

UNITS

UNIT	LEVEL	STUDIO	1 BED	1 BED + STUDY	2 BED	3 BED	BATH	ENS	ADPT.	UNIT AREA	BALCONY/ COURTYARD AREA	LIFT ACCESS	DIRECT SUNLIGHT	CROSS THROUGH VENTILATION	SINGLE ASPECT	LIVING ROOM WIDTH	PARKING REQUIRED (PER UNIT)	PARKING SPACES PROVIDED
101A	1									50.0m <sup>2</sup>	8.0m <sup>2</sup>					> 3.6m	1	1
102A	1									50.5m <sup>2</sup>	8.0m <sup>2</sup>					3.6m	1	1
103A	1									68.6m <sup>2</sup>	8.7/36.2m <sup>2</sup>					> 4m	1	1
104A	1									56.3m <sup>2</sup>	8.6/12.6m <sup>2</sup>					3.6m	1	1
105A	1									97.7m <sup>2</sup>	14.7/36.4m <sup>2</sup>					> 4m	1.2	1.2
106A	1									91.4m <sup>2</sup>	15.5m <sup>2</sup>					4m	1.2	1.2
107A	1									58.6m <sup>2</sup>	8.0m <sup>2</sup>					> 4m	1	1
108A	1									84.9m <sup>2</sup>	10.3m <sup>2</sup>					4m	1.2	1.2
109A	1									90.6m <sup>2</sup>	17.7m <sup>2</sup>					> 4m	1.2	1.2
101B	1									90.7m <sup>2</sup>	10.4/10.2m <sup>2</sup>					> 4m	1.2	1.2
102B	1									67.5m <sup>2</sup>	10.6m <sup>2</sup>					3.6m	1	1
103B	1									87.2m <sup>2</sup>	16.1/85.5m <sup>2</sup>					4.0m	1.2	1.2
201A - 301A	2 - 3									50.0m <sup>2</sup>	8.0m <sup>2</sup>					> 3.6 m2	1	1
202A - 302A	2 - 3									50.5m <sup>2</sup>	8.0m <sup>2</sup>					3.6m2	1	1
203A - 303A	2 - 3									67.6m <sup>2</sup>	8.7m <sup>2</sup>					> 4m2	1	1
204A - 304A	2 - 3									56.3m <sup>2</sup>	9.7m <sup>2</sup>					3.6m2	1	1
205A - 305A	2 - 3									101.2m <sup>2</sup>	11.5m <sup>2</sup>					> 4m2	1.2	1.2
206A - 306A	2 - 3									91.4m <sup>2</sup>	15.5m <sup>2</sup>					4 m2	1.2	1.2
207A - 307A	2 - 3									58.6m <sup>2</sup>	8.0m <sup>2</sup>					> 3.6m2	1	1
208A - 308A	2 - 3									84.9m <sup>2</sup>	10.3m <sup>2</sup>					4m2	1.2	1.2
209A - 309A	2 - 3									90.6m <sup>2</sup>	10.0m <sup>2</sup>					> 4m2	1.2	1.2
201B - 301B	2 - 3									99.8m <sup>2</sup>	10.0m <sup>2</sup>					> 4m2	1.2	1.2
202B - 302B	2 - 3									67.8m <sup>2</sup>	10.4m <sup>2</sup>					3.6m2	1	1
203B - 303B	2 - 3									87.2m <sup>2</sup>	10.0m <sup>2</sup>					4.0m2	1.2	1.2
401A	4									50.0m <sup>2</sup>	12.8m <sup>2</sup>					> 4m2	1	1
402A	4									63.3m <sup>2</sup>	8.0m <sup>2</sup>					> 4m2	1	1
403A	4									55.0m <sup>2</sup>	9.7m <sup>2</sup>					3.6m2	1	1
404A	4									55.1m <sup>2</sup>	8.1m <sup>2</sup>					> 4m2	1	1
405A	4									70.6m <sup>2</sup>	21.0m <sup>2</sup>					> 4m2	1.2	1.2
406A	4									74.0m <sup>2</sup>	24.5m <sup>2</sup>					> 4m2	1.2	1.2
407A	4									106.1m <sup>2</sup>	53.9m <sup>2</sup>					> 4m2	1.5	1.5
401B	4									86.7m <sup>2</sup>	10.4m <sup>2</sup>					> 4m2	1.2	1.2
402B	4									59.0m <sup>2</sup>	14.4m <sup>2</sup>					> 4 m2	1	1
403B	4									40.9m <sup>2</sup>	6.7m <sup>2</sup>					4m2	1	1
501A - 601A	5 - 6									50.1m <sup>2</sup>	8.1m <sup>2</sup>					> 3.6m2	1	1
502A - 602A	5 - 6									60.8m <sup>2</sup>	9.0m <sup>2</sup>					> 4m2	1	1
503A - 603A	5 - 6									55.0m <sup>2</sup>	9.7m <sup>2</sup>					3.6m2	1	1
504A - 604A	5 - 6									55.1m <sup>2</sup>	8.1m <sup>2</sup>					> 4m2	1	1
505A - 605A	5 - 6									70.9m <sup>2</sup>	10.4m <sup>2</sup>					> 4m2	1.2	1.2
506A - 606A	5 - 6									52.6m <sup>2</sup>	9.0m <sup>2</sup>					3.6m	1	1
507A - 607A	5 - 6									83.1m <sup>2</sup>	10.0m <sup>2</sup>					> 4m2	1.2	1.2
508A - 608A	5 - 6									90.6m <sup>2</sup>	10.0m <sup>2</sup>					> 4m2	1.2	1.2
501B - 601B	5 - 6									77.2m <sup>2</sup>	10.1m <sup>2</sup>					4m2	1.2	1.2
502B - 602B	5 - 6									54.7m <sup>2</sup>	8.4m <sup>2</sup>					3.6m2	1	1
503B - 603B	5 - 6									40.1m <sup>2</sup>	6.7m <sup>2</sup>					> 3.6m2	1	1
701A	7									110.6m <sup>2</sup>	12.5m <sup>2</sup>					> 4m2	1.5	1.5
702A	7									53.6m <sup>2</sup>	9.7m <sup>2</sup>					>3.6m2	1	1
703A	7									54.1m <sup>2</sup>	8.1m <sup>2</sup>					> 3.6m2	1	1
704A	7									55.0m <sup>2</sup>	8.2m <sup>2</sup>					> 4m2	1	1
705A	7									52.6m <sup>2</sup>	9.0m <sup>2</sup>					>3.6m2	1	1
706A	7									83.1m <sup>2</sup>	10.0m <sup>2</sup>					> 3.6m2	1.2	1.2
707A	7									90.6m <sup>2</sup>	10.0m <sup>2</sup>					> 4m2	1.2	1.2
701B	7									73.1m <sup>2</sup>	10.1m <sup>2</sup>					> 4m2	1.2	1.2
702B	7									54.7m <sup>2</sup>	8.4m <sup>2</sup>					3.6 m2	1	1
703B	7									40.1m <sup>2</sup>	6.7m <sup>2</sup>					> 3.6m2	1	1
TOTAL		4	33	6	32	2	78	UNITS	12	5566.9m <sup>2</sup>			56.4% (44/78)	75.6% (60/78)	55.1% (43/78)		86	86

