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Sustainable Transport. Safe Solutions

**325 Castlemead Dr, Yanchep**  
Proposed Child Care Centre

## TRANSPORT IMPACT STATEMENT



Prepared for:  
**LP WA No3 Pty Ltd**

December 2020

# 325 Castlemead Dr, Yanchep

Prepared for: LP WA No3 Pty Ltd  
Prepared by: Paul Ghantous  
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# 1. Introduction

**This Transport Impact Statement has been prepared by Urbii on behalf of LP WA No3 Pty Ltd with regards to the proposed child care centre, located at 325 Castlemead Dr, Yanchep.**

The subject site is situated on the south-western corner of Castlemead Drive and Spinnaker Boulevard, as shown in Figure 1. The site is bound by roads on three frontages and vacant residential land to the west. The site forms part of Local Development Plan No. 14 (Figure 2).

The subject site is presently vacant. It is proposed to develop the site into a child care centre catering for up to 94 children and 17 staff.

The key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress movement patterns, car parking and access to the site for alternative modes of transport.



**Figure 1: Subject site location**

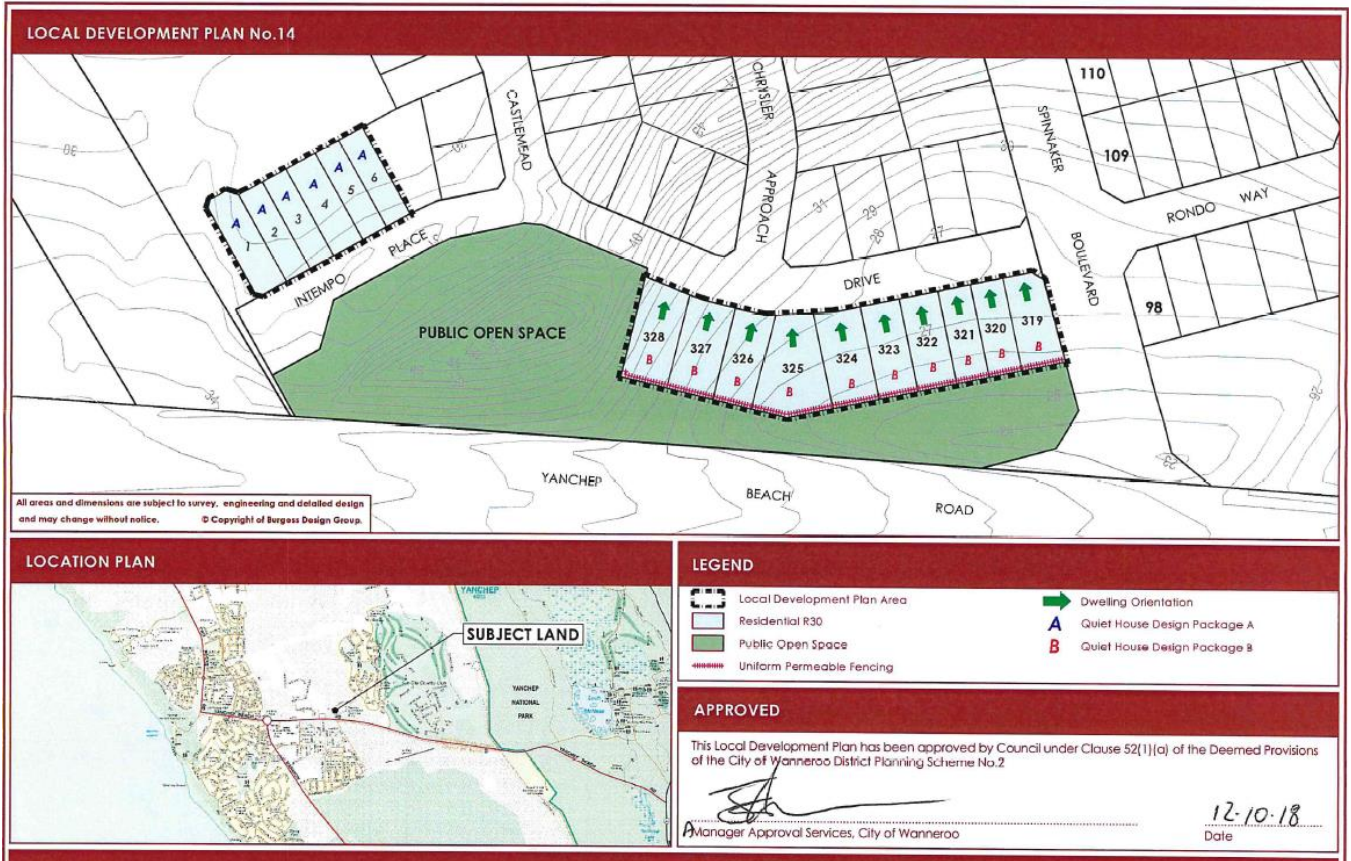


Figure 2: Local development plan no. 14



## 2. Proposed development

**The proposal for the subject site is for a child care centre comprising:**

- A child care centre with rooms allocated to different age groups,
- Outdoor play area,
- 33 car parking bays including one ACROD bay,
- Bicycle parking for twelve bicycles,
- End of trip facilities including lockers, a shower and change room, and
- Bin store.

Vehicle access to the site is proposed via two crossovers on Castlemead Drive.

Pedestrians and cyclists will access the development from the external path network abutting the site.

The proposed development plans are included for reference in Appendix A.



# 3. Vehicle access and parking

## Vehicle access

The proposed vehicular access arrangements have been reviewed for efficient and safe traffic circulation.

Vehicle access to the site is via one exit only crossover and one entry/exit crossover on Castlemead Drive. The exit only crossover is set back a sufficient distance from the intersection of Castlemead Drive and Spinnaker Boulevard and is 3m in width. The two-way crossover is 6.2m in width. Vehicles can circulate efficiently in a counter-clockwise direction through the site. Pedestrian sight triangles are provided at the property boundary.



