus marginata*) (DotE 2014a). 2.35 ha of *B. menziesii* woodland occurs within the clearing footprint and may provide suitable habitat for this species. However given the mostly degraded condition of the vegetation within the clearing footprint and lack of understory vegetation, the presence of this species is unlikely. Throughout its range the species tends to favour areas of

Clearing Principle	Assessment
	dense undergrowth (DEC 2009). Furthermore this species generally occurs within deep grey-white sand associated with the Bassendean sand-dune system (although rare plants have been known to extend into the Spearwood system) (DEC 2009). The site occurs within the Spearwood and Quindalup systems and therefore does not comprise of the soils usually favoured by this species. This species was not identified within the DPaW five kilometre search and the closest recorded occurrence of the species was located approximately twelve kilometres northeast of the site (DPaW, 2014a). Given the above information, it is unlikely that this species occurs within the clearing footprint. *Drakaea micrantha* This species occurs in infertile grey sands, in Jarrah (*Eucalyptus marginata*) and Common Sheoak (*Allocasuarina fraseriana*) woodland or forest associated with *Banksia* species (Brown et al. 1998) or under thickets of Spearwood (*Kunzea ericifolia*) (Brown et al. 1998; Hoffman & Brown 1992; Robinson & Coates 1995). The Dwarf Hammer-orchid is usually found on cleared firebreaks or open sandy patches that have been disturbed, where competition from other plants has been removed (Brown et al. 1998; Hearn et al. 2006). Although areas of suitable habitat appear to occur on site, the sands occurring at the site belong to the Spearwood and Quindalup system and therefore are generally calcareous yellow to brown sands. DPaW records suggest that this species is generally confined to areas further inland upon the grey sands of the Bassendean system. This species was not identified within the DPaW 5 km search and the closest recorded occurrences of the species was located over twenty kilometres northeast and southeast of the site (DPaW, 2014a). The presence of *C. huegelii* is unlikely given the degraded state of much of the clearing area and the sparse nature of the understory. The presence of *Drakaea micrantha* is also unlikely given the vast distance to any known occurrence of this species. Furthermore these species generally occurs on the grey sands of the

CLEARING PRINCIPLE	ASSESSMENT
	Bassendean sands rather than the Spearwood or Quindalup Sands. Given the above it is unlikely that any rare flora exists within the clearing footprint and it is expected that the clearing action is **unlikely to be at variance** to this clearing principle. The Level 2 Flora and Vegetation Survey has been included as Appendix A.
Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a Threatened Ecological Community (TEC).	A search of undertaken by DPaW returned buffers of the following two TECs within the clearing footprint (DPaW 2014, Figure 6): ● SCP19a- Sedgelands in Holocene dune swales of the southern Swan Coastal Plain; and, ● SCP19b- Woodlands over sedgelands in Holocene dune swales of the southern Swan Coastal Plain. The mapped buffers of 16 SCP19a communities and 10 SCP19b communities were identified as overlapping the site boundary. The typically common vegetation associated with both SCP19a and SCP19b includes *Acacia rostellifera, A. saligna, Xanthorrhoea preissii* over sedges including *Baumea juncea, Ficinia nodosa and L. gladiatum*, over native grass *Poa porphyroclado*, SCP19b typically contains an overstory of *E. gomphocephala*, *Melaleuca rhaphiophylla* and *Banksia littoralis* (DEC 2011). The Floristic Community Type analysis undertaken as part of the Level 2 Flora and Vegetation Survey suggests that the site does not contain any vegetation communities consistent with any of the TECs mapped around the site. In addition the development concept plan has been designed to retain the areas of better quality vegetation and utilise existing buildings and cleared tracks. Therefore it is expected that this proposal is **unlikely to be at variance** to this clearing principle.

CLEARING PRINCIPLE	ASSESSMENT
Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared	Regional vegetation mapping indicates that the clearing footprint is located within the Heddle *et al.* vegetation unit 'Cottesloe Complex Central and South' (Figure 4) which has approximately 35.22 per cent of its Pre-European vegetation remaining (Perth Biodiversity Program 2013). The clearing footprint also falls within the following broad Shepherd vegetation mapping unit (Figure 4) (DAFWA 2012); 998- Medium woodland: Tuart. This unit has approximately 38.08 per cent of its Pre-European vegetation remaining in the SWA02 sub-region (Government of Western Australia 2013). EPA Position Statement No. 9 identifies vegetation complexes with 30 per cent or less or their pre-clearing extent remaining in a bioregion to be critical assets and may require formal assessment for any clearing of that critical asset. Given that the vegetation complex mapped within the site is above this threshold it is not considered a critical asset and therefore. It is estimated that 12% of the remaining 998 association is protected for conservation. Vegetation condition was assessed based on the Bush Forever condition scale (DoEP, 2000b). The proposed development footprint was assessed as mostly 'Degraded' to 'Completely Degraded' with only 0.62 ha of vegetation in a 'Good' condition and therefore does not accurately represent the Cottesloe Complex Central and South unit or vegetation association 998. In addition, there is extensive area surrounding the site reserved for conservation purposes including Bush Forever sites 356, 379 and 278 (Figure 10). Furthermore several Conservation Category Wetlands (CCWs) surround the site and therefore provide additional protection for vegetation in the area (Figure 7). Furthermore, the clearing of 2.35 ha of native vegetation will not reduce the remaining extent of the Cottesloe Complex Central and South Complex or vegetation association 998 to below the 30% threshold of Pre-European extent. Given the information above it is expected that the actions are **unlikely to be at**

CLEARING PRINCIPLE	ASSESSMENT
	variance to this principle.
Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	A search of the Perth Groundwater Atlas (DoW, 2015) and the Geomorphic Wetlands Database (DPaW 2014b) did not return any known wetlands or watercourses within or in association to the clearing footprint (Figure 7). This search included geomorphic wetlands and EPP Lakes. The nearest wetland identified was a Multiple Use Wetland (MUW) located approximately 300 meters east of the proposed clearing footprint. The nearest wetland of conservation significance is a CCW located approximately 800 m northeast of the application area and is separated by Greenham Place and Stakehill road. A search for federally protected matters such as Ramsar Wetlands and wetlands identified by the Directory of Important Wetlands did not return any results within the site. The nearest federally significant wetlands are the Beecher Point Wetlands located approximately 1.5 km west of the proposed clearing area. No typical wetland indicator species were identified during the flora survey within the clearing footprint or property boundary. Due to the results of the desktop wetland and watercourse search and the absence of native wetland vegetation within the proposed clearing area, it is expected that the proposed clearing is **unlikely to be at variance with this principle.**
Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation	The site is located within both the Quindalup and the Spearwood Dune Systems. More specifically the following soil subsystems occur within the clearing application area (Figure 11): ● Quindalup South Qf2 Phase- Calcareous deep sands; ● Quindalup South Qp2 Phase- Uniform calcareous sands showing variable depths of surface darkening; and, ● Spearwood S1d Phase- Moderately deep to very deep siliceous yellow-brown sands.

Clearing Principle	Assessment
	The sandy nature of the soils in the majority of the site may cause some short term dust problems and localised wind erosion, depending on when the site is cleared. However given that much of the proposed clearing area is degraded and consists of a relatively sparse understory, erosion is not expected to be significantly elevated from the present state of the site. Regardless, management measures will be put in place to ensure mobilisation of sand is mitigated including dampening of soil if clearing is undertaken during dry months. Regional topographic data was sourced from the Department of Water (DoW 2012a). This elevation data suggests that the site is generally gently sloping in the western portion of the site and moderately undulating in the south-eastern portion. Mapped topographic contours within the site range between 10 and 40 meters (Australian Height Datum [AHD]; DoW 2012a) (Figure 12). The steepest areas of the site are either already cleared or are located outside of the clearing footprint. Although excessive stormwater runoff is unlikely given the porous nature of the soils within the site, any potential surface runoff during construction will be managed in accordance with Best Practice Management where necessary. Acid Sulfate Soil (ASS) risk mapping by the Department of Environment Regulation (DER) identified the entire site as having no known risk of ASS. This is supported by the relatively elevated nature of the site as well as the porous nature of the sandy soils to allow infiltration. The search of the Perth Groundwater Atlas (DoW 2015) identified the sight as having 'brackish' salinity levels (1000-1500) mg/L TDS. The removal of 2.32 ha of mostly degraded native vegetation is unlikely to significantly impact upon groundwater levels and as a result is unlikely to create salinity issues at the site. Given the gently sloping relief and the porous nature of the sandy soil to facilitate infiltration it is considered that any potential land degradation would be localised and minimal. In dry and windy conditions, sand may be mobilised resulting in localised erosion, however it is considered that potential land degradation will not be

CLEARING PRINCIPLE	ASSESSMENT
	'appreciable' and can be easily managed through measures such as dampening of the soil in drier months. The proposal is **unlikely to be at variance** to this principle.
Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area	A search of the Bush Forever mapping by the Department of Planning indicates that there are no Bush Forever sites or protected areas within the proposed clearing area. The closest Bush Forever site is site 356 which is located approximately 200 meters to the north of the clearing footprint (Figure 10). The clearing footprint is isolated from this Bush Forever site by Mandurah Road, a primary regional road and also other rural properties. Two additional Bush Forever sites are located within 1 km of the property however are also separated from the site by other rural properties and cleared areas associated with Greenham Place and the rail reserve. Mapping of the Perth Regional Ecological Linkages (WALGA 2008) shows Link 76 as occurring adjacent to the site and Link 81 approximately 50 meters west of the site. The majority of Link 76 is contained within Bush Forever site 356 and therefore is not expected to be cleared in the near future. Furthermore the portion of the linkage which abuts the site contains rural development in the form of horse stables and therefore separates the vegetation linkage from the property. The site is also isolated from Link 76 by the presence of Mandurah Road. Link 81 which is located east of the site comprises of intact native vegetation within Bush Forever sites and protected CCWs. Furthermore the site is isolated from Link 81 due to the presence of Greenham Place and the rail reserve. Due to the isolation of the site from these mapped ecological linkages, use of the site as a fauna corridor would be limited to avian fauna. In addition, the proposed clearing area is relatively small and comprises vegetation in a 'Degraded' condition or worse. This clearing area is in a poor condition in comparison to the overall site and therefore any current value that the site provides as an ecological linkage is expected to be retained through the portions of better quality vegetation on site. A search of the DPaW managed lands dataset identified Port Kennedy Scientific Park as the nearest Nature

CLEARING PRINCIPLE	ASSESSMENT
	Reserve. This reserve is located approximately 1.5 km west of the site and is separated from the site by roads and other rural properties. Approximately 800 m to the northeast of the site is a CCW which is separated from the property by Greenham Place, Stakehill Road, other rural properties and associated completely degraded areas (Figure 7). The separation distance from this conservation area is considered adequate to protect the values of the wetland, especially considering the small size and degraded nature of the proposed clearing area. The proposed clearing area is located upon the Cottesloe Complex- Central and South which as of 2013 has 9.09% of its Pre-European extent with formal protection including DPaW conservation estates, Bush Forever (BF) sites on DPaW managed lands and BF sites in Regional Parks. The proposed clearing area is relatively small and degraded with a presence of tracks and weed species providing a poor representation of the vegetation complex. Given that the proposal is to clear only a small portion of mostly degraded native vegetation in an area isolated from the large intact conservation reserves surrounding the site, it is expected that the proposed clearing will not impact any nearby conservation areas and is **unlikely to be at variance** to this principle.
Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water	The nearest weather bureau station is located at Hopelands approximately 6.9 km south-east of the Site. Average annual rainfall for the area is approximately 767.9 mm, with much of rain falling between June and August (BoM 2014). Given the porous nature of the soil and the degraded nature of the vegetation which is proposed to be cleared, natural surface water hydrology is not likely to be significantly altered. However, as mentioned previously, best practice management will be in place during construction to slow water flow velocity if necessary. Mapping by the DoW indicates that the proposed clearing area does not lie within a Public Drinking Water Source Area (PDWSA) (DoW 2013). Regional groundwater contour mapping by the Department of Water

CLEARING PRINCIPLE	ASSESSMENT
	(2010) suggests that groundwater levels below the site are approximately three m AHD, equating to approximately seven to 37 m below ground level (Figure 9). The Department of Water's WIN (Water Information Network) Bore Dataset (2012) did not identify any bores as falling within the boundaries of the site. Several WIN bore records were obtained for the broader region surrounding the site with recorded groundwater levels ranging between 3.0 and 12.8 m below ground level (Figure 9). Regional data indicates that groundwater salinity across the site ranges from 1000-1500 mg/L TDS which is classified as brackish (DoW 2015). As mentioned previously, the removal of 2.35 ha of mostly degraded native vegetation is unlikely to impact upon groundwater levels and as a result is unlikely to create salinity issues at the site. Given the relatively small and degraded clearing area and the considerable distance to ground water from the proposed action **is unlikely to be at variance** to this principle.
Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding	DoW mapping suggests that there are no known watercourses in the vicinity of the site. The 100 year ARI Floodplain Development Control Area mapping (DoW 2014) did not identify the site as being located within the 100 year ARI flood risk area. As mentioned previously, regional soil mapping indicates that the underlying soil profile of the site is of a porous sandy nature (DAFWA 2002) and separation to groundwater is expected to range between 3.0 and 37 m below ground level across the site based on topographic and groundwater contour mapping (GSWA 2008, DoW 2010). These characteristics suggest stormwater would be able to infiltrate without waterlogging and causing excessive runoff. In addition, much of the proposed clearing area is in a degraded or worse condition and therefore any clearing in these areas is unlikely to significantly alter the current characteristics of the site and result in exacerbated flooding or an increased incidence of flooding. Given that much of the vegetation is already in a degraded condition, the area is elevated upon porous sands with adequate separation to groundwater and not located within a known flood risk area, it is concluded that the action is not likely to cause or exacerbate the incidence of flooding and therefore is **unlikely to be at**

CLEARING PRINCIPLE	ASSESSMENT
	variance to this principle.

4 Summary of Assessment

In summary, it has been found that the proposed clearing of 2.35 ha of native vegetation within the property at Lot 11 and 700 Mandurah Road, Karnup for the purpose of the development of the site as a Montessori School is only likely to be at variance with 'principle b' and potentially at variance to 'principle g' of the ten clearing principles contained within the EP Act. The following table summarises the assessment against each clearing principle.

Table 2: Summary of Assessment

CLEARING PRINCIPLE	SUMMARY OF ASSESSMENT	PROPOSED OUTCOME
Principle (a) – Native vegetation should not be cleared it if comprises a high level of biological diversity;	Much of the clearing footprint is degraded or previously cleared. However 2.35 ha of PEC Banksia dominated woodlands of the Swan Coastal Plain IBRA region is proposed to be cleared.	Clearing may be at variance to this principle
Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia;	The proposal involves clearing native vegetation (2.35 ha) which is considered suitable foraging habitat for Carnaby's Black Cockatoo and the Forest Red-Tailed Black Cockatoo. No potential breeding trees were identified within the clearing footprint.	Clearing is likely to be at variance to this principle
Principle (c) – Native vegetation should not be cleared if it includes, or is necessary for the continued existence of rare flora;	No rare or priority flora were identified during the flora and vegetation surveys. The survey was outside of the detectable period for *Caladenia huegelii* and *Drakea micrantha* however it is considered highly unlikely that these species exist within the site, based on their preferred habitat and closest recorded occurrence.	Clearing is unlikely to be at variance to this principle
Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of,	No vegetation types consistent with TECs were identified within the clearing	Clearing is unlikely to be at variance

CLEARING PRINCIPLE	SUMMARY OF ASSESSMENT	PROPOSED OUTCOME
or is necessary for the maintenance of a Threatened Ecological Community (TEC);	footprint or cadastral boundary.	to this principle
Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared;	Both the Heddle et al. and Shepherd vegetation units within the clearing footprint have greater than 30% of their Pre-European extent remaining.	Clearing is unlikely to be at variance to this principle
Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland	No known wetlands or watercourses were identified within or in association to the clearing footprint.	Clearing is unlikely to be at variance to this principle
Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation;	Given the sandy nature of the soil within the clearing footprint, in dry and windy conditions the proposed action may cause land degradation. However, it is considered that this would be localised and easily manageable.	Clearing is unlikely to be at variance to this principle
Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area;	No conservation areas are located within the proposed clearing area and the site is isolated from any nearby conservation areas.	Clearing is unlikely to be at variance to this principle
Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water;	The Site is relatively elevated with considerable distance to ground water from the surface. Salinity has been identified as brackish however the clearing of a small area of mostly degraded vegetation is unlikely to impact upon water quality.	Clearing is unlikely to be at variance to this principle

CLEARING PRINCIPLE	SUMMARY OF ASSESSMENT	PROPOSED OUTCOME
Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding	Much of the vegetation is already in a degraded condition, the area is elevated upon porous sands and not located within a known flood risk area.	**Clearing is unlikely to be at variance to this principle**

4.1 Conclusion

Following the assessment against the ten clearing principles and the Level 2 Flora and Vegetation Surveys, the Black Cockatoo Habitat Assessments and the desktop assessment of the environmental values of the site and surrounds, it has been established that the proposal is only expected to be at variance to **principle b**. It is expected that the clearing of approximately 2.35 ha of Black Cockatoo foraging habitat will be at variance to the necessary maintenance of a significant habitat for fauna indigenous to Western Australia. This action will be referred to the Department of the Environment for potentially significant impacts to Black Cockatoos under the EPBC Act.

It is also considered that the proposal may be at variance to **principle a** given that 2.35 ha of PEC 3 community '*Banksia dominated woodlands of the Swan Coastal Plain IBRA region*' is proposed to be cleared.

5 Limitations

This report is produced strictly in accordance with the scope of services set out in the contract or otherwise agreed in accordance with the contract. 360 Environmental makes no representations or warranties in relation to the nature and quality of soil and water other than the visual observation and analytical data in this report.

In the preparation of this report, 360 Environmental has relied upon documents, information, data and analyses ("client's information") provided by the client and other individuals and entities. In most cases where client's information has been relied upon, such reliance has been indicated in this report. Unless expressly set out in this report, 360 Environmental has not verified that the client's information is accurate, exhaustive or current and the validity and accuracy of any aspect of the report including, or based upon, any part of the client's information is contingent upon the accuracy, exhaustiveness and currency of the client's information. 360 Environmental shall not be liable to the client or any other person in connection with any invalid or inaccurate aspect of this report where that invalidity or inaccuracy arose because the client's information was not accurate, exhaustive and current or arose because of any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to 360 Environmental.

Aspects of this report, including the opinions, conclusions and recommendations it contains, are based on the results of the investigation, sampling and testing set out in the contract and otherwise in accordance with normal practices and standards. The investigation, sampling and testing are designed to produce results that represent a reasonable interpretation of the general conditions of the site that is the subject of this report. However, due to the characteristics of the site, including natural variations in site conditions, the results of the investigation, sampling and testing may not accurately represent the actual state of the whole site at all points.

It is important to recognise that site conditions, including the extent and concentration of contaminants, can change with time. This is particularly relevant if this report, including the data, opinions, conclusions and recommendations it contains, are to be used a considerable time after it was prepared. In these circumstances, further investigation of the site may be necessary.

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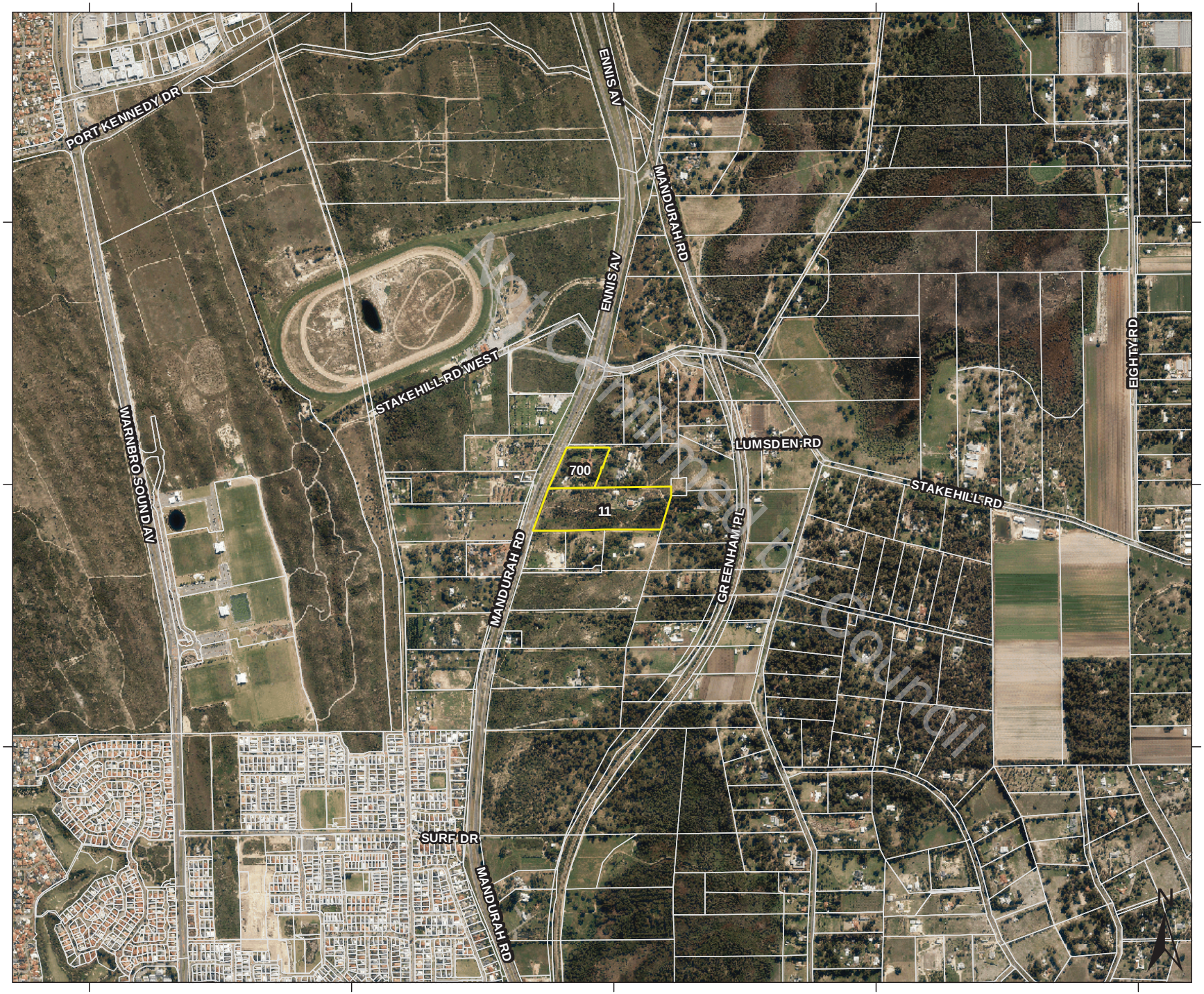
FIGURES



Legend

- Site Location (10.43 ha)
- Cadastral Boundaries

Note:
Lot 11 - 7.832 ha
Lot 700 - 2.594 ha

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- CADASTRE SOURCED FROM LANDGATE 7 NOV 2014
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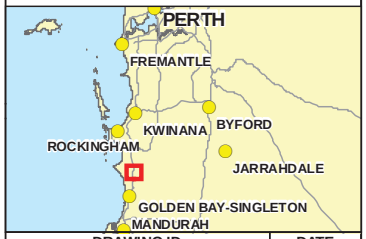

DRAWING ID	DATE
785 F1 Site Location.mxd	07-Nov-2014

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	BP	TS	0

Rockingham Montessori School
Lots 11 & 700 Mandurah Road, Karnup
Clearing Permit Application

Figure 1 - Site Location

PDS-085/15 - Attachment

Legend

- Site Location
- Clearing Footprint (5.13 ha)

Development Layout

- Buildings
- Roads/Carparks
- Deck
- Firebreak
- Hardcourt
- Paving
- Recreation Area
- Wastewater Easement
- Wastewater Disposal Area

Bushfire Management

- Building Protection Zone
- Hazard Separation Zone
- Retained Native Vegetation

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- SITE LAYOUT SOURCED FROM EIW ARCHITECTS (24 NOV 2014) (SK01_MASTERPLAN.DWG)
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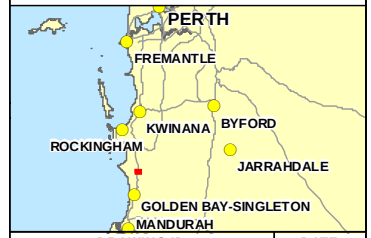

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785 f2 layout.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
Lot 11 & 700 Mandurah Road, Karnup
Clearing Permit Application

Figure 2 - Site Layout

PDS-085/15 - Attachment

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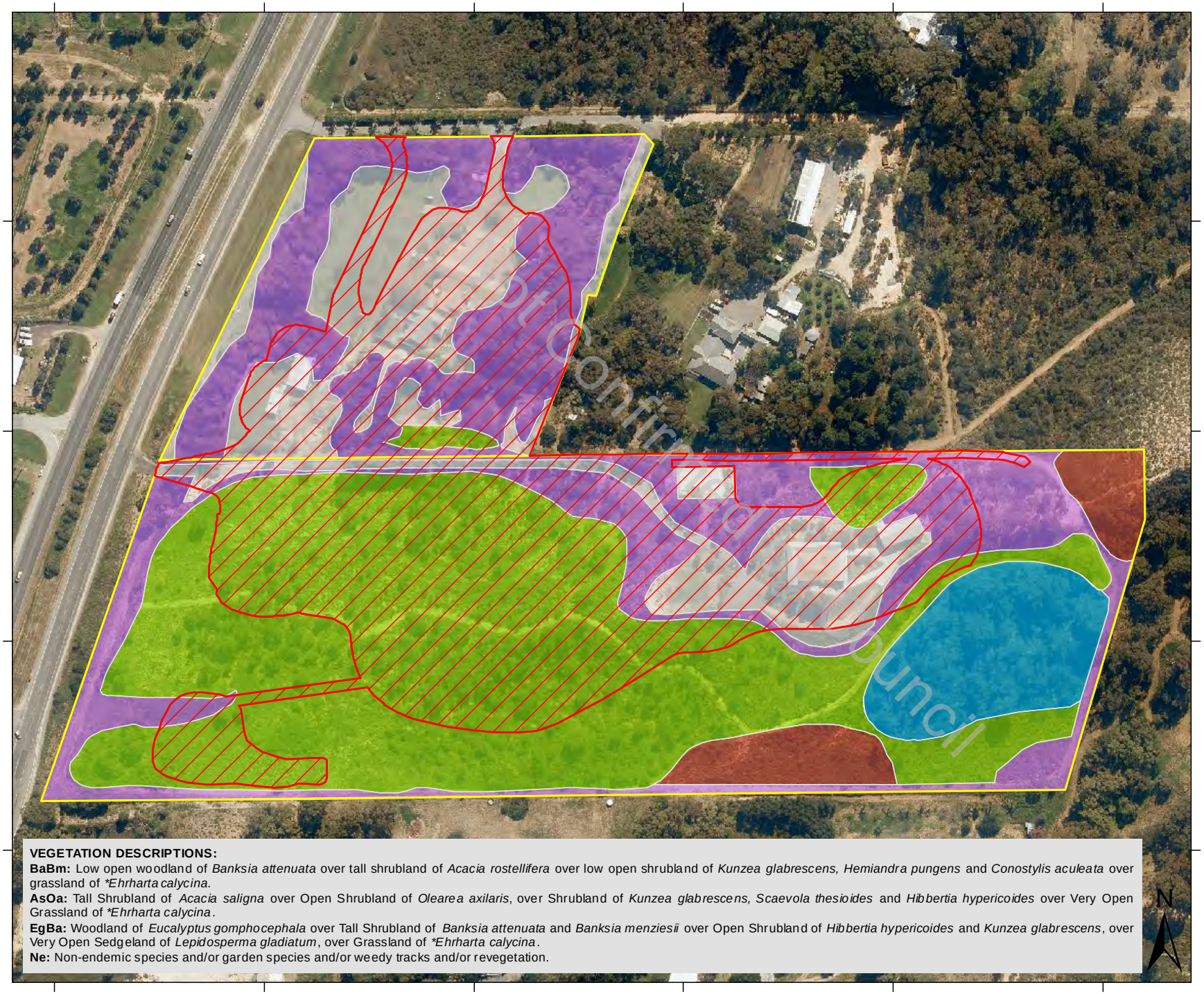

VEGETATION DESCRIPTIONS:

BaBm: Low open woodland of *Banksia attenuata* over tall shrubland of *Acacia rostellifera* over low open shrubland of *Kunzea glabrescens, Hemiandra pungens* and *Conostylis aculeata* over grassland of **Ehrharta calycina.*

AsOa: Tall Shrubland of *Acacia saligna* over Open Shrubland of *Olearea axilaris*, over Shrubland of *Kunzea glabrescens, Scaevola thesioides* and *Hibbertia hypericoides* over Very Open Grassland of **Ehrharta calycina*.

EgBa: Woodland of *Eucalyptus gomphocephala* over Tall Shrubland of *Banksia attenuata* and *Banksia menziesii* over Open Shrubland of *Hibbertia hypericoides* and *Kunzea glabrescens*, over Very Open Sedgeland of *Lepidosperma gladiatum*, over Grassland of **Ehrharta calycina*.

Ne: Non-endemic species and/or garden species and/or weedy tracks and/or revegetation.

Legend

- Site Location
- Clearing Footprint (5.13 ha)

Native Vegetation

- BaBm
- AsOa
- EgBa

Non-Native Vegetation

- Ne
- Cleared

VEGETATION IN CLEARING FOOTPRINT

Native - BaBm: 2.35 ha
Non-native - Ne: 1.37 ha

Cleared: 1.41 ha
Total: 5.13 ha

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- VEGETATION MAPPING BY 360 ENVIRONMENTAL 2014
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2014 (© Western Australian Land Information Authority 2014)

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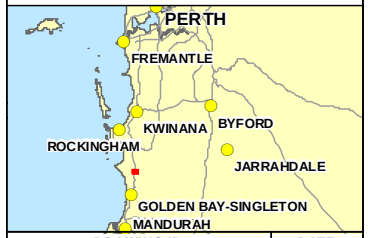

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785 f3 vegetation associations.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

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JJ	CT/TS	TS	0

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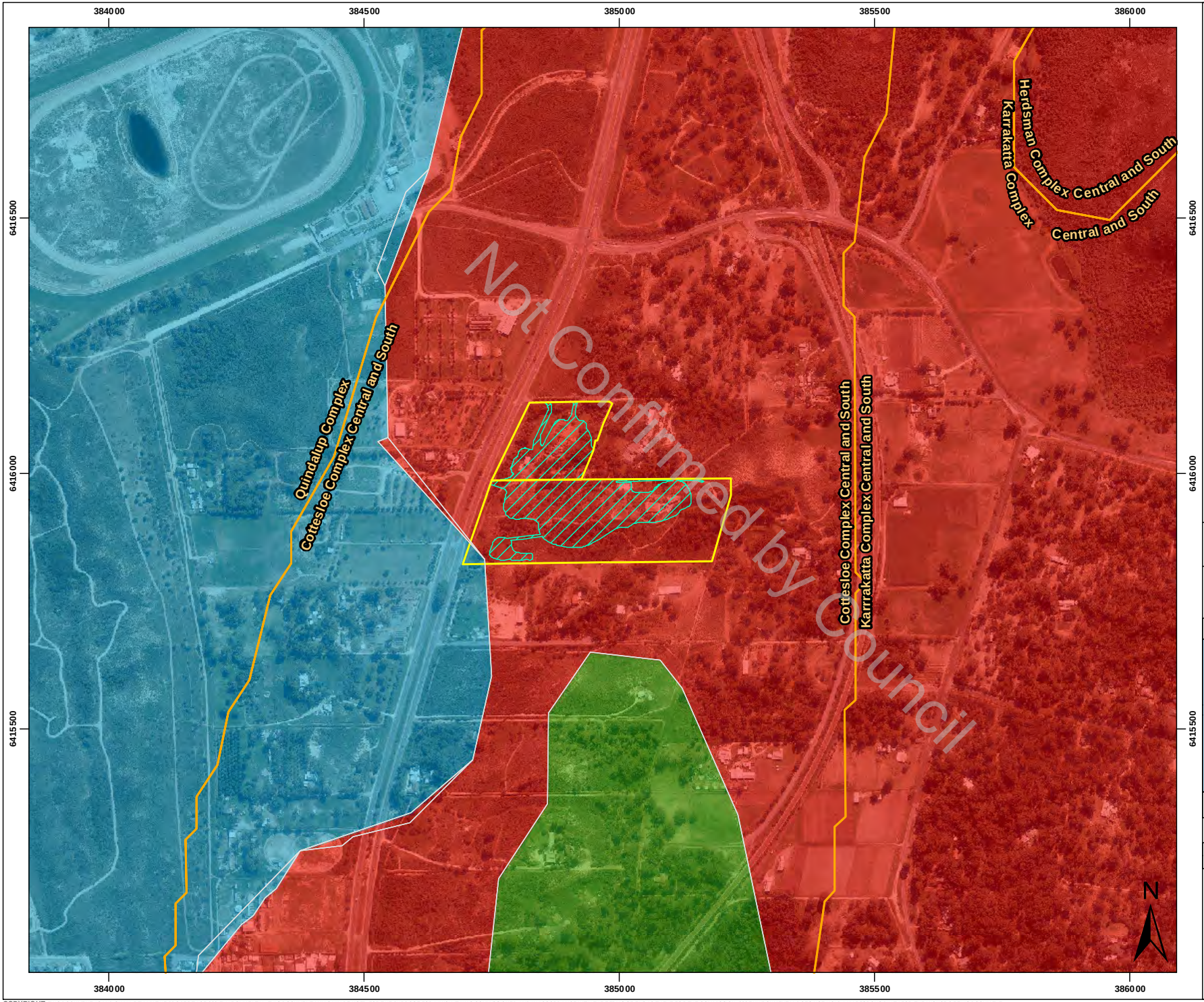
Figure 3 - Vegetation Associations

PDS-085/15 - Attachment



Legend

- Site Location
- Clearing Footprint
- Heddle (1980) Vegetation complexes

Shepherd Vegetation Associations

- **998:** Medium woodland; Tuart
- **1001:** Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (Melaleuca spp.)
- **3048:** Shrublands; scrub-heath on the Swan Coastal Plain

Note:
Cottesloe Complex Central and South: Mosaic of woodland of *E. gomphocephala* and open forest of *E. gomphocephala - E. marginata - E. calophylla*; closed heath on the limestone

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- VEGETATION ASSOCIATIONS SOURCED FROM DAFWA 2012 BASED ON SHEPHERD ET AL 2001
- HEDDLE COMPLEXES SOURCED FROM HEDDLE 1980
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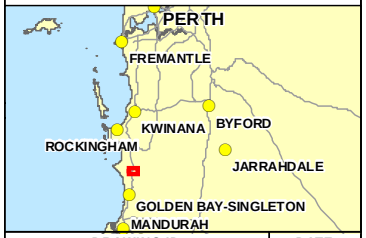

DRAWING ID	DATE
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HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
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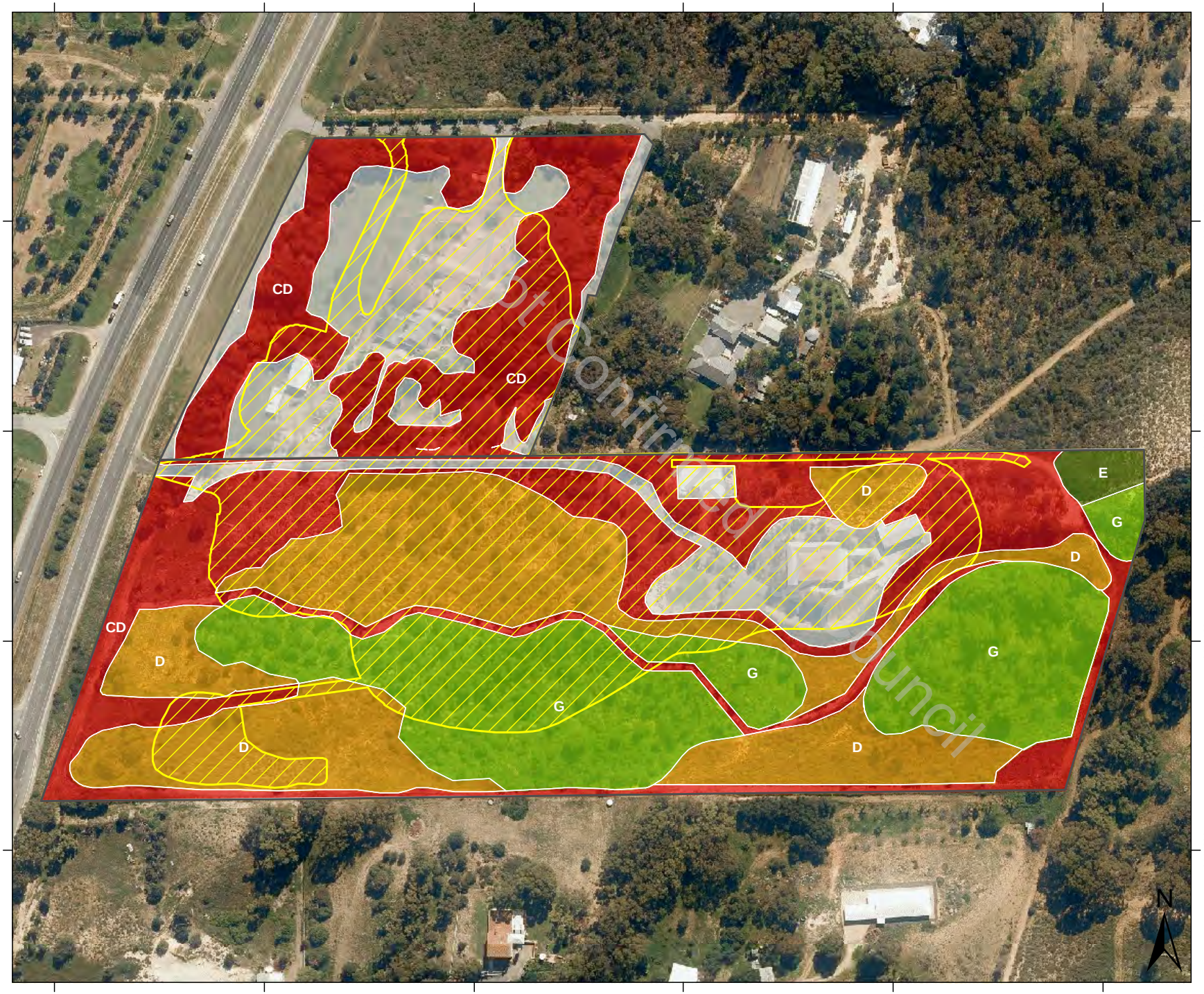
Figure 4 - Broad Vegetation Associations

PDS-085/15 - Attachment



Legend

- Site Location
- Clearing Footprint (5.13 ha)

Vegetation Condition

- E - Excellent
- G - Good
- D - Degraded
- CD - Completely Degraded
- Cleared

VEGETATION IN CLEARING FOOTPRINT
Good: 0.62 ha
Degraded: 1.35 ha
Completely Degraded: 1.75 ha

Cleared: 1.41 ha
Total: 5.13 ha

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- VEGETATION MAPPING BY 360 ENVIRONMENTAL 2014
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2014 (© Western Australian Land Information Authority 2014)

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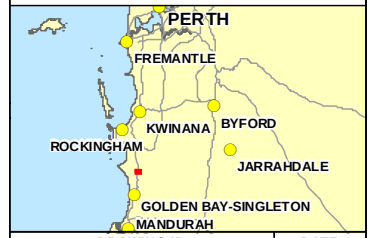
LOCALITY MAP



DRAWING ID	DATE
785 f5 vegetation condition.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	CT/TS	TS	0

Rockingham Montessori School
Lot 11 & 700 Mandurah Road, Karnup
Clearing Permit Application

Figure 5 - Vegetation Condition

PDS-085/15 - Attachment

Legend

Site Location

Priority and Rare Flora

- Priority 4
- Priority 3
- Priority 2
- Priority 1
- Declared Rare

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- FLORA RECORDS SOURCED DPAW NOV 2014
- PHOTOGRAPHY SOURCED FROM LANDGATE AUG 2014 (© Western Australian Land Information Authority 2014)

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Meters

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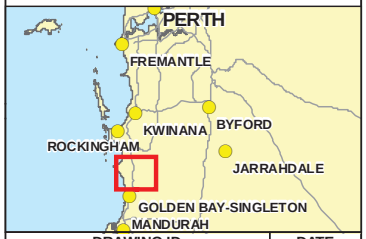
LOCALITY MAP



DRAWING ID	DATE
785 f9b drflora.mxd	18-Nov-2014

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

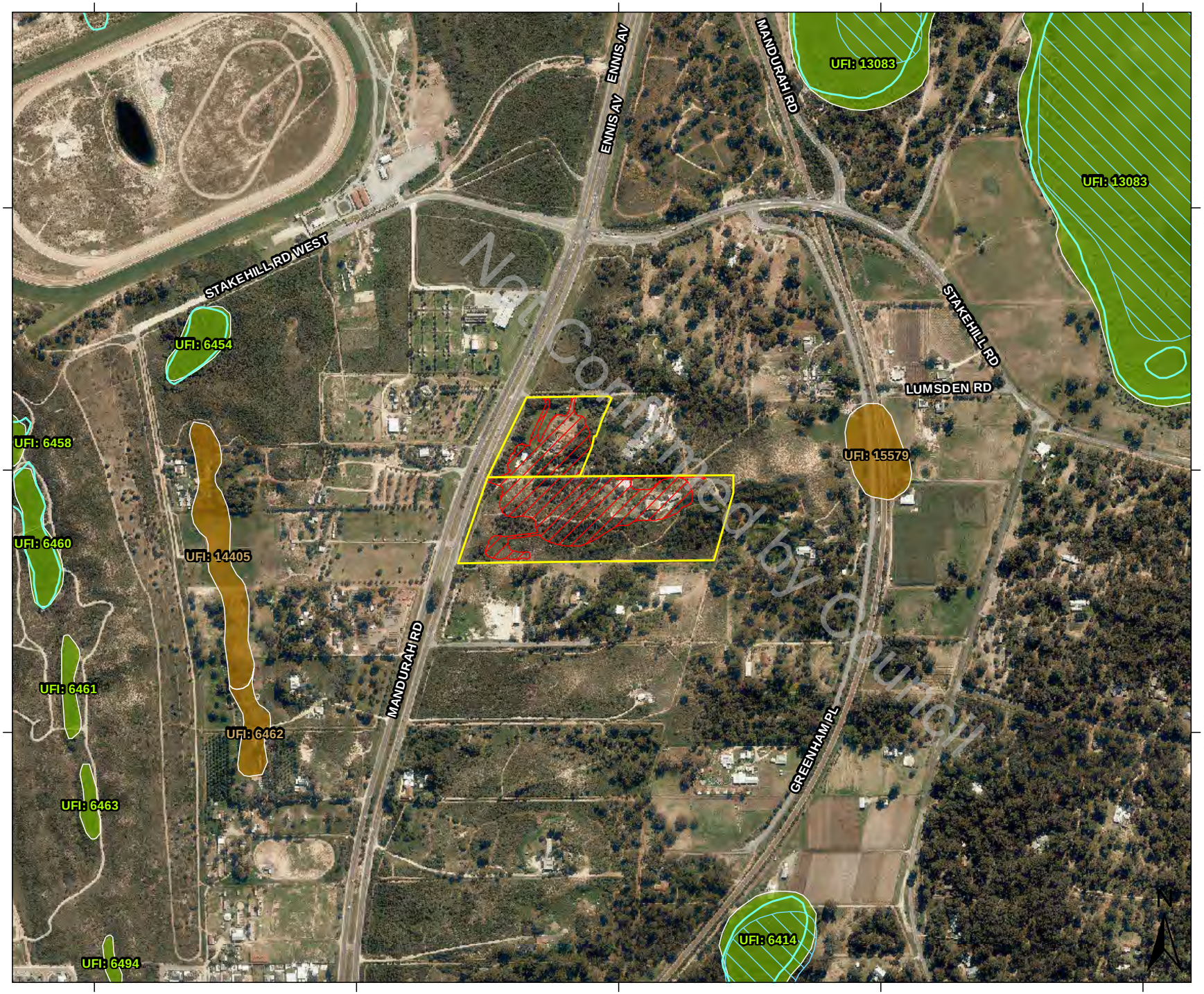
CREATED	CHECKED	APPROVED	REVISION
CS	CT	TS	0