RETAIL

RETAIL SPACE	AREA	STORAGE AREA	PARKING REQUIRED	PARKING PROVIDED
1	60.5m2	25.0m2	1 space per 16.4m2 GLFA	
2	73.1m2	24.4m2		
3	73.3m2	27.1m2		
4	27.7m2	9.5m2		
5	47.3m2	14.4m2		
6	44.9m2	14.2m2		
7	43.5m2	14.4m2		
8	43.5m2	14.4m2		
9	43.5m2	14.4m2		
10	43.5m2	11.5m2		
11	51.4m2	12.9m2		
12	60.9m2	8.8m2		
TOTAL	615.1m2		37.5 (622.1/16.4)	38

PARKING

	UNITS	UNIT VISITOR	RETAIL	CARSHARE	TOTAL
REQUIRED	58	16	38	3	115
PROVIDED	77	16	38	3	134

Assessor # 20420		Certificate # 0003357233		Issued: 290419	
Thermal Performance Specifications					
These are the Specifications upon which the Certified Assessment is based. If details included in these Specifications vary from other drawings or written specifications, these Specifications shall take precedence. If only one specification option is detailed for a building element, that specification must apply to all instances of that element for the project. If alternate specifications are detailed for a building element, the location and extent of alternate specifications must be detailed below and/ or clearly indicated on referenced documents					
Windows	Product ID	Glass	Frame	U value	SHGC Area M <sup>2</sup> Detail
Single glazed		Clear	Aluminium	7.63	0.75 As per plans
Single glazed		Low e	Aluminium	5.60	0.41 Western facade
Skylights	Product ID	Glass	Frame	U value	SHGC Area M <sup>2</sup> Detail
Window and skylight U and SHGC values. If specified, are according to ANAC 2005. Alternate products or specifications may be used if their U value is lower, and the SHGC value is less than 10% higher or lower, than the U and SHGC values of the product specified above.					
External walls	Construction	Insulation	Colour – solar abs.	Detail	
Cavity brick/Framed		R2.0	Medium and dark	As per plans	
Internal walls	Construction	Insulation	Detail		
Plasterboard		None	As per plans. Within units		
Hebel/Plasterboard		None	As per plans. Between units		
Floors	Construction	Insulation	Covering	Detail	
Concrete		None	Varies	As per plans. Lower level	
Framed		None	Varies	As per plans. Upper level	
Ceilings	Construction	Insulation	Detail		
Plasterboard		R2.5	As per plans		
Roof	Construction	Insulation	Colour – solar abs.	Detail	
Metal		R1.5	Dark	As per plans	
Concrete		R1.0	Dark	As per plans	
Window cover	Internal (curtains)		External (awnings, shutters, etc)		
As plans			-		
Fixed shading	Eaves (width - inc. gutters, h1 above windows)		Location		
As plans – eaves /soffits			As plans – eaves/soffits/louvers as shown		
Overshadowing	Overshadowing structures		Overshadowing trees		
NA					
Orientation, Exposure, Ventilation and Infiltration					
Orientation of nominal north:	0	Living area open to entry:	Y	Ventilated skylights:	N
Terrain category:	Suburban	Doors separate living areas:	N	Open fire, unflued gas heat:	N
Roof ventilation:	Unventilated	Stair open to heated areas:	N	Vented downlights:	N
Cross ventilation:	Standard	Seals to windows and doors:	Y	Wall and ceiling vents:	N
Subfloor:	Conditioned	Exhaust fans without dampers:	N		

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Certificate no.: 0003357233  
Assessor Name: Damian O'Toole  
Accreditation no.: 20420  
Certificate date: 29 Apr 2019  
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