Figure 3: Proposed development vehicle access



## Car parking layout

Dimensions of car park aisles and bays are compliant with AS2890.1. Bays are 2.6m wide by 5.4m long and an aisle width of 6.2m has been provided. The ACROD bay is designed to AS2890.6.

## Parking supply

It is proposed to provide a total of 33 car parking bays for the proposed development. This includes providing one ACROD bay.

## Parking requirements

Reference was made to the City of Wanneroo *Local Planning Policy 2.3 - Child Care Centres* for car parking requirements:

- 1 bay per staff member (17 bays for 17 staff)
- 9 bays plus 1 per 8 children accommodated in excess of 54 (14 bays for 94 children)
- Total 31 bays are required

The total parking supply of 33 bays meets the requirements of LPP 2.3 and is also considered sufficient to meet the needs of the proposed development.

## 4. Provision for service vehicles

The proposed development will not generate significant service vehicle traffic. It is recommended that smaller vehicles such as vans or utes be utilised for deliveries to the site. These smaller vehicles can park in a car parking bay for a short time during 'off-peak' periods.

Waste bins will be wheeled out to the verge for kerbside waste collection.



## 5. Hours of operation

The hours of operation for the child care centre are Monday-Friday 6:30am to 6:00pm. The RTA NSW *Guide to Traffic Generating Developments* indicates that pre-school centres typically have peaks in the periods 8:00am to 9:00am and 2:30pm to 4:00pm.

Traffic count data obtained from the City of Wanneroo indicates that the road network weekday peak hours occur between 8am and 9am in the morning and 3pm to 4pm in the afternoon.

## 6. Daily traffic volumes and vehicle types

### Traffic generation

The traffic volume that will be generated by the proposed development has been estimated using trip generation rates derived with reference to the following sources:

- Roads and Traffic Authority of New South Wales *Guide to Traffic Generating Developments* (2002).

The trip generation rates adopted are detailed in Table 1.