Rockingham Montessori School
Lots 11 & 700 Mandurah Road, Karnup

Clearing Permit Applicaiton

Figure 6- Flora

PDS-085/15 - Attachment



Legend

- Site Location
- Clearing Footprint
- EPP Lakes

Surface Water Features

- Swamp - perennial

Geomorphic Wetlands

- Conservation
- Resource Enhancement
- Multiple Use
- Not Assessed

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- GEOMORPHIC WETLANDS SOURCED FROM DPAW 2014
- HYDROGRAPHY SOURCED FROM DOW 2010
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2014 (© Western Australian Land Information Authority 2014)

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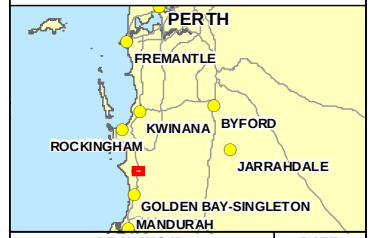
LOCALITY MAP



DRAWING ID	DATE
785 f7 hydrology.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
Lot 11 & 700 Mandurah Road, Karnup
Clearing Permit

Figure 7 - Wetlands

PDS-085/15 - Attachment

Legend

- Site Location
- Clearing Footprint (5.13 ha)
- Black Cockatoo Habitat
- Black Cockatoo Significant Trees

BLACK COCKATOO HABITAT IN CLEARING FOOTPRINT: 2.35 ha

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- VEGETATION MAPPING BY 360 ENVIRONMENTAL 2014
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2014 (© Western Australian Land Information Authority 2014)

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0 12.5 25 50 75 100
Meters
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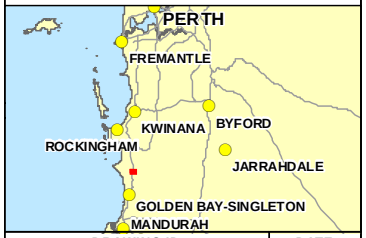
LOCALITY MAP



DRAWING ID	DATE
785 f8 bc habitat.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

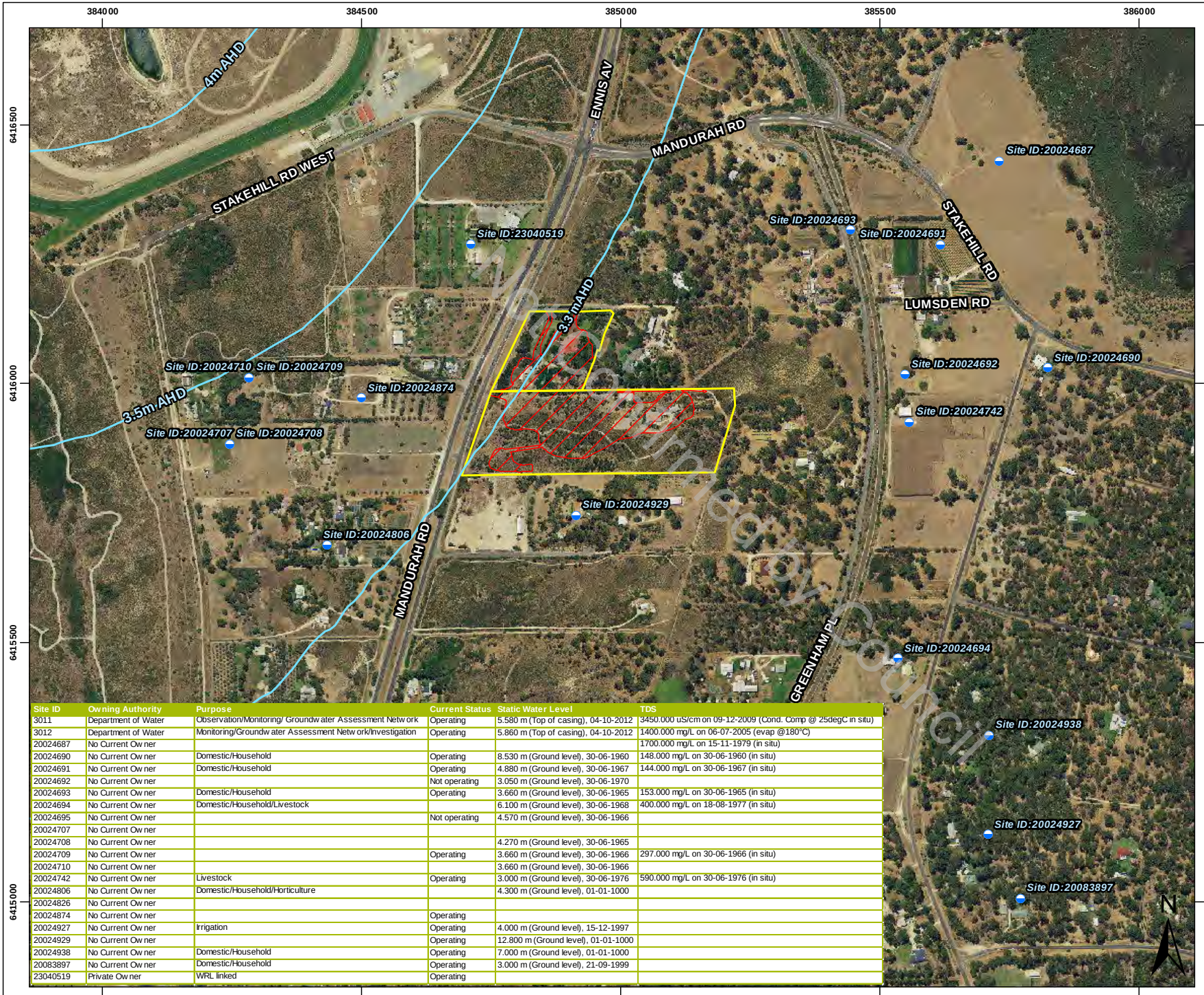
CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
Lot 11 & 700 Mandurah Road, Karnup
Clearing Permit Application

Figure 8 - Black Cockatoo Habitat

PDS-085/15 - Attachment

K:\Projects\3.0 LD\785 Mandurah Road Karnup EAR\Figures



Site ID	Owning Authority	Purpose	Current Status	Static Water Level	TDS
3011	Department of Water	Observation/Monitoring/ Groundwater Assessment Network	Operating	5.580 m (Top of casing), 04-10-2012	3450.000 uS/cm on 09-12-2009 (Cond. Comp @ 25degC in situ)
3012	Department of Water	Monitoring/Groundwater Assessment Network/Investigation	Operating	5.860 m (Top of casing), 04-10-2012	1400.000 mg/L on 06-07-2005 (evap @180°C)
20024687	No Current Owner				1700.000 mg/L on 15-11-1979 (in situ)
20024690	No Current Owner	Domestic/Household	Operating	8.530 m (Ground level), 30-06-1960	148.000 mg/L on 30-06-1960 (in situ)
20024691	No Current Owner	Domestic/Household	Operating	4.880 m (Ground level), 30-06-1967	144.000 mg/L on 30-06-1967 (in situ)
20024692	No Current Owner		Not operating	3.050 m (Ground level), 30-06-1970	
20024693	No Current Owner	Domestic/Household	Operating	3.660 m (Ground level), 30-06-1965	153.000 mg/L on 30-06-1965 (in situ)
20024694	No Current Owner	Domestic/Household/Livestock		6.100 m (Ground level), 30-06-1968	400.000 mg/L on 18-08-1977 (in situ)
20024695	No Current Owner		Not operating	4.570 m (Ground level), 30-06-1966	
20024707	No Current Owner				
20024708	No Current Owner			4.270 m (Ground level), 30-06-1965	
20024709	No Current Owner		Operating	3.660 m (Ground level), 30-06-1966	297.000 mg/L on 30-06-1966 (in situ)
20024710	No Current Owner			3.660 m (Ground level), 30-06-1966	
20024742	No Current Owner	Livestock	Operating	3.000 m (Ground level), 30-06-1976	590.000 mg/L on 30-06-1976 (in situ)
20024806	No Current Owner	Domestic/Household/Horticulture		4.300 m (Ground level), 01-01-1000	
20024826	No Current Owner				
20024874	No Current Owner		Operating		
20024927	No Current Owner	Irrigation	Operating	4.000 m (Ground level), 15-12-1997	
20024929	No Current Owner		Operating	12.800 m (Ground level), 01-01-1000	
20024938	No Current Owner	Domestic/Household	Operating	7.000 m (Ground level), 01-01-1000	
20083897	No Current Owner	Domestic/Household	Operating	3.000 m (Ground level), 21-09-1999	
23040519	Private Owner	WRL linked	Operating		

Legend

- Site Location
- Footprint
- WIN Bores
- Groundwater Contours (Hist. Max)

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- WIN BORES SOURCED FROM DOW 2012
- GROUNDWATER CONTOURS SOURCED FROM DOW 2010
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2014
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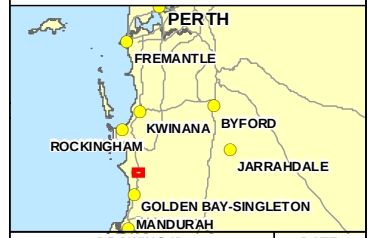
LOCALITY MAP



DRAWING ID	DATE
785 f9 groundwater.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
Lot 11 & 700 Mandurah Road, Karnup
Clearing Permit Application

Figure 9 - Groundwater

PDS-085/15 - Attachment

Legend

- Site Location
- Bush Forever Sites
- Perth Regional Ecological Linkages

DPaW Managed Lands

- Marine Park
- Miscellaneous Reserve
- Nature Reserve

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- BUSH FOREVER SITES SOURCED FROM DOP 2012
- ECOLOGICAL LINKAGES SOURCED FROM PBP (WALGA) 2008
- DPAW MANAGED LANDS SOURCED FROM DPAW 2014
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE AUG 2014 (© Western Australian Land Information Authority 2014)

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Meters
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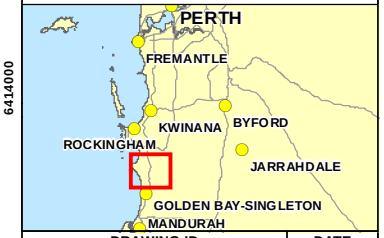
LOCALITY MAP



DRAWING ID	DATE
785 f10 conservation areas.mxd	10-Feb-2015

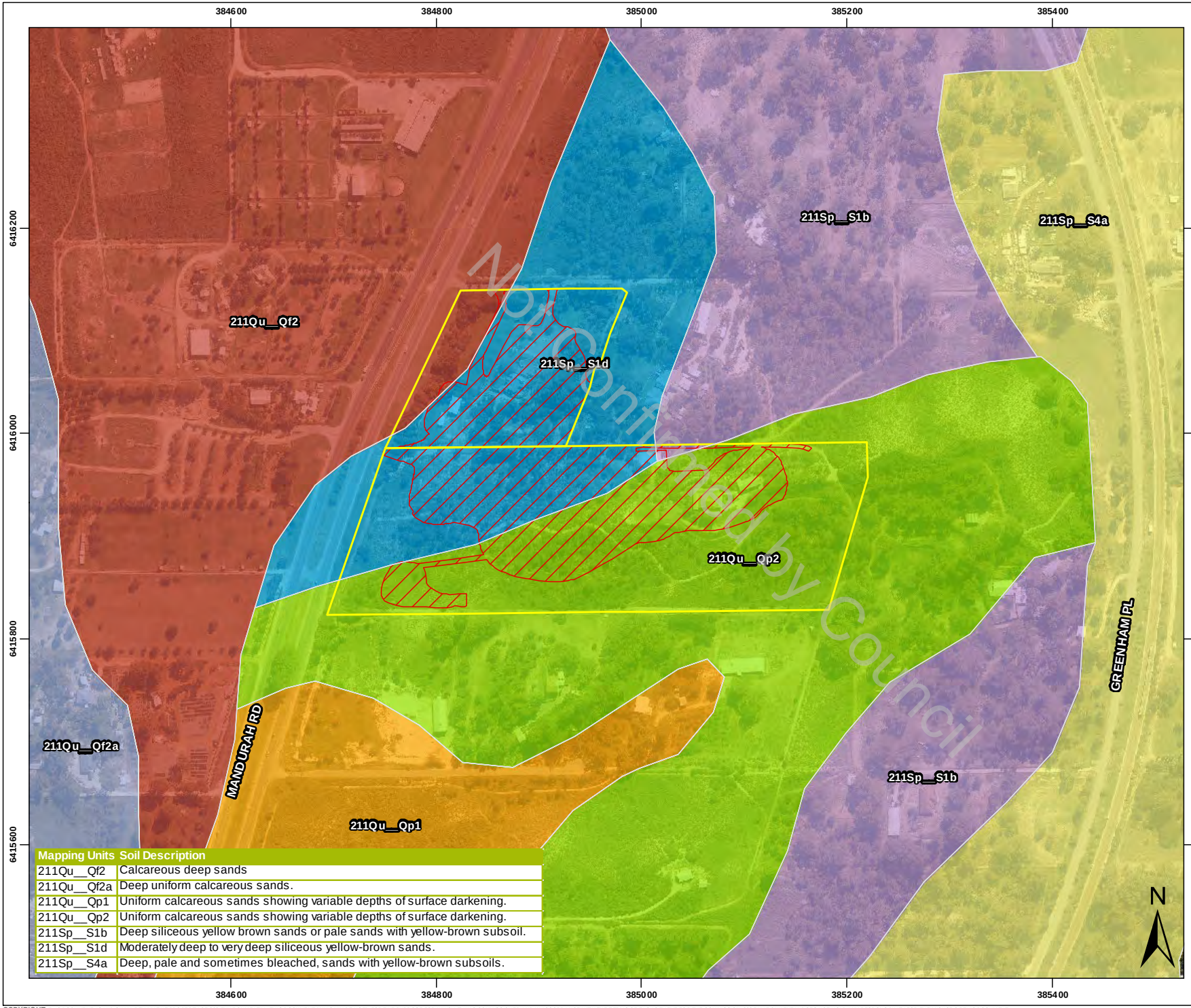
HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
Lots 11 & 700 Mandurah Road, Karnup
Clearing Permit Application

Figure 10 - Conservation Area

PDS-085/15 - Attachment



Mapping Units	Soil Description
211Qu__Qf2	Calcareous deep sands
211Qu__Qf2a	Deep uniform calcareous sands.
211Qu__Qp1	Uniform calcareous sands showing variable depths of surface darkening.
211Qu__Qp2	Uniform calcareous sands showing variable depths of surface darkening.
211Sp__S1b	Deep siliceous yellow brown sands or pale sands with yellow-brown subsoil.
211Sp__S1d	Moderately deep to very deep siliceous yellow-brown sands.
211Sp__S4a	Deep, pale and sometimes bleached, sands with yellow-brown subsoils.

Legend

- Site Location
- Clearing Footprint

Soil Subsystems

- **211Qu__Qf2,** Quindalup South Qf2 Phase
- **211Qu__Qf2a**, Quindalup South Qf2a Phase
- **211Qu__Qp1**, Quindalup South Qp1 Phase
- **211Qu__Qp2**, Quindalup South Qp2 Phase
- **211Sp__S1b**, Spearwood S1b Phase
- **211Sp__S1d**, Spearwood S1d Phase
- **211Sp__S4a**, Spearwood S4a Phase

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- SOILS SOURCED FROM DAFWA 2002
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2014 (© Western Australian Land Information Authority 2014)

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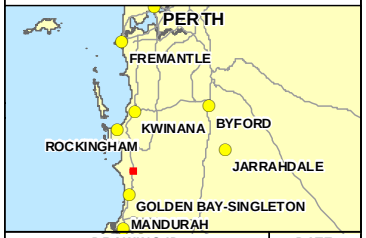
LOCALITY MAP



DRAWING ID	DATE
785 f11 soils.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

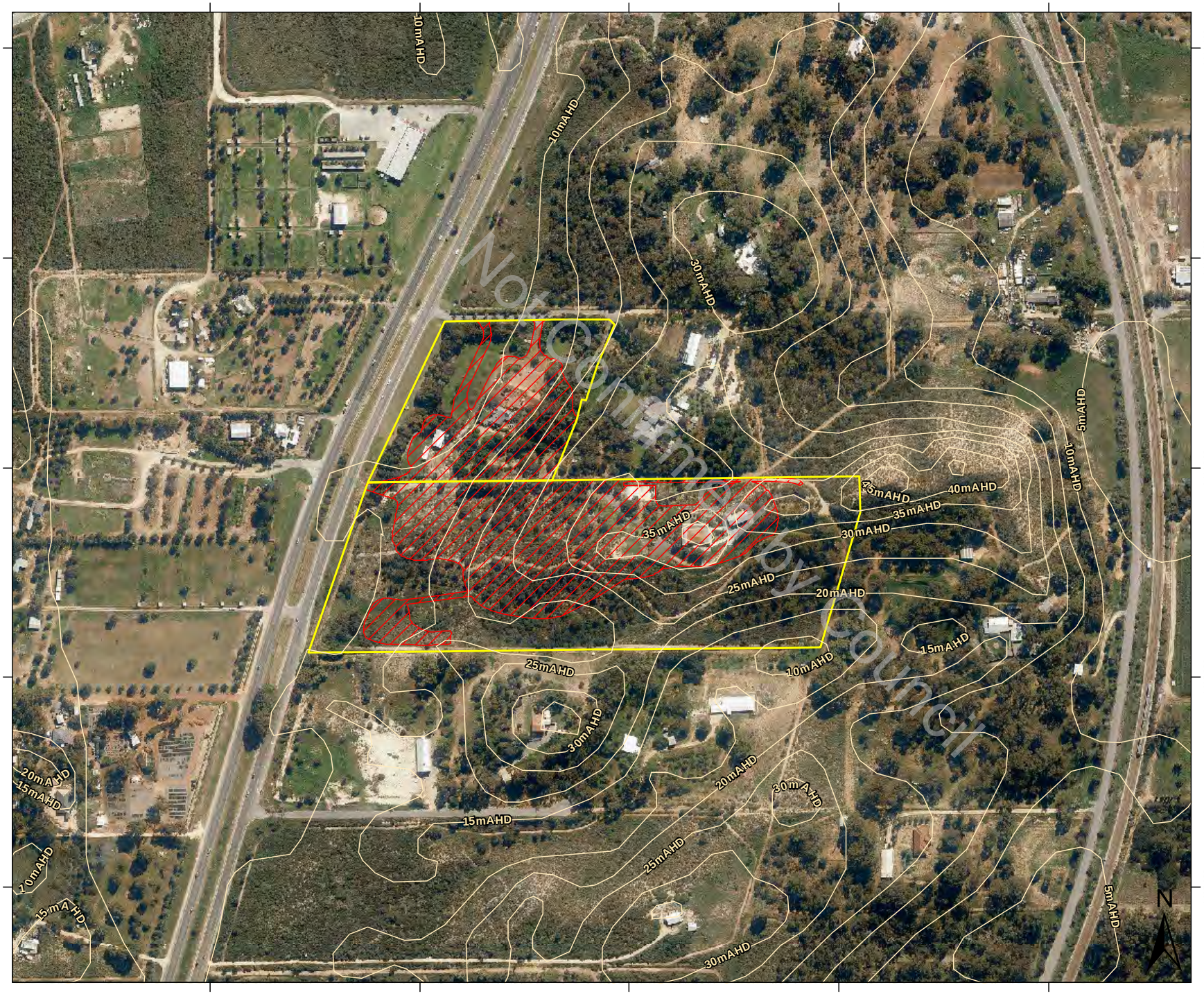
CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
Lot 11 & 700 Mandurah Road, Karnup
Environmental Assessment Report

Figure 11 - Soils

PDS-085/15 - Attachment

K:\Projects\3.0 LD\785 Mandurah Road Karnup EAR\Figures



Legend

- Site Location
- Clearing Footprint
- Ground Surface Contours

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
- LOCALITY MAP SOURCED FROM LANDGATE 2006
- TOPOGRAPHY SOURCED FROM GSWA 2008
- AERIAL PHOTOGRAPHY SOURCED FROM LANDGATE 2014 (© Western Australian Land Information Authority 2014)

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Meters
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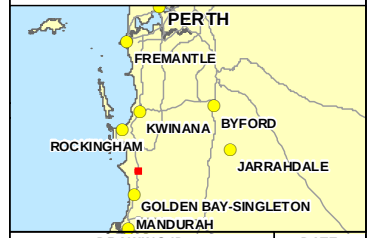
LOCALITY MAP



DRAWING ID	DATE
785 f12 topo.mxd	22-Oct-2015

HORIZONTAL DATUM AND PROJECTION
GDA 1994 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
JJ	CT/LR	TS	0

Rockingham Montessori School
Lot 11 & 700 Mandurah Road, Karnup
Clearing Permit Application

Figure 12 - Topography

PDS-085/15 - Attachment

APPENDIX A

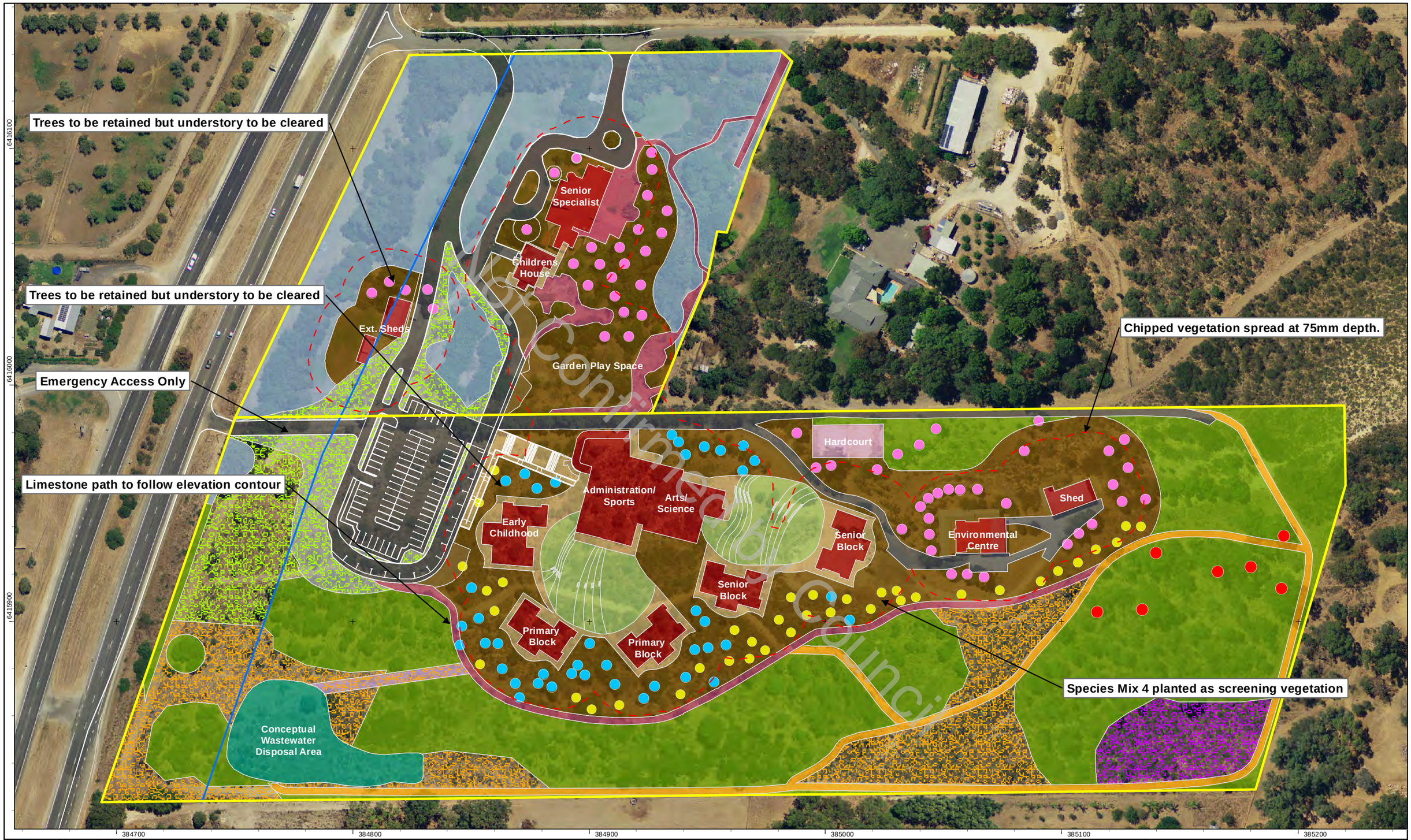
360 Environmental Flora, Vegetation and Black Cockatoo Habitat Assessment

APPENDIX B

DPaW NatureMap Search Report

APPENDIX C

DotE Protected Matters Search Report



LEGEND

- Site Boundary
- Potential Black Cockatoo Habitat Trees

Separation Distance Guide

- 20m

Rehabilitation Elements

- Species Mix 1
- Species Mix 2
- Species Mix 3
- Species Mix 4
- 40m Vegetated Buffer

Vegetation Management

- Mulched or Cleared Understory
- Retained Native Vegetation
- Retained Non-Endemic Vegetation
- Retained Non-Endemic Trees
- Retained Foraging Trees

Development Layout

- 2500m^2 Wastewater Disposal Area
- Existing and Proposed Buildings
- Deck
- Firebreak - Existing
- Hardcourt - Existing
- Limestone Path or Paving
- Recreation Area
- Carpark/Access
- Estimated Road Batters
- Wastewater Easement

DATA SOURCES
AERIAL IMAGERY: LANDGATE FEB 2015
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Rockingham Montessori School

HORIZONTAL DATUM	SCALE	REVISION	VERT. DATUM
GDA MGA ZONE 50	1:1,500	A	-

DRAWN	CHECKED	APPROVED	STATUS	DATE	SIZE
CS/JJ	CL	TS	FINAL	22/10/2015	A3

0 10 20 40 60 80
Meters

PROJECT NUMBER	DRAWING NO.
785	1

Rockingham Montessori School

Lots 11 and 700, Mandurah Road, Karnup

Preliminary Assessment of Water, Visual and Rehabilitation

Figure 1 - Landscaping and Revegetation

K:\Projects\3.0 LD\785 Mandurah Road Karnup EAR\Figures\Prelim Water, Visual and Rehab\785 F1 Landscape Plan Elements JJ Oct 2015.mxd

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Perth Office
L3, 369 Newcastle Street
Northbridge 6003
Western Australia

p: +618 9221 1991
f: +618 9221 1919
info@rowegroup.com.au
rowegroup.com.au

Job Ref: 8235
9 July 2015

Development Assessment Panel
C/- Department of Planning
Locked Bag 2506
PERTH WA 6001

Attention: Metropolitan South-West JDAP – Mr Ian Birch

Dear Sir

SAT Matter DR 126/2015 – Rockingham Montessori School Inc. vs Metro South-West Joint Development Assessment Panel
Proposed 'Educational Establishment' – Lot 11 (No. 1809) and Lot 700 (No. 1791) Mandurah Road, Karnup

We refer to the above Review and the Orders made as a result of our 12 June 2015 Mediation Conference. The project team has prepared additional information for the Respondent (via the City of Rockingham and Department of Planning) to consider with respect to the proposed 'Educational Establishment' at Lot 11 (No. 1809) and Lot 700 (No. 1791) Mandurah Road, Karnup ('the subject site').

We provide below a summary of the modifications to the proposal and additional information in support of the development. Detailed reporting is attached as appendices to this correspondence.

Revised Masterplan

Please find attached a revised Masterplan of the proposed development at the subject site prepared by EIW Architects (SK01, Rev. B, 1 July 2015). Below is a summary of the modifications:

- Removal of 'Early Childhood' building from Lot 700 and relocation of the building to Lot 11;
- Removal of one (1) 'Primary Block' building from Lot 11;
- Removal of right hand turn into the subject site from Mandurah Road;
- Modification to the vehicular entry and internal car/bus parking areas; and

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- Confirmation on the Masterplan that the northern vehicular access is for "Emergency Access Only".

A copy of the revised Masterplan is included as Appendix 1.

Rockingham Montessori School Philosophy

The Rockingham Montessori School Board has provided information detailing the school's philosophy, its teaching methodologies and practices, and why the subject site is ideally suited to the school in this regard.

A copy of the school's information is contained in Appendix 2.

Planning – Non-Conforming Use/Objectives of 'Rural' Zone

The following contains additional planning information with respect to the appropriateness of the proposed 'Educational Establishment' in the 'Rural' Zone (Lot 11) and the alteration of the existing non-conforming use (Lot 700).

'Rural' Zone

Lot 11 is zoned 'Rural' under the provisions of the City of Rockingham Town Planning Scheme No. 2 ('TPS 2'). An 'Educational Establishment' is listed as an 'A' use in the 'Rural' Zone, meaning that the use is not permitted unless the local government has exercised its discretion by granting planning approval after giving special notice in accordance with Clause 6.3 (Advertising of Applications) of TPS 2.

The land use of 'Educational Establishment' is approvable within the 'Rural' Zone and (therefore) its appropriateness turns on whether the use is compatible with characteristics of Lot 11, the surrounding land uses, and whether the impacts of the proposed use can be adequately contained.

The original Development Application Report contained a series of environmental, traffic, fire and acoustic reports in support of the 'Educational Establishment' in the 'Rural' Zone. TPS 2 contains a variety of non-rural and non-residential uses that are approvable in the 'Rural' Zone, meaning there is a contemplation (under TPS 2) that 'Rural' zoned land is capable of accommodating other land uses which may require larger tracts of land and may not be appropriate or desirable in an urban setting. Such uses that are approvable in the 'Rural' Zone include: 'Child Care Premises', 'Educational Establishment', 'Exhibition Centre', 'Private Recreation', 'Place of Public Worship, 'Reception Centre', 'Restaurant' and 'Veterinary Clinic'.

Given the undulating topography of Lot 11 and the presence of remnant vegetation worthy of retention in the south-eastern portion of the lot, the site is not suitable for farming or agricultural purposes. In addition to the information contained in the original Development Application Report, the further reporting

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(contained below and attached as appendices) confirms that the impacts of the 'Educational Establishment' use at Lot 11 can be adequately contained, managed and/or mitigated. These impacts relate to traffic, environmental matters, fire management, servicing and the appropriate operation of the land use.

Non-Conforming Use

Rowe Group, in the Development Application Report, provided information on the land use permissibility of the proposed 'Educational Establishment' in the context of changing the use of Lot 700 from one non-conforming use ('Reception Centre') to another non-conforming use ('Educational Establishment'). Lot 700 is currently used as the Munja Gardens Function Centre, which hosts and caters for a variety of events including (but not limited to) weddings, engagements, birthdays, conferences and meetings. The development was approved as a 'Reception Centre' and has been in operation since a time prior to the 'Special Rural' zoning of Lot 700. The 'Reception Centre' has a certificate of approval for 295 persons.

A 'Reception Centre' land use is defined in TPS 2 as follows:

> *Reception Centre: means premises used by parties for functions on formal or ceremonious occasions, but not for unhosted use for general entertainment purposes.*

Clause 7.3 of TPS 2 provides the capacity to change from one non-conforming use to another non-conforming use where there are good planning reasons to do so. Clause 7.3 states (underlining is for emphasis):

> *Where an application is for a change of use from an existing non-conforming use to another non-conforming use, the Council is not to grant its planning approval unless the proposed use is less detrimental to the amenity of the locality than the existing non-conforming use and is, in the opinion of the Council, closer to the intended purpose of the zone.*

Based on our experience and based on our interpretation of Clause 7.3 of TPS 2, in order to take advantage of Clause 7.3 the following criteria must be met:

- The existing use must be non-conforming;
- The proposed use must be non-conforming;
- The proposed use must be less detrimental to the amenity of the locality; and
- The proposed use must be closer to the intended purpose of the zone.

With respect to the above, the existing 'Reception Use' is a non-conforming use given its approval was granted prior to the 'Special Rural' rezoning of Lot 700. Schedule 4 of TPS 2 sets out the land use

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permissibility of the 'Special Rural' Zone and, with respect to Lot 700, a 'Reception Centre' and 'Educational Establishment' are 'X' (prohibited) land uses. Therefore, the existing use is non-conforming and the proposed use is non-conforming. The first two criteria, as outlined above, are met.

The third test is whether the proposed non-conforming use is less detrimental to the amenity of the locality than the current use. This is a test as to relative impact – most likely in relation to traffic, noise and visual appearance. Consideration to the existing amenity and characterisation of the locality is important in this regard. 'Amenity' is defined in TPS 2 as meaning: *all those factors which combine to form the character of an area and include the present and likely future amenity*. We understand the common practice of the SAT, in determining the amenity of an area, is a question of fact and applies to the objective character of an area that represents the present state of amenity.

The Karnup locality, in proximity to the subject site, is characterised by a busy road (Mandurah Road); a railway line (Perth-Mandurah suburban rail); open space; relatively large allotments; a variety of land uses including single residential dwellings, the Munja Gardens Function Centre, a substantial veterinary surgery, a large kennel/cattery and a wrecking yard; a vegetative landscape.

For various reasons the proposed 'Educational Establishment' will have less impact on the amenity of the locality than the existing 'Reception Centre'. Importantly, the revised Masterplan (see Appendix 1) does not propose any new built form development on Lot 700. This is an important consideration given the original Masterplan proposed additional car parking and an 'Early Childhood Centre' building in the southern portion of Lot 700. This is no longer the case.

With respect to traffic, the proposed 'Educational Establishment' will alter the access arrangements to Lot 700 by utilising a shared crossover to Mandurah Road from Lot 11. The current vehicular access from the battle axe leg north of Lot 700 will only be used for emergency access purposes. Contained in Appendix 6 is a copy of the Bus Transport Opportunities technical note that has been prepared by DVC. With respect to attracting students to utilise bus services, Rockingham Montessori School is considering including the bus operating costs into the school fees (as suggested by DVC) to make such a service more attractive given families already pay for the bus services in this regard. Rockingham Montessori School is also considering amending its Code of Conduct to require students travel to the subject site by bus unless there are extenuating circumstances that require drop off/pick up by private vehicle. Therefore, with respect to traffic and its impact on the amenity of the locality, the modifications to the access arrangement (to Lot 700) in addition to the opportunity to transport the majority of students to the proposed development by bus (rather than private vehicles) will assist in reducing the impact of traffic to Lot 700. Currently, we understand there are no formalised arrangements for guests to be transported to functions at the 'Reception Centre' in large numbers (i.e. by bus).

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The 'Reception Centre' land use is, by its definition, a land use that is predominantly based around entertainment. This may include (but not be limited to) functions where live and recorded music is played, alcohol is served, functions are held during the day and at night time, weekdays and weekends and (as best we can establish) there are no limitation to the number of functions that can be held at the Munja Gardens Function Centre. The 'Reception Centre' has a certificate of approval for 295 persons. The existing buildings at Lot 700 will accommodate a maximum of approximately 180 students as part of the proposed 'Educational Establishment' use. This is significantly less that the maximum number of guests approved for the existing 'Reception Centre' use and will result in a less intensive use of Lot 700. The proposed 'Educational Establishment' will operate during normal business hours and during the school calendar only. The proposed use will rarely operate on weekends or late into the evening which suggests that the proposed use will operate at the least sensitive times of the day and week as opposed to the existing 'Reception Centre' use.

With respect to noise, an acoustic assessment was undertaken by Herring Storer Acoustics and submitted as part of the Development Application Report. The assessment concluded that the proposed 'Educational Establishment' is capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* and State Planning Policy 5.4 with appropriate acoustic design of buildings close to Mandurah Road. The acoustic impact of adjoining premises is not expected to significantly affect the proposed school, and similarly potential noise emissions from the proposed school are not expected to impact on the adjacent premises. Moreover, the use of the school will be during the day time on weekdays which is a less sensitive time for noise compared to the use of the existing 'Reception Centre' which is likely to be in the evening, nights and on weekends.

In relation to the visual amenity of Lot 700, 360 Environmental has prepared further environmental reporting (see Appendix 3) which includes a Landscaping and Revegetation Plan ('LRP'). The LRP has been developed with regard to bushfire planning requirements and to minimise the visual impacts on the surrounding residents and Mandurah Road. The LRP proposes to retain the non-endemic vegetation on Lot 700 with mulched or cleared understory of vegetation occurring in areas around the existing buildings to accord with the Fire Management Plan. The LRP proposes the retention of the existing vegetation within the 40m buffer to Mandurah Road. This will ensure there is no change to the visual amenity of the development at Lot 700.

The existing amenity of the locality includes the threat of bushfire given its rural context. As contained in the Fire Management Plan ('FMP') prepared by RUIC Fire (Attachement 4) reticulated mains water, including the provision of fire fighting pillar hydrants, shall be provided to the subject site. Specific placement of pillar hydrants to support bushfire and structural fire fighting purposes are to be negotiated with the Department of Fire and Emergency Services to ensure maximum benefit is achieved. The

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extension of mains water and the provision of pillar hydrants at the subject site can only improve the amenity of the locality with the provision of such fire fighting infrastructure and provides an opportunity for neighbouring properties to benefit from the fire infrastructure.

To summarise, the proposed 'Educational Establishment' non-conforming use is less detrimental to the amenity of the locality than the current 'Reception Centre' non-conforming use for the following reasons:

- The revised Masterplan (see Appendix 1) does not propose any new built form development on Lot 700;
- The proposed 'Educational Establishment' will alter the access arrangements to Lot 700 by utilising a shared crossover to Mandurah Road from Lot 11;
- It is proposed to transport the majority of students to the 'Educational Establishment' by bus (rather than private vehicles), which will assist in reducing the impact of traffic to Lot 700. Currently, there are no formalised arrangements for guests to be transported to functions at the 'Reception Centre' in large numbers (i.e. by bus);
- The existing buildings at Lot 700 will accommodate a maximum of approximately 180 students. This is significantly less that the maximum number of guests (at 295) approved for the existing 'Reception Centre' use and will therefore result in a less intensive use of Lot 700;
- The proposed 'Educational Establishment' will operate during normal business hours and during the school calendar only. The proposed use will not operate on weekends or late into the evening which suggests that the proposed use will operate at the least sensitive times of the day and week as opposed to the existing 'Reception Centre' use;
- The acoustic impact of adjoining premises is not expected to significantly affect the proposed school, and similarly potential noise emissions from the proposed school are not expected to impact on the adjacent premises;
- The LRP proposes to retain the non-endemic vegetation on Lot 700 with mulched or cleared understory of vegetation occurring in areas around the existing building to accord with the Fire Management Plan. The LRP proposes the retention of the existing vegetation within the 40m buffer to Mandurah Road. This will ensure there is no change to the visual amenity of the development at Lot 700; and
- The extension of mains water and the provision of pillar hydrants at the subject site can only improve the amenity of the locality with the provision of such fire fighting infrastructure provides an opportunity for neighbouring properties to benefit from the fire infrastructure.

The fourth test is whether the proposed non-conforming use is closer to the objective of the 'Special Rural' Zone. The objectives of the 'Special Rural' Zone are outlined in Clause 4.12.1 of TPS 2:

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(a) *To identify areas within which co-ordinated subdivision can occur for the purposes of providing a rural lifestyle that is not associated with large scale, intensive rural activities, whilst also allowing for the effective management of the land to ensure the retention of the rural landscape and amenity and conserve and enhance the natural environment.*

(b) *To ensure that all development within Special Rural zones is in accordance with the Provisions Relating to Specified Areas as set out in Schedule No. 4 of the Scheme that has due regard to the objectives and principles outlined in the Rural Land Strategy and supported by any other Plan or Policy that the Council may adopt from time to time as a guide to future development within the Zone.*

The primary objective of the 'Special Rural' Zone is to allow for rural-residential development. With respect to the City of Rockingham Rural Land Strategy ('RLS'), Lot 700 is located within Planning Unit No. 4 and specifically within Precinct 4C. The RLS provides some more detailed context to the way in which 'Rural' and 'Special Rural' zoned land is to be used. With respect to Planning Unit No. 4, the RLS states:

> *The primary objective for this Planning Unit is to encourage special rural/special residential development which recognises and enhances the landscape and natural resource attributes of the unit and provides a natural viewshed to Mandurah Road and a rural context to proposed urban development to the east.*

As with the objective of the 'Special Rural' Zone under TPS 2, the primary objective of Planning Unit No. 4 in the RLS is to encourage special rural/special residential development. With respect to the use of Planning Unit No. 4, the RLS makes the following comments:

- That tourism related development will be considered (page 37);
- That the Planning Unit contains or is adjacent to some intensive uses to which buffers must be observed (page 37); and
- The land within Precinct 4C is not identified for further urban development in the short or medium term (page 38).

With respect to land use permissibility at Lot 700, the following is an extract of Schedule 4 of TPS 2 in the context of approvable uses:

Use	Permissibility
Residential – Single House	P
Communications Antennae – Domestic	P
Home Occupation	D
Residential Building	D
Rural Pursuit	D

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Caretakers Dwelling as an incidental use	D
Communications Antennae – Commercial	D
Bed and Breakfast	A
Home Business	A
Industry – Cottage	A
Agriculture – Intensive	A
Telecommunications Infrastructure	A

Although the primary objective of the 'Special Rural' Zone and 'Planning Unit No. 4' is to allow/encourage rural-residential development there are a number of uses (other than 'Residential – Single House') that may be approved in the 'Special Rural' Zone (depending on their scale and intensity). This suggests that there is an acceptance of the fact that there are non-residential uses which would be acceptable in this area, provided impacts can be managed.

The existing approvable uses, together with the suggestion in the RLS that tourism uses will be considered, suggests that there is not only a tolerance but an expectation that the whole of the 'Special Rural' Zone will not be used for low density single residential development, but to assist to provide a buffer between the 'Rural' zoned land and the land earmarked for future urban development.