ABSA  
(Australian Building Sustainability Association)

Accreditation Period	2018-2019
Assessor Name	Damian O'Toole
Assessor Number	20420
Assessor Signature	

HERS Assessments completed within the accreditation period are part of the ABSA quality audit system

This Accredited Assessor is qualified to use NatHERS Accredited Software and has agreed to follow an Assessor Code of Practice

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

1. Commitments for Residential flat buildings - RFB

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✔	✔	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✔	✔
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✔	✔
(e) The applicant must install: (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✔	✔
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✔	✔	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✔	
(g) The pool or spa must be located as specified in the table.	✔	✔	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✔	✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✔	✔	✔
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✔	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✔	✔
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✔	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 5 star	individual fan, ducted to facade or roof	manual switch on/off	individual fan, not ducted	manual switch on/off	individual fan, not ducted	manual switch on/off

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✔		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✔	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✔	✔
(g) Where there is an in-slab heating or cooling system, the applicant must:  (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✔	✔	✔
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✔	✔	✔

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
401A	3.0	22.0
401B	9.0	22.0
403B	7.0	14.0
406A	30.0	15.0
407A	20.0	12.0
504A	5.0	14.0
701A	5.0	22.0
701B	9.0	21.0
702B	3.0	26.0

	Fixtures				Appliances			Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	3 star (> 8 but <= 7.5 L/min)	4 star	5 star	5 star	-	-	5 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
None	-	-	-	-	-	-	-	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✔	✔	✔
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✔	✔
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system/s is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✔	✔
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✔	✔

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/ toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
101A, 102A, 102B, 104A, 302B, 402B, 502B, 602B, 702B	ceiling fans + 1-phase airconditioning EER 3.0 - 3.5	-	1-phase airconditioning EER 3.0 - 3.5	-	1	1	yes	yes	yes	yes	0	yes
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	-	1-phase airconditioning EER 3.0 - 3.5	-	1	1	yes	yes	yes	yes	0	yes

	Individual pool	Individual spa	Appliances & other efficiency measures									
Dwelling no.	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	-	4 star	-	2 star	-	-

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
706A	27.0	14.0
707A	22.0	12.0
501A, 601A	3.0	21.0
501B, 601B	8.0	21.0
502A, 602A	11.0	23.0
507A, 607A	23.0	12.0
508A, 608A	5.0	19.0
101A, 201A, 301A	4.0	23.0
101B, 201B, 301B	8.0	20.0
102A, 202A, 302A	4.0	21.0
102B, 202B, 302B	24.0	24.0
108A, 208A, 308A	24.0	12.0
109A, 209A, 309A	6.0	21.0
103A, 203A, 303A, 402A	9.0	23.0
402B, 502B, 602B, 702A	22.0	24.0
107A, 207A, 307A, 506A, 606A	29.0	15.0
103B, 203B, 303B, 503B, 603B, 703B	6.0	14.0
105A, 205A, 305A, 404A, 604A, 704A	5.0	17.0
104A, 204A, 304A, 403A, 503A, 603A, 703A	3.0	20.0
All other dwellings	11.0	16.0

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ABN 56 120 779 106  
NOMINATED ARCHITECTS  
TONY GRAY 5303 & PAUL GODSELL 6726  
P 02 9660 3644 www.crawford.com.au  
E arch@crawford.com.au

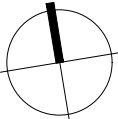
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A	19/05/03	DA ISSUE
ISSUE	DATE	AMENDMENTS

CLIENT  
DEVELOPMENTLINK

PROJECT  
MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
BASIX CERTIFICATE  
SHEET 01



SCALE N/A  
APPROVED  
DRAWN  
CHECKED  
DATE NOV 2018  
STATUS DA

PROJECT NUMBER 18041  
DRAWING NUMBER

A003

ISSUE





(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✔	✔
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✔	✔	✔
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✔	✔	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✔	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✔	✔
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✔	✔

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✔	✔
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✔	✔
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✔	✔	✔

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Car park area	ventilation (supply + exhaust)	carbon monoxide monitor + 2-speed fan	fluorescent	motion sensors	No
Lift car (No.1)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No.2)	-	-	compact fluorescent	connected to lift call button	No
Garbage room	ventilation supply only	-	fluorescent	motion sensors	No
Plant or service room	ventilation supply only	thermostatically controlled	fluorescent	manual on / manual off	No
Storage	no mechanical ventilation	-	fluorescent	manual on / manual off	No
Ground floor lobby type	ventilation supply only	time clock or BMS controlled	compact fluorescent	motion sensors	No
Hallway/lobby type	ventilation supply only	time clock or BMS controlled	compact fluorescent	motion sensors	No

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 12
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 12

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✔	✔
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✔	✔	✔
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✔	✔	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✔	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✔	✔
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✔	✔

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✔	✔
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✔	✔
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✔	✔	✔

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✔" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✔" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✔" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).

