

PLANS AND DOCUMENTS
referred to in the ULDA

APPROVAL dated 11 / 4 / 11

Development Approval – Site Risk Assessment

Voxson Development – 10 Theodore St, Eagle Farm

for Voxson Pty Ltd



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A handwritten signature in black ink, reading 'Justin Harvey'.

Prepared and Approved for release by:
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Ph.D, M.T.M, B.Sc.(Hons), MRACI C.Chem
14th October 2010

STATEMENT OF LIMITATION

Data and conclusions of this report are the findings and opinions of Icubed Environmental and are not an expressed or implied representation, warranty or guarantee. This report has been prepared for Voxson Australia Pty Ltd. Icubed Environmental does not accept liability for any third party's use or reliance on this report.



1 Introduction

Icubed environmental have been commissioned by Voxson Australia to prepare a Safety and Risk Assessment report for a proposed office building to be constructed at 10 Theodore St, Eagle Farm, Qld. The purpose of the report is to assess and demonstrate that the risk posed by existing neighbouring industries will not adversely affect the proposed development.

Existing operations in the area that could potentially impact on the proposed development include fuel storage facilities as well as asphalt and concrete batching plants.

The approach taken by this report will be to identify the potential adverse impacts (hazards) from existing operations and to assess the likely frequency and consequences of these hazards to determine the overall level of risk. The hazards identified will be broadly classed into environmental, safety and operational/financial risks.

The risk assessment approach taken will be semi-quantitative in that where frequencies and consequences for hazards to be realised are available then quantitative estimates will be made. It is noted that the obtaining estimates of risks that will externally impinge on a site can be difficult.

The assessment manager (ULDA) has identified neighbouring fuel storage facilities and asphalt and concrete batching plants, as shown on Maps 8 and 9 of the Northshore Hamilton Development Scheme as facilities that could potentially impact on the proposed development.

2 Site Description

The proposed development is at 10 Theodore St, Eagle Farm. The area is generally industrial with some higher impact industries such as fuel storage and a bitumen plants.

Figure 1 (below) shows the general neighbourhood of the site and some of the industries identified as potentially impacting the proposed development site. The site is bounded to the West by the BP Whinstanes fuel storage terminal, has general purpose warehouse business to the south. A Caltex petrol station is located on the other side of Theodore st to the west and the Neumann Petroleum fuel storage area is located to the south west of the site

2.1 Proposed Development

The proposed development is for a 5 story office and showroom complex with 2 levels of basement parking. Drawings of the proposed development are presented in Appendix A. The highest occupation areas on the site are considered to be the showroom areas. These areas are nominated as the highest occupation areas on the site as they could attract a higher density of people than the office areas on the levels above.



Figure 1: Proposed Development Site (north to top of page)

3 Risk Assessment Methodology and Assessment Criteria

The approach taken in this risk assessment has been to review the nature and type of the existing operations and conduct an historical review of the hazard and environmental impacts from the existing industries as identified by ULDA.

The consequences from these hazards or events on the proposed development site have then been estimated. The hazards have been categorised as either environmental/miscellaneous/financial or health and safety related. The frequency of these events has been estimated and an overall assessment of risk has been made using one of the two risk assessment matrices below (Table 1 & Table 2) (depending on the type of consequences).

These risk assessment matrices are based on those used to evaluate risk as high risk facilities – such as a major hazard facility and incorporate a greater range of high consequence, low frequency events than is typically found in risk assessment matrices. These additional spaces are included as the most likely impacts from an external source or property will or could occur from high consequence events.

Note that this assessment does not consider any hazards that may or could exist on the proposed development.



Table 1: Health & Safety Risk Assessment Matrix

Likelihood	Highly Improbable (once Every 100,000 years)	0.0000001	0.000001	0.00001	0.0001	0.001	0.01	0.1
	Very Improbable (once every 10,000 years)	0.00001	0.0001	0.001	0.01	0.1	1	10
	Very Rare (once evry 1,000 years)	0.0001	0.001	0.01	0.1	1	10	100
	Rare (once every 100 years)	0.001	0.01	0.1	1	10	100	1000
	Unlikely (every 10 years)	0.01	0.1	1	10	100	1000	10000
	Likely (once a year)	0.1	1	10	100	1000	10000	100000
	Frequent (every month)	1	10	100	1000	10000	100000	1000000
		Near Miss	Minor Injury	First Aid Injury	Medical Treatment Injury	Lost Time Injury	Serious/ Permanent Injury	Fatality/ Multiple Fatalities
		Consequences						

Table 2: Environmental/Financial Risk Assessment Matrix

Likelihood	Highly Improbable (once Every 100,000) years	0.0000001	0.00001	0.0001	0.001	0.01	0.1	1
	Very Improbable (once every 10,000 years)	0.00001	0.0001	0.001	0.01	0.1	1	10
	Very Rare (once evry 1,000 years)	0.0001	0.001	0.01	0.1	1	10	100
	Rare (once every 100 years)	0.001	0.01	0.1	1	10	100	1000
	Unlikely (every 10 years)	0.01	0.1	1	10	100	1000	10000
	Likely (once a year)	0.1	1	10	100	1000	10000	100000
	Frequent (every month)	1	10	100	1000	10000	100000	1000000
		Internal Repair/Man agement only	Minor Property Damage/\$1	Property Damage \$10	Significant Cost/Clean Up/Damage ~\$100	Major Damage ~ \$1,000	Business Critical ~\$10,000	Major Community Damage \$100,000 +
		Consequences x \$1,000						

Risks are rated as acceptable in the green area, requiring attention or further action in the orange section and unacceptable in the red zone.



3.1 **Assessment Criteria**

The Hazardous Industries and Chemical Branch cite the NSW Government HIPAP 4: Risk Criteria for Land Use Safety Planning (Consultation Draft) July 2008 as a reference source for determining acceptable levels of risk for facilities such as Large Dangerous Goods locations and Major Hazard Facilities (MHF's).

In this instance we are considering the impacts of neighbouring Large Dangerous Goods Locations (LDGL's), Dangerous Goods Locations and possibly MHF's on the proposed site at 10 Theodore St, Eagle Farm.

The proposed site is in an industrial area; from HIPAP 4: Risk Criteria for Land Use Safety Planning (Consultation Draft) July 2008 acceptable risk levels from neighbouring facilities for proposed development are defined as:

Individual Fatality Risk Criteria from HIPAP 4 are detailed in Table 3 below.

Land Use	Suggested Criteria (risk in a million per year)
Commercial developments including retail centres, offices and entertainment centres	5
Sporting complexes and active open space	10
Industrial	50

Injury Risk Criteria for residential and sensitive use areas from HIPAP 4 are detailed in Table 4 below

Land Use - Residential and sensitive uses	Suggested Criteria (risk in a million per year)
Incident heat flux radiation at residential and sensitive use areas should not exceed 4.7 kW/m	50
Incident explosion overpressure at residential and sensitive use areas should not exceed 7 kPa	50
Toxic concentrations in residential and sensitive use areas should not exceed a level which would be seriously injurious to sensitive members of the community following a relatively short period of exposure at a maximum frequency of	10
Toxic concentrations in residential and sensitive use areas should not cause irritation to eyes or throat, coughing or other acute physiological responses in sensitive members of the community over a maximum frequency of	50

As the proposed use primarily commercial in nature the individual fatality risk criteria for commercial premises of 5 in million per year would be the most appropriate guide in this instance. It is noted that the area is generally changing from a traditional industrial area to a more commercial zone and that for new residents and developments in an already established area, a higher risk tolerance level would be expected.



3.2 Review of Major Incidents

A review of major incidents reported in media and publicly available databases including fire and explosions from fuel storage facilities and asphalt plants was undertaken. For asphalt plants, from a dataset of primarily United States facilities 132 significant incidents or events have been recorded over a 10 year period¹. A review of these events showed that there was mix of fires and explosions. The majority of the data indicated that the consequences of these events were primarily localised and most likely contained to the site. No significant off-site impacts were reported.

