Mobil Oil Australia Pty Ltd
ABN 88 004 052 984
Level 9, 664 Collins Street
Docklands Victoria 3008
GPO Box 400
Melbourne Victoria 3001
61 3 9261 0000 Telephone

David Cooke
Managing Director
DCA Design
On behalf of Australia Light Foundation Inc

16th June 2025

Dear Mr Cooke,

Design Amendment - Proposed Child Care Centre - 291 Sunshine Rd, Tottenham - Australia Light Foundation Inc

I refer to your email dated 1 April 2025 seeking Mobil's response to the proposed design amendment.

Mobil does not object to the proposed design amendment provided that Mr Cann's latest Risk Assessment Report dated 12 March 2025 also forms part of the permit and your client otherwise continues to comply with all aspects of conditions 23 to 29 of the permit (which relates to the works near the Somerton Jet Pipeline).

This will require the following amendments to the existing permit:

1. Condition 23:

   The Risk Assessment Reports (RARs) of Mr Nigel Cann dated 16 September 2019 and 12 March 2025 that assess the health and safety risks to occupants of the development by reason of the development being within the pipeline measurement length of the Licensed Pipeline 118 ('PL118') form part of the permit.

2. Condition 26:

   Both storeys of the south west facing façade of the childcare centre shall be constructed from non-combustible materials, the south west-facing windows in the childcare centre shall be laminated with appropriate structural support to retain the glass in situ in the event of breakage and the roof of the childcare centre shall be constructed of non-combustible materials such as genuine Colorbond Klip Lok.

Please note that by incorporating the changes to conditions 23 and 26, your client will also need to prepare (by reason of condition 1d) updated plans that implement Mr Cann's recommendations for relocating the doorways from;

(a) Playroom 02 to outdoor play area 02 so that it is "as far away from the wall as practicable"; and

(b) Playroom 06 to outdoor play area 01 so that it is on "the north-east facing wall".

Can you please provide me with these amended plans in due course.

Please contact me if you require additional information or clarification of the above.

Regards,

Zohaib Iqbal
Integrity Engineer
29 Francis Street, Yarraville, VIC 3013
+61 3 9900 1807 zohaib.iqbal@exxonmobil.com

ARUP

Sky Park, One Melbourne Quarter
699 Collins Street
Docklands
VIC, 3008
Australia

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arup.com

By email
30 June 2025

Tim Hutchens
DCA Design

Your ref EMAIL 20250623
Our ref 30679200/NKC

291 Sunshine Road

Addressing Mobil Oil Provisions

Dear Mr Hutchins,

I have reviewed the provisions of Mobil's agreement not to object to the proposed childcare centre design amendment.

I can see no reason why you cannot agree to the amendments to conditions 23 and 26 that Mobil Proposes.

I have reviewed the amended drawings (Rev M) provided to me (and attached to this letter) and can confirm that:

a) The doorway between Playroom 02 and outdoor play area 02 has been moved as far away as practicable from the fire wall

b) The doorway between playroom 06 and outdoor play area 01 has been moved to the northeast facing wall

c) The drawings have been marked up with the requirement that southwest facing windows shall have "glass laminated appropriate structural support to retain the glass in situ in the event of breakage"

d) The drawings have been marked up with "walls to be constructed from non-combustible materials shown with red crosshatch" for the walls facing the southwest."

e) The drawings have been noted with the instruction that roof is to be constructed with non-combustible materials.

ARUP

Our ref:	30679200/NKC
Date	30 June 2025

I confirm that I am satisfied with these changes and that they meet the requirements of my Risk Assessment Report dated 12 March 2025. I can see no reason why you cannot agree to the amendments to conditions 23 and 26 that Mobil Proposes.

Yours sincerely

Nigel Cann
Professional Process Safety Engineer

d +61 9668 5516
m +61 411 166 087
e nigel.cann@arup.com

Enc Amended Drawings (rev M)

PROPOSED CHILDCARE CENTRE
291 SUNSHINE RD TOTTENHAM

-

SHEET NO.	SHEET NAME
CS000	COVER SHEET + STREET PERSPECTIVE
SA002	DESIGN RESPONSE
SA003	SITE PLAN CHILDCARE
TP101	PROPOSED FLOOR PLAN - L00
TP102	PROPOSED FLOOR PLAN - L01
TP103	PROPOSED ROOF PLAN
TP104	PROPOSED ELEVATIONS SHEET 1
TP105	PROPOSED ELEVATIONS SHEET 2
TP106	SHADOW DIAGRAMS

CHILDCARE CENTRE DESIGN PREPARED BY

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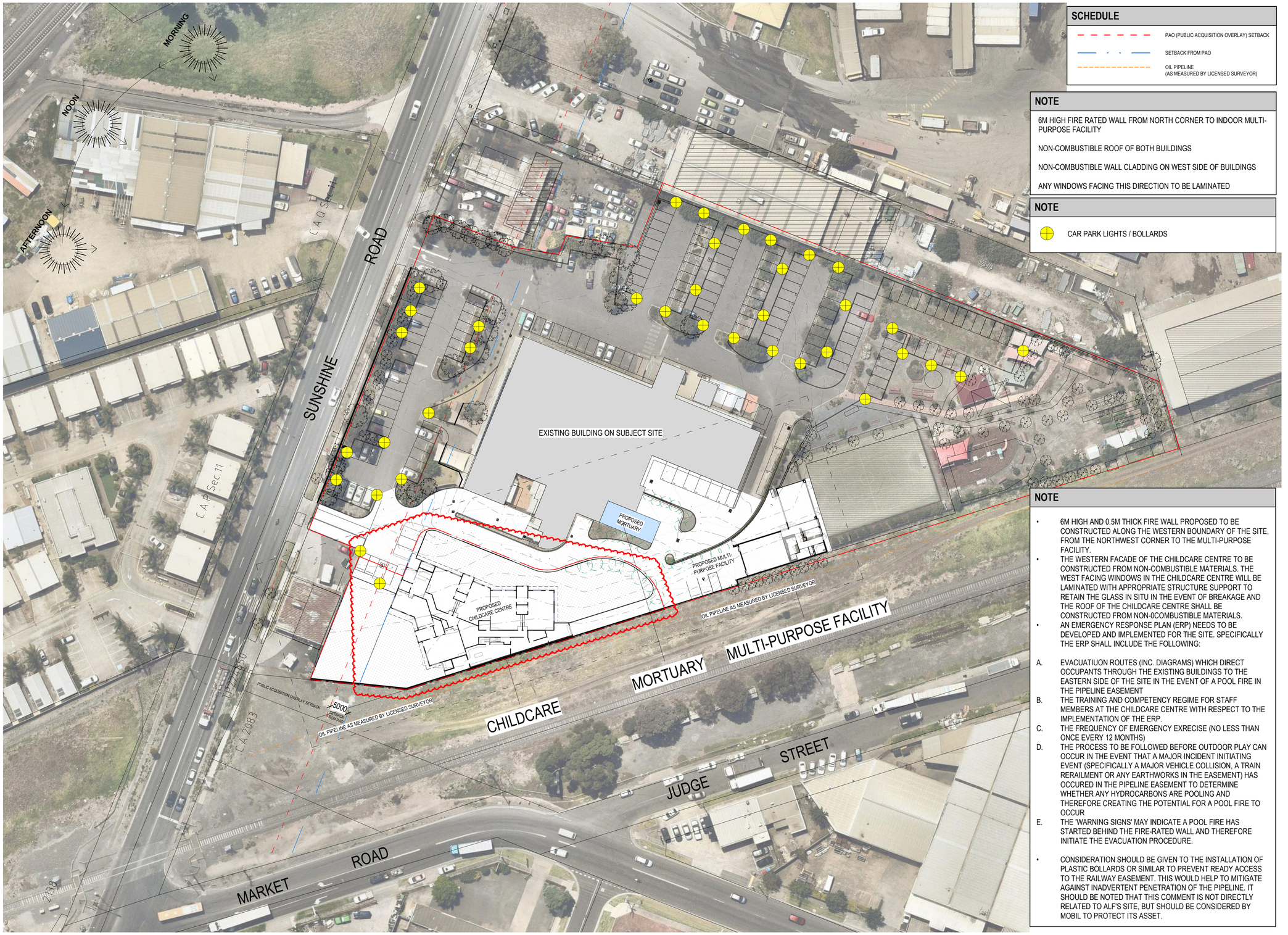
REV	DESCRIPTION	DRN	CHK	DATE
A	AMENDMENT APPLICATION	TH	DC	03.04.2025

PRELIMINARY

PROJECT	TITLE	DRAWN	SCALE	PLOT DATE	JOB No.
PROPOSED CHILDCARE CENTRE 291 SUNSHINE RD TOTTENHAM	COVER SHEET + STREET PERSPECTIVE	SS	@ A1	23/06/2025 10:46:29 AM	834

DWG No CS000 REVISION A



SCHEDULE

- PAO (PUBLIC ACQUISITION OVERLAY) SETBACK
- SETBACK FROM PAO
- OIL PIPELINE (AS MEASURED BY LICENSED SURVEYOR)

NOTE

6M HIGH FIRE RATED WALL FROM NORTH CORNER TO INDOOR MULTI-PURPOSE FACILITY

NON-COMBUSTIBLE ROOF OF BOTH BUILDINGS

NON-COMBUSTIBLE WALL CLADDING ON WEST SIDE OF BUILDINGS

ANY WINDOWS FACING THIS DIRECTION TO BE LAMINATED

NOTE

CAR PARK LIGHTS / BOLLARDS

NOTE

- 6M HIGH AND 0.5M THICK FIRE WALL PROPOSED TO BE CONSTRUCTED ALONG THE WESTERN BOUNDARY OF THE SITE, FROM THE NORTHWEST CORNER TO THE MULTI-PURPOSE FACILITY.
- THE WESTERN FACADE OF THE CHILDCARE CENTRE TO BE CONSTRUCTED FROM NON-COMBUSTIBLE MATERIALS. THE WEST FACING WINDOWS IN THE CHILDCARE CENTRE WILL BE LAMINATED WITH APPROPRIATE STRUCTURE SUPPORT TO RETAIN THE GLASS IN SITU IN THE EVENT OF BREAKAGE AND THE ROOF OF THE CHILDCARE CENTRE SHALL BE CONSTRUCTED FROM NON-0COMBUSTIBLE MATERIALS.
- AN EMERGENCY RESPONSE PLAN (ERP) NEEDS TO BE DEVELOPED AND IMPLEMENTED FOR THE SITE. SPECIFICALLY THE ERP SHALL INCLUDE THE FOLLOWING:

A. EVACUATIUON ROUTES (INC. DIAGRAMS) WHICH DIRECT OCCUPANTS THROUGH THE EXISTING BUILDINGS TO THE EASTERN SIDE OF THE SITE IN THE EVENT OF A POOL FIRE IN THE PIPELINE EASEMENT

B. THE TRAINING AND COMPETENCY REGIME FOR STAFF MEMBERS AT THE CHILDCARE CENTRE WITH RESPECT TO THE IMPLEMENTATION OF THE ERP.

C. THE FREQUENCY OF EMERGENCY EXRECISE (NO LESS THAN ONCE EVERY 12 MONTHS)

D. THE PROCESS TO BE FOLLOWED BEFORE OUTDOOR PLAY CAN OCCUR IN THE EVENT THAT A MAJOR INCIDENT INITIATING EVENT (SPECIFICALLY A MAJOR VEHICLE COLLISION, A TRAIN RERAILMENT OR ANY EARTHWORKS IN THE EASEMENT) HAS OCCURED IN THE PIPELINE EASEMENT TO DETERMINE WHETHER ANY HYDROCARBONS ARE POOLING AND THEREFORE CREATING THE POTENTIAL FOR A POOL FIRE TO OCCUR

E. THE 'WARNING SIGNS' MAY INDICATE A POOL FIRE HAS STARTED BEHIND THE FIRE-RATED WALL AND THEREFORE INITIATE THE EVACUATION PROCEDURE.

- CONSIDERATION SHOULD BE GIVEN TO THE INSTALLATION OF PLASTIC BOLLARDS OR SIMILAR TO PREVENT READY ACCESS TO THE RAILWAY EASEMENT. THIS WOULD HELP TO MITIGATE AGAINST INADVERTENT PENETRATION OF THE PIPELINE. IT SHOULD BE NOTED THAT THIS COMMENT IS NOT DIRECTLY RELATED TO ALF'S SITE, BUT SHOULD BE CONSIDERED BY MOBIL TO PROTECT ITS ASSET.

AREA ANALYSIS

MULTI-PURPOSE FACILITY BUILDING FOOTPRINT	297 m²

DESIGN RESPONSE

1. Approach to the centre easily and safe for arrival and departure of parents and children.
2. Safe and direct transfer of children from the car to the foothpath.
3. See through security fence with childproof opening deviceto the main entry.
4. Easy and direct access between indoor and sufficient outdoor play spaces.
5. Children's room located with direct access from each room to outdoor play areas.
6. Children's room directly accessible from corridor.
7. Outdoor space is enclosed by fence barrier.
8. Quality outdoor play space providing opportunities for children to explore and develop a relationship with the natural environment.
9. Staff and support facilities conveniently located to one another service areas with convenient access to the street.
10. Service yard in close proximity to the services.
11. Outdoor lighting must be designed, baffled and located to the satisfaction of the responsible authority such that no direct light emitted outside the boundaries of the subject land. Any security lighting is to be connected to a sensor so that illumination of the site is not continuos.
12. Car spaces and accessways are to be designed in accordance with clause 52.06-87 of planning scheme.
13. Disabled car parking spaces are to be provided in accoradnce with Australian Standard AS/NZS 2890.6:2009 with inclusion of the bollard and shared space.
14. A sign or signs must be provided to the satisfaction of the responsible authority to direct drivers to the on-site car parking area. Such sign(s) must be located in the vacinity of the frontage of the subject land and maintained to the satisfaction of the responsible authority. The sign(s) must not exceed 0.3m² in area.
15. All waste water generated onsite must comply with City West Water trade waster requirements before discharge to the reticulated sewerage system.
16. Risk report has been prepared and 6M high fire rated wall has been proposed as per consultants recommendations

AREA ANALYSIS

OVERALL SITE AREA	17725 m²	
CHILDARE CENTRE AREA	2293 m²	
OVERALL NUMBER OF CHILDREN	120	
TOTAL OUTDOOR AREA	938 m²	
PERMEABLE AREA	1282 m²	59.2%
IMPERVIOUS AREA	884 m²	40.8%

OUTDOOR PLAY AREA SCHEDULE

Outdoor Play Area No.	Level	No. of Children	Area
	CC - L00	<varies>	914 m²
	MPF - L00		24 m²

ROOM AREA SCHEDULE

Room No.	Clear Area	Age	No. of Children	Level
ROOM 1	56 m²	UNDER 3 YEARS	16	CC - L00
ROOM 2	68 m²	UNDER 3 YEARS	20	CC - L00
ROOM 3	69 m²	UNDER 3 YEARS	20	CC - L00
ROOM 4	68 m²	ABOVE 3 YEARS	20	CC - L00
ROOM 5	74 m²	ABOVE 3 YEARS	22	CC - L00
ROOM 6	73 m²	ABOVE 3 YEARS	22	CC - L00
ROOM 7	38 m²			MPF - L00
ROOM 2	81 m²			MPF - L00

PARKING ANALYSIS

TOTAL CAR SPACES	167
TOTAL BIKE SPACES	4

NOTE

CAVEAT THE LEVELS UNTIL ENGINEERING IS COMPLETE.

ROOM AREA:
Exclusive of : *Cot Room / Store / Toilet / Prep.area / Storage / Lockers*

OUTDOOR PLAY AREA:
Exclusive of : *Store Area*

NOTE

FOR ALL LANDSCAPE/OUTDOOR PLAY AREA REFER TOP LANDSCAPE CONSULTANT'S DRAWINGS

ALL GLAZING AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

SCREEN/FENCES MATERIALS AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

CHILDCARE CENTRE DESIGN PREPARED BY

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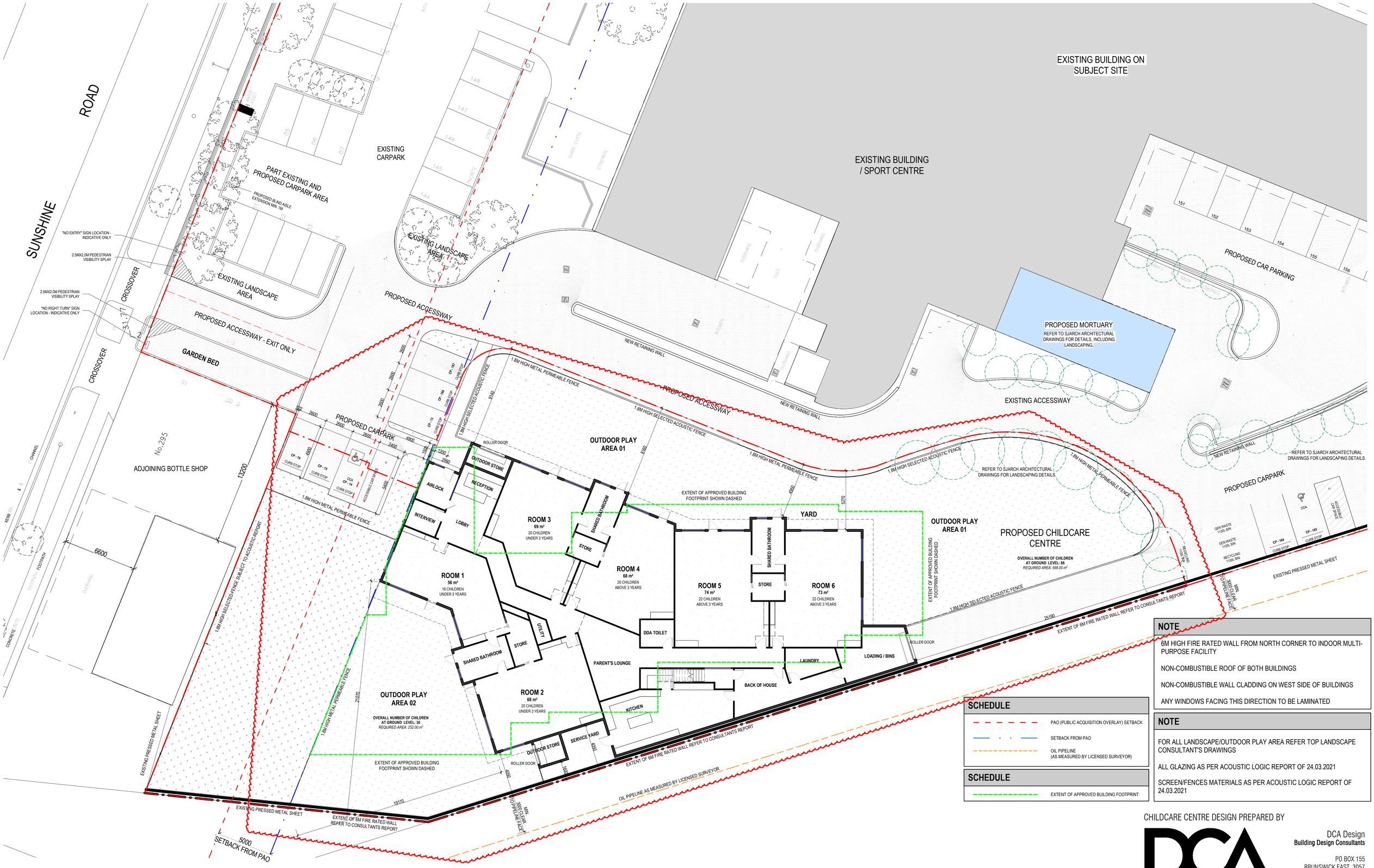
REV	DESCRIPTION	DRN	CHK	DATE
H	ISSUE FOR VICROADS	IC	SS	18.12.18
I	CHANGES PER CONDITION 1	IC	SS	11.01.2019
J	UPDATE ARCHITECTURAL DRAWINGS	IC	SS	17.09.2019
K	TOWN PLANNING	RL	SS	23.04.2021
L	SECONDARY CONSENT ISSUE – MORTUARY ADDITION	MN	MN	16.01.2025
M	AMENDMENT APPLICATION	TH	DC	03.04.2025

PRELIMINARY

PROJECT	TITLE	DRAWN	SCALE	PLOT DATE	JOB No.
PROPOSED CHILDCARE CENTRE 291 SUNSHINE RD TOTTENHAM	DESIGN RESPONSE	SS	As indicated @ A1		834

DWG No SA002 REVISION M



NOTE

6M HIGH FIRE RATED WALL FROM NORTH CORNER TO INDOOR MULTI-PURPOSE FACILITY

NON-COMBUSTIBLE ROOF OF BOTH BUILDINGS

NON-COMBUSTIBLE WALL CLADDING ON WEST SIDE OF BUILDINGS

ANY WINDOWS FACING THIS DIRECTION TO BE LAMINATED

SCHEDULE

- PAO (PUBLIC ACQUISITION OVERLAY) SETBACK
- SETBACK FROM PAO
- OIL PIPELINE (AS MEASURED BY LICENSED SURVEYOR)

SCHEDULE

- EXTENT OF APPROVED BUILDING FOOTPRINT

NOTE

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SCREEN/FENCES MATERIALS AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

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M	AMENDMENT APPLICATION	TH	DC	03.04.2025

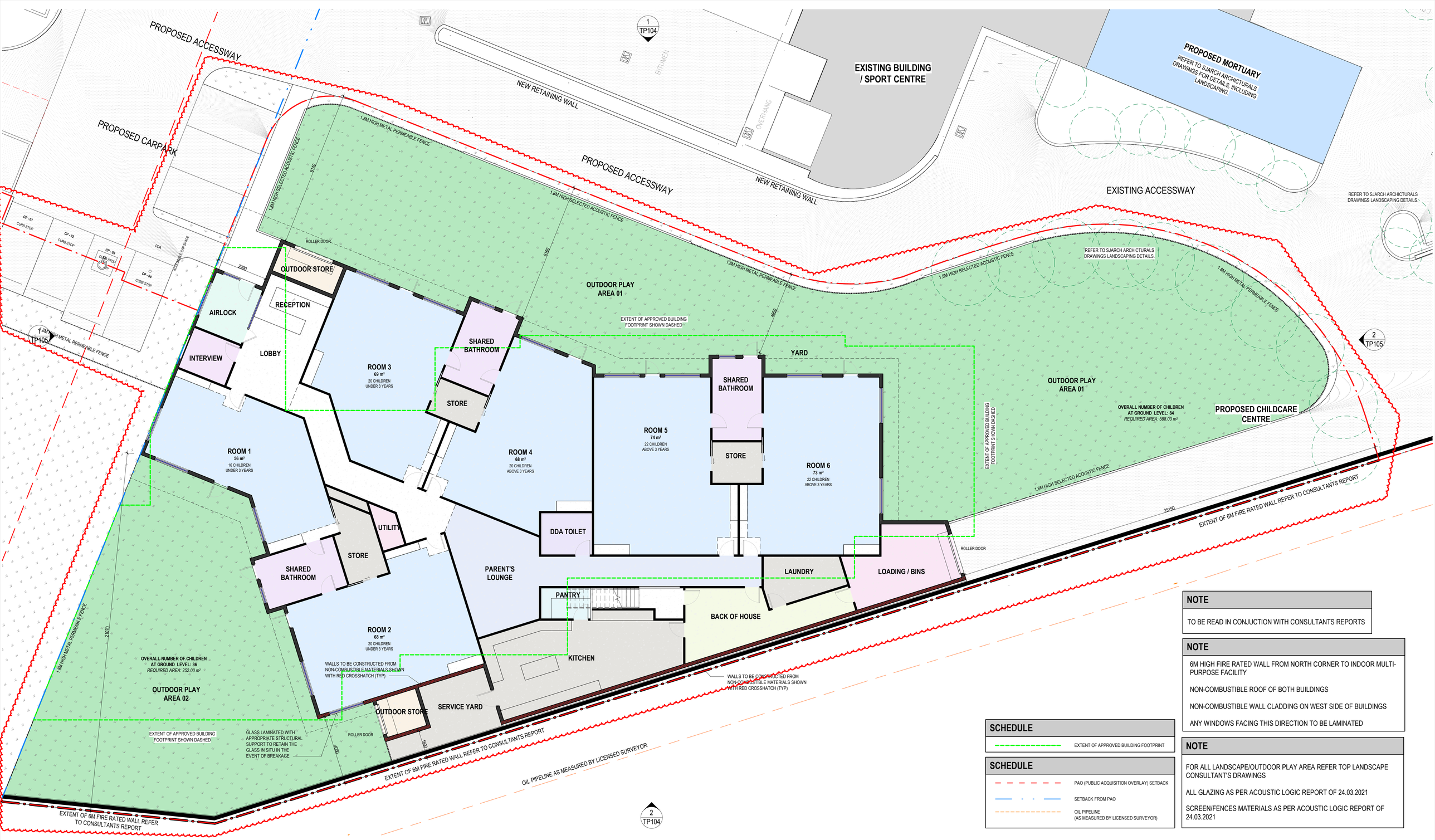
PRELIMINARY

PROJECT: PROPOSED CHILDCARE CENTRE
291 SUNSHINE RD TOTTENHAM

TITLE: SITE PLAN CHILDCARE

DRAWN: Author | SCALE: As indicated @ A1 | PLOT DATE: | JOB No.: 834

DWG No: SA003 | REVISION: M



SCHEDULE

EXTENT OF APPROVED BUILDING FOOTPRINT

SCHEDULE

PAO (PUBLIC ACQUISITION OVERLAY) SETBACK

SETBACK FROM PAO

OIL PIPELINE (AS MEASURED BY LICENSED SURVEYOR)

NOTE

TO BE READ IN CONJUCTION WITH CONSULTANTS REPORTS

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SCREEN/FENCES MATERIALS AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

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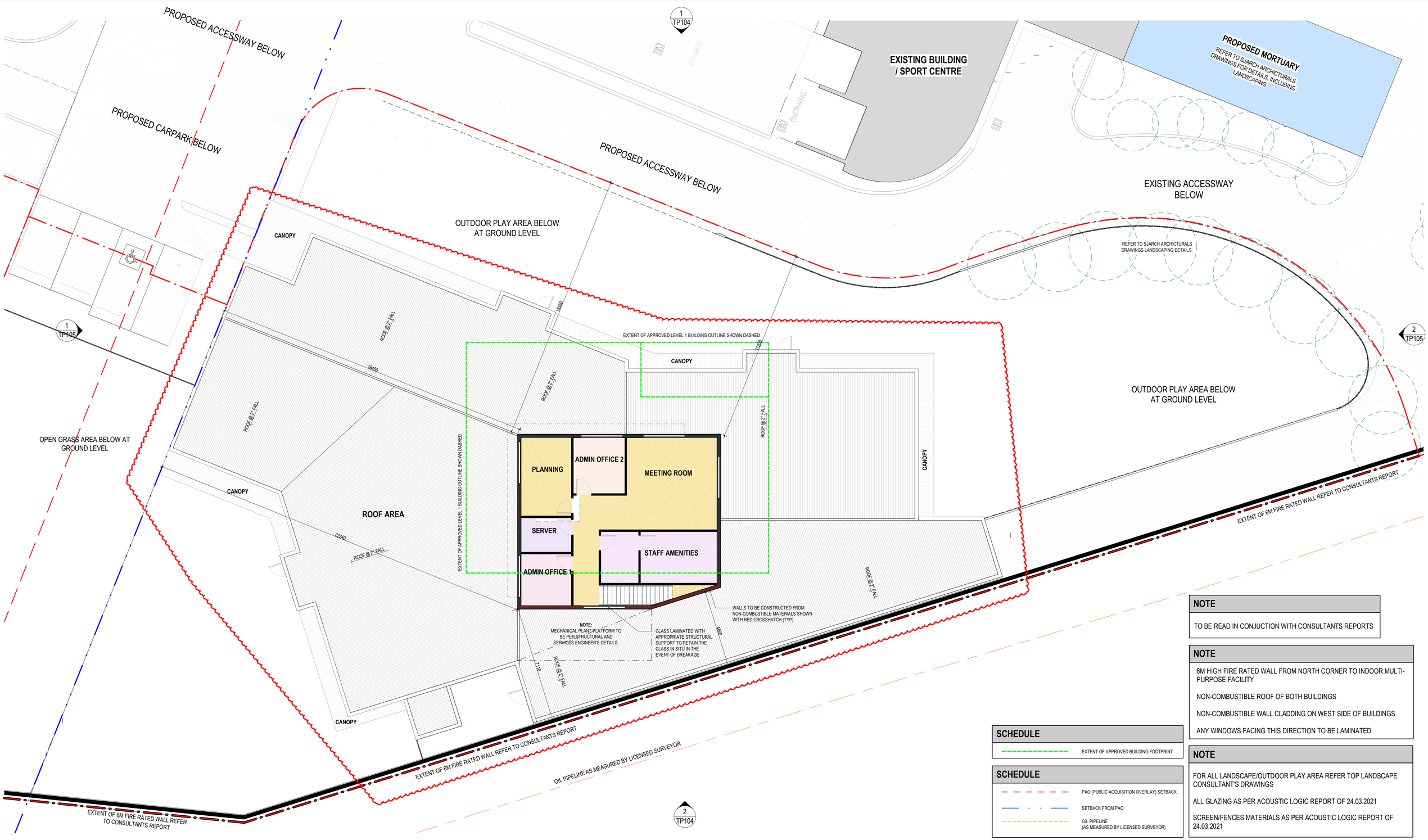
PRELIMINARY

PROJECT	TITLE	DRAWN	SCALE	PLOT DATE	JOB No.
PROPOSED CHILDCARE CENTRE 291 SUNSHINE RD TOTTENHAM	PROPOSED FLOOR PLAN - L00	SS	1 : 100 @ A1		834

DWG No TP101 REVISION M



NOTE

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SCREEN/FENCES MATERIALS AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

SCHEDULE

EXTENT OF APPROVED BUILDING FOOTPRINT

SCHEDULE

PAO (PUBLIC ACQUISITION OVERLAY) SETBACK

SETBACK FROM PAO

OIL PIPELINE (AS MEASURED BY LICENSED SURVEYOR)