**Table 1: Adopted trip rates for traffic generation**

Land use	Trip rate source	Daily rate	AM rate	PM rate	AM-in	AM-out	PM-in	PM-out
Child Care	RTA NSW	4	1	1	50%	50%	50%	50%

The RTA Guide specifies a rate of 1.4 trips per child between 7am and 9am (2 hours), so it was assumed that 1 trip per child would be generated in the peak hour (8am to 9am). The RTA Guide specifies 0.8 trips per child between 2:30pm and 4:00pm. For simplicity, it was conservatively assumed 1 trip per child would also be generated in the PM peak hour.

Child care centres have well defined peak periods in their daily traffic profiles, therefore the daily trip rate would be no more than 4 trips per child.

The estimated traffic generation of the proposed development is detailed in Table 2. The proposed development is estimated to generate 376 vehicles per day (vpd), with 94 vehicles per hour (vph) generated during the AM and PM peak hours, respectively.

These trips include both inbound and outbound vehicle movements. It is anticipated that most of the vehicle types would be passenger cars and SUVs.

**Table 2: Development traffic generation – Weekday AM and PM peak hour**

Land use	Quantity	Daily Trips	AM Trips	PM Trips	AM Peak Trips		PM Peak Trips	
					IN	OUT	IN	OUT
<b>Child Care</b>	94	376	94	94	47	47	47	47
<b>Total</b>		376	94	94	47	47	47	47

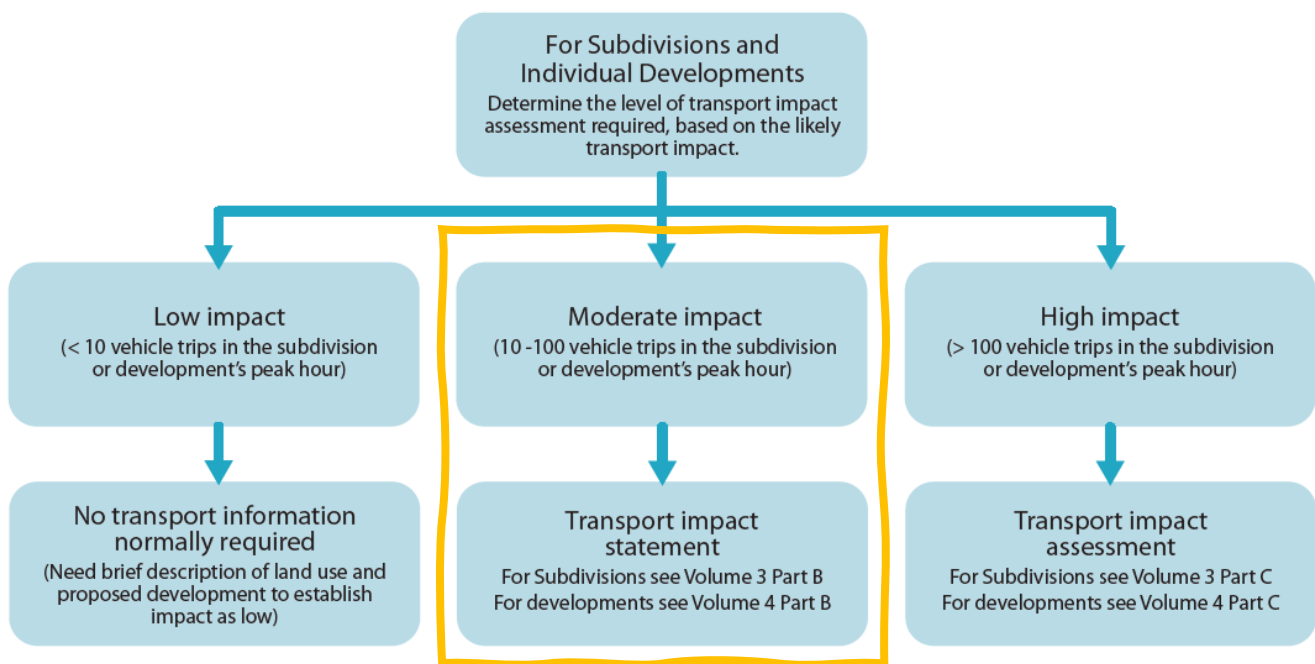


## Impact on surrounding roads

The WAPC Transport Impact Assessment Guidelines for Developments (2016) provides the following guidance on the assessment of traffic impacts:

“As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis.”