A significant number of localised explosions were reported meaning that mild off site over pressures could be encountered.

3.3 Likelihood & Frequency Data

3.3.1 Bulk Fuel Storage

There have been 2 notable large fires and explosions from fuel storage locations, the Buncefield explosion and fire in 2005 and the Coode Island Fire. The Buncefield fire and explosion was notable in that the over pressures from the explosive ignition of a fuel leak significantly exceeded those previously experienced from an unconfined vapour explosion. Both these events had off-site impacts. The Coode Island fire was responsible for a potentially toxic smoke plume. Of note, impacts from the smoke plume were not in the immediate vicinity of the fire but many kilometres away when the buoyant smoke plume began to fall and mix.

In general, fuel storage facilities will need to be operating at or close to a level of risk that meets the regulatory requirements where off site impacts meet the HIPAP 4 Criteria detailed in Tables 1 and 2. For the purposes of this report the off-site fatality consequence from the neighbouring fuel storages is estimated as $50 \times 10^{-6}/\text{yr}$ and the off site irritation/minor injury from heat flux or a toxic smoke plume frequency is estimated at $50 \times 10^{-6}/\text{yr}$. As the proposed site has 2 storages nearby the frequency estimates will be double to $1 \times 10^{-5}/\text{yr}$.

The proposed building will be located approximately 120m from the closest bulk storage tank at the BP Whinstanes terminal. The proposed building will be located approximate 30m away from the Caltex petrol station on the corner of Kingsford Smith Drive and Theodore St and approximately 135 metres from the closest storage tank at the Neumann facility.

Two recently constructed tanks on the western property boundary of the Whinstanes Terminal are noted, these have been reviewed from aerial photography and do not appear to be storage tanks for fuel based products, this assessment is made on the basis that they are not bunded and too close to the property boundary to contain flammable materials under existing code and design requirements (AS1940:2004).

The proposed building will potentially be in a consequence zone from an explosion at either the BP Whinstanes Terminal, the Caltex Petrol Station or the Neumann storage terminal.

3.3.2 Warehouse & Storage Fire

The United Kingdom Health and Safety Executive (UK HSE) stipulates that the average frequency for warehouse fires across all industries is $1 \times 10^{-2}/\text{yr}$. On this basis the prospect of a fire from the neighbouring warehouse structure is estimated at $1 \times 10^{-2}/\text{yr}$.

It is noted that the risk posed by a warehouse structure on an adjacent building in this instance is no greater or less than in normal development and this scenario is not considered as a significant risk contributor.

¹ See http://www.fireworld.com/scripts/side_search.php?cmd=search&words=asphalt&x=0&y=0&table=incidents



3.3.3 Asphalt Plants

In order to assess the likelihood of a major incident at an asphalt plant the following assumptions have been made; There are approximately 5 asphalt plants per million people of population. On this basis there have been 132 reported major events over a ten year period in the US with a population of approximately 280 million people – this gives an approximate frequency of occurrence for a major incident of 1×10^{-2} /yr. There are a range of consequences from these major incidents that range from localised explosions and fires that have resulted in injuries and fatalities.

3.4 Consequences

3.4.1 Bulk Fuel Storage & Petrol Distribution

The range of consequences from fire or explosion from fuel storage depots are considered to be

- a minor fire contained to site with minimal off site impacts
- a major tank fire or pool fire with possible resultant heat flux effects and toxic fume generation
- a jet fire from a ruptured pipeline
- a confined tank explosion
- general vapour cloud explosion
- projectile drum/vessel

To establish the likely consequences of a jet or pool fire a simple calculation was undertaken to determine the likely heat flux from a large pool fire. For the purposes of the calculation the pool fire was assumed to have an area of 2,200m² – the size of a large bund compound at Whinstanes and the fuel was assumed to be gasoline. Using the method for estimating heat flux as detailed in *SFPE Handbook of Fire Protection Engineering, 3rd Edition 2002 page 3-276*. The heat flux from a pool fire at 120m was estimated to be 5.8 kW/m². Heat flux at this level is not sufficient to cause structural failure or damage to the building. It will impinge on potential escape routes with only short term exposure acceptable at these levels of heat flux. At 140 m the heat flux is reduced to 4.7 kW/m².

Heat flux from a jet fire has been estimated assuming that there was a leak/hole in a pipe under pressure that was discharging fuel at the rate of 50kg/s – it is noted that this is a significantly large discharge rate from a hole orifice that would be in the range of 30-100mm. Using the estimation method from the *International Association Oil and Gas Producers Risk Assessment Data Directory Report 434-7 (March 2010)* and following the generalised method therein; a heat flux of 12.5 kW/m² would be experienced at distances of approximately 90 metres and heat flux levels of 5.0 kW/m² would be experienced at distances of 112 metres.

The extent of the heat fluxes from a major pool fire or large jet fire could impact from BP onto the Eastern side of the proposed building. The expected levels of heat flux are not sufficient to warrant concern regarding the structural integrity of the building. The level of heat flux are such that long term exposure along the eastern side of the building in the event of a fire could cause injury in the event there is a large fire on the BP site. It is noted that the Eastern side of the building is to be constructed from dense concrete tilt panel that will provide protection from heat flux as well any explosive overpressure. Alternative emergency access routes exist for staff in the eastern offices.

Impacts from a fire at the Neumann complex are expected to be similar but lower in intensity due to the slightly greater separation distances and the fact that there are more intervening structures to shield the proposed development. Impacts from a fire/explosion scenario at the Caltex petrol station are likely to be similar as well due to the proximity of the



site. The significantly reduced fuel loads will assist in reducing the overall risk posed by the petrol station.

3.4.2 Asphalt Plants

The range of consequences from an asphalt plant major incident are considered to be

- a minor fire contained to site with minimal off site impacts
- a major tank fire or pool fire with possible resultant heat flux effects and toxic fume generation
- a confined tank explosion
- projectile drum/vessel

A burning pool fire from the asphalt plant would be expected to have heat flux radii of approximately 40-60m at the 4.7 kW/m² level. The asphalt plant is sufficiently separated from the proposed development to not pose significant risk.

3.5 Environmental Impacts

A review of existing environmental hazards was undertaken with the results detailed in Table 3. Of note there were no significant hazards or risks identified.

It is recognised that the neighbouring fuel storage plant will emit Volatile Organic Compounds (VOC). VOC emissions will occur as part of the normal site operations. The levels of VOC emissions likely to be experienced at the proposed facility are not considered likely to pose a threat to human health. Some nuisance odour may be experienced.

It is recognised that the asphalt plant will emit Volatile Organic Compounds, Sulfur Dioxide (SO₂), Nitrogen oxides and poly aromatic hydrocarbons (PAH). The great majority of the SO₂ and PAH emissions are from a point source stack and should be emitted and dispersed without resulting in any significant ground level concentrations that would pose a threat to health.

3.6 Risk Assessment

The outcomes from the risk assessment including the hazards identified, likelihood and consequence estimates and final risk ratings are presented in Table 3.

3.7 Existing Controls

3.7.1 Engineering & Design Controls

There are a number of features of the proposed design and site layout that will reduce the overall level of risk on the site. These are summarised below:

1. Design. The eastern wall of the proposed building is to be constructed of concrete tilt panel. A wall of this nature provides two valuable levels of protection against radiant heat flux as well as explosion overpressure. The only eastern facing elements of the building that have line of sight to the BP storage facility are the roof-top terrace and balcony areas. These areas are considered to be sparsely occupied and in the event of a major fire staff could readily evacuate.
2. Materials of Construction – the building will be constructed from primarily non-combustible materials that will limit the potential for any knock-on fire effects.