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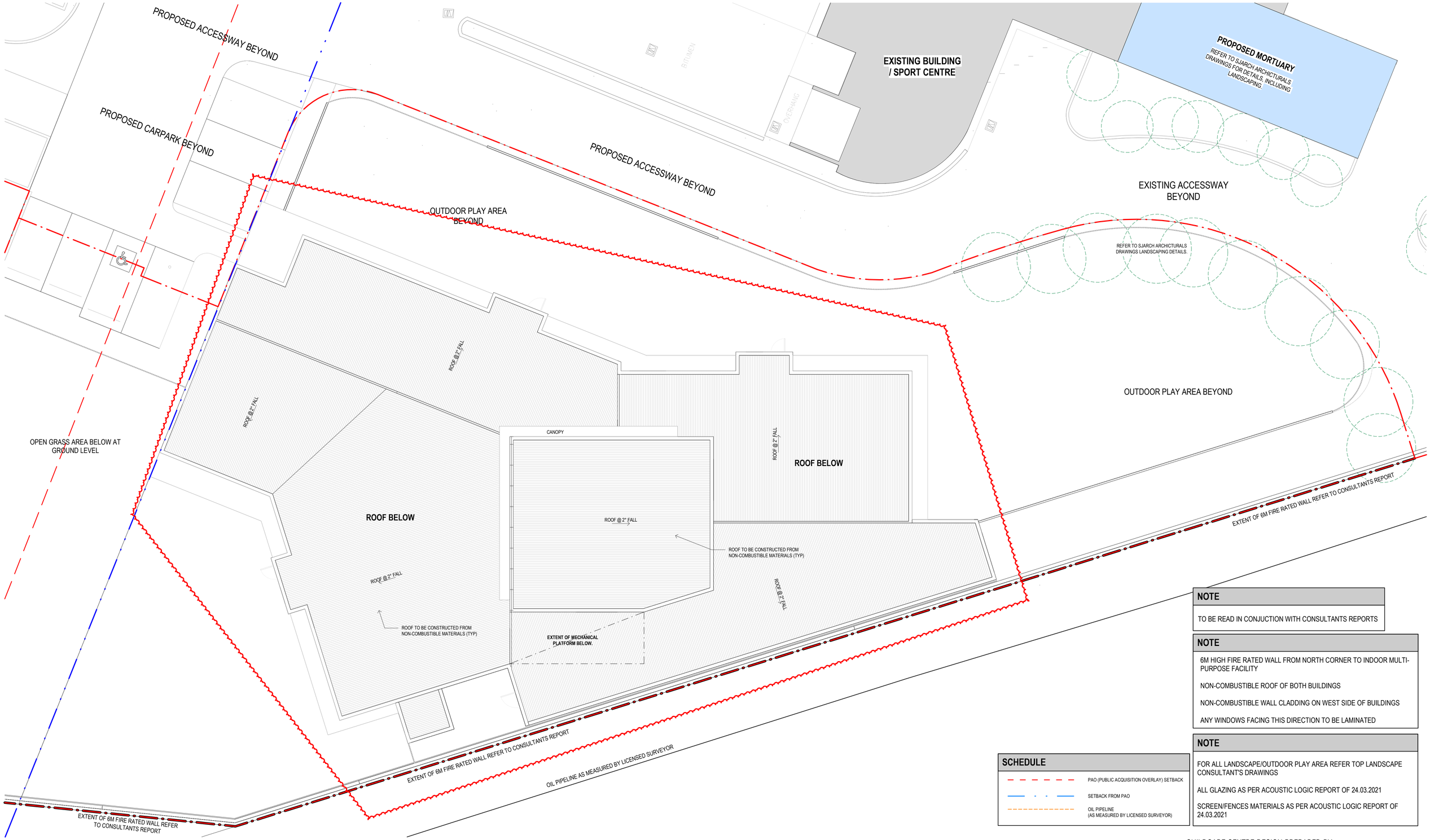
PRELIMINARY

PROJECT	TITLE	DRAWN	SCALE	PLOT DATE	JOB No.
PROPOSED CHILDCARE CENTRE 291 SUNSHINE RD TOTTENHAM	PROPOSED FLOOR PLAN - L01	SS	1 : 100 @ A1		834

DWG No TP102 REVISION M



NOTE

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SCREEN/FENCES MATERIALS AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

SCHEDULE

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- SETBACK FROM PAO
- OIL PIPELINE (AS MEASURED BY LICENSED SURVEYOR)

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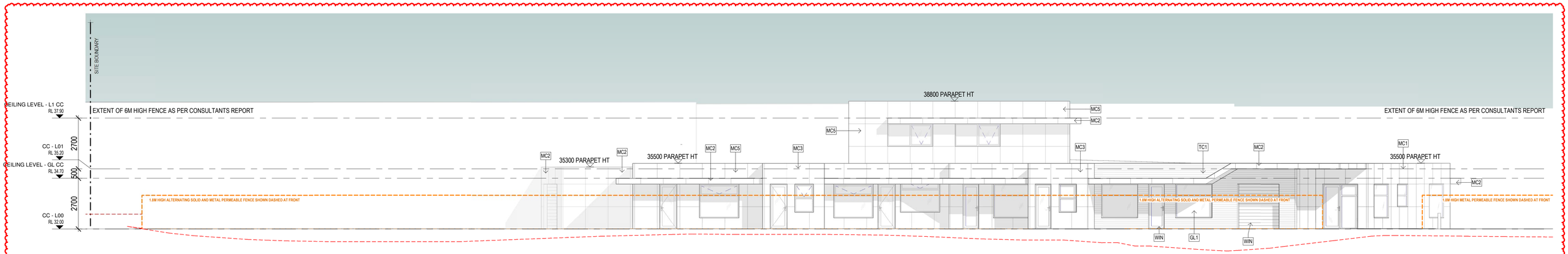
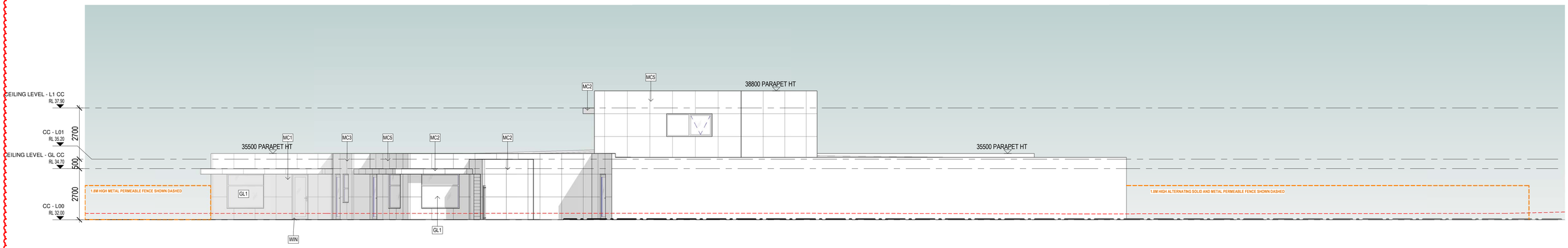
PRELIMINARY

PROJECT	TITLE	DRAWN	SCALE	PLOT DATE	JOB No.
PROPOSED CHILDCARE CENTRE 291 SUNSHINE RD TOTTENHAM	PROPOSED ROOF PLAN	SS	1 : 100 @ A1		834

DWG No TP103 REVISION M



1 TP104 ELEVATION EAST
SCALE 1 : 100



2 TP104 ELEVATION WEST
SCALE 1 : 100

MATERIAL SCHEDULE

TC1 **TIMBER LOOK CLADDING**
WITH VERTICAL EMPHASIS

MC1 **MATRIX CLADDING**
MULTI-COLOUR 'HIT AND MISS'

MC2 **MATRIX CLADDING**
DARK NAVY OR SIMILAR

MC3 **MATRIX CLADDING**
CREAM OR SIMILAR

MC4 **MATRIX CLADDING**
WINDSPRAY OR SIMILAR

MC5 **MATRIX CLADDING**
WHISPER WHITE OR SIMILAR

RF **ROOF SHEETIN FINISH**
COLOUR_COLORBOND MONUMENT OR SIMILAR

DP **ALL CAPPINGS, RAINWATERHEADS AND DOWNPIPES**
COLOUR_COLORBOND MONUMENT OR SIMILAR

WIN **ALUMINIUM WINDOW**
FRAME_BLACK

GL1 **GLAZED WINDOW 1**
FINISH_CLEAR

GL2 **GLAZED WINDOW 2**
TINT_BLACK

GL3 **COLOURED ACRYLIC**

REFERENCE IMAGES

REFERENCE IMAGES FOR FIRE WALL
MIX OF SOLID AND TRANSPARENT PANELS

NOTE

FOR ALL LANDSCAPE/OUTDOOR PLAY AREA REFER TOP LANDSCAPE CONSULTANT'S DRAWINGS

ALL GLAZING AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

SCREEN/FENCES MATERIALS AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

NOTE

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NON-COMBUSTIBLE ROOF OF BOTH BUILDINGS

NON-COMBUSTIBLE WALL CLADDING ON WEST SIDE OF BUILDINGS

ANY WINDOWS FACING THIS DIRECTION TO BE LAMINATED

NOTE

TO BE READ IN CONJUCTION WITH CONSULTANTS REPORTS

NOTE

------ NATURAL GROUND LEVEL

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0 1 5 10m

REV	DESCRIPTION	DRN	CHK	DATE
A	AMENDMENT APPLICATION	TH	DC	03.04.2025

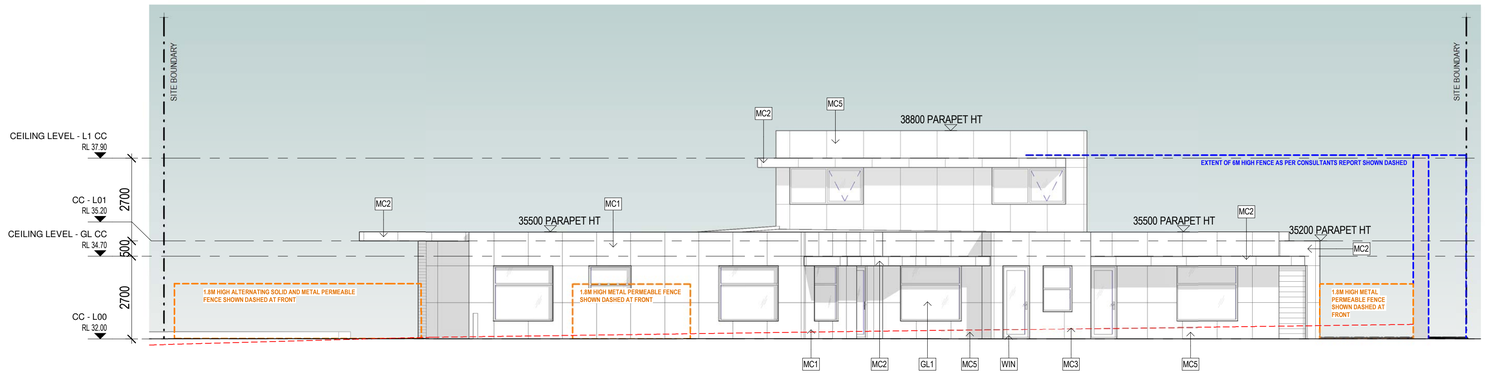
PRELIMINARY

PROJECT
PROPOSED CHILDCARE CENTRE
291 SUNSHINE RD TOTTENHAM

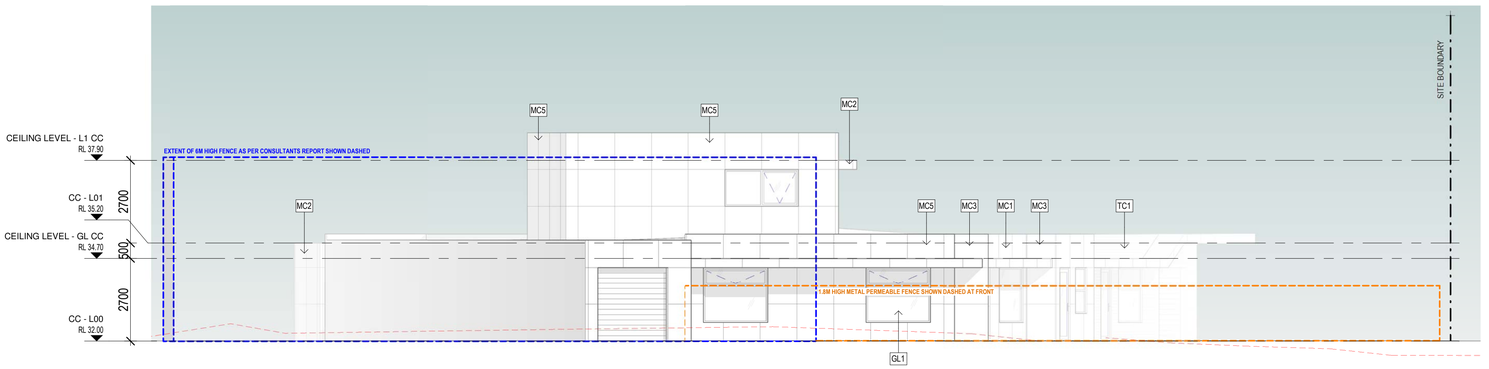
TITLE
PROPOSED ELEVATIONS
SHEET 1

DRAWN: SS
SCALE: 1 : 100 @ A1
PLOT DATE:
JOB No.: 834

DWG No: TP104
REVISION: A



1 TP105 ELEVATION NORTH
SCALE 1 : 100



2 TP105 ELEVATION SOUTH
SCALE 1 : 100

MATERIAL SCHEDULE

TC1 **TIMBER LOOK CLADDING**
WITH VERTICAL EMPHASIS

MC1 **MATRIX CLADDING**
MULTI-COLOUR 'HIT AND MISS'

MC2 **MATRIX CLADDING**
DARK NAVY OR SIMILAR

MC3 **MATRIX CLADDING**
CREAM OR SIMILAR

MC4 **MATRIX CLADDING**
WINDSPRAY OR SIMILAR

MC5 **MATRIX CLADDING**
WHISPER WHITE OR SIMILAR

RF **ROOF SHEETIN FINISH**
COLOUR_COLORBOND MONUMENT OR SIMILAR

DP **ALL CAPPINGS, RAINWATERHEADS AND DOWNPIPES**
COLOUR_COLORBOND MONUMENT OR SIMILAR

WIN **ALUMINIUM WINDOW**
FRAME_BLACK

GL1 **GLAZED WINDOW 1**
FINISH_CLEAR

GL2 **GLAZED WINDOW 2**
TINT_BLACK

GL3 **COLOURED ACRYLIC**

REFERENCE IMAGES

REFERENCE IMAGES FOR FIRE WALL
MIX OF SOLID AND TRANSPARENT PANELS

NOTE

FOR ALL LANDSCAPE/OUTDOOR PLAY AREA REFER TOP LANDSCAPE CONSULTANT'S DRAWINGS

ALL GLAZING AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

SCREEN/FENCES MATERIALS AS PER ACOUSTIC LOGIC REPORT OF 24.03.2021

NOTE

6M HIGH FIRE RATED WALL FROM NORTH CORNER TO INDOOR MULTI-PURPOSE FACILITY

NON-COMBUSTIBLE ROOF OF BOTH BUILDINGS

NON-COMBUSTIBLE WALL CLADDING ON WEST SIDE OF BUILDINGS

ANY WINDOWS FACING THIS DIRECTION TO BE LAMINATED

NOTE

TO BE READ IN CONJUCTION WITH CONSULTANTS REPORTS

NOTE

------ NATURAL GROUND LEVEL

CHILDCARE CENTRE DESIGN PREPARED BY

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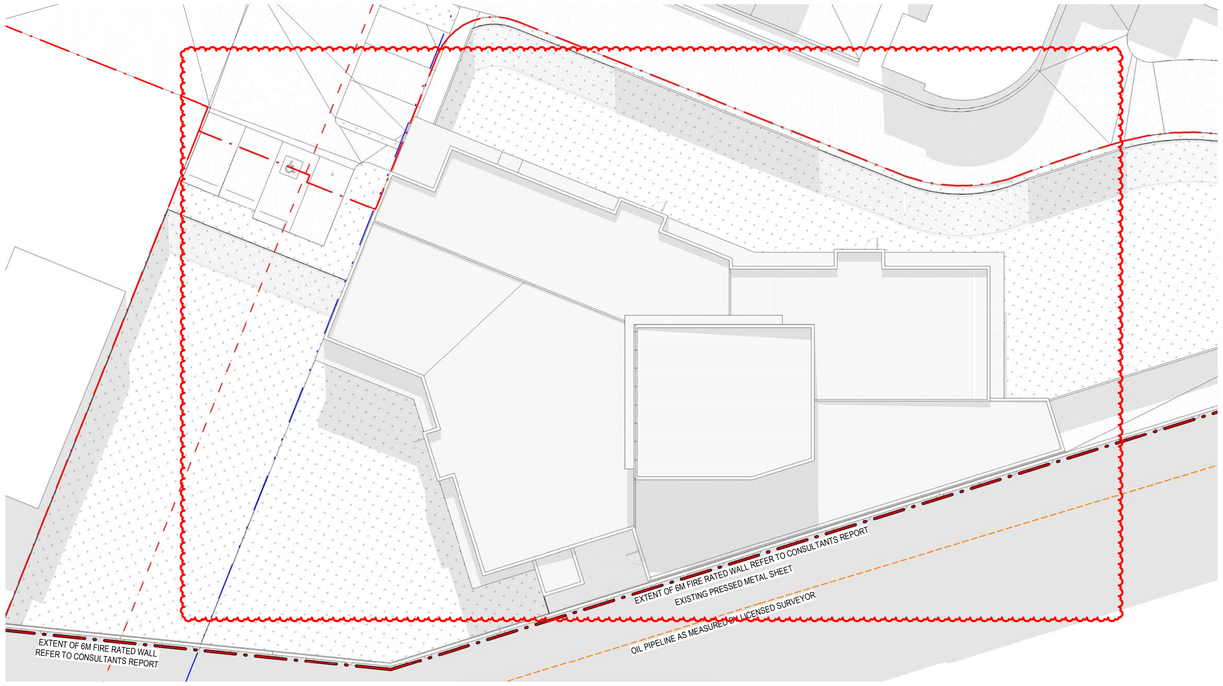
0 1 5 10m

REV	DESCRIPTION	DRN	CHK	DATE
A	AMENDMENT APPLICATION	TH	DC	03.04.2025

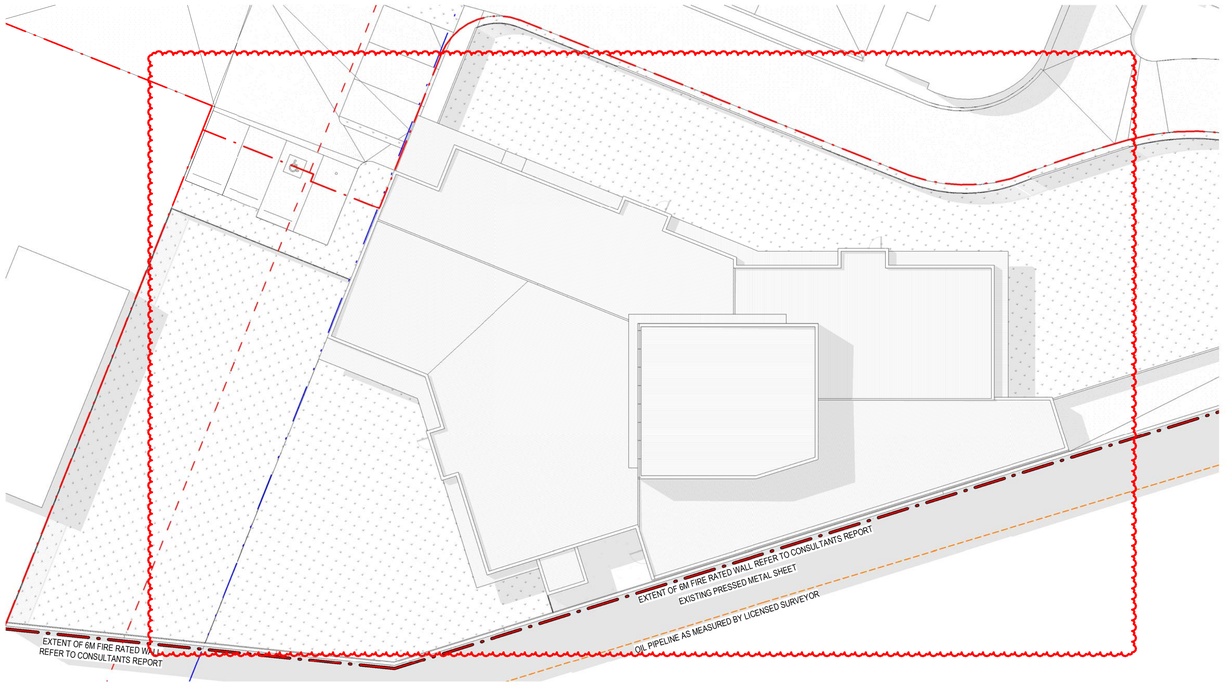
PRELIMINARY

PROJECT	TITLE	DRAWN	SCALE	PLOT DATE	JOB No.
PROPOSED CHILDCARE CENTRE 291 SUNSHINE RD TOTTENHAM	PROPOSED ELEVATIONS SHEET 2	SS	1 : 100 @ A1		834

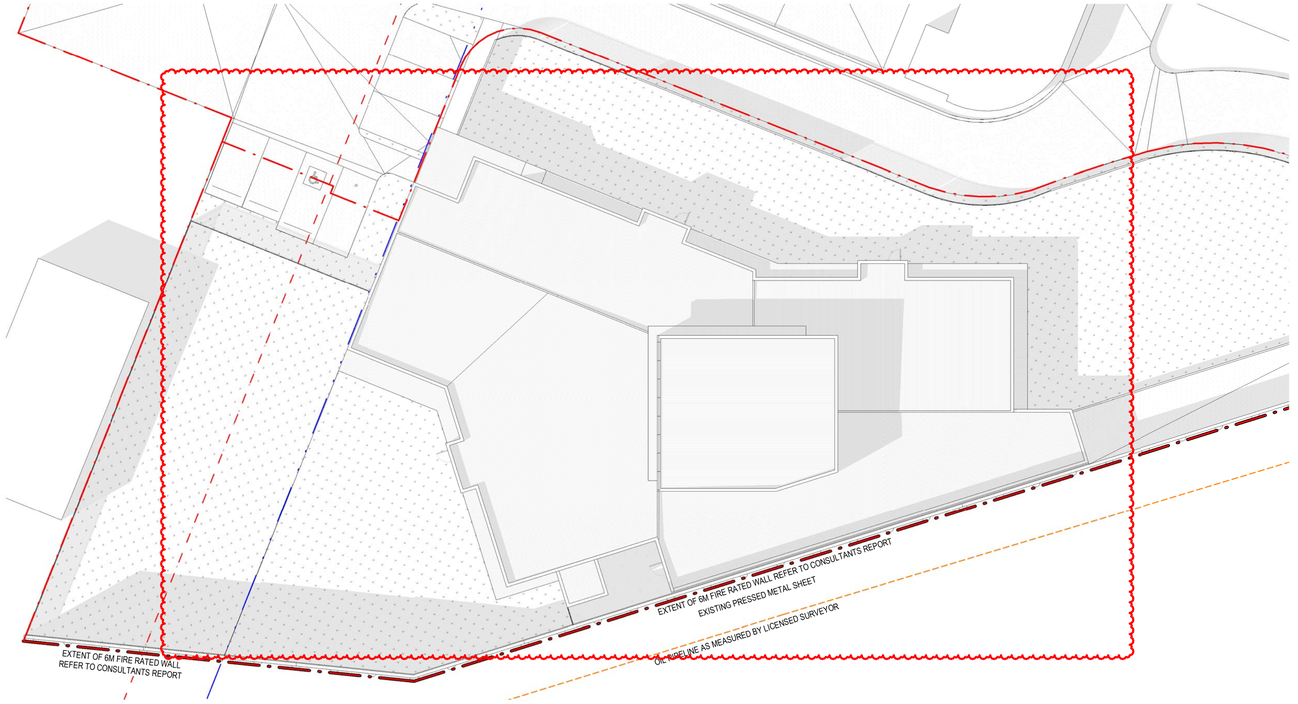
DWG No TP105 REVISION A



01 TP106 SHADOWS - 22 SEPTEMBER - 9AM
SCALE 1 : 200



02 TP106 SHADOWS - 22 SEPTEMBER - 12NOON
SCALE 1 : 200



03 TP106 SHADOWS - 22 SEPTEMBER - 3PM
SCALE 1 : 200

LEGEND
- TITLE BOUNDARY
- ADJOINING PROPERTIES

CHILDCARE CENTRE DESIGN PREPARED BY

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REV	DESCRIPTION	DRN	CHK	DATE
A	AMENDMENT APPLICATION	TH	DC	03.04.2025

PRELIMINARY

PROJECT: PROPOSED CHILDCARE CENTRE
291 SUNSHINE RD TOTTENHAM

TITLE: SHADOW DIAGRAMS

DRAWN: SS
SCALE: As indicated @ A1
PLOT DATE:
JOB No.: 834
DWG No: TP106
REVISION: A

ARUP

Australia Light Foundation

291 Sunshine Road

Pipeline Safety Risk Report

Reference: PSRR/30679200_01

Issue A | 12 March 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 306792-00

Arup Australia Pty Ltd | ABN 76 625 912 665

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ARUP

Document Verification

Project title	291 Sunshine Road
Document title	Pipeline Safety Risk Report
Job number	306792-00
Document ref	PSRR/30679200_01
File reference	30679200

Revision	Date				
Draft 1	28 February 2025	**Filename**	20250228 ALF Pipeline Safety Risk Report		
		Description	Revised Risk Assessment responding to building redesign for childcare centre at 291 Sunshine Road		
			Prepared by	**Checked by**	**Approved by**
		Name	Trung Le	Nigel Cann	Nigel Cann
		Signature			
Issue A	12 March 2025	**Filename**	20250312 ALF Pipeline Safety Risk Report		
		Description	Refined statements about fire rating of doors		
			Prepared by	**Checked by**	**Approved by**
		Name	Trung Lee	Nigel Cann	Nigel Cann
		Signature			
		Filename			
		Description			
			Prepared by	**Checked by**	**Approved by**
		Name			
		Signature			

Issue Document Verification with Document ☑

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Attachments

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Appendices

1. Executive Summary

DCA Design is preparing a modified design for the childcare centre planned for development at the Australia Light Foundation (ALF) located at 291 Sunshine Road, Tottenham. In accordance with the VCAT Ruling for P842/2019, any modification to the plans for the facility require the consent of the Responsible Authority. In order to obtain the consent, a revised pipeline safety risk report is required to assess the risks associated with the Mobil operated Somerton to Altona Licensed Pipeline PL118.

Arup has completed a revised study of the potential heat flux that could be produced from a large pool fire from a liquid hydrocarbon release from PL118. The assessment shows that the heat flux impacting the building and the play area spaces is less than the previous building design.

In addition, robust rail fencing has been erected forming a barrier to uncontrolled heavy vehicles entering the rail easement area, reducing the risk of an incident that could damage the pipeline.

On the condition that the following recommendations are implemented, the modified building design by DCA for the childcare centre at 291 Sunshine Rd, Tottenham is deemed appropriate.

I. Both stories of the south west facing façade of the childcare centre shall be constructed from non-combustible materials, the south west-facing windows in the childcare centre shall be laminated with appropriate structural support to retain the glass in situ in the event of breakage and the roof of the childcare centre shall be constructed of non-combustible materials such as genuine Colorbond Klip Lok as specified in the existing plans.

II. The doorways leading to outdoor play area 2 are outside the predicted worst case radiation modelling zone with the fire wall in situ, it is however recommended that the doorway to playroom 02 is moved to the opposite side, as far away from the fire wall as practicable. Similarly, the doorway from playroom 06 to outdoor play area 01 is recommended to be moved to the north-east facing wall. No fire rating for the doors is required.

III. An emergency response plan (ERP) needs to be developed and implemented for the site. Specifically, the ERP shall include the following:

a. Evacuation routes (including evacuation diagrams) which direct people in play area 1 and occupants through the existing buildings to the eastern side of the Site in the event of a pool fire in the pipeline easement;

b. The training and competency regime for staff members at the childcare facility with respect to the implementation of the ERP;

c. The frequency of emergency exercises (no less than once every twelve months);

d. The process to be followed before outdoor play can occur in the event that a major incident initiating event (specifically, a major vehicle collision, a train derailment or any earthworks in the easement) has occurred in the pipeline easement. This process would primarily consist of a visual inspection of the easement to determine whether any hydrocarbons are pooling and therefore creating the potential for a pool fire to occur

e. The “warning signs” that may indicate a pool fire has started behind the fire-rated wall, and therefore initiate the evacuation procedure.

2. Introduction

Nigel Keith Cann of Sky Park, One Melbourne Quarter, 699 Collins Street, Docklands, Victoria 3008, a Professional Process Safety Engineer and Risk Consultant, employed by Arup Australia Pty Ltd has been previously engaged by Australia Light Foundation to prepare an Expert Witness Statement for the development of a child care facility at 291 Sunshine Road, Tottenham. However, due to the COVID-19 pandemic causing delays and that the previously approved design included regulatory and operational features that were problematic, a redesign has been proposed.

It is Arup's understanding that DCA Design is preparing a modified design for the childcare centre planned for development at the Australia Light Foundation (ALF) located at 291 Sunshine Road, Tottenham. In accordance with the VCAT Ruling for P842/2019, any modification to the plans for the facility require the consent of the Responsible Authority. In order to obtain the consent, a revised pipeline safety risk report is required to assess the risks associated with the Mobil operated Somerton to Altona Licensed Pipeline PL118. This is that report.

2.1 The Site

The site of the proposed childcare facility is to the west of the existing buildings on the Australia Light Foundation site at 291 Sunshine Road, Tottenham ("The Site"). The site is bounded to the north by Sunshine Road and to the west by a freight railway line. Within this easement the Somerton to Altona Licensed Pipeline (hereinafter referred to as PL118) runs parallel to the rail line and with its centre line approximately 3 m from the west boundary of the Site.

2.2 Pipeline PL118

Pipeline PL118 is located along the west boundary, which is located in the rail reserve land. The pipeline has the following features [1]:

- Maximum Allowable Operating Pressure: 5,171 kPa
- Contents: Liquid hydrocarbons
- Nominal diameter: 350 mm (approximately)
- Overall length: 33.5 km (approximately)

Section 2 of the Australian Standard AS 2885.1-2012 Pipelines – Gas and liquid petroleum Part 1: Design and construction [2], requires that a safety management process is followed on an ongoing basis over the life of a pipeline to reduce risk to as low as reasonably practicable (ALARP)

2.3 Previous Report

Previously a Statement of Evidence Report was prepared in September 2019 by Arup where:

- A review of the relevant documentation including the planning drawings, VCAT statement of grounds, and related planning and submission documents
- A review of information provided by Mobil that Arup requested;
- A site visit that included:
    - Walking the length of PL118 along the boundary of 291 Sunshine Road and north of Sunshine Road to the confined space pit
    - Driving around the streets in the immediate area.
- Consequence modelling of pool fires from PL118

- A review of rail incidents impacting hydrocarbon pipelines.

Using this information, a report detailing impact contours of the hazard events on a site overlay and provided risk mitigation measure that can be implemented relating to the structure and fence was prepared.

It was concluded that the proposal for the development of the childcare centre at 291 Sunshine Rd, Tottenham is appropriate, on the condition that the four recommendations in section 9 of the previous expert witness statement are followed.

Additionally, the architectural drawing pack (issued 17 September 2019) by Rev J was viewed. Recommendations were made regarding construction materials and fire rating, and it was concluded that that these drawings are an accurate reflection of the specifications made in the previous document.

2.4 VCAT Ruling

Previously:

- Mobil Oil Australia Pty Ltd is the Applicant in respect to the proceeding P842/2019 seeking a review of the decision by Maribyrnong City Council to amend a planning permit in application number TP232/2004(2). Mobil opposes the issue of an amended permit.
- The amendment to the existing permit (which allows place of worship, place of assembly and car parking reduction) is to allow the construction of a building and use of the land for a Childcare Centre, construction of a building and use of the land for an Indoor Recreation Facility and alteration to a Road Zone Category 1 (Sunshine Road) and is subject to a number of conditions including the preparation of a Risk Management Report.
- The intention of seeking the amendment to the existing permit is to allow the building of a childcare facility as part of the building infrastructure of the Australia Light Foundation (ALF)

However, this ruling was on the provisional condition that the design was built to specifications and not altered as mentioned previously.