Based on the above, and in the context of the existing character of the Karnup locality as also outlined above, an 'Educational Establishment' is closer to the intended purpose of the 'Special Rural' Zone for the following reasons:

- An 'Educational Establishment' has fixed hours of operation and, therefore, can be managed to a much greater degree than a 'Reception Centre';
- As the 'Educational Establishment' proposed is a school, its primary hours of operation are during the day rather that at night or on weekends;
- The use will generate less noise than a 'Reception Centre' as the use of amplified sounds and the potential for anti-social behaviour associated with alcohol consumption will be less, and highly unlikely after hours and at weekends; and
- An 'Educational Establishment' that is a school is a frequent companion to residential development, and is therefore more consistent with the 'Special Rural' Zone than a 'Reception Centre'.

For the various reasons outlined above, the proposed development accords with Clause 7.3 (Change of Non-Conforming Use) of TPS 2 and should be supported on planning grounds.

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Environmental

Further environmental investigations were undertaken by 360 Environmental. The following is a summary of the additional information contained in Appendix 3.

A Landscaping and Revegetation Plan ('LRP') has been prepared by 360 Environmental to depict the planting areas and species that would be implemented to improve the environment, visual impact and vegetation cover at the subject site. This LRP has been developed with regard to bushfire planning requirements and to minimise the visual impacts on the surrounding residents and Mandurah Road.

360 Environmental has provided a visual representation of the proposed 'Educational Establishment' in its rural context. A view shed analysis, line of site calculations and photo review assessment have been undertaken to assess the visible and non-visible aspects of the development from nearby homes and Mandurah Road. It is concluded that visual impacts from the development are low.

A preliminary water supply investigation was conducted by 360 Environmental to assess different sources of water across the subject site and their allowable uses. The review of the options found that connection to the Water Corporation's system is the preferred solution. It will provide a safe, reliable water supply; prevent the requirement for carting water or expensive hydrogeological studies; and prove to be a cost effective option. The Department of Water has also recommended this approach owing to the complexities associated with other options.

The irrigation area for wastewater disposal has been depicted in the southwest corner of the subject site adjacent to the 40 meter vegetated buffer to Mandurah Road. No water protection areas are located on the subject site or nearby surrounds. This irrigation area will be mulched and planted to reduce any visual impact.

A copy of the additional environmental reporting is contained as Appendix 3.

Fire Management Plan/ Bushfire Emergency Plan

RUIC Fire has revised its Fire Management Plan ('FMP') commensurate to the revised Masterplan (contained as Appendix 1). The revised FMP contains bushfire planning design elements that can be summarised as follows:

- Future classrooms and the Sports/Administration building shall be constructed to BAL-29 in accordance with AS3959. This is identified as being sufficient to withstand landscape scale bushfire impacts;
- The Bushfire Emergency Plan incorporating a "Shelter in Place" policy is prepared in support of this development must be adhered to;
- Building Protection Zones shall overlap between buildings and shall incorporate specific low threat landscaping designs;

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- Reticulated mains fire fighting water supply shall be provided inclusive of pillar fire fighting hydrants; and
- Public access roads and internal road structures shall allow private and emergency vehicles to access, egress and safely move through the site at all times. The additional Emergency Access point at the north of the site provides a second access and egress point to the site.

RUIC Fire has also prepared a Bushfire Emergency Plan ('BEP'), which is contained within the FMP, to address the additional requirements of the City of Rockingham in considering the proposed development in the context of bushfire safety. The BEP includes the following Essential Safety Practices that will be implemented:

- The school shall adopt a formal policy to close for any school day where a Fire Danger Rating of Severe or higher is forecast for the Perth Metropolitan Area;
- The school shall implement a communication system to ensure all parents are advised of the closure of the school during elevated bushfire danger periods;
- The BEP is to be directly enforced through a formal school policy endorsed by the Rockingham Montessori School Board;
- The BEP is to be rehearsed by the entire school twice a month during the school year when the school operates during the 'Bushfire Season' as formally declared by the City of Rockingham Firebreak's Notice;
- The BEP is to be rehearsed and updated after each stage of completion; and
- The school principal is personally responsible for the completion, review and updating of the BEP.

A copy of the FMP, which also contains the BEP, is contained as Appendix 4.

Water Mains Connection

BPA Engineering has been requested to investigate the supply of reticulated water to the subject site in order to support the proposed 'Educational Establishment' development. BPA Engineering has liaised with Water Corporation in this regard and has concluded that there are no impediments to the proposal from an engineering point of view to extend the water mains infrastructure to service the subject site.

A copy of BPA Engineering's advice is contained as Appendix 5.

Bus Transport Opportunities

Donald Veal Consulting ('DVC') has prepared advice in support of the operation of bus services to transport students to and from the subject site. An analysis of the current enrolment details of the students at the existing Rockingham Montessori School campus on Attwood Way in Rockingham was used to formulate the likely catchment area of the proposed Karnup campus in addition to potential bus routes and timetables.

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With respect to attracting students to utilise bus services, Rockingham Montessori School is considering including the bus operating costs into the school fees (as suggested by DVC) to make such a service more attractive given families already pay for the bus services in this regard. Rockingham Montessori School is also considering amending its Code of Conduct to require students travel to the subject site by bus unless there are extenuating circumstances that require drop off/pick up by private vehicle.

DVC advises that the school bus routes should be carefully devised to enable students and staff to gather at key locations to make the bus journeys efficient. To provide coverage for approximately 95% of current student residences, DVC has suggested that three (3) bus routes are adopted and additional services should be considered if demand warrants. The catchment area for the Karnup campus, acknowledging the retention of the existing Rockingham campus on Attwood Way, is not known at this stage and is too early to determine with any reliability. The technical note prepared by DVC demonstrates how school bus services could be structured to meet the majority of demand that may arise and how bus patronage can be stimulated.

An appropriate condition could be placed on the planning approval requiring the Applicant prepare and update (as required) a bus route plan based on student enrolment details (i.e. location) to the satisfaction of the City of Rockingham.

A copy of the Bus Transport Opportunities technical note, prepared by DVC, is contained as Appendix 6.

Auxiliary and U-Turn Lanes

Shawmac has undertaken further investigation into auxiliary and U-turn facilities in the context of the proposed 'Educational Establishment' development at the subject site. With respect to auxiliary lanes, Shawmac has given consideration to the Austroads Guide to Road Design (the 'Guidelines'). The Guidelines indicate that deceleration lanes are likely to be warranted where they are necessary to ensure that turning traffic does not impede through traffic to the extent that the operational efficiency of an intersection or intersection approach is compromised and/or an unacceptable level of safety would result due to turning traffic slowing or stopping in a through lane. Shawmac and DVC agree that a deceleration lane is required off Mandurah Road. Figure 1, as contained in Shawmac's technical note, indicates the conceptual geometry of a deceleration lane with no acceleration lane. This is reflected in the revised Masterplan (contained as Appendix 1).

With respect to U-turn facilities, Shawmac has advised that the use of U-turn facilities is recognised as being safe and acceptable and crash rates have been shown to be lower at U-turn facilities than at three (3) and four (4) way intersections. As part of the proposed access and egress arrangements servicing the subject site, it is intended to provide a U-turn facility generally as shown in Figure 3 of Shawmac's

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technical note. This facility would be located approximately 900 metres south of the left in/left out entry and egress point (to the subject site) where the grade across the median flattens and the location is a sufficient distance to allow weaving movements to be safely undertaken (see Figure 4 of Shawmac's technical note). The U-turn facility could cater for design vehicles up to 12.5 metres (which is suitable for a school bus) and the facility would complement the existing U-turn facility on Mandurah Road north of Stakehill Road.

A copy of Shawmac's technical note with respect to auxiliary lanes is contained as Appendix 7.

Traffic Management Plan

A Traffic Management Plan ('TMP'), incorporating behavioural management and disciplinary measures, has been prepared by the Rockingham Montessori School in conjunction with Shawmac and DVC. The TMP procedures include the imposition of a 10km/h speed limit on internal roads, procedures for entering and existing the subject site; use of the 'Kiss N Drive', parking area and bus bays; and procedures and responsibilities with respect to students, parents, the designated traffic warden, staff and the school principal.

A copy of the Traffic Management Plan is contained as Appendix 8.

We trust the additional information outlined above and contained in the following appendices is of assistance to the Respondent, City of Rockingham and Department of Planning. The additional information strongly supports the proposed development of an 'Educational Establishment' at Lot 11 (No. 1809) and Lot 700 (No. 1791) Mandurah Road, Karnup.

Should you require any further information or clarification in relation to this matter, please contact Paul Cunningham on 9221 1991.

Yours faithfully,

Paul Cunningham
Rowe Group

Encl.

ROCKINGHAM
Montessori
SCHOOL

3 July 2015

Mission Statement "To provide a Montessori environment in which the needs of the whole child are met in a nurturing, safe and caring school, by encouraging independence, mutual respect and self-discipline so that students are prepared to take their place in the global community."

1. Executive Summary

Rockingham Montessori School was established in 1985 moving to its current site in Attwood Way, Rockingham in 1988. Like the surrounding location, the school has experienced considerable growth and to meet demand is currently spread across three (3) sites: children's house, lower and upper primary at Attwood Way, high school at Murdoch University's Rockingham Campus and Playgroup (Infant Toddler Program) in Baldivis. The school continues to expand and improve upon its education programme.

The property at Lot 11 (No. 1809) Mandurah Road, Karnup has been purchased to provide beautiful tranquil surrounds for purpose built classroom communities where the children are able to access nature and contribute to environmental sustainability. The school has an opportunity to help preserve a portion of land with native flora and fauna in an area that is now subject to dense urbanisation. The prospective purchase of the existing Munja Gardens Function Centre, with its existing buildings and beautiful surrounds, provides an amazing opportunity for the School, enabling more space for students to be immersed in nature whilst receiving their education.

Student catchment is wide ranging from all directions and the waiting list continues to increase in accordance with the ever increasing population in the local area. Karnup was identified as mostly central to the current student catchment and will allow for increased enrolments as the surrounding area's population continues to increase. Offering a sought after alternative method of education, the closest Montessori schools to the current Rockingham and proposed Karnup sites are located in Bibra Lake to the north and Margaret River to the south.

2. Future Plans for Rockingham Montessori School

Rockingham Montessori School aims is to provide a comprehensive Montessori education for children aged one year to eighteen years of age where children can continue within the one schooling philosophy for their early childhood, primary and secondary education on one site. Having established itself as a school of choice both nationally and internationally the school wishes to further consolidate the success of the school (in conjunction with its current site at Attwood Way) and establish an additional site where classes are offered from the Infant Toddler Program to Year 12.

The Karnup site will provide beautiful tranquil rural surrounds with purpose built classroom communities where the children are able to access nature and contribute to environmental sustainability. The School has an opportunity to help preserve a portion of land containing some native flora and fauna in an area that is now subject to dense urbanisation. The relocation to a 7.84ha rural site (Lot 11) and 2.59ha semi-rural site (Lot 700) will support the development of the Erd Kinder program for our adolescents.

3. What is Montessori Education?

In a true Montessori school you will find independent children who are encouraged not only to do things for themselves but also to think for themselves. You will find children who have learnt how to explore and solve problems for themselves. Most importantly you will see small children who are often perceived as only being aware of their own needs helping each other and who, without being asked to, will put things away and perform acts of kindness purely to benefit the group as a whole. So how does this all come about? What exactly is Montessori?

Everything in the classroom is designed to support the windows of opportunity that children naturally learn through. The Montessori 'nursery school' is called the Children's House because everything in it is designed to allow the child to become independent – the materials are child sized and the equipment is laid out in an orderly fashion on low shelves that are easily accessible for the children. The equipment is aesthetically pleasing and is meticulously cared for which encourages the children to take care of it too. Children between the ages of three and six are grouped together in their own mini society. The younger children learn from watching the older children and the older ones benefit by helping the younger children. The mixed age group allows the children to develop socially, intellectually and emotionally – it is an essential part of any Montessori school.

The curriculum is divided into four main areas. Practical life not only gives the children the opportunity to practise the skills of everyday life but also helps them to develop concentration and develop co-ordination of mind and body. The sensorial materials capitalise on the fact that children use their senses to learn. Through these materials they are encouraged to order and classify the physical properties of the world they live in. The materials for mathematics help the children to learn and really understand mathematical concepts because they are presented using concrete materials. Children are prepared to write and read from the minute they come into the class through a series of activities that gradually build all the individual skills required so that when they are ready it is just a natural progression. Geography, history, biology, botany, zoology, art and music are covered with a hands-on approach that is based on the fact that children learn most effectively from their own experiences.

In a Montessori school you will see children choosing their activities independently and moving from one activity to the next – always returning things to the shelf after they have used them. You will experience an atmosphere of calm and

see young children concentrating for surprising periods of time. Children work individually, in a group or with a friend. The morning should last for a minimum of three hours – three hours in which there is no fixed 'timetable'. Groups arise spontaneously rather than at a fixed time every day. Maria Montessori observed that this unfettered period of time was essential for the children to develop the kind of concentration that you see when a child becomes involved with something that is essential for his development. There are no time limits for the child – he may work with whatever he chooses for as long as he likes.

In a Montessori school the child is guided by a trained adult who will show him how to do the things that he is ready for after which he can work with them independently. The adult observes the child and will not interfere so long as the child is working with the material productively. When a difficulty arises she is able to step in and give help but is always careful never to give more help than is needed. Children work at their own individual pace and naturally develop their own rhythm and work pattern. Each child's individual needs are assessed through observation so that he or she is shown new things when he or she is developmentally ready and new knowledge is always built on what he or she already knows. Since everything the student does in the classroom also prepares for a later activity, the child is able to move gradually through activities developing his or her skills effortlessly.

The ideal Montessori classroom environment aims to provide:

- Learning materials especially suited to the child's needs at each stage of development.
- Learning materials which are sequential in difficulty, provide continual challenge and are self-correcting, allowing the child independence in learning.
- A three year age span in the classroom supports the child's social learning, peer tutoring and promotes cooperation between the younger and older children.
- Self-discipline by providing clear, appropriate behaviour guidelines and academic choices.

The teacher is a dynamic link between the child and the prepared environment, acting as a facilitator in the learning process. Working consistently to teach courteous behaviour and conflict resolution, the teacher balances the needs of each child with the need for order and harmony in the classroom.

Dr Maria Montessori observed that children passed through very definite stages of development. Therefore instead of the usual grades, children in Montessori schools pass through three planes of development. These Planes of Development are listed below:

Childrens House	3 - 6 years	Upper Primary	9 - 12 years
Lower Primary	6 - 9 years	Adolescent Program	12 – 18 years

Each plane creates a sense of community. Younger children observe and are inspired by the older children. The older children are able to reach higher levels of understanding through teaching the younger children. Such interaction builds self-confidence and self esteem.

Children's House (for 3-6 year olds) provides a program which is divided into five areas and provides every opportunity to ensure that children achieve the outcomes of the Early Years Learning Framework for Australian Early Childhood.

The five areas are:

- Practical life exercises (including Health & Physical Education);
- Sensorial materials;
- Language learning area;
- Mathematics learning area; and
- Cultural activities (Science, History and Geography, The Arts, Technology & Enterprise).

Lower Primary (for 6-9 year olds) and Upper Primary (for 9-12 year olds) provides a program for early and middle childhood in the following key learning areas as set out in the Australian Montessori curriculum:

- The Arts;
- Language;
- Health and Physical Education;
- Mathematics;
- English;
- Science;
- Society and Environment; and
- Technology and Enterprise.

The Adolescent Program (or high school) for 12-15 year olds provides a program for adolescence using a combination of the Australian Montessori Curriculum, Big Picture Education Australia and the Montessori Erd Kinder method. This cyclical model incorporates the collaborative development of the Learning Plan including internship and exhibition process ensuring students learn from real life experiences.

The Erd Kinder method empowers adolescents with the knowledge that they must take responsibility for their own care and that their activities, pursuits and actions have a very real effect on their fellow students, instructors, home and community. Lessons about economics, environmental sciences, domestic arts are acquired through hands-on work and the intellect is developed by reading; by community discussion; by enriching interactions with art, music and nature.

Shawmac Pty Ltd

TECHNICAL NOTE

Subject:	Auxiliary lanes - Montessori School
Date:	02/07/15
Author:	T Shaw
Attention:	

Consideration is based on the Austroads Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections and in particular Section 5.2.1 (Deceleration lanes) and Section 5.2.2 (Acceleration lanes).

With respect to deceleration lanes, the guidelines indicate that:

"*The need for deceleration turn lanes cannot be stated definitively in all instances because of the many factors to be considered, such as speeds, traffic volumes, capacity, type of road, service provided, traffic control and crash history*".

The guidelines further indicate that deceleration lanes are likely to be warranted where they are necessary to ensure that turning traffic does not impede through traffic to the extent that the operational efficiency of an intersection or intersection approach is compromised and /or an unacceptable level of safety would result due to turning traffic slowing or stopping in a through lane. It is agreed that a deceleration lane is required.

The length required for a deceleration lane can similarly be determined by reference to the guidelines. With respect to design speed, the guidelines indicate that for normal length of deceleration lanes the mean free speed of the through road which is about numerically equal to the posted speed limit (km/h) should be used.

Given that the entry from the deceleration lane into the proposed school site will be a free flow slip lane and queuing of vehicles will occur away from the intersection, the design of the deceleration lane can allow for an entry speed of 20 to 30 km/h. Based on a comfortable deceleration rate of 2.5 m/sec^2, the length of deceleration lane including diverge taper is calculated as 90m for a design speed of 80km/h and an entry speed of 25 km/h, 85m for a design speed of 80km/h and an entry speed of 30 km/h, 150m for a design speed of 100km/h and an entry speed of 20 km/h and 140m for a design speed of 100km/h and an entry speed of 30 km/h.

With respect to acceleration lanes, the guidelines indicate that these are usually provided only where:

- insufficient gaps exist for vehicles to enter a traffic stream;
- turning volumes are high (e.g. 300 to 500 vph)

- the observation angle falls below the requirements of the minimum gap sight distance model (for example, inside of horizontal curves);
- heavy vehicles pulling into the traffic stream would cause excessive slowing of major road vehicles.

In the case of the Montessori School site, initial assessment placed left turning traffic volumes at about 430 vehicles per hour, and on that basis an acceleration lane may have been warranted; notwithstanding this the traffic signals at the intersection of Mandurah Road and Stakehill Road break traffic flow and create a platooning effect which creates regular gaps in traffic flow.

Subsequent to the initial assessment, commitments have been provided by the school to provide bus transport and to maintain the existing school in Rockingham. Based on this, the original assessment which assumed high levels of private car use and low vehicle occupancy rate (see Table 1) has been revised to give a rate generally as shown on Table 2 below. This is based on advice of likely levels of usage from the Montessori School Board which sees and adjustment of car usage levels plus an assumed occupancy rate of 1.5 persons per car.

Years	**Initial**	**Ultimate**
Student Number	268	516
Mode Share	85%	85%
Occupancy	1.5 (1.0 adopted for calcs)	1.5 (1.0 adopted for calcs)
Vehicles	151	438
Trips-Ends During Morning and Afternoon Peak Periods	**302**	**876**
Total Daily Trips-Ends	**604**	**1752**

Table 1. Initial assessment.

Category	Students (Future Maximum)	Students attending Baldivis	Car Usage Rate	Occupancy Rate	# Vehicles	Morning / Afternoon Trip Ends New Site	Teacher traffic (morning only)	Total Daily Traffic
Children's House	72	48	100%	1.5	32	64		128
Lower Primary Classes	72	48 (bus 7)	85%	1.5	27	54		108
Upper Primary Classes	72	36 (bus 5)	85%	1.5	20	40		80
Adolescent Programme (Middle)	150	150 (bus 60)	60%	1.5	60	120		240
Adolescent Program Upper)	150	150 (bus 120)	20%	1.5	20	40		80
Students in other modes of transport (Assumed small buses)		Bus 228	100%	25	9	9		18
Totals	516				1	327	42	696

Table 2. Adjusted Traffic Generation

With the reduced number of movements the need for an acceleration lane is not considered to be warranted.

Notwithstanding this, the provision of an acceleration lane would require a relocation of the school entry to the north to provide an appropriate distance between the entry and the start of the left turn lane into Olive Hill Close.

As with the deceleration lane length, the length of an acceleration lane is based on the distance required for a vehicle to accelerate from the design speed of the entry curve to the zoned speed limit. Given and entry speed of 25 km/h and a zoned speed of 100 km/h, this would require a lane distance of 435 metres.

For a zoned speed of 80 km/h (which is strongly recommended adjacent to the site, the recommended lane length reduces to 215 metres.

Additionally, the Austroads guidelines make allowance for constrained sites, and indicate that while it is desirable in most cases that the accelerating vehicle reaches the mean free speed of the adjacent through lane before merging, in some situations it may be acceptable to design for a speed decrement of 20 km/h within the merge area (i.e. a merging vehicle travelling at 80 km/h enters a traffic stream of vehicles travelling at 100 km/h).

Figure 1 and Figure 2 indicate the conceptual geometry of a deceleration lane with no acceleration lane (Figure 1) and a deceleration lane and acceleration lane based on a zoned speed of 80 km/h (Figure 2). Both geometries are achievable, albeit the latter would require realignment of the internal access road and parking area and adjustment of the deceleration lane into Olive Hill Close.

Figure 1 Deceleration Lane

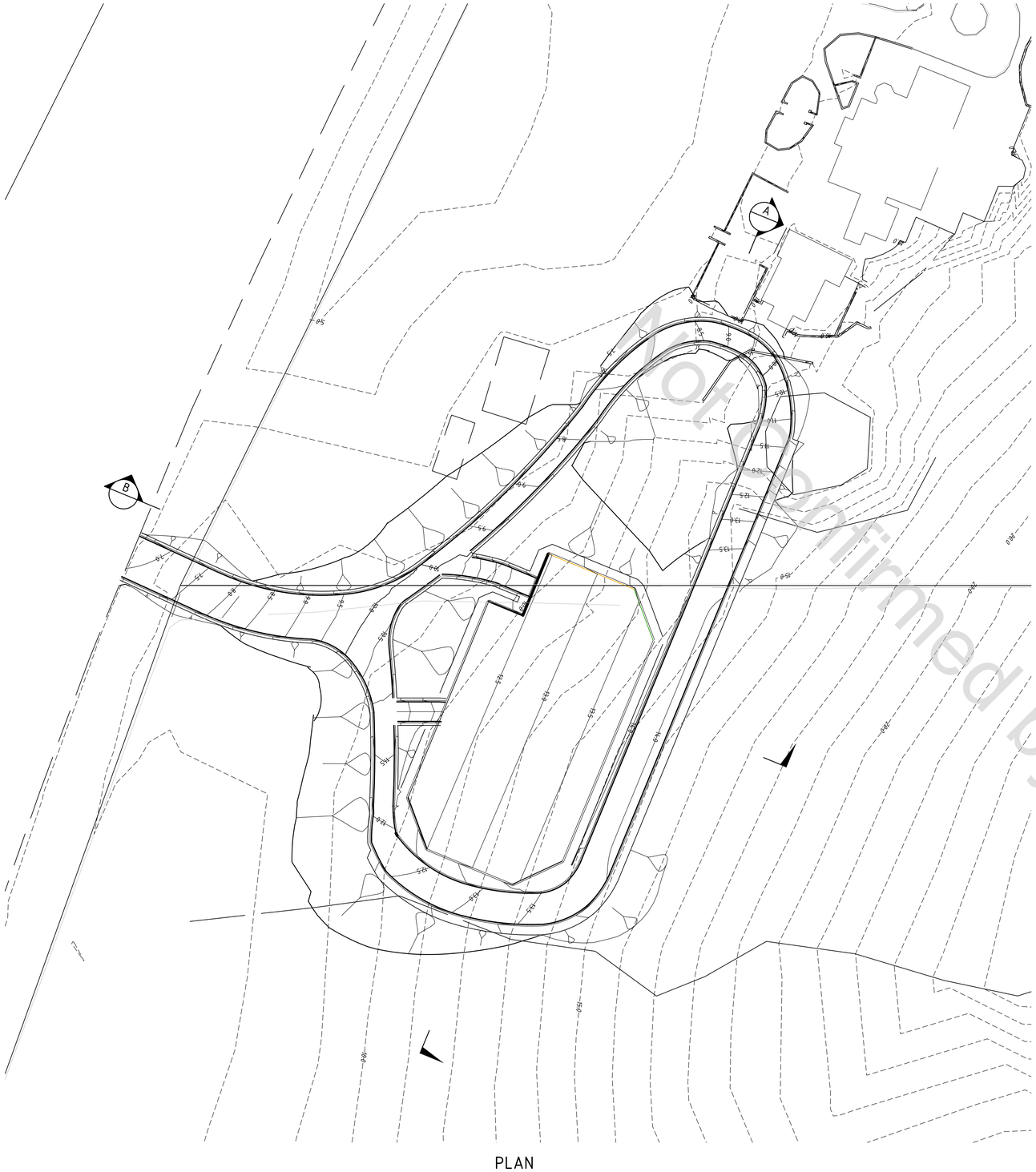
Figure 2 Deceleration Lane – Acceleration Lane

U Turn Facility.

The use of U turn facilities is recognised as being a safe and acceptable and crash rates have been shown to be lower at U Turn facilities than at three and four way intersections. As part of the proposed access and egress arrangements, it is intended to provide a U Turn facility generally as shown on Figure 3. This would be located approximately 900 metres south of the left in – left out entry and egress point where the grade across the median flattens and the location is a sufficient distance to allow weaving movements to be safely undertaken – see Figure 4. The U Turn facility could cater for design vehicles of up to 12.5 metres (which is suitable for a school bus) is shown on Figure 3.

Figure 3 U Turn facility

Figure 4 Relationship of the Access to the U Turn Facility (Proposed)



PLAN

SCALE 1 : 500

SECTION B

SCALE 1 : 500

SECTION A

SCALE 1 : 500

ONE CALL INFORMATION SHOWN

DESIGNED	DP	AUG 15
DRAWN	DP	AUG 15
FILE NAME	SK-K08515 .DWG	
SCALE	1 : 1000	
DATUM	A.H.D	

No.	DATE	REVISION	BY	APP'D
A	19.08.15	ISSUED FOR COMMENT	DP	

BPA Engineering
Civil And Structural Consultants
460 Roberts Road Subiaco, Western Australia 6008
Telephone 61 8 9382 8008 Facsimile: 61 8 9382 8006
P.O. Box 1308 Subiaco, Western Australia 6008
E-mail: bpa@bpaeng.com.au

CONSULT AUSTRALIA Member Firm

CHECKED	DATE	APPROVED	DATE

ROCKINGHAM MONTESSORI SCHOOL
KARNUP

PLAN

CONCEPT CARPARK AND
EARTHWORKS LAYOUT

DRAWING No. SK01
REV. A
WAPC N°

Enquiries: Joanne Cammack on 9323 4718
Our Ref: 14/8654-02 (D15#698871)
Your Ref: 20 2014 535 1, AD15/53117

mainroads WESTERN AUSTRALIA
ABN: 50 860 676 021

17 November 2015

Chief Executive Officer
City Of Rockingham
PO Box 2142
ROCKINGHAM DC WA 6967

ATTENTION: DONNA SHAW

Dear Madam

SECTION 31 RECONSIDERATION OF DECISION - JDAP REFUSAL OF PROPOSED EDUCATIONAL ESTABLISHMENT (MONTESSORI SCHOOL) - LOT 11 (NO.1809) AND LOTS 700 & 701 (NO.1791) MANDURAH ROAD, KARNUP

Thank you for your letter dated 29 October 2015 seeking Main Roads comments for Section 31 reconsideration of Decision – JDAP Refusal of Proposed Education Establishment (Montessori School) – Lot 11 (No. 1809) and Lots 700 and 701 (No. 1791 Mandurah Road, Karnup.

Main Roads previously provided conditional support for the above development, subject to establishing alternative vehicle access from a minor road and access from Mandurah Road reserved for emergency vehicles only. This position by Main Roads still stands.

However, through the State Administrative Tribunal (SAT), alternate options were discussed which includes the proposed option as illustrated in the proponent traffic consultant report.

The application as presented provides insufficient detail of road improvements on Mandurah Road to determine if this application warrants approval.

The illustrations as presented in the traffic consultant report are 2 dimensional only. No consideration of 3rd dimension been provided. There are no illustrations for the proposed U-turn facility other than textual comment where the traffic report indicates "*a formal U-turn facility similar to that provided north of Stakehill Road should be provided south of the school site and north of Surf Drive*".

The current posted speed to where the proposed U-turn facility is likely to be constructed is located in a 100km/hr speed zone on Mandurah Road. The traffic report clearly indicates, "*as there is a strong demand for traffic to exit to the north from the proposed school site*", the design of the U-turn facility MUST take into consideration the current speed zone. It is imperative that the design of this facility incorporates deceleration and acceleration traffic lanes i.e. vehicles MUST NOT block Mandurah Road.

The location of the preferred site to accommodate the U-turn facility MUST consider the existing north and south bound carriageway profiles. The description in the report indicates that the proponent preferred site for this facility be located north of the full movement intersection at Mandurah Road and Surf Drive. The levels of the existing carriageways and the widening of those carriageways to develop deceleration and acceleration traffic lanes and sight lines may preclude the ability to build this facility in this location.

With regards to the 2 dimensional concept associated with the applicant main access point onto Mandurah Road, this concept was developed by Main Roads in response to discussions during SAT mediation. No additional work has been undertaken by the proponent.

If however that JDAP approves this development based on the information provided to this application, the following conditions MUST BE INCORPORTATED in any determination:

1. Prior to occupancy of any part of the development, the development owners covenant and agree to carry out and complete at their own expense the upgrade of Mandurah Road, to the specifications of Main Roads, and in accordance with the approved plans to the satisfaction of Main Roads and the City of Rockingham.

   The upgrade to Mandurah Road shall specifically include, but not limited to, the following items:

   - *Acceleration and deceleration lanes are to be provided to the existing Munja Garden's Function Centre driveway and the proposed U-turn facility on Mandurah Road south of the site;*
   - *Modify the existing Munja Garden's Function Centre driveway to include a seagull style traffic island;*
   - *The acceleration lane (auxiliary traffic lane) including pavement taper is to be constructed from the existing Munja Garden's Function Centre driveway to the existing left turn pocket into Olive Hill Close from Mandurah Road;*
   - *The existing left turn pocket into Olive Hill Close from Mandurah Road is required to be modified to accommodate the above dot point;*
   - *Acceleration and decelerations lanes provided to the U-turn facility (based on the design speed of 100km/hr);*
   - *A physical barrier be installed within the median of Mandurah Road. The length of barrier required would comprise of 150m upstream and 150m downstream (total of 300m in length) being located directly opposite the existing Munja Garden's Function Centre driveway;*

2. A detailed road safety audit is required to be conducted by a suitable consultant as agreed to by the City of Rockingham and Main Roads to determine the exact location of the proposed U-turn facility on Mandurah Road. This is required to be completed and endorsed by Main Roads prior to detailed design of the U-turn facility.

3. Prior to the submission of a building permit application for the development, the development owners must submit for the City of Rockingham and Main Roads approval, detailed designs, plans and accompanying specifications for the upgrade of Mandurah Road.

4. The developers shall be responsible for all costs involved in the land acquisition, design and construction of the Mandurah Road upgrade. This includes signage,

road markings, relocation of services, street lighting and Main Roads costs involved in checking of the design and construction drawings and any site inspections.

5. Main Roads approval for the road construction drawings is required before any works is undertaken within the Mandurah Road reservation. A detailed traffic management and safety plan while working within the road reservation is to be submitted as part of this approval.

6. A Bus Management Plan is required to be prepared by the proponent to the satisfaction of the City of Rockingham. The bus management plan is required to describe in detail the planned bus routes for the purpose of moving students to and from the proposed development. No "U" turns for Buses will be permitted within the Mandurah Road corridor.

7. No vehicle access shall be permitted to or from Mandurah Road road reserve from the Lots 11, 700 and 701 except at the designated crossover point being the existing Munja Garden's Function Centre driveway and the proposed emergency vehicle access being on Lot 11. This shall be noted on the deposited plan in accordance with Section 150 of the Planning and Development Act 2005 as a restrictive covenant for the benefit of Main Roads WA at the expense of the applicant.

8. One driveway shall be permitted onto Mandurah Road from Lot 11 for emergency vehicle access only. This shall be 7 metres in width, at right angles to the carriageway. The driveway crossover shall be constructed to the City of Rockingham standards for commercial driveways.

a. Advice to Applicant

The applicant must obtain approval from Main Roads before all works are undertaken within the Mandurah Road reserve. The applicant seeking access to the Main Roads network will be required to submit an Application as outlined in the "Application Kit and Guidelines" for State Roads.

Application Kits can be found on the Main Roads website >"Our Roads" >"Conducting Works on Roads >"Applications to Undertake Works on State Roads" >Application Kit and Guidelines for Complex Works **OR** Application Form for Low Complexity Works.

If you require any further information please contact Joanne Cammack on 9323 4718. In reply please quote file reference 04/10555-12 (D15#698871).

Yours faithfully

Lindsay Broadhurst
MANAGER ROAD PLANNING

From: Zhuo, Ming
To: Donna Shaw
Subject: RE: Montessori School
Date: Friday, 31 July 2015 3:15:10 PM

Hi Donna,

For the proposed disposal area, it should be required to cope with the new development and meet the maximum loading rate.

Regards

Ming Zhuo
Scientific Officer | Environmental Health Directorate | Water Unit
Public Health Division
Department of Health
Grace Vaughan House, 227 Stubbs Terrace, Shenton Park, WA 6008
PO Box 8172, Perth Business Centre, WA 6849
T: 9388 4940 | F: 9388 4910
ming.zhuo@health.wa.gov.au
www.Public.Health.wa.gov.au

promoting health | preventing disease | managing risk

From: Donna Shaw [mailto:Donna.Shaw@rockingham.wa.gov.au]
Sent: Friday, 31 July 2015 12:43 PM
To: Zhuo, Ming
Subject: RE: Montessori School

Hi Ming

We have referred it to you for comment given the Department of Health would be required to approve the proposed method of waste water disposal.

If the Department of Health is not supportive of their proposal, we need to know up front.

Thanks

city of Rockingham
where the coast comes to life

Donna Shaw - Senior Planning Officer

PO Box 2142 Rockingham DC WA 6967
Civic Boulevard Rockingham Western Australia
telephone **+61 8 9528 0374** facsimile **+61 8 9592 1705**
email **donna.shaw@rockingham.wa.gov.au**
web www.rockingham.wa.gov.au

From: Zhuo, Ming [mailto:Ming.Zhuo@health.wa.gov.au]
Sent: Friday, 31 July 2015 11:58 AM
To: Donna Shaw
Subject: RE: Montessori School

Hi Donna,

Further look at the plan you sent.

May I please ask you again what we can assist you from the Water Unit.

I am assuming the School is about to lodge the new application for the Waste water treatment system.

Regards

Ming Zhuo
Scientific Officer | Environmental Health Directorate | Water Unit
Public Health Division
Department of Health
Grace Vaughan House, 227 Stubbs Terrace, Shenton Park, WA 6008
PO Box 8172, Perth Business Centre, WA 6849
T: 9388 4940 | F: 9388 4910
ming.zhuo@health.wa.gov.au
www.Public.Health.wa.gov.au

promoting health | preventing disease | managing risk

From: Donna Shaw [mailto:Donna.Shaw@rockingham.wa.gov.au]
Sent: Friday, 31 July 2015 11:04 AM
To: Zhuo, Ming
Subject: Montessori School

Hi Ming

I have had the applicant extract the sections relevant to Wastewater Disposal for you.

Thanks

city of Rockingham
where the coast comes to life

Donna Shaw - Senior Planning Officer

PO Box 2142 Rockingham DC WA 6967
Civic Boulevard Rockingham Western Australia
telephone **+61 8 9528 0374** facsimile **+61 8 9592 1705**

email **donna.shaw@rockingham.wa.gov.au**
web www.rockingham.wa.gov.au

Government of **Western Australia**
Department of **Water**

looking after all our water needs

Your ref 20.2014 535.1-AD15/53106
Our ref RF2042-05
PA 3836
Enquiries Jane Sturgess (9550 4228)

City of Rockingham
PO Box 2142
Rockingham DC WA 6967

Attention: Donna Shaw

Dear Donna,

Re: Section 31 Reconsideration of Decision – JDAP Refusal of Proposed Educational Establishment (Montessori School) – Lot 11 (No. 1809), 700 and 701 (No. 1791) Mandurah Road, Karnup.

Thank you for referring the proposed Reconsideration of Proposed Educational Establishment at Lots 11, 700 and 701 Mandurah Road, Karnup received 2 November 2015. The Department of Water (DoW) has reviewed the proposal and has following advice:

Wastewater treatment
Onsite wastewater disposal via the use of an ATU(s) and irrigation of treated wastewater is deemed appropriate. However the type and number of systems required to service the school and its population shall be discussed with the Department of Health and the City of Rockingham.

Groundwater
The subject area is located within the Stakehill Groundwater Area as proclaimed under the *Rights in Water and Irrigation Act 1914*. Any groundwater abstraction in this proclaimed area for purposes other than domestic and/or stock watering taken from the superficial aquifer, is subject to licensing by the Department of Water. The issuing of a groundwater license is not guaranteed but if issued will contain a number of conditions that are binding upon the licensee.

The Churcher East subarea of the Stakehill Groundwater Area is over allocated. If groundwater is required for irrigating the school grounds, an alternative non-potable water source for irrigation will need to be sourced or seek trading of a groundwater entitlement.

Save time with Water Online
As your organisation is registered to use Water Online, we encourage you to lodge future referrals electronically via the Water Online customer portal at

Kwinana Peel Region
107 Breakwater Parade Mandurah Ocean Marina Mandurah Western Australia 6210
PO Box 332 Mandurah Western Australia 6210
Telephone (08) 9550 4222 Facsimile (08) 9581 4560
www water.wa.gov.au

www.water.wa.gov.au. **Water Online** provides the fastest and most efficient process for submitting referrals or requests for planning advice. If you have any questions regarding the Water Online portal please contact our Business Support Unit on 1800 508 885 (select Option 2) or planning.enquiries@water.wa.gov.au.

If you have any queries relating to the above matter, please contact Jane Sturgess at the DoW's Mandurah office on 9550 4228.

Yours faithfully

for **Brett Dunn**
Program Manager – Urban Water Management
Peel Region

10 November 2015

Government of **Western Australia**
Department of **Parks and Wildlife**
Regional & Fire Management Services Division

Your ref: 20.2014.535.1-D15/1417
Our ref: 37457
Enquiries: Lyndon Mutter
Phone: 9442 0342
Email: lyndon.mutter@dpaw.wa.gov.au

Ms Donna Shaw
City of Rockingham
PO Box 2142
ROCKINGHAM WA 6967

Dear Madam

PROPOSED EDUCATIONAL ESTABLISHMENT – LOT 11 AND LOTS 700 AND 701 MANDURAH RD, KARNUP

With reference to your correspondence dated 7 January 2014, the Department of Parks and Wildlife (Parks and Wildlife) provides the following comments.

It appears the development will involve the clearing of native vegetation. Clearing of native vegetation in Western Australia is prohibited, unless the clearing is authorised by a clearing permit obtained from the Department of Environmental Regulation, or is of a kind that is exempt in accordance with Schedule 6 of the Environmental Protection Act 1986 or Environmental Protection (Clearing of Native Vegetation) Regulations 2004. The proponent will need to liaise with the Department of Environmental Regulation regarding clearing of native vegetation.

It is the expectation of the Department that the planning system will appropriately address environmental planning issues including those not specifically mentioned in this advice.

Please contact Lyndon Mutter on 9442 0342 or by email at lyndon.mutter@dpaw.wa.gov.au if you have any queries regarding this advice.

Yours faithfully

Stefan de Haan
REGIONAL MANAGER
23 January 2015

Swan Region
Cnr Australia II Drive and Hackett Drive, Crawley WA 6009
Locked Bag 104, Bentley Delivery Centre, Western Australia 6983
Phone: (08) 9422 0300 Fax (08) 9386 6399 Email: lyndon.mutter@dpaw.wa.gov.au
www.dpaw.wa.gov.au

CITY OF ROCKINGHAM
SCHEDULE OF SUBMISSIONS
PROPOSED EDUCATIONAL ESTABLISHMENT - LOT 11 (NO.1809) MANDURAH ROAD, KARNUP

NAME & ADDRESS	COMMENTS
1. Ms Stella Onderwater 24 Erlistoun Street GOLDEN BAY WA 6174 **2. Mr Michael & Mrs Yvonne Tanoa** (Address not provided) **3. Ms Jodie Borgia** (Address not provided) **4. Ms Melinda Grummet** (Address not provided) **5. Ms Theresa Rowe** (Address not provided) **6. Ms Samantha & Mr Tristan Fuller** 94 Brennan Promenade BALDIVIS WA 6171 **7. G & B Jordan** (Address not provided) **8. Ms Natalia Robayo** (Address not provided) **9. Ms Helen Young** (Address not provided) **10. Ms Gina Tribbeck** (Address not provided) **11. Ms Julie Cowley** (Address not provided) **12. Mr Nicholas & Mrs Laura King** (Address not provided) **13. Ms Kylie Wolfig** (Address not provided) **14. Ms Kylie Marie** (Address not provided) **15. Ms Korine D'Cunta** (Address not provided) **16. Mr Brad & Mrs Lee-Ann Forbes** 55 Baskerville Crescent BALDIVIS WA 6171 **17. Ms Helen Baranie** 3A Nannine Avenue WHITE GUM VALLEY WA 6162	As a committed community member of Rockingham Montessori School I fully endorse the proposal that has been submitted to Council for the School to establish an alternative education facility for the Rockingham and Peel regions at 1791 and 1809 Mandurah Roads, Karnup. I believe that a development such as this nature can only add value to the entire Rockingham community by providing a viable alternative option for education for all children.

NAME & ADDRESS	COMMENTS
18. Ms Naomi Borich (Address not provided) **19. Ms Zoe Powell** (Address not provided) **20. Ms Amanda Ferguson & Mrs Douglas Nutt** (Address not provided) **21. Ms Vanessa Wiggins** (Address not provided) **22. Ms Christie Turley** (Address not provided) **23. Ms Monica Batista** 41 Amadeus Crescent PORT KENNEDY WA 6172 **24. Mr Geoff Pennell** (Address not provided) **25. Dr Simone Stubbs** 11 Heath Street SINGLETON WA 6175 **26. Ms Kylee Visser** (Address not provided) **27. Ms Kelly Evans** 26 Lucky Bay Road SECRET HARBOUR WA 6173 **28. Mr Tim & Mrs Caroline Stiles** 5 Hamilton Place SAFETY BAY WA 6169 **29. Ms Julie Todd** (Address not provided) **30. Ms Candice Shields** (Address not provided) **31. Ms SInead Togher** (Address not provided) **32. K Stevenson** (Address not provided) **33. Ms Helen Doyle** (Address not provided) **34. Ms Nicole O'Neill** (Address not provided)	As a committed community member of Rockingham Montessori School I fully endorse the proposal that has been submitted to Council for the School to establish an alternative education facility for the Rockingham and Peel regions at 1791 and 1809 Mandurah Roads, Karnup. I believe that a development such as this nature can only add value to the entire Rockingham community by providing a viable alternative option for education for all children.