The proposed development will not increase traffic flows on any roads adjacent to the site by the quoted WAPC threshold of +100vph to warrant further analysis. Therefore, the impact on the surrounding road network is moderate (Figure 4).



**Figure 4: Level of traffic impact for subdivisions and individual developments**

Source: WAPC *Transport Impact Assessment Guidelines Volume 4: Individual Developments*, August 2016

## 7. Traffic management on the frontage roads

**Information from online mapping services, Main Roads WA, Local Government, and/or site visits was collected to assess the existing traffic management on frontage roads.**

Castlemead Drive near the subject site is an approximately 6m wide, two-lane undivided road. As shown in Figure 5, the road has recently been constructed. A footpath is constructed on the southern side of the road.

Castlemead Drive is not yet open to the public and has not been added to the Main Roads mapping system. However, it will likely be an Access road in the Main Roads WA road hierarchy and is expected to operate under a built-up area speed limit of 50km/h. Access roads are the responsibility of Local Government and typically are for the provision of vehicle access to abutting property (Figure 7).

Castlemead Drive intersects Spinnaker Boulevard as a left-int/left-out intersection. Spinnaker Boulevard features a raised and kerbed median with tree planting. Parking embayment, footpaths and bicycle lanes are provided on both sides of Spinnaker Boulevard (Figure 6). A paved threshold treatment is provided at the intersection of Castlemead Drive / Spinnaker Boulevard.



**Figure 5: Castlemead Drive looking west**



**Figure 6: Intersection of Spinnaker Boulevard / Castlemead Drive**

Note: Photo taken from Spinnaker Boulevard looking north. The subject site is on the left.