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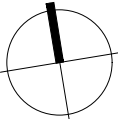
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DEVELOPMENTLINK

PROJECT  
MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
BASIX CERTIFICATE  
SHEET 02



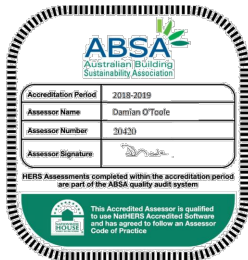
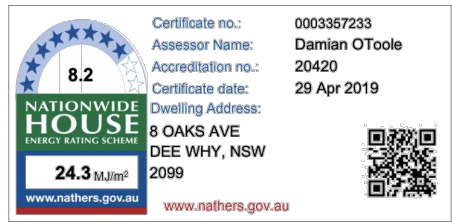
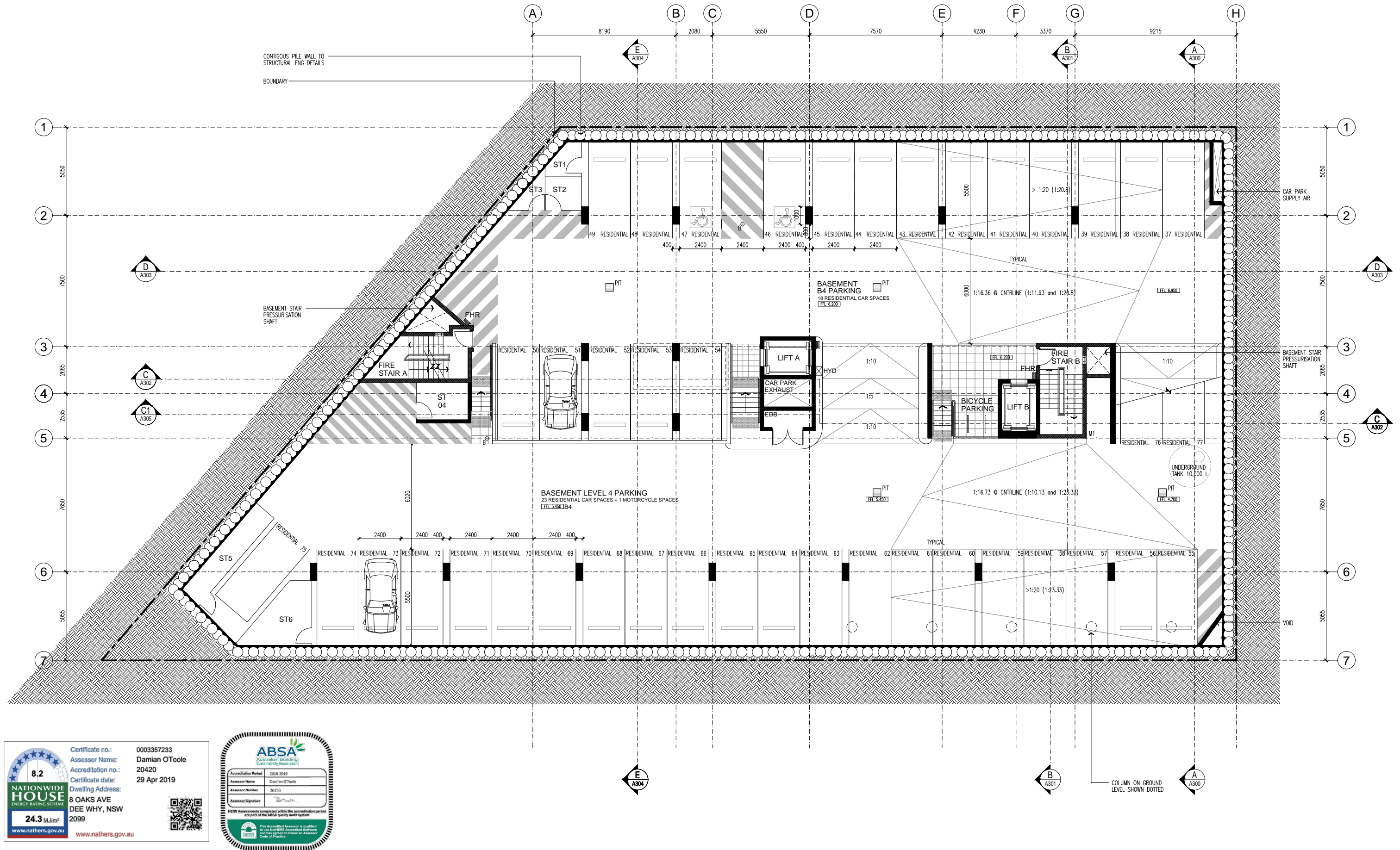
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STATUS DA

PROJECT NUMBER 18041  
DRAWING NUMBER

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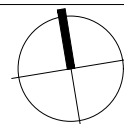
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LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
BASEMENT LEVEL 4  
FLOOR PLAN