3.8 **Proposed Mitigatory Controls**

3.8.1 **Emergency Plans and Procedures**

It is recommended that Emergency Plans and Procedures be developed that include responses to the following scenarios:

1. Fire Scenario at BP, Neuman's Petroleum or Caltex Petrol Station. A fire at any of these facilities that require a site evacuation could result in incident heat fluxes could impact on the evacuation route. In this instance site evacuation procedures will need to be drafted that consider these elements and do not direct people into the path of incident heat flux – this is most relevant for any evacuation route along the eastern boundary of the site where incident heat fluxes could exceed levels that could be safely tolerated without human injury for more than 15 seconds.
2. Off Site fire that generates toxic smoke plume and requires a 'shelter indoor' procedure where all staff are mustered to an indoor area, air conditioning and ventilation is isolated to prevent outside air entering the area and infiltration points are blocked with rags/wets towels. Staff would remain in the indoor area for as long as there was a risk of toxic smoke inhalation.
3. Site evacuation procedure to the front of the site and then a secondary muster point to the east or west to avoid being downwind of any smoke plume.

3.8.2 **Staff & Visitor Inductions**

It is recommended that all permanent office staff undergo a site induction that highlights the off-site risks and details the most likely emergency response procedures.



Table 3: Off Site Impact Hazard Events for Proposed Development at 184 Curtin Ave W, Eagle Farm

Hazard/Event	Likelihood	Consequences	Risk Rating	Existing Controls	Proposed Controls
Safety					
Minor Fire - neighbour site	0.01	No Impact/minor business interruption	0.001		
Office/Admin Fire - Neighbour site	0.01	No Impact/minor business interruption	0.001		
Warehouse Drum Store Fire	0.001	Potential for Projectiles with escalation potential - fire - Damage to warehouse/goods - Fire Brigades will be in attendance and should be able to control spot fires	1	Separation Distances, Materials of Construction, Office orientation and fire wall separation	Consider installation of smoke detection and automated alarm system
Vehicle Rollover-Spill	0.01	No Impact/minor business interruption	0.001		
Vehicle Rollover-Fire	0.001	No Impact/minor business interruption	0.001		
Toxic Smoke from Major Fire (warehouse/asphalt)	0.01	Toxic Plume from incomplete combustion as a result of fire or combustion of toxic materials. - Business Interruption	1	Separation Distances, Materials of Construction, Office orientation and fire wall separation	Shelter Indoors Procedure as a Part of Emergency Plan
Toxic Smoke from Major Fire (warehouse/asphalt)	0.01	Toxic Plume from incomplete combustion as a result of fire or combustion of toxic materials. - Minor Irritation - potential hospitalisations	1		Shelter Indoors Procedure as a Part of Emergency Plan
Toxic Smoke from Major Fire BP/Neumann	0.00001	Toxic Plume from incomplete combustion as a result of fire or combustion of toxic materials. - Minor Irritation - potential hospitalisations	0.00005		
Major Fire	0.01	Smoke Impacts from fire, area evacuated - Business Interruption - One week in duration	0.1	Separation Distances, Materials of Construction, Office orientation and fire wall separation	Shelter Indoors Procedure as a Part of Emergency Plan
Major Fire	0.00001	Heat Flux From adjacent site fire-BP/Neumann (jet or pool fire) - will not cause property damage, may require site evacuation	0.00001	Separation Distances, Materials of Construction, Office orientation and fire wall separation	Site Evacuation – Emergency Procedure required to ensure that areas subject to heat flux from an adjacent fire are not accessed
Major Fire	0.001	Heat Flux From adjacent site fire Mobile Lube - minor property damage possible to equipment in yard	0.1	Separation Distances, Materials of Construction, Office orientation and fire wall separation	Site Evacuation
Major Fire	0.001	Heat Flux From adjacent site - Boral Asphalt - minor property damage possible to equipment in yard	0.1	Separation Distances, Materials of Construction, Office orientation and fire wall separation	Site Evacuation
Major Fire	0.0001	Heat Flux From adjacent site fire Mobile – knock on effect to generate a secondary fire in on-site fuel storage	0.01	Separation Distances, Materials of Construction, Office orientation and fire wall separation	Site Evacuation, tank to be cooled by fire brigade in the event of a neighbouring fire.
Explosion from Asphalt Plant Fuel Tanker Fire	0.01	blast over pressures unlikely to cause any damage	0.01	Separation distance	
	0.001	Fire starts during refuelling, heat flux from fire minor damage potential.	0.0001	Separation Distances, Materials of Construction.	



Hazard/Event	Likelihood	Consequences	Risk Rating	Existing Controls	Proposed Controls
Explosion from Fuel Storage	0.001	blast over pressures - minor property damage/windows breaking, some equipment damage. Note that wall facing the Fuel Terminal storage is Constructed of concrete tilt panel and will provide blast protection to all staff on Eastern side with the exception of the roof terrace area.	0.001	Separation Distances, Materials of Construction, Office orientation and fire wall separation Predicted low level of occupancy for the rooftop terrace area reduces risk for this area.	
Environmental					
Dust	0.01	Nuisance/minor property damage	0.1		
Petroleum/Fuel Odour	1	Nuisance	1		
Toxic Gas Plume	0.001	Nuisance/illness possible irritation, medical assessment	0.1		Shelter Indoors Procedure as a Part of Emergency Plan
Contaminated Overland Water Flow	0.001	Nuisance/minor property damage & clean up	0.001		
Odour	0.1	Nuisance/minor property damage & clean up	0.1		
Light	0.1	Nuisance/minor property damage & clean up	0.1		
Noise	0.1	Nuisance/minor property damage & clean up	0.1		