**ROAD HIERARCHY FOR WESTERN AUSTRALIA  
ROAD TYPES AND CRITERIA (see Note 1)**

CRITERIA	PRIMARY DISTRIBUTOR (PD) (see Note 2)	DISTRICT DISTRIBUTOR A (DA)	DISTRICT DISTRIBUTOR B (DB)	REGIONAL DISTRIBUTOR (RD)	LOCAL DISTRIBUTOR (LD)	ACCESS ROAD (A)
<i>Primary Criteria</i>						
1. Location (see Note 3)	All of WA incl. BUA	Only Built Up Area.	Only Built Up Area.	Only Non Built Up Area. (see Note 4)	All of WA incl. BUA	All of WA incl. BUA
2. Responsibility	Main Roads Western Australia.	Local Government.	Local Government.	Local Government.	Local Government.	Local Government.
3. Degree of Connectivity	High. Connects to other Primary and Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	Medium. Minor Network Role Connects to Distributors and Access Roads.	Low. Provides mainly for property access.
4. Predominant Purpose	Movement of inter regional and/or cross town/city traffic, e.g. freeways, highways and main roads.	High capacity traffic movements between industrial, commercial and residential areas.	Reduced capacity but high traffic volumes travelling between industrial, commercial and residential areas.	Roads linking significant destinations and designed for efficient movement of people and goods between and within regions.	Movement of traffic within local areas and connect access roads to higher order Distributors.	Provision of vehicle access to abutting properties
<i>Secondary Criteria</i>						
5. Indicative Traffic Volume (AADT)	In accordance with Classification Assessment Guidelines.	Above 8 000 vpd	Above 6 000 vpd.	Greater than 100 vpd	<b>Built Up Area</b> - Maximum desirable volume 6 000 vpd. <b>Non Built Up Area</b> - up to 100 vpd.	<b>Built Up Area</b> - Maximum desirable volume 3 000 vpd. <b>Non Built Up Area</b> - up to 75 vpd.
6. Recommended Operating Speed	60 – 110 km/h (depending on design characteristics).	60 – 80 km/h.	60 – 70 km/h.	50 – 110 km/h (depending on design characteristics).	<b>Built Up Area</b> 50 - 60 km/h (desired speed) <b>Non Built Up Area</b> 60 – 110 km/h (depending on design characteristics)	<b>Built Up Area</b> 50 km/h (desired speed). <b>Non Built Up Area</b> 50 – 110 km/h (depending on design characteristics).
7. Heavy Vehicles permitted	Yes.	Yes.	Yes.	Yes.	Yes, but preferably only to service properties.	Only to service properties.
8. Intersection treatments	Controlled with appropriate measures e.g. high speed traffic management, signing, line marking, grade separation.	Controlled with appropriate measures e.g. traffic signals.	Controlled with appropriate Local Area Traffic Management.	Controlled with measures such as signing and line marking of intersections.	Controlled with minor Local Area Traffic Management or measures such as signing.	Self controlling with minor measures.
9. Frontage Access	None on Controlled Access Roads. On other routes, preferably none, but limited access is acceptable to service individual properties.	Prefer not to have residential access. Limited commercial access, generally via service roads.	Residential and commercial access due to its historic status. Prefer to limit when and where possible.	Prefer not to have property access. Limited commercial access, generally via lesser roads.	Yes, for property and commercial access due to its historic status. Prefer to limit whenever possible. Side entry is preferred.	Yes.
10. Pedestrians	Preferably none. Crossing should be controlled where possible.	With positive measures for control and safety e.g. pedestrian signals.	With appropriate measures for control and safety e.g. median/islands refuges.	Measures for control and safety such as careful siting of school bus stops and rest areas.	Yes, with minor safety measures where necessary.	Yes.
11. Buses	Yes.	Yes.	Yes.	Yes.	Yes	If necessary (see Note 5)
12. On-Road Parking	No (emergency parking on shoulders only).	Generally no. Clearways where necessary.	Not preferred. Clearways where necessary.	No – emergency parking on shoulders – encourage parking in off road rest areas where possible.	<b>Built Up Area</b> – yes, where sufficient width and sight distance allow safe passing. <b>Non Built Up Area</b> – no. Emergency parking on shoulders.	Yes, where sufficient width and sight distance allow safe passing.
13. Signs & Linemarking	Centrelines, speed signs, guide and service signs to highway standard.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs and guide signs.	Speed and guide signs.	Urban areas – generally not applicable. Rural areas - Guide signs.
14. Rest Areas/Parking Bays	In accordance with Main Roads' Roadside Stopping Places Policy.	Not Applicable.	Not Applicable.	Parking Bays/Rest Areas. Desired at 60km spacing.	Not Applicable.	Not Applicable.

**Figure 7: Road types and criteria for Western Australia**

Source: Main Roads Western Australia D10#10992



## 8. Public transport access

Information was collected from Transperth, PTA and site visits to assess the existing public transport access to and from the site.

The subject site has access to the following bus services within walking distance:

- Bus Route 491: Butler Stn - Yanchep via Marmion Av.

The nearest bus stops are less than 400m walk away from the site on Yanchep Beach Road.

The existing public transport network plan is shown in Figure 8.

Local bus services will likely be rerouted once the Yanchep Train Station is constructed as part of Metronet. The Yanchep Train Station will be one of three stations constructed as part of the train line extension from Butler (Figure 9).



Figure 8: Transperth public transport plan

Source: Transperth





**LEGEND**

- - - Passenger rail alignment
- Yanchep Rail Extension - local roads
- Future local roads
- - - Future Mitchell Freeway
- Station location
- Road over rail bridge
- Green bridge
- Fauna underpass

**Figure 9: Yanchep rail extension and train station (Metronet)**

Source: <https://www.metronet.wa.gov.au/>

## 9. Pedestrian access

Information from online mapping services, Main Roads WA, Local Government, and site visits was collected to assess the pedestrian access for the proposed development.

### Pedestrian facilities and level of service

Footpaths are provided on Castlemead Drive and Spinnaker Boulevard near the subject site. Pedestrian crossing facilities including kerb ramps are provided at intersections which promotes improved access for bicycles, wheelchairs, and prams (Figure 10).



**Figure 10: Pedestrian ramps and TGSIs near the site**

The proposed development provides a continuous walkway from the footpath on Castlemead Drive to the main building entrance.