SCALE  
1:100 @ A1  
1:200 @ A3

APPROVED PG  
DRAWN HP  
CHECKED -  
DATE NOV 2018  
STATUS DA

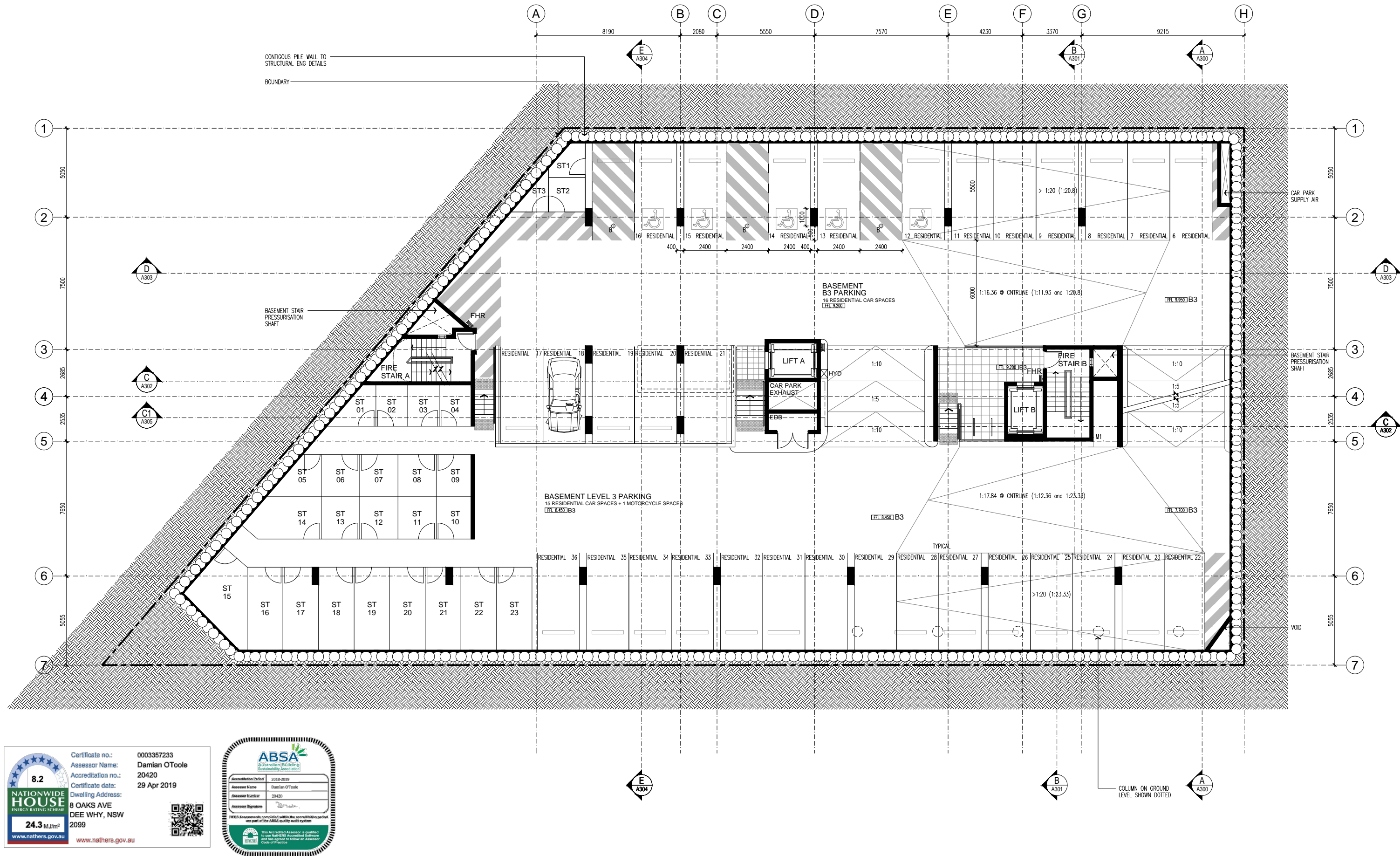
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18041

DRAWING NUMBER  
A100

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8.2

NATIONWIDE  
HOUSE  
ENERGY RATING SCHEME

24.3 MJ/m<sup>2</sup>

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Certificate no.: 0003357233

Assessor Name: Damian O'Toole

Accreditation no.: 20420

Certificate date: 29 Apr 2019

Dwelling Address: 8 OAKS AVE  
DEE WHY, NSW  
2099

ABSA  
Australian Building  
Sustainability Association

Accreditation Period: 2019-2020

Assessor Name: Damian O'Toole

Assessor Number: 20420

Assessor Signature:

HERS Assessments completed within the accreditation period are part of the ABSA quality audit system.

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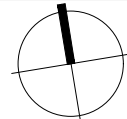
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8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
BASEMENT LEVEL 3  
FLOOR PLAN