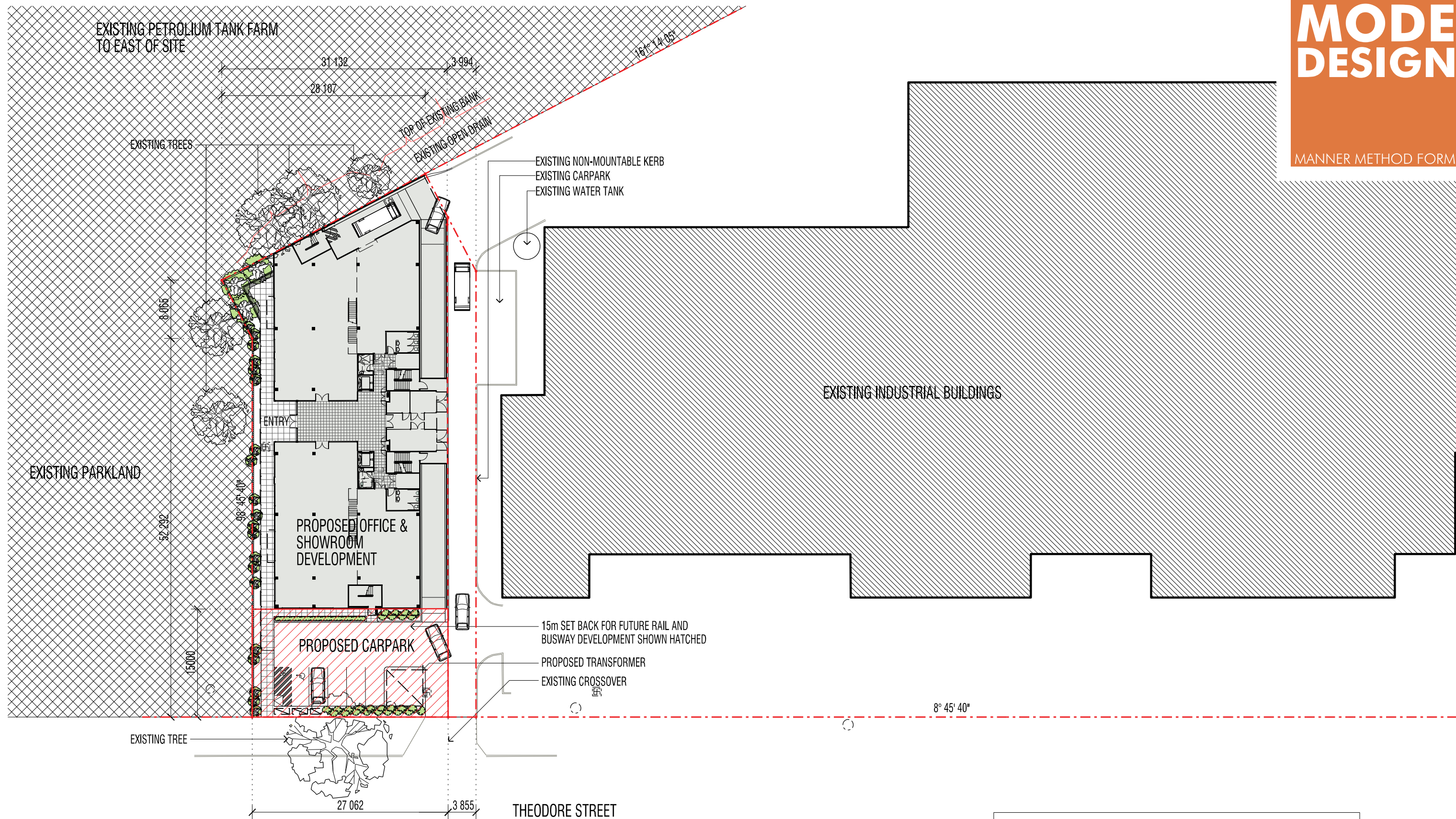
4 Summary

This report has reviewed the overall risk posed on the proposed development. Heat fluxes from large pool fires or a large jet fire could impact on the eastern boundary emergency access routes. Alternative emergency egress routes exist within the building allowing for access routes other than the eastern side to be used in the event of a major fire at the neighbouring BP Whinstanes Terminal. With minor changes to emergency response plans and procedures including the development of a shelter indoors procedures and education of on-site staff and contractors posed by neighbouring industries the risks posed by neighbouring industries will not adversely affect the site.



APPENDIX A

Proposed Development Drawings.



01 SITE PLAN
1:500

SITE / LOT INFORMATION

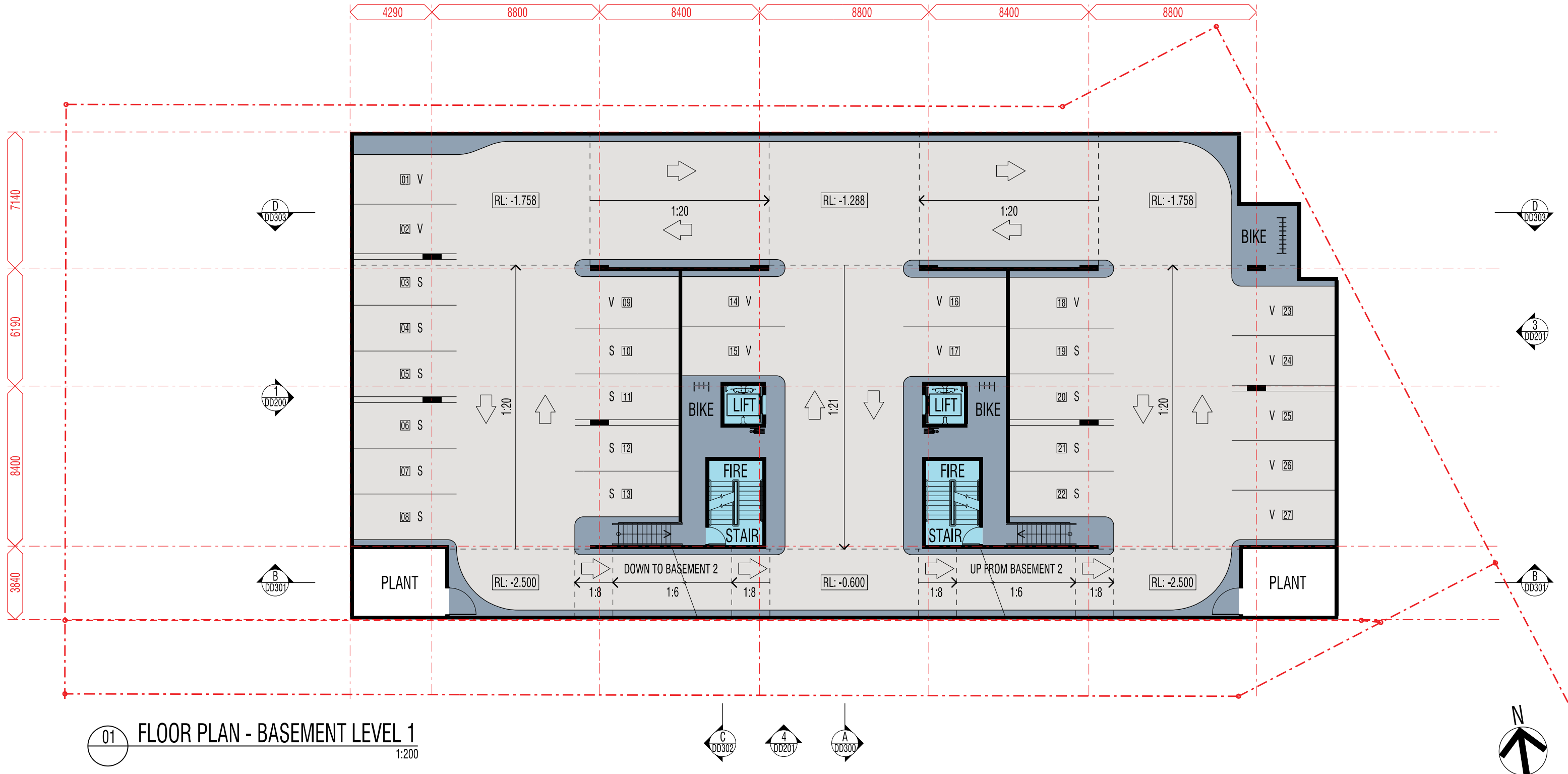
TOTAL LOT AREA: 2.29 Ha	10.6% OF TOTAL LOT AREA DEVELOPED
TOTAL SITE PLAN AREA: 2,145m ²	49% BUILT SITE PLAN AREA
BUILDING FOOTPRINT AREA: 1,048m ²	



PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM SITE PLAN

BASEMENT LEVEL 1 CARPARK

GROSS FLOOR AREA: 33 m²
[S] STAFF PARKING SPACE @ 2400: 14
[V] VISITOR PARKING SPACE @ 2600: 13
BICYCLE PARKING: 11



01 FLOOR PLAN - BASEMENT LEVEL 1
1:200

PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
FLOOR PLAN - BASEMENT LEVEL 1