2.5 Revised Child Care Centre Concept Design

The previously proposed development was to be located between the existing multipurpose building western wall and the fence line on the western boundary of the Site. The childcare centre will be located to the northwestern corner of the site and the indoor multipurpose facility a little further south.

The location remains the same, but the revised design now has the southern wall of the building sitting flush with the firefall. The new design has a smaller footprint with a total of 833.60 m^2 compared to the previous 1076.49 m^2 which can be largely attributed to the reduction in the first-floor facilities.

The new design improves the operational logistics by replacing a play-area, moving the back of house facilities to southern boarder which allows for access from the rear driveway which can be seen in Figure 2.1 below.

Figure 2-1: Revised design with previous design in red outline

This design has new implications in the case of a pipeline leak:

The previous area of concern was the play-area between the firewall and southern boarder of the childcare centre which formed a corridor but as the new design removes this area with back of house facilities pushing the building up to the wall, this eliminates the scenario where exposure is most significant as this area was previously closest to the wall where radiation experienced was significant. This will be further discussed in section 4 regarding consequence modelling.

- The south-western section of the facility however now has a play-area which extends to the boarder of the firewall which increases the proximity of the potential pool-fire

2.6 Firewall Design

The previous report conducted recommended the construction of a 6m tall concrete fire-rated wall along the western boundary of the Site to shield any occupants of the outdoor area from radiation emanating from a potential pool fire, providing sufficient time for evacuation.

This design is to at minimum to achieve the FRL in accordance with AS 3600 and meet a minimum Fire Resistance Level (FRL) of 60/60/60 as specified in AS 1530.4.

This rating provides at minimum 60 minutes for occupants to evacuate in case of emergency.

The concept design drawings have been attached in Appendix B

3. Pipeline Hazards and Risks

3.1 Historical Events

Pipelines that carry flammable and combustible fluids present a hazard to members of society when they fail. Whilst there have been few incidents in Australia, recent incidents overseas such as the San Bruno accident in northern California (2010) and the Marshall accident in Michigan (also 2010) highlight that severe consequences including fatalities to the public and major environmental impacts, can occur, particularly when the failure occurs in an urban environment.

3.1.1 Pacific Gas and Electric Co, San Bruno

On 9 September 2010, a gas pipeline explosion and fire occurred in San Bruno, California. It took 60 to 90 minutes to shut off the gas after the explosion, and the fire burned for several hours after the explosion. The incident caused eight fatalities and numerous injuries. The pipeline was a large 30-inch (76 cm) steel pipe and owned by Pacific Gas and Electric Co (PG&E). It was installed in 1956, and had a history of failed seams, which was also the cause of this incident [3].

Due to its history of failed welds, federal law required the pipeline to be checked for detection of similar failures by pumping it full of water at high pressure. PG&E chose not to do this, instead using another method that only detected corrosion but not bad seams. Investigations after the incidents found that there were numerous other defective welds along the pipeline. PG&E increased the pressure in the pipeline to meet growing energy demands and as a result, the defective welds weakened leading to failure. PG&E was fined $1.6b in 2015.

3.1.2 Enbridge, Talmadge Creek

On 25 July 2010, a heavy crude oil pipeline ruptured and spilled into Talmadge Creek in Michigan. Approximately 3,800 m^3 of oil was released. It was found that Enbridge (the pipeline operator) was notified of the breach but continued to pump oil for a further 17 hours. The clean-up took more than two years, costing more than $767m. The cause of the rupture was determined to be corrosion fatigue. There was a flaw in polyethylene tape coating which caused the pipe to crack and corrode. Enbridge was aware of this defect but did not act in response [3].

3.1.3 Calnev Pipe Line Company, San Bernadino

On 12 May 1989, a Southern Pacific Transportation Company freight train derailed in San Bernardino, California. The entire train was destroyed because of the derailment. 13 days later, on 25 May, the 14-inch pipeline owned by the Calnev Pipe Line Company (transporting gasoline and was located under the wreckage), ruptured at the site of the derailment, releasing gasoline which ignited. As a direct result, 2 were killed and 23 injured. 11 homes in the neighbourhood were destroyed, in addition to 21 motor vehicles destroyed [4].

The National Transportation Safety Board determined that the probable cause of the pipeline rupture was inadequate testing and inspection of the pipeline following the derailment (excavation and hydrostatic testing did not occur across the entire area of derailment) that failed to detect damage to the pipe by earth-moving equipment. Contributing to the cause of the pipeline rupture was the severity of the train derailment that resulted in extensive wreckage and commodity removal operations.

3.2 Victoria Pipeline Regulations and AS 2885

In Victoria, pipelines are regulated by the Pipeline Regulations 2017 S.R. No. 9/2017 [2]. The Pipeline Regulations require that Safety Management Plans are prepared in accordance with the suite of Australian standards that make up AS 2885.

For gas and liquid pipelines there is a zone of heightened threats to pipeline integrity and risks to people, property and the environment. This zone is called the "measurement length" and is defined in AS 2885.1 as the radius of the 4.7 kW/m^2 radiation contour for a full-bore rupture of the pipeline. For a liquid hydrocarbon line this can be a variable distance as "the 4.7 kW/m^2 contour may follow topographic features as the spilled fluid flows away under the influence of gravity and the variable topography". Mobil has provided information that the measurement length for PL118 is 200 m [5]. This information is consistent with information received previously with matters associated with PL118.

Mobil had suggested that a measurement length of 200 m may apply at various locations along the 33.5 km of the pipeline [1] where the local topography would allow a pool to form some considerable distance from the pipe centreline. In the vicinity of 291 Sunshine Road the major part of the pool will move towards the rail line and pool in that vicinity. Therefore, the measurement length at this location would likely be less than 50 m.

3.2.1 Classification of Locations

Section 4.3 of AS 2885.1 provides requirements regarding the classification of locations for pipelines. The main points to note are:

a. The classification for the pipeline is to reflect the threats to the pipeline integrity and the risks to people, property and the environment.

b. The primary location class is to reflect the population density along the pipeline, which includes residents and other people who may spend prolonged periods near the pipeline (e.g. work, recreation).

c. The secondary location class (if appropriate) is to reflect any special land uses along the pipeline.

For new pipelines, the location class is determined using permissible land uses in planning document, taking into account anticipated land uses.

For existing pipelines, the location class is determined using the current land use and authorised developments along the pipeline, but does not need to take full account of planned (but not implemented) land uses.

The measurement length is the radius of the 4.7 kW/m^2 radiation contour for a full-bore rupture of the pipeline.

Relevant to this matter are the following location classes:

a. Primary location class T1 (residential) – land that is developed for community living, which may include high density if it is not more than 10% of the land use. b.

b. Secondary location class S (sensitive use) – land where the consequences of a failure may be increased due to the inability of sensitive populations who may not be able to protect themselves from a pipeline failure. This includes schools, hospitals, aged care facilities and prisons. The sensitive use location class is assigned where there is a sensitive development within the measurement length.

Mobil has indicated that the existing location classification for the pipeline in the vicinity of 291 Sunshine Road is T1. They have also indicated that locating a childcare centre within the measurement length of PL118 would add the additional secondary location class of sensitive (S) [5].

Arup agrees with Mobil that the existing location classification of T1 is appropriate and that the addition of the childcare centre will add an additional secondary location class of S.

This does not change due to the proposed changes in the childcare centre building design proposed by DCA that appears in Appendix B.

3.2.2 High Consequence Areas

Section 4.7 in AS 2885.1 provides requirements regarding the special provisions for high consequence areas. It sets the minimum requirements for compliance in high consequence areas. The main points to note are:

For classes T1 (residential) and S (sensitive use), the pipeline shall be designed so that rupture is not a credible failure mode. Section 4.7.2 of AS 2885.1 provides more details on how this can be achieved.

For liquid fuel pipelines it is the environmental consequences that will tend to dominate relative to the consequences of ignition of the fluids for releases from a gas pipeline.

The information prepared by GHD as part of the Master Plan changes for Newport Village has been previously reviewed in the last report. [6]. Of relevance to this report is Appendix F, Pipeline Calculation Information, which follows the requirements of AS 2885.1 for PL118. These calculations were relied upon as Mobil had confirmed by email correspondence that they broadly agree with this study and that it does apply to the section of the pipeline adjacent to 291 Sunshine Road, Tottenham [7].

These calculations show that excavators with a greater than 30 T capacity with twin tiger teeth are capable of puncturing the pipe wall with a hole size that is greater than the critical defect length. This will cause a rupture according to the definitions of AS 2885.1-2012 (see AS 2885.1 section 4.7.2).

3.2.3 External Interference Protection

Section 5.5 in AS2885.1 provides requirements regarding the external interference protection. The main points to note are:

a. The pipeline should be designed so that multiple independent physical and procedural controls are implemented to prevent failure from external interference by identified threats.

b. Physical controls aim to prevent pipeline failure by physically preventing contact with the pipe or by providing adequate resistance to pipe penetration. These include separation (burial, exclusion, barrier) and resistance to penetration (wall thickness, barrier to penetration).

c. Procedural controls aim to minimise the likelihood of external interference activities occurring without the knowledge of the pipeline operator and to maximise the likelihood of people undertaking the external interference activities being aware of the pipeline and the consequences of pipeline damage. These include pipeline awareness and external interference detection.

d. Section 7.5 of AS2885.3 provides more details on external interference controls.

e. For location class T1 (residential), a minimum of two physical controls and two procedural controls shall be implemented (section 5.5.4(b)).

f. The minimum depth of cover for buried liquid pipelines with natural excavation is 900mm for location class T1 (residential), or 600mm for rock excavation. In addition, for pipelines in a railway reserve running parallel to the rails the minimum depth should be 1200mm, 2000mm below the top of the rails and 10000mm laterally from the rails as per Figure 5.8.8(A) of AS2885.1.

g. It was found that drawing L-11-023 shows that the minimum cover is 1400mm for PL118 in the vicinity of 291 Sunshine road and it meets the minimum depth requirement of Figure 5.8.8(A). Although it is not specifically dimensioned it is more than likely that PL118 is positioned more than 10m from the rail line based on comparison with dimensions that are provided.

h. A second physical barrier is required. As mentioned in section 3.2.2, there is not sufficient penetration resistance in T118 pipeline to resist a large 30 T excavator with tiger teeth leading to a full-bore rupture. Consideration is required of some of the items listed and penetration barriers as listed in section 5.5.5 of AS2885.1. These are:

i. Pipe replacement;

    i. Pipeline relocation;

    ii. Concrete slabs;

iii. Concrete encasement;

iv. Concrete coating;

v. Separating by exclusion; or

vi. Separation by barriers.

4. Consequence Modelling

4.1 Potential Major Incident Scenarios

As PL118 carries liquid hydrocarbons with relatively low volatility, hazard scenarios such as jet fires and vapour cloud explosions (VCEs) are not credible.

The only plausible fire scenario as a result of a loss of containment is a liquid pool fire.

In the event of a catastrophic pipeline rupture, there is the potential for a pool of liquid hydrocarbon to form at the surface. If an ignition source is present, a pool fire could result.

The low point of the pipeline easement is shown in Figure 4.1. The Google Street View image for Sunshine Road was evidently taken shortly after rain had fallen; water accumulated on the western side of the easement, closer to the railway and further from the Site.

Figure 4-1: Google Street View image from December 2017 showing where a liquid pool can form in the pipeline easement

This phenomenon was also evident during a site visit on Friday 6 September 2019.

Following heavy rainfall over the previous days, the western side of the easement was muddy while the eastern side was drier.

A follow up site visit was conducted in January 2025 which reconfirmed the easement and contour of the land was still present at the same location.

On this basis, the conclusion was that, should a liquid hydrocarbon pool form in the pipeline easement, it would be on the western side, along the railway tracks.

4.2 Pool Fire

Mobil has indicated that a 10 m diameter pool is a reasonable basis for consequence modelling [6].

It is therefore assumed that a 10 m diameter pool could form anywhere along the railway easement and used this as the basis of consequence modelling performed herein.

The centre of the 10 m pool is approximately 16 m from the Site fence line at its nearest point and approximately 26 m from the Site fence line at its furthest point. This is shown in Figure 4.2

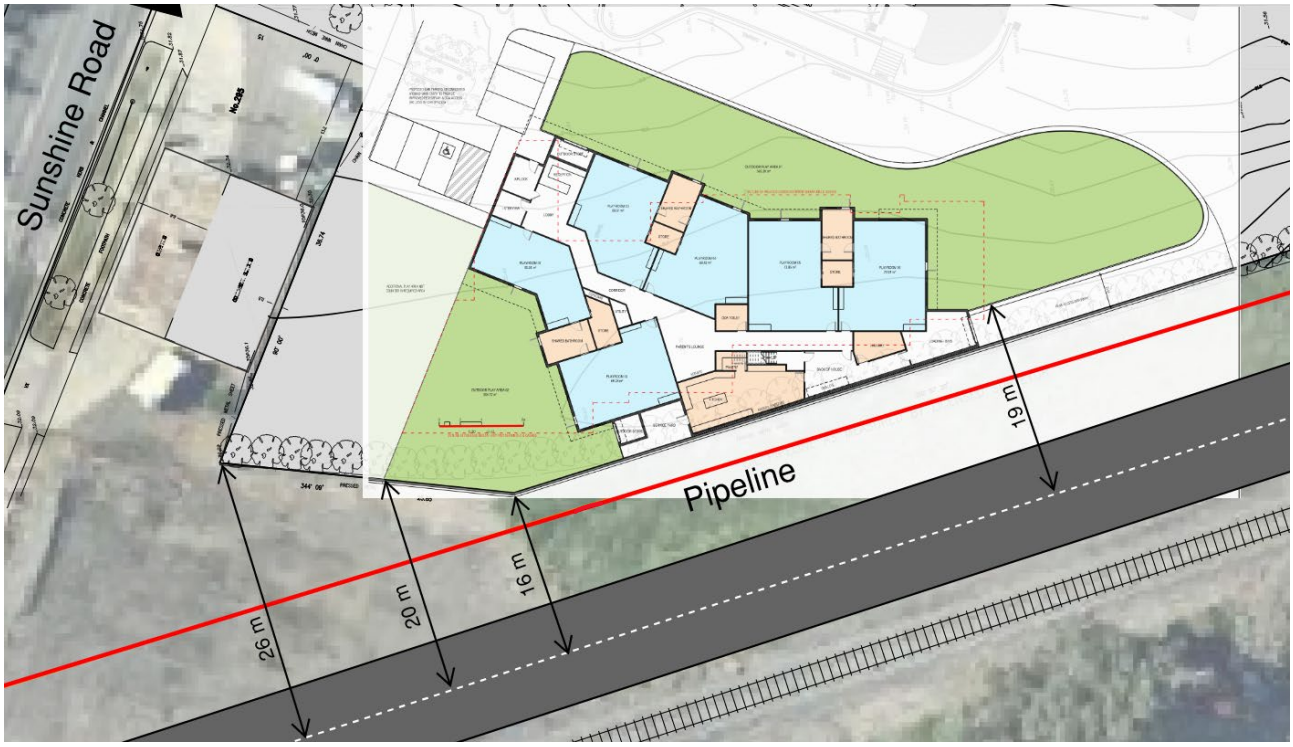

Figure 4-2 Distance between centre of 10 m diameter pool (grey) and the fence line of the Site

The centre of the 10 m pool is approximately 16 m from the closest corners of the proposed childcare centre building and 26 m from the most distant western-facing corner of the proposed building.

Weather data were obtained from the Bureau of Meteorology. The wind roses for the Laverton BOM site indicate that wind can blow from the west (which would result in the greatest radiation impacts on the site in the event) at gust speeds of up to 40 km/h (11 m/s). Some gusts may exceed this level.

4.3 Pool Fire Modelling

Arup has undertaken consequence modelling to assess the reduction in radiation achieved by a fire rated wall.

Modelling to determine the extent of a potential pool fire's impacts was performed using DNV GL's software package Phast v8.22. Phast is an industry standard consequence modelling tool for dispersion, fire, toxic and blast effects. The previous expert witness report used the same software.

AS 2885.1-2012 states at 4.3.2 that the measurement length is the radius of the 4.7 kW/m2 contour. Further, the New South Wales Department of Planning guidance note Hazardous Industry Planning Advisory Paper No 4: Risk Criteria for Land Use Safety Planning (HIPAP 4) describes 4.7 kW/m2 as the threshold at which pain will occur after 15-20 seconds and injury after 30 seconds' exposure [9].

The composition of jet fuel used in the model was developed by Arup for use in Phast, and is based on data from the U.S. Department of Health and Human Services [10]. The composition is shown in Table 4.1.

Table 4-1 Composition of jet fuel used in Phast model

Hydrocarbon	%Mass
n-Butane	1.2
n-Pentane	1.7
n-Hexane	6.4

Hydrocarbon	%Mass
n-Heptane	12.1
n-Octane	18.5
n-Nonane	23.5
Benzene	4.3
Toluene	7.5
m-Xylene	24.8

In order to provide context to the results, the following high-level comments are to be addressed:

a. The consequence modelling represents the maximum extent of the scenario it depicts. In other words, the results show what the expected heat radiation profile would be for a fully developed pool fire, with the maximum flame length. In reality, this situation takes time to develop once the initial ignition event occurs.

b. Liquid pool fires are distinct from jet fires emanating from pressurised gas pipelines in this respect. There is little to no time to react to a jet fire, so engineering controls (such as separation distances, fire/blast walls etc.) are required to achieve sufficient protection. This is not the case with liquid pool fires, where emergency response strategies can be part of a sufficiently robust risk management system.

Modelling results shown are under the 5/D weather condition as a baseline. For weather conditions 1/D and 11/D results, please refer to Appendix A.

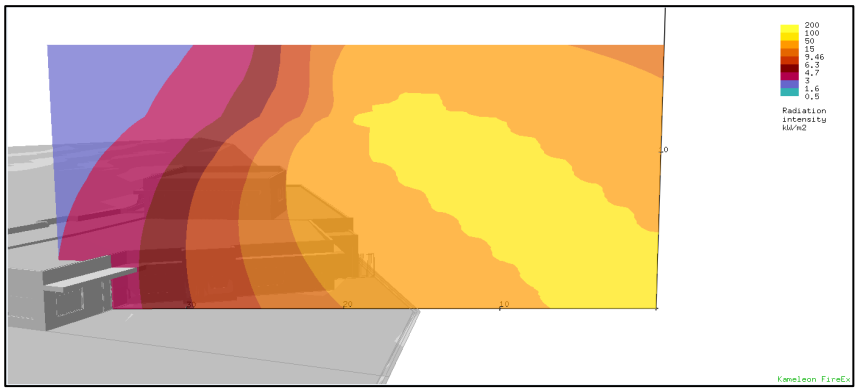

Figure 4-3: Radiation Exposure 5/D weather condition with no wall side profile

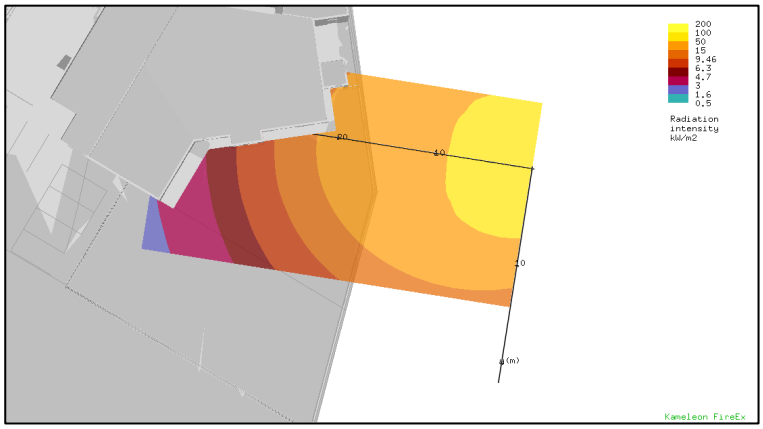

Figure 4-4: Radiation Exposure 5/D weather condition with no wall top down view

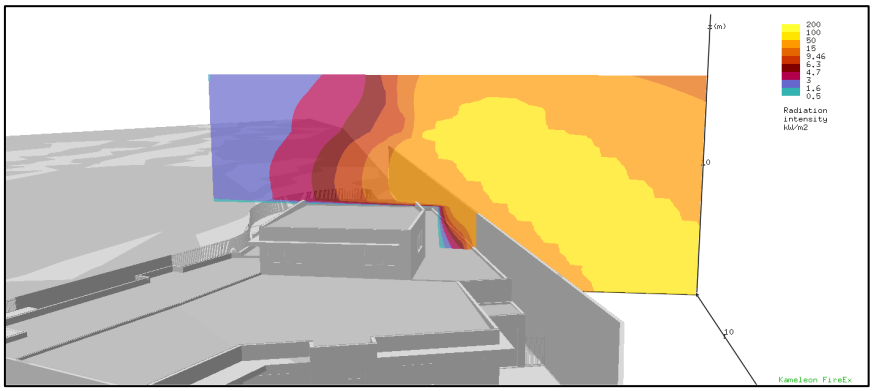

Figure 4-6 Radiation Exposure 5/D weather condition on building

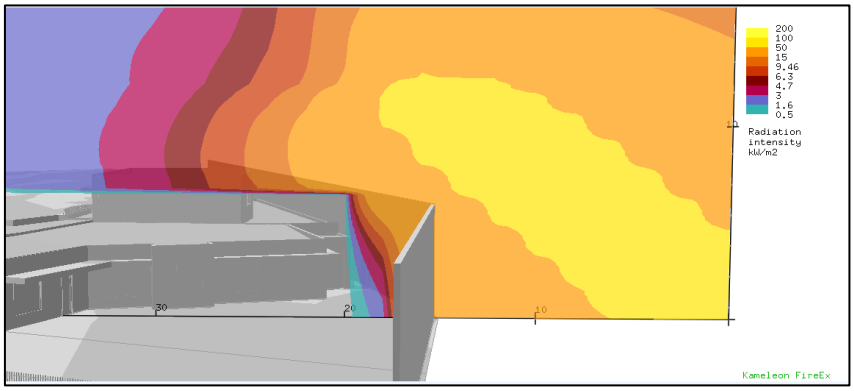

Figure 4-7: Radiation Exposure 5/D weather condition play area 2

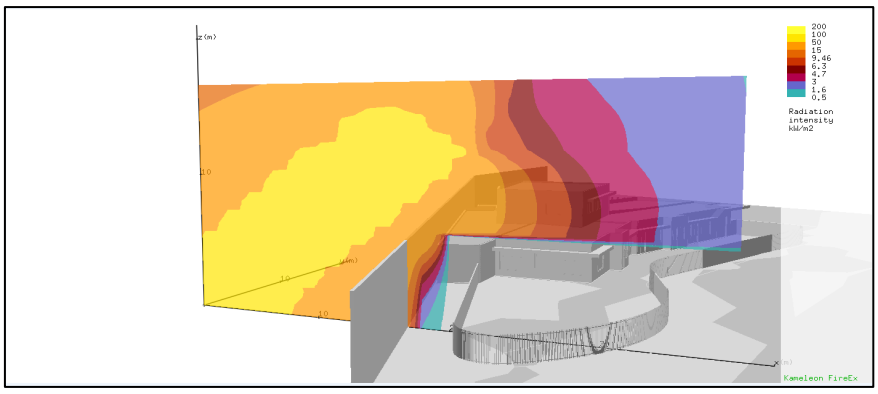

Figure 4-8 Radiation Exposure 5/D weather condition play area 1

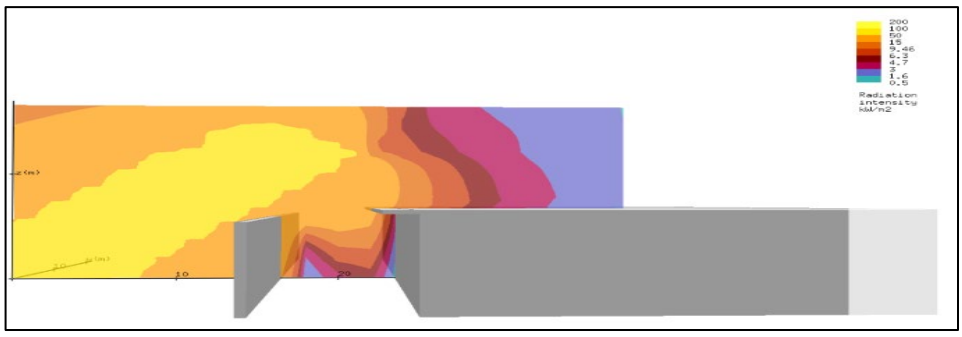

Figure 4-5: Radiation Exposure from previous design

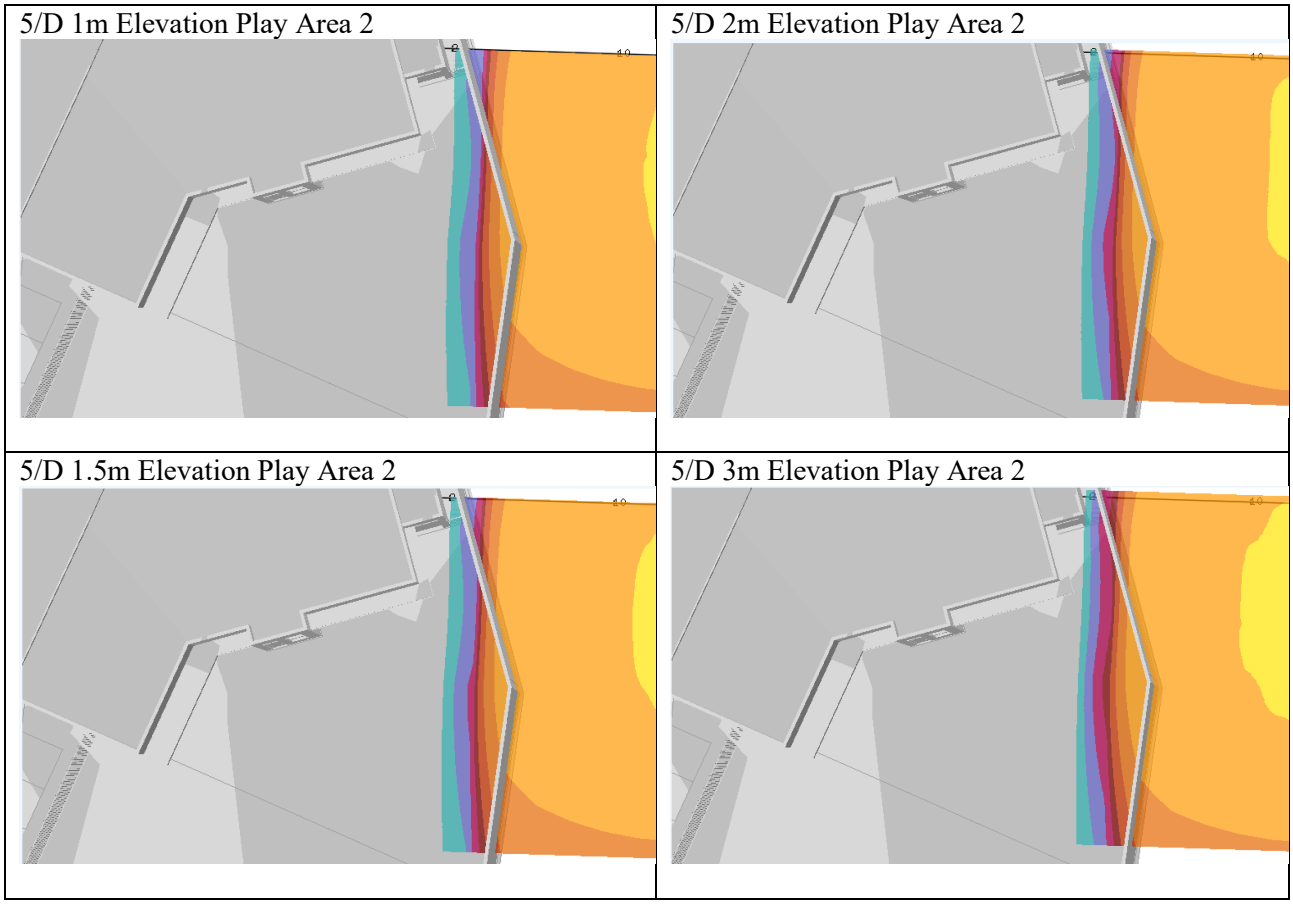

Figure 4-9 Radiation exposure on play area 1 at varying elevations top-down view

4.4 Discussion

Figures 4-3 and 4-4 models the facility without the firewall and it is clear that the radiation exposure is significant and envelops the whole outdoor play area confirming the need for a firewall to mitigate risk.

It is observed that there are significant levels of exposure to radiation, particularly of concern for play area 2 in the case of a pool fire as indicated by the contours shown in Figure 4-7. The level of radiation that exceeds 4.7 kW/m^2 under the 5/D weather condition is approximately 5 meters from the wall which is harmful for any occupants within the vicinity.

Figure 4-9 aims to illustrate the area of radiation experienced as a function of various heights with the most significant being 1.5m as occupants are typically small children.

As discussed in section 2, the new design is a better design in the lens of an emergency evacuation situation. This is because the corridor pathway where exposure is highest has been eliminated and occupants now move directly away from the wall towards the entrance of 291Sunshine Road. Figure 4-8 below depicts radiation exposure from the previous design under a 5/D weather scenario.

The modelling results in case of exposure near the building is minor as any occupants will be within the building which will provide shielding from the radiation.

Play area 1 is also not of concern as the radiation only reaches the driveway and not to the play area. No occupants are likely to be exposed in this scenario.

It is of note however to reiterate that the consequence modelling results shown are under worse case scenarios where the pool fire has already fully formed. Typically, a major incident such as train derailment would have to occur to rupture the pipeline for the hydrocarbons to start pooling and then be ignited.

Occupants would have already been made aware to evacuate once the first incident occurred prior to the pool fire forming hence the risk of exposure is minimal.

With respect to the access doors to outdoor play area 02, these fall in the lower radiation zones (less than 4.7 kW/m^2 as displayed in Figure 4.9) and therefore do not require any specific fire protection. It would be preferable to move the doorway to playroom 02 to the opposite side of the room away from the wall as far as practicable.

5. Consequence Mitigation

Two means have been considered by which to mitigate the consequences of a pool fire on the proposed childcare facility, namely:

a. Relocate the childcare centre to the eastern side of the Site; and

b. Have a specific emergency response plan (ERP) to address the residual hazards from a large pool fire at PL118.

5.1 Relocation of Childcare Centre

A theoretically credible consequence reduction measure is to relocate the childcare centre to the eastern side of the Site, at which point it would be outside the 4.7 kW/m^2 contour (as well as shielded by the existing building).

However, it had been informed by the Imam of the mosque, Imam Muhammed Sadik Karadag, that this is not an acceptable solution due to religious and cultural sensitivities related to the existing mosque on the eastern side of the site. Specifically, by locating the childcare centre in the immediate vicinity of the mosque, people will walk in front of those praying while facing qibla (i.e. facing towards Mecca), which is prohibited in Islam. The existing mosque has been designed to eliminate this issue.