SCALE: 1:100 @ A1  
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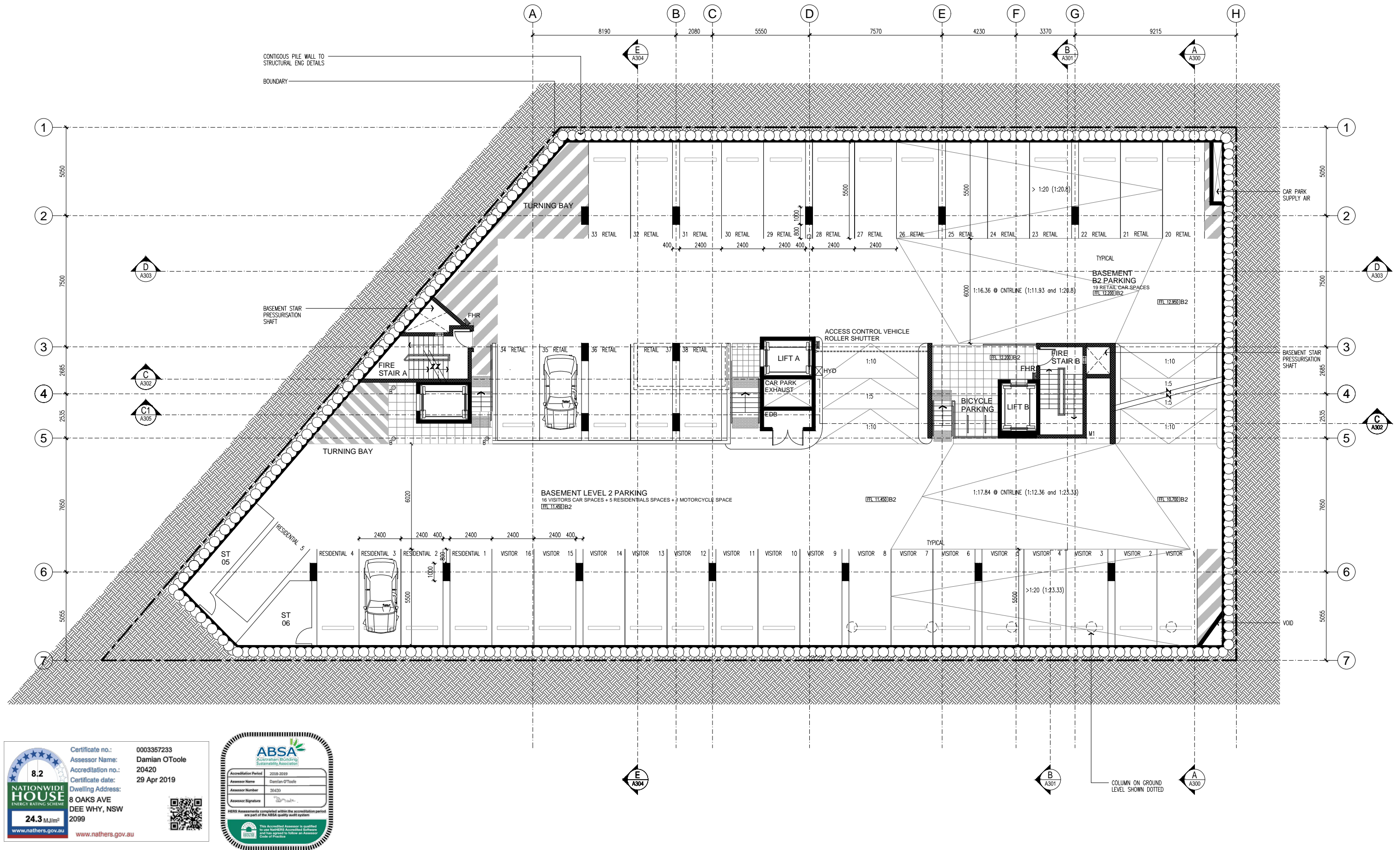
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STATUS DA

PROJECT NUMBER  
18041

DRAWING NUMBER  
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Assessor Name: Damian O'Toole  
Accreditation no.: 20420  
Certificate date: 29 Apr 2019  
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

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Australian Building Sustainability Association

Accreditation Period: 2019-2021  
Assessor Name: Damian O'Toole  
Assessor Number: 20420  
Assessor Signature: [Signature]

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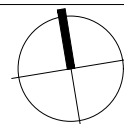
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8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
BASEMENT LEVEL 2  
FLOOR PLAN



SCALE: 1:100 @ A1  
1:200 @ A3

APPROVED PG  
DRAWN MT  
CHECKED -  
DATE NOV 2018  
STATUS DA

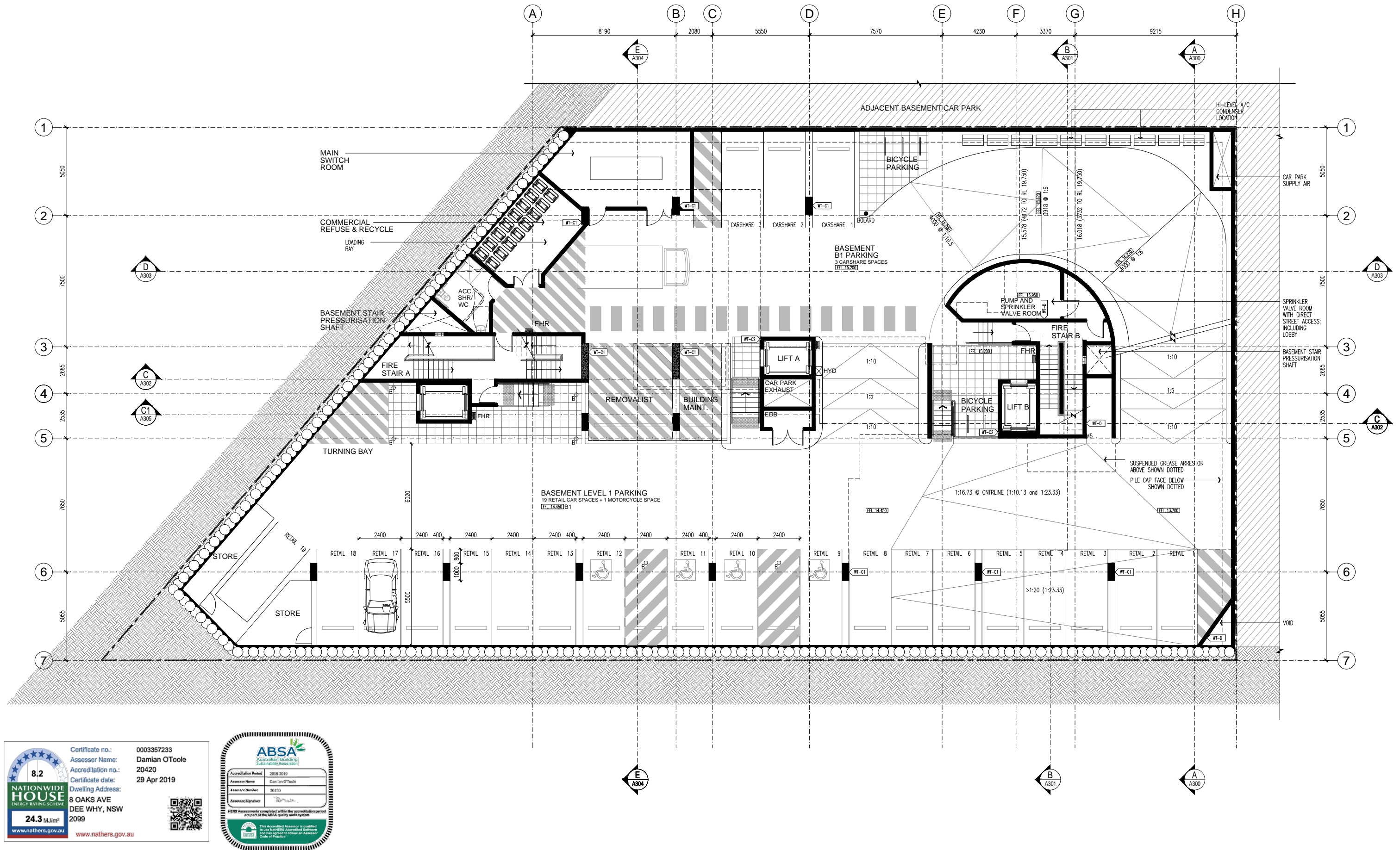
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A102