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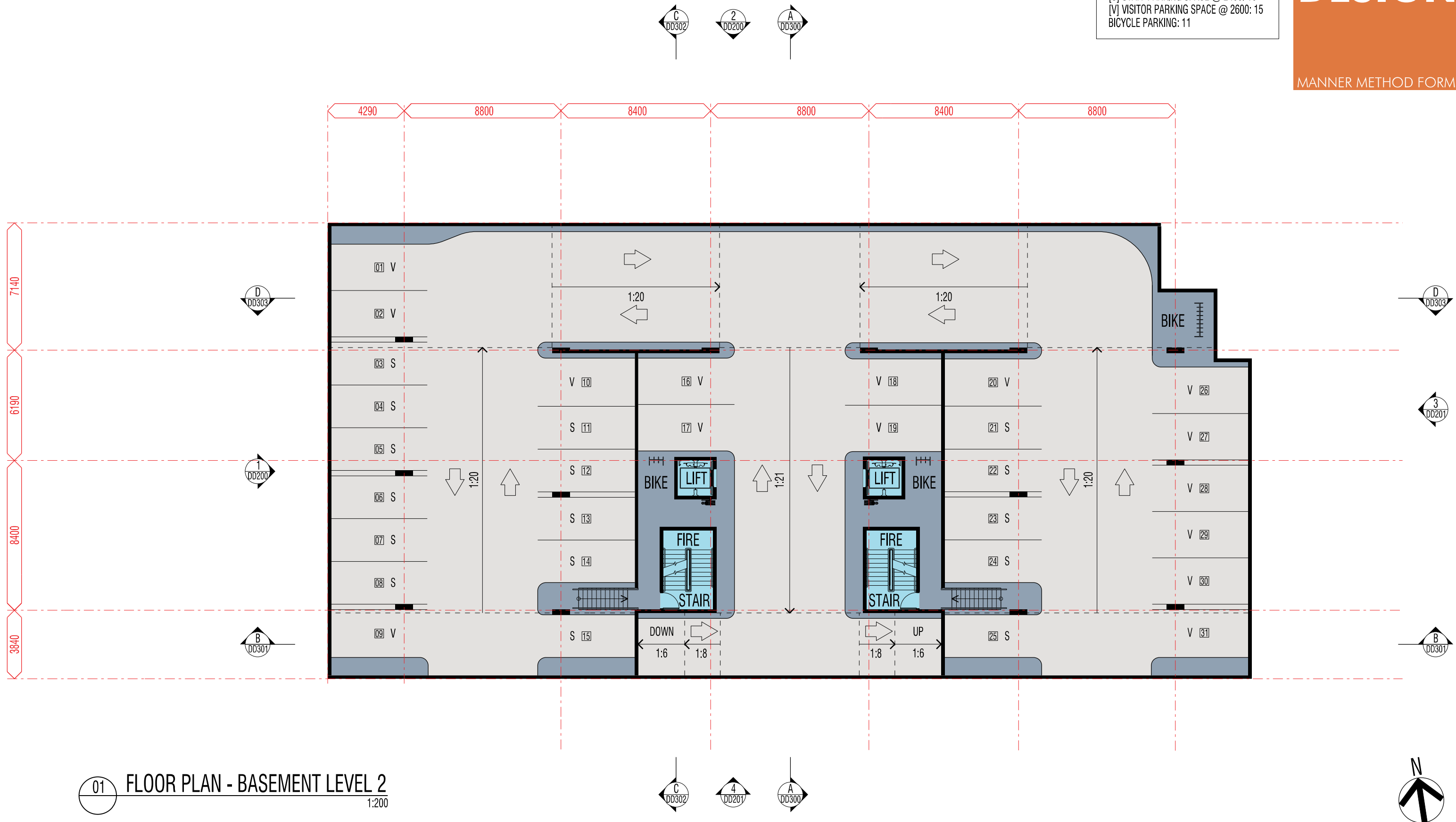
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DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD100_A

BASEMENT LEVEL 2 CARPARK

GROSS FLOOR AREA: 33 m²
[S] STAFF PARKING SPACE @ 2400: 16
[V] VISITOR PARKING SPACE @ 2600: 15
BICYCLE PARKING: 11



01 FLOOR PLAN - BASEMENT LEVEL 2
1:200

PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
FLOOR PLAN - BASEMENT LEVEL 2

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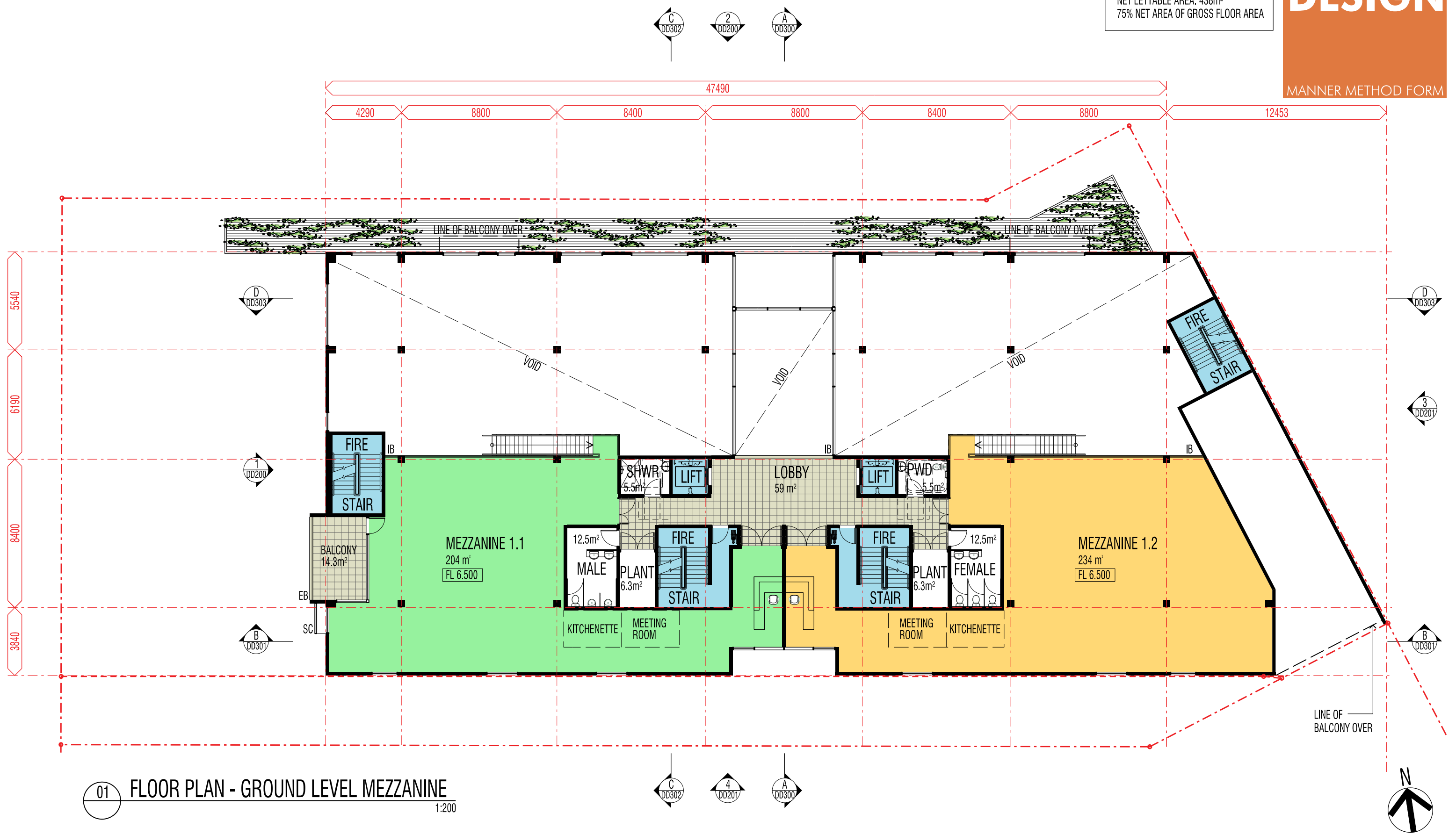


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MEZZANINE FLOOR
GROSS FLOOR AREA: 581 m²
NET LETTABLE AREA: 438m²
75% NET AREA OF GROSS FLOOR AREA