NAME & ADDRESS	COMMENTS
35. A Oldridge (Address not provided) **36. Ms Jennifer McLean** (Address not provided) **37. Alex Jamison and Gaz Smith** 7 Hyacinth Place MADORA BAY WA 6210 **38. Mrs Asti Jorgenson** 4 Preston Road PARMELIA WA 6167 **39. Mrs Sally Anna Lyon** 815 Mandurah Road BALDIVIS WA 6171 **40. Mr Jim Tiao** 34 Beckingham Parkway BALDIVIS WA 6171 **41. Mr Graham and Mrs Moira Howard** 24 Mayfield Road SAFETY BAY WA 6169 **42. Mr Paul Doyle** (Address not provided) **43. D Nye** (Address not provided) **44. T Ryan** (Address not provided) **45. Mr Paul and Mrs Tina Klimaitis** 510 Eighty Road BALDIVIS WA 6171 **46. Mr George & Mrs Renee Mutale** (Address not provided) **47. Tyler Armson-Lloyd** 82 Chelmsford Avenue PORT KENNEDY WA 6172 **48. Ms Debbie Bird** (Address not provided) **49. Ms Rebecca Baron** (Address not provided) **50. Ms Alison Benwood** (Address not provided)	As a committed community member of Rockingham Montessori School I fully endorse the proposal that has been submitted to Council for the School to establish an alternative education facility for the Rockingham and Peel regions at 1791 and 1809 Mandurah Roads, Karnup. I believe that a development such as this nature can only add value to the entire Rockingham community by providing a viable alternative option for education for all children.

NAME & ADDRESS	COMMENTS
51. Mr Bill Higginson 28 Jarvis Road BALDIVIS WA 6171 **52. Mr Brett Russell** (Address not provided) **53. Ms Cheryl Anderson** (Address not provided) **54. Ms Nikki O'Neill** (Address not provided) **55. Ms Joclyn Green** (Address not provided)	As a committed community member of Rockingham Montessori School I fully endorse the proposal that has been submitted to Council for the School to establish an alternative education facility for the Rockingham and Peel regions at 1791 and 1809 Mandurah Roads, Karnup. I believe that a development such as this nature can only add value to the entire Rockingham community by providing a viable alternative option for education for all children.
56. Mr Kevin & Mrs Jenny Roberts 97 Forty Road SECRET HARBOUR WA 6173 **57. Mr James & Mrs Dorothy Morgan** 26A Lombadina Parade SECRET HARBOUR WA 6173 **58. Mr Peter Ballinger** Lot 13 (No.1857) Mandurah Road KARNUP WA 6176 **59. Mr Peter Corkery & Ethel Corkery** 1575 Old Mandurah Road BALDIVIS WA 6171 **60. Ms E Lundgren** Unit 2/34 Kumarina Drive SECRET HARBOUR WA 6171 **61. Mr Huertas Alvaro** (Address not provided) **62. Ms Ellis Sullivan** 14 Marlowe Place MUNSTER WA 6166 **63. Mr Robert De Caprio** 309 Young Road BALDIVIS WA 6171 **64. Ms Orla Carroll** 42/8 Kathleen Avenue MAYLANDS WA 6051	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

NAME & ADDRESS	COMMENTS
65. Ms Emma McPhee 8 Niagara Place MORELY WA 6062 **66. Ms Linda Chu** PO Box 401 MANDURAH WA 6210 **67. Mr Mervyn Williams** 134 Holland Street FREMANTLE WA 6160 **68. Mr Raymond Lynch** (Address not provided) **69. Ms Leonie Moore** 6/2 Lear Place COOLBELLUP WA 6163 **70. Ms Heather Richter** 54B Strickland Road ARDROSS WA 6153 **71. Ms Lois Wood** 4/9 Doepel Street NORTH FREMANTLE WA 6159 **72. Mr Michael Barrett-Lennard** 51A Beach Street BICTON WA 6157 **73. S Coppard** 12 Rebecca Place SOUTH LAKE WA 6164 **74. Ms Caterina Massimi** 3 Riley Road KARDINYA WA 6163 **75. Callum** 45 Karridale Loop BALDIVIS WA 6171 **76. Ms K Bowen** 100 Forty Road SECRET HARBOUR WA 6173 **77. Mr Angus Johnson** 105 Huxtable Terrace BALDIVIS WA 6171 **78. Ms Jessikah Glassip** 13 Augusta Mews MEADOW SPRINGS WA 6210	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

NAME & ADDRESS	COMMENTS
79. Mr Gareth & Mrs Denise Isaac 6 Swanson Way SECRET HARBOUR WA 6173 **80. Mr Asman Mashor** 251 Preston Point Road BICTON WA 6157 **81. Ms Louise Cuttriss** 3 Dugong View YANGEBUP WA 6164 **82. Ms Jean Rennick** Lot 1 Caponi Road BARRAGUP WA 6209 **83. Ms Alison Elsom** 90 Twickenham Drive KINGSLEY WA 6026 **84. Ms Alison Rennick** 4A Thomas Way KARDINYA WA 6163 **85. Ms Elvina Celic** 46 Emperor Avenue BELDON WA 6027 **86. Ms Joanna Rose** 43 Talia Drive STIRLING WA 6021 **87. Ms Kris Ingham** 25 Hillsdale Rise DARCH WA 6065 **88. Ms Paula Poletti** 13 Rosewood Lane THORNLIE WA 6108 **89. Ms Narelle Rutland** 1/4 Lee Place NORANDA WA 6062 **90. Ms Melissa Parker** 10 Montmartre Green PORT KENNEDY WA 6172 **91. Mr Jared Davidson** 86 Eden Street INNALOO WA 6018 **92. Mr Eugene White** 116 Honeywood Avenue WANDI WA 6167	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

NAME & ADDRESS	COMMENTS
93. Ms Wendy Mostyn 4 Gillian Street EAST WAIKIKI WA 6169 **94. Ms Jill Carter** 7 Treasure Avenue SINGLETON WA 6175 **95. Ms Mikelah-Jayde Riley** 135 Winery Drive KARNUP WA 6176 **96. Stephanie** (Address not provided) **97. Ms Mary Forbes** (Address not provided) **98. Ms Holly Meehan** 30 Anvils Circle SECRET HARBOUR WA 6173 **99. Jocey** (Address not provided) **100. Ms Samantha Bowen** 20 Tryall Avenue PORT KENNEDY WA 6172 **101. Mr Robbie Bell** 32 Grafton Drive DUDLEY PARK WA 6210 **102. Ms Alexandra Tait** 2 Metz Way WEMBLEY DOWNS WA 6019 **103. Ms Carol Kigiel** 60 McCabe Street MOSMAN PARK WA 6012 **104. Mr Roy Emmott** 7 Hydra Close ROCKINGHAM WA 6168 **105. Ms Jane Esmond** 87/240 Burke Drive ATTADALE WA 6156 **106. Ms Kerry Davidson** 86 Eden Street INNALOO WA 6018	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

NAME & ADDRESS	COMMENTS
107. Nicole 3A Chessan Street ALFRED COVE WA 6154 **108. Ms Tiahna Massimi** 3 Riley Road KARINDYA WA 6163 **109. Ms Kerrie Shearer** (Address not provided) **110. Ms Jess McCaw** 36 Whitebread Way LEDA WA 6170 **111. Ms Sarah Wood** 11 Marks Place ROCKINGHAM WA 6168 **112. Ms Helen McLarty** Unit 8/2 Waroonga Road NEDLANDS WA 6009 **113. Ms Liz White** 336 Fennager Way CALISTA WA 6167 **114. Nadine** (Address not provided) **115. Mr Will Watson** 32 Canning Highway PERTH WA 6000 **116. Mr Ben Nunn** 4 The Ridge YANGEBUP WA 6164 **117. Ms Gail Priest** 29 Castle Road WOODLAND WA 6018 **118. Kerry Walker** 7 Tandy Court DUNCRAIG WA 6023 **119. Ms Katie Wells** 4/1 Chudleigh Street FREMANTLE WA 6160 **120. Ms Christina Fitzpatrick** 62 Bourke Street LEEDERVILLE WA 6007 **121. Mr William Bellin** 6/246 Ewen Street WOODLANDS WA 6018	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

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122. Ms Emmelie Brolund 19/15 Eric Street COTTESLOE WA 6011 **123. Mr Anthony Banham** 10 Osterley Terrace DARCH WA 6065 **124. Mr Donald Briggs** 9 Warren Place DUDLEY PARK WA 6210 **125. Mr Jeremy Parsons** 5 Calice Street HILTON WA 6163 **126. Mr Tim Grant** 2/4 Curan Street COOLBELLUP WA 6163 **127. Mr Luke Harding** 57 Beach Street FREMANTLE WA 6160 **128. Mr Herman Isaac** 10 Nicholas Crescent HILTON WA 6163 **129. Mr Gordon Essex** 37 Bromley Road HILTON WA 6163 **130. Ms Sheryl Hay** 116 Challenger Avenue PARMELIA WA 6167 **131. Ms Kylie Adams** 13 Melilla Terrace SECRET HARBOUR WA 6173 **132. Mr Joe Myren** 37 Sarah Ann Crescent WARNBRO WA 6169 **133. Ms Rebecca Quirke** 66 Cinnabar Drive ELLINGTON WA 6034 **134. Ms Sophie Trandos** 4 Jobson Mews ILUKA WA 6028	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

NAME & ADDRESS	COMMENTS
135. Mr Shaun Hegarty 117 High Street SORRENTO WA 6020 6173 **136. Ms Angelique Morris** 19 Pepin Court JOONDALUP WA 6027 **137. Shannon Pegg** 44 Mahatten Avenue ILUKA WA 6028 **138. Mr Trevor Gwynne** 2 Nome Street WARNBRO WA 6169 **139. Ms Carly Brandenburg** 38 Royal Melbourne Avenue CONNOLLY WA 6027 **140. Mr Lee Khaned** 207 Grand Ocean Boulevard PORT KENNEDY WA 6172 **141. Mr Mark Grant** 5 Cowling Way PARMELIA WA 6167 **142. Ms Kerry Grant** 42 Kingsbridge Road WARNBRO WA 6169 **143. Ms Katelyn Brandenburg** 8 Chapel Street BALDIVIS WA 6171 **144. Mr Chris & Mrs Jenny Brandenburg** 38 Royal Melbourne Avenue CONNOLLY WA 6027 **145. Mr Matthew Sanfead** 3 Cossack Street BALDIVIS WA 6171 **146. Mr Paul Sheppard** 19 Goulburn Road BALDIVIS WA 6171	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

NAME & ADDRESS	COMMENTS
147. Ms Heather Brookes 19 Goulburn Road BALDIVIS WA 6171 **148. Ms Lili Dejtei** 5 Hodden Way KARRINYUP WA 6018 **149. Ms Emma Keen** 51 Millstream Drive SOUTHERN RIVER WA 6110 **150. Ms Jasmine Williams** 55 Baroness Road BALDIVIS WA 6171 **151. Mr Daniel Hillebrand** 42 Kingsbridge Road WARNBRO WA 6169 **152. Ms Kara Grant** 42 Kingsbridge Road WARNBRO WA 6169 **153. Ms Tara Frankel** 50 Arizona Parade GOLDEN BAY WA 6174 **154. Ms Danielle Ellis** 17 Walgreen Crescent CALISTA WA 6167 **155. Mr Peter Woods** 13A Quorn Street WEMBLEY DOWNS WA 6019 **156. Lee Raymond** 116 Honeywood Avenue WANDI WA 6167 **157. Ms Sheraldine Williams** 16 Martin Place GREENWOOD WA 6024 **158. Ms Bev Smith** (Address not provided) **159. Ms Melanie Seol** 3/935 Albany Highway EAST VICTORIA PARK WA 6101	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

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160. Ms Holly Johnson 29 Ashton Avenue CLAREMONT WA 6010 **161. Ms Tania Raymond & Alex Garside** 8 Bangor Way ORELIA WA 6167 **162. Ms Francine Crewe** 30 Camden Boulevard AUBIN GROVE WA 6164 **163. Ms Linda Ogborne** 42 Hawkstone Street COTTESLOE WA 6911 **164. Mr Saxon Ziazan** 28A Zenobia Street PALMYRA WA 6157 **165. Ms Deb Thompson** 98 Ashdale Boulevard DARCH WA 6065 **166. Ms Wendy Dugond** 158B Cordelia Avenue COOLBELLUP WA 6163 **167. Mr Ben George Simmons-Toff** Unit 8/6 McKimmie Road PALMYRA WA 6157 **168. Mr Darryl Rice** 1 Paw Paw Close GREENFIELDS WA 6201 **169. Shrino Gwynne** 2 Name Street WAIKIKI WA 6169 **170. Ms Rhonda & Jesse Piani** 8 Strasbourg Ramble PORT KENNEDY WA 6172 **171. Ms Renae Hasmer** 10 Manhattan Avenue HILTON WA 6163 **172. Ms Aimee Staniland** 81 Crystaluna Drive GOLDEN BAY WA 6174	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

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173. Ms Natasha Buckner 117 Leach Highway WILLAGEE WA 6156 **174. Ms Katelin Davidson** 289 Yangebup Road YANGEBUP WA 6164 **175. Ms Rebecca Davidson** 8b Eden Street INNALOO WA 6018 **176. Ms Holly** 45 Karridale Loop BALDIVIS WA 6171 **177. Mr Jeff Mifsud** 135 Winery Drive KARNUP WA 6176 **178. Mr Clifford Emmott** 7 Hydra Close ROCKINGHAM WA 6168 **179. Mr Maxwell Watson** 11 Clune Court HUNTINGDALE WA 6110 **180. Ms Brigitte Rieder** 5 Harbour Road SOUTH FREMANTLE WA 6162 **181. Ms Megan Davidson** PO Box 611 HILLARYS WA 6923 **182. Mr Kevin Lawless** 3 Dale Street MOUNT NASURA WA 6112 **183. Mr Adam Mabey** 30 Apollo Way CARLISLE WA 6101 **184. Mr Kevin Aiyana** 22 Hayes Terrace MOSMAN PARK WA 6012 **185. T Mayor** 1/212 Edward Street OSBORNE PARK W A 6017	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.

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186. Mr Callum McIntosh 5 Indigo Place SOUTH LAKE WA 6164 **187. Mr Scott & Lee Emmerson** 101 Karri Street KARNUP WA 6176 **188. Ms Lauren Kenny & Ben Griffin** 10 Surf Drive SECRET HARBOUR WA 6173 **189. Ms Ruth Cooke** Unit 3/165 Mill Point Road SOUTH PERTH WA 6151 **190. Ms Naomi Akijuki** 105 St Kilda Road RIVERVALE WA 6103 **191. Mr G & Mrs B Martella** 146 Fletcher Road KARNUP WA 6176 **192. Ms Jane Mitchell** 3/1 Wingfield Avenue CRAWLEY WA 6009 **193. Mr G B Owen** 115 Forty Road SECRET HARBOUR WA 6176 **194. Ms Louise Whitley** 7 Kumarina Drive SECRET HARBOUR WA	I/we object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Contamination of bore water, with sewerage fertilisers and pesticides. 3. Loss of the function Centre which is actually an asset to most of the community. 4. Danger to children with busy Highway location known major high risk intersections. 5. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 6. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 7. Traffic congestion in peak hour traffic. 8. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the three most dangerous intersections in Rockingham. 9. Loss of amenity to neighbouring properties for a school that their own proposal claims has not one student from the suburb it is proposed for. 10. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council (All of us) if children are maimed or child fatalities occur. 11. There are much safer appropriate places readily available for schools. 12. A private alternative school is not an asset to the whole community, it is only an asset to a very small affluent portion of the community and while this small number may be vocal, it is nonetheless still a small minority of our community. From the Education Department statistics 2014 less than 1% of Rockingham's school children attend this school. 13. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway it is all just a waste of resources. 14. Should fires or dangerous roads see the school fail because of fatalities it will be an added burden on our community and us the community in whole will be left with the cost and liability for allowing it to go ahead.
195. Mr Ray & Mrs Kerry Penfold 25 Lombadina Parade SECRET HARBOUR WA 6176	Please refer to the above submission. (Additional Attachment) - Please note that we are really concerned about a school being in the middle of the worst intersections, eg. Port Kennedy Drive, Surf Drive and Anstey Road. Disaster, Disaster, Disaster, with traffic and accidents.
196. Mr Rod & Mrs Hazel Priestley 80 Fletcher Road KARNUP WA 6176	Please refer to the above submission. (Additional Attachment) - We write to object to the proposal to establish a school at Lots 11, 700 and 701 Mandurah Road, Karnup. Our main objection is in regard to the access and egress that will be necessary throughout the day for such a large school, but especially our concern is for the peak times at start and finish of school.

NAME & ADDRESS	COMMENTS
No.196 Cont…	As local residents we have seen numerous traffic incidents in the immediate area, and as we assume Mandurah Road will remain a major road between Rockingham and Mandurah for many years to come, any changes which impact on traffic should be strongly resisted. The area is currently zoned Rural or semi (Special?) rural and a large school will have a negative impact on local residents. If and when the zoning changes following the current review, then perhaps the locality can be developed with schools built in practical and safer locations, and not immediately adjacent to busy main roads. We also have a concern regarding impact on the water table, contamination of the environment by sewerage, pesticides and fertilizers, bushfire risk, and loss of amenity for neighbouring properties.
197. Ms M Wunsch 1871 Mandurah Road KARNUP WA 6176	Please refer to the above submission. (Additional Attachment) - Further to the above, Mandurah Road can be dangerous even at this time. It is obvious already this Education company have no consideration for the care of children, environment or community. Seemingly have sufficient money to buy land anywhere! Fire! Safety of 516 children unimaginable! Sad - it would be a blessing to ask why - This land? This land area not suitable for children or safe keeping for children, it is isolated, dangerous, sad Montessori, cannot comprehend the thinking. It sounds like a place for unwanted children! God forgive you.
198. Messrs L J & S W Harry 1834 Mandurah Road PORT KENNEDY WA 6172	Please refer to the above submission. (Additional Attachment) - We presume that previous submissions made on this matter will be considered along with these further comments. 1. Traffic. The latest plan provides no solution to the problems. It shows that the planners have, by use of a new entry coming off the southbound road into the school premises provided for vehicles to get into the school but no provision for them to get out if wanting to go North. That will send the vehicles looking for such turnabout access to areas such as Secret Harbour and Anstey Park etc. There will of course also be those impatient drivers who will try to exit by using the new Southern Drive-in access regardless of the real dangers that involves. 2. The very use of a new crossover at the point of entry to the school would be against Main Roads policy for the area as we found when seeking a crossover from our nursery some years ago. Our crossover would have involved many less vehicles than that for the school which appears to have parking bays for about 100 vehicles in addition to the many parents who would be dropping off and picking up children every school day. 3. Water/Sewerage. It is not clear whether the school premises involve using the usual Government facilities for such services. However if it proposes using some form of septic systems then long term damage to what is now a valuable water recourse could occur. We understand from water authorities that new supply for these areas depends significantly on run-off from hills area opposite. 4. If normal water and sewerage facilities were not required of the applicants then surely some form of legal assurance to both Government Authorities and landowners would be demanded. NB. Surf Drive - Anstey Road and Port Kennedy Drive are the 3 most dangerous roads in the Rockingham area (local news paper December).

NAME & ADDRESS	COMMENTS
199. Mr Andrew Chapman 1858 Mandurah Road PORT KENNEDY WA 6172	I'm not against the proposal as such, but it has changed a couple of times now and I would like to be informed of any new proposals or changes. I do wonder about the septic situation as we take our drinking water from the aquifer beneath us all. Also How much of a drain the school would place on that resource. Also as for the traffic making a U turn to head back to Rockingham. If Forty Road was sealed they could come out at the lights on Stakehill, problem solved.
200. Ms Andrea Morrow 36 Yulbah Loop BALDIVIS WA 6171	Thank you for the opportunity to submit a submission regarding the proposed Private Educational facility. I, Andrea Morrow, object to the School proposal on the following grounds. 1. Loss of amenity of the locality which is zoned Rural or Semi-Rural and should remain so. 2. Loss of the wedding function centre which is actually an asset to most of the community. 3. Danger to children with busy Highway location known high risk intersections. 4. Danger to children with Bushfire risk inability to evacuate all in a wildfire. 5. Danger to all motorists with large number of vehicles entering and exiting busy dangerous highway. 6. Traffic congestion in peak hour traffic. 7. Blocking of intersections at Surf Rd and Anstey Rd with traffic attempting to make U turns which are two of the most dangerous intersections in Rockingham. 8. Loss of amenity to neighbouring properties for a school that doesn't have one student from the suburb it is proposed for. 9. Rockingham council facilitating the placement of a school on a knowingly busy dangerous highway could see legal action aimed at the Council if a child is maimed or a child fatality occurs. 10. There are much safer appropriate places readily available for schools. 11. A private alternative school is not an asset to the community in general, only an asset to a very small portion of the community and while this small number may be vocal, It is nonetheless still a small minority of the general community. 12. Once the parents of the children experience for themselves the dangers and inappropriateness of this location they won't want to send their children there anyway.
201. Dr Peter John Kett 1822 Mandurah Road PORT KENNEDY WA 6172	As a local resident, I wish to convey to Rockingham City Council my strong, in principle, support for the proposed Rockingham Montessori School. My property is directly opposite Lot 11, so I am one of the local residents most closely affected. I believe we have a duty to support educational facilities in our community. Educating the young is a noble tradition and schools provide a focus around which community can develop. On the positive side the proposed site has spectacular views, cooling sea breezes and plenty of space to develop a first class educational facility. On the negative side sewerage, water and traffic issues need a satisfactory solution. Most of the objections to the School proposal are simply matters that need careful planning or regulation.

NAME & ADDRESS	COMMENTS
No.201 Cont…	1. Mandurah Road Mandurah Road should be designed to service the community, not the community designed to fit in with the existing road structure. a) The existing 100km/hour speed limit is too high for an area where residents access their property directly from the road. There is no need for this now that the freeway provides a fast alternative for long distance travellers. b) The Mandurah Road U-turn problem for parents dropping off and returning to Rockingham could be addressed by developing Forty Road as was originally planned (this was planned to give access to Anstey Park, Secret Harbour and Golden Bay from the freeway via Karnup Road, Stakehill Road east, the lights and Stakehill Road west). U-turn for parents coming from Mandurah is not a problem because of the existing large U-turn lane on Ennis Avenue some 100m north of the lights. 2. Sewerage and Scheme Water I suspect it would be folly to allow the proposal without sewerage as nearby residents rely upon the groundwater for drinking. Whether Scheme Water should also be a requirement depends upon the school's ability to gain new licences for bore water or secure long term leases for existing allocations. 3. The Amenity of the Area This is changing as surrounding areas become urban. The future for the area lies in synthesis with its urban surrounds, not as an island of rural in a sea of urban. I used to be regularly approached by trainers looking for agistment, but now haven't had an enquiry in years. Urbanisation has caused horse access to the beach and traditional riding areas to the west (now Larkhill ovals) to be closed. Environmental restrictions make the building of new stables uneconomic. The Larkhill horse training track is struggling, with talk in favour of Pinjarra. Demand for the area as a horse precinct has dropped dramatically. Most landholders believe council should rethink its approach to the area. The School would be a step in the right direction.
202. Ms Ann & Mr Donald Neame (Address not provided)	We wish to support the proposal of the establishment of a Montessori School at the above address. We feel the development of a School in Karnup would be an asset to the Rockingham and Peel regions where classes would be offered to children from the Infant Toddler Programme to Year 12. The proposed site where the School is to be built would be very beneficial to the children enabling them to have access to nature and contribute to environmental sustainability of the area while receiving an education. It also meets the needs of an alternative education for families within the region where the catchment into University is particularly low. We believe that the establishment of an environmentally friendly Montessori School in this area would be of great benefit to the region and to the children attending the School.
203. Ms Kate Sales (Address not provided)	As a committed community member of Rockingham Montessori School I fully endorse the proposal that has been submitted to Council for the School to establish an alternative education facility for the Rockingham and Peel regions at 1791 and 1809 Mandurah Roads, Karnup. I believe that a development such as this nature can only add value to the entire Rockingham community by providing a viable alternative option for education for all children.

NAME & ADDRESS	COMMENTS
204. Mr Gregory Symonds 1872 Mandurah Road PORT KENNEDY WA 6172	I am in favour of the proposal and see it as another educational option for the growing population of the City of Rockingham, a city which will become a major Metropolitan centre. I assume that Council is aware of the septic and underground water situation in this area and they will ensure the development meets it obligations in regards to those matters. It may be an appropriate time for council to have a whole new look at infrastructure in that area on both sides of Mandurah Road and perhaps have a look at how it would fit in with the sewerage, power and water that exists in nearby Anstey Park. As long as I have lived at 1872 Mandurah Road, I have been aware that Forty Road must at sometime be sealed and linked up to join Stakehill Road and give entry for cars on to Mandurah Road at the traffic lights. Again it might be time for Council to re-visit Forty Road (it is a gazetted road).....the sealing of it will facilitate and help alleviate traffic congestion and flow that may occur if/ when the said Educational Establishment proceeds. I would appreciate being kept informed of how this proposal is proceeding.

NAME & ADDRESS	SERVICING AUTHORITY COMMENTS
1. Department of Water Mr Brett Dunn PO Box 332 MANDURAH WA 6210	Thank you for the referral for the abovementioned site dated 15 December 2014. The Department of Water (DoW) has reviewed the information and has some concerns with the proposed development application in its current form as detailed below. <u>Potable and Wastewater Servicing</u> The proposed educational establishment site is remote from reticulated potable supply and sewer service of the Water Corporation. The development application states drinking water supply for the site is to be provided from a combination of collected rainwater and groundwater. It should be noted that for local groundwater resources to be proposed as a drinking water source a Drinking Water Source Protection Plan (DWSPP) will be required, which will include a comprehensive hydrogeological assessment of local groundwater resources to determine risk of contamination and management. Risks to drinking water sources are managed via controlling land uses within recharge areas, through land use planning restrictions implemented through the local government's town planning scheme. Given the recharge area for local groundwater resources will be beyond the site boundaries, planning restrictions limiting activities on surrounding properties would need to be applied, which has not been considered by the proponent, and is likely not a preferred outcome for the City of Rockingham. Furthermore, the development application also proposes a wastewater treatment system to treat wastewater and irrigate an area within the facility grounds. *Water Quality Protection Note (WQPN) 25*: *Land use compatibility in Public Drinking Water Source Areas (DoW, 2004)* defines wastewater treatment and disposal as incompatible in a drinking water source area, representing an unacceptable risk to human health. Therefore, the proposal to have groundwater abstraction for drinking water and wastewater treatment and disposal on the same site is a fatal flaw of this development application. The proponent should demonstrate a feasible strategy to provide essential water servicing for the site prior to the approval of the development application. On resolution of the above, the proponent should also identify the irrigation areas required for the wastewater treatment plant (should this still be the intention). A Works Approval may be required by the Department of Environment Regulation, and further approvals will also be required from the Department of Health. <u>Groundwater Resources</u> The development application should confirm there are available groundwater resources for the proposal. This should include: • A breakdown of groundwater requirements including irrigation of school ovals and gardens, construction requirements and any other usages; • Details of any current licences and confirmation of legal access, or transfer, of the groundwater entitlements; • Details of any further groundwater allocation which would need to be applied for. The Department recommends the aforementioned issues are resolved prior to the approval of the development application. If you wish to discuss the above further please contact Catherine Taylor of the Mandurah Office on (08) 9550 4237.

NAME & ADDRESS	SERVICING AUTHORITY COMMENTS
2. Main Roads Mr Lindsay Broadhurst	I refer to your letter dated 15 December 2014 requesting Main Roads comments on the development application identified above. Main Roads has previously provided advice to the City of Rockingham in a letter dated 26 August 2014 (refer attached). Conditional support was provided by Main Roads subject to alternative access arrangements being undertaken from a minor road and access from Mandurah Road being reserved for emergency access only. As this current application has not addressed the concerns raised by Main Roads our comments remain the same as those provided to the City of Rockingham and are as follows: • The proposed school is located on a Primary Regional Road and Control of Access Highway (Mandurah Road) which has an existing posted speed of 100 km/h at this location. Control of access in relation to any road means that a section or part of that road is intended for use by prescribed traffic without avoidable hindrance, whether from traffic from an intersecting road or otherwise. The intent of a declared Control of Access Highway is that the road may be entered or departed from specified places only. • Two vehicle access points are located on Mandurah Road (one access point from Lot 700 and Lot 11 respectively). The existing access provides for Left-in, Left-out (LILO) movements from both Lots. The current proposal allows for a deceleration lane for northbound vehicle traffic on Mandurah Road entering the access point located at Lot 700. • Although, there are two existing access points to Lots 11 and 700, the revised Transport Assessment report prepared by Shawmac, dated 27 November 2014, identifies proposed access to the school is from one point only, located on the southbound carriageway of Mandurah Road at Lot 11. • The revised Transport Assessment report also proposes closure of the existing median break immediately south of the proposed entry to the site in order to improve road safety. This closure may have implications for adjacent land owners along Mandurah Road. • Main Roads is concerned about the future traffic safety issues around access to the school site from Mandurah Road although it is acknowledged that there is currently no alternative access. • There is currently no structure plan in place for Karnup and further discussions are required with the City of Rockingham in order to initiate alternative access arrangements for this area. Main Roads is prepared to support the above application subject to the conditions below: 1. No access, other than provision of an emergency access, shall be made available to or from the proposed development from Mandurah Road. 2. Access to the proposed development to be provided via a connection to the local road network in this area (ie. Greenham Place or Stakehill Road). If you require any further information please contact David Van Den Dries (Urban Road Planning Manager, South) on 9323 4917 or Tiffany Cullinane (Planning Information Officer) on 9323 5828. Main Roads representatives met with the applicants on Friday 22 August 2014 to discuss the concerns presented by the initial application referred to Main Roads on 4 August 2014. Main Roads has endeavoured to be proactive in expressing concerns and making the applicant aware of issues associated with the proposed development.

NAME & ADDRESS	SERVICING AUTHORITY COMMENTS
3. Department of Parks & Wildlife Mr Stefan de Haan	With reference to your correspondence dated 7 January 2014, the Department of Parks and Wildlife (Parks and Wildlife) provides the following comments. It appears the development will involve the clearing of native vegetation. Clearing of native vegetation in Western Australia is prohibited, unless the clearing is authorised by a clearing permit obtained from the Department of Environmental Regulation, or is of a kind that is exempt in accordance with Schedule 6 of the Environmental Protection Act 1986 or Environmental Protection (Clearing of Native Vegetation) Regulations 2004. The proponent will need to liaise with the Department of Environmental Regulation regarding clearing of native vegetation. It is the expectation of the Department that the planning system will appropriately address environmental planning issues including those not specifically mentioned in this advice. Please contact Lyndon Mutter on 9442 0342 or by email at lyndon.mutter@dpaw.wa.gov.au if you have any queries regarding this advice.

We the Sanfead Family of 5 Olive Hill Close have just discovered that the proposed Montessori School has appealed the Southwest Metropolitan JDAP Decision MSWJDAP/63.

We attended the Rockingham Town Council Planning meeting that unanimously voted against the proposed School at this site. We then attended the Rockingham Council meeting that also unanimously voted to not support the Montessori School proposal and lastly we attended the Southwest Metropolitan JDAP Decision that also unanimously voted against the School Proposal. We are a little perplexed because we were told at the JDAP because we had made a submission we would be informed if the decision was appealed and Rockingham Town Planning were of the opinion that it was not likely to be appealed as there were no likely chance of an appeal being successful. But we have only just noticed the link to the decision from the Southwest JDAP has been removed from the Rockingham Council Web site and on enquiring as to why we were told that the decision had been appealed and we weren't notified because they were not allowed to tell us. We also note that the appeal date 14 April is some thirty six days after the Southwest Metropolitan JDAP decision. The School has Roe and Associates representing them and I am sure they would be aware of the time constraints for appeals.

We object to the appeal on the grounds the appeal was not lodged by due date by over a week.

It has been almost one year since an uninvited visit from the principal of this Montessori school where she tried to convince us to sign a document endorsing the proposed school at that point she was told politely that we would not support the proposal. The Rockingham Planning Department stated that Montessori were told not to purchase the land in question as it was not likely to be suitable for a School but this School ignored this advice. It appears they think they can bully their way through all the regulations and safeguards in place it seems that the mentality is just keep throwing money until you get your own way, we have seen this before. It is a tactic that large mining houses use to manipulate favourable outcomes over native title and conservation hurdles interfere with their objectives, while it may be effective we hope the substantial lack of merit this proposal has on numerous levels will see another unanimous decision to stop this proposal.

We the Sanfead family humbly request that we be added to this appeal as effected parties. We are not lawyers or Town Planners and we do apologise if we have used the wrong wording or omitted something we are unaware of we beg your indulgence in this request.

- Safety on the roads surrounding our property

  We have lived at 5 Olive Hill Close in Karnup for 14 years and we have found the roads and intersection near our property to be very dangerous at times and great care needs to be taken on Mandurah Road (National Highway one). The intersections of Port Kennedy and Mandurah Road being rated by Risky Roads the third most dangerous intersection in Western Australia just North of the proposed school. The intersection of Mandurah road and Surf Road is rated as the fourth most dangerous intersection in Western Australia by Risky Roads just South of the proposed school and the next intersection South is Anesty Road and Mandurah Road rated as Rockingham's third most dangerous intersection the two above mentioned intersection complete the three most dangerous intersections in Rockingham.

  There is currently 30,000 vehicles per day that pass this site with the bulk of this number occurring in peak times which is the time when distracted drivers will be entering and leaving a busy highway not to mention that it is planned to increase the current two lane highway to three lanes. Surely town planning must consider this. Perth is already choking with congestion and good planning decisions are required as has been discussed in recent months there is insufficient room for slowdown lanes and with all the parents wanting to arrive at the same time and leave at same time twice daily. this will grind traffic to a standstill and this on National Highway One that is as mentioned also a designated freight and heavy haulage route.

By allowing this school here it will substantially increase traffic that will be entering and exiting both the site and nearby intersections twice daily in peak hours. This will greatly increase the risk of road accidents to all who use this road in particular we are concerned for our own safety, extended family and friends who visit us regularly.
There is clear history of numerous fatalities on Mandurah Road particularly at nearby intersections to our property and the proposed school. Main Roads is clearly against this proposal, the City of Rockingham is against the proposal on the road safety issue along with many other safety and planning reasons. It is unreasonable in our view to place our family, friends and neighbours in greater danger on this notorious stretch of National Highway One. A relative's comment on visiting us is "it is like trying to enter a Grand Prix when exiting our street onto the Highway.

- Our property along with the proposed school site are in high fire risk zones. While placing schools in bushland may make some feel warm and fuzzy the reality is school children have a fascination with fire and there is much historical evidence of fires being lit by school children. This will undoubtedly place our family and property at a much higher bushfire risk. While our property is mostly cleared the way we purchased it for the bushfire risk we should be not be put under any obligation to maintain this for the benefit of adjoining land.

- Our family carefully chose the location of our property to escape the heavily populated busy areas of Rockingham, we had lived within close proximity to schools and found the congestion and noise unbearable. The location and zoning of our property should protect us from exactly what we escaped. At the time of purchase we investigated the future planning for our area and found that State Planning and the Rockingham Town Council goal was to preserve the amenity of our locality as rural and special rural. If this proposal was to go ahead it will destroy our lifestyle and go against state and local planning.

- The Topography of our property and the proposed school is extreme. Our property sits upon one hill the proposed school sit upon the next hill with the boundary fence line in the valley between the two properties leaving no possible way of secluding either property from each other. It is noted in either or both Liveable neighbourhood element 8 or Policy DC2.4 School Planning that schools should not abut residential properties because of noise and neighbourhood dispute issues. Our visual amenity will go from one visible building (A family home) and bushland to many building roads and the destruction of most of the bushland.

- There is no scheme water or scheme sewerage at our property or the proposed school site. It is clear the department of health has issues with this, we also are alarmed that the sewerage from such a large number of people will contaminate our only source of drinking water our bore. We also have concerns that pesticides that will be required to keep insect populations at bay on the site will also seep into our water table. The Schools answer is for them to cart drinking water for the site. What are we supposed to do? Also cart water the expense of this maybe something the school can ultimately recover from the fees to attend the school but it would be an expense that we would have meet without recompense. We have been alerted that there is already water quantity issues in our area by a Rockingham Shire Councillor who has an affiliation with the Lark Hill Horse Training Facility located across the road from the proposed site. So we will likely be left with little water that is not safe to consume plus the likely expense of drilling deeper bores to chase the already dropping water table.

- Noise our amenity will be destroyed on another level. It has been arrogantly pointed out by the proposed school that schools are not subject to noise control regulations other than the use of heavy equipment which we have already mentioned is highlighted as problematic by Liveable neighbourhood element 8 and or Policy DC2.4 School Planning. The school will be allowed to make our lives a misery that we will be powerless to do anything about it. We have been told by an ex-employee that the open structure of this educational system sees no regimented play and lunch times, so the schoolyard tends to be busy and noisy all day long.

- Fauna, we are extremely lucky to have Carnaby and black & red Cockatoos congregate and feed on the prosed school site there are also a large number of kangaroos and Kookaburra's that visit both our property and the proposed school site. It is abundantly clear that the destruction of the bushland feeding area and the large number of people on the site will greatly diminish the fauna activity and the Cockatoos will be lost forever.

  Bushland, as we have already stated the amenity of this area and the zoning designed to protect this will again be greatly diminished by the extensive removal of natural surviving bushland for both building and fire protection, for this proposed school. While the school claims it is preserving bushland the obvious is the opposite.

- Two of the people in our family work from home so the impact on our amenity will be substantially higher as this will have an effect on us most of the day. We are rapidly approaching retirement age and our long term plan was to have a safe quite lifestyle for us our children and grandchildren to enjoy.

- We hold band practice at our property regularly, over the past fourteen years there has been only noise complaint and that was from the School itself. They were visiting the site with some dignitaries that they were trying to sell the school idea too. This occurred in the mid-afternoon the complaint was for playing a stereo to loud when in fact it was electric guitar that under the noise regulation act it is allowable to play a musical instrument at that time of day for the period it was played. Again no one else in fourteen years has had a problem but the school does before it even has people at the site, what it will get like if this goes ahead.

- Crime it is commonly known that schools unfortunately attract the criminal element of our society probably for the theft electronic equipment and the like, it is expected that these criminals will not ignore us and effect our lifestyle through opportunistic crimes such as theft vandalism and arson. This school will impact greatly on our sense of safety and security.

- The School will as it does now have surveillance cameras to protect its investment, it will be impossible to carry out surveillance without also recording our home and back yard. Apparently there is no law that can stop them, this will drastically affect our lifestyle. To be placed under constant surveillance, again will destroy our lifestyle and wellbeing. We will be made to feel like criminals in our own home and back yard.

  We are a humble family that happily lives by the rules and regulations of our community we actually embrace these boundaries as it gives us a sense of direction and belonging we only ask that others do the same and not corrupt these boundaries, it is the boundaries that creates and preserves our community. Boundaries are intended for us all including the poor the rich the passive the pushy the meek and the bullies of our community. If we openly choose who is and who isn't subject to these boundaries it is our society that suffers.

Apparently the Montessori proposal is not subject to Liveable neighbourhood element 8 Schools or Planning Policy DC2.4 Schools, because the subject site it is on a rural zoned lot but is within the City of Rockingham. We believe the risks to children can be much higher on rural lots because of bushfire risks, poor access, and lack of adequate services, such as scheme water and scheme sewerage. We would like to think the comprehensive and concise regulations and guidelines that have been written to protect our community's children should be enforced for all. While apparently they are not designed for rural areas such as small towns and the like, it does not seem appropriate to simply ignore these regulations and guidelines in Rockingham which is clearly part of the Perth metropolitan area. Rockingham has land zoned where schools should be built that is subject to these documents. We believe that in this case liveable neighbourhood

element 8 Schools and or Policy DC2.4 School Planning be used as minimal guidelines for the protection of school children in the spirit these documents where intended. On talking to some parents of children attending this school some simply won't attend this dangerous site a few are of the opinion it is that dangerous the Government won't allow it to go ahead, which should be the case but it seems there are loopholes to the regulations that this school is using to circumvent the very rules and regulations they should be adhering too.

We feel that we have been unfairly and unjustly subjected to an enormous amount of stress regarding the relentless applications and pigheaded refusal to accept all the unanimous decisions against this proposal we plead that the SAT take into account the physiological impact the Montessori School has had and is inflicting on our family for a proposal that has been clearly and comprehensively rejected on this site.

We would like to add we have no issue whatsoever with the Montessori Educational system it may be great it may not, we are simply in no position to judge. It is certainly not a factor in this case. What is it is that we researched and planned our lifestyle to and including retirement and don't want our lifestyle and wellbeing destroyed on the whim of a few.

We wish Rockingham Montessori well in finding a safe appropriate location that meets both their and our community's needs. This site is obviously inappropriate for a School and it is not anywhere near the last piece of land in Karnup or Rockingham.

View of our family home from proposed position of the administration building floor level. The Dividing fence line floor level is 15 to 20 metres our home floor level is 35 metres.