# 10. Bicycle access

**Information from online mapping services, Department of Transport, Local Government, and/or site visits was collected to assess bicycle access for the proposed development.**

## Bicycle network

As this area of Yanchep is still under development, the Department of Transport's Perth Bicycle Network maps have not been updated to include recently constructed cycle facilities. Review of aerial imagery and site observations indicates there are on-street cycle lanes on Spinnaker Boulevard and Yanchep Beach Road in the vicinity of the site.

## Bicycle parking and end of trip facilities

Bicycle parking for twelve bicycles is provided as part of the proposed development and is conveniently located near the building entrance. End of trip facilities including a shower, change room and lockers are provided to encourage active transport for staff.

# 11. Site specific issues

No additional site-specific issues have been identified within the scope of this assessment.



## 12. Safety issues

No crashes have been recorded at nearby roads and intersections in the last 5 years.

## 13. Conclusion

**This Transport Impact Statement has been prepared by Urbii on behalf of LP WA No3 Pty Ltd with regards to the proposed child care centre, located at 325 Castlemead Dr, Yanchep.**

The subject site is situated on the south-western corner of Castlemead Drive and Spinnaker Boulevard and is presently vacant. It is proposed to develop the site into a child care centre catering for up to 94 children and 17 staff.

The site features good connectivity with the existing road network. There is good public transport coverage through nearby bus and future train services (including the Yanchep rail extension). Connectivity for pedestrians and cyclists is also good.

The traffic analysis undertaken in this report shows that the traffic generation of the proposed development is minimal (less than 100vph on any lane) and as such would have insignificant impact on the surrounding road network.

It is concluded that the findings of this Transport Impact Statement are supportive of the proposed development.