Imam Muhammed Sadik Karadag's letter outlining this and further cultural and religious issues related to the siting of the childcare centre is attached in Appendix B.

We have been informed that this situation has not changed in February 2025.

5.2 Emergency Response Plan

In order for the fire-rated wall to be fully effective, an emergency response plan (ERP) needs to be developed and implemented for the site. The ERP needs to address the hazards associated with PL118, the control measures in place and the steps to be taken should a major incident occur.

Specifically, the ERP shall include the following:

a. Evacuation routes (including evacuation diagrams) which direct those in play area 1 and occupants through the existing buildings to the eastern side of the Site in the event of a pool fire in the pipeline easement;
b. The training and competency regime for staff members at the childcare facility with respect to the implementation of the ERP;
c. The frequency of emergency exercises (no less than once every twelve months);

d. The process to be followed before outdoor play can occur in the event that a major incident initiating event (specifically, a major vehicle collision, a train derailment or any earthworks in the easement[1]) has occurred in the pipeline easement. This process would primarily consist of a visual inspection of the easement to determine whether any hydrocarbons are pooling and therefore creating the potential for a pool fire to occur; and
e. The "warning signs" that may indicate a pool fire has started behind the fire-rated wall, and therefore initiate the evacuation procedure.

[1] Any earthworks occurring in the easement would likely be without Mobil's knowledge or consent, and would therefore pose a risk to the integrity of the pipeline. As a courtesy, ALF should inform Mobil if such earthworks occur. Likewise, if Mobil have arranged authorised earthworks near the Site, they should inform ALF.

6. Risk Assessment

A review of the Safety Management Study (SMS) workshop minutes prepared by GHD as part of the Master Plan changes for Newport Village was conducted [5]. This study identifies potential causes of loss of containment from PL118 in the context of the development proposed in that Master Plan. Given the similarity of the location of the proposed childcare centre in relation to the pipeline, this workshop study has been used as a basis for the following discussion.

Note that in the minutes table that PL118 is referred to as the "Exxon pipeline" and that references to line numbers in this section are to the line numbers used in the workshop minutes.

Undertaking a risk assessment will indicate if the existing mitigation measures are sufficient to manage the risks associated with the pipeline with respect to proposed childcare centre. A qualitative risk assessment methodology, definitions for severity, frequency classes, a risk matrix and risk treatment actions are provided in Appendix F of AS 2885.1. These definitions and tables are used in this risk estimate.

6.1 Line 1B – External interference related to construction

During the period of the childcare construction there is a risk that interference with the PL118 could occur given the pipeline is approximately 3 m from the boundary of 291 Sunshine Road. Pipe wall thickness is only an effective control to limit rupture by excavators no larger than 30 T using tiger teeth. The following control measures should be implemented during construction:

Limit size of any digger to 30 T maximum and not allow the use of tiger teeth.

a. Construct the fence first.

b. Machinery can only be on ALF site side

c. Work can only commence with Mobil review of Construction Management Plan

The impact of a penetration is the same as in the GHD study i.e. major severity (loss of 2 days' supply of fuel to the Airport) and hypothetical frequency if the fire wall is installed before other activities take place and all lifting and other machinery only operates from the ALF side of the fence line.

6.2 Line 3 – Excavation without consent

Previously there was no fencing or other exclusion barriers from the rail corridor or from Sunshine Road to prevent excavation without consent. A rail fencing as seen in Figure 6.1 below has been installed obstructing access from Sunshine Road and reducing the risk of excavation without consent.

Figure 6-1 Sunshine Road rail corridor fencing

The pipeline is clearly marked with pipeline warning signs spaced approximately 50 m apart as required as illustrated in Figure 6.2

Figure 6-2 Pipe line markers

Given the location of the pipeline in the rail easement it is unlikely that excavation would occur without consent, however it is possible. The impact would be the same as a construction impact considered in section 6.1, that is major (loss of 2 days' supply of fuel to the airport) with an unlikely frequency giving a high Risk. It should be noted that this high risk exists currently without the proposed childcare facility.

With appropriate emergency response procedures, it is unlikely that safe evacuation from the childcare facility could not be accomplished due to the remote likelihood that a loss of fuel would result in an immediate fire due to the low volatility of jet fuel. With respect to the people dimension the severity rating would be trivial and the frequency unlikely giving a low risk.

An appropriate ERP to evacuate the childcare facility in the event of machinery being detected near the pipeline will prevent a life-threatening outcome.

6.3 Line 4B – External interference from power augers and drilling

Previously there was no fencing or other exclusion barriers from the rail corridor or from Sunshine Road to prevent interference without consent. A rail fencing has been installed obstructing access from Sunshine Road and reducing the risk of interference without consent. The pipeline is clearly marked with pipeline warning signs spaced approximately 50 m apart as required

Given the location of the pipe line in the rail easement it is unlikely that interference would occur without consent, however it is possible. The impact would be the same as a construction impact considered in section 6.1, that is major (loss of 2 days' supply of fuel to the airport) with an unlikely frequency giving a high risk. It should be noted that this high risk exists currently without the proposed childcare facility.

With appropriate emergency response procedures, it is unlikely that safe evacuation from the childcare facility could not be accomplished due to the remote likelihood that a loss of fuel would result in an immediate fire due to the low volatility of jet fuel. With respect to the people dimension the severity rating would be trivial and the frequency unlikely giving a low risk.

An appropriate emergency response plan to evacuate the childcare facility in the event of machinery being detected or a pool fire near the pipeline or a petroleum odour in the air, will prevent a life-threatening outcome

6.4 Line 10 – External interference from Deep ploughing or drilling around pipeline

It is plausible that there could be external interference of PL118 during the construction of the childcare facility during the introduction of services to the facility. This can be prevented by ensuring that all services come from and easterly direction and any ploughing or drilling activities do not go beyond the boundary.

Given the location of the pipe line in the rail easement it is unlikely that excavation would occur without consent, however it is possible. The impact would be the same as a construction impact considered in section 6.1, that is major (loss of 2 days' supply of fuel to the airport) with an unlikely frequency giving a high risk.

This risk frequency can be reduced to remote if no drilling or ploughing is allowed a part of the construction of the childcare facility.

6.5 Line 13 - External interference – Train derailment

It is noted that the GHD study recommended a derailment study to be completed and additional pipeline protection to be implemented as required in relation to the proposed NPV Master Plan. A literature review was conducted and found one incident where a pipeline was penetrated as a result of a derailment [3]. In this case there was a total derailment and the penetration is thought to have happened as a result of the recovery process and that no testing of the pipeline was undertaken before it was allowed to go back into service.

It was noted that the pipeline burial depth for PL118 of 1400 mm minimum and the over 10 m alignment separation here is a degree of inherent protection provided.

With appropriate emergency response procedures, it is unlikely that safe evacuation from the childcare facility could not be accomplished due to the remote likelihood that there is a loss of fuel as a result derailment and that an immediate fire would take place due to the low volatility of jet fuel. With respect to the people dimension the severity rating would be trivial and the frequency unlikely giving a low risk.

An appropriate emergency response plan to evacuate the childcare facility in the event of derailment and that daily checks should be undertaken following a derailment for a period of two weeks to ensure that fuel pooling or a petroleum odour does not exist. In the event of such a detection, the childcare centre should be evacuated, and Mobil notified of the problem.

6.6 Line 16 – External interference backfill or traffic during construction

It is plausible that there could be external interference of PL118 during the construction of the childcare facility due to backfill or traffic during construction. This risk can be reduced by ensuring that the fire wall is constructed first preventing traffic and other vehicles gaining access to the pipeline area.

With the construction period, it is considered that the Supply dimension would dominate with a severity class of major, but with a frequency remote due to the fence, giving an intermediate risk rating.

With appropriate procedural controls such as the development of a Construction Management Plan, approved by Mobil that the risk can be reduced to hypothetical and the risk rated as *low.*

7. Recommendations

Both stories of the south west facing façade of the childcare centre shall be constructed from non-combustible materials, the south west-facing windows in the childcare centre shall be laminated with appropriate structural support to retain the glass in situ in the event of breakage and the roof of the childcare centre shall be constructed of non-combustible materials such as genuine Colorbond Klip Lok as specified in the existing plans.

The doorways leading to outdoor play area 2 are outside the predicted worst case radiation modelling zone with the fire rated wall in situ, it is however recommended that the doorway to playroom 02 is moved to the opposite side, as far away from the wall as practicable. No fire rating for the doors is required.

Similarly the doorway from playroom 06 to outdoor play area 01 is recommended to be moved to the north-east facing wall.

An emergency response plan (ERP) needs to be developed and implemented for the site. Specifically, the ERP shall include the following:

a. Evacuation routes (including evacuation diagrams) which direct people in play area 1 and occupants through the existing buildings to the eastern side of the Site in the event of a pool fire in the pipeline easement;

b. The training and competency regime for staff members at the childcare facility with respect to the implementation of the ERP;

c. The frequency of emergency exercises (no less than once every twelve months);

d. The process to be followed before outdoor play can occur in the event that a major incident initiating event (specifically, a major vehicle collision, a train derailment or any earthworks in the easement) has occurred in the pipeline easement. This process would primarily consist of a visual inspection of the easement to determine whether any hydrocarbons are pooling and therefore creating the potential for a pool fire to occur

e. The “warning signs” that may indicate a pool fire has started behind the fire-rated wall, and therefore initiate the evacuation procedure.

On the condition that these recommendations are implemented, the modified building design by DCA for the childcare centre at 291 Sunshine Rd, Tottenham is deemed appropriate.

8. References

[1] Victorian Government Gazette, Melbourne: Victorian Government Printer, 2017.

[2] H. J. a. H. A., Nightmare pipeline failures: Fantasy planning, black swans and integrity management, CCH Australia Ltd, 2014.

[3] National Transportation Safety Board (US), Railroad accident report— Derailment of Southern Pacific Transportation Company freight train on May 12, 1989 and subsequent rupture of Calnev petroleum pipeline on May 25, 1989—San Bernardino, California (1990), San Bernardino, California: https://en.wikisource.org/wiki/Railroad_accident_report%E2%80%94Derailment_of_Southern_Pacific_Transportation_Company_freight_train_on_May_12,_1989_and_subsequent_rupture_of_Calnev_petroleum_pipeline_on_May_25,_1989%E2%80%94San_Bernardino,_California, 1990.

[4] Pipeline Regulations 2017 S.R. No.9/2017, https://www.energy.vic.gov.au/__data/assets/pdf_file/0021/65082/PipelinesRegulations-2017.pdf, 2017.

[5] B. Frick, Letter to Andrew, Melbourne: Mobil Oil Australia Pty Ltd, 9 April 2019.

[6] J. B. a. C. K, Newport Village Pipeline safety management Study, Melbourne: GHD, 2015.

[7] G. Lakey, Email to Nicholas Crawford dated 9 September 2019.

[8] Bureau of Meteorology, "Wind speed and direction rose," [Online]. Available: Laverton, Vic - January 2025 - Daily Weather Observations

[9] NSW Department of Planning, "Hazardous Industry Planning Advisory Paper No 4: Risk Criteria for Land Use Planning," January 2011. [Online]. Available: https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/hazardousindustry-planning-advisory-paper-no-4-risk-criteria-for-land-use-safetyplanning-2011-01.ashx?la=en.

[10] U.S. Department of Health and Humas Services, "Toxicological Profile for Total Petroleum Hydrocarbons (TPH)," September 1999. [Online]. Available: https://www.atsdr.cdc.gov/toxprofiles/tp123-a.pdf

Appendix A

Consequence Modelling Results

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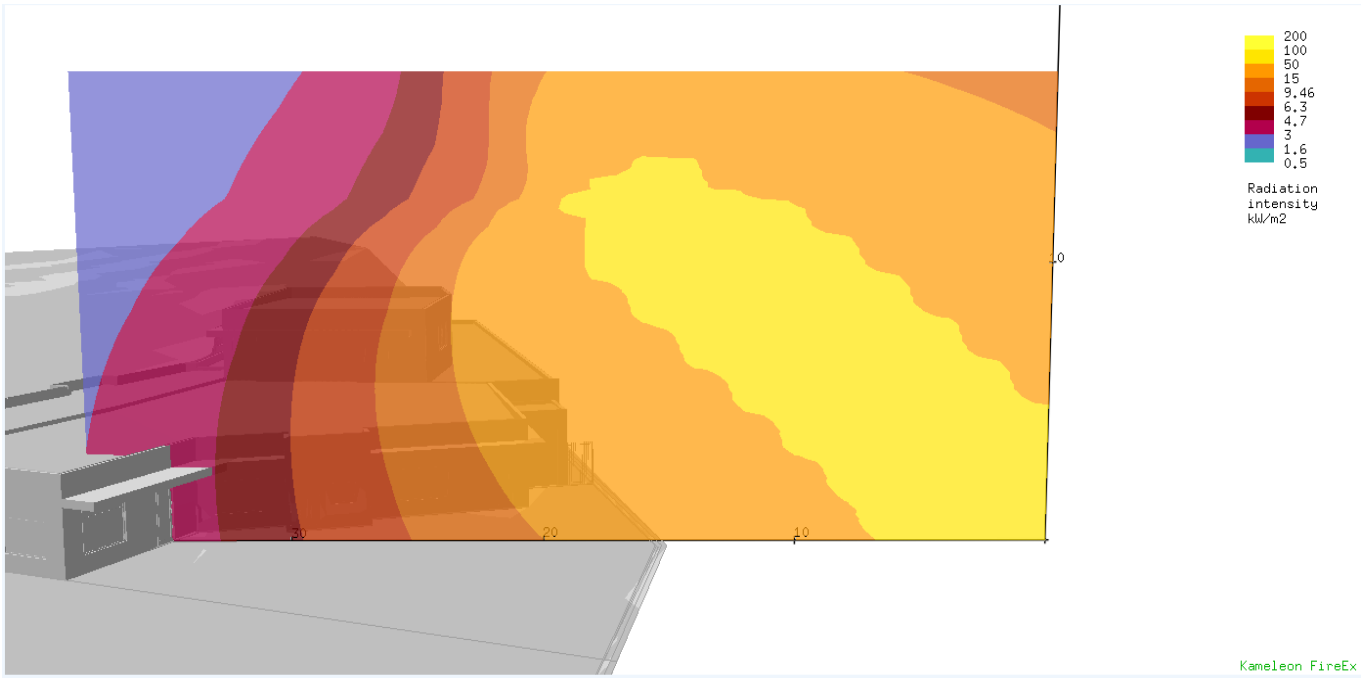
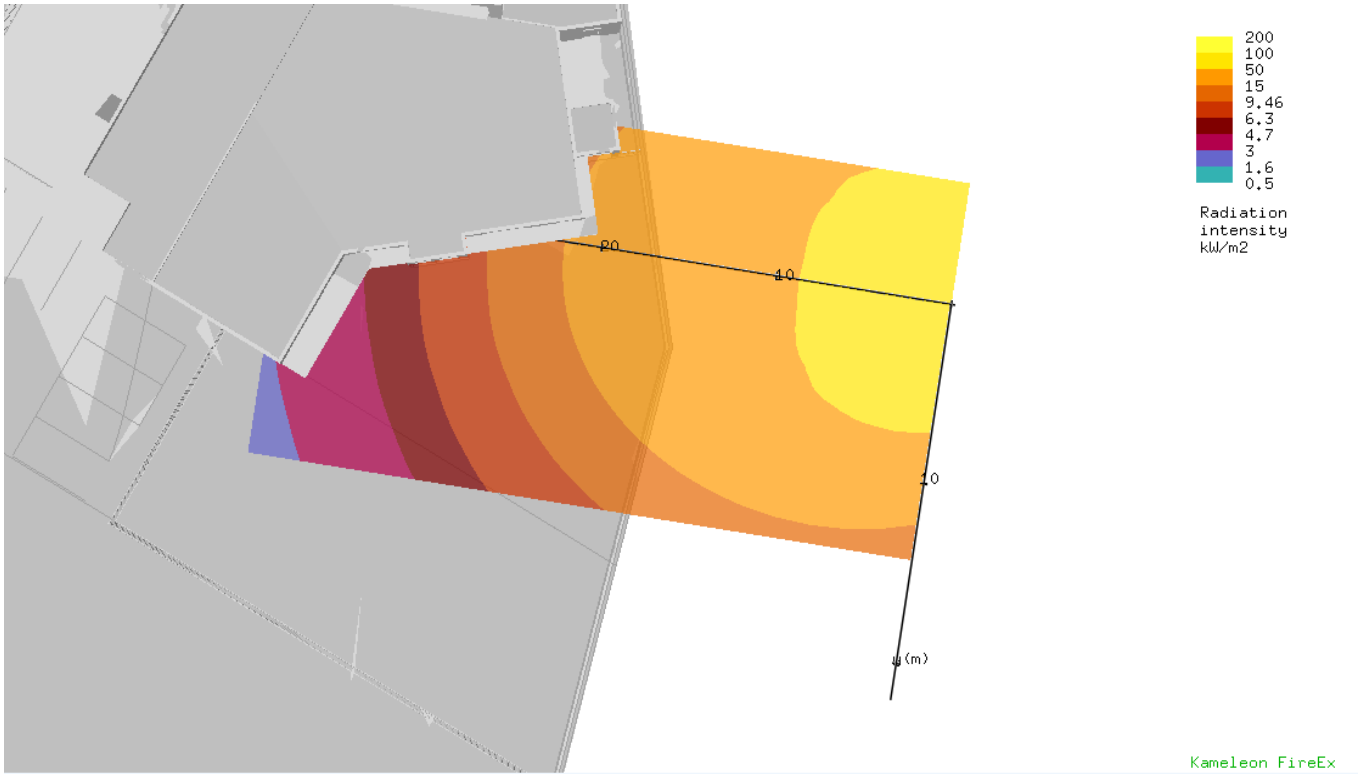
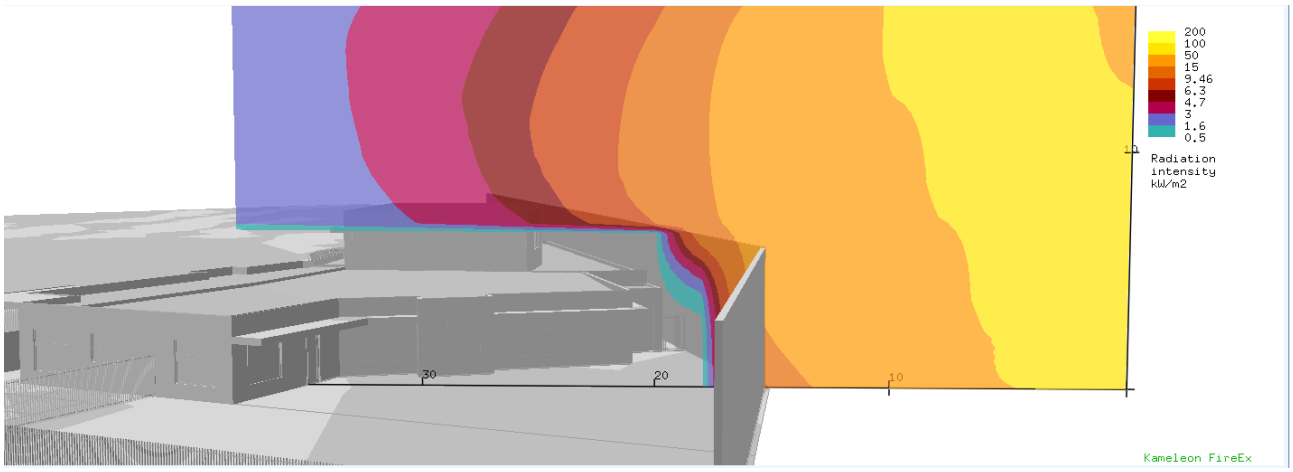