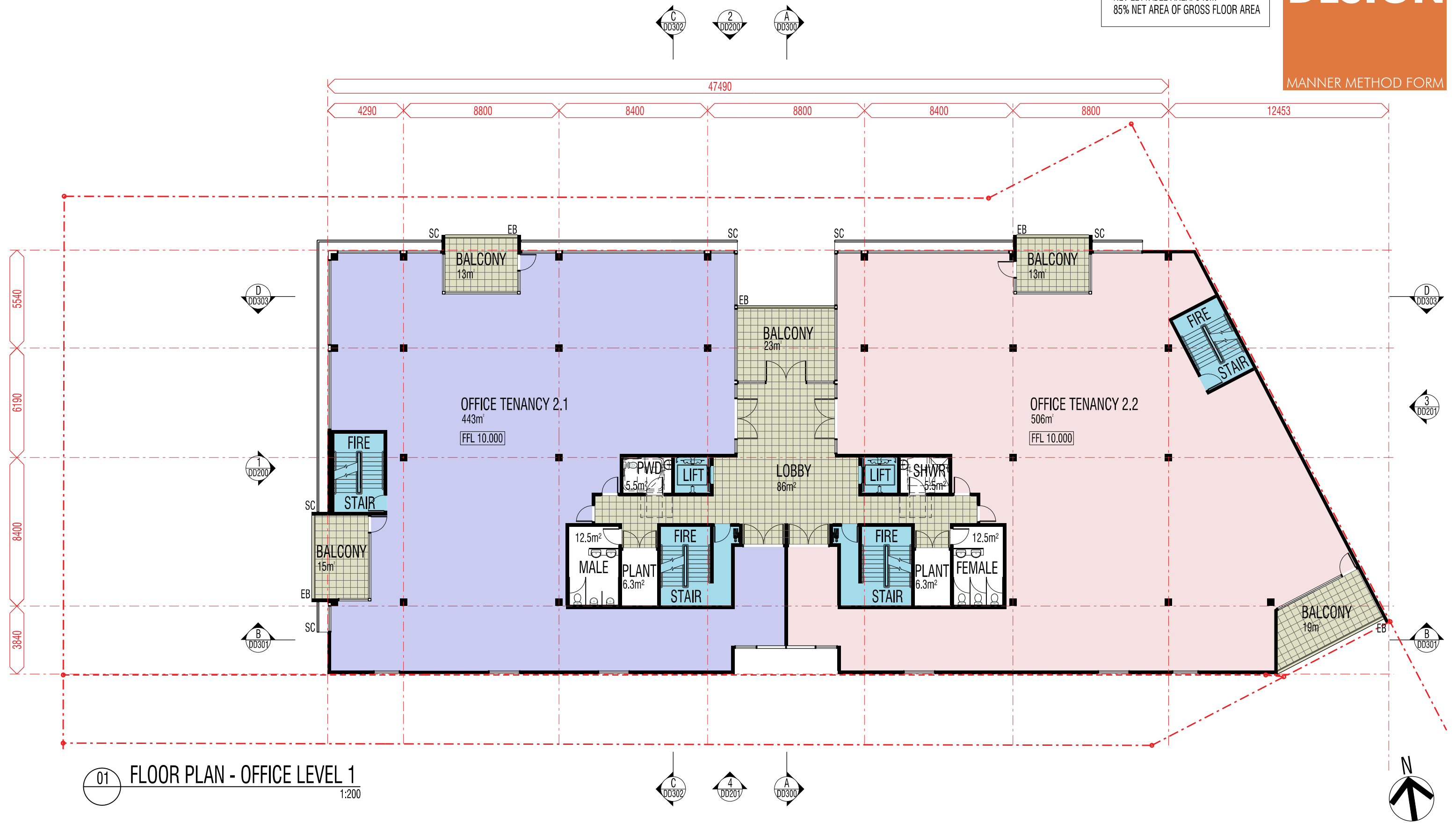
■ PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
FLOOR PLAN - GROUND LEVEL MEZZANINE

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DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD103_B

OFFICE LEVEL 1

GROSS FLOOR AREA: 1123 m²
NET LETTABLE AREA: 949m²
85% NET AREA OF GROSS FLOOR AREA



01 FLOOR PLAN - OFFICE LEVEL 1
1:200

■ PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
FLOOR PLAN - OFFICE LEVEL 1

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PROJECT No: 09378BNE
DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD104_B

OFFICE LEVEL 2

GROSS FLOOR AREA: 1123 m²
NET LETTABLE AREA: 949m²
85% NET AREA OF GROSS FLOOR AREA



PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
FLOOR PLAN - OFFICE LEVEL 2

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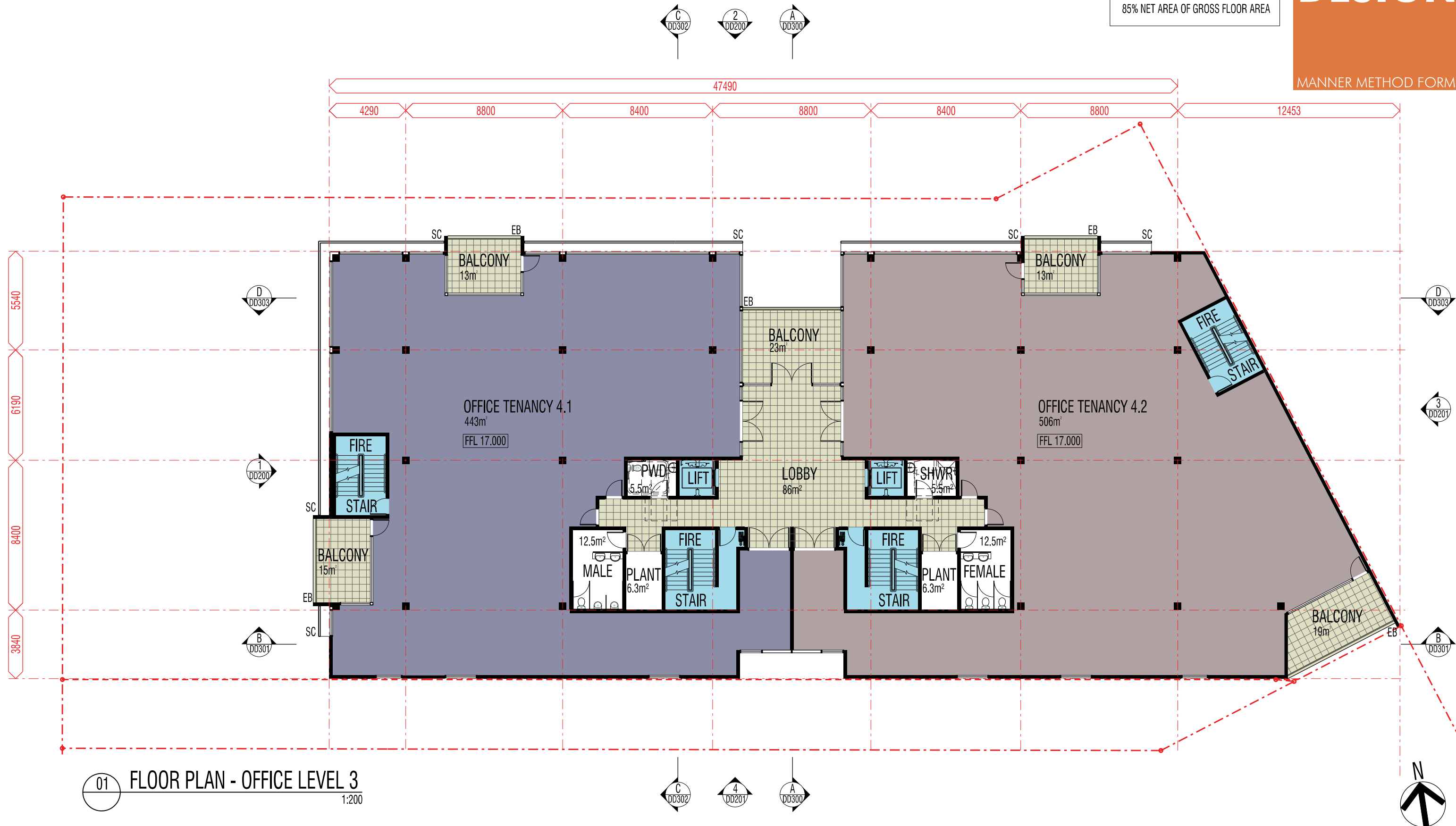
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OFFICE LEVEL 3