# Appendices

## Appendix A: Proposed development plans



# CHILDCARE CENTRE LOT 319-325 CASTLEMEAD DRV YANCHEP WA



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**94 PLACE CHILDCARE**  
LOT 319-325 CASTLEMEAD DRV YANCHEP WA

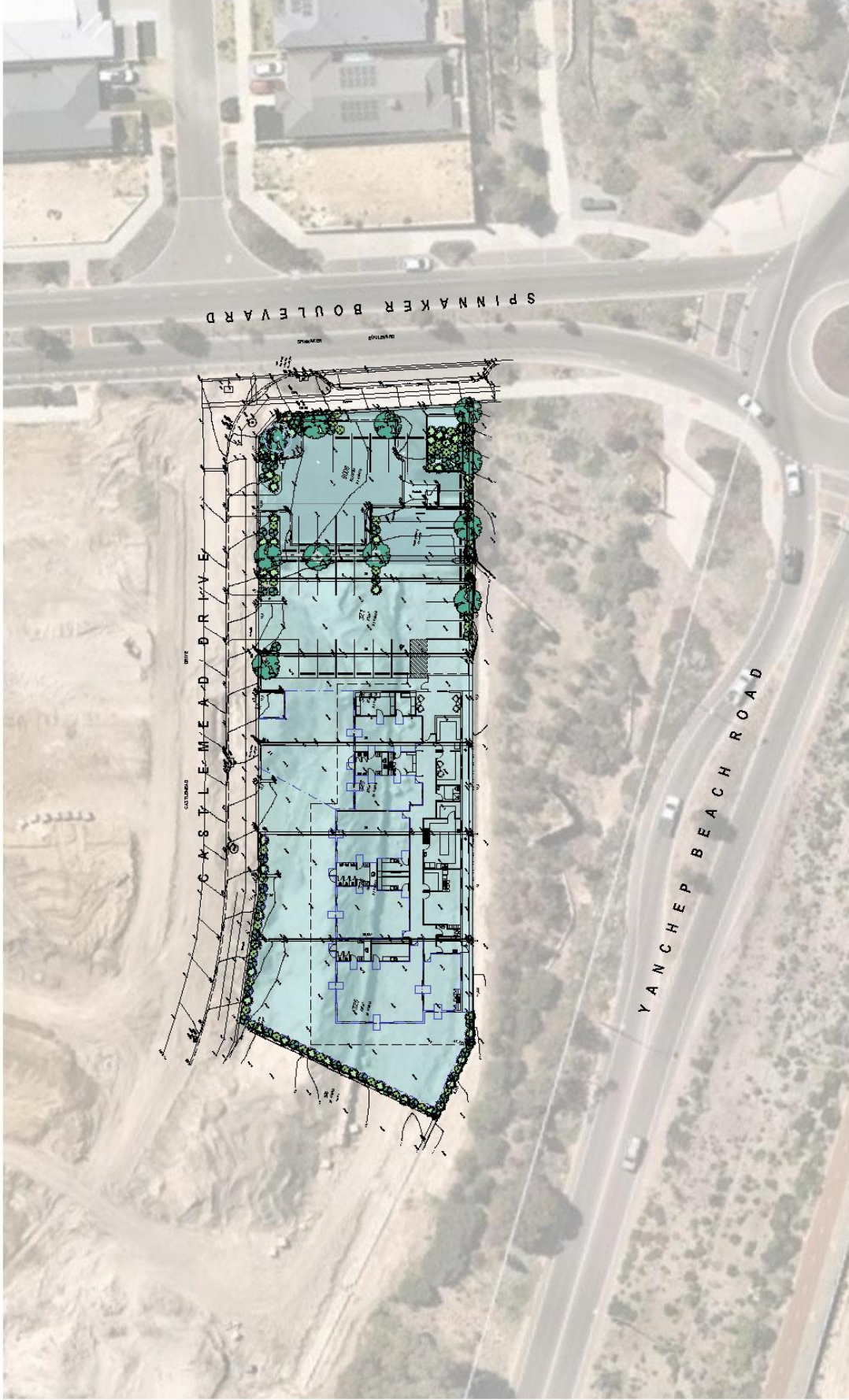
Job No:  
5193

Rev No:  
SK 1

Issue Date:  
October 2020

**Cover Sheet**  
Scale: MTS





Location Plan  
Scale: 1:1500 @ A3

Job No: 8183  
 Drawing No: 81001.1  
 Date: October 2020

94 PLACE CHILDCARE  
 LOT 319-325 CASTLEMEAD DRV YANCHEP WA



O & A ARCHITECTURE PTY LTD (ABN 71 627 522 013)  
 3/51 Thomas Street Hammonds, SA 5031  
 Phone: 08 8332 4444  
 Email: info@oandarchitecture.com.au





SITE AREA	2821M2
TOTAL FLOOR AREA	777M2
TOTAL CARPARKING	33 PARKS
LANDSCAPED AREAS	310M2
OUTDOOR PLAY	700M2
CENTRE CAPACITY	94 PLACES
NO. OF STAFF	17 STAFF