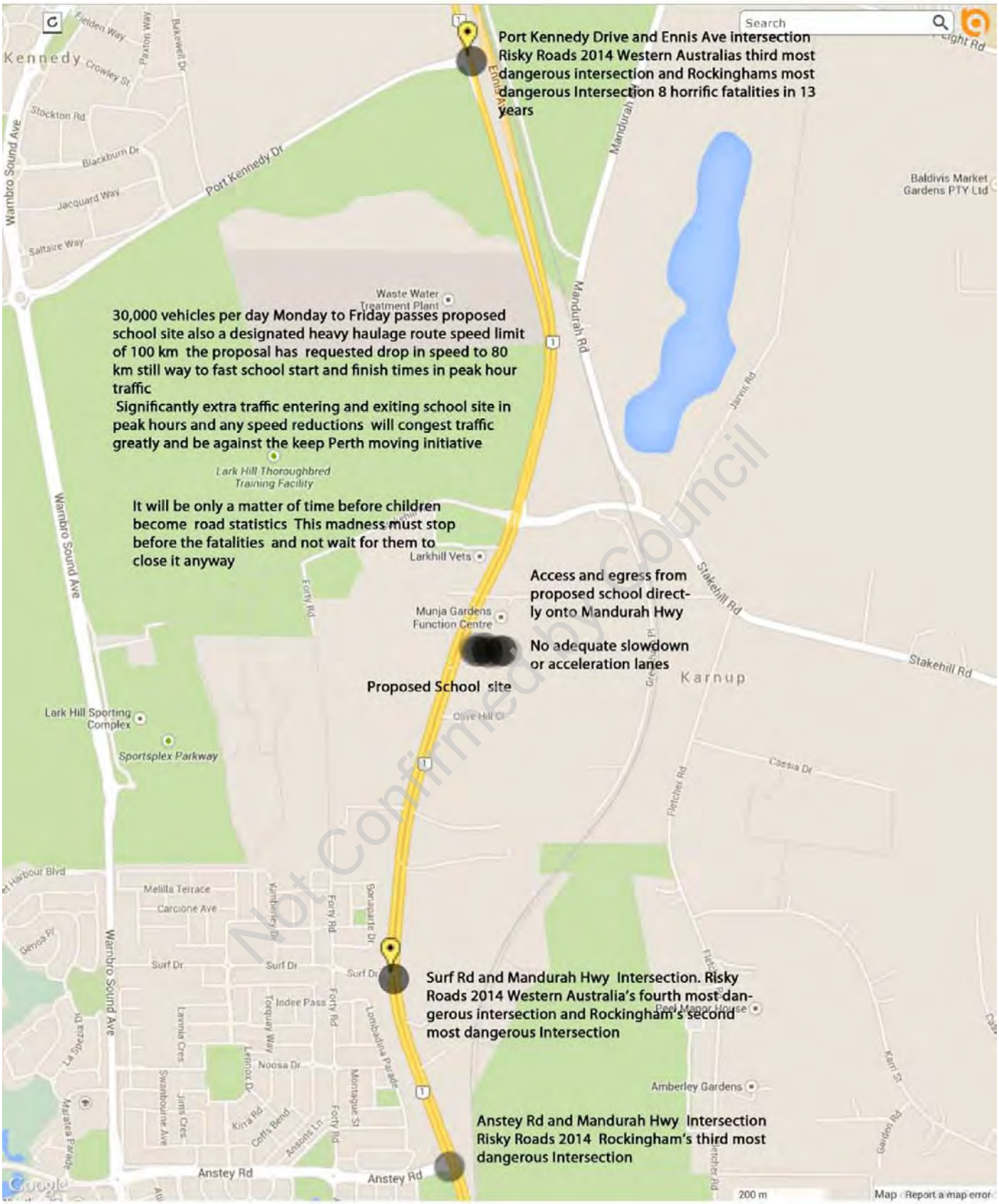
There is no chance of any screening that could give either the school or our family privacy and this will utterly destroy our amenity that was a major factor in purchasing our home 14 years ago.

Picture of a person standing where the above photo of our home was taken from (Location of the administration Building and play areas). Floor levels 24 metres to 27.5 metres, unobstructed views of our home from the proposed school site range from floor levels of 20 metres to 37.53 metres. The existing Rockingham Montessori School has numerous surveillance cameras we and other neighbours will be placed under 24 hr surveillance just to enable this school to protect its investment.

Number 9 Olive Hill Close Karnup

Picture taken from near the proposed Environmental Centre at the site.

Risky Roads Survey 2014



Type Intersection Road

x Type: Intersection

Carnaby's Cockatoos at proposed site where they normally congregate and feed, directly opposite our home and the site of the main School Buildings

Two Carnaby's feeding on site to be cleared for School Buildings

Government of **Western Australia**
Development Assessment Panels

State Administrative Tribunal Reconsideration

Responsible Authority Report

(Regulation 12)

Property Location:	Lots 11, 700 and 701 Mandurah Road, Karnup
Application Details:	Educational Establishment
DAP Name:	Metro South-West Joint Development Assessment Panel
Applicant:	Rowe Group
Owner:	Rockingham Montessori School Inc. (Lot 11), Noel Francis Smith and Jozefa Smith (Lot 700)(note: Rockingham Montessori School Inc. is under contract to purchase Lot 700, subject to development approval being granted)
LG Reference:	City of Rockingham – 20.2014.535.1
Responsible Authority:	Department of Planning
Authorising Officer:	Assistant Director General, Perth and Peel Planning
Department of Planning File No:	28-50175-2 DAP/14/00687
Report Date:	11 December 2015
Application Receipt Date:	16 January 2015
Application Process Days:	325 days
Attachment(s):	1 – Locality Plan 2 – Aerial Photo 3 – Refusal Decision and Refused Plans 4 – Amended Master Plan and Development Plans 5 – Main Roads WA Referral Responses

Officer Recommendation:

That the Metro South-West Joint Development Assessment Panel, pursuant to section 31 of the *State Administrative Tribunal Act 2004* in respect of SAT application DR 126 of 2015, resolves to:

Reconsider its decision dated 10 March 2015 and **refuse** DAP Application reference DAP/14/00687 and amended plans:

- Masterplan, Drawing SK01, Rev D, dated 22 October 2015;
- Site Sections, Drawing No.SK02, no Rev, dated 26 November 2014;
- Site Sections, Drawing No.SK03, Rev A, dated 26 November 2014;
- Typical Classroom Block, Drawing No.SK04, Rev B, dated 26 November 2014;
- Typical Classroom Block, Drawing No.SK05, Rev A, dated 26 November 2014;
- Administration/Sports Centre, Drawing No.SK07, Rev A, dated 26 November 2014;
- Administration/Sports Centre, Drawing No.SK08, Rev A, dated 26 November 2014;

- Administration/Sports Centre Elevations, Drawing No.SK09, Rev A, dated 26 November 2014;
- Administration/Sports Centre Elevations, Drawing No.SK10, Rev A, dated 27 November 2014;
- Senior Specialist Block, Drawing No.SK11, Rev A, dated 26 November 2014;
- Senior Specialist Block, Drawing No.SK12, Rev A, dated 26 November 2014;
- Children's House, Drawing No.SK 13, Rev B, dated 26 November 2014; and
- Environment Centre, Drawing No.SK 14, Rev A, dated November 2014

for the following reasons:

Reasons

1. The development is inconsistent with State Planning Policy 3 – Urban Growth and Settlement, and Development Control Policy 2.4 – School Sites as it:

    a) does not represent a sustainable or well planned development due to the rural nature of the locality and relative isolation from urban facilities, such as a local road network, pedestrian and cyclist facilities, public transport, community services, supporting activity and residential uses;

    b) does not contribute to a sustainable or liveable neighbourhood form, or a sense of neighbourhood and community identity;

    c) does not integrate land use and transport planning to reduce the need to travel, promote the use of public transport and reduce dependence on private cars; and

    d) does not facilitate the efficient use of existing urban infrastructure and proposes significant development and demand for infrastructure and services in an area where they are unlikely to be provided.

2. The development is inconsistent with State Planning Policy 2 – Environment and Natural Resources Policy, as it has not been demonstrated the proposed clearing of native vegetation is acceptable.

3. The development is inconsistent with Development Control Policy 5.1 – Regional Roads (Vehicular Access), which seeks to minimise and rationalise existing access arrangement to regional roads. The development will result in the intensification of use of an existing access point to the site and require significant alteration to Mandurah Road, which may compromise and erode the function and performance of Mandurah Road as a Primary Regional Road reserved under the Metropolitan Region Scheme.

4. The development does not achieve the intent of the matters to be given regard pursuant to Cl.30(1) of the Metropolitan Region Scheme, as it would prejudice the orderly and proper planning of the locality by significantly intensifying development on the subject land, contrary to the purpose, character and amenity of the 'Rural' zone pursuant to the Metropolitan Region Scheme.

Background:

Property Address:		Lots 11, 700 and 701 Mandurah Road, Karnup
Zoning	MRS:	Rural (abuts Mandurah Road – Primary Regional Road)
	TPS:	Rural and Special Rural
Use Class:		Educational Establishment
Strategy Policy:		State Planning Policy 2 – Environment and Natural Resources Policy State Planning Policy 2.5 – Land Use Planning in Rural Areas; State Planning Policy 2.9 – Water Resources; State Planning Policy 3.0 – Urban Growth and Settlement State Planning Policy 3.7 – Planning in Bushfire Prone Areas Development Control Policy 1.2 – Development Control – General Principles Development Control Policy 2.4 – School Sites Development Control Policy 5.1 – Regional Roads (Vehicular Access)
Development Scheme:		City of Rockingham Town Planning Scheme No.2
Lot Size:		10.43 hectares
Existing Land Use:		Dwelling and Reception Centre
Value of Development:		$18 million

The subject land is located 13km to the south of Rockingham on the eastern side of Mandurah Road (refer to **Attachment 1 – Location Plan**), and currently contains a single storey dwelling on Lot 11 and reception centre on Lot 700 (refer to **Attachment 2 – Aerial Photo**).The surrounding area is predominantly rural in setting and character.

On 10 March 2015 the Metro South-West JDAP refused an application for an Educational Establishment (refer to **Attachment 3**) on the subject land, due to concerns regarding its isolated location, limited accessibility, vehicle access arrangements, bushfire risk, impacts on the natural environment, and incompatibility with the rural zoning of the land.

The applicant sought review of the refusal by the State Administrative Tribunal (SAT). A number of mediation sessions have taken place involving the Department, City of Rockingham, Main Roads WA and the applicant. Additional information and amended plans have been submitted (refer to **Attachment 4**) and the SAT has invited the JDAP to reconsider its decision pursuant to section 31 of the State Administrative Tribunal Act 2004.

Details: outline of development application

Amended Plans and Additional Information:

The applicant has submitted amended plans, which modify the following aspects of the original proposal:

- Relocation of the early childhood centre from Lot 700 to Lot 11;
- Replacement of the western most primary block with relocated early childhood centre;
- Removal of carparking spaces on Lot 700 (with the exception of 7 carparking bays that are located on the boundary with Lot 11 and Lot 700);
- Reconfiguration of internal traffic circulation on Lot 11 and Lot 700;
- Use of access to Lot 11 for emergency access only;
- Relocation and expansion of carparking bays on Lot 11;
- Modified internal pedestrian access; and
- Relocation of main vehicle entrance to the site to Lot 700/701.

The applicant has also provided the following additional and revised information:

- Revised Masterplan (refer to **Attachment 4**);
- Revised Transport Assessment, Traffic Management Plan and School Bus proposal;
- Clearing Permit Application Report (note: has not been submitted to the DoER);
- Revised Fire Management Plan;
- Revised Rehabilitation and Landscaping and Visual Impact, Wastewater and Water Supply Information; and
- Concept car park and Earthworks Layout Plan (note: does not reflect the revised Masterplan).

Details of Proposed Development:

The proposed development is an Educational Establishment to accommodate 516 students and 42 staff, which includes the following elements:

- 1 administration building including sports hall, arts and science area and classrooms;
- 1 senior specialist building including technology centre and hospitality teaching area (converted from existing Function Centre);
- 1 children's house building (converted from existing Chapel building);
- 1 environment centre (converted from existing dwelling);
- 1 early childhood building;
- 2 primary teaching blocks;
- 2 senior teaching blocks;
- Retention of three storage sheds;
- Retentions of existing hard courts;
- A primary, senior and garden play space; and
- Car parking, vehicle access and manoeuvring areas.

Legislation & policy:

Legislation

State Administrative Tribunal Act 2004 – s.31
Metropolitan Region Scheme 1963 – Cl.30(1)

State Government Policies

State Planning Policy 2 – Environment and Natural Resources Policy (SPP 2)
State Planning Policy 2.5 – Land Use Planning in Rural Areas (SPP 2.5)
State Planning Policy 3.0 – Urban Growth and Settlement (SPP 3)
State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7)
Development Control Policy 1.2 – Development Control – General Principles
Development Control Policy 2.4 – School Sites
Development Control Policy 5.1 – Regional Roads (Vehicular Access)

Local Policies

City of Rockingham Planning Policy 3.1.1 Rural Land Strategy

Consultation:

Additional public consultation was not undertaken as part of the SAT process, however details regarding the initial public consultation (undertaken by the City of Rockingham) are provided in the City's Responsible Authority Report.

During the SAT process further consultation was undertaken with Main Roads WA (MRWA) and the Department of Water (DoW). A copy of MRWA's initial and subsequent referral advice has been included at **Attachment 5**. Advice received is discussed where relevant in the comments section below.

Planning assessment:

In determining development proposals under the Metropolitan Region Scheme (MRS), clause 30(1) is relevant which requires decision makers to give regard to:

- The purpose for which the land is zoned or reserved;
- The orderly and proper planning of the locality; and
- The preservation of amenities of the locality.

Land Use and Location

The land use and location of the proposal has previously been identified by the JDAP as a significant issues and refusal reason (refer to **Attachment 3**). The applicant has not reduced the size or scale of the proposed development through the SAT process and as such the concerns previously raised remain.

The subject land is zoned 'Rural' by the MRS whereby a range of rural uses can be undertaken. The subject land and its surrounds are likely to remain 'Rural' for the foreseeable future.

The WAPCs *Development Control Policy 2.4 – School Sites* (DC 2.4) outlines objectives and measures in relation to the location and design of school sites. DC 2.4 generally states that school sites should:

- be identified in district and local plans;
- maximise accessibility via multiple frontages and access points;
- locate in close proximity to public transport routes (particularly for secondary schools) and facilitate short, safe and direct trips for pedestrians and cyclists,
- form part of the community with regard to interface and visual attraction,
- have regard to the retention and protection of conservation areas and service easements; and
- provide 10-12 hectares for a combined primary and secondary non-government school.

The WAPC's *Liveable Neighbourhoods*, although not intended for use in assessment of development applications, provides a number of objectives and requirements which guide decision makers in consideration of what is acceptable with regard to location of school sites. These include locations which:

- maximise accessibility;
- managing traffic congestion by providing a surrounding street network to distribute traffic;
- form part of a community; and
- promote walkability, cycling and access by public transport.

The subject land is isolated from urban zoned land and only capable of being accessed by Mandurah Road, a 100km/h controlled access highway with no provision for pedestrian, cyclist or public transport to the site.

Whilst it is acknowledged that an 'Educational Establishment' is a discretionary use within the 'Rural' zone of TPS2 (Lot 11 only), the combined primary and secondary school is of a significant size and scale, catering for 516 students and 42 staff. A school of this scale should be located in an urban context within an urban zone, where the residential density, transport networks, community infrastructure and supporting activity which complement a school can be provided. The rural zone of the subject site and its surrounds are not intended to cater for development beyond the intensity of typical 'Rural' uses.

In addition to non-compliance with DC 2.4, the proposed development does not comply with the following objectives of SPP3, as it:

- does not represent a sustainable or well planned development due to the rural nature of the locality and relative isolation from urban facilities, such as a local road network, pedestrian and cyclist facilities, public transport, community services, supporting activity and residential uses;
- does not contribute to a sustainable or liveable neighbourhood form or a sense of neighbourhood and community identity;
- does not integrate land use and transport planning to reduce the need to travel, promote the use of public transport and reduce dependence on private cars; and
- does not facilitate the efficient use of existing urban infrastructure and proposes significant development and demand for infrastructure and services in an area where they are unlikely to be provided.

The proposed land use and location of the proposed development are not considered appropriate and the development application should be refused.

Vehicle Access: Mandurah Road Primary Regional Road

The subject land has frontage to Mandurah Road only and vehicles are proposed to access/egress the site from a single left in/left out access on Lot 700 (current location of the Reception Centre access). As access is restricted to left in/out only, this will require vehicles to perform U-turns in Mandurah Road. All arrivals and departures to and from the school will be by private car or bus.

To reduce the total number of private car trips to the school, the applicant proposes to offer a private bus service for students which could possibly cover up to 50% of student trips to and from school. Although the offer of a private bus service is likely to be taken up by some students of the school, the contended usage rate is considered uncertain and variable. The ongoing performance of a private bus service is also difficult to ensure, due to difficulties enforcing a minimum rate of usage or performance of the service by planning authorities. For this reason, vehicle access considerations by the agencies have placed limited weight on the proposed bus service.

Mandurah Road is reserved by the MRS as a 'Primary Regional Road' and is classified as a controlled access highway and primary freight route. Such roads are intended by Development Control Policy 5.1 – Regional Roads Vehicular Access, for use by traffic without avoidable hindrance, whether from traffic from an intersecting road or otherwise. The road may be entered or departed from specified places only which ensures traffic flows freely and safely. Mandurah Road at the point of the subject land is currently a four lane divided carriageway with a posted speed of 100km/h. MRWA have advised that ultimately, Mandurah Road will be upgraded to a six lane highway although the timing for the upgrade is not known.

Access and egress to the school site will require vehicles to decelerate to enter, accelerate to re-join traffic, weave across traffic lanes, and perform U-turns within a 100km/h speed environment.

As a part of the SAT process MRWA prepared concept drawings for access/egress to the site to inform whether access to the site could physically be provided and the extent of works required. The concept drawings raise a number of issues which remain unresolved:

- Based on the current traffic speed of 100km/h, deceleration and acceleration lanes would encroach on existing vehicle access to Olive Hill Close and private access to Lots 13 and 14 Mandurah Road (located to the south of the subject land – see **Attachment 1**) and adversely impact their function;
- If the speed limit were reduced to 80km/h, the deceleration and acceleration lanes would not encroach on Olive Hill Close or any other properties, however reduction to the speed limit is subject to a separate process, managed by MRWA; and
- Due to level differences between the existing carriageways south of the subject land, there is uncertainty whether a U-turn facility and the associated deceleration/acceleration lanes could be constructed.

MRWA maintain their original position, in that it could only support the proposed development if alternative vehicle access were provided from a minor road east of the subject land. In addition, MRWA have also advised:

- Main Roads is concerned about the future traffic safety issues around access to the school site from Mandurah Road, although it is acknowledged that there is currently no alternative access; and
- The application provides insufficient detail of road improvements on Mandurah Road to determine if the application warrants approval.

Development Control Policy 5.1 – Regional Roads (DC 5.1) seeks to minimise and rationalise existing access arrangements to regional roads to improve traffic flow and safety. Although the subject land has existing access to Mandurah Road, the proposed development will significantly increase the use of that access and require significant modification to Mandurah Road. Mandurah Road is a high order primary regional road and freight route, and its function and performance should be protected from new ad-hoc development along its boundaries.

No other alternative access is achievable and for this reason it is recommended that the JDAP affirm its refusal of the proposed development. Notwithstanding, MRWA has provided a list of conditions which should be imposed if the JDAP were to support the proposed development, which are provided with the alternate resolution.

Servicing

The subject land is not currently serviced by reticulated water or sewer and this is part of the refusal reasons for the original proposal.

The applicant has addressed these concerns and advised of their intention to provide the proposed development with reticulated water, if it were to be approved. On-site effluent disposal is still proposed.

The applicant has obtained engineering advice which concludes reticulated water could be provided to the site by extending the existing supply from Surf Drive (approximately 1.3 kms to the south west of the subject land). If the JDAP were to support the proposed development, a condition to this effect should be imposed.

Subsequent to the refusal of the application, the DoW have advised that onsite wastewater disposal via the use of aerobic treatment units (ATU) and irrigation is deemed appropriate, however the type and number of systems required to service the school and its population should be discussed with the Department of Health and the City of Rockingham. If the JDAP were to support the proposed development, advice to this effect should be included with the approval, which is provided with the alternate resolution.

Bushfire Risk

Concerns regarding safe access/egress to the site and secure water supplies were identified as a significant concern and refusal reason of the original proposal. The applicant has since amended their fire management plan to address the concerns raised.

The main features of the FMP are:

- A proposal to ‘shelter in place’;
- Classrooms and Sports/Administration building to be constructed to BAL-29, in accordance with AS3959;

- Modification of vegetation to ensure the hazard level surrounding all existing and proposed buildings is low; and
- Additional emergency vehicle access to Mandurah Road from Lot 700.

Since the initial consideration of this matter by the JDAP, SPP 3.7 (Planning for Bushfire Prone Areas) has been gazetted. The proposed development is classified by SPP 3.7 as a 'vulnerable land use'. SPP 3.7 provides that a 'vulnerable land use' in an area where BAL-29 applies may be acceptable if a Bushfire Management Plan is jointly endorsed by the relevant local government and Department of Fire and Emergency Services (DFES).

DFES has previously advised the Department that the City is the responsible authority regarding fire protection matters. The City has advised the proposed development and associated Fire Management Plan is consistent with the requirements of the Planning for Bushfire Protection Guidelines, subject to a minor addition requiring the extent of the building protection zone being illustrated within the FMP.

It is considered bushfire concerns have been addressed and that the proposed bushfire management measures are acceptable.

Environmental Values

The subject land contains areas of native and introduced/exotic species of varying condition. The proposed development and associated FMP mitigation strategies will result in the clearing of large areas of vegetation and ultimately the loss of habitat for fauna. Within the clearing footprint for the proposed development there exists completely degraded to good quality vegetation and of the 5.13 hectare clearing footprint:

- 0.62 hectares is in a good condition;
- 1.35 hectares is in a degraded condition;
- 1.75 hectares is in a completely degraded condition;
- 1.41 hectares is already cleared.

The subject land also contains vegetation which is identified as Carnaby's and Forest Red-tailed black cockatoo habitat, which makes up 2.35 hectares of the proposed clearing. A number of significant black cockatoo trees in the north-west corner of the subject land have been identified, which will be retained.

To offset the proposed clearing, the application includes rehabilitation of areas which are in completely degraded to degraded condition and are outside of the development footprint.

Much of the potential impacts of clearing native vegetation are deferred to the Department of Environment Regulation (DoER) clearing permit process. This would include a referral for clearing of Black Cockatoo habitat to the Commonwealth Department of Environment.

Without a clearing permit being lodged and determined by DER, it cannot be concluded that the proposed clearing is environmentally acceptable. However, the proposed clearing could be acceptable if a clearing permit were to be submitted and supported by DoER. Approval of the proposed development does not exempt the landowner/applicant from needing to obtain a clearing permit for the vegetation. If the

JDAP were to support the proposed development, advice regarding the need for a clearing permit from DER should be included, which is provided with the alternate resolution.

Conclusion:

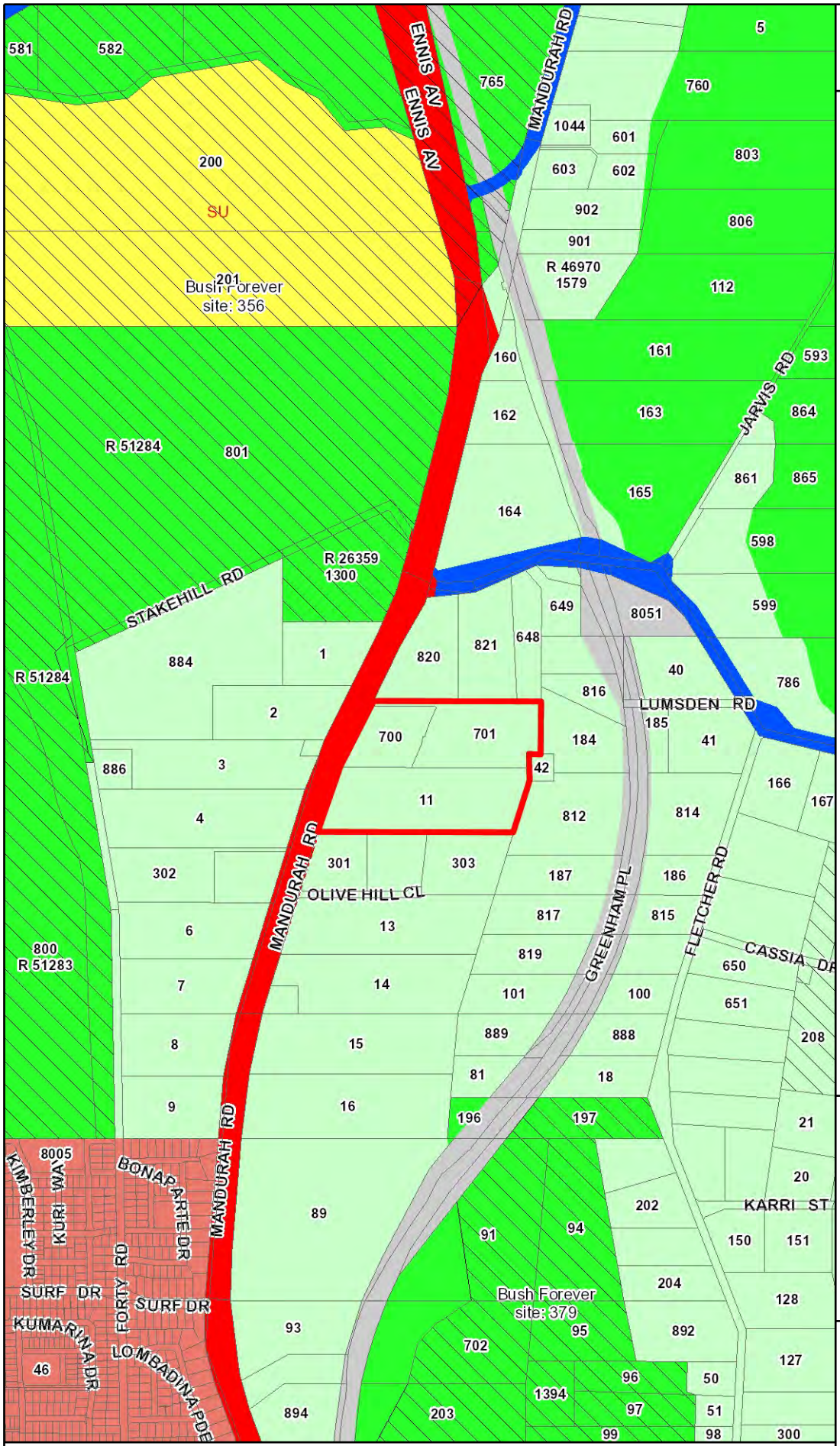
The applicant's amended plans and additional information have addressed concerns regarding bushfire risk and servicing. However, there remain significant concerns regarding the proposed rural location of the development and vehicle access.

The proposed development is of a significant scale, which is not compatible with the rural zoning or location. The subject land is isolated from urban facilities (such as a local road network, pedestrian and cyclist facilities, public transport, community services, supporting activity and residential uses) which would usually complement a school of this scale and the development does not build on existing communities or promote a proposal which reduces energy or travel demand.

The proposed vehicle access is not supported by policy which aims to protect the regional road network to maintain its function and performance. The proposed development proposes to introduce school traffic, which would usually be distributed across a local road network, directly into a 100km/h controlled access highway and freight route, which is not supported.

The proposed development represents a significant departure from established WAPC policy and practice for the development of school sites.

It is recommended that the JDAP refuse the application.



Government of Western Australia
Department of Planning

Legend

- Local Government Area
- Cadastre (View 1)
- Road Names
- Region Scheme Boundary
- Bush Forever Areas
- Region Scheme Zones and Res
  - Other regional roads
  - Parks and recreation
  - Primary regional roads
  - Public purposes - special uses
  - Railways
  - Rural
  - Urban

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Kilometres

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at A4

Projection:

WGS 1984 Web Mercator Auxiliary Sphe

Notes:

The data that appears on the map may be out of date, not intended to be used at the scale displayed, or subject to license agreements. This information is stored in the relevant layers metadata. For these reasons the map should not be distributed outside of the Department.

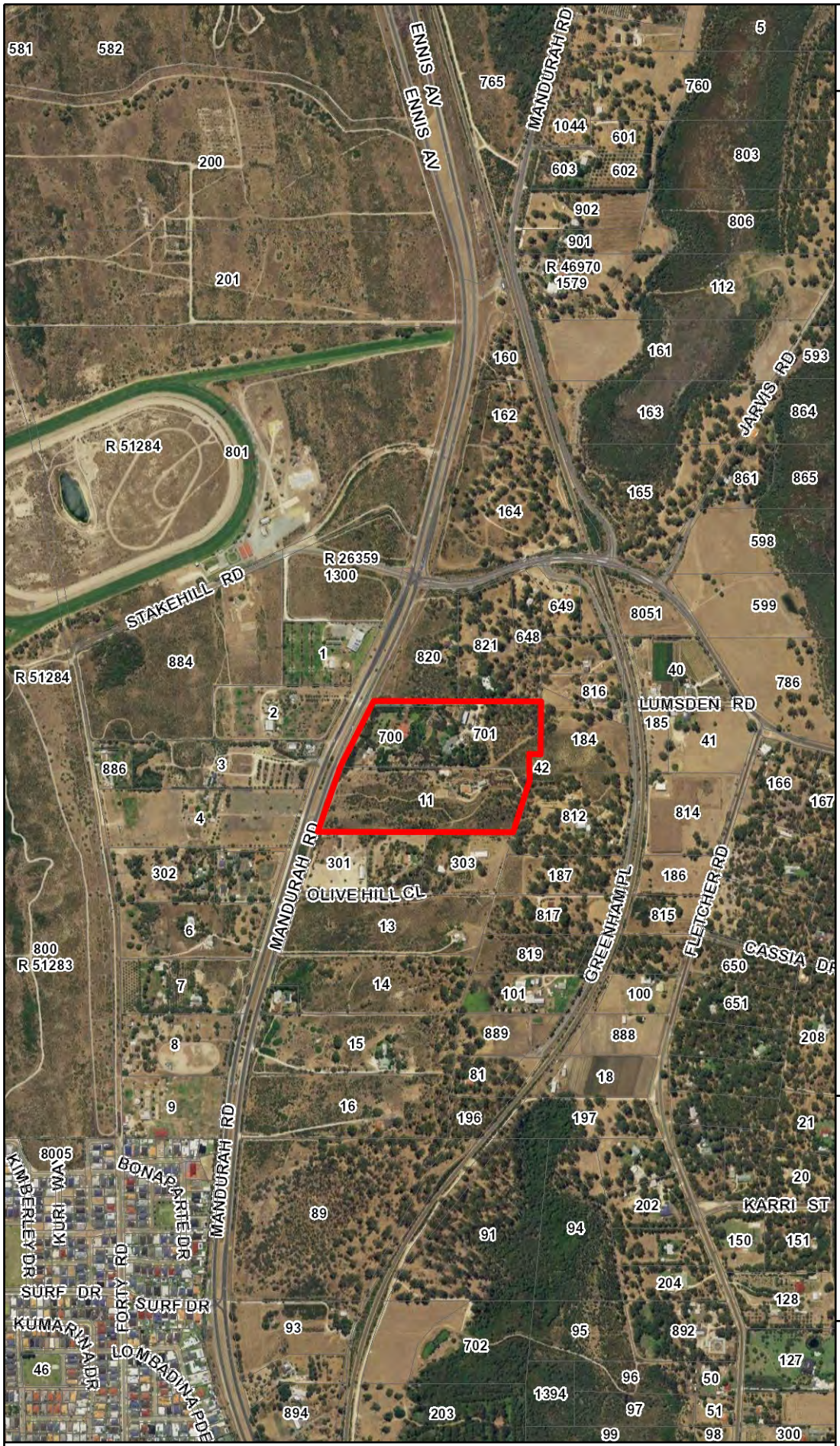
Locality Plan

INTERNAL USE ONLY

Internal Spatial Viewer
Link to viewer

Produced by:FUNCTIONALITY TO COME

Date produced: 14-Dec-2015



Government of Western Australia
Department of Planning

Legend

- Local Government Area
- Cadastre (View 1)
- Road Names

N

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Kilometres

1: 17,055

at A4

Projection:

WGS 1984 Web Mercator Auxiliary Sphe

Aerial Photo

INTERNAL USE ONLY

Internal Spatial Viewer
Link to viewer

Notes:

The data that appears on the map may be out of date, not intended to be used at the scale displayed, or subject to license agreements. This information is stored in the relevant layers metadata. For these reasons the map should not be distributed outside of the Department.

Produced by:FUNCTIONALITY TO COME

Date produced: 14-Dec-2015

Government of Western Australia
Department of Planning

Legend

- Local Government Area
- Cadastre (View 1)
- Road Names

Aerial Photo

INTERNAL USE ONLY

PlanViewWA
Link to viewer

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at A4

Projection: WGS 1984 Web Mercator Auxiliary Sphere

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Produced by: FUNCTIONALITY TO COME

Date produced: 14-Dec-2015

Government of **Western Australia**
Development Assessment Panels

LG Ref: 20.2014.535.1
DoP Ref: DAP/14/00687
Enquiries: Development Assessment Panels
Telephone: (08) 6551 9919

Mr Paul Cunningham
Rowe Group
Level 3 369 Newcastle Street
Northbridge WA 6003

Dear Mr Cunningham

Metro South-West JDAP – City of Rockingham – DAP Application 20.2014.535.1
Lot 700 (1791) & Lot 11 (1809) Mandurah Road, Karnup
Educational Establishment

Thank you for your application and plans submitted to the City of Rockingham on 12 December 2014 for the above development at the above mentioned site.

This application was considered by the Metro South-West Joint Development Assessment Panel at its meeting held on 10 March 2015, where in accordance with the provisions of the City of Rockingham Local Planning Scheme No. 2 and the MRS, it was resolved to refuse the application as per the attached notice of determination.

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

Should you have any enquiries please contact Ms Donna Shaw at the City of Rockingham on (08) 9528 0374.

Yours sincerely

Sean O'Connor

DAP Secretariat

18/03/2015

Encl. DAP Determination Notice

Cc: Ms Donna Shaw
City of Rockingham
Donna.shaw@rockingham.wa.gov.au

Frances Page-Croft and Rosa Rigali

Planning and Development Act 2005

City of Rockingham Local Planning Scheme No. 2

Metro South-West Joint Development Assessment Panel

Determination on Development Assessment Panel Application for Planning Approval

Location: Lot 700 (1791) & Lot 11 (1809) Mandurah Road, Karnup
Description of proposed Development: Educational Establishment

In accordance with Regulation 8 of the *Development Assessment Panels Regulations 2011*, the above application for planning approval was **refused** on 10 March 2015, subject to the following:

PART A – CITY OF ROCKINGHAM LOCAL PLANNING SCHEME NO.2

Refuse DAP Application reference DAP/14/00687 and accompanying plans SKO1 REV A dated 27 November 2014, SK02 (no Rev) dated 26 November 2014, SK03 REV A dated 26 November 2014, SK04 REV B dated 26 November 2014, SK05 REV A dated 26 November 2014, SK06 REV A dated 26 November 2014, SK07 REV A dated 26 November 2014, SK08 REV A dated 26 November 2014, SK09 REV A dated 26 November 2014, SK10 REV A dated 27 November 2014, SK11 REV A dated 26 November 2014, SK12 REV A dated 26 November 2014, SK 13 REV B dated 26 November 2014, SK 14 REV 1 dated November 2014, in accordance with Clause 6.7.1(b) of the City of Rockingham Local Planning Scheme No. 2, for the following reasons:

Reasons

1. An 'Educational Establishment' is not permitted on Lots 700 and 701 Mandurah Road by virtue of not meeting the prerequisites of clause 7.3 of Town Planning Scheme No.2 for a change of non-conforming use, as the development would be more detrimental to the amenity of the locality than the existing non-conforming use, and it would not be closer to the intended purpose of the zone than the existing non-conforming use.
2. The proposed development is inconsistent with clause 4.11.1 of Town Planning Scheme No.2, being the objectives of the Rural Zone, as the proposal does not preserve land for farming nor foster semi-rural development which is sympathetic to the characteristics of the area in which it is located.
3. The development cannot provide for safe and efficient access to and from Mandurah Road.
4. The proposed development is inconsistent with the objectives of Planning Unit No.4C of Planning Policy 3.1.1 - Rural Land Strategy, Planning Unit C as the proposed development is not setback 40m from Mandurah Road and 10m from all other boundaries and the scale of the development is considered to intrude into the landscape.
5. The traffic generated by the development will adversely affect the functioning and safety of Mandurah Road, which is inconsistent with its role as a Regional Road.

6. The proposed development is inconsistent with clause 1.6.2(b) of Town Planning Scheme No.2 as it is not considered to secure the amenity, health and convenience of the Scheme Area and the inhabitants thereof by virtue of:

   (a) introducing a land use that substantially increases traffic and noise and results in adverse visual impacts;

   (b) not demonstrating that the method of providing drinking water to service the development will not result in an unacceptable risk to human health by virtue of the effluent disposal area being on the same site as the groundwater abstraction.

7. The proposed development is inconsistent with clause 1.6.2(e) of Town Planning Scheme No.2, which aims to protect and enhance the environmental values and natural resources of the Scheme Area and to promote ecologically and environmentally sustainable land use and development which minimises resource use and waste, as the development:

   (a) will result in extensive vegetation clearing and reduction; and

   (b) requires extensive cut and fill.

8. The development is inconsistent with Clause 4.11.2(a) of Town Planning Scheme No.2 as it does not achieve the required 30 metre setback to Mandurah Road which is required to provide for a vegetated visual buffer and the intrusion of parking and access areas within the required setback area results in an adverse visual impact.

9. The development does not provide for adequate protection to life and property from bushfire as required by the Western Australian Planning Commission's Planning for Bush Fire Protection Guidelines.

10. The development will adversely impact on local rural amenity as a result of the substantial vegetation clearing and modification and earthworks required to facilitate the development on the site.

PART B – METROPOLITAN REGION SCHEME

Refuse DAP Application reference DAP/14/00687 and accompanying plans SK01 Rev A, SK02, SK03 Rev A, SK04 Rev B, SK05 Rev A, SK06 Rev A, SK07 Rev A, SK08 Rev A, SK09 Rev 9, SK10 Rev A, SK11 Rev A, SK12 Rev A, SK13 Rev B, SK14 Rev A for an educational establishment at Lots 11 and 700 Mandurah Road Karnup, for the following reasons:

Reasons

1. The development does not comply with State Planning Policy 1 - State Planning Framework Policy, State Planning Policy 2.5 - Land Use Planning in Rural Areas and State Planning Policy 3 - Urban Growth and Settlement as it:

   (a) does not facilitate the efficient use of existing urban infrastructure and human services and represents a development in an area which is not well serviced, where services and facilities are difficult to provide and which creates unnecessary demands for infrastructure and human services,

   (b) does not provide for accessible community resources, including education,

(c) does not integrate land use and transport planning to reduce the need for transport, promote the use of public transport and reduce the dependence on private cars, and

(d) does not encourage a safe environment in respect of access, bushfire and health and safety, high standard of urban design and a sense of neighbourhood and community identity.

2. The development does not comply with State Planning Policy 2 - Environment and Natural Resources Policy as it:

(a) does not protect, conserve and enhance the natural environment;

(b) does not promote and assist in the wise and sustainable use and management of natural resources;

(c) does not take account of the availability of water resources to ensure maintenance of water quality and quantity for existing and future environmental and human uses.

3. The development does not comply with State Planning Policy 3.4 - Natural Hazards and Disasters as it does not demonstrate compliance with the Western Australian Planning Commission's Planning for Bushfire Protection Guidelines in respect of safe access/egress and secure water supplies.

4. The development does not comply with Development Control Policy 5.1 - Regional Roads (Vehicular Access), which seeks to minimise and rationalise existing access arrangements to regional roads. The development will result in the intensification of use of two existing access points to the site and require alterations to Mandurah Road leading to adverse traffic safety issues, this being contrary to the purpose of Mandurah Road as a Primary Regional Road reserved under the Metropolitan Region Scheme. No other alternative access is achievable.

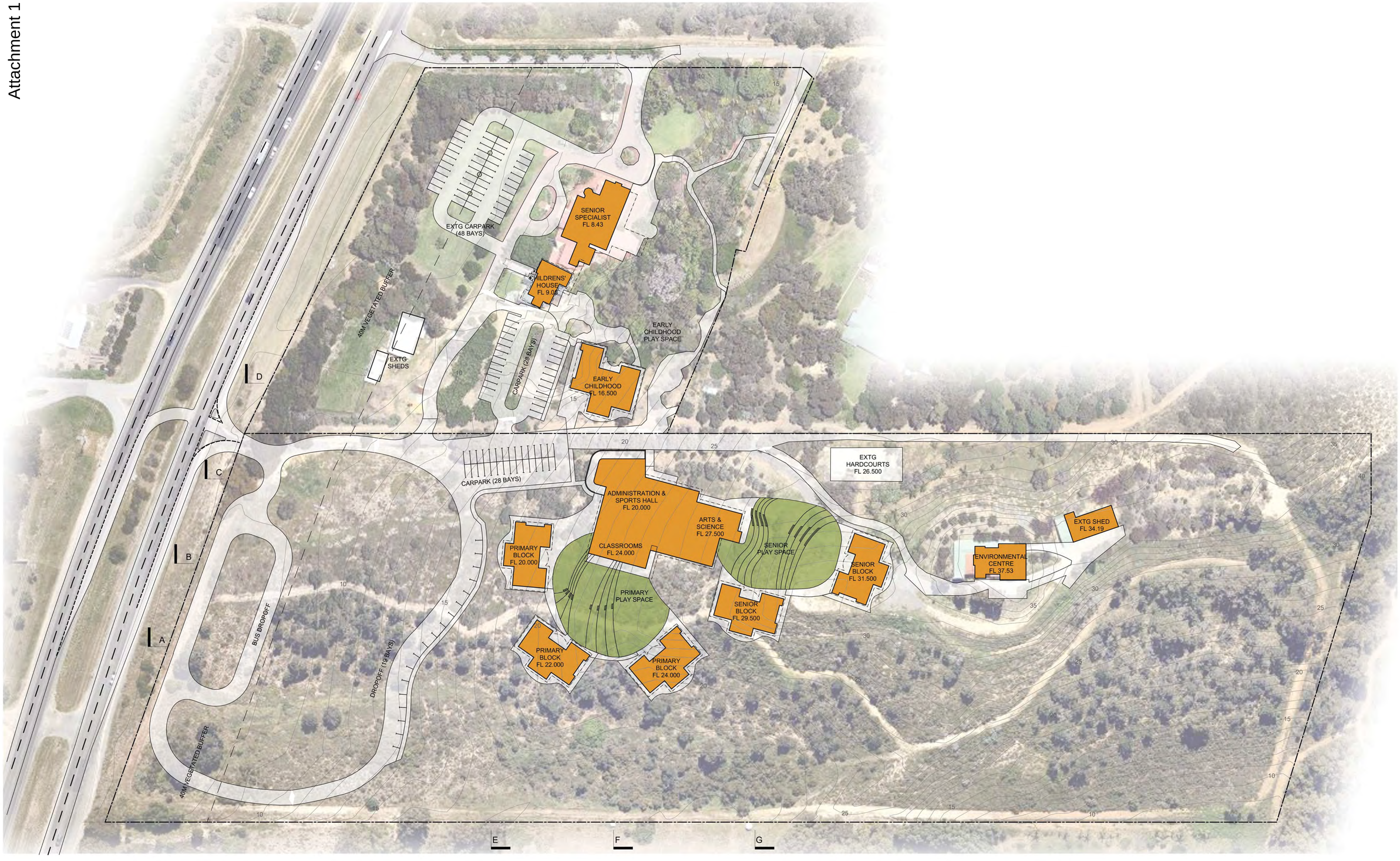
5. The development would prejudice the orderly and proper planning of the locality by reason of intensifying the land use on the subject site contrary to the objectives of the 'Rural' zone of the Metropolitan Region Scheme and 'Special Rural' and 'Rural' zones of the City of Rockingham Town Planning Scheme No. 2, as it does not:

(a) provide for a variety of rural living environments based on defined lot sizes, land form and natural environmental characteristics,

(b) provide for a range of associated compatible development, consistent with the environmental opportunities and constraints applicable to individual sites, and

(c) ensure development is sited, designed and managed in harmony with the natural environment so as to protect the rural landscape and amenity.