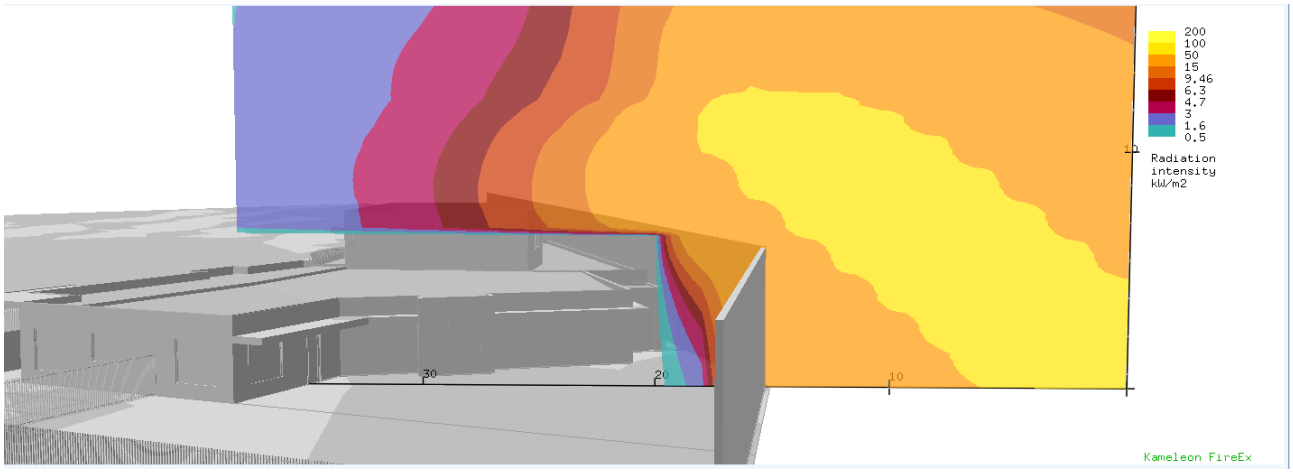
Play Area 1 5/D – **no wall**



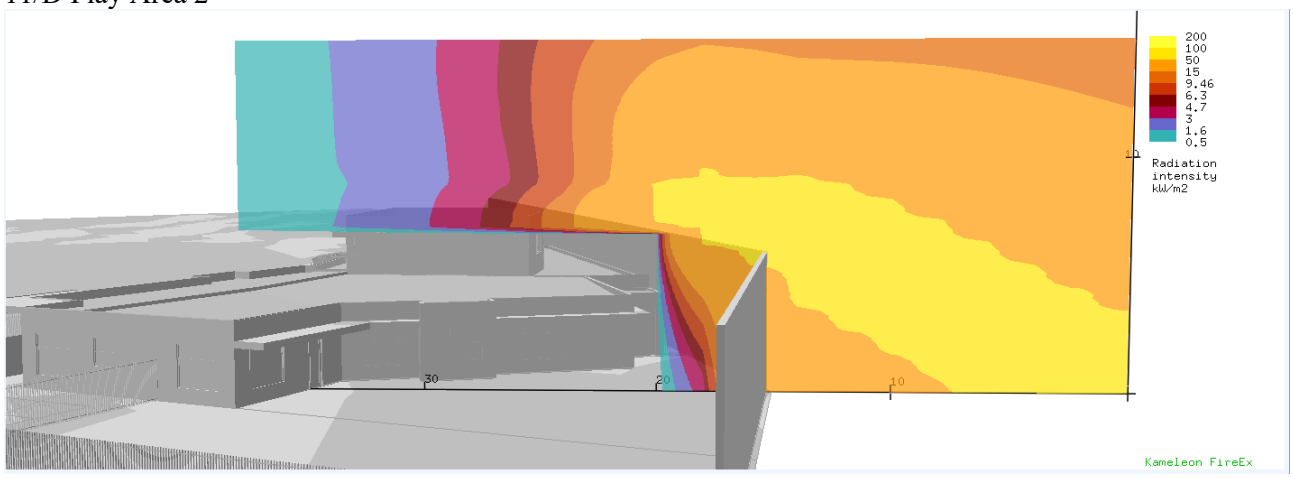
1/D Play Area 2



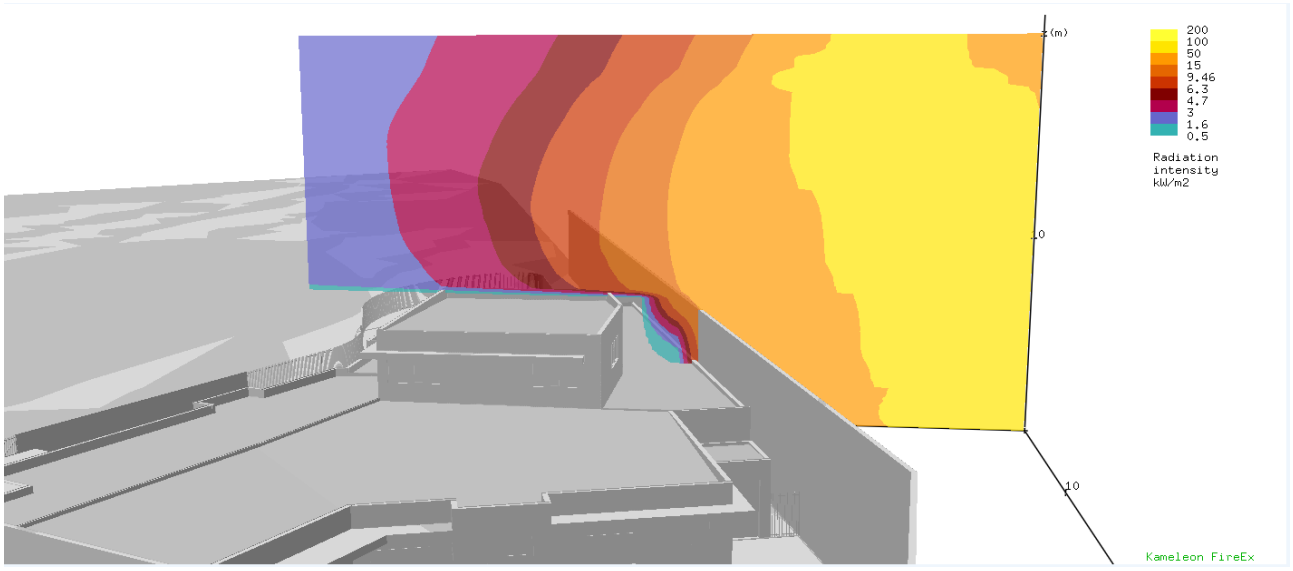
5/D Play Area 2



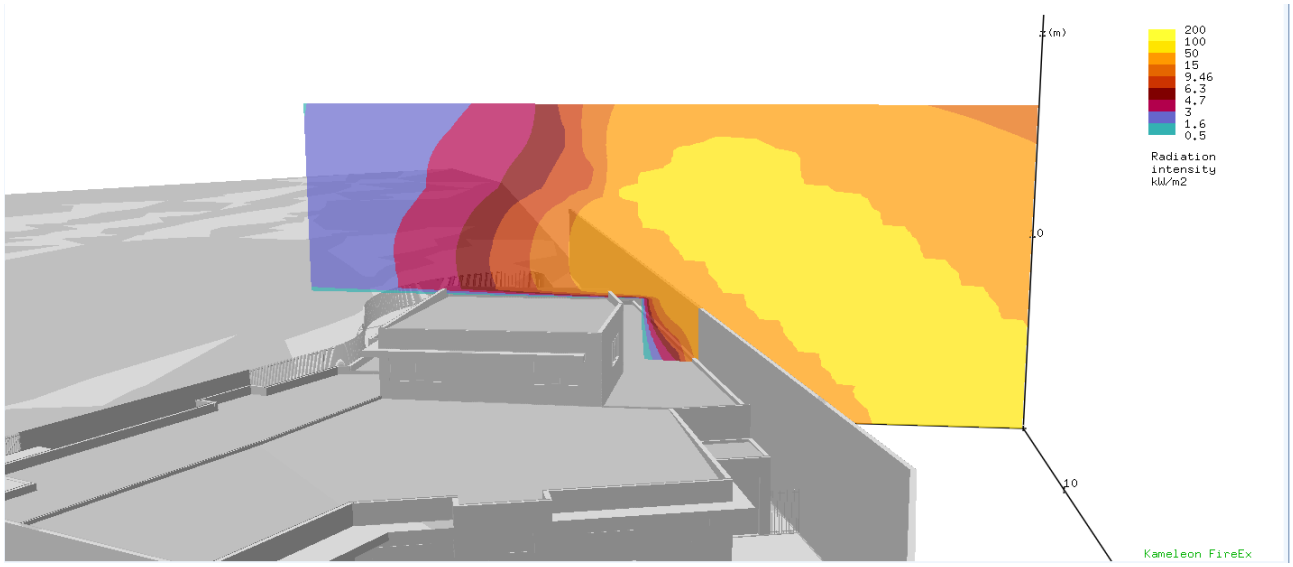
11/D Play Area 2



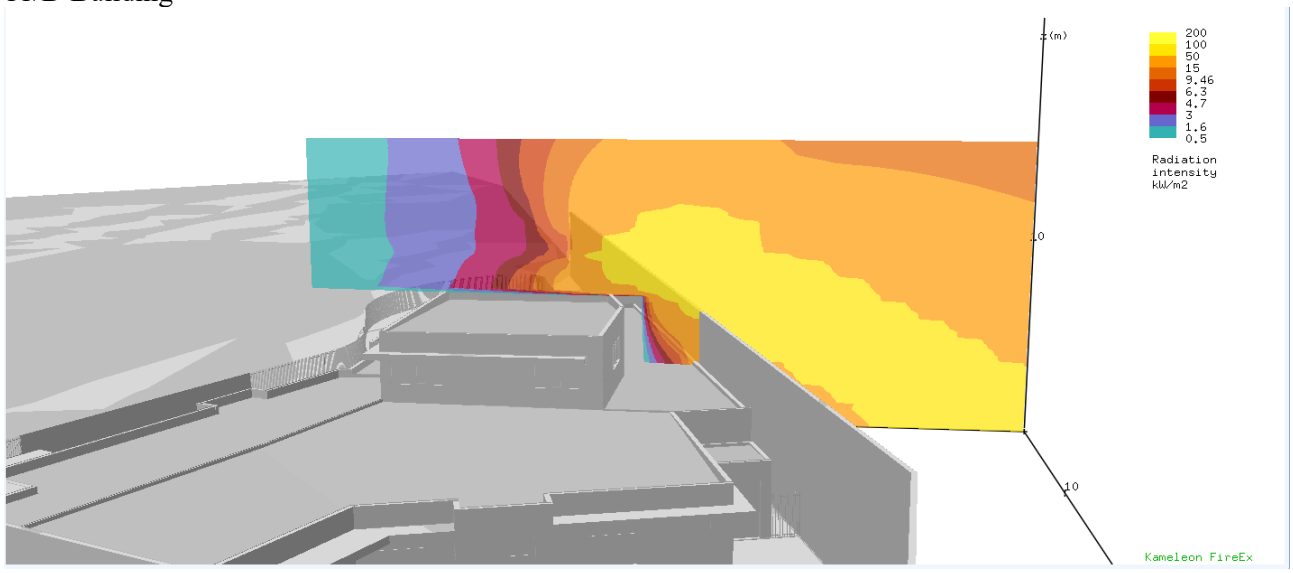
1/D Building



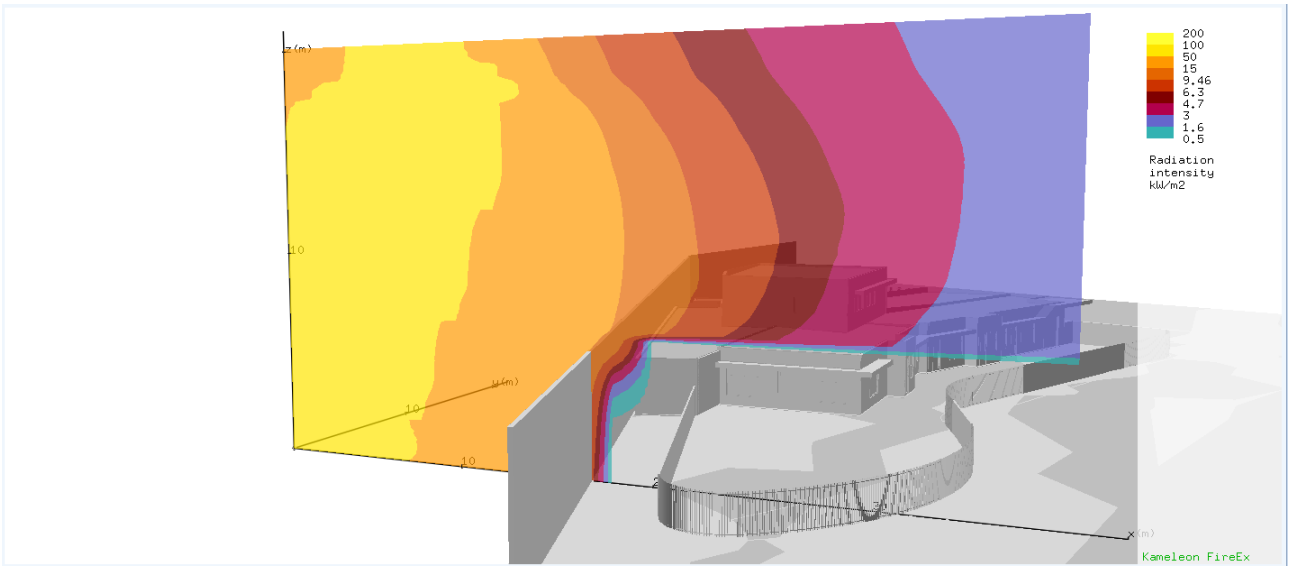
5/D Building



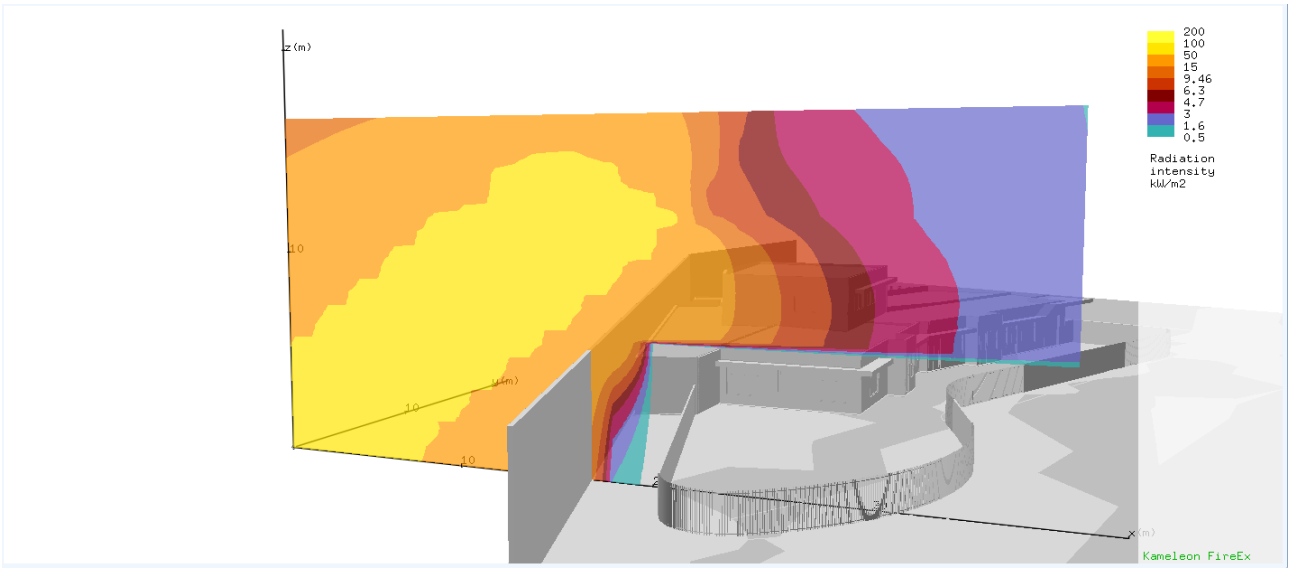
11/D Building



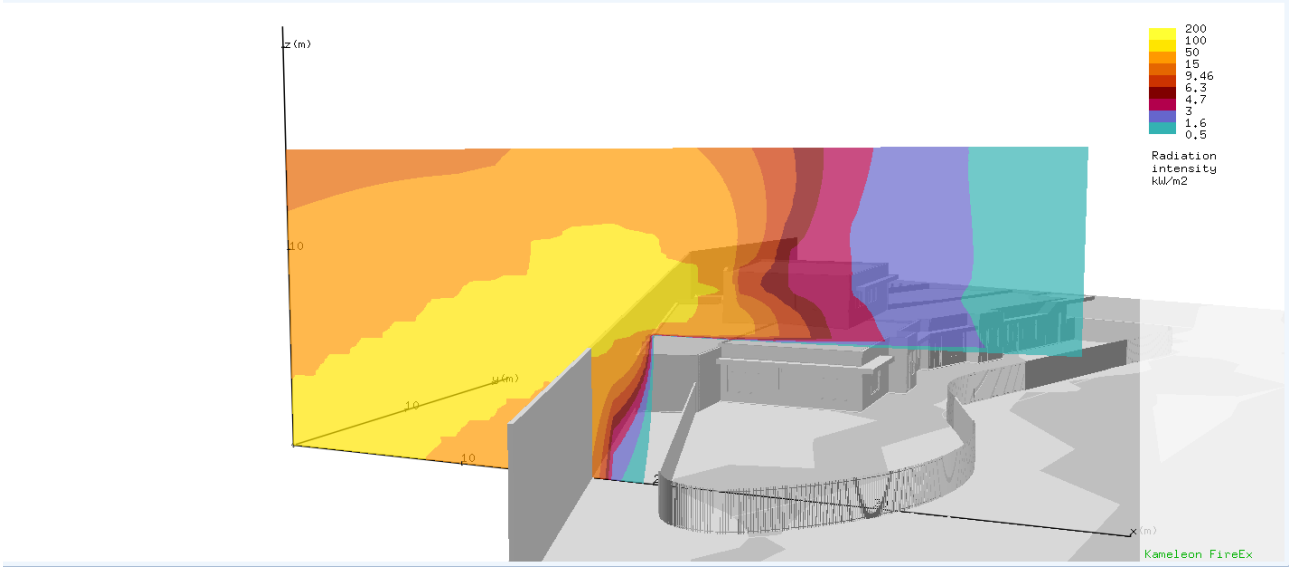
1/D Play Area 1



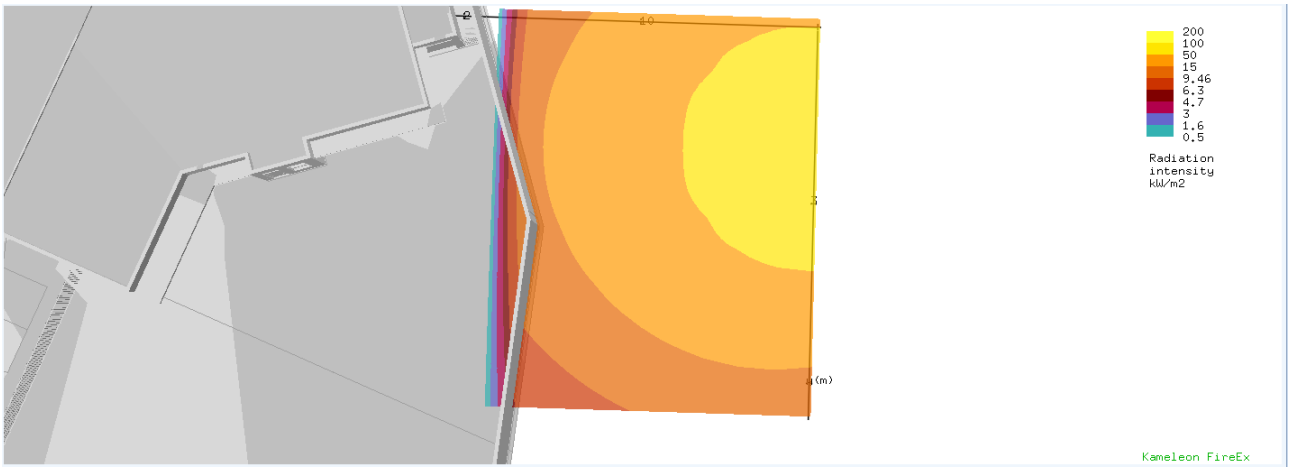
5/D Play Area 1



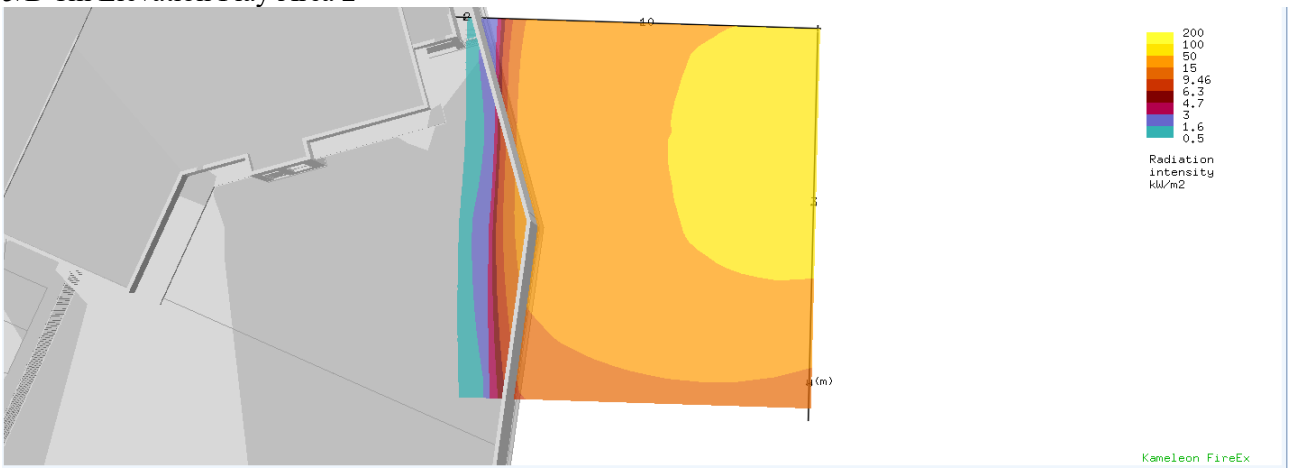
11/D Play Area 1



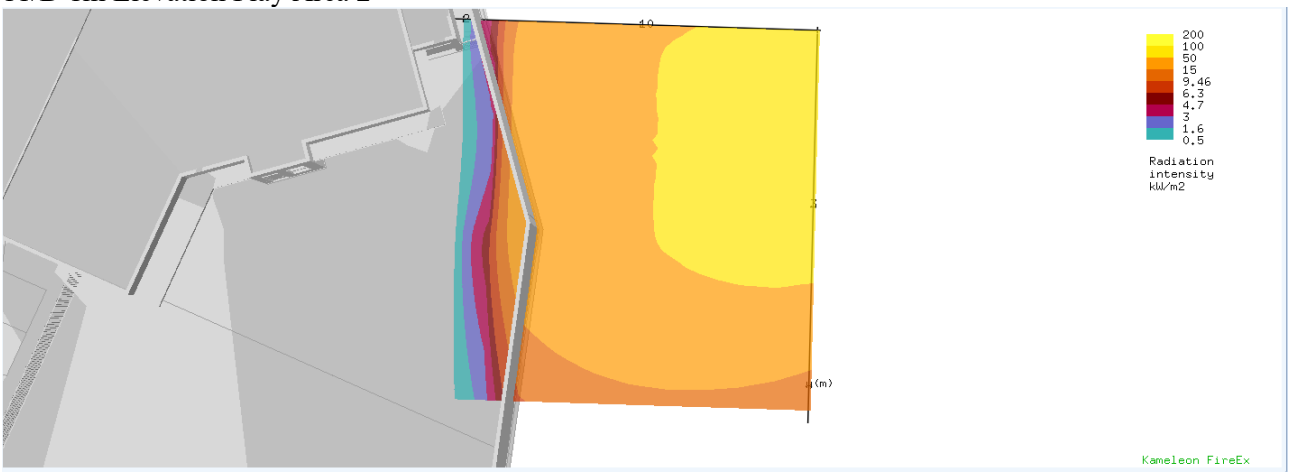
1/D 1m Elevation Play Area 1



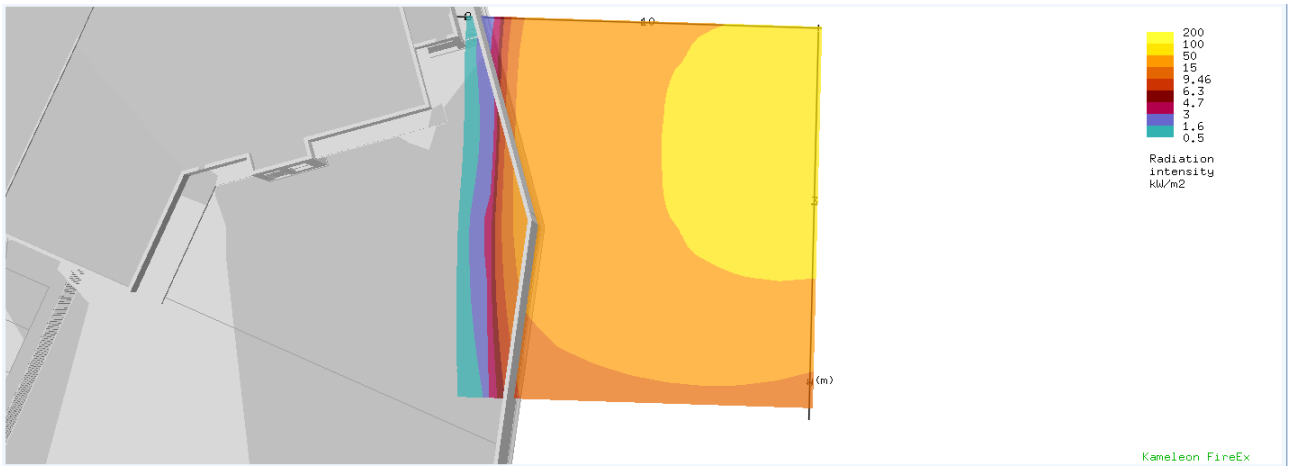
5/D 1m Elevation Play Area 2



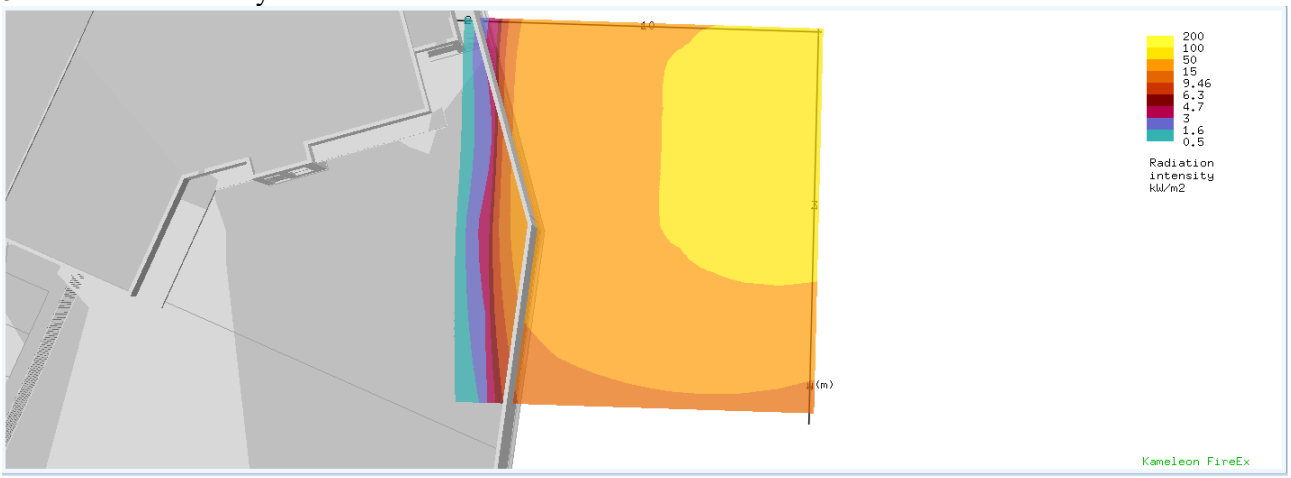
11/D 1m Elevation Play Area 2



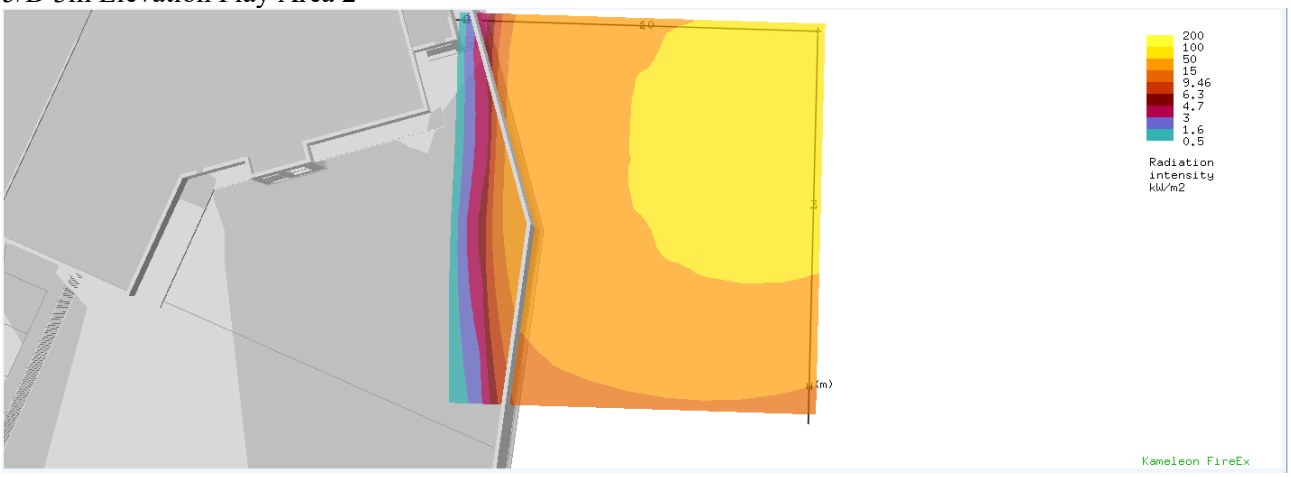
5/D 1.5m Elevation Play Area 2



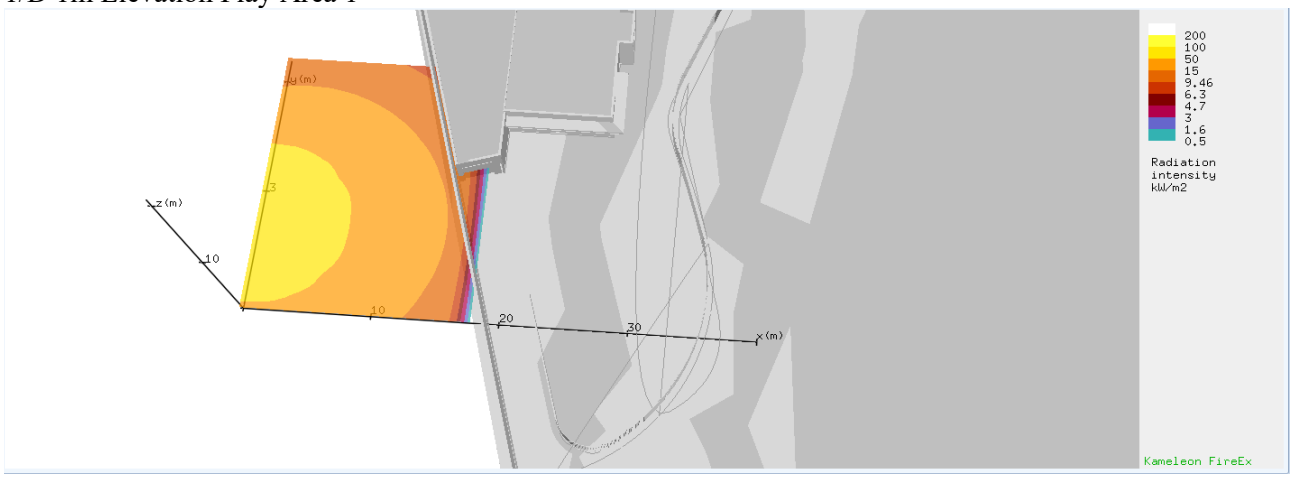
5/D 2m Elevation Play Area 2



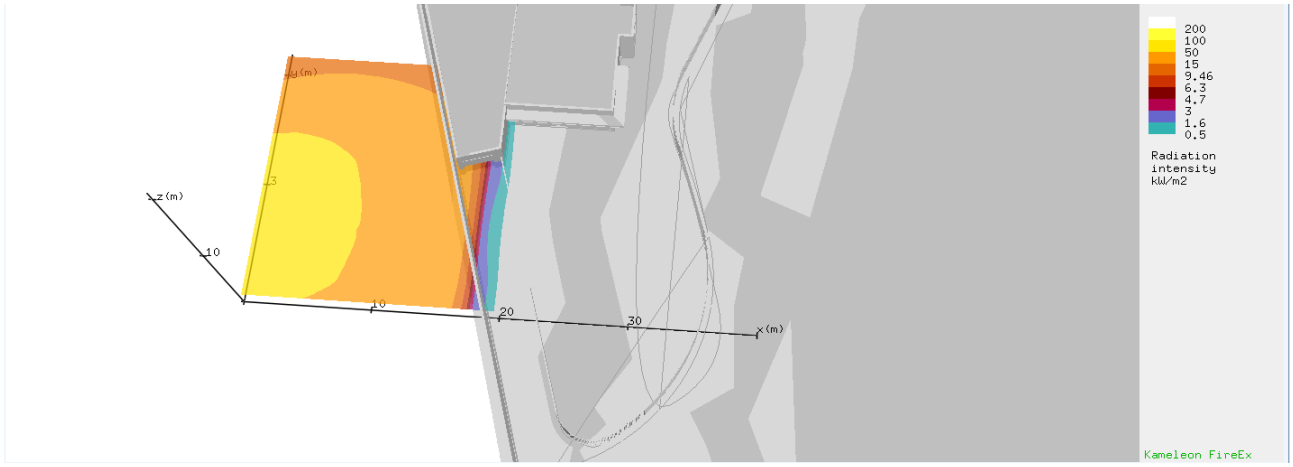
5/D 3m Elevation Play Area 2



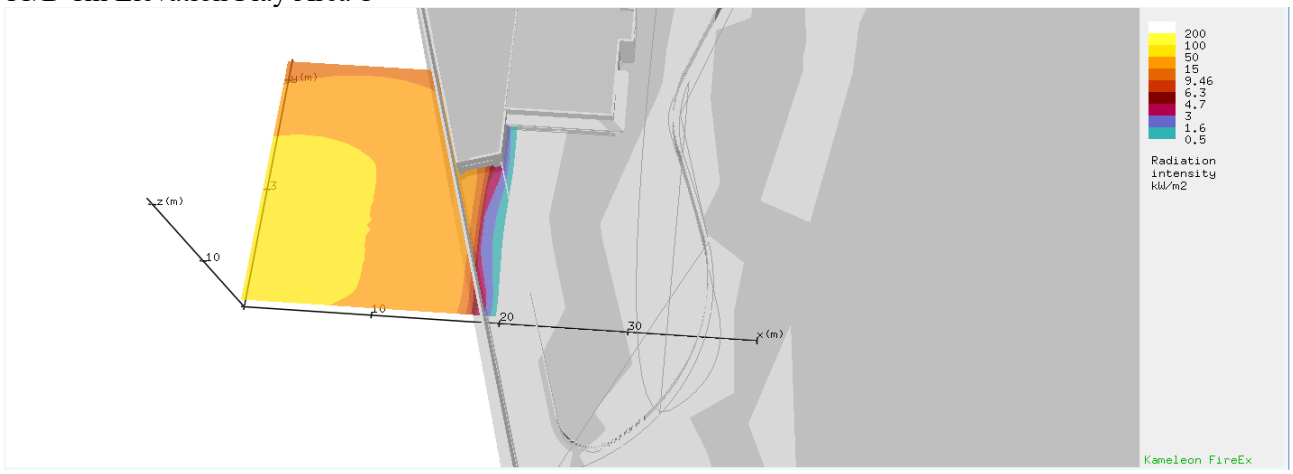
1/D 1m Elevation Play Area 1



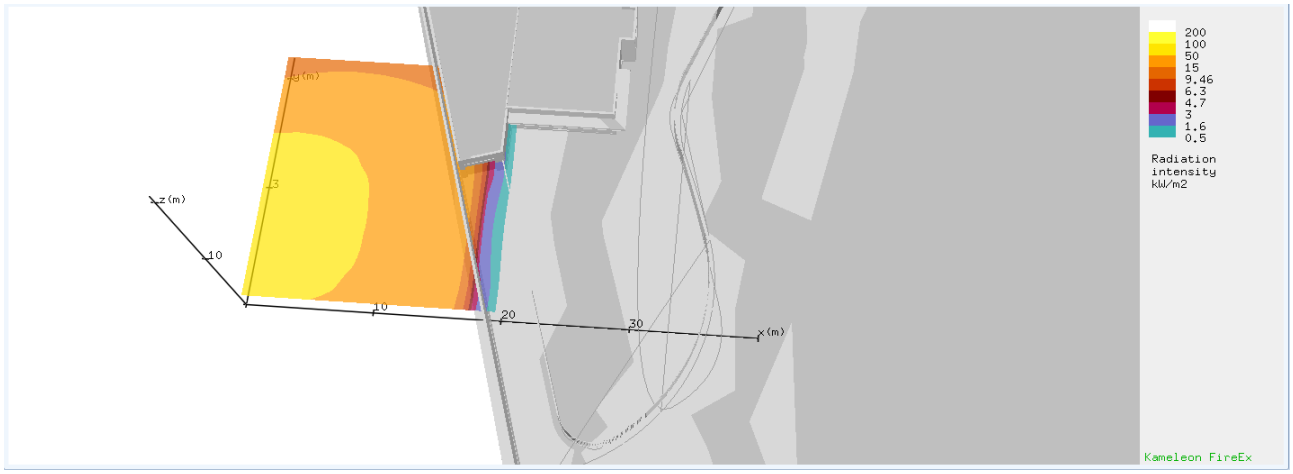
5/D 1m Elevation Play Area 1



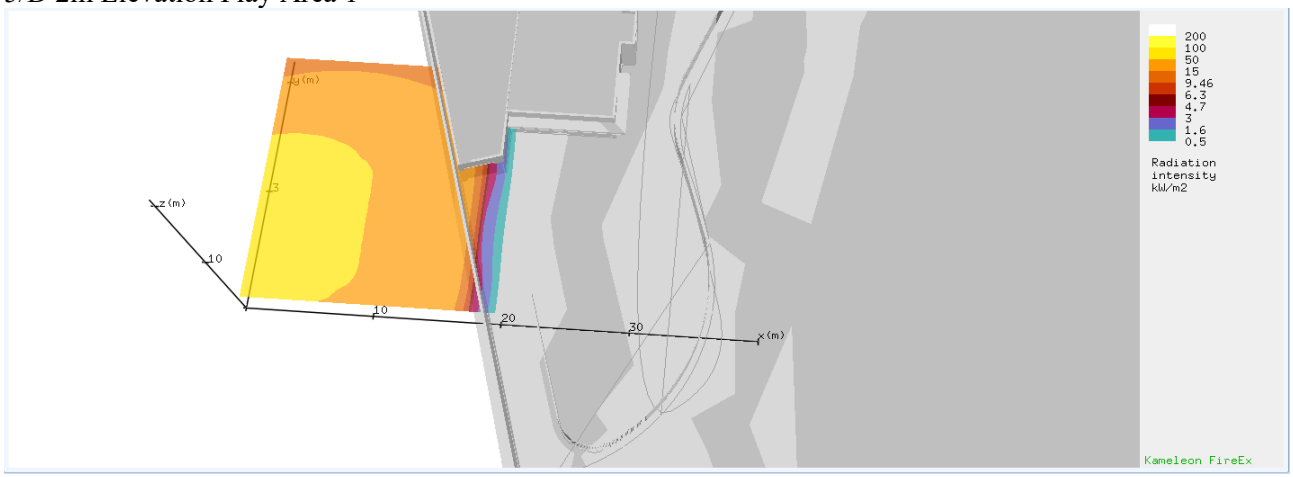
11/D 1m Elevation Play Area 1



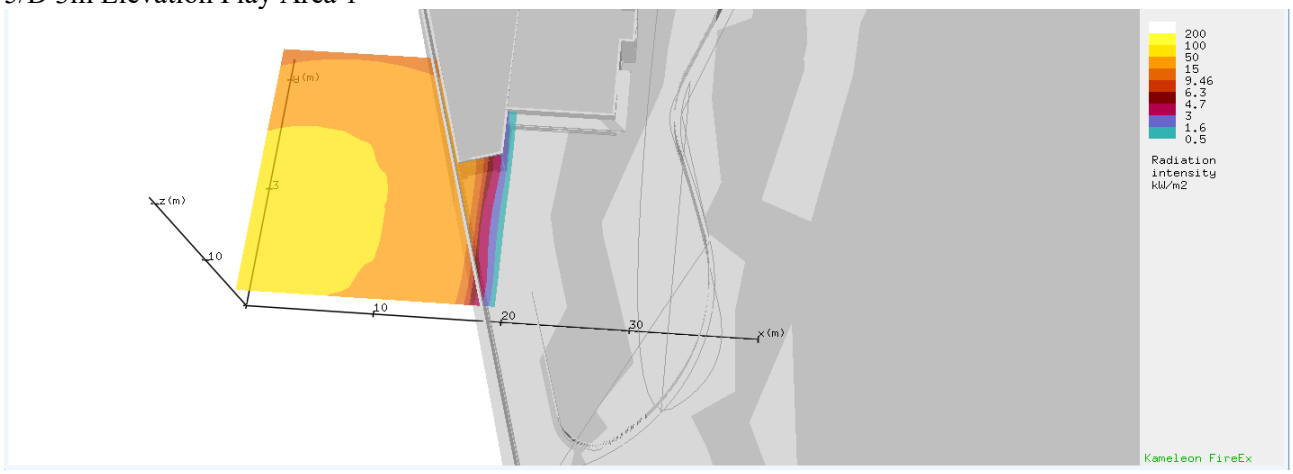
5/D 1.5m Elevation Play Area 1



5/D 2m Elevation Play Area 1



5/D 3m Elevation Play Area 1



Appendix B

Attachments:

- Revised Concept Design
- Firewall Drawings
- Letter Regarding Location of Childcare Centre Relative to Mosque

PROPOSED CHILDCARE CENTRE

291 SUNSHINE ROAD, TOTTENHAM

DEVELOPMENT SUMMARY	
CHILDREN ACCOMODATED:	120
INTERNAL PLAY AREA REQUIRED:	390m²
INTERNAL PLAY AREA PROVIDED:	407m²
OUTDOOR PLAY AREA REQUIRED:	840m²
OUTDOOR PLAY AREA PROVIDED:	857m²
CARSPACES REQUIRED:	26
CARSPACES PROVIDED:	6 & 150+ ONSITE CARSPACES NEARBY

SHEET LIST	
SK00	COVER SHEET
SK01	GROUND FLOOR PLAN
SK02	FIRST FLOOR PLAN
SK03	ELEVATIONS

DCA Design
Building Design Consultants

PO BOX 155
BRUNSWICK EAST, 3057
(03) 9682-6655
email@dcadesign.com.au
www.dcadesign.com.au

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PROJECT:	PROPOSED CHILDCARE CENTRE	JOB NO.:	5219
ADDRESS:	291 SUNSHINE ROAD, TOTTENHAM		
CLIENT:	-		
SHEET TITLE:	COVER SHEET		
DRAWN:	TH SCALE: 1 : 100 @ A1 PAPER SIZE	DWG NO:	SK00
DATE:	DEC 2024	REV:	

5/12/2024 11:30:42 AM

1 GROUND FLOOR PLAN
SK03 1 : 100

AREA SCHEDULE

ROOM / AREA NAME	AREA	OCCUPANCY
PLAYROOM 01	55.95 m²	16 CHILDREN
PLAYROOM 02	68.28 m²	20 CHILDREN
PLAYROOM 03	68.61 m²	20 CHILDREN
PLAYROOM 04	68.42 m²	20 CHILDREN
PLAYROOM 05	73.85 m²	22 CHILDREN
PLAYROOM 06	72.61 m²	22 CHILDREN
	407.72 m²	
AIRLOCK	9.86 m²	
BACK OF HOUSE	25.39 m²	
CORRIDOR	24.45 m²	
DDA TOILET	7.35 m²	
INTERVIEW	7.25 m²	
KITCHEN	49.71 m²	
LAUNDRY	11.22 m²	
LOADING / BINS	22.39 m²	
LOBBY	20.28 m²	
OUTDOOR STORE	5.40 m²	
OUTDOOR STORE	6.46 m²	
PANTRY	5.22 m²	
PARENT'S LOUNGE	52.84 m²	
RECEPTION	7.41 m²	
SERVICE YARD	Not Enclosed	
SHARED BATHROOM	13.92 m²	
SHARED BATHROOM	14.40 m²	
SHARED BATHROOM	14.40 m²	
STORE	6.96 m²	
STORE	6.30 m²	
STORE	11.43 m²	
UTILITY	3.14 m²	
	325.79 m²	
ADMIN OFFICE 1	8.79 m²	
ADMIN OFFICE 2	9.75 m²	
PLANNING ROOM	13.33 m²	
SERVER	5.86 m²	
STAFF AMENITIES	20.25 m²	
STAFF BREAK OUT	46.79 m²	
	104.77 m²	
BUILDING AREA TOTAL	838.28 m²	
OUTDOOR PLAY AREA 01	592.28 m²	84 CHILDREN MAX
OUTDOOR PLAY AREA 02	264.72 m²	37 CHILDREN MAX
	857.00 m²	
OUTDOOR PLAY AREA TOTAL	857.00 m²	

AREA SCHEDULE - PREVIOUS DESIGN

GROUND FLOOR	843.29 m²
FIRST FLOOR	209.97 m²
FIRST FLOOR TERRACE	23.24 m²
	1076.49 m²

AREA SCHEDULE - PROPOSED DESIGN

GROUND FLOOR	816.57 m²
FIRST FLOOR	117.04 m²
	933.60 m²

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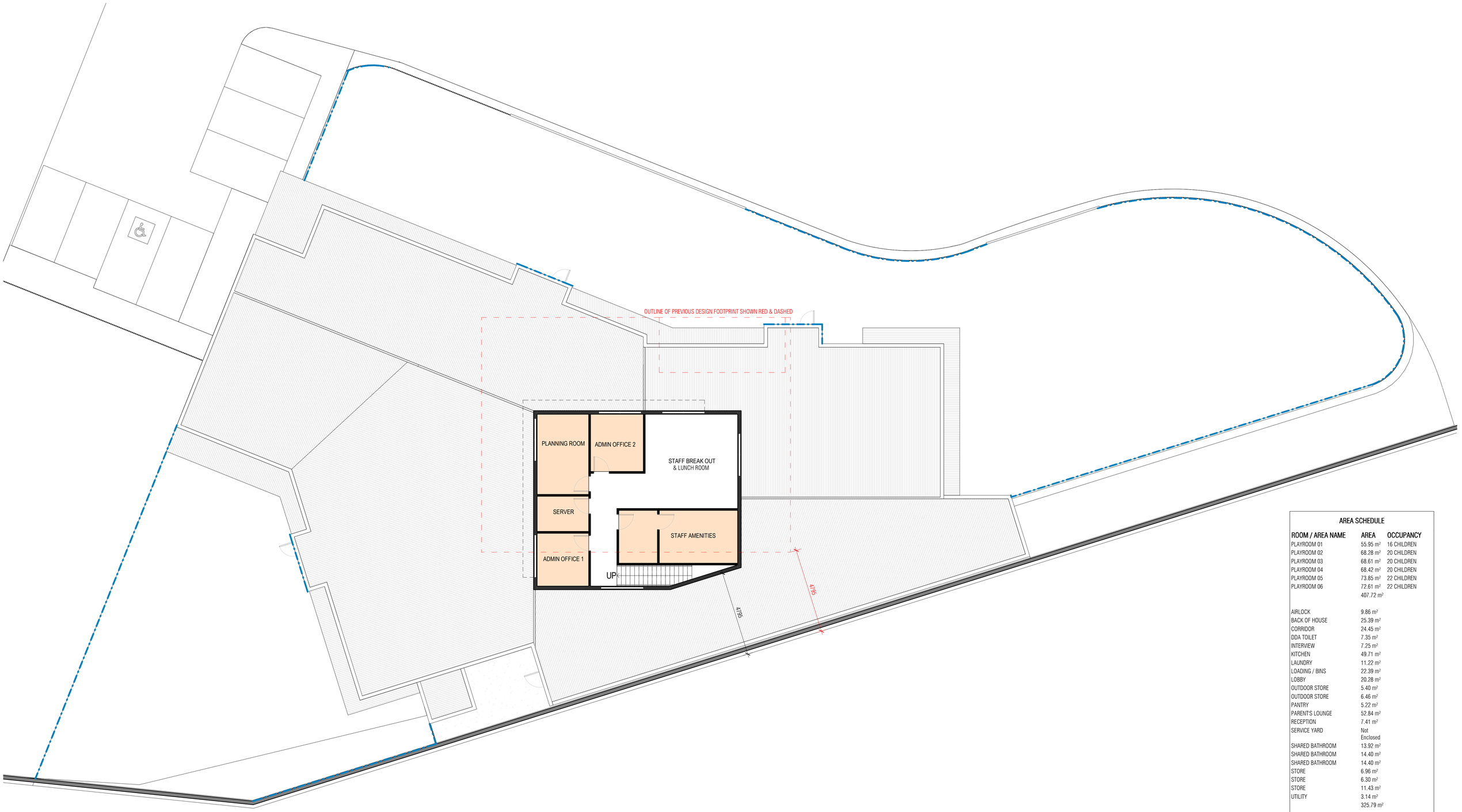
0 2 4 8m
1:100 @ A1

PROJECT: PROPOSED CHILDCARE CENTRE JOB NO.: 5219
ADDRESS: 291 SUNSHINE ROAD, TOTTENHAM
CLIENT: -
SHEET TITLE: GROUND FLOOR PLAN
DRAWN: TH SCALE: 1 : 100 @ A1 PAPER SIZE DWG NO: SK01
DATE: DEC 2024 REV:
5/12/2024 11:30:44 AM



1 SK03 FIRST FLOOR PLAN
1 : 100

AREA SCHEDULE

ROOM / AREA NAME	AREA	OCCUPANCY
PLAYROOM 01	55.95 m²	16 CHILDREN
PLAYROOM 02	68.28 m²	20 CHILDREN
PLAYROOM 03	68.61 m²	20 CHILDREN
PLAYROOM 04	68.42 m²	20 CHILDREN
PLAYROOM 05	73.85 m²	22 CHILDREN
PLAYROOM 06	72.61 m²	22 CHILDREN
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RECEPTION	7.41 m²	
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OUTDOOR PLAY AREA TOTAL	857.00 m²	

AREA SCHEDULE - PREVIOUS DESIGN

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FIRST FLOOR	209.97 m²
FIRST FLOOR TERRACE	23.24 m²
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AREA SCHEDULE - PROPOSED DESIGN

GROUND FLOOR	816.57 m²
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0 2 4 8m
1:100 @ A1

PROJECT: PROPOSED CHILDCARE CENTRE JOB NO.: 5219
ADDRESS: 291 SUNSHINE ROAD, TOTTENHAM
CLIENT: -
SHEET TITLE: FIRST FLOOR PLAN
DRAWN: TH SCALE: 1 : 100 @ A1 PAPER SIZE DWG NO: SK02
DATE: DEC 2024 REV:
5/12/2024 11:30:45 AM

1 EAST ELEVATION
1 : 100

2 NORTH ELEVATION
1 : 100

3 NORTH-WEST ELEVATION
1 : 100

4 WEST ELEVATION
1 : 100

5 SOUTH-EAST ELEVATION
1 : 100

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0 2 4 8m
1:100 @ A1

PROJECT: PROPOSED CHILDCARE CENTRE JOB NO.: 5219
ADDRESS: 291 SUNSHINE ROAD, TOTTENHAM
CLIENT: -
SHEET TITLE: ELEVATIONS
DRAWN: TH SCALE: 1 : 100 @ A1 PAPER SIZE DWG NO: SK03
DATE: DEC 2024 REV:
5/12/2024 11:30:48 AM

30365

Proposed Childcare Centre
291 Sunshine Road
Tottenham

DRAWING LIST

GENERAL:

G1. THESE DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS OR OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE WORK. THE ENGINEER ACCEPTS NO RESPONSIBILITY FOR THE WORKS UNLESS THE WORKS ARE INSPECTED AND APPROVED IN WRITING BY THE ENGINEER DURING CONSTRUCTION.

G2. ALL BUILDING WORKS, CONSTRUCTION, WORKMANSHIP, MATERIALS AND WORKPLACE PRACTICES SHALL COMPLY WITH CURRENT RELEVANT AUSTRALIAN STANDARDS, THE BUILDING CODE OF AUSTRALIA, THE VICTORIA BUILDING REGULATIONS AND VICTORIA BUILDING ACT AND ANY OTHER STATUTORY REQUIREMENTS.

G3. ANY DISCREPANCIES ON OR BETWEEN DOCUMENTATION SHALL BE REFERRED TO THE ARCHITECT/ENGINEER AND A WRITTEN INSTRUCTION SHALL BE GIVEN PRIOR TO PROCEEDING WITH ANY WORK. ALL QUERIES REGARDING THIS PROJECT, RELEVANT TO DOME CONSULTING AUST PTY LTD, MUST BE COMMUNICATED VIA A E-MAIL ONLY AS A REQUEST FOR INFORMATION (R.F.I.). THE TENDERER SHALL ASSUME THE GREATER/LARGER CRITERIA WITH REGARD TO COST IN THE ABSENCE OF ANY INFORMATION. NO SUBSTITUTIONS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. THE OMISSION OR ABSENCE OF ANY STRUCTURAL MEMBER OR DETAIL SHALL NOT ENTITLE THE BUILDER TO A VARIATION, WHERE THE BUILDER SHOULD HAVE REASONABLY ALLOWED FOR THE INCLUSION OF THIS MEMBER OR DETAIL.

G4. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. THESE DRAWINGS MUST NOT BE SCALED. ALL FRAMING AND MEMBERS INDICATED ON PLANS ARE DIAGRAMMATICALLY SHOWN ONLY. ALL CONSTRUCTION AND MEMBER LOCATION & LAYOUT MUST BE IN ACCORDANCE WITH PROPER PRACTICE AND IN ACCORDANCE WITH THE MAXIMUM SPANS & SPACINGS SPECIFIED. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT NOTED ON THE ENGINEERING DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

G5. DURING CONSTRUCTION THE BUILDER SHALL BE RESPONSIBLE FOR MAINTAINING ALL STRUCTURE IN A STABLE CONDITION AND FOR ENSURING THAT NO ELEMENT BE OVERSTRESSED. THE BUILDER SHALL SEEK THE ADVICE OF AN ENGINEER IF REQUIRED FOR ANY SPECIALISED TEMPORARY WORKS (Eg. FORMWORK DESIGN, PROPPING).

G6. AT ALL TIMES, CONSTRUCTION SHALL BE CONDUCTED IN STRICT ACCORDANCE WITH THE OHS ACT, OHS REGULATIONS AND RELEVANT OHS CODES OF PRACTICE. THESE DRAWINGS MAY ONLY PERTAIN TO THE PERMANENT FINAL STATE OF THE PROPOSED STRUCTURE / CONSTRUCTION. THEY DO NOT NECESSARILY PERTAIN TO THE TEMPORARY STATE OF CONSTRUCTION OR THE CONSTRUCTION WORKPLACE, WHERE THE BUILDER SHALL ARRANGE FOR ALL NECESSARY DESIGN AND SPECIFICATION FOR ANY SUCH TEMPORARY WORKS FOR THE TEMPORARY STATE OF CONSTRUCTION, AS REQUIRED, TO ENSURE STRUCTURE STABILITY, PREVENT STRUCTURE OVERSTRESS AND ENSURE WORKPLACE SAFETY, SINCE THESE WORKS DEPEND ON PARTICULAR CONSTRUCTION METHODS ADOPTED BY THE BUILDER. EG. TRENCHING, EXCAVATION, PROPPING, SHORING, HANDRAIL, BARRIERS, ERECTION METHODS, PERSONAL PROTECTIVE EQUIPMENT, ETC.

G7. THE STRUCTURE REFERRED TO BY THIS DOCUMENTATION, IF RESIDENTIAL AND WHERE APPLICABLE, HAS BEEN DESIGNED FOR THE FOLLOWING LIVE LOADINGS, UNLESS OTHERWISE SPECIFIED;

- NON-TRAFFICABLE ROOFS 0.25 kPa
- MULTIPURPOSE FACILITY 4.00 kPa
- BALCONIES/TERRACES 4.00 kPa

G8. THE STRUCTURE REFERRED TO BY THIS DOCUMENTATION, IF RESIDENTIAL AND WHERE APPLICABLE, HAS BEEN DESIGNED FOR AS1170.2 REGION A AND TERRAIN CATEGORY 3 WIND LOADING PARAMETERS, UNLESS OTHERWISE SPECIFIED.

G9. EASEMENTS: UNLESS OTHERWISE SPECIFIED, THE STRUCTURE DESIGNED AND SPECIFIED IN THESE STRUCTURAL DRAWINGS IS DESIGNED ON THIS BASIS THAT NO EASEMENTS SHALL EXIST, EITHER ON THIS PROPERTY OR NEIGHBOURING PROPERTIES AT OR ADJACENT TO THE STRUCTURE SPECIFIED IN THESE DRAWINGS, THAT MAY HAVE AN EFFECT UPON THE STRUCTURE OR EASEMENT ASSET. THE BUILDER SHALL CONFIRM THAT NO EASEMENTS EXIST AND IF OTHERWISE, THIS OFFICE SHALL BE NOTIFIED, PRIOR TO ANY CONSTRUCTION FOR FURTHER ADVICE.

G10. NEW WALL AND ROOF CONSTRUCTION SHALL BE AT LEAST 20mm CLEAR OF ANY ADJACENT NEIGHBOURING STRUCTURES. CONSTRUCTION METHODS ADOPTED SHALL BE SUCH TO PREVENT ANY IMPACT OR INTERFERENCE WITH NEIGHBOURING PROPERTY.

G11. THE FIRE RESISTANCE PERIOD (FRP) OF STRUCTURAL MEMBERS SPECIFIED IN THESE DRAWINGS SHALL NOT BE LESS THAN THE REQUIRED FIRE RESISTANCE LEVEL (FRL). THE FRL SHALL BE AS DETERMINED BY THE BUILDING SURVEYOR AND AS SPECIFIED ON THE ARCHITECTURAL DRAWINGS. UNLESS SPECIFIED IN THESE DRAWINGS, NO REPRESENTATION IS MADE THAT THE FRP OF STRUCTURAL MEMBERS SPECIFIED ARE NOT LESS THAN THE REQUIRED FRL.

SITE WORKS:

W1. ADEQUATE DRAINAGE SHALL BE PROVIDED TO PREVENT WATER PONDING OR COLLECTING ADJACENT TO THE WORKS, BUILDINGS OR FOOTINGS, PRIOR TO, DURING AND AFTER CONSTRUCTION.

W2. EXCAVATIONS OR TRENCHES NEAR OR UNDER BUILDINGS SHALL BE BACKFILLED WITH COMPACTED CLEAN FILL OR CONCRETE AND IN ACCORDANCE WITH AS3500. EXCAVATIONS AND TRENCHES NEAR, UNDER OR PARALLEL TO THE EDGE OF A BUILDING OR STRUCTURE SHALL BE CONSTRUCTED AND/OR LOCATED AT A SUFFICIENT DISTANCE AWAY, IN STRICT ACCORDANCE WITH AS3500.3 (SECTION 7.2.9).

W3. THE BUILDER SHALL ENSURE THAT NO EXISTING FOOTINGS OR STRUCTURES, EITHER ON THIS PROPERTY OR NEIGHBOURING PROPERTIES, BE UNDERMINED OR DESTABILISED BY ANY CONSTRUCTION OR EXCAVATION WORKS.

W4. WARNING AND DISCLAIMER: BEWARE OF UNDERGROUND SERVICES - THESE DRAWINGS DO NOT SHOW THE POSITION OF EXISTING UNDERGROUND SERVICES. THE CONTRACTOR IS TO REFER TO CO-ORDINATION OF SERVICES DRAWINGS BY OTHERS. DOME CONSULTING (AUST) PTY LTD DISCLAIMS RESPONSIBILITY FOR DAMAGE OR INJURY TO ANY PERSON CAUSED DIRECTLY OR INDIRECTLY BY ANY WORKS AFFECTING THE SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ANY RELEVANT AUTHORITIES TO DETERMINE THE LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES.

SITE MAINTENANCE (BUILDER AND OWNER RESPONSIBILITIES):

X1. CONTINUAL AND FUTURE MAINTENANCE OF ROOF GUTTERS, DOWNPIPES, STORMWATER, DRAINS, PAVING, GUTTERS, SEWERAGE, MAINS WATER AND ALL PLUMBING SHALL ALWAYS BE CARRIED OUT BY THE BUILDER AND CURRENT AND FUTURE OWNERS / OCCUPIERS. THESE SHALL BE KEPT PROPERLY MAINTAINED TO PREVENT OVERFLOWS LEAKS AND BLOCKAGES. ANY DEFECTS SHALL BE PROMPTLY REPAIRED. REFER TO NOTES F2 & F3.

X2. THE PLANTING OF TREES, SHRUBS AND GARDEN BEDS AND GENERAL SITE MAINTENANCE, DURING CONSTRUCTION AND IN THE FUTURE, SHALL COMPLY WITH THE REQUIREMENTS OF AS2870 AND WITH THE CSIRO DOCUMENT BTF 18, "FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE: A HOMEOWNER'S GUIDE". IT IS THE BUILDERS RESPONSIBILITY TO ENSURE THAT THE OWNER IS INFORMED OF THESE REQUIREMENTS. THE BUILDER SHALL PROVIDE TO THE OWNER A COPY OF THE CSIRO DOCUMENT BTF 18 AND A COPY OF THE GEOTECHNICAL SITE INVESTIGATION REPORT (SOIL REPORT). REFER TO NOTES F2 & F3.

FOUNDATIONS AND FOOTINGS:

F1. FOOTINGS AND SLAB CONSTRUCTION SHALL BE IN ACCORDANCE WITH AS2870 AND AS3798.

F2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE GEOTECHNICAL SITE INVESTIGATION REPORT (SOIL REPORT). ALL FOOTING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE REPORT. THE BUILDER IS TO ENSURE THAT A COPY OF THE SOIL REPORT IS OBTAINED AND READ PRIOR TO CONSTRUCTION. A COPY OF THE SOIL REPORT SHALL BE PROVIDED TO THE OWNER BY THE BUILDER. ANY DISCREPANCIES SHALL BE REFERRED TO THIS OFFICE PRIOR TO CONSTRUCTION. REFER TO NOTES X1 & X2.

F3. ALL CONSTRUCTED FOOTING SYSTEMS SHALL BE MAINTAINED BY THE BUILDER AND CURRENT AND FUTURE OWNERS / OCCUPIERS IN ACCORDANCE WITH THE CSIRO DOCUMENT BTF 18, "FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE: A HOMEOWNER'S GUIDE". A COPY OF BTF 18 SHALL BE PROVIDED TO THE OWNER BY THE BUILDER. ANY DISCREPANCIES SHALL BE REFERRED TO THIS OFFICE PRIOR TO CONSTRUCTION. REFER TO NOTES X1 & X2.

F4. TREES WITHIN DISTANCE "X" FROM ALL EXTERNAL FOOTINGS SHOULD BE REMOVED PRIOR TO CONSTRUCTION, WHERE "X" = 1.0 x MATURE HEIGHT OF A SINGLE TREE OR "X" = 1.5 x MATURE HEIGHT OF A GROUP OR ROW OF TREES. IF TREES ARE NOT REMOVED, THIS OFFICE SHALL BE CONSULTED FOR FURTHER INSTRUCTION, ADVICE AND FOOTING SYSTEM REDESIGN, PRIOR TO CONSTRUCTION OF FOOTINGS. FOR INFORMATION ONLY AND NOT FOR CONSTRUCTION; FOOTING SYSTEM REDESIGN MAY COMPRISE SPECIFYING THAT THE AFFECTED FOOTINGS SHALL BE DEEPENED WITH BLINDING CONCRETE TO 2.0m BELOW SURFACE LEVEL OR TO BEDROCK OR PROVIDE A ROOT BARRIER TO A MINIMUM DEPTH OF 1.8m, LOCATED 2.0m MIN FROM EXTERNAL FOOTINGS.

F5. ALL EXCAVATIONS SHALL BE INSPECTED ON SITE. IF CONDITIONS OTHER THAN THOSE SPECIFIED IN THE DRAWINGS (OR IF NOT SPECIFIED IN THE DRAWINGS, AS SPECIFIED IN THE SOIL REPORT) ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR FURTHER ADVICE AND CONSTRUCTION SHALL CEASE UNTIL FURTHER WRITTEN INSTRUCTIONS ARE ISSUED BY ENGINEER.

F6. WHERE ROOT BARRIERS ARE SPECIFIED TO BE INSTALLED BETWEEN TREES AND FOOTINGS, THEY SHALL BE HDPE SHEETING, POLYPROPYLENE OR EQUIVALENT INSTALLED FROM THE SURFACE TO A DEPTH PENETRATING TO A MINIMUM OF 1.8m, TAKING CARE TO PENETRATE ALL SIGNIFICANT ROOT MATTER. THE ROOT BARRIER SHALL BE LOCATED A MINIMUM OF 2.0m FROM THE PROPOSED FOOTINGS AND COMPLY WITH THE DETAILS FOR OPEN EXCAVATIONS AS SPECIFIED IN AS2870 Supp1-1996 C6.1. THE BASE OF THE TRENCH SHALL CONTAIN ROOT INHIBITORS AND THE TRENCH BACKFILLED WITH LOW STRENGTH CONCRETE. THE EXTENT AND LOCATION OF THE ROOT BARRIER SHOULD BE CONFIRMED ON SITE IN CONSULTATION WITH THE GEOTECHNICAL ENGINEER OR CONTRACTOR WITH ARBORICULTURE EXPERIENCE.

F7. ALL FOOTINGS SHALL BE FOUNDED WITHIN THE FOUNDATION MATERIALS AND AT THE DEPTHS SPECIFIED IN THE DRAWINGS OR WHEN NOT SPECIFIED IN THE DRAWINGS, AS SPECIFIED IN THE GEOTECHNICAL SITE INVESTIGATION REPORT REFERRED TO ON THESE DRAWINGS.

F8. ALL FOOTINGS SHALL BE FOUNDED WITHIN NATURAL UNDISTURBED MATERIAL OF SAFE BEARING CAPACITY, AS SPECIFIED IN THESE DRAWINGS. FOOTINGS SHALL NOT BE FOUNDED IN FILL, DISTURBED, LOOSE, WET OR SOFT MATERIAL. FOOTINGS SHALL NOT BE FOUNDED IN CLOSE PROXIMITY TO EASEMENTS OR SERVICES, WITHIN THE ZONE OF INFLUENCE.

F9. FOUNDATION MATERIAL SHALL BE INSPECTED AND APPROVED BY THE BUILDING SURVEYOR / INSPECTOR BEFORE LYING MEMBRANES, FIXING REINFORCEMENT OR ORDERING CONCRETE.

F10. THE SITE OF THE WORKS SHALL BE STRIPPED OF ALL GRASS, ROOTS, VEGETABLE MATTER AND COMPRESSIBLE TOPSOIL.

F11. THE GROUND BELOW SLABS SHALL BE PROOF ROLLED WITH AN APPROVED HEAVY COMPACTOR. ALL "SOFT SPOTS" ENCOUNTERED SHALL BE REMOVED AND REPLACED WITH COMPACTED CRUSHED ROCK OR APPROVED FILL IN ACCORDANCE WITH AS2870 & AS3798. CLEAN GRANULAR FILLING UP TO 600mm MAY BE PLACED UNDER THE SLAB IN ACCORDANCE WITH THE PROVISIONS OF AS 2870 PART 6.4. FILLING SHALL BE COMPACTED IN 150mm THICK LAYERS BY MECHANICAL ROLLER. ANY FILL USED, UNLESS NOTED OTHERWISE, SHALL BE A SELECT NON-EXPANSIVE MATERIAL CONTAINING NO PIECES LARGER THAN 75mm. FILL SHALL BE PLACED IN 150mm LAYERS AND UNIFORMLY COMPACTED USING PROPER EQUIPMENT TO AT LEAST 95% RELATIVE COMPACTION.

F12. TERMITE PROTECTION SHALL BE PROVIDED AS REQUIRED BY AUSTRALIAN STANDARD AS3990 AND THE LOCAL STATUTORY AUTHORITY.

F13. SLABS SHALL BE LAID ON A 0.2 mm POLYTHENE MEMBRANE, CONTINUOUS, LAPPED 200mm MINIMUM AND TAPED AT PUNCTURES AND SERVICE AND PIPE PENETRATIONS. MEMBRANE TO EXTEND UNDER AND TO THE SIDES OF ALL SLABS, BEAMS AND THICKENINGS.

F14. BEAM AND STRIP FOOTING REINFORCEMENT SHALL HAVE A NOMINAL COVER OF 50mm. TRENCH MESH SHALL BE LAID CONTINUOUSLY AND SHALL BE SPLICED WHERE NECESSARY WITH A LAP OF 500mm.

F15. TRENCH MESH SHALL BE OVERLAPPED BY THE WIDTH OF FABRIC AT CORNERS AND INTERSECTIONS AND THE ENDS OF TRENCH MESH SHALL TERMINATE WITH A CROSSBAR. FABRIC SHALL BE PLACED NEAR THE TOP OF THE SLAB AND SHALL HAVE A NOMINAL COVER OF 25mm, UNO. FABRIC SHALL BE LAPPED A MINIMUM OF TWO WIRES PLUS 25mm AND SHALL BE SET OUT SUCH THAT NO MORE THAN THREE THICKNESSES OF FABRIC OCCUR AT ANY LOCATION.

F16. STRIP FOOTINGS DEEPER THAN 700mm SHALL BE PROVIDED WITH SIDE SLIP JOINTS CONSISTING OF A DOUBLE LAYER OF POLYTHENE AT THE SIDES OF THE FOOTING ONLY.

F17. PROVIDE ADEQUATE SITE DRAINAGE IN ACCORDANCE WITH AS2870 SECTION 5.2 AND AS3500. PROVIDE AGRICULTURAL DRAIN SYSTEM TO UP STREAM PERIMETER OF FOOTINGS / BUILDINGS AND CONNECTED TO STORMWATER SYSTEM VIA SILT PITS. THE AREA 1m AROUND THE PERIMETER OF BUILDINGS SHALL BE GRADED AWAY FROM BUILDINGS AT A MINIMUM SLOPE OF 1 IN 20. THE GROUND SURROUNDING THE SLAB SHALL HAVE ITS SURFACE AT LEAST 150mm LOWER THAN THE SLAB SURFACE AND BE GRADED AWAY FROM THE SLAB EDGE TO THE SITE DRAINAGE SYSTEM.

F18. WHERE REQUIRED AND APPROPRIATE, PROVIDE 15MPa BLINDING CONCRETE UNDER SPECIFIED FOOTINGS TO ACHIEVE REQUIRED FOUNDING DEPTH OF FOOTINGS.

F19. THE BUILDER SHALL CARRY OUT THE ADDITIONAL REQUIREMENTS FOR MODERATELY (M), HIGHLY (H1 & H2) AND EXTREMELY (E) REACTIVE SITES, AS REQUIRED AND SPECIFIED IN AS2870 CL.5.6 & 6.6.

F20. FOR MODERATELY (M), HIGHLY (H1 & H2) AND EXTREMELY (E) REACTIVE SITES, ALL DRAINS (STORMWATER AND SANITARY PLUMBING DRAINS AND DISCHARGE PIPES) ATTACHED TO OR EMERGING FROM UNDERNEATH THE BUILDING SHALL INCORPORATE FLEXIBLE JOINTS IMMEDIATELY OUTSIDE THE FOOTING AND COMMENCING WITHIN 1 M OF THE BUILDING PERIMETER TO ACCOMMODATE A TOTAL RANGE OF DIFFERENTIAL MOVEMENT IN ANY DIRECTION EQUAL TO THE ESTIMATED CHARACTERISTIC SURFACE MOVEMENT OF THE SITE (Ys). THE FITTINGS OR OTHER DEVICES THAT ARE PROVIDED TO ALLOW FOR THE MOVEMENT SHALL BE SET AT THE MID POSITION OF THEIR RANGE OF POSSIBLE MOVEMENT AT THE TIME OF INSTALLATION, SO AS TO ALLOW FOR MOVEMENT EQUAL TO 0.5Ys IN ANY DIRECTION FROM THE INITIAL SETTING. UNLESS SPECIFIED OTHERWISE, Ys SHALL BE TAKEN AS 40mm FOR CLASS M, 60mm FOR CLASS H1 AND 75mm FOR CLASS H2. FOR CLASS E OR P SITES, Ys SHALL BE TAKEN AS THAT SPECIFIED IN THE GEOTECHNICAL SITE INVESTIGATION REPORT OR BY THE ENGINEER.