Site Plan/Floor Plan  
Scale: 1:250 @ A3



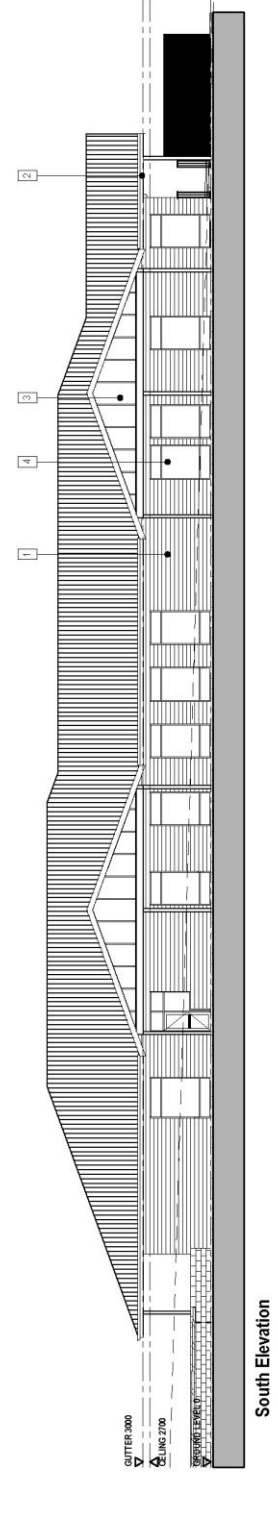
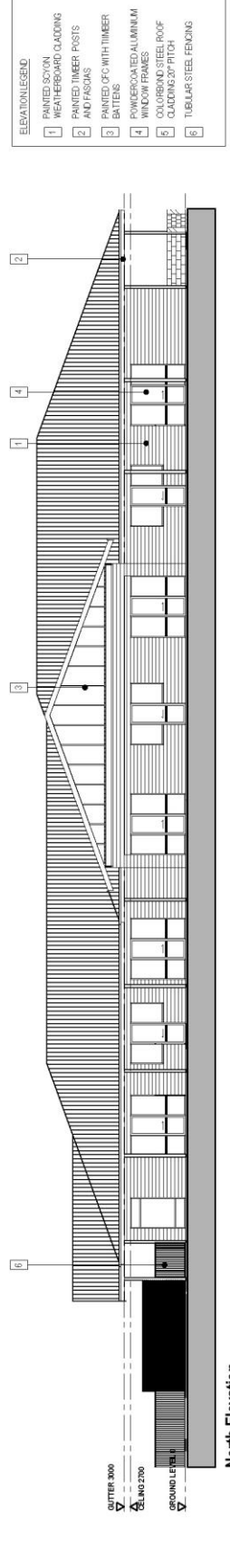
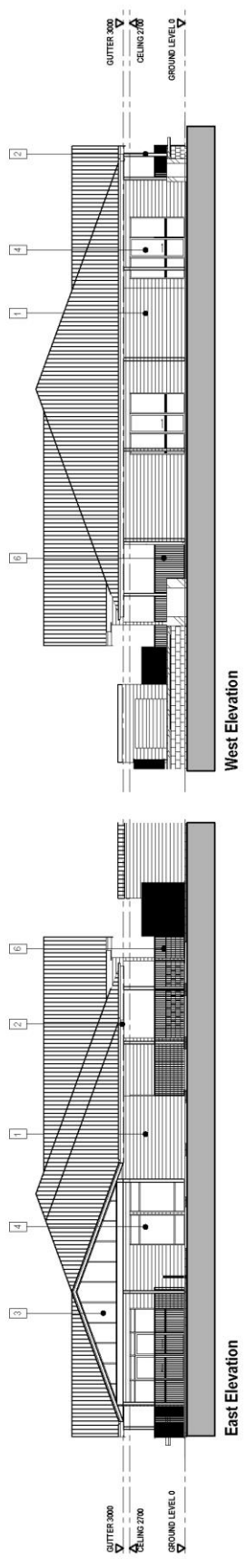
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94 PLACE CHILDCARE  
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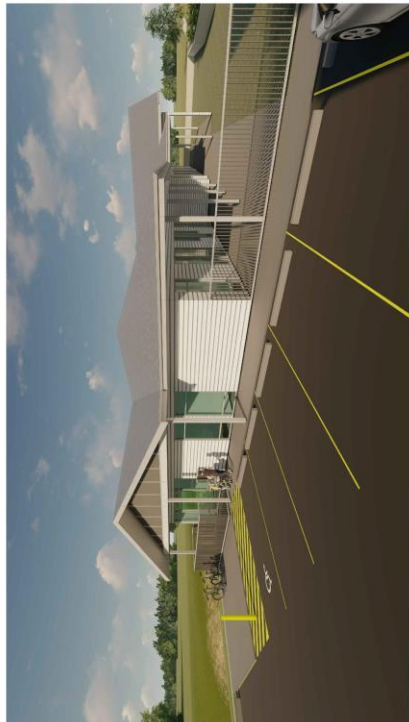


Elevations  
Scale: 1:200 @ A3

Job No: S183  
 Date: 25 October 2020

94 PLACE CHILDCARE  
 LOT 319-325 CASTLEMEAD DRY YANCHEP WA

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3d Views  
Scale: NTS



Job No: S193  
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94 PLACE CHILDCARE  
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