Attachment 1



MASTERPLAN

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ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 27/11/2014 DWG NO. : SK01 REV: A

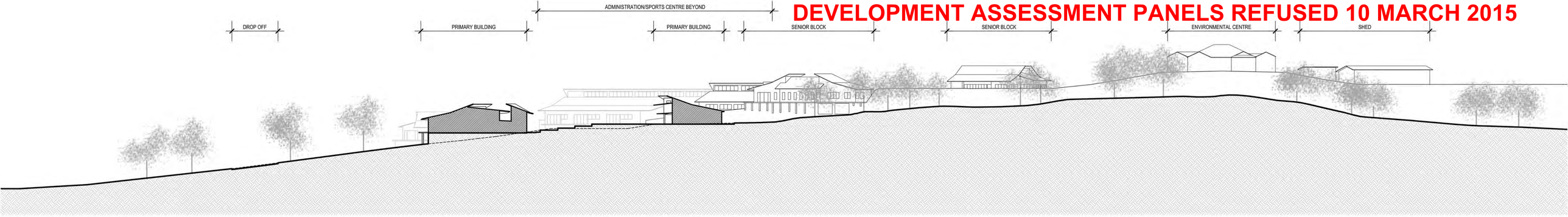
340 Hay Street Subiaco
Western Australia 6008

T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au

ABN 88 1290 054 672

eiw architects

building ideas



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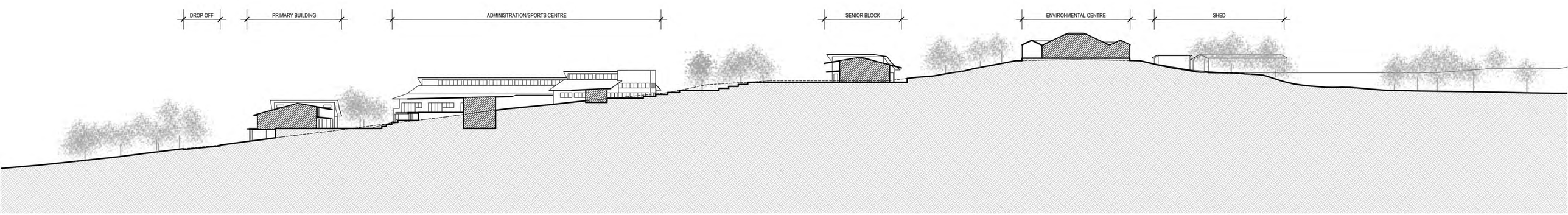

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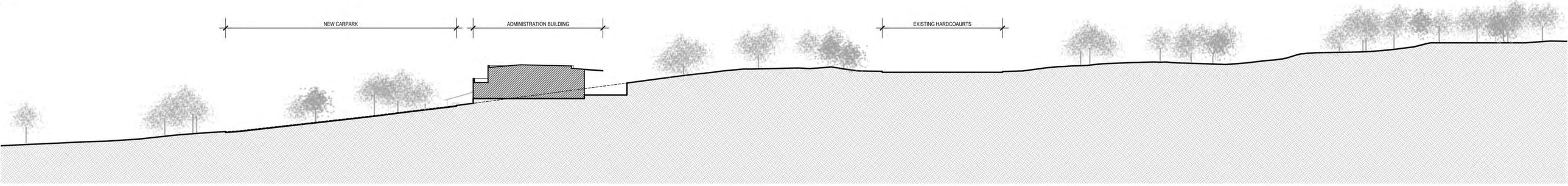

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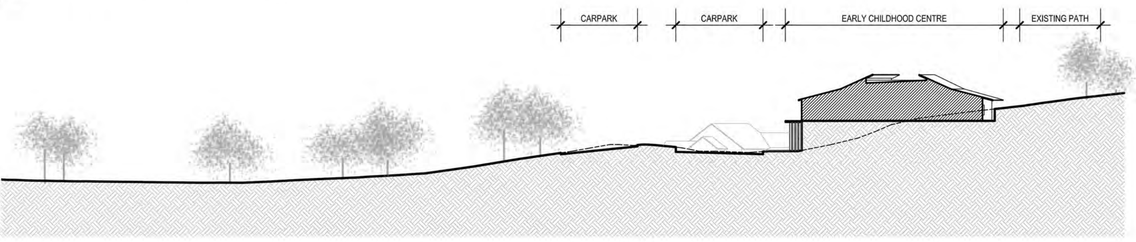

SITE SECTION D 1:500

yID

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SITE SECTIONS

SCALE : 1:500@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK02 REV:

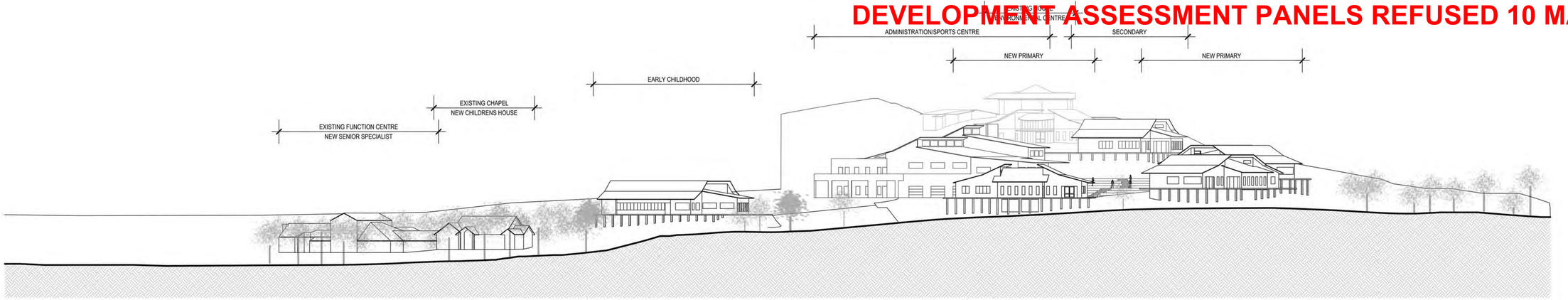
340 Hay Street Subiaco
Western Australia 6008

T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au

ABN 88 1290 054 672

eiw architects

building ideas



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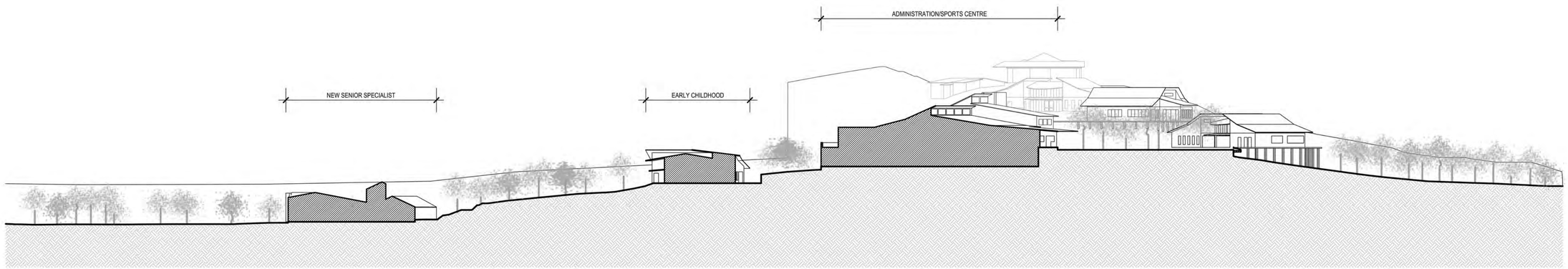

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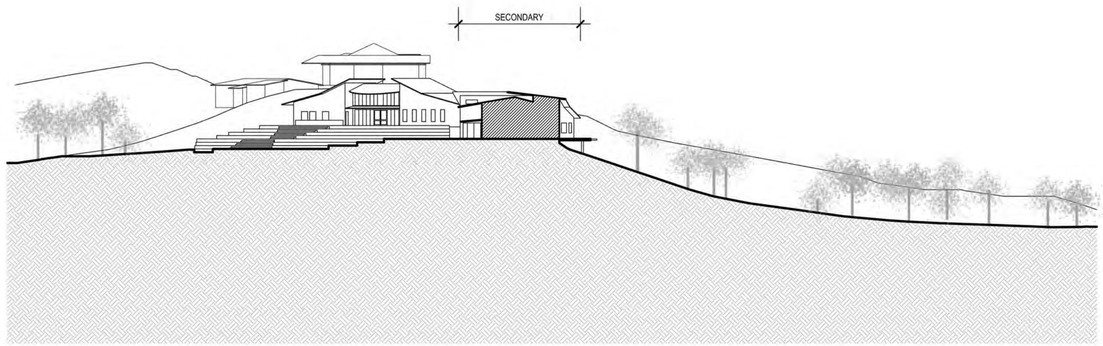

G SITE SECTION G 1:500
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SITE SECTIONS

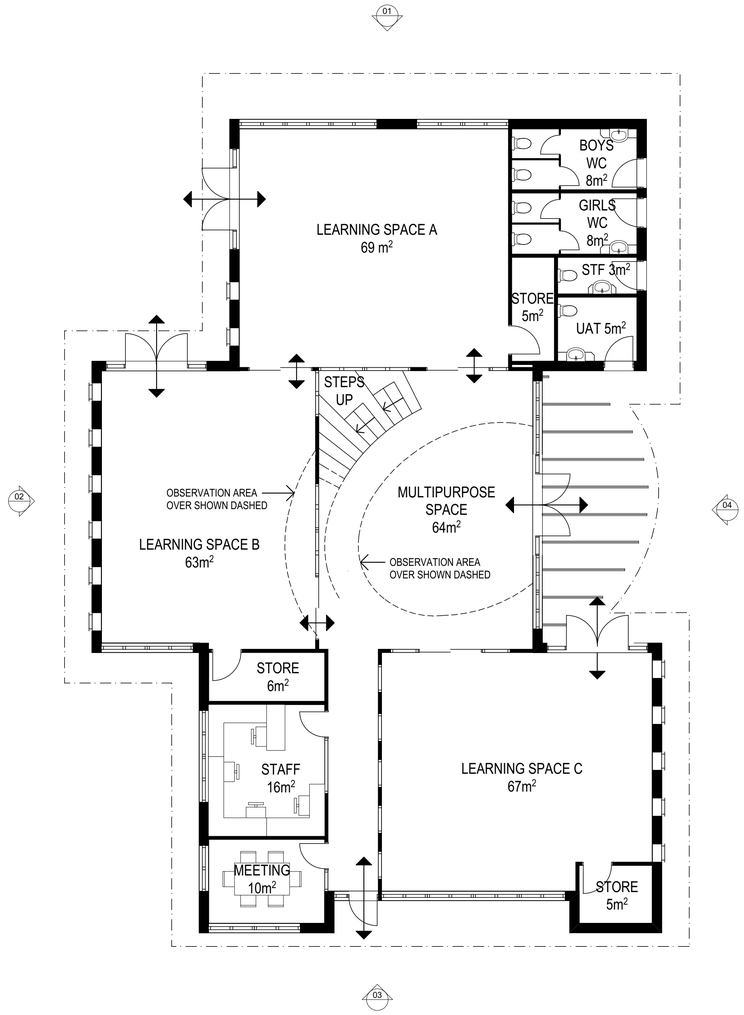
SCALE : 1:500@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK03 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas



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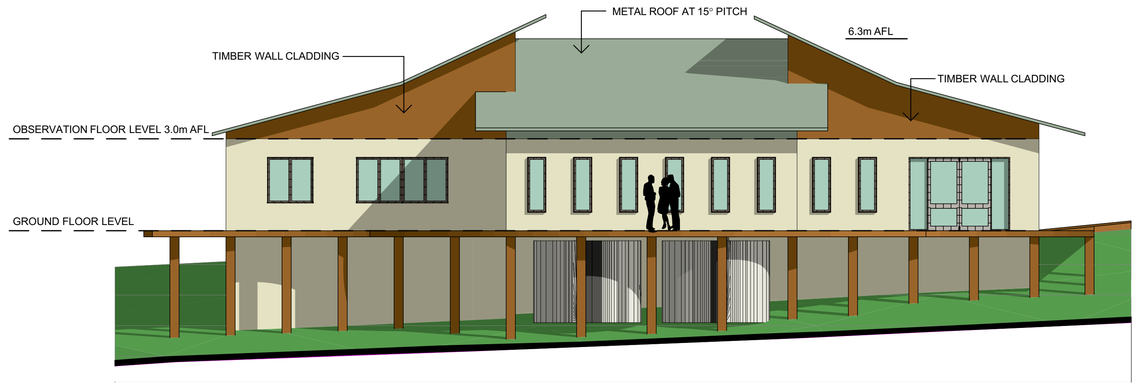

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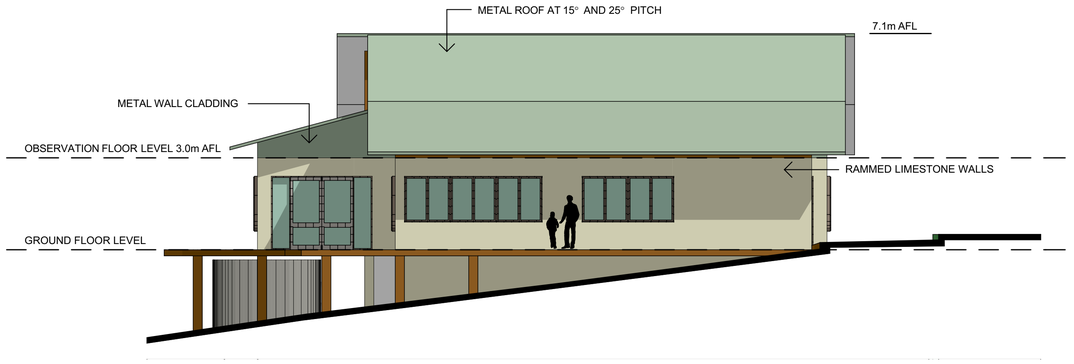

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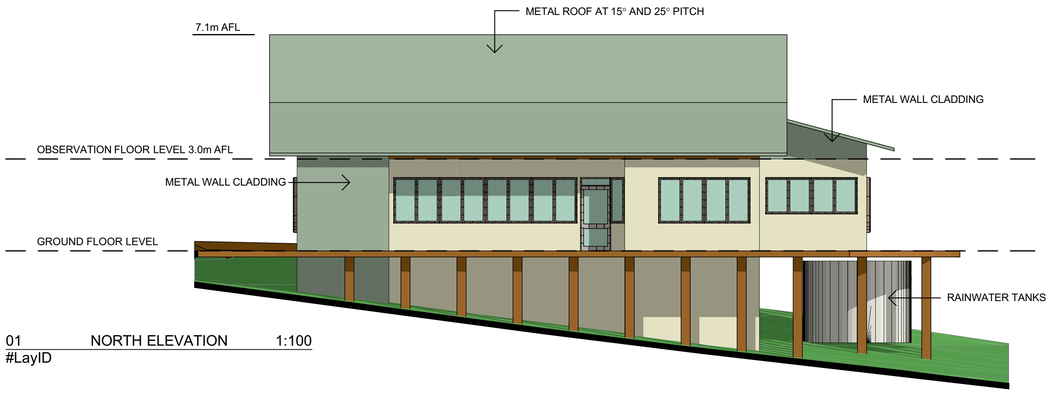

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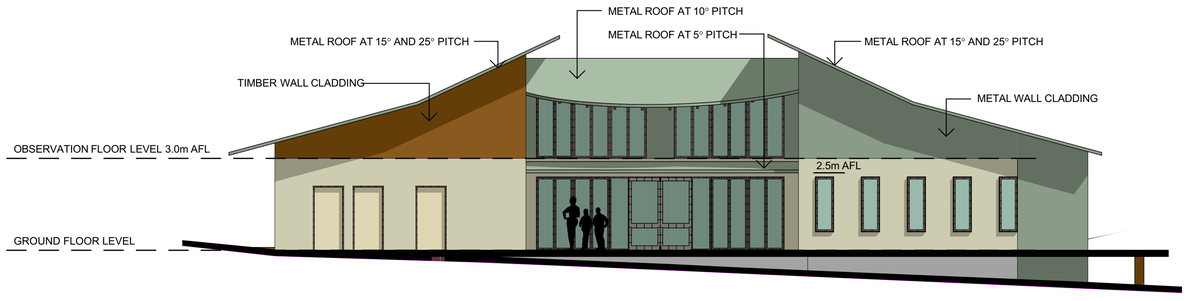

04 EAST ELEVATION 1:100
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TYPICAL CLASSROOM BLOCK

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK04 REV: B

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
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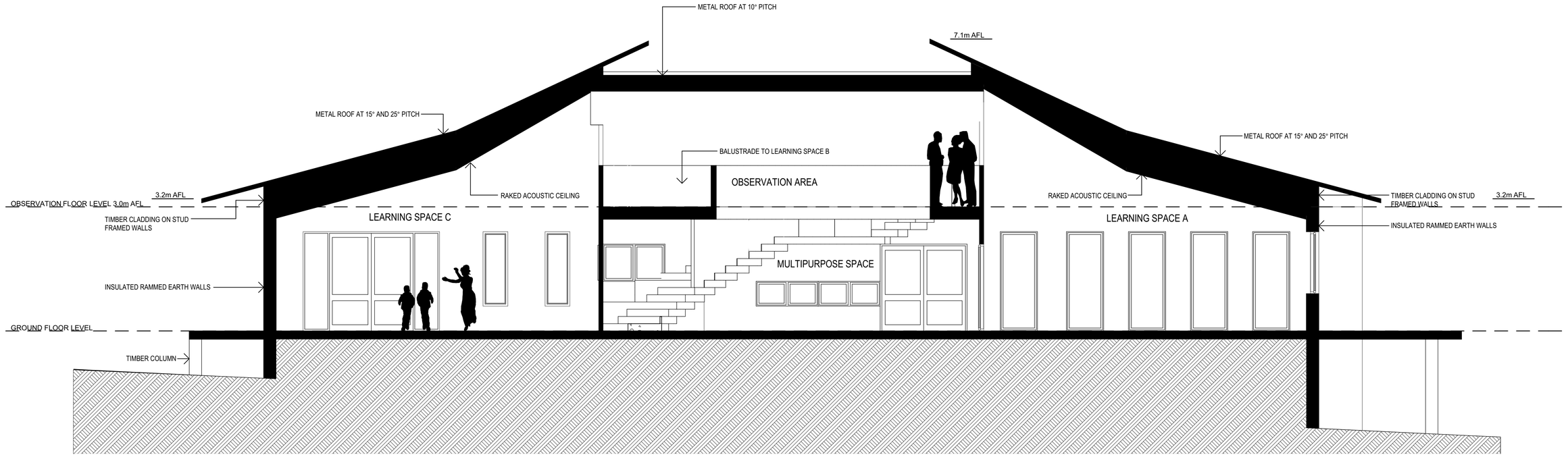

A SECTION A 1:50
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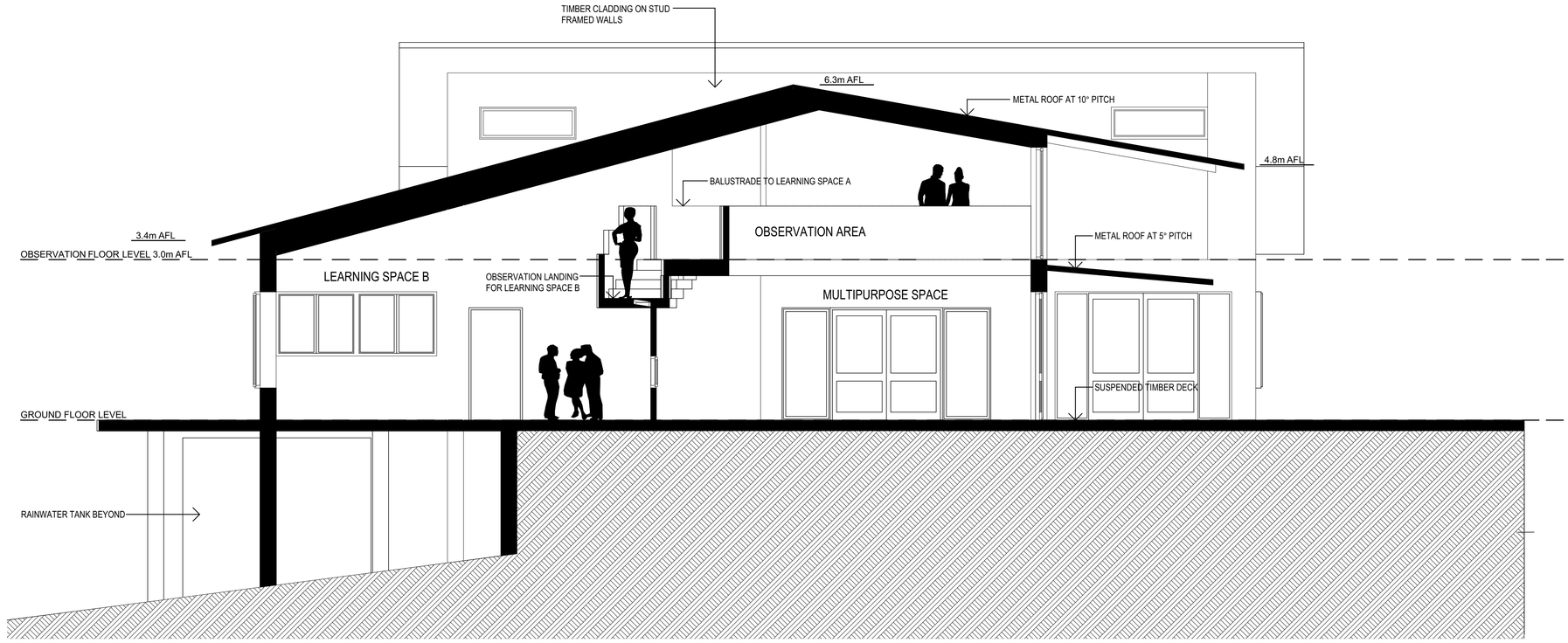

B SECTION B 1:50
#LayID

N

TYPICAL CLASSROOM BLOCK

SCALE : 1:50@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK05 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
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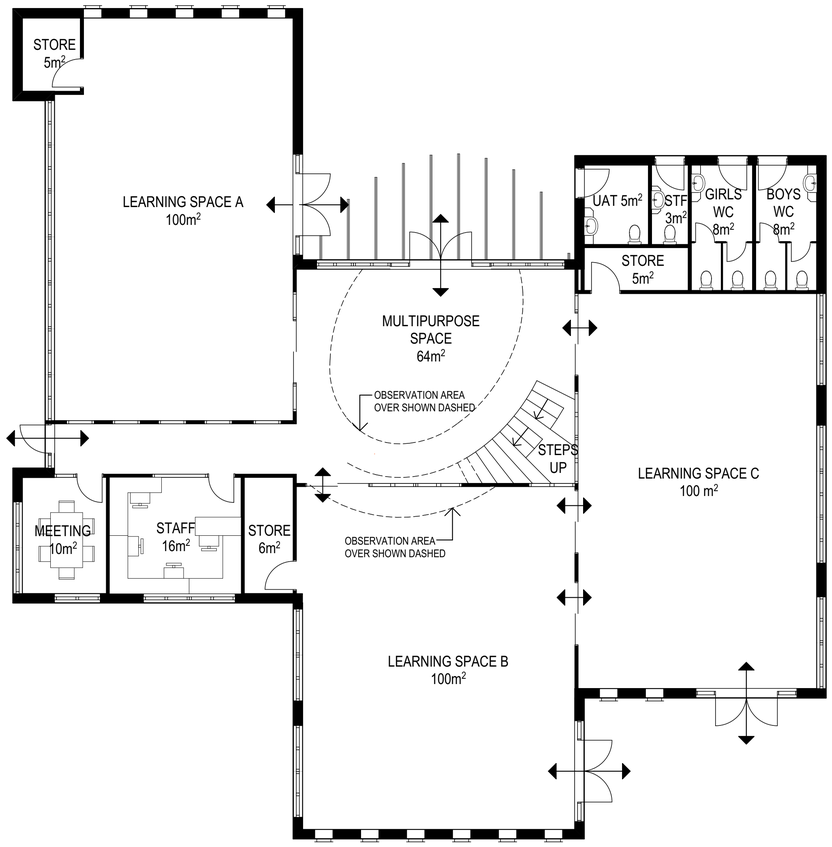
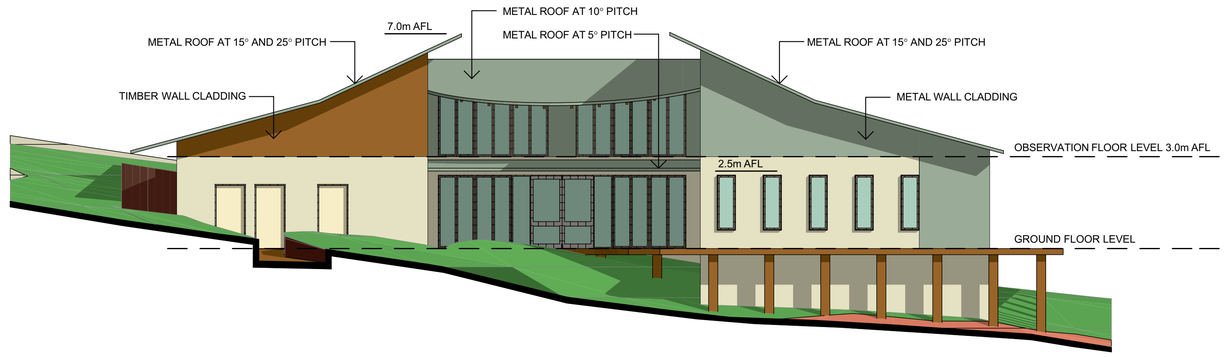
Attachment 5



FLOOR PLAN 1:100



01 ECC NORTH ELEVATION 1:100
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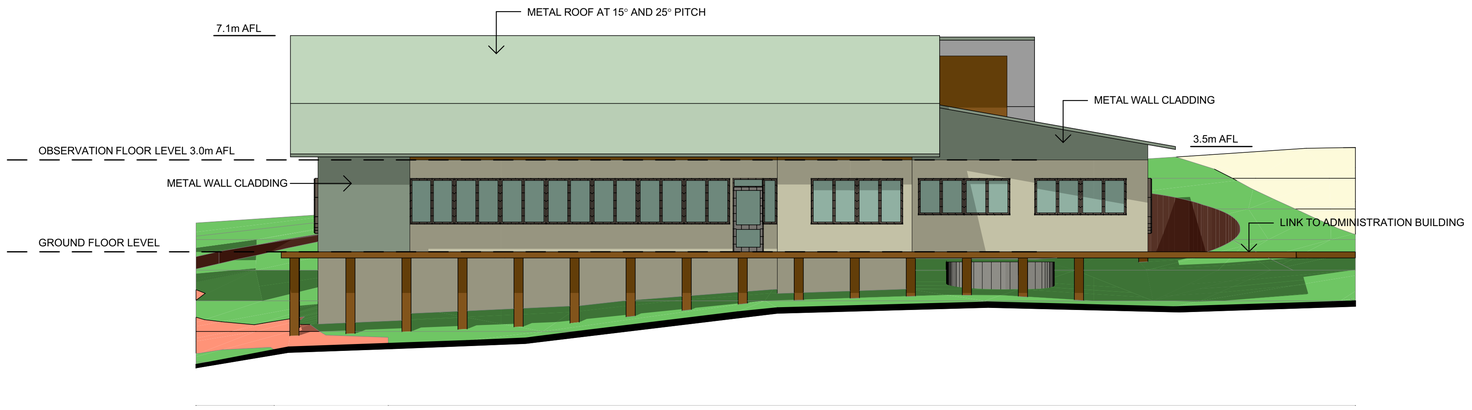

02 ECC WEST ELEVATION 1:100
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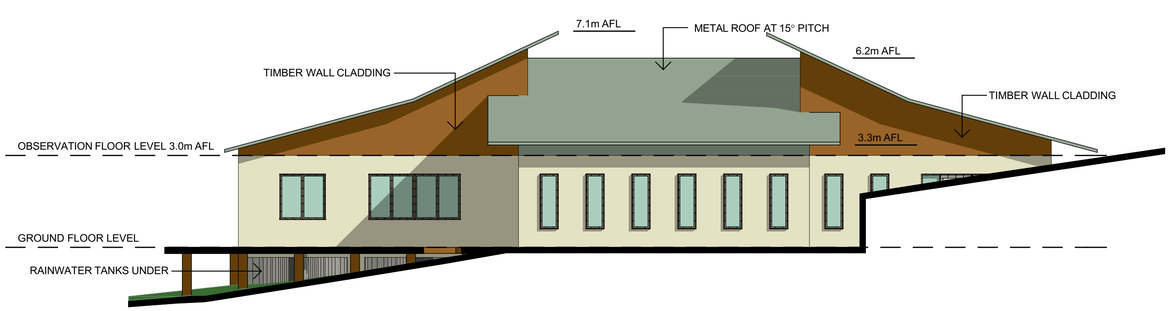

03 ECC SOUTH ELEVATION 1:100
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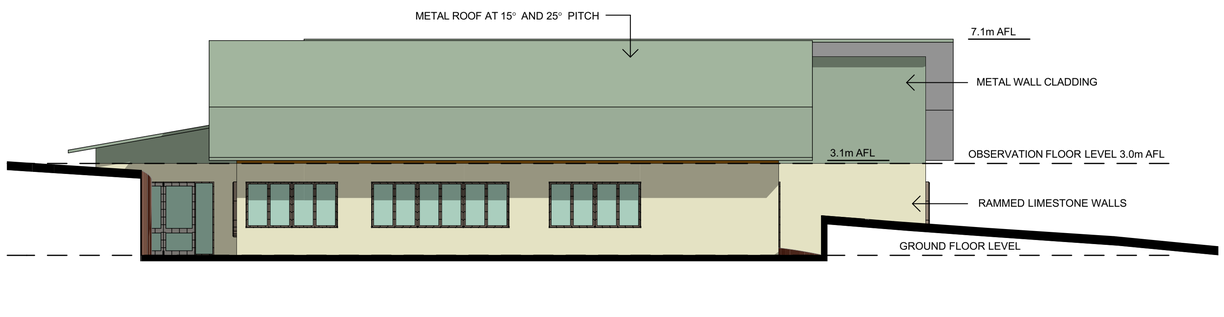


04 ECC EAST ELEVATION 1:100
#LayID

N

EARLY CHILDHOOD

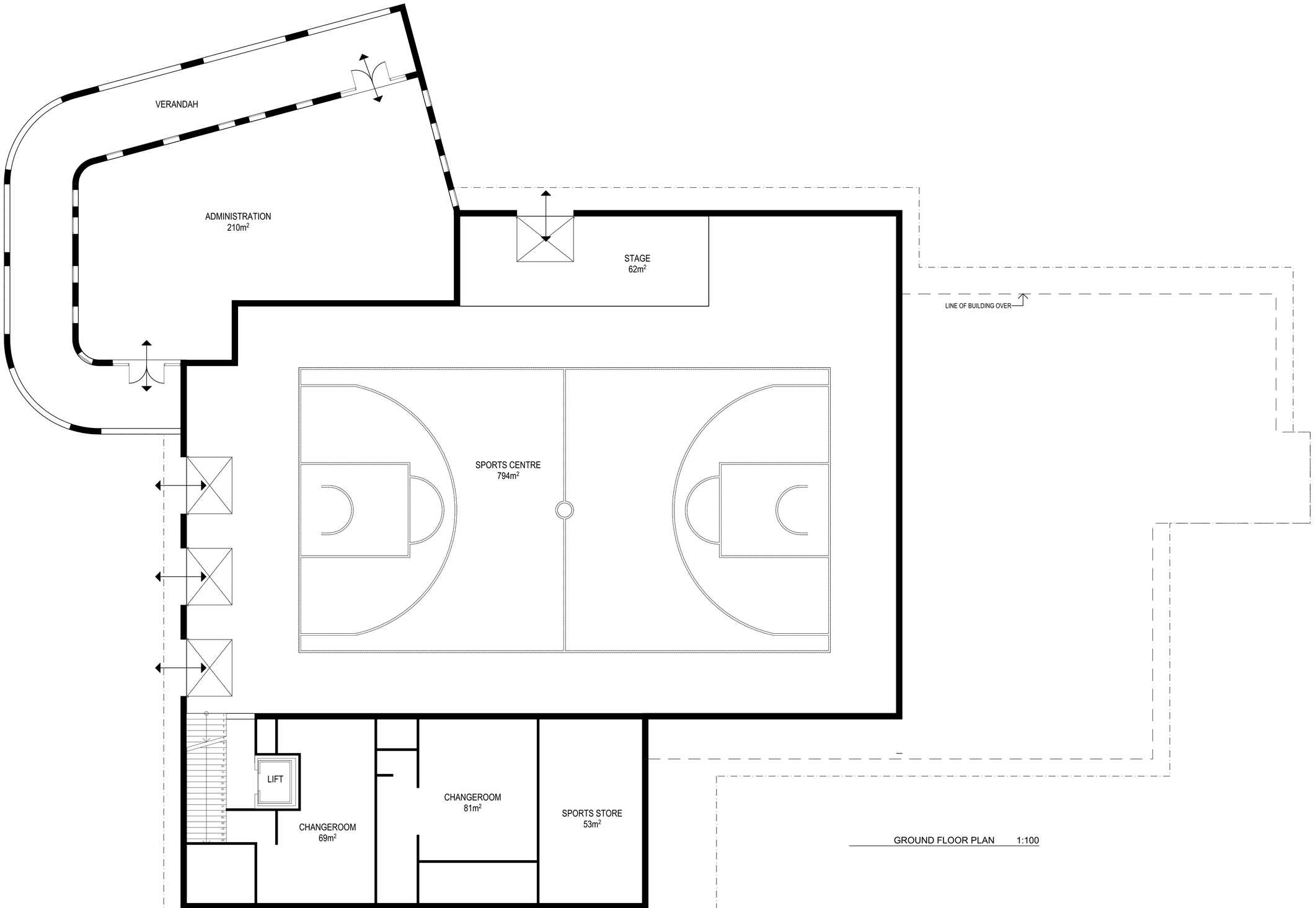
SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK06 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas



GROUND FLOOR PLAN 1:100

N

ADMINISTRATION / SPORTS CENTRE

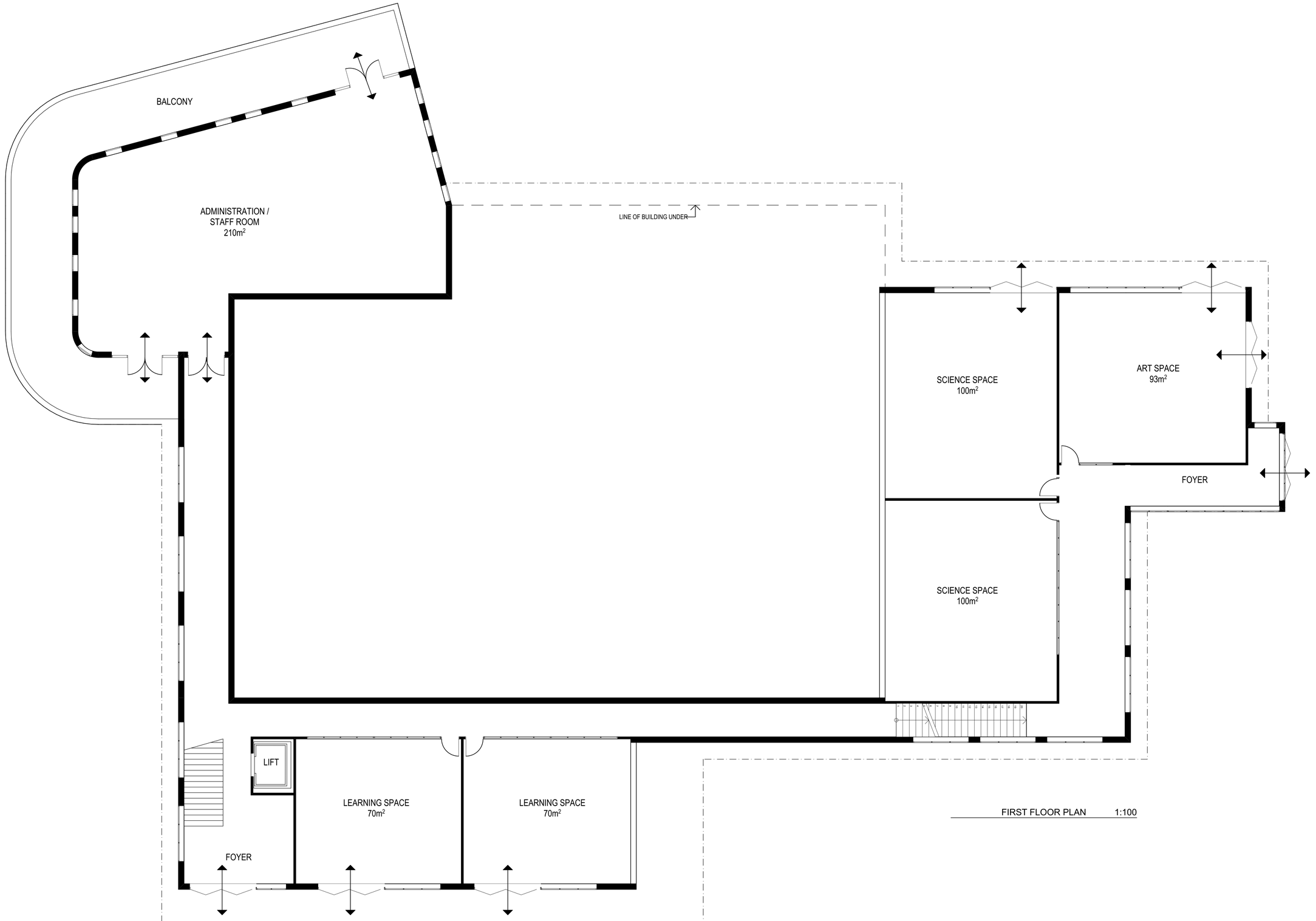
SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK07 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas



FIRST FLOOR PLAN 1:100

N

ADMINISTRATION / SPORTS CENTRE

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK08 REV: A

340 Hay Street Subiaco
Western Australia 6008

T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au

ABN 88 1290 054 672

eiw architects

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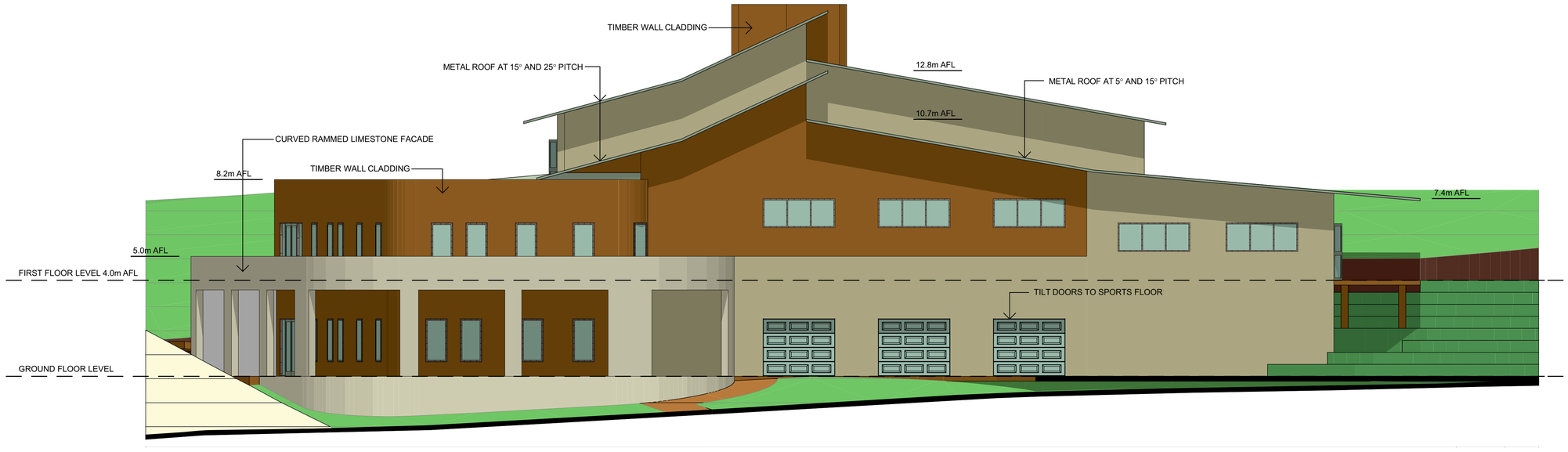
Attachment 8



01 ADMIN WEST ELEVATION 1:100
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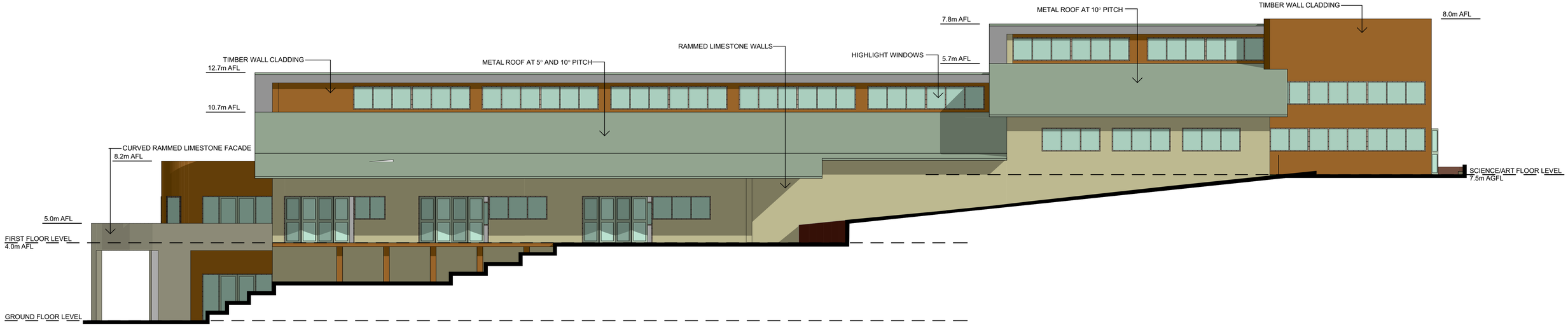