GROSS FLOOR AREA: 1123 m²
NET LETTABLE AREA: 949m²
85% NET AREA OF GROSS FLOOR AREA



PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
FLOOR PLAN - OFFICE LEVEL 3

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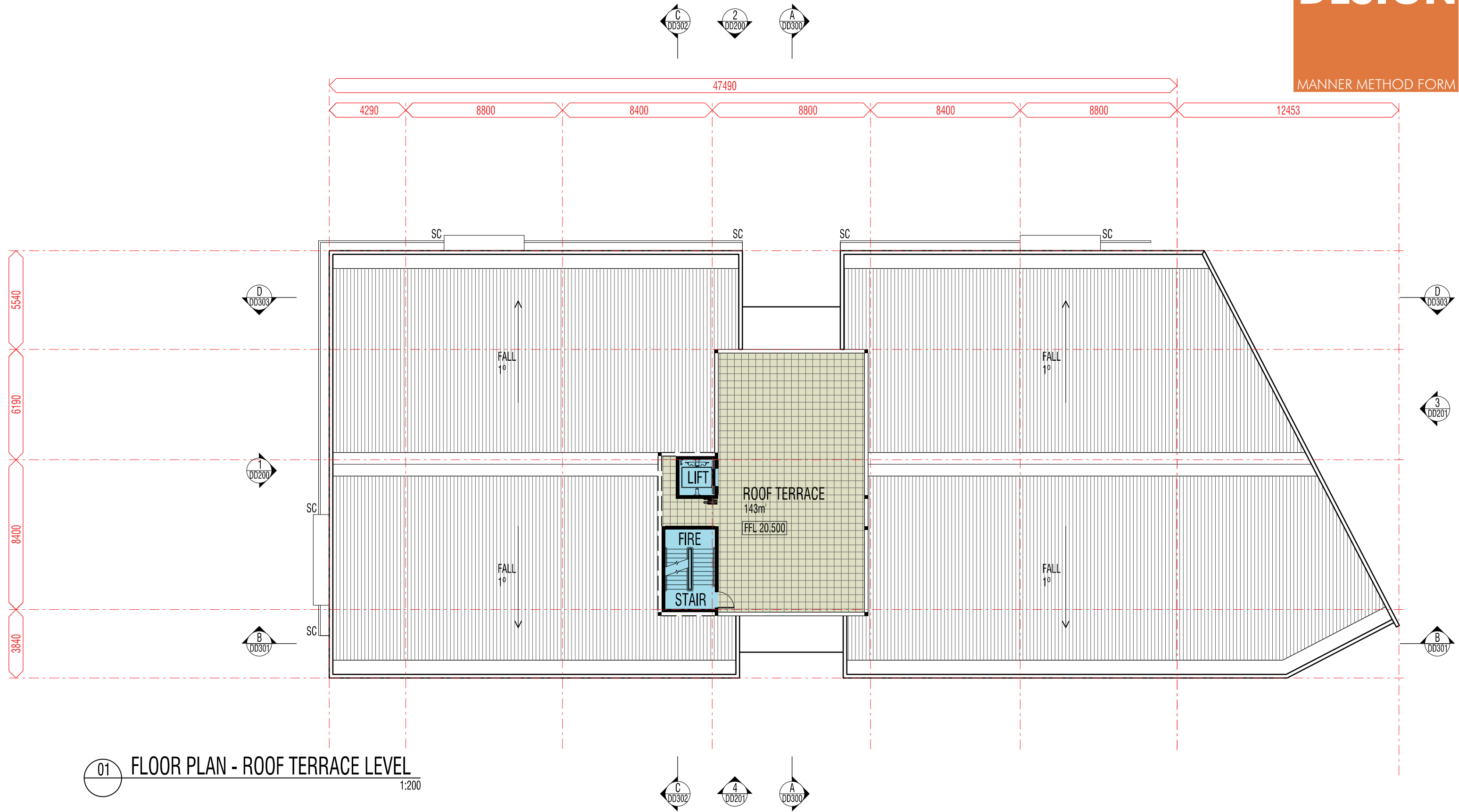
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PROJECT No: 09378BNE
DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD104_B

ROOF TERRACE
GROSS FLOOR AREA: 17 m²



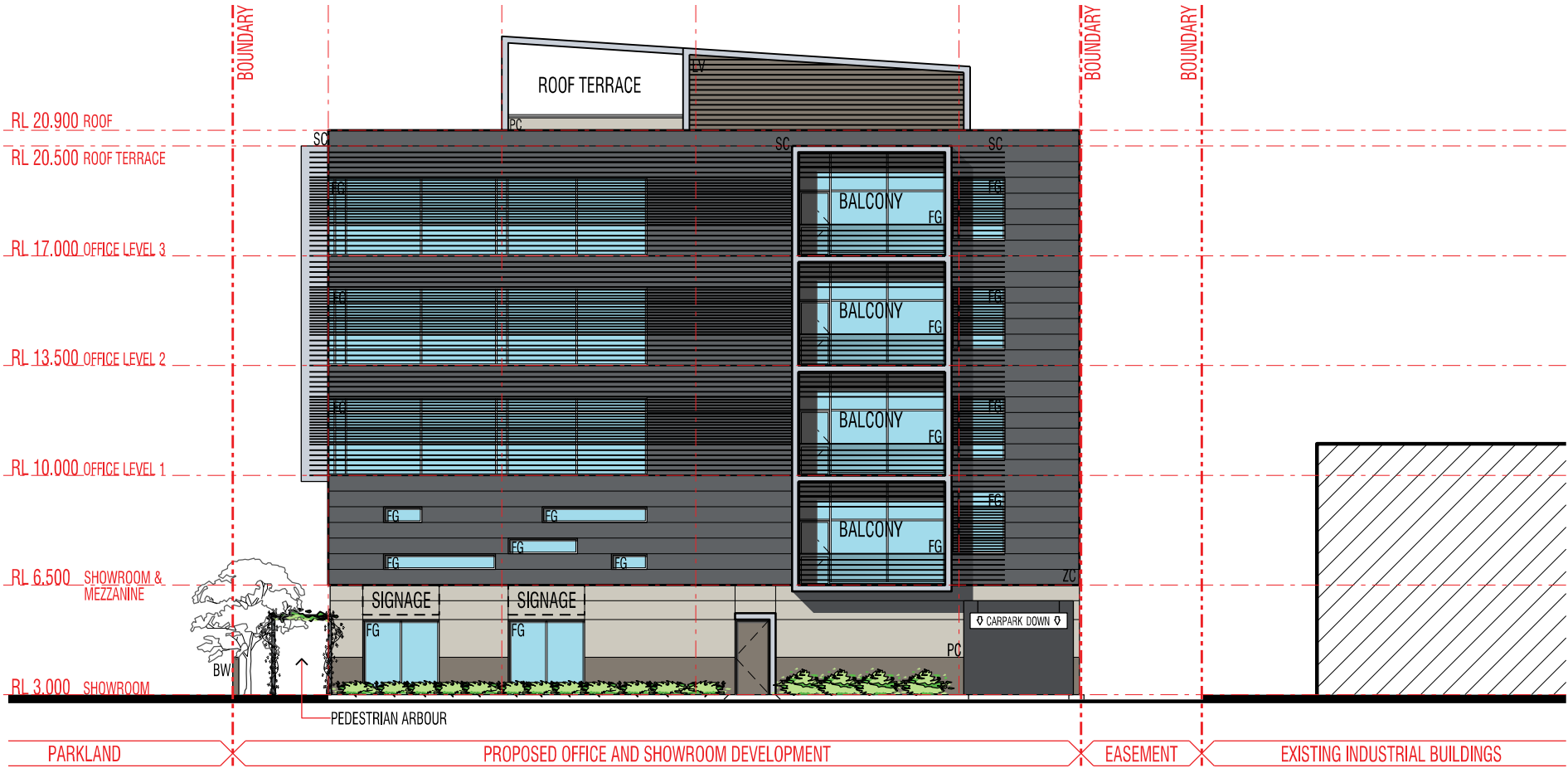
PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
FLOOR PLAN - ROOF TERRACE LEVEL