CONCRETE:

C1. ALL CONCRETE WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600.

C2. CONCRETE STRENGTH AND CONCRETE COVER:

THE CHARACTERISTIC COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS (f'c) SHALL BE AS SPECIFIED BELOW, UNLESS OTHERWISE SPECIFIED.

THE CONCRETE COVER TO REINFORCEMENT OR TENDONS, WHERE STANDARD FORMWORK AND COMPACTION ARE USED, SHALL BE AS SPECIFIED BELOW, UNLESS OTHERWISE SPECIFIED (REFER ALSO TO AS3600 SECTION 4.3).

CONCRETE STRENGTH AND CONCRETE COVER:

	f'c	Exposure Classification		
		A1	A2	B1
BLINDING CONCRETE	15 MPa	n/a	n/a	n/a
PLAIN CONCRETE BORED PIERS	25 MPa	n/a	n/a	n/a
REINFORCED BORED PIERS(1)	32 MPa	45	45	-
RAFT AND WAFFLE SLABS	25 MPa	40	50	-
STRIP AND PAD FOOTINGS	25 MPa	50	60	-
SLAB ON GROUND(2)-RESIDENTIAL (T/B)	25 MPa	30/40	40/50	-
SLAB ON GROUND(2)-INDUSTRIAL (T/B)	32 MPa	-	30/40	40/50
SUSPENDED SLABS AND BEAMS	32 MPa	-	30	40
COLUMNS AND WALLS	40 MPa	-	20	30
PRECAST PANELS	40 MPa	-	20	30

(1)REINFORCED BORED PIERS CAST IN NON AGGRESSIVE SOILS, REFER ALSO TO AS2159.

(2)SLAB ON GROUND CAST AGAINST GROUND WHERE SURFACE IS PROTECTED BY A DAMP PROOF MEMBRANE.

(3)(T/B) DENOTES: TOP COVER / BOTTOM COVER

EXPOSURE CLASSIFICATIONS

CONCRETE SURFACE IN CONTACT WITH GROUND IN NON-AGGRESSIVE SOILS
RESIDENTIAL: A1
NON-RESIDENTIAL: A2

CONCRETE SURFACE IN INTERIOR ENVIRONMENTS
RESIDENTIAL: A1
NON-RESIDENTIAL: A2
INDUSTRIAL (REPEATED WETTING AND DRYING): B1

CONCRETE SURFACE IN ABOVE GROUND EXTERIOR ENVIRONMENTS
NON INDUSTRIAL (>50km FROM COASTLINE): A2
INDUSTRIAL (>50km FROM COASTLINE): B1
NEAR COASTAL (1km to 50km FROM COASTLINE): B1

THE CONCRETE COVERS SPECIFIED ABOVE ARE FOR EXPOSURE CLASSIFICATIONS A1, A2 OR B1 IN A TEMPERATE CLIMATIC ZONE, AS DEFINED IN AS3600. REFER TO THIS OFFICE FOR FURTHER ADVICE ON OTHER CLASSIFICATIONS OR OTHER CLIMATIC ZONES OR FOR FURTHER GUIDANCE.

THE CONCRETE COVERS SPECIFIED ABOVE DO NOT APPLY FOR CONCRETE IN SULFATE, ACID SULPHATE OR SALINE SOILS OR WITHIN 1km OF COASTLINE OR IN FRESHWATER OR SEAWATER. REFER TO THIS OFFICE FOR FURTHER ADVICE FOR SUCH CASES OR FOR FURTHER GUIDANCE.

C3. ALL CONCRETE SHALL BE COMPACTED USING MECHANICAL VIBRATION. VIBRATION OF FORMS IS NOT ACCEPTABLE AND CONCRETE SHALL NOT BE SPREAD BY VIBRATING.

C4. CONCRETE SHALL BE CURED BY AN APPROVED METHOD FOR AT LEAST 7 DAYS AFTER PLACEMENT.

C5. CONCRETE SECTIONS SHOWN ARE MINIMUM SIZES AND DO NOT INCLUDE FINISHES. SIZES SHALL NOT BE REDUCED OR HOLES FORMED OR MADE IN ANY MEMBER WITHOUT THE APPROVAL OF THE ENGINEER.

C6. SLABS AND BEAMS ARE TO BE POURED TOGETHER UNO.

C7. CONCRETE COVER TO BE MAINTAINED BY THE USE OF APPROVED BAR CHAIRS SPACED AT APPROX. 1000mm CROSS CENTRES. CONDUITS, PIPES ETC. ARE NOT TO BE PLACED IN COVER CONCRETE.

C8. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY ONLY AND NOT IN TRUE PROJECTION.

C9. REINFORCEMENT SHALL BE IN ACCORDANCE WITH AS4671.

REINFORCEMENT NOTATIONS:

N - D500N Hot Rolled Ribbed Reinforcing Bar	S - D250N Hot Rolled Ribbed Reinforcing Bar
RL - D500RL Rectangular Mesh	SL - D500SL Square Mesh
R - R250N Hot Rolled Plain Reinforcing Bar	LxTM - D500LxTM Trench Mesh

C10. REINFORCEMENT SHALL BE EVENLY DISTRIBUTED OVER THE WIDTHS SHOWN UNO.

C11. PROVIDE 2-N12 OR 3-L12TM X 2m LONG DIAGONALLY ACROSS RE-ENTRANT CORNERS OF SLABS, TIED UNDER TOP FABRIC, UNO.

C12. AT SLAB EDGES INCLUDING CONSTRUCTION AND OTHER JOINTS AT LEAST ONE REINFORCING BAR OR FABRIC WIRE SHALL BE LOCATED PARALLEL TO AND WITHIN 75 OF THE SLAB EDGE.

C13. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE APPROVED OR PERMITTED BY THE ENGINEER.

C14. SAWN JOINTS SHALL BE MADE AT A TIME APPROPRIATE TO THE CONCRETE MIX AND CLIMATIC CONDITIONS - GENERALLY WITHIN 10 TO 20 HOURS OF PLACING THE CONCRETE.

C15. STRIPPING OF FORMS AND REMOVAL OF FORMWORK SHALL TAKE PLACE IN ACCORDANCE WITH A PROCEDURE AGREED WITH THE ENGINEER.

C16. SUSPENDED SLABS SHALL BE GIVEN AN UPWARD MID SPAN CAMBER OF 3mm PER 1000mm. BEAMS SHALL BE CAMBERED AS SHOWN ON DRAWINGS.

C17. LAPS SHALL BE 300mm MIN FOR FABRIC. WHERE NOT SHOWN ON THE DRAWINGS, LAPS SHALL BE IN ACCORDANCE WITH SECTION 13 OF AS3600. REINFORCEMENT SPLICES SHALL BE MADE IN THE POSITIONS SHOWN ON THE DRAWINGS OR AS OTHERWISE APPROVED BY THE ENGINEER.

C18. HOLDING DOWN BOLTS SHALL BE SUPPLIED TO THE CONCRETER FOR CASTING INTO THE CONCRETE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE HOLDING DOWN BOLT PLAN SUPPLIED BY STEEL FABRICATOR.

C19. WELDING OF REINFORCEMENT SHALL BE NOT BE PERMITTED UNLESS AUTHORISED BY THE ENGINEER.

C20. ALL CONCRETE BEAMS AND SLABS SHALL BE SEPARATED FROM SUPPORTING MASONRY BY 2 LAYERS OF A SUITABLE DEBONDING MEMBRANE OR SIMILAR APPROVED MEMBRANE ON TOP OF MORTAR LEVELLING SCREED. VERTICAL FACES OF CONCRETE SHALL BE KEPT FREE OF ADJOINING SURFACES BY A 12mm THICKNESS OF BITUMINOUS CANEITE. ALL NON-LOAD BEARING WALLS SHALL BE KEPT 20mm CLEAR FROM THE UNDERSIDE OF CONCRETE.

C21. BRICKWORK SHALL NOT BE CONSTRUCTED ON CONCRETE SLABS OR BEAMS UNTIL FORMWORK SUPPORTING SAME HAS BEEN REMOVED.

C22. FOR FLOOR AREAS LARGER THAN 16.0 Sq.m SUPPORTING BRITTLE FLOOR COVERINGS (TILES) SLAB MESH TO BE UPGRADED TO SL92 MIN. TO ALLOW FOR SHRINKAGE CONTROL.

STRUCTURAL STEEL:

S1. ALL STEEL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100, AS1163, AS3678 & AS3679.

S2.ALL FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AS4100 AND AS3828.

S3. HOT ROLLED & WELDED PRODUCTS SHALL BE BHP - 300PLUS AND PLATE SHALL BE GRADE 250 MATERIAL SQUARE, RECTANGULAR AND CIRCULAR HOLLOW MEMBERS (SHS, RHS & CHS) SHALL COMPLY WITH AS1163.

S4. ALL WELDING SHALL BE IN ACCORDANCE WITH AS1554. UNLESS NOTED OTHERWISE, ALL WELDS SHALL BE CONTINUOUS FILLET WELD, SIZE 6mm, GP CATEGORY USING E41XX/W40X CONSUMABLES.

S5. BOLT DESIGNATION:

4.6/S - COMMERCIAL BOLTS: GRADE 4.6 TO AS1111 TIGHTENED TO A SNUG TIGHT CONDITION.

8.8/S - HIGH STRENGTH BOLTS: GRADE 8.8 TO AS1252 TIGHTENED TO A SNUG TIGHT CONDITION.

8.8/TB - HIGH STRENGTH BOLTS: GRADE 8.8 TO AS1252 FULLY TENSIONED TO AS4100 AS A BEARING JOINT.

8.8/TF - HIGH STRENGTH BOLTS: GRADE 8.8 TO AS1252 FULLY TENSIONED TO AS4100 AS A FRICTION JOINT

S6. BOLTS SHALL BE M20-8.8/S AND HOLDING DOWN BOLTS SHALL BE M20-4.6/S GALVANISED UNO.

S7. CONNECTIONS NOT SPECIFICALLY DETAILED SHALL BE IN ACCORDANCE WITH THE APPROPRIATE CONNECTION DETAILED IN THE AISC STANDARDISED STRUCTURAL CONNECTIONS MANUAL.

S8. ALL CLEAT PLATES AND STIFFENERS SHALL BE 10mm THICK UNO.

S9. HOLLOW MEMBERS TO BE GALVANISED SHALL BE ADEQUATELY VENTED. THE ENDS OF ALL HOLLOW MEMBERS SHALL BE SEALED WITH A 3mm PLATE UNO.

S10. PURLINS AND GIRTS SHALL BE IN ACCORDANCE WITH AS4600, GALVANISED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

S11. WHERE STEEL SHOP DRAWINGS ARE PREPARED AND WHERE THE ENGINEER HAS BEEN ENGAGED TO REVIEW THE STEEL SHOP DRAWINGS, A COPY OF THE STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO THIS OFFICE FOR REVIEW, PRIOR TO ANY FABRICATION, PROCUREMENT OF MATERIALS OR CONSTRUCTION OF STEEL OR ANY OTHER STRUCTURE. THESE SHALL NOT COMMENCE UNTIL THE REVIEW OF SHOP DRAWINGS IS COMPLETED. THIS REVIEW IS AN OVERVIEW REVIEW OF THE DESIGN INTENT ONLY AND SHALL NOT BE DEEMED AS AN APPROVAL OR VERIFICATION OF THE SHOP DRAWINGS. THIS REVIEW DOES NOT REMOVE THE RESPONSIBILITY FOR THE INTERPRETATION OF THE STRUCTURAL DRAWINGS, DIMENSIONAL ACCURACY, FABRICATION AND ERECTION FROM THE STEEL FABRICATOR OR BUILDER.

S12. PROVIDE ALL NECESSARY CLEATS AND HOLES TO STEEL MEMBERS, AS REQUIRED TO FIX TIMBER AND OTHER MATERIALS AND FINISHES TO THE STEELWORK.

S13. ALL BOLTS AND STRUCTURAL STEEL EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANISED UNO.

S14. ALL EXPOSED STRUCTURAL STEELWORK, BOLTS AND FIXINGS ARE TO BE HOT DIPPED GALVANISED IN ACCORDANCE WITH AS4680 WITH A MINIMUM ZINC COATING MASS OF 600g/m2 OR OTHER APPROVED PROTECTIVE COATING SYSTEM SHALL BE PROVIDED. COATINGS DAMAGED DURING TRANSPORT AND ERECTION SHALL BE MADE GOOD.

S15. GALVANISING: PROVIDE 10mm DIAMETER GALVANISING DRAIN HOLES AS REQUIRED. ALL GALVANISING DRAIN HOLES ARE TO BE PLUGGED WITH SILICONE SEALANT & PAINTED TO MATCH GALVANISED STRUCTURE AFTER ERECTION. ANY CHIPS OR FLAKING OF GALVANISING COATING TO STRUCTURAL STEELWORK PRIOR TO OR DURING ERECTION IS TO BE TOUCHED UP WITH TWO COATS OF ZINC RICH PAINT. ALL GALVANISED STRUCTURAL STEELWORK IN CONTACT WITH THE GROUND IS TO BE COATED WITH DULUX AMERLOCK 400 TO 100mm ABOVE FINISHED SURFACE LEVEL. REFER MANUFACTURE'S SPECIFICATIONS FOR APPLICATION.

S16. ALL STEEL LINTELS SUPPORTING MASONRY EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANISED. STRUCTURAL STEEL CORROSION PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH THE BCA VOL.2 SECTION 3.4.4.4, UNLESS NOTED OTHERWISE.

S17. PROVIDE MINIMUM 150mm END BEARING AND LEVELLING GROUT FOR STEELWORK SEATED ON MASONRY UNO. LINTELS SHALL NOT BE PROPPED DURING LOAD APPLICATION.

TIMBER:

T1. ALL TIMBER WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS1684 & AS1720.

T2. TIMBER MEMBERS REQUIRED THAT ARE NOT SPECIFIED IN THE DRAWINGS SHALL BE IN ACCORDANCE WITH AS1684 OR THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCY SHALL BE REFERRED TO THE ARCHITECT.

T3. BRACING: PROVIDE SUB FLOOR, WALL AND ROOF BRACING IN ACCORDANCE WITH AS1684 IN ADDITION TO ANY BRACING SPECIFIED IN THESE DRAWINGS. ALL TIMBER MEMBERS SHALL BE ADEQUATELY TIED TO RESIST UPLIFT AND RACKING FORCES IN ACCORDANCE WITH AS1684. PROVIDE SPEED BRACING TO ALL TIMBER RAFTERS.

T4. ROOF TRUSSES SHALL BE TO MANUFACTURERS DESIGN AND SPECIFICATIONS. A COPY OF ROOF TRUSS DESIGN, COMPUTATIONS AND DRAWINGS MUST BE SUBMITTED TO THIS OFFICE FOR REVIEW, PRIOR TO ANY FABRICATION, PROCUREMENT OF MATERIALS OR CONSTRUCTION OF ROOF TRUSSES OR ANY OTHER STRUCTURE. THESE SHALL NOT COMMENCE UNTIL REVIEW OF ROOF TRUSS DESIGN IS COMPLETED. THIS REVIEW IS AN OVERVIEW REVIEW OF THE DESIGN INTENT ONLY AND SHALL NOT BE DEEMED AS AN APPROVAL OR VERIFICATION OF THE ROOF TRUSS DESIGN. THIS REVIEW DOES NOT REMOVE THE RESPONSIBILITY FOR THE INTERPRETATION OF THE STRUCTURAL DRAWINGS, DIMENSIONAL ACCURACY, DESIGN, MANUFACTURE AND ERECTION OF TRUSSES FROM THE TRUSS MANUFACTURER OR BUILDER.

T5. PROVIDE DOUBLE STUDS UNDER EACH END OF ALL TIMBER LINTELS, BEAMS ETC., UNLESS NOTED OTHERWISE. PROVIDE DOUBLE FLOOR JOISTS UNDER ALL WALLS, UNO.

T6. ALL BOLTED CONNECTIONS SHALL USE WASHERS UNDER BOLT HEAD AND NUT. ALL EXTERNAL BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED. NO KNOTS OR DEFECTS SHALL OCCUR WITHIN 150mm OF BOLT GROUP OR CONNECTORS. WHERE POSSIBLE, RE-TIGHTEN BOLTS AFTER 6 WEEKS AND AGAIN AT 12 MONTHS.

T7. MAKE GOOD PRESERVATIVE TREATMENT WHERE CHECKOUTS, HOLES AND CUTS EXPOSE UNTREATED TIMBER.

T8. ALL EXTERNAL TIMBERS SHALL BE DURABLE, SUITABLE FOR EXTERNAL USE AND COMPLY WITH THE APPROPRIATE HAZARD LEVEL FOR SPECIFIC SERVICE CONDITIONS.

T9. GLUED LAMINATED BEAMS SHALL BE MANUFACTURED IN ACCORDANCE WITH AS1328 CAMBER SHALL BE AS NOTED ON THE DRAWINGS OR AS SPECIFIED AND INSTALLED WITH HOG UP. BEAMS FOR EXTERNAL USE SHALL BE FABRICATED USING RESORCINOL OR PHENOLIC ADHESIVE.

T10. ALL PROPRIETARY FIXINGS SHALL BE INSTALLED TO DEVELOP THEIR MAXIMUM CAPACITY AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. METAL FIXINGS SHALL BE COMPATIBLE WITH TIMBER GLUES AND PRESERVATIVE TREATMENTS.

T11. NO PENETRATIONS, NOTCHES, CHAMFERS OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN TIMBER MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

MASONRY:

M1. ALL MASONRY WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.

M2. ALL MASONRY UNITS SHALL BE IN ACCORDANCE WITH AS4455. MORTAR, BLOCKS AND ALL BUILT-IN COMPONENTS SHALL COMPLY WITH THE DURABILITY REQUIREMENTS OF AS3700 - TABLE 5.1, WITH RESPECT TO THE EXPOSURE ENVIRONMENT.

M3. ALL MASONRY UNITS SHALL BE SOLID OR HOLLOW AS SPECIFIED AND HAVE A CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF 30MPa FOR BRICKS AND 15MPa FOR CONCRETE BLOCKS.

M4. UNREINFORCED MASONRY: MORTAR SHALL CONSIST OF 1 CEMENT, 1 HYDRATED LIME, 6 WELL GRADED SAND UNLESS REQUIRED OTHERWISE BY AS3700.

M5. REINFORCED MASONRY: MORTAR TO CLAY MASONRY SHALL CONSIST OF 1 CEMENT, ¼ HYDRATED LIME, 3 WELL GRADED SAND. CAVITY GROUT SHALL CONSIST OF 1 CEMENT, 2 ½ SAND, 1 ½ 10mm AGGREGATE.

M6. ALL MORTAR SHALL BE TYPE "M3", UNLESS IN A SEVERE MARINE ENVIRONMENT WHERE MORTAR TYPE "M4" SHALL BE USED, REFER AS3700 TABLE 12.2. CEMENT SHALL BE TYPE GP PORTLAND CEMENT OR GB BLENDED CEMENT COMPLYING WITH AS3972. LIME SHALL BE HYDRATED BUILDING LIME COMPLYING WITH AS1672.1. WATER THICKENER SHALL BE METHYL CELLULOSE BASED. SAND SHALL BE WELL GRADED AND FREE FROM SALTS, VEGETABLE MATTER AND IMPURITIES AND SHALL NOT CONTAIN MORE THAN 10% OF THE MATERIAL PASSING THE 75 MICRON SIEVE.

M7. LOAD BEARING MASONRY SHALL HAVE FULL BED JOINTS, UNO.

M8. MASONRY TIES FOR CAVITY WALLS SHALL BE MEDIUM DUTY CLASSIFICATION SPACED AT NOT MORE THAN 600 CENTRES VERTICALLY AND HORIZONTALLY. ADDITIONAL TIES SHALL BE PLACED ADJACENT TO LATERAL SUPPORTS, CONTROL JOINTS AND AROUND OPENINGS AT A SPACING OF NOT MORE THAN 300, AND LOCATED NOT MORE THAN 300 FROM THE LINE OF SUPPORT, CONTROL JOINT OR PERIMETER OF OPENING.

M9. MASONRY SHALL BE TIED TO COLUMNS AT 400mm MAXIMUM VERTICAL CENTRES.

M10. NEW MASONRY SHALL BE TIED INTO EXISTING USING MEDIUM DUTY TIES AT 400 MAXIMUM VERTICAL CENTRES ALONG ALL VERTICAL EDGES AND AT 600 MAXIMUM HORIZONTAL CENTRES UNO.

M11. ALL CAVITIES BELOW GROUND LEVEL SHALL BE MORTAR OR GROUT FILLED.

M12. NON LOAD BEARING WALLS SHALL BE KEPT 20mm CLEAR OF THE UNDERSIDE OF FLOORS AND SHELF ANGLES.

M13. ALL STEELWORK PROJECTING INTO CAVITIES SHALL BE HOT DIPPED GALVANISED.

M14. AT VERTICAL CONTROL JOINTS PROVIDE MASONRY FLEXIBLE ANCHORS MFA 3/3 (A) AT 600mm MAX CTS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TOGETHER WITH A SUITABLE BACKING ROD AND FLEXIBLE SEALANT APPLIED TO UNPAINTED SURFACES.

M15. WHERE WALLS ABUT THE UNDERSIDE OF HORIZONTAL OR RAKING MEMBERS (SLABS, STEEL OR CONCRETE BEAMS) PROVIDE MASONRY FLEXIBLE ANCHORS TYPE MFA 4 EVERY THIRD PERPEND AND FIXED TO THE STRUCTURAL MEMBER WITH RAMSET 6 DIA. HEAD DRIVE PINS OR SIMILAR. PROVIDE 10MM CLOSED CELL POLYETHYLENE FOAM BACKING ROD BETWEEN WALL AND MEMBER.

M16. WHERE MASONRY WALLS INTERSECT STRUCTURAL MEMBERS (STEEL OR CONCRETE) PROVIDE MASONRY FLEXIBLE ANCHORS MFA 7 AT 600 CENTRES EMBEDDED IN THE MASONRY WALL AND FIXED TO MEMBER WITH 6 DIA. HEAD RAMSET DRIVE PINS. MFA 7 TIES SHALL BE 200MM LONG X 50MM TURNDOWN. TIES TO OUTER SKIN SHALL INCORPORATE A DRIP GROOVE.

M17. FOR WALLS WITH A CAVITY GREATER THAN 80MM, PROVIDE MASONRY FLEXIBLE ANCHORS 'ANCHOR-TIES' AT 450 VERTICAL AND 600 HORIZONTAL CENTRES.

M18.NEEDLE AND PROPPING DETAILS AND PROCEDURES THAT MAY BE SHOWN ON THE DRAWINGS ARE A GUIDE ONLY. THE BUILDER SHALL PROVIDE DETAILS AND PROCEDURES OF NEEDLE AND PROPPING TO OPENINGS IN MASONRY WALLS TO THIS OFFICE FOR REVIEW BEFORE WORK COMMENCES.

M19. PROVIDE VERTICAL CONTROL JOINTS AT 6m MAXIMUM CENTRES, UNLESS NOTED OTHERWISE. VERTICAL CONTROL JOINTS AND ARTICULATION OF MASONRY WALLS SHALL BE IN ACCORDANCE WITH AS3700 Cl.12.6.4, TECHNICAL NOTE No.61 PUBLISHED BY THE CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA CEMENT, THE RECOMMENDATIONS OF THE SITE INVESTIGATION REPORT AND AS SPECIFIED IN THESE DOCUMENTS OR THE ARCHITECTURAL DRAWINGS. JOINT SPACING SHALL NOT EXCEED 6m UNO AND JOINTS SHALL ALSO BE LOCATED AT A DISTANCE FROM ALL CORNERS NOT LESS THAN 0.5m AND NOT GREATER THAN 3.0m. JOINTS SHALL BE KEPT FREE OF NON-COMPRESSIBLE MATERIAL.

M20. REINFORCED MASONRY:

- REINFORCED MASONRY WALL/BLOCK CAVITY TO BE FILLED WITH 20MPa MORTAR/GROUT WITH POURABLE CONSISTENCY (10mm MAX AGGREGATE SIZE) AND CEMENT CONTENT NOT LESS THAN 300kg/m3 AND SHALL BE M3 (1:5).
- CAVITY GROUT SHALL BE PLACED BY PUMPING OR OTHER APPROVED METHOD AND SHALL BE PLACED BEFORE INITIAL SET OCCURS, AND IN NO CASE MORE THAN 12 HOURS AFTER WATER IS ADDED.
- CAVITY GROUTING SHALL BE DONE IN LIFTS NOT EXCEEDING 300mm PER 12 HOUR PERIOD AND RODDED INTO POSITION.
- THE REINFORCED CAVITY SHALL BE NOT LESS THAN 75mm IN WIDTH. UNO.
- MORTAR SHALL CURE FOR AT LEAST THREE DAYS BEFORE POURING CAVITY GROUT.
- PROVIDE A MINIMUM OF 15mm COVER OF GROUT AROUND ALL REINFORCEMENT.
- MASONRY SHALL BE LAID WITH FULL HEAD AND BED MORTAR JOINTS. MORTAR FINS SHALL NOT PROTRUDE INTO CAVITY GROUT SPACE.
- DOUBLE LEAF MASONRY SHALL BE BONDED TOGETHER WITH HEAVY DUTY MASONRY TIES AT MAXIMUM 600 CENTRES.
- CLEAN OUT PORTS SHALL BE PROVIDED FOR EACH POUR BY LEAVING OUT TWO UNITS AT THE BOTTOM OF EACH SECTION TO BE GROUTED. DURING WORK, MORTAR FINS AND ANY OTHER MATERIAL SHALL BE REMOVED FROM THE CAVITY GROUT SPACE. THE PORTS SHALL BE SEALED WITH SIMILAR MASONRY UNITS AFTER INSPECTION AND BEFORE GROUTING.
- REINFORCING BARS SHALL BE PLACED BEFORE OR DURING THE BLOCK LAYING.
- REINFORCEMENT, INCLUDING STARTER BARS AND WALL TIES, SHALL BE HOT DIPPED GALVANIZED UNO.

External Lintel Table

For Timber Lintels Refer Member Schedule
Builder To Check Member Schedule Prior To Using This
Table External Lintels To Be Hot Dipped Galvanised

Up to 1000mm brickwork over lintel

Span	Lintel	
900	90x90x6 EA	110 End Bearing
1200	90x90x6 EA	110 End Bearing
1500	90x90x6 EA	110 End Bearing
1800	100x100x6 EA	110 End Bearing
2100	100x100x6 EA	110 End Bearing
2400	150x90x8 UA	150 End Bearing
2700	150x90x8 UA	150 End Bearing

Up to 2000mm brickwork over lintel

Span	Lintel	
900	90x90x6 EA	110 End Bearing
1200	90x90x6 EA	110 End Bearing
1500	90x90x6 EA	110 End Bearing
1800	100x100x6 EA	110 End Bearing
2100	150x90x8 UA	150 End Bearing
2400	150x90x8 UA	150 End Bearing
2700	150x90x8 UA	150 End Bearing

Abbreviations

SHS	SQUARE HOLLOW SECTION
RHS	RECTANGULAR HOLLOW SECTION
CHS	CIRCULAR HOLLOW SECTION
UB	UNIVERSAL BEAM
UC	UNIVERSAL COLUMN
PFC	PARALLEL FLANGE CHANNEL
EA	EQUAL ANGLE
UA	UNEQUAL ANGLE
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL

PRELIMINARY
Not For Construction

Rev.	Init	Description	Date
-	-	-	-

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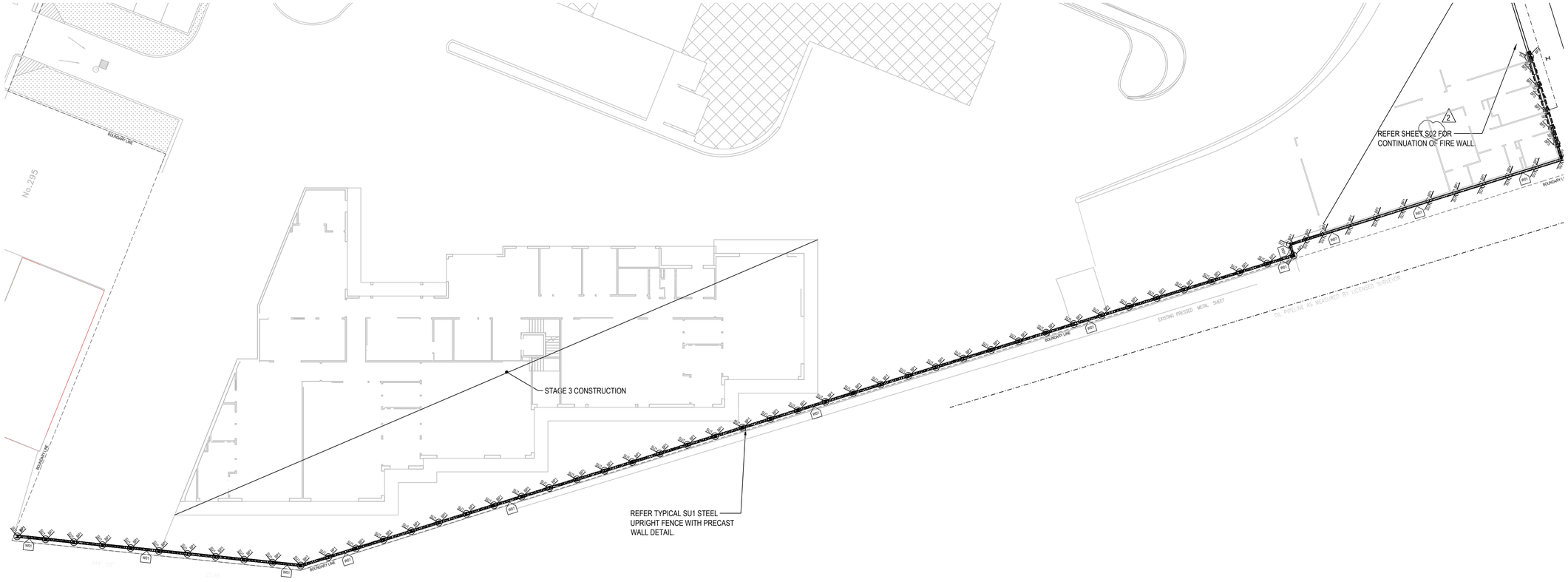
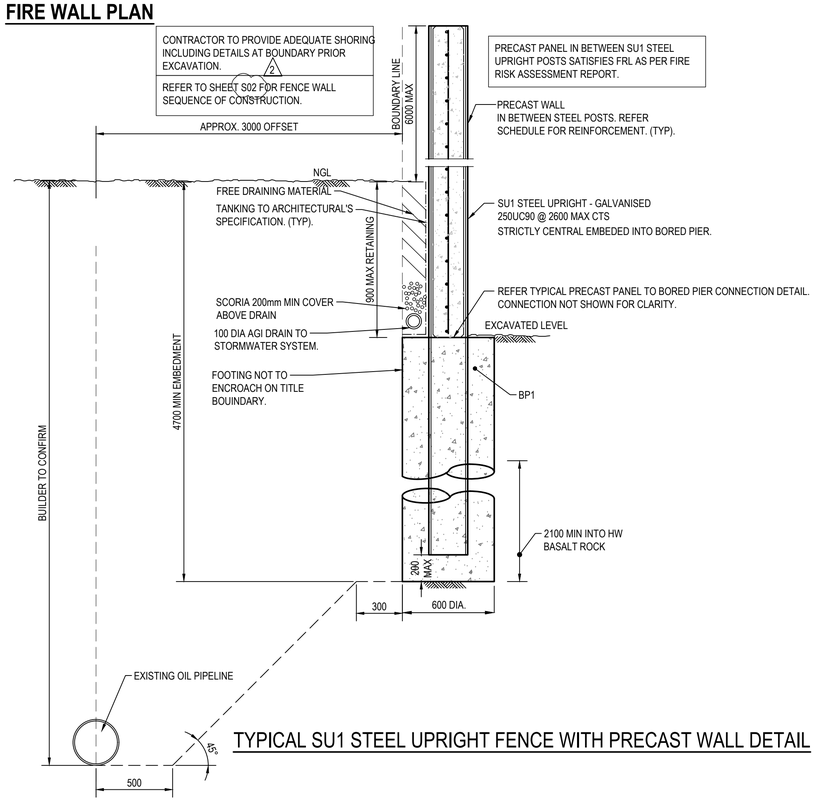
Project
Proposed Childcare Centre
291 Sunshine Road
Tottenham

Drawing
Cover Sheet
General Notes

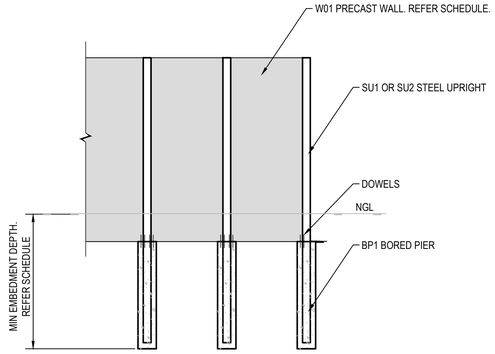
Status	PRELIMINARY		
Drawn	HT	Designed	HT
Scale	-	Date	July 2021
Project No.	30365	Drawing No.	S00
		Rev.	00



FIRE WALL PLAN

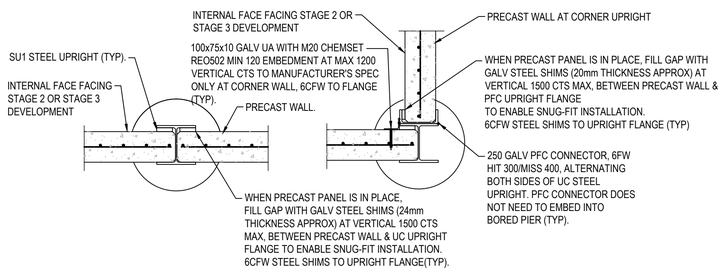


TYPICAL SU1 STEEL UPRIGHT FENCE WITH PRECAST WALL DETAIL



TYPICAL PRECAST PANEL ELEVATION BETWEEN SU1 OR SU2 STEEL UPRIGHTS.