02 ADMIN SOUTH ELEVATION 1:100
#LayID

N

ADMIN/SPORTS CNTR ELEVATIONS

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK09 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
eiw architects
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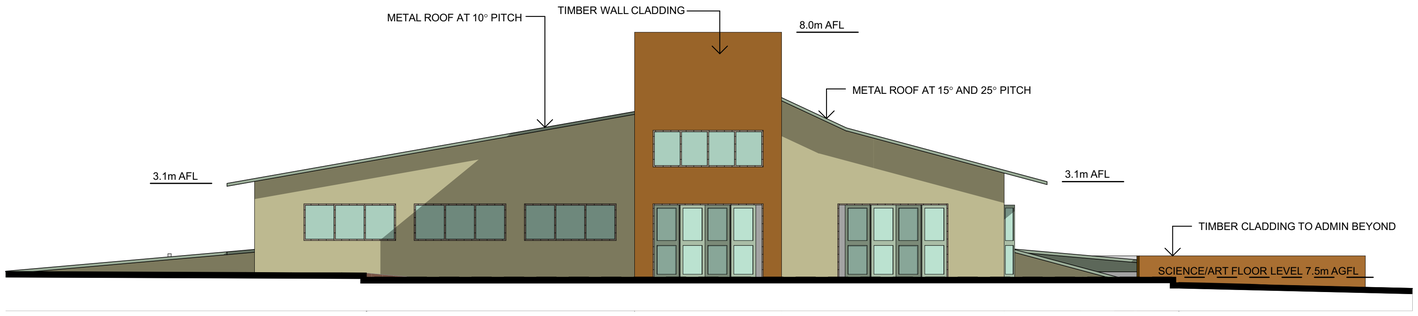

03 ADMIN EAST ELEVATION 1:100
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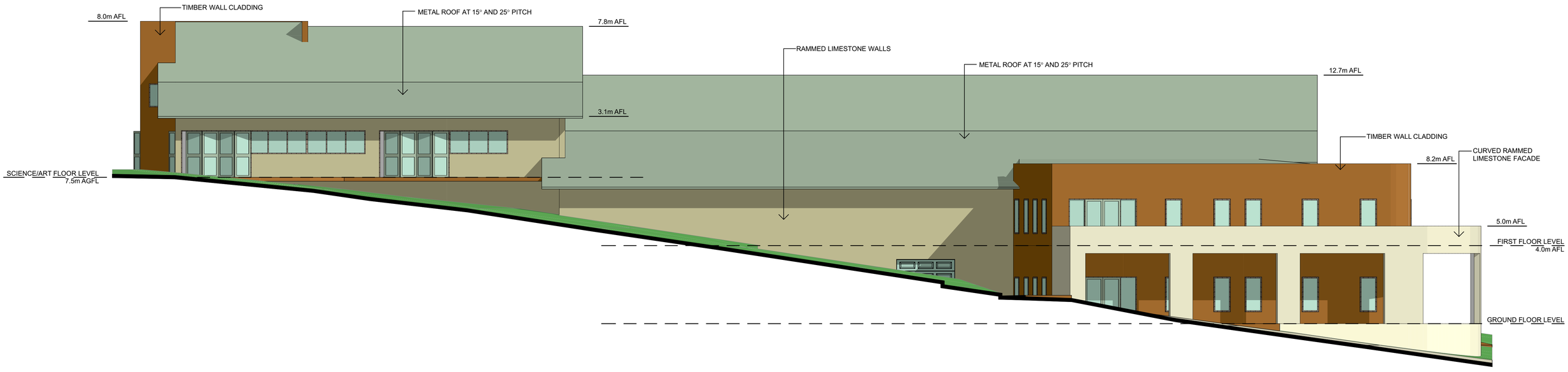

04 ADMIN NORTH ELEVATION 1:100
#LayID

N

ADMIN/SPORTS CNTR ELEVATIONS

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 27/11/2014 DWG NO. : SK10 REV: A

340 Hay Street Subiaco
Western Australia 6008

T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au

ABN 88 1290 054 672

eiw architects

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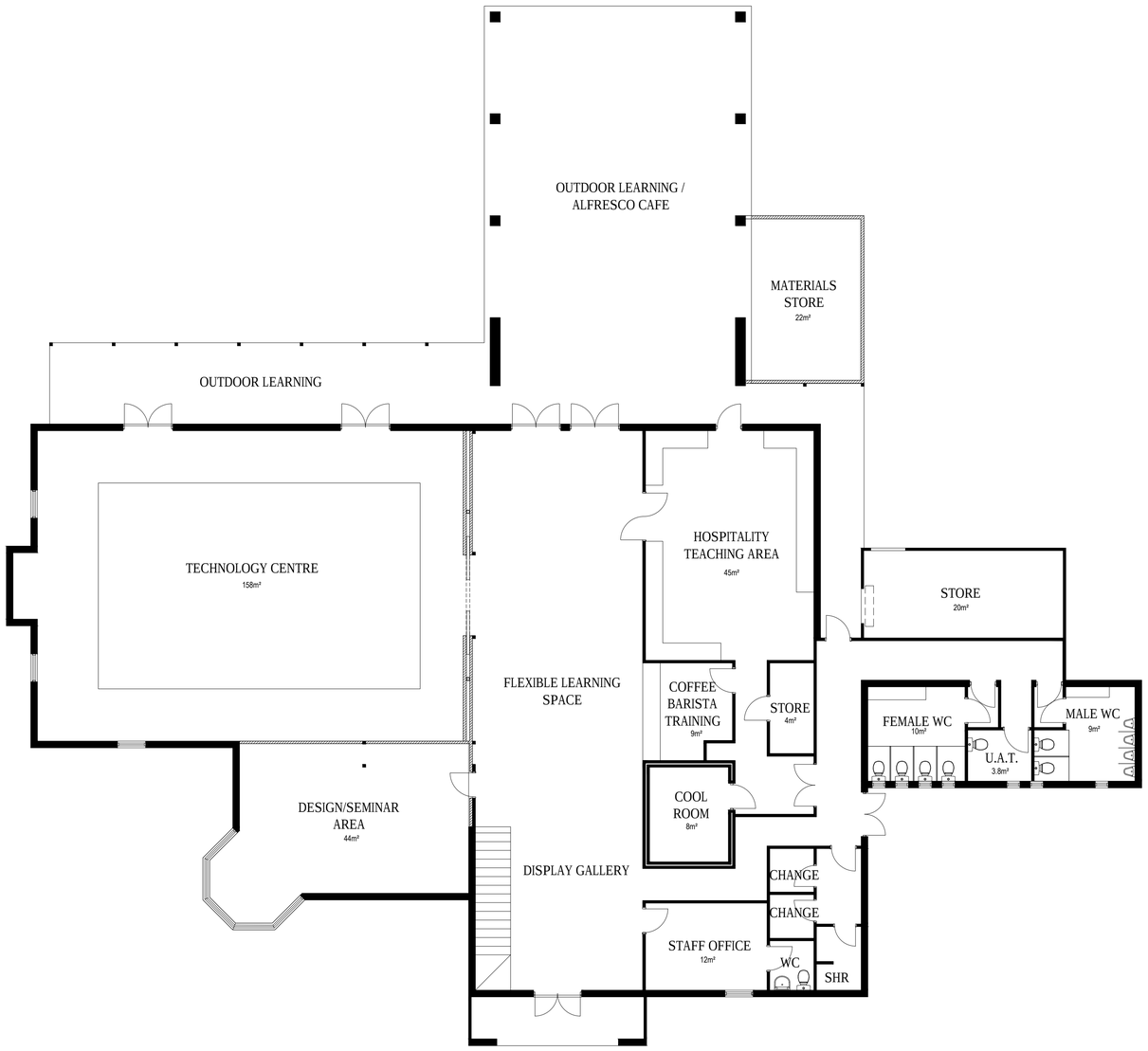

N

SENIOR SPECIALIST BLOCK

SCALE. : 1:100@A1

0 1 2 10m

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK11 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
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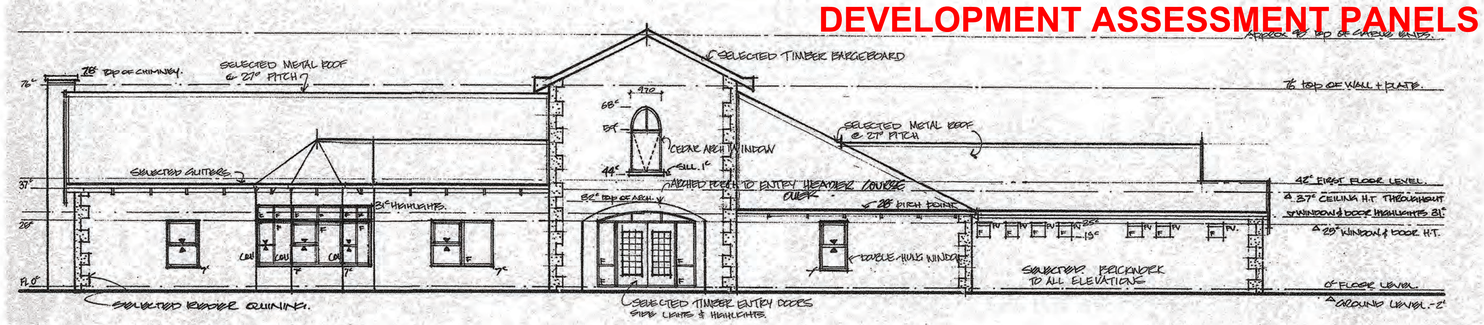
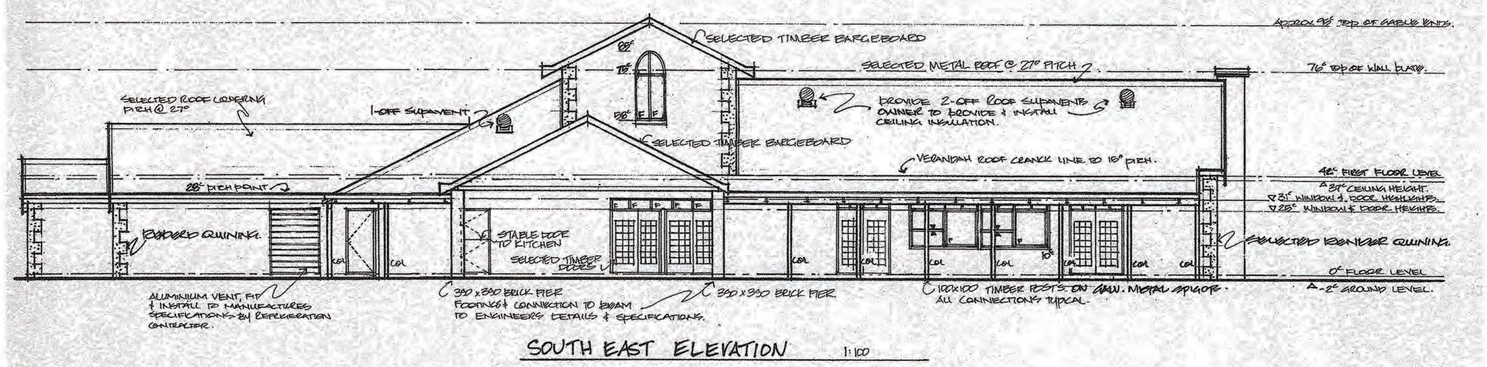
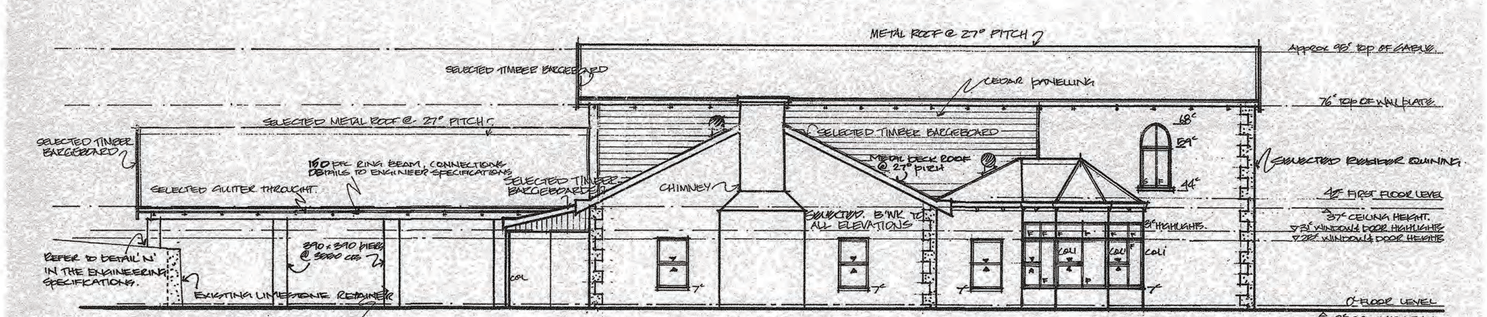


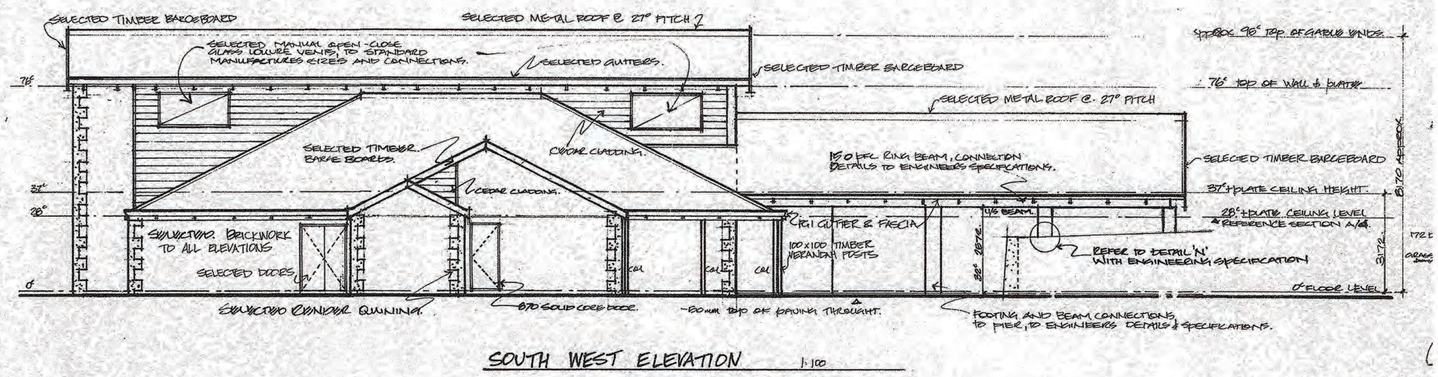
NORTH WEST ELEVATION 1:100



SOUTH EAST ELEVATION 1:100



NORTH EAST ELEVATION 1:100



SOUTH WEST ELEVATION 1:100

SENIOR SPECIALIST BLOCK

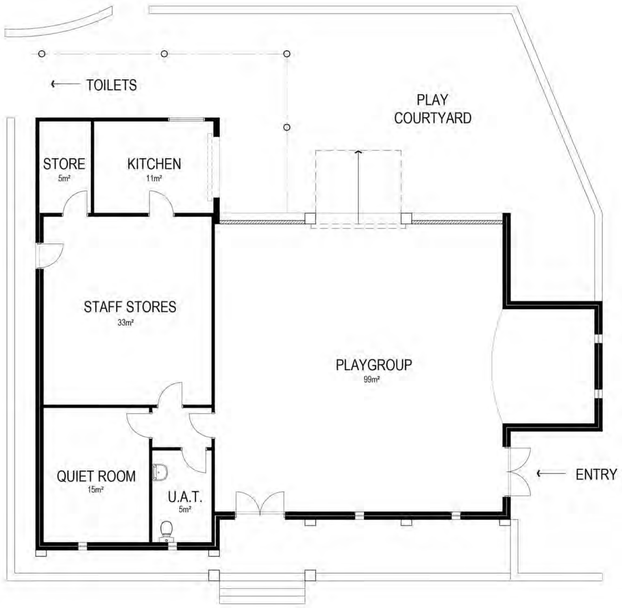
SCALE. : 1:100@A1 0 1 2 10m

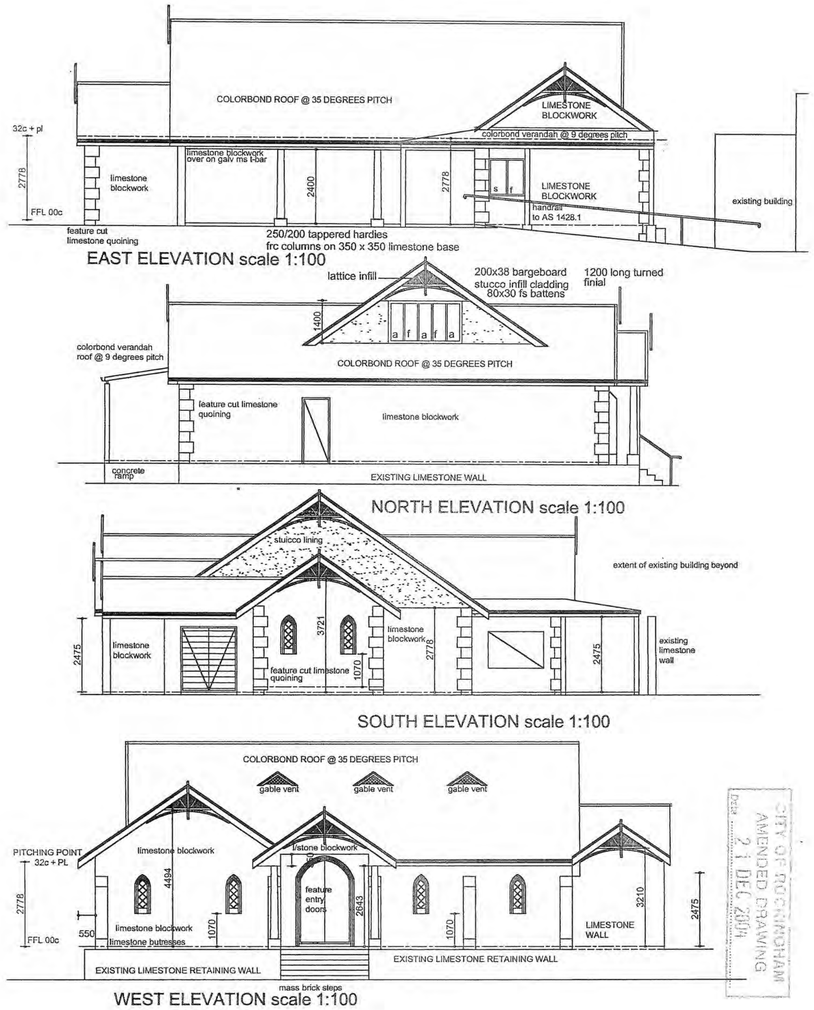
ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK12 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas





CHILDRENS HOUSE

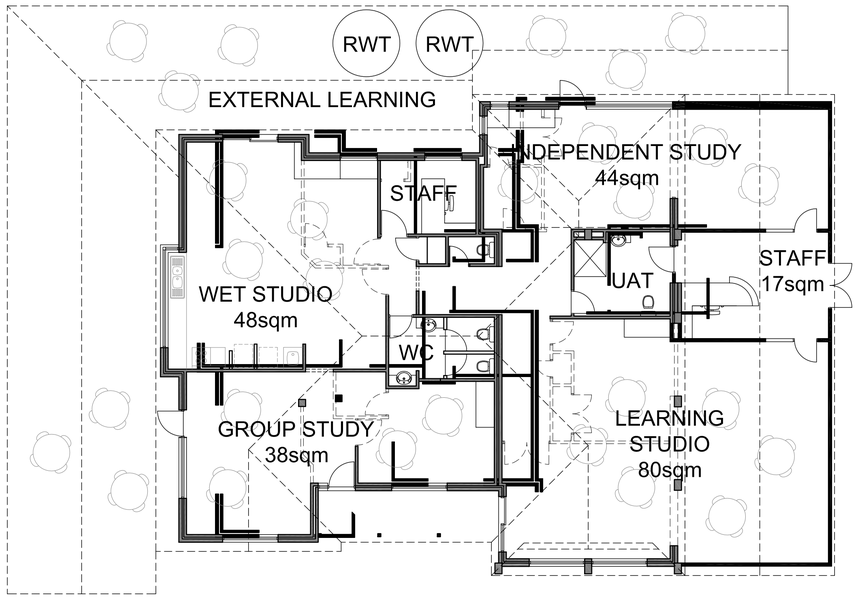
SCALE. : 1:100@A1 0 1 2 10m

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, ROCKINGHAM

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK13 REV : B

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1290 054 672
eiw architects
building ideas

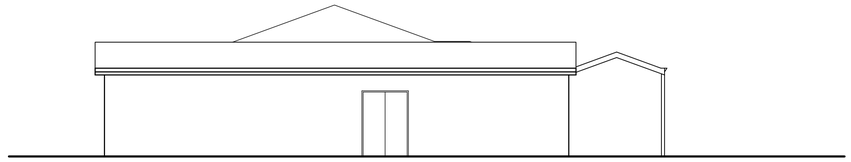


FLOOR PLAN

SCALE 1:100

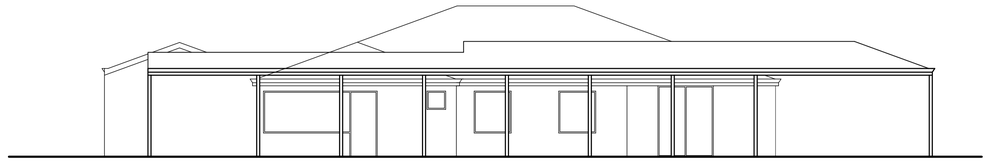
FRONT ELEVATION

SCALE 1:100



SIDE ELEVATION

SCALE 1:100



REAR ELEVATION

SCALE 1:100

N

ENVIRONMENT CENTRE

SCALE. : 1:100@A1

0 1 2 10m

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO. : 1407 DATE : NOVEMBER 2014 DWG NO. : SK14 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1290 054 672

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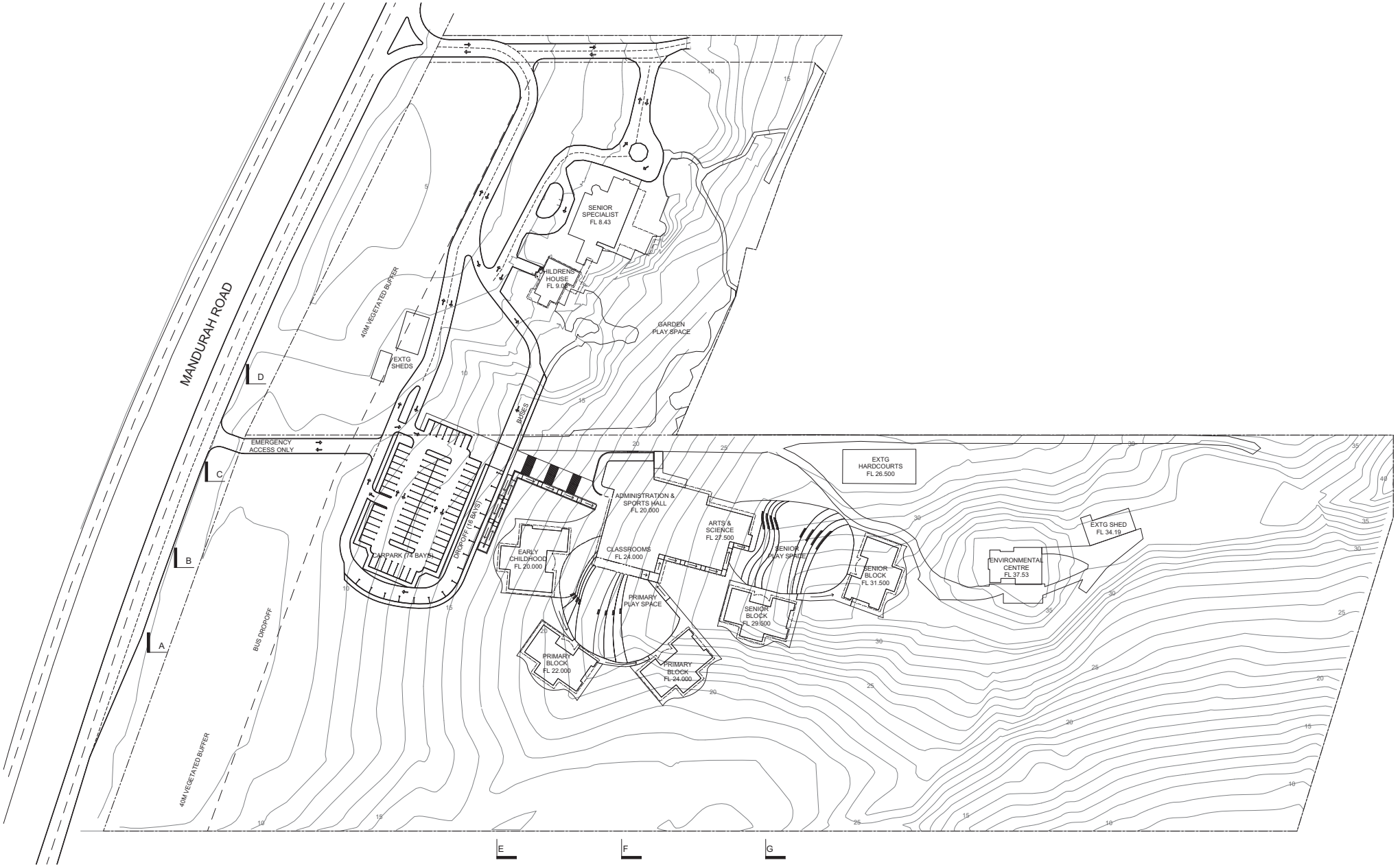


N

MASTERPLAN

SCALE : 1:750@A1

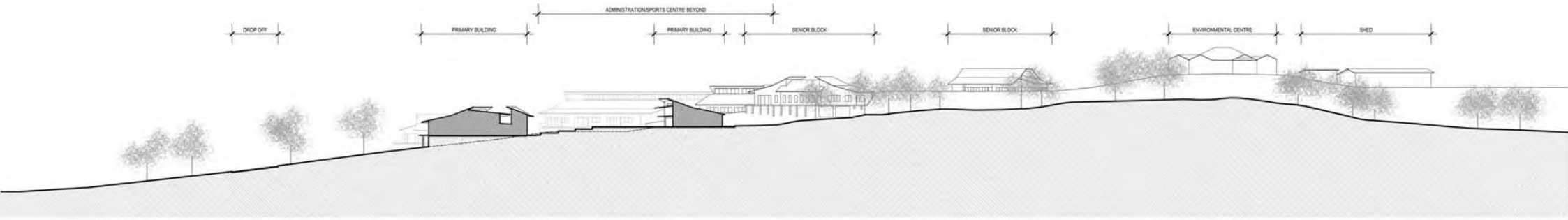
ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 22/10/2015 DWG NO. : SK01 REV: D

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1250 054 872
eiw architects
building ideas

Attachment 4



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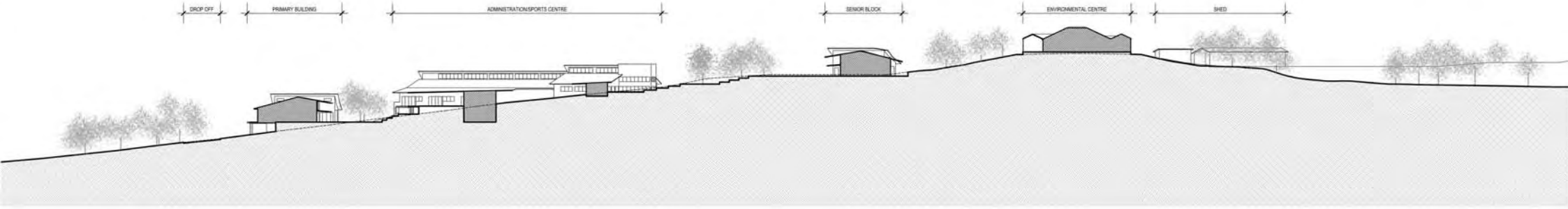
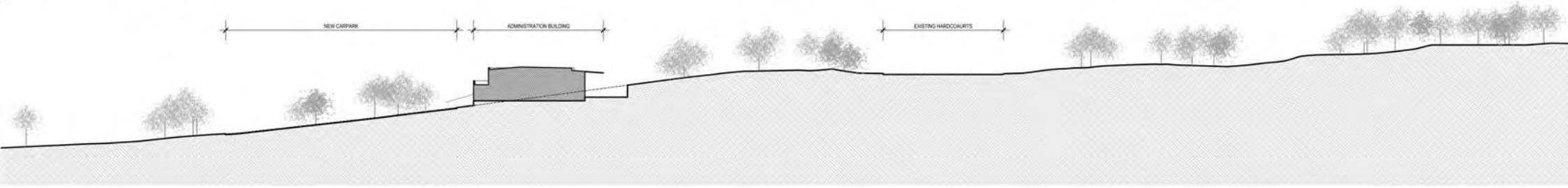
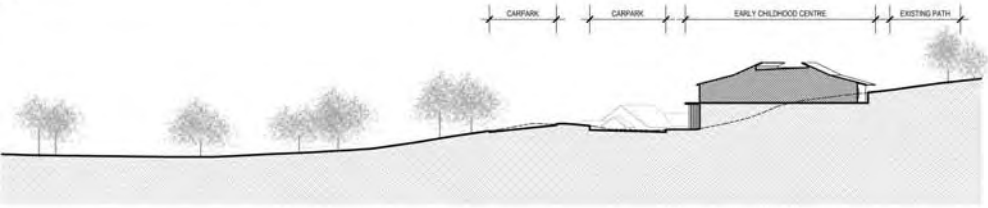


SITE SECTION B 1:500



SITE SECTION C 1:500



SITE SECTION D 1:500

SITE SECTIONS

SCALE : 1:500@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK02 REV:

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E elwarch@elwarch.com.au
W elwarch.com.au
ABN 88 1290 054 672
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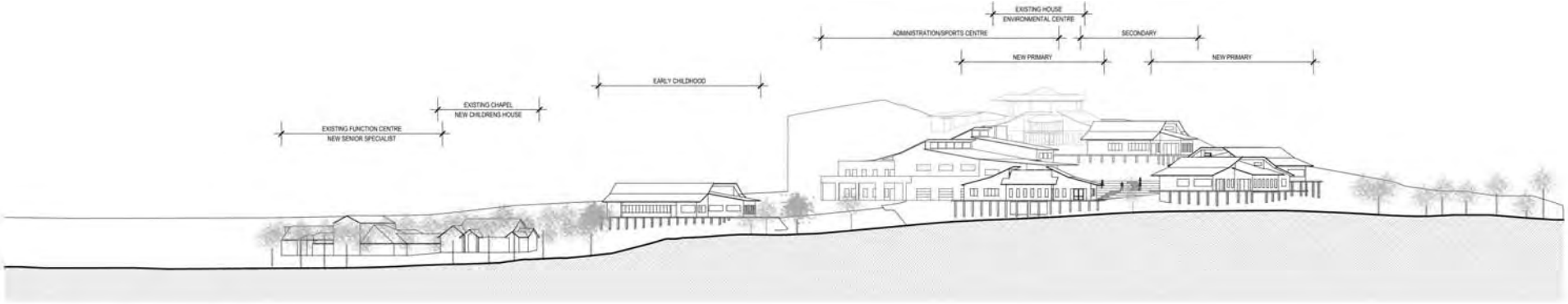

E SITE SECTION E 1:500
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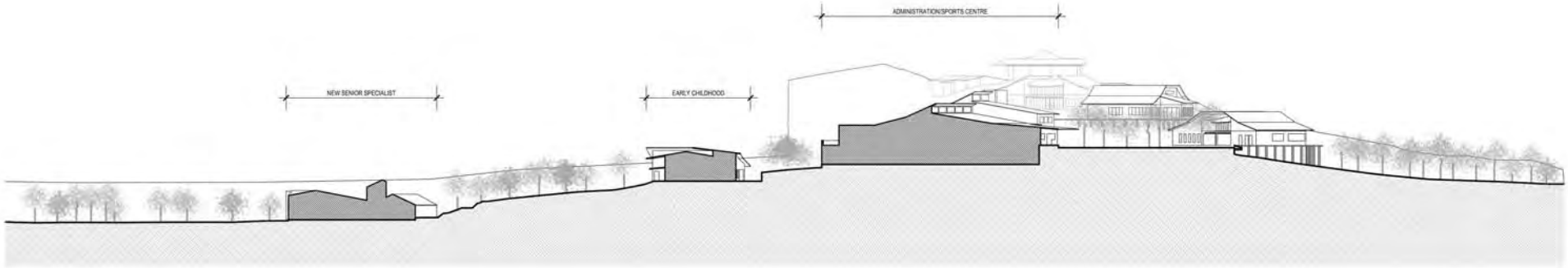


F SITE SECTION F 1:500
#LayID

G SITE SECTION G 1:500
#LayID

N

SITE SECTIONS

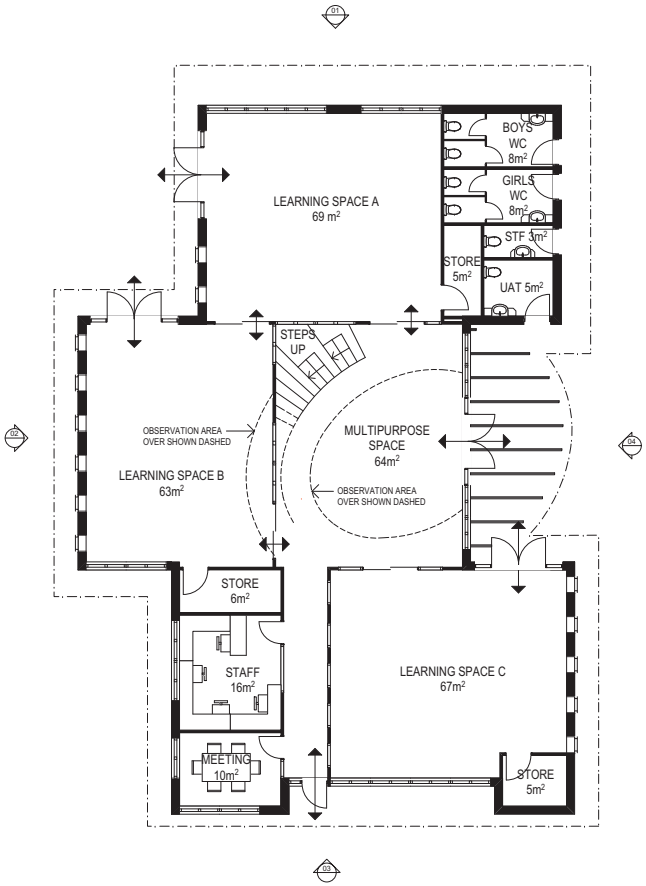
SCALE : 1:500@A1

ROCKINGHAM MONTESSORI SCHOOL

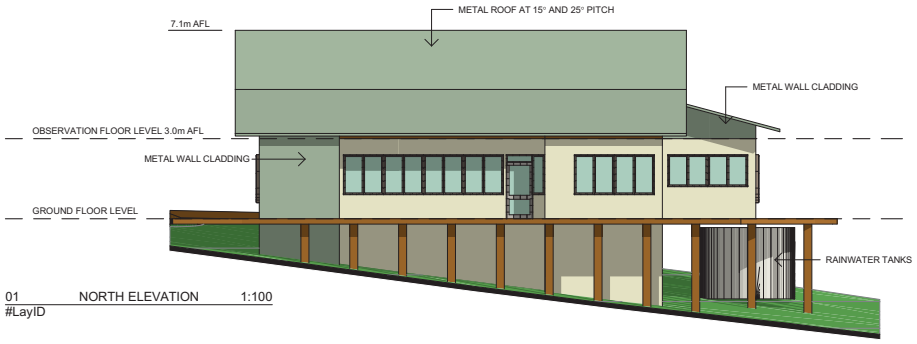
Mandurah Road Karnup

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK03 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E elwarch@elwarch.com.au
W elwarch.com.au
ABN 88 1290 864 870



FLOOR PLAN 1:100



01 NORTH ELEVATION 1:100
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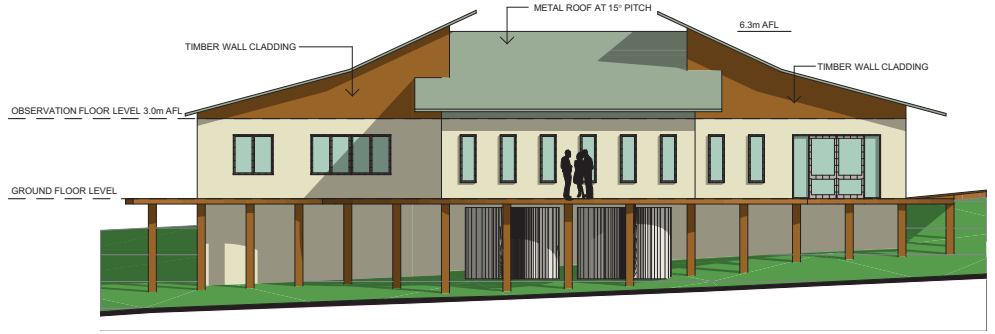

02 WEST ELEVATION 1:100
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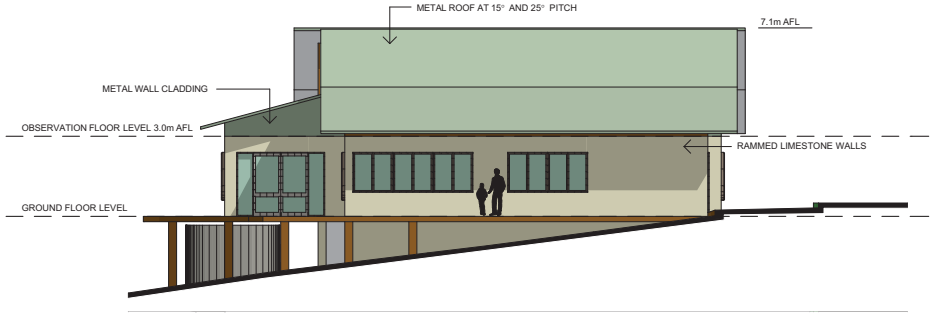

03 SOUTH ELEVATION 1:100
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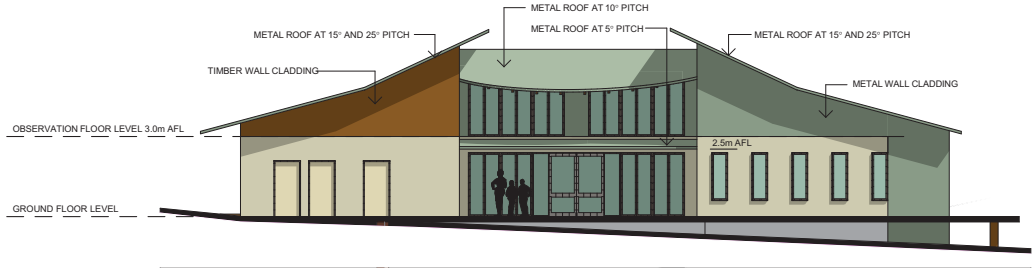

04 EAST ELEVATION 1:100
#LayID

TYPICAL CLASSROOM BLOCK

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK04 REV: B

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1290 054 672
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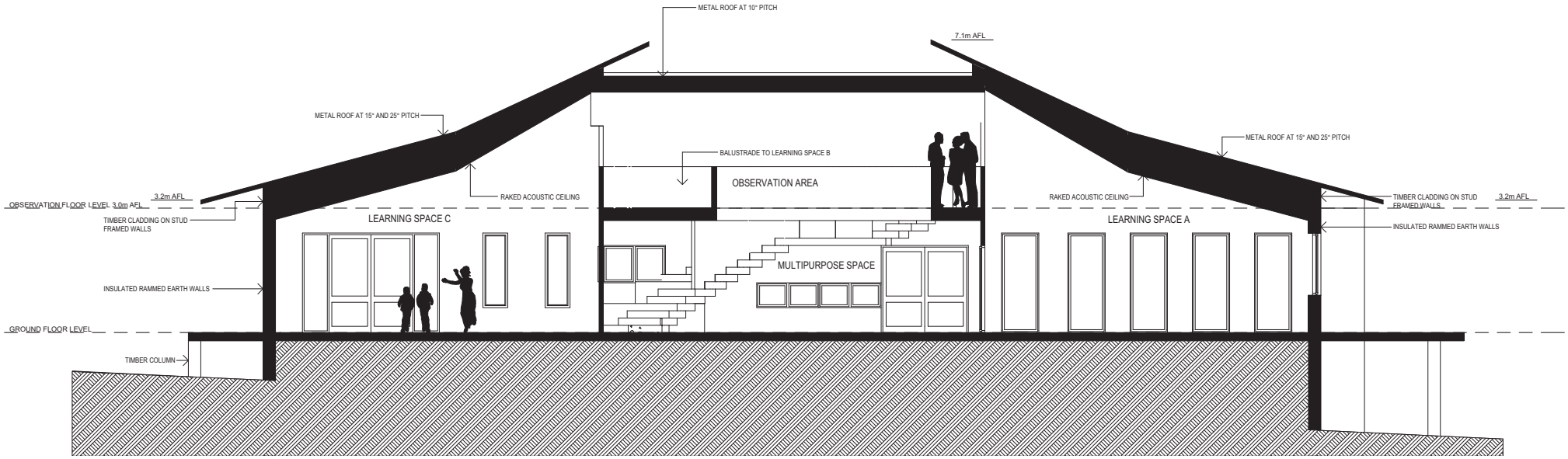

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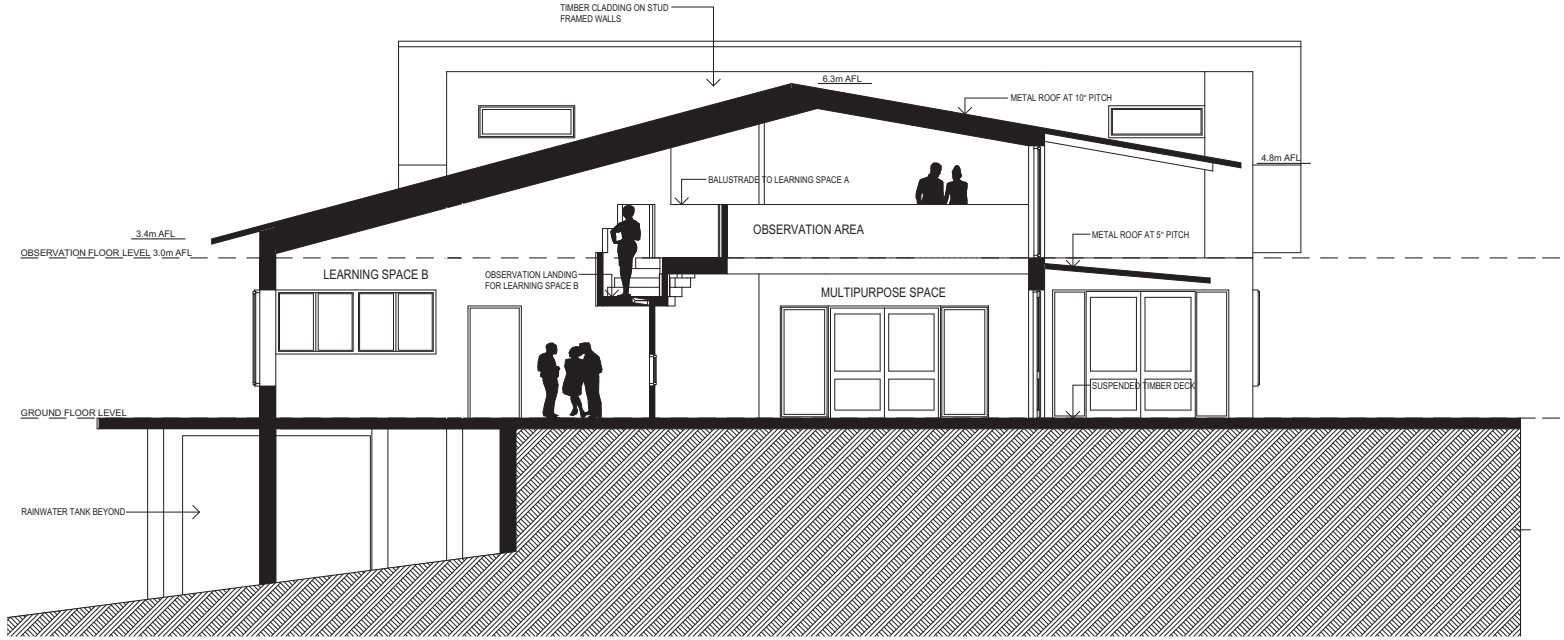