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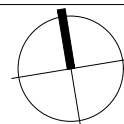
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MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
BASEMENT LEVEL 1  
FLOOR PLAN



SCALE  
1:100 @ A1  
1:200 @ A3

APPROVED PG  
DRAWN MT  
CHECKED -  
DATE NOV 2018  
STATUS DA

PROJECT NUMBER  
18041

DRAWING NUMBER  
A103

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NATIONWIDE  
HOUSE  
ENERGY RATING SCHEME

24.3 MJ/m<sup>2</sup>

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Accreditation no.: 20420

Certificate date: 29 Apr 2019

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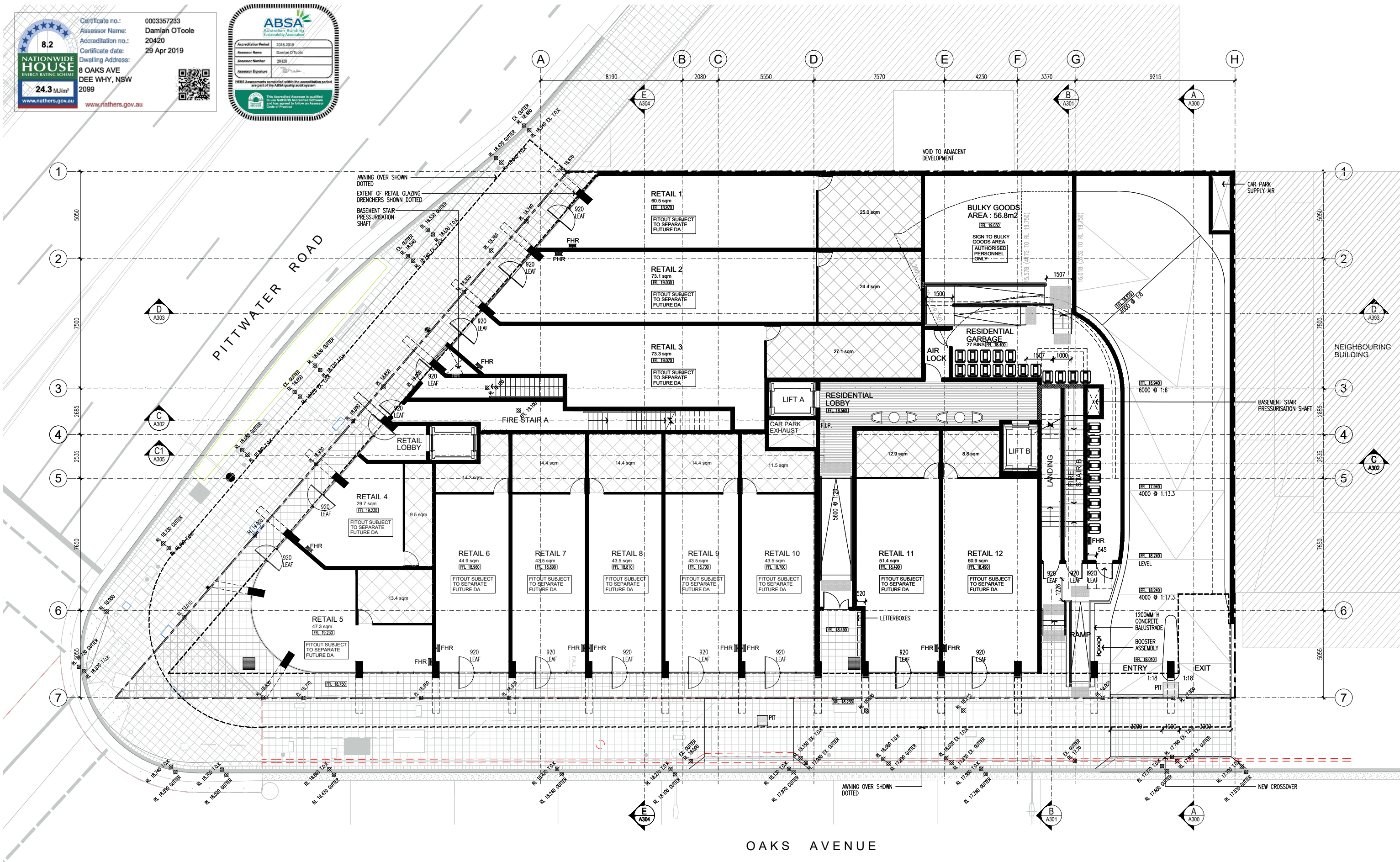
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Assessor Number: 20420