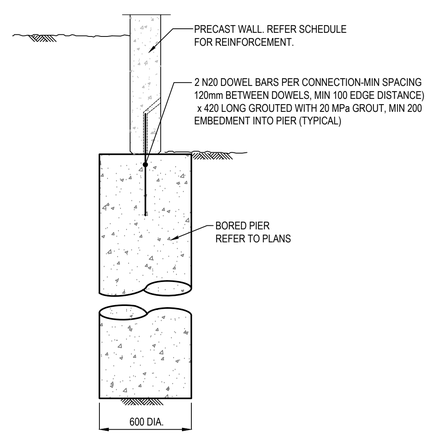
NTS



TYPICAL PRECAST PANEL TO SU1 STEEL UPRIGHT CONNECTION DETAIL.

(PLAN VIEW)

PRECAST PANEL REINFORCEMENT NOT SHOWN FOR CLARITY.



TYPICAL PRECAST PANEL TO BORED CONNECTION DETAIL.

GENERAL NOTES

1. ALL DIMENSIONS AND LEVELS SHALL BE CHECKED BY THE CONTRACTOR AGAINST ARCHITECTURAL DRAWINGS. RESOLVE ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.

2. THE LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES SHALL BE VERIFIED AND ACCURATELY LOCATED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.

3. REFER TO GEOTECHNICAL REPORT PREPARED BY STATEWIDE GEOTECHNICAL PTY LTD
REPORT # 25384-1 DATED 30/03/2020
SUB SURFACE CONDITION, ANTICIPATED EXCAVATION CONDITIONS, SITE TRAFFIC ABILITY AND SAFE BATTER SLOPE

4. THE EXCAVATION AREA SHALL BE GRADED TO SUMPS FITTED WITH SILT TRAPS AND PUMPED AS REQUIRED TO MAINTAIN THE EXCAVATION FREE OF WATER. ALL WATER SHALL DISTRIBUTE INTO COUNCIL DRAIN TO COMPLY WITH COUNCIL AND EPA REQUIREMENT

ARCHITECTURAL INFORMATION

THIS ENGINEERING DESIGN IS BASED ON THE ARCHITECTURAL INFORMATION (DRAWINGS, DOCUMENTS) ISSUED TO THIS OFFICE ON OR BEFORE 10.01.2020
THIS ENGINEERING DESIGN IS THEREFORE NOT BASED ON ANY SUBSEQUENT DIFFERENCES OR AMENDMENTS TO THE ARCHITECTURAL INFORMATION.
ALL SETDOWN AREAS ARE TO BE REFERRED TO ARCHITECTURAL DOCUMENTATIONS TYPICAL.

GEOTECHNICAL INFORMATION

THE ENGINEERING DESIGN IS BASED ON THE INFORMATION CONTAINED IN THE GEOTECHNICAL SITE INVESTIGATION REPORT (SOIL REPORT) BY:
STATEWIDE GEOTECHNICAL PTY LTD
REPORT # 25384-1 DATED 30/03/2020
SAFE BEARING CAPACITY OF FOUNDATION MATERIAL:
HW BASALT ROCK: 300 kPa (CLASS P)
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS & ADVICE CONTAINED IN THE REPORT, WITH SPECIFIC CONSIDERATION OF THE ADVICE REGARDING EXISTING TREES, PLANTING OF TREES AND TREE / BUILDING REMOVAL.
ALL FOUNDING DEPTHS TO BE CONFIRMED ON SITE BY A QUALIFIED GEOTECHNICAL ENGINEER.

WARNING

ALL SERVICES SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY AND EXACT LOCATION IS TO BE CONFIRMED ON SITE BY CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORKS.

WARNING AND DISCLAIMER
BEWARE OF UNDERGROUND SERVICES

THESE DRAWINGS DO NOT SHOW THE POSITION OF EXISTING UNDERGROUND SERVICES. THE CONTRACTOR & BUILDER UNDERTAKING THE WORKS SHOWN ON THESE DRAWINGS IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF UNDERGROUND SERVICES PRIOR TO THE COMMENCEMENT OF WORKS. DOME CONSULTING (AUST) PTY LTD DISCLAIMS RESPONSIBILITY FOR DAMAGE OR INJURY TO ANY PERSON CAUSED DIRECTLY OR INDIRECTLY BY ANY WORKS AFFECTING THE SERVICES.

IMPORTANT NOTE

THESE DRAWINGS ARE TO BE APPROVED BY THE APPROPRIATE CITY COUNCIL ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION.

PIER SCHEDULE

Mark	Size
BP1	600Ø BORED PIER F'c=32 MPA. 4700 MIN EMBEDMENT BELOW NGL OR 2100 MIN INTO HW BASALT ROCK WHICHEVER IS DEEPER
BP2	750Ø BORED PIER F'c=32 MPA. 4700 MIN EMBEDMENT BELOW NGL OR 2100 MIN INTO HW BASALT ROCK WHICHEVER IS DEEPER
BP3	600Ø BORED PIER F'c=32 MPA. 3200 MIN EMBEDMENT BELOW NGL OR 500 MIN INTO HW BASALT ROCK WHICHEVER IS DEEPER

STRIP FOOTING SCHEDULE

Mark	Size
SF1	400 mm WIDE x 450 mm MIN DEEP 4-L12 TM TOP & BOTTOM
SF2	400 mm WIDE x 450 mm MIN DEEP 4N16 TOP & 2 LAYERS 4N16 BOTTOM

WALL SCHEDULE

W01	200 PRECAST WALL N12 @ 200 CTS CTRL VERTICAL N12 @ 200 CTS CTRL HORIZONTAL F'c = 40 MPa.

PRELIMINARY
Not For Construction

Rev.	Init	Description	Date
01	HT	REVISED AS CLOUDED	04.08.2021

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Project: Proposed Childcare Centre
291 Sunshine Road
Tottenham

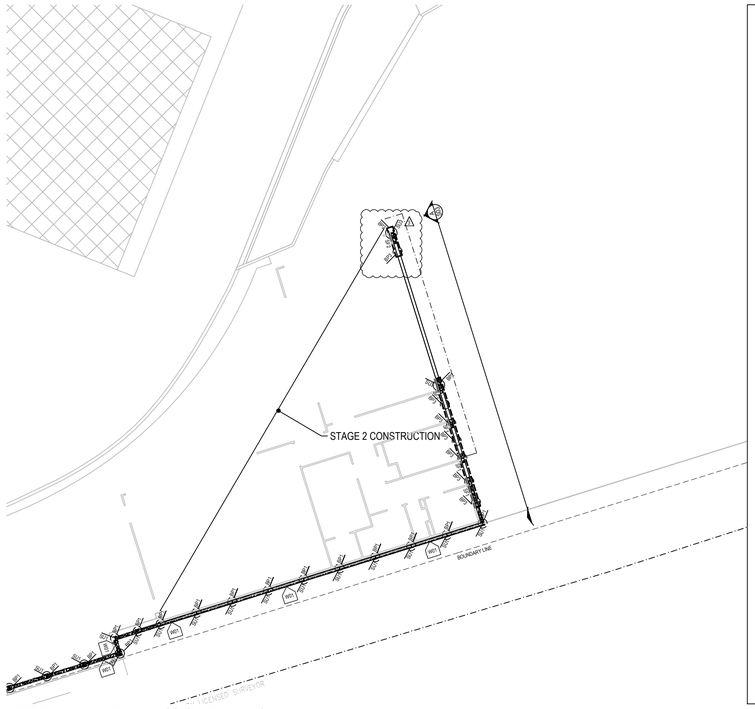
Drawing: Stage 1 Fire Wall Plan & Details Sheet 1

Status

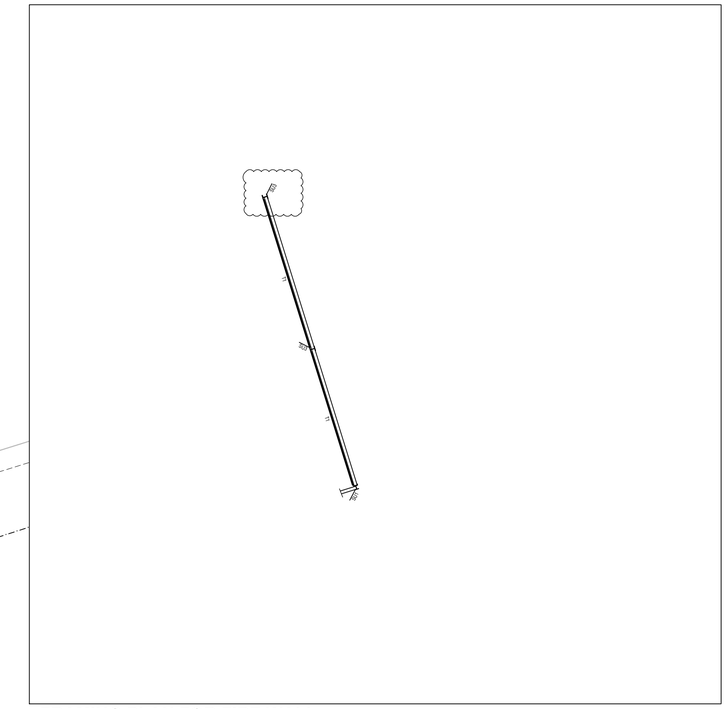
Drawn	HT	Designed	HT
Scale	1:200; 1:20	Date	July 2021
Project No.	30365	Drawing No.	S01
		Rev.	02

Member Schedule

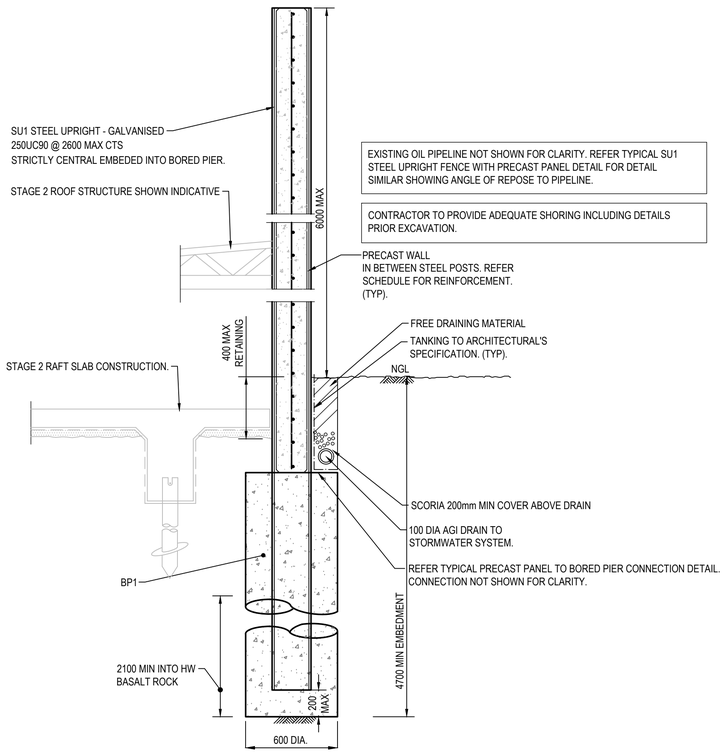
Mark	Member Size	Max Span
T1	250 PFC TIE BEAM. ⌐	10300



FIRE WALL PLAN (CONTINUE)



FRAMING PLAN FOR FIRE WALL



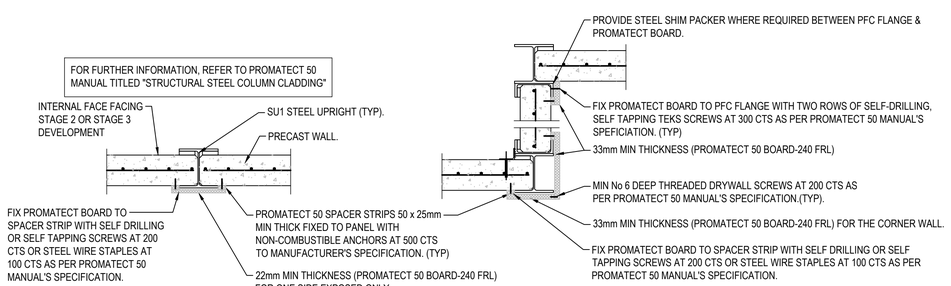
EXISTING OIL PIPELINE NOT SHOWN FOR CLARITY. REFER TYPICAL SU1 STEEL UPRIGHT FENCE WITH PRECAST PANEL DETAIL FOR DETAIL SIMILAR SHOWING ANGLE OF REPOSE TO PIPELINE.

CONTRACTOR TO PROVIDE ADEQUATE SHORING INCLUDING DETAILS PRIOR EXCAVATION.

FENCE WALL CONSTRUCTION NOTE

- COMMENCE BORING OF PIERS.
- CONSTRUCT ALL BORED PIERS, STEEL UPRIGHT POSTS AND PRECAST PANELS FOR THE EXCAVATED AREA.
- INSTALL DRAINAGE AND BACKFILL MATERIAL AS NOTED IN THE DETAILS.

TYPICAL SU1 STEEL UPRIGHT FENCE ABUTTING STAGE 2 CONSTRUCTION



TYPICAL FIRE-RATED SU1 STEEL UPRIGHT DETAIL

Rev.	Init	Description	Date
01	HT	REVISED AS CLOUDED	04.08.2021

DOME CONSULTING (Aust)
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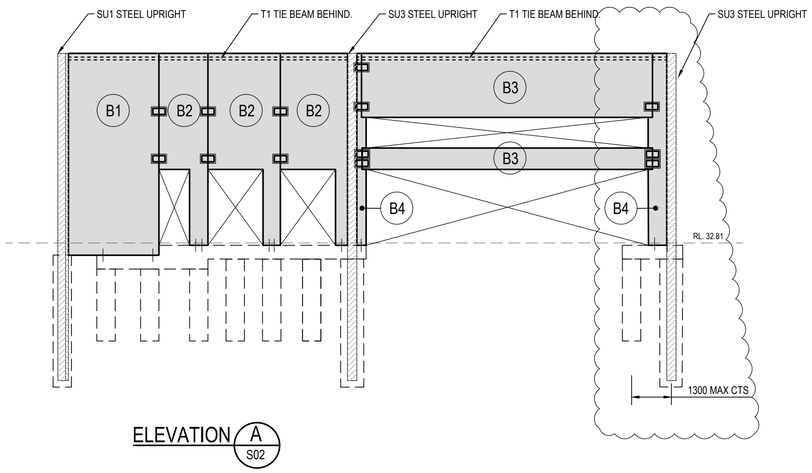
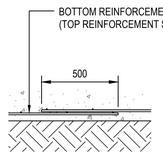
Project
Proposed Childcare Centre
291 Sunshine Road
Tottenham

Drawing
Stage 1 Fire Wall Plan
& Details Sheet 2

Status	PRELIMINARY
Drawn	HT
Designed	HT
Scale	1:200; 1:20
Date	July 2021
Project No.	30365
Drawing No.	S02
Rev.	00

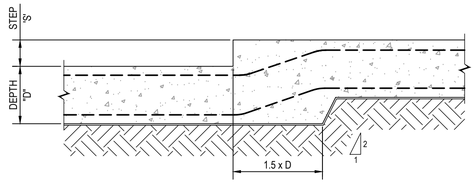


ELEVATION A S02



SECTION

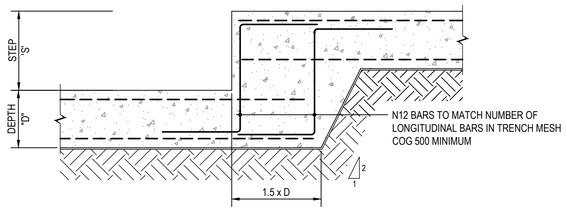
STRIP FOOTING REINFORCEMENT AT SPLICE



ELEVATION

'S' LESS THAN OR EQUAL TO 200mm

SCALE 1:20

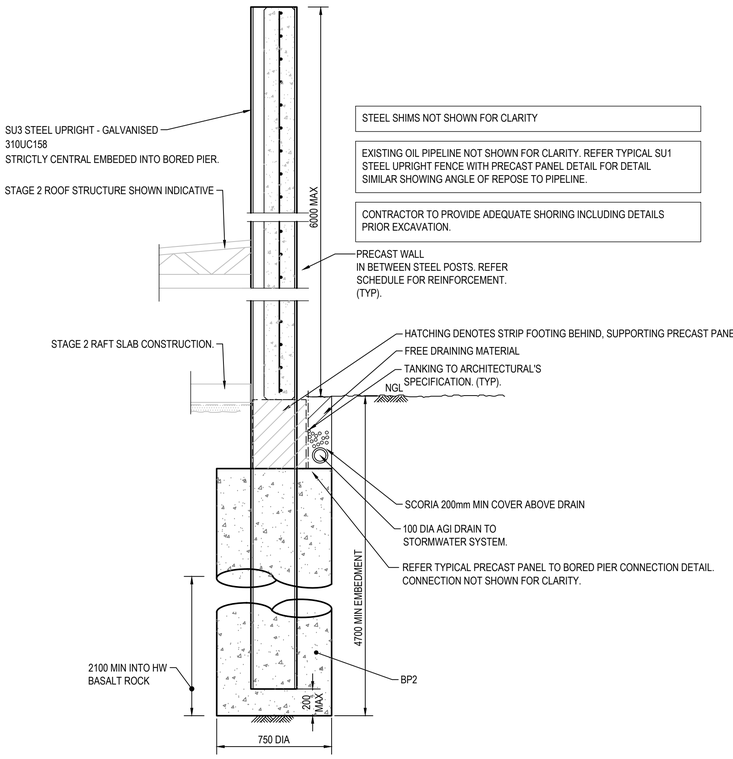


ELEVATION

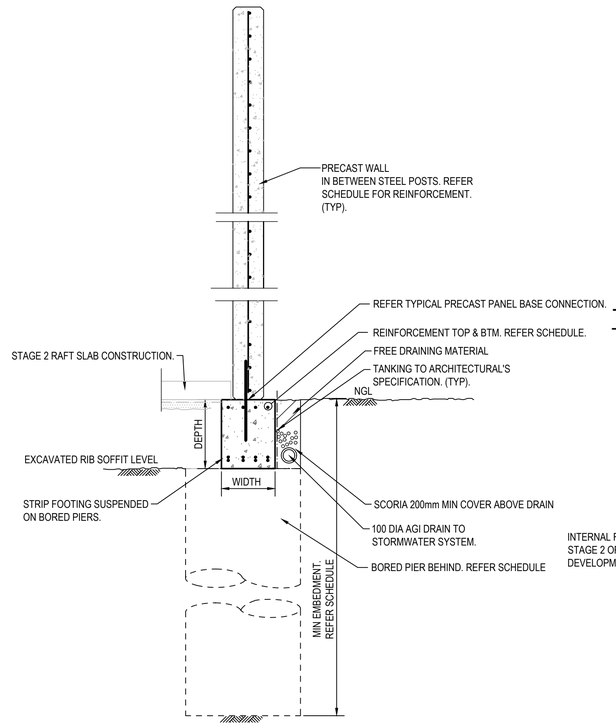
'S' GREATER THAN 'D' BUT LESS THAN 1.5 x 'D'

SCALE 1:20

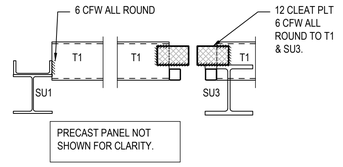
STRIP FOOTING STEPPING DETAILS



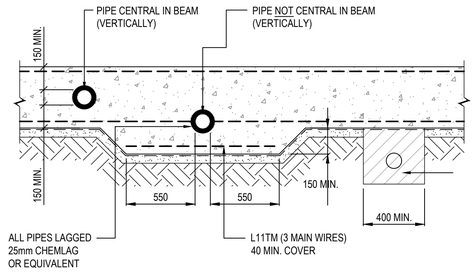
TYPICAL SU3 STEEL UPRIGHT FENCE WITH PRECAST WALL DETAIL



TYPICAL PRECAST WALL ON STRIP FOOTING



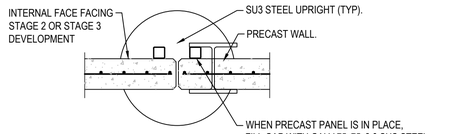
TYPICAL T1 TO STEEL UPRIGHT CONNECTION.



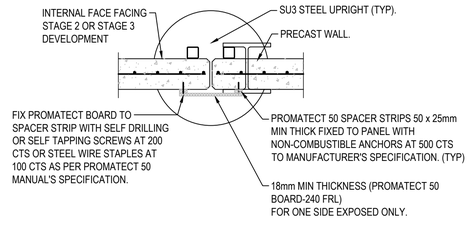
ELEVATION

PIPE IN BEAM DETAIL

SCALE 1:20



TYPICAL PRECAST PANEL TO SU3 STEEL UPRIGHT CONNECTION DETAIL.



TYPICAL FIRE-RATED SU3 STEEL UPRIGHT DETAIL

Rev.	Init	Description	Date
01	HT	REVISED AS CLOUDED	04.08.2021

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Project
Proposed Childcare Centre
291 Sunshine Road
Tottenham

Drawing
Stage 1 Fire Wall Panel
Elevation & Details

Status	PRELIMINARY
Drawn HT	Designed HT
Scale 1:200; 1:20	Date July 2021
Project No. 30365	Drawing No. S03 Rev. 01

AUSTRALIA
LIGHT FOUNDATION
Avustralya Nur Vakfı

Address: 291-293 Sunshine Rd, Tottenham 3012, Victoria
Postal Address: PO Box 6079, West Footscray 3012, Victoria
Phone: (03) 9312 0104 Email: lightfoundation@hotmail.com
ABN: 43 316 521 385

Mr Nigel Cann
Associate Principal
Risk & Security
Professional Process Safety Engineer
Arup
Sky Park, One Melbourne Quarter
699 Collins Street
Docklands VIC 3008 Australia

09 September 2019

Dear Nigel,

Re: Australia Light Foundation Incorporated

291-293 Sunshine Road, Tottenham

As you are aware, the Australia Light Foundation (ALF) runs a community centre and facilitates for the needs of Culturally and Linguistically Diverse communities living in the North and Western Suburbs of Melbourne. In particular, the ALF services and facilitates for the sensitive needs of the Muslim community living in Victoria at the above land.

The ALF currently has a large designated Mosque area on the eastern side of our existing building, meeting rooms, place of assembly/reception centre area and social club. These facilities attract hundreds of participants to the land on any given day.

Friday Prayers are the busiest time onsite at the ALF. Despite having in excess of 300 people attending the Friday prayers, worshippers seamlessly atttend and depart the Mosque area in silence without interrupting the prayers of worshipers. They are aware of the silence required and external noise is kept to an absolute minimum. The ALF also has people attending the facility to conduct their 5 daily prayers. The car parking area on the east side of the existing building is fully occupied at peak times. A childcare centre on the east part of the Mosque will be much noisier, resulting in interruptions and disruptions to the prayers and supplications of worshippers.

Access to the entrances for the Mosque and the (ablution) wash areas are only possible from the eastern side of the building. Prayers are conducted facing (Qibla) the direction of Mecca and in our case towards the west direction in our building. The existing Mosque has been designed to allow worshipers to enter into the prayer area using the entrances from the eastern part of the Mosque to avoid interrupting or walking in front of other people who are performing their prayers.

In Islam it is forbidden to cut through or interrupt people during their prayers. This is a religiously sensitive matter, so the existing mosque has been designed to eliminate this from occurring. Worshippers enter in through the eastern entrance and fill the room row by row starting from the very front.

Building a childcare facility on the eastern part of the existing building is not possible as it will generate more noise than current noise levels. The eastern section of the property is the busiest part of the site with people coming in and out of prayer sessions. Having a childcare facility immediately near the mosque will not suit people who are supplicating and performing their prayers. This is due to a number of reasons including but not limited to an impractical site layout for worshippers visiting the Mosque for prayers having to park on the western side of the building and then access the Mosque on the eastern side. It also leads to noise and the increase in people and vehicle traffic conflicting when prayer times coincide with departure times of children.

The current proposed location is to build the childcare facility is on the western side of the existing building. It has been designed this way to accommodate for the cultural and religious sensitivities of the Muslim community. The current proposed location is designed to allow for drop off and pick up of children without interrupting any cultural and religious services on the site. It also allows much needed childcare services and other religious and cultural services to be run simultaneously onsite without interrupting each other.

Furthermore, the report provided by the responsible Officer at Maribyrnong City Council states the following:

> *By massing the buildings along the sites western property boundary, the more sensitive uses would be placed a considerable distance from the heavy industries to the east. While there are further heavy industries to the west, the railway would provide a buffer of up to 60 metres, ensuring these sensitive uses do not detract or limit the expansion of industrial businesses at this location.*

These are the reasons why we have proposed the Child Care Centre in this location and not on the eastern side of the existing buildings as appears to be suggested by Mobil.

Should you require any further information, please do not hesitate to contact Hamdi Koyu on 0419 876 846.

Kind Regards,

Fatih Yargi
General Coordinator
Public Officer

AUSTRALIA
LIGHT FOUNDATION
Avustralya Nur Vakfı

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Postal Address: PO Box 6079, West Footscray 3012, Victoria
Phone: (03) 9312 0104 Email: lightfoundation@hotmail.com
ABN: 43 316 521 385

Mr Nigel Cann
Associate Principal
Risk & Security
Professional Process Safety Engineer
Arup
Sky Park, One Melbourne Quarter
699 Collins Street
Docklands VIC 3008 Australia

09 September 2019

Dear Nigel,

Re: Australia Light Foundation Incorporated

291-293 Sunshine Road, Tottenham

I write in my capacity as the Imam of the Australia Light Foundation Mosque in Tottenham, Victoria.

The Australia Light Foundation (ALF) is a community centre and Mosque that provides for the cultural and religious needs of the Muslim community living in Victoria.

I am aware of the proposed childcare centre project of the ALF and am supportive of its construction.

I have been asked to provide my opinion on the possibility of constructing the facility on the eastern side of the current building. I wish to bring to your attention a number of religious and cultural obstacles that prevent the proposed facility being built on the eastern side of the current building.

As you will appreciate, a very important ingredient of the prayer in Islam is the state of calmness and tranquillity coupled with humility achieved by deep concentration. Prayer rooms and Mosques are designed to allow worshippers to conduct their prayers and supplications in a quiet and peaceful environment, away from worldly distractions, giving worshippers the required environment and setting to spiritually connect with Allah.

The current Mosque area at the ALF is purposely positioned to reduce surrounding noises that can distract a person's prayer or supplication. It serves as a place where worshippers can easily access the Mosque and conduct their daily prayers and Friday Prayers without being interrupted by simultaneous activities and programs being offered at the site.

The carparking area on the east side of the existing building is fully occupied at peak times. Access to the entrances for the Mosque and the (ablution) wash areas are only possible from the eastern side of the building.

Prayers are conducted facing (Qibla) the direction of Mecca and in our case towards the west in our building. In accordance with the Islamic requirements and architecture, the existing Mosque has been designed to allow worshippers to enter into the prayer area using the entrances from the eastern part of the Mosque. This is to avoid interrupting or walking in front of other people who are performing their prayers.

In Islam it is forbidden to cut through or interrupt people during their prayers. This is a religiously sensitive matter, so the existing mosque has been designed to eliminate this from occurring. Worshippers enter in through the eastern entrance and fill the room row by row starting from the very front, coming all the way to the back of the mosque during peak periods of prayer.

Building a childcare facility on the eastern part of the existing building is therefore not possible. The eastern section of the property is the busiest part of the site with people coming in and out of prayer sessions. Having a childcare facility immediately near the mosque will not suit people who are supplicating and performing their prayers.

The increase in noise levels coming from a proposed childcare facility immediately near the Mosque entry will make it difficult for worshippers to concentrate and will interrupt their prayers.

It is not possible to change or move the entry of the existing Mosque from the east to the west as the entries cannot face the direction of Qibla (Mecca), that is we cannot have people entering the Mosque in front of worshippers. Distracting a worshippers supplication and prayers is disrespectful and is inappropriate and unaccepted in Islam.

The proposed location of the childcare centre on the western part of the existing building suits the cultural and religious requirements of the site and the Muslim community, and eliminates any possible distractions to prayers and allows for safe drop off and pick up of children.

Based on these important cultural and religious requirements, I strongly request that the proposed childcare facility remain on the western side of the existing building as proposed.

Yours faithfully,

Imam Muhammed Sadik Karadag
Australia Light Foundation Imam