B SECTION B 1:50
#LayID

TYPICAL CLASSROOM BLOCK

SCALE : 1:50@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK05 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
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W eiwarch.com.au
ABN 88 1250 054 672
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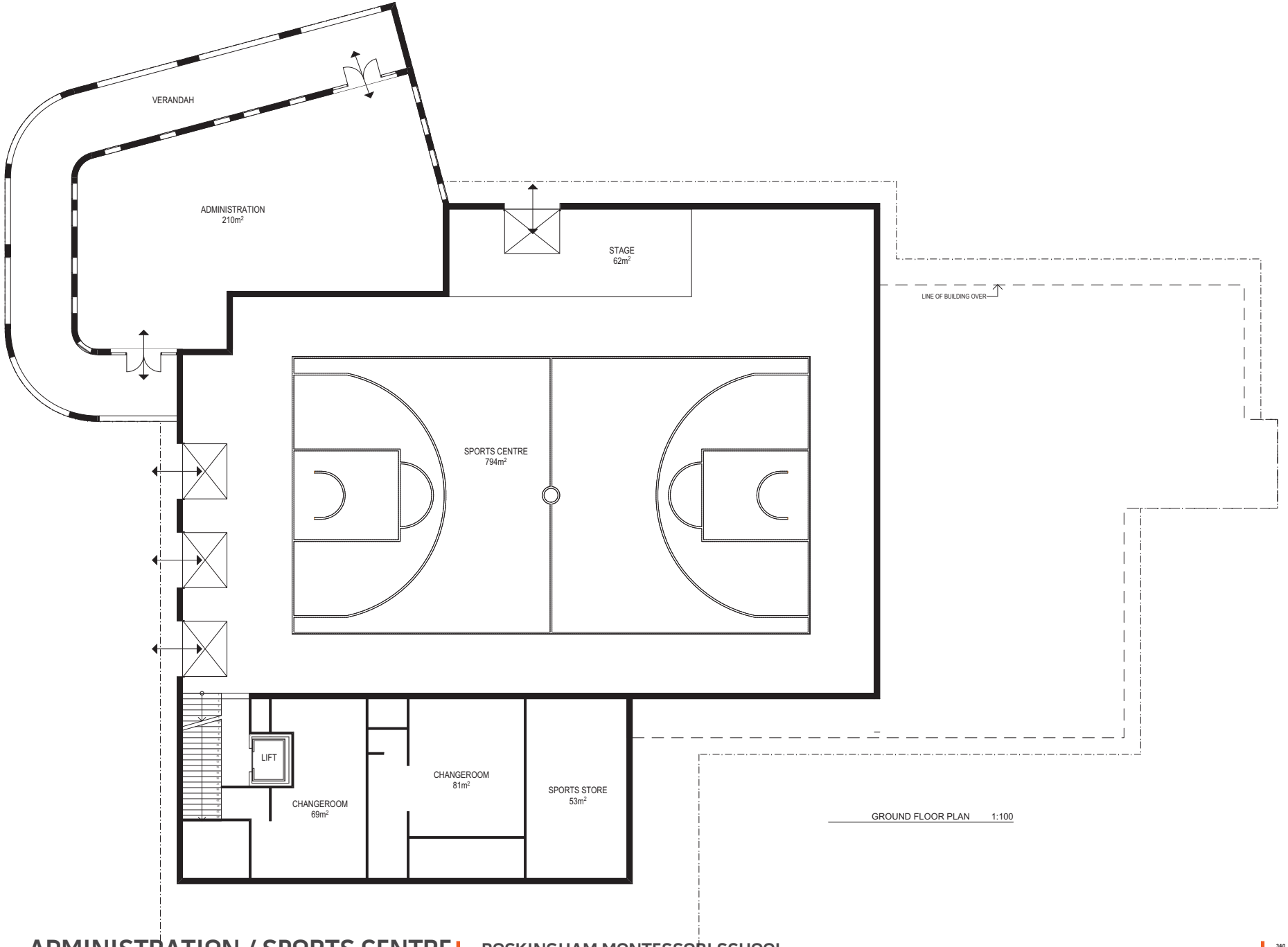

GROUND FLOOR PLAN 1:100

N

ADMINISTRATION / SPORTS CENTRE

SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK07 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1250 054 872
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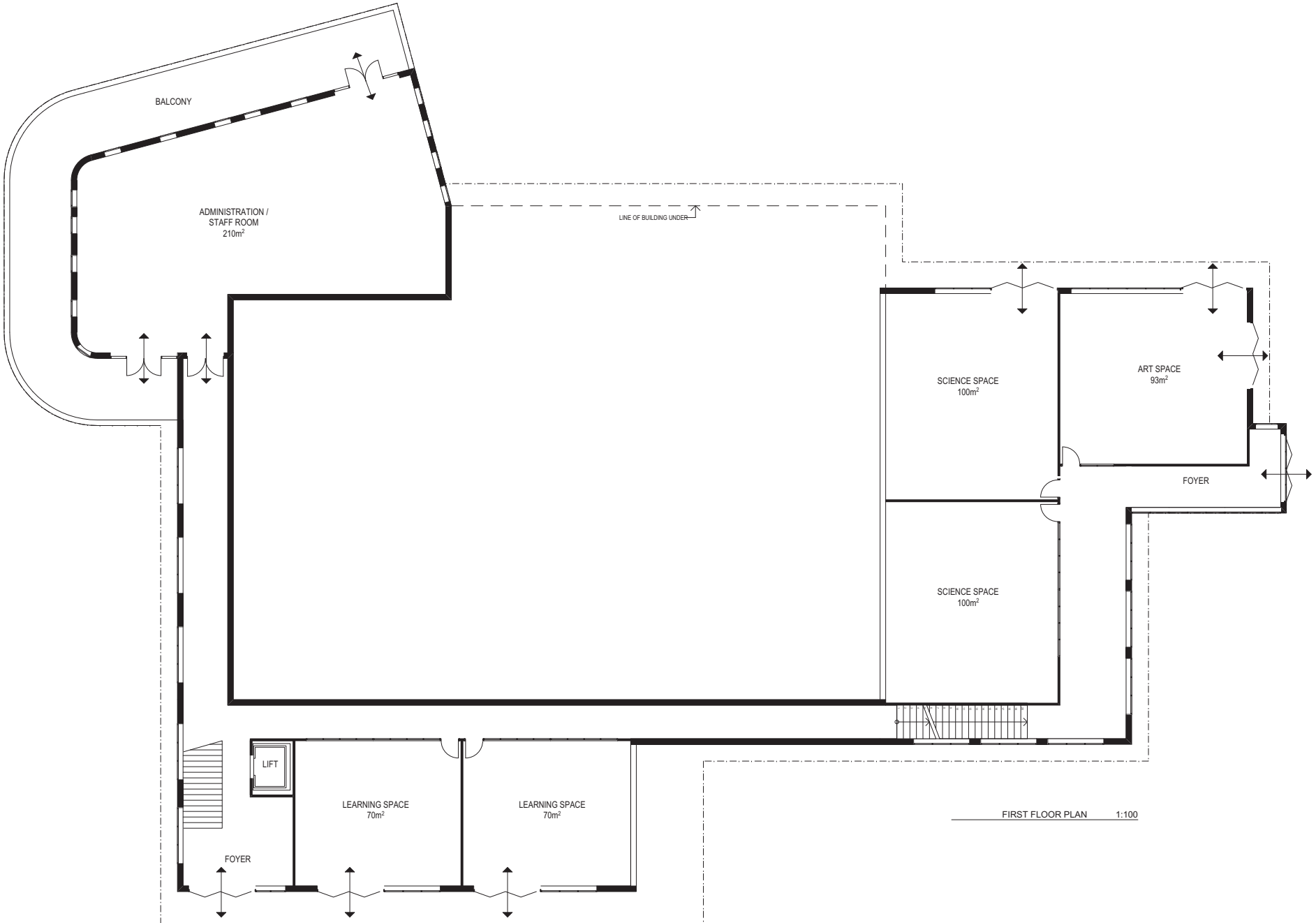


FIRST FLOOR PLAN 1:100

N

ADMINISTRATION / SPORTS CENTRE | ROCKINGHAM MONTESSORI SCHOOL

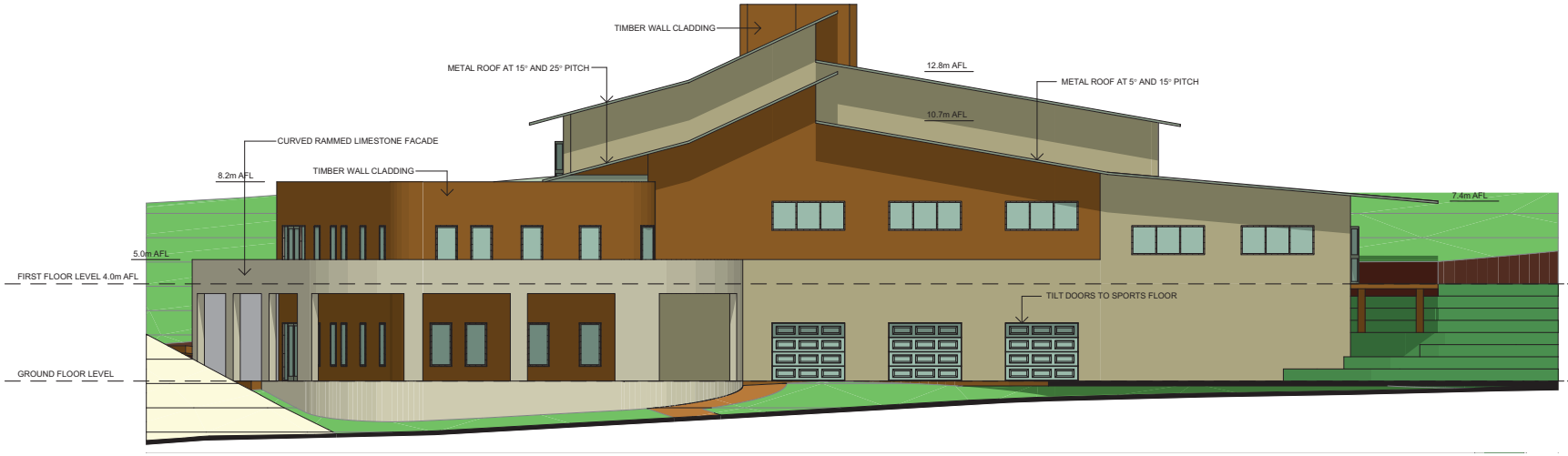
Mandurah Road Rockingham

SCALE : 1:100@A1

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK08 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1250 054 872
eiw architects

building ideas



01 ADMIN WEST ELEVATION 1:100
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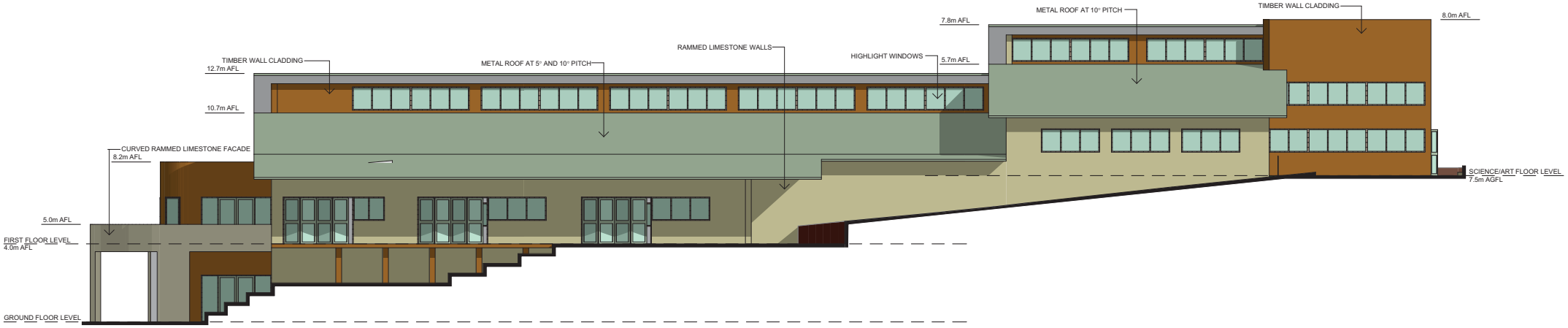


02 ADMIN SOUTH ELEVATION 1:100
#LayID

N

ADMIN/SPORTS CNTR ELEVATIONS

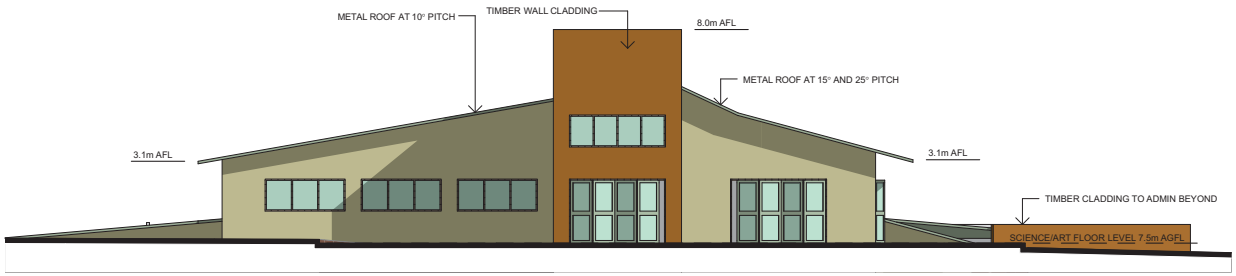
SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Rockingham

JOB NO. : 1407 DATE : 26/11/2014 DWG NO. : SK09 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1250 054 872
eiw architects
building ideas



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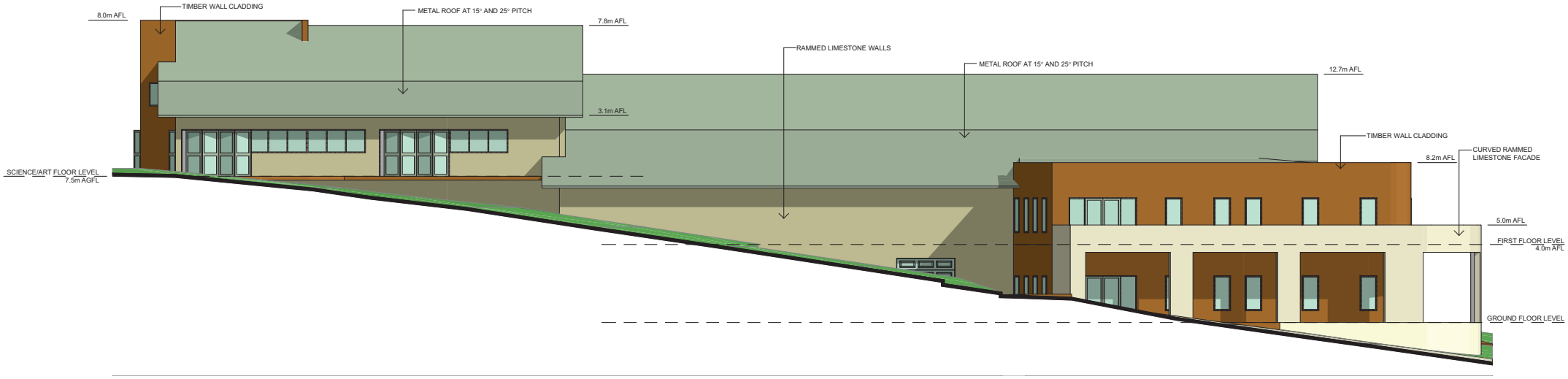


04 ADMIN NORTH ELEVATION 1:100
#LayID

N

ADMIN/SPORTS CNTR ELEVATIONS

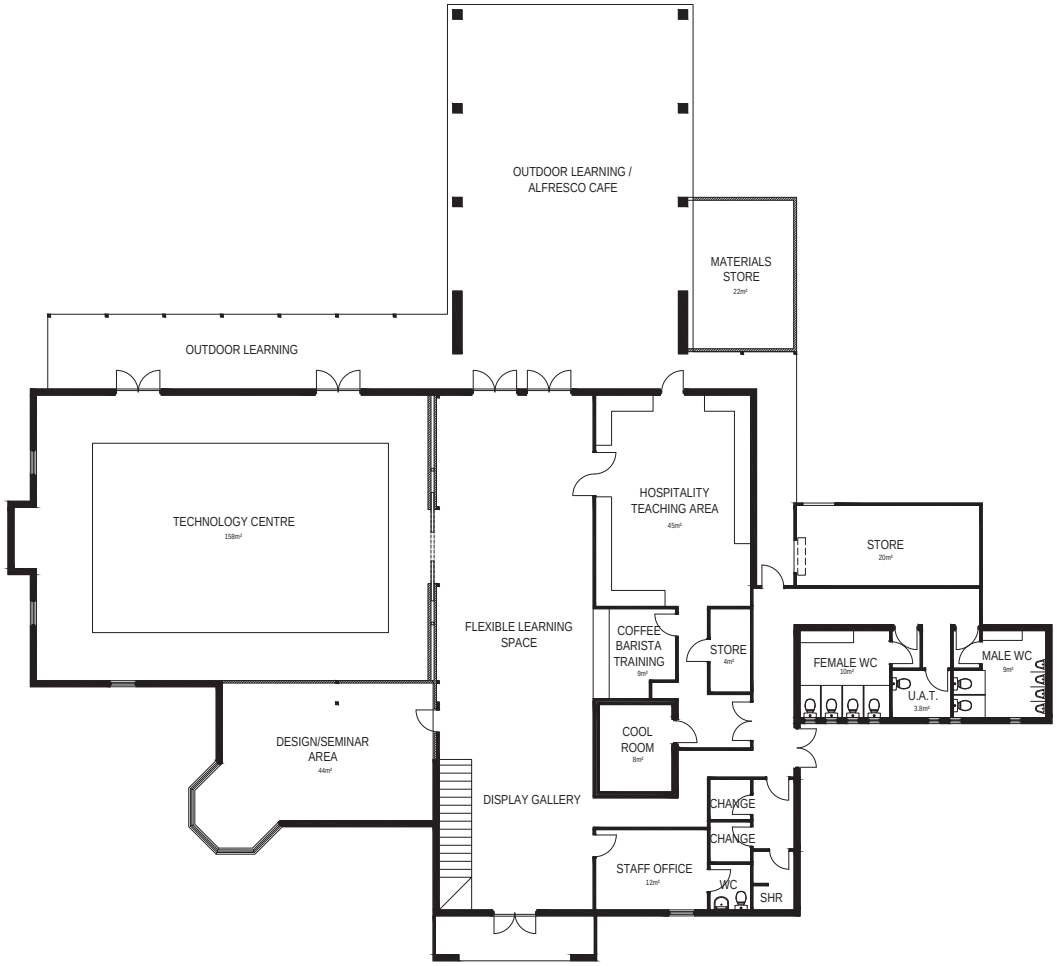
SCALE : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

Mandurah Road Karnup

JOB NO. : 1407 DATE : 27/11/2014 DWG NO. : SK10 REV: A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W eiwarch.com.au
ABN 88 1250 054 672
eiw architects
building ideas



SENIOR SPECIALIST BLOCK

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

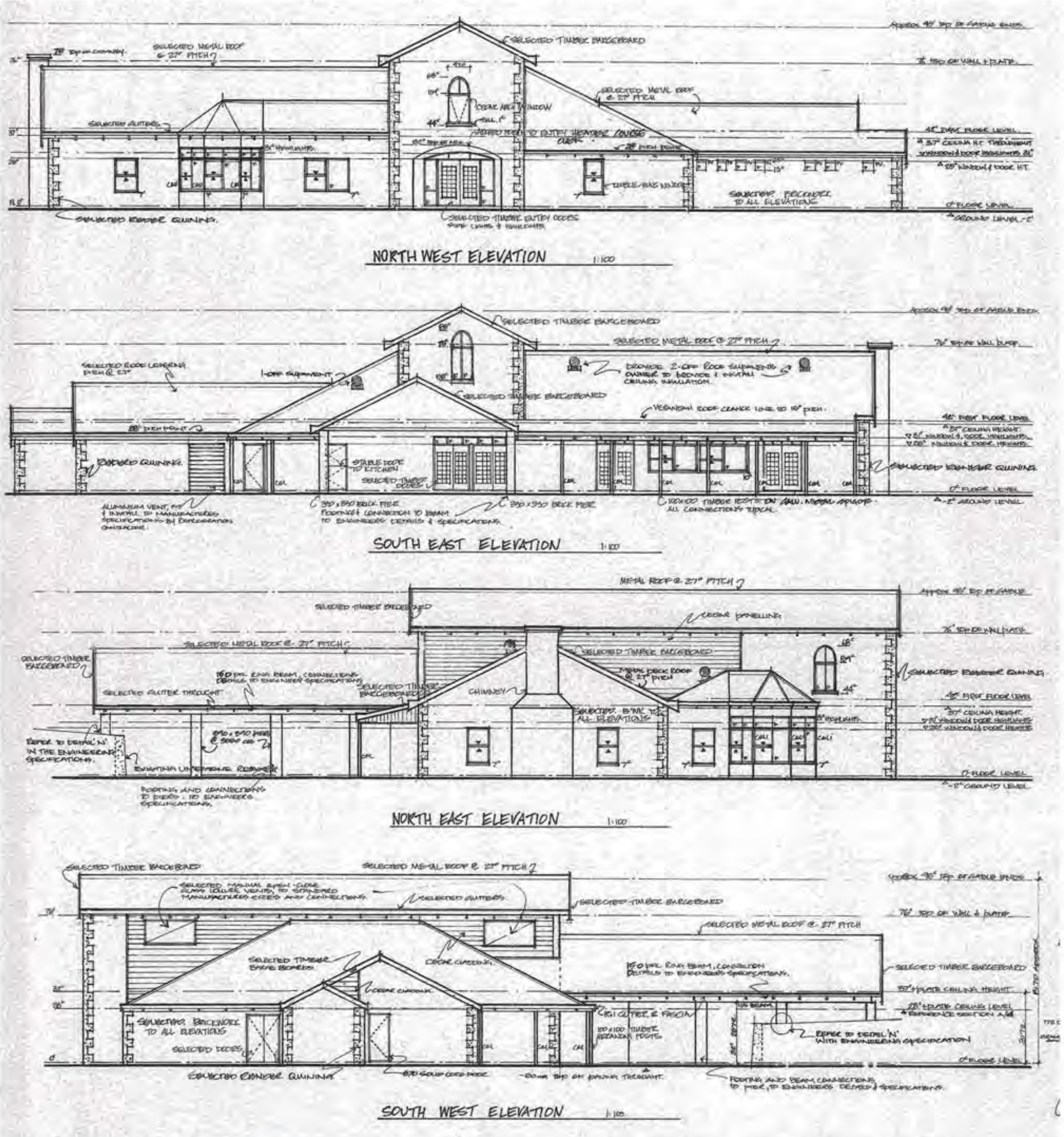
ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK11 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E eiwarch@eiwarch.com.au
W www.eiwarch.com.au
ABN 88 1050 064 672

building ideas



SENIOR SPECIALIST BLOCK

SCALE.: 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO.: 1407 DATE: 26/11/14 DWG NO.: SK12 REV: A

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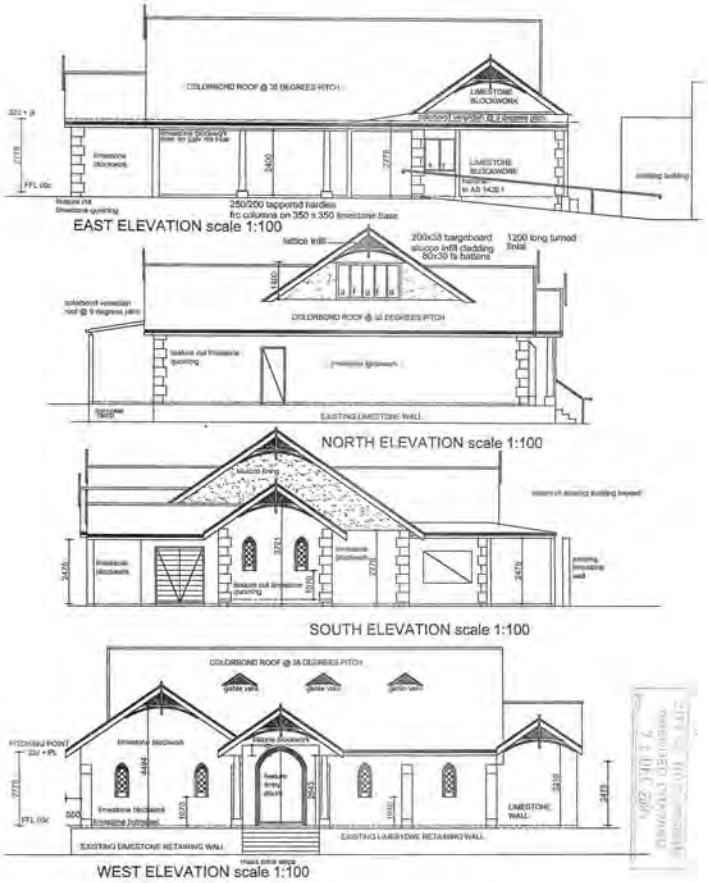
building ideas

PDS-085/15 - Attachment



CHILDRENS HOUSE

SCALE. : 1:100@A1

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, ROCKINGHAM

JOB NO. :1407 DATE :26/11/14 DWG NO. :SK13 REV : B

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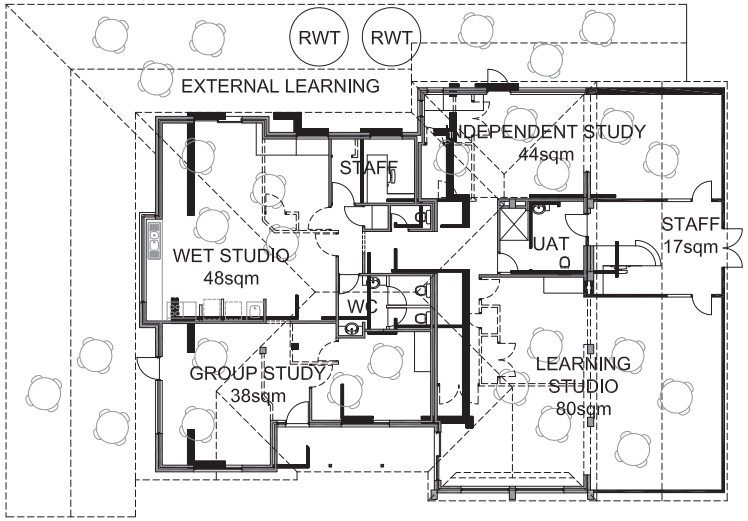
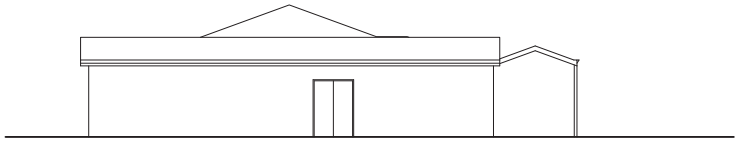


FLOOR PLAN

SCALE 1:100

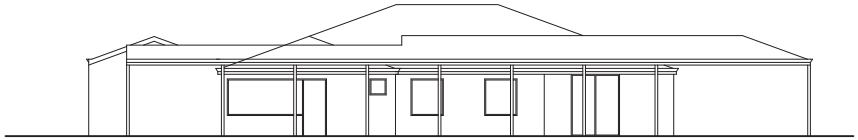
FRONT ELEVATION

SCALE 1:100



SIDE ELEVATION

SCALE 1:100



REAR ELEVATION

SCALE 1:100

N

ENVIRONMENT CENTRE

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

ROCKINGHAM MONTESSORI SCHOOL

MANDURAH ROAD, KARNUP

JOB NO. :1407 DATE :NOVEMBER 2014 DWG NO. :SK14 REV : A

340 Hay Street Subiaco
Western Australia 6008
T +61 8 9381 4844
E elwarchitects@iinet.net.au
W www.elwarch.com.au
ABN 88 1290 054 672

elw architects

building ideas

Enquiries: Joanne Cammack on 9323 4718
Our Ref: 14/8654-02 (D15#699235)
Your Ref: 28-50175-2

mainroads WESTERN AUSTRALIA
ABN: 50 860 676 021

17 November 2015

Department of Planning
Locked bag 2506
PERTH WA 6000

Via email: corporate@planning.wa.gov.au

ATTENTION: JASON GORDON

Dear Sir

ROCKINGHAM MONTESSORI SCHOOL – APPLICATION 28-50175-2- - LOT 11 (NO.1809) AND LOTS 700 & 701 (NO.1791) MANDURAH ROAD, KARNUP - (RECONSIDERATION OF DECISION - JDAP REFUSAL OF PROPOSED EDUCATIONAL ESTABLISHMENT (MONTESSORI SCHOOL))

Thank you for your letter dated 30 October 2015 seeking Main Roads comments for Section 31 reconsideration of Decision – JDAP Refusal of Proposed Education Establishment (Montessori School) – Lot 11 (No. 1809) and Lots 700 and 701 (No. 1791 Mandurah Road, Karnup.

Main Roads previously provided conditional support for the above development, subject to establishing alternative vehicle access from a minor road and access from Mandurah Road reserved for emergency vehicles only. This position by Main Roads still stands.

However, through the State Administrative Tribunal (SAT), alternate options were discussed which includes the proposed option as illustrated in the proponent traffic consultant report.

The application as presented provides insufficient detail of road improvements on Mandurah Road to determine if this application warrants approval.

The illustrations as presented in the traffic consultant report are 2 dimensional only. No consideration of 3rd dimension been provided. There are no illustrations for the proposed U-turn facility other than textual comment where the traffic report indicates "*a formal U-turn facility similar to that provided north of Stakehill Road should be provided south of the school site and north of Surf Drive*".

The current posted speed to where the proposed U-turn facility is likely to be constructed is located in a 100km/hr speed zone on Mandurah Road. The traffic report clearly indicates, "*as there is a strong demand for traffic to exit to the north from the proposed school site*", the design of the U-turn facility MUST take into consideration the current speed zone. It is imperative that the design of this facility incorporates deceleration and acceleration traffic lanes i.e. vehicles MUST NOT block Mandurah Road.

The location of the preferred site to accommodate the U-turn facility MUST consider the existing north and south bound carriageway profiles. The description in the report indicates that the proponent preferred site for this facility be located north of the full movement intersection at Mandurah Road and Surf Drive. The levels of the existing carriageways and the widening of those carriageways to develop deceleration and acceleration traffic lanes and sight lines may preclude the ability to build this facility in this location.

With regards to the 2 dimensional concept associated with the applicant main access point onto Mandurah Road, this concept was developed by Main Roads in response to discussions during SAT mediation. No additional work has been undertaken by the proponent.

If however that JDAP approves this development based on the information provided to this application, the following conditions MUST BE INCORPORTATED in any determination:

1. Prior to occupancy of any part of the development, the development owners covenant and agree to carry out and complete at their own expense the upgrade of Mandurah Road, to the specifications of Main Roads, and in accordance with the approved plans to the satisfaction of Main Roads and the City of Rockingham.

   The upgrade to Mandurah Road shall specifically include, but not limited to, the following items:

   - *Acceleration and deceleration lanes are to be provided to the existing Munja Garden's Function Centre driveway and the proposed U-turn facility on Mandurah Road south of the site;*
   - *Modify the existing Munja Garden's Function Centre driveway to include a seagull style traffic island;*
   - *The acceleration lane (auxiliary traffic lane) including pavement taper is to be constructed from the existing Munja Garden's Function Centre driveway to the existing left turn pocket into Olive Hill Close from Mandurah Road;*
   - *The existing left turn pocket into Olive Hill Close from Mandurah Road is required to be modified to accommodate the above dot point;*
   - *Acceleration and decelerations lanes provided to the U-turn facility (based on the design speed of 100km/hr);*
   - *A physical barrier be installed within the median of Mandurah Road. The length of barrier required would comprise of 150m upstream and 150m downstream (total of 300m in length) being located directly opposite the existing Munja Garden's Function Centre driveway;*

2. A detailed road safety audit is required to be conducted by a suitable consultant as agreed to by the City of Rockingham and Main Roads to determine the exact location of the proposed U-turn facility on Mandurah Road. This is required to be completed and endorsed by Main Roads prior to detailed design of the U-turn facility.

3. Prior to the submission of a building permit application for the development, the development owners must submit for the City of Rockingham and Main Roads approval, detailed designs, plans and accompanying specifications for the upgrade of Mandurah Road.

4. The developers shall be responsible for all costs involved in the land acquisition, design and construction of the Mandurah Road upgrade. This includes signage,

road markings, relocation of services, street lighting and Main Roads costs involved in checking of the design and construction drawings and any site inspections.

5. Main Roads approval for the road construction drawings is required before any works is undertaken within the Mandurah Road reservation. A detailed traffic management and safety plan while working within the road reservation is to be submitted as part of this approval.

6. A Bus Management Plan is required to be prepared by the proponent to the satisfaction of the City of Rockingham. The bus management plan is required to describe in detail the planned bus routes for the purpose of moving students to and from the proposed development. No "U" turns for Buses will be permitted within the Mandurah Road corridor.

7. No vehicle access shall be permitted to or from Mandurah Road road reserve from the Lots 11, 700 and 701 except at the designated crossover point being the existing Munja Garden's Function Centre driveway and the proposed emergency vehicle access being on Lot 11. This shall be noted on the deposited plan in accordance with Section 150 of the Planning and Development Act 2005 as a restrictive covenant for the benefit of Main Roads WA at the expense of the applicant.

8. One driveway shall be permitted onto Mandurah Road from Lot 11 for emergency vehicle access only. This shall be 7 metres in width, at right angles to the carriageway. The driveway crossover shall be constructed to the City of Rockingham standards for commercial driveways.

a. Advice to Applicant

The applicant must obtain approval from Main Roads before all works are undertaken within the Mandurah Road reserve. The applicant seeking access to the Main Roads network will be required to submit an Application as outlined in the "Application Kit and Guidelines" for State Roads.

Application Kits can be found on the Main Roads website >"Our Roads" >"Conducting Works on Roads >"Applications to Undertake Works on State Roads" >Application Kit and Guidelines for Complex Works **OR** Application Form for Low Complexity Works.

If you require any further information please contact Joanne Cammack on 9323 4718. In reply please quote file reference 04/10555-12 (D15#699235).

Yours faithfully

Lindsay Broadhurst
MANAGER ROAD PLANNING

mainroads
WESTERN AUSTRALIA

ABN: 50 860 676 021

Enquiries: Tiffany Cullinane on 9323 5828
Our Ref: 14/8654 (D15#62865)
Your Ref: 28-50175-2

9 February 2015

The Secretary
Western Australian Planning Commission
Locked Bag 2506
PERTH WA 6001

ATTENTION:JASON BOUWHUIS

Dear Sir

DEVELOPMENT APPLICATION - WAPC NO 28-50175-2 - LOT 11 (NO. 1809) AND LOT 700 (NO. 1791) MANDURAH ROAD, KARNUP - PROPOSED EDUCATIONAL ESTABLISHMENT

Dear Sir

I refer to your letter dated 21 January 2015 requesting Main Roads comments on the development application identified above.

Main Roads has previously provided advice to the City of Rockingham in a letter dated 26 August 2014 (refer attached). Conditional support was provided by Main Roads subject to alternative access arrangements being undertaken from a minor road and access from Mandurah Road being reserved for emergency access only.

As this current application has not addressed the concerns raised by Main Roads our comments remain the same as those provided to the City of Rockingham and are as follows:

- The proposed school is located on a Primary Regional Road and Control of Access Highway (Mandurah Road) which has an existing posted speed of 100 km/h at this location. Control of access in relation to any road means that a section or part of that road is intended for use by prescribed traffic without avoidable hindrance, whether from traffic from an intersecting road or otherwise. The intent of a declared Control of Access Highway is that the road may be entered or departed from specified places only.

- Two vehicle access points are located on Mandurah Road (one access point from Lot 700 and Lot 11 respectively). The existing access provides for Left-in, Left-out (LILO) movements from both Lots. The current proposal allows for a deceleration lane for northbound vehicle traffic on Mandurah Road entering the access point located at Lot 700.

Don Aitken Centre, Waterloo Crescent, East Perth or PO Box 6202 EAST PERTH Western Australia 6892
Telephone: 138 138 Facsimile: (08) 9323 4430
Email: enquiries@mainroads.wa.gov.au Website: www.mainroads.wa.gov.au

- Although, there are two existing access points to Lots 11 and 700, the revised Transport Assessment report prepared by Shawmac, dated 27 November 2014, identifies proposed access to the school is from one point only, located on the southbound carriageway of Mandurah Road at Lot 11.

- The revised Transport Assessment report also proposes closure of the existing median break immediately south of the proposed entry to the site in order to improve road safety. This closure may have implications for adjacent land owners along Mandurah Road.

- Main Roads is concerned about the future traffic safety issues around access to the school site from Mandurah Road although it is acknowledged that there is currently no alternative access.

- There is currently no structure plan in place for Karnup and further discussions are required with the City of Rockingham in order to initiate alternative access arrangements for this area.

Main Roads is prepared to support the above application subject to the conditions below:

1. No access, other than provision of an emergency access, shall be made available to or from the proposed development from Mandurah Road.

2. Access to the proposed development to be provided via a connection to the local road network in this area (ie. Greenham Place or Stakehill Road).

Main Roads representatives met with the applicants on Friday 22 August 2014 to discuss the concerns presented by the initial application referred to Main Roads on 4 August 2014. Main Roads has endeavoured to be proactive in expressing concerns and making the applicant aware of issues associated with the proposed development.

If you require any further information please contact David Van Den Dries (Urban Road Planning Manager, South) on 9323 4917.

Yours faithfully

Lindsay Broadhurst
MANAGER ROAD PLANNING
Enc.

mainroads
WESTERN AUSTRALIA
ABN: 50 860 676 021

Enquiries: Joanne Cammack on 9323 4718
Our Ref: 04/10555-12 (D14#457872)
Your Ref: 20.2014.280.1

26 August 2014

Chief Executive Officer
City Of Rockingham
PO Box 2142
ROCKINGHAM DC WA 6967

COPY

ATTENTION: DONNA SHAW

Dear Madam

PROPOSED CHANGE OF USE TO EDUCATIONAL ESTABLISHMENT (ROCKINGHAM MONTESSORI SCHOOL) - LOT 11 (NO 1809) MANDURAH ROAD KARNUP

Thank you for your letter dated 4 August 2014 requesting Main Roads comments on the above development (change of use) application.

Main Roads representatives met with the applicants on Friday 22 August 2014 to discuss some of the concerns presented by this application. The proposed school site is intended to ultimately cater for approximately 550 students (250 primary and 300 secondary students) and 42 staff although this is likely to occur as a staged approach with the secondary school as the first priority.

Main Roads comments regarding this development application are as follows:

- The proposed school is located on a Primary Regional Road and Control of Access Highway (Mandurah Road) which has an existing posted speed of 100 km/h at this location. Mandurah Road currently carries significant volumes of traffic (approx. 28,500 vehicles per day as per Shawmac *Transport Assessment* dated 22 July 2014, p 9). Ultimately Mandurah Road (Melville-Mandurah Highway) will become a 6 lane highway servicing major residential/employment areas for the south west corridor.

- The proposed school, as presented, has only one vehicle access point to Mandurah Road which will be located mid-way on the lot boundary facing Mandurah Road. Given the bushfire prone environment in this location, a single access point is not considered adequate for emergencies.

- The *Transport Assessment* report by Shawmac dated 22 July 2014 acknowledges the posted speed of 100 km/h and proposes a deceleration lane for Left-In, Left-Out movements. The report also proposes closure of the existing median break

Don Aitken Centre, Waterloo Crescent, East Perth or PO Box 6202 EAST PERTH Western Australia 6892
Telephone: 138 138 Facsimile: (08) 9323 4547
Email: enquiries@mainroads.wa.gov.au Website: www.mainroads.wa.gov.au

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immediately south of the proposed entry to the site in order to improve safety. This closure may have implications for adjacent land owners along Mandurah Road.

- Access to the school site will therefore require vehicles to travel past the site and undertake U-turn movements on a high speed road. The nearest safe U-turn point is north of the Stakehill Road traffic signals, some 800 metres north of the site. The nearest right turn availability for south-bound traffic is at Surf Drive, approximately 1.3km south of the site which is a residential road with a roundabout approximately 200m from the intersection. A median barrier or formal U-turn facilities would be required to prevent unsafe U-turns.

- The ultimate school population is 550 students and there is currently an expectation that 100% of the children will be driven to the site. During the discussions, the option of bussing students was explored. However, this would not prevent all parents from driving children to the site.

- Given the above, there is a risk that some parents may drop children off on Mandurah Road requiring students to cross the road. Although access to the site is not conducive to cycling, there is also a risk to cyclists.

- Main Roads is concerned about the future traffic safety issues around access to the school site from Mandurah Road, although it is acknowledged that there is currently no alternative access.

- WAPC's *Liveable Neighbourhood Policy* (Element 8, R20) states that a school should be surrounded by a minimum of three streets, including a neighbourhood connector and a wider access street. Element 8, R28 also states that the street network surrounding the school should facilitate short, safe and direct trips for pedestrians and cyclists.

- WAPC DC Policy 2.4 (Section 3.2) states that there is a need for a primary school site to be located close to a local distributor to ensure ease of access by vehicles and proximity (where appropriate) to public transport routes. The policy also states that secondary school sites should be set aside with accessibility as an important consideration, not only for students arriving by public transport and private car, but also by those students travelling to school by bicycle or on foot.

- There is currently no structure plan in place for Karnup and further discussions are required with the City in order to initiate alternative access arrangements for this area.

Main Roads is prepared to support the above application subject to the conditions below:

1. No access, other than provision of an emergency access, shall be made available to or from the proposed development from Mandurah Road.

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2. Access to the proposed development to be provided via a connection to the local road network in this area (ie Greenham Place or Stakehill Road).

If you require any further information please contact Joanne Cammack on 9323 4718. In reply please quote file reference 04/10555-12 (D14#457872).

Yours faithfully

Lindsay Broadhurst
MANAGER ROAD PLANNING