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PROJECT No: 09378BNE
DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD107_A

ELEVATION MATERIAL LEGEND

BW	BLOCKWORK WALL
DP	DOWNPIPE
FG	FIXED GLASS
LG	LOUVERED GATES
LV	LOUVERS
PC	PRECAST CONCRETE
SC	SUN SCREENING
ZC	ZINC CLADDING



01

ELEVATION 1 - WEST

1:200

PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
ELEVATIONS - WEST

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PROJECT No: 09378BNE
DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD200_A

ELEVATION MATERIAL LEGEND

BW	BLOCKWORK WALL
DP	DOWNPIPE
FG	FIXED GLASS
LG	LOUVERED GATES
LV	LOUVERS
PC	PRECAST CONCRETE
SC	SUN SCREENING
ZC	ZINC CLADDING



01 ELEVATION 2 - NORTH
1:200

PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
ELEVATIONS - NORTH

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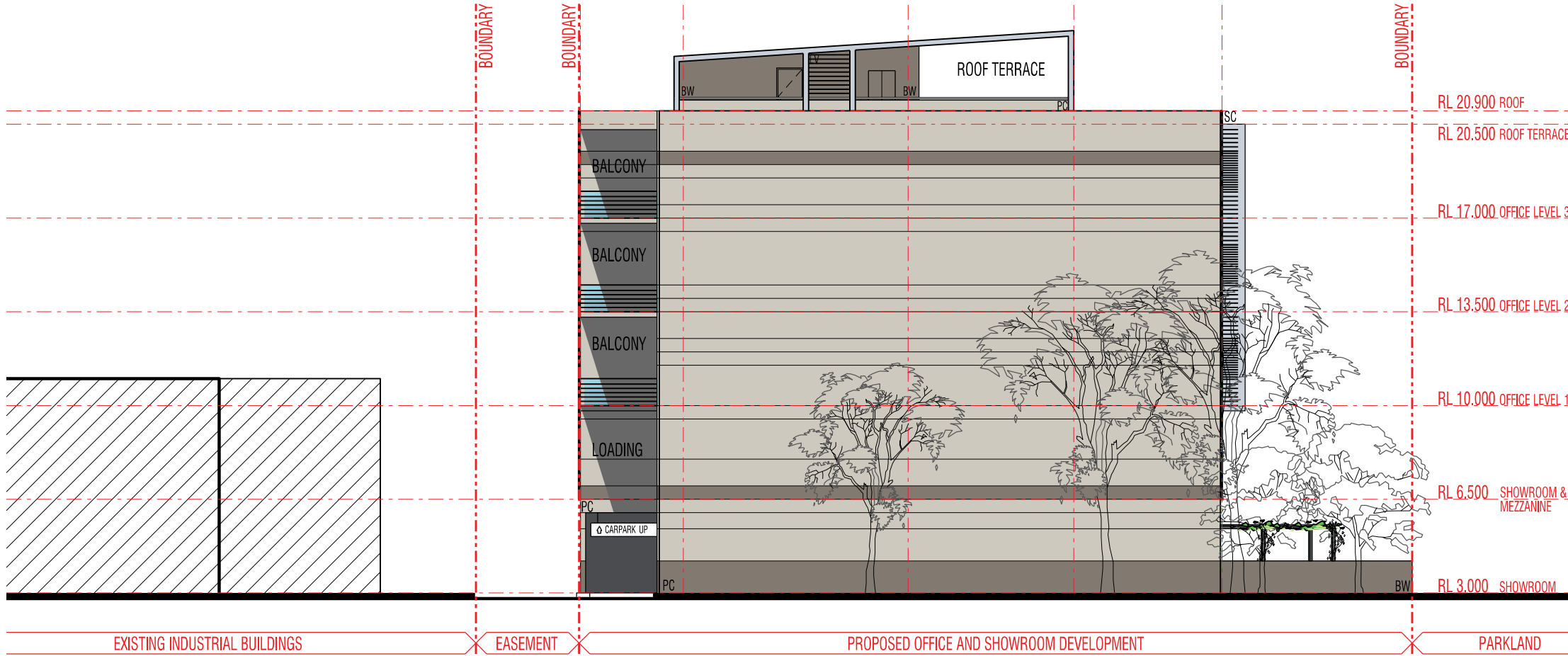
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PROJECT No: 09378BNE
DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD200_A

ELEVATION MATERIAL LEGEND

BW	BLOCKWORK WALL
DP	DOWNPIPE
FG	FIXED GLASS
LG	LOUVERED GATES
LV	LOUVERS
PC	PRECAST CONCRETE
SC	SUN SCREENING
ZC	ZINC CLADDING



01

ELEVATION 3 - EAST

1:200

PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
ELEVATIONS - EAST

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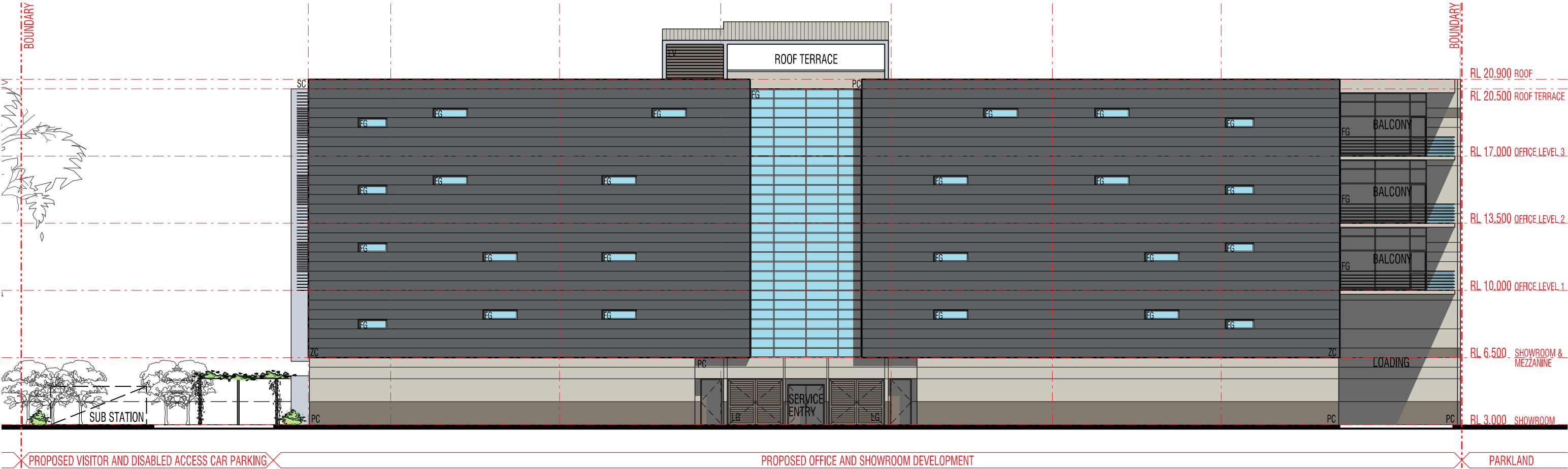
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PROJECT No: 09378BNE
DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD201_A

ELEVATION MATERIAL LEGEND

BW	BLOCKWORK WALL
DP	DOWNPIPE
FG	FIXED GLASS
LG	LOUVERED GATES
LV	LOUVERS
PC	PRECAST CONCRETE
SC	SUN SCREENING
ZC	ZINC CLADDING



01

ELEVATION 4 - SOUTH

1:200

■ PROPOSED SHOWROOM AND OFFICES: THEODORE STREET-EAGLE FARM
ELEVATIONS - SOUTH

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PROJECT No: 09378BNE
DATE: JUNE 2010
SCALE: 1:200 @ A3
DRAWING No: DD201_A