Assessor Signature: [Signature]

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PROJECT  
MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
GROUND FLOOR PLAN

SCALE  
1:100 @ A1  
1:200 @ A3

APPROVED  
PG  
DRAWN  
CHECKED

DATE  
NOV 2018

STATUS  
DA

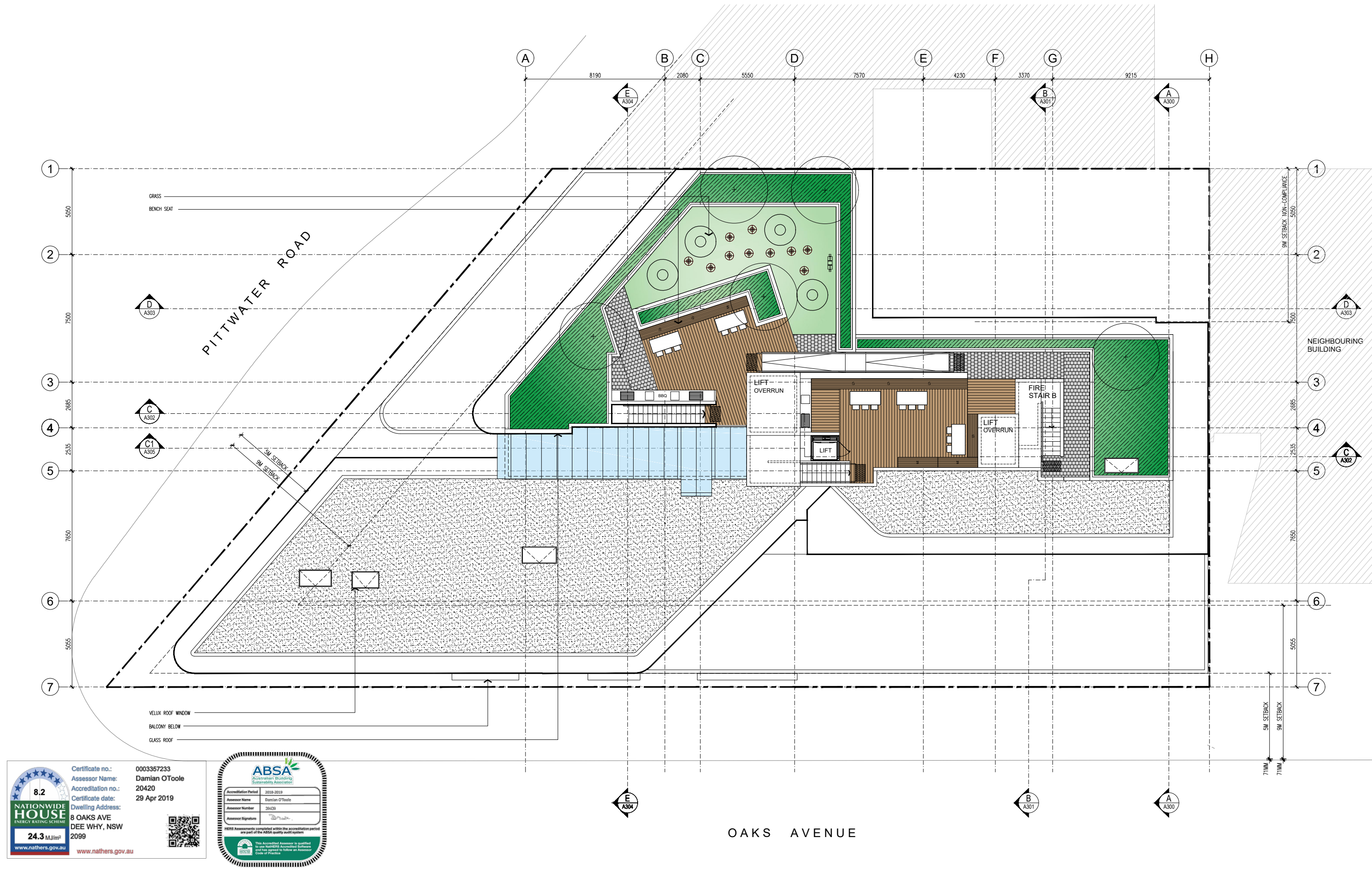
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18041

DRAWING NUMBER  
A104

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**NATIONWIDE HOUSE ENERGY RATING SCHEME**

**8.2**

**24.3 MJ/m²**

**2099**

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**Assessor Name:** Damian O'Toole  
**Accreditation no.:** 20420  
**Certificate date:** 29 Apr 2019  
**Dwelling Address:** 8 OAKS AVE DEE WHY, NSW 2099

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Australian Building Sustainability Association

**Accreditation Period:** 2019-2021  
**Assessor Name:** Damian O'Toole  
**Assessor Number:** 20420  
**Assessor Signature:** [Signature]

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PROJECT  
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LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
**LEVEL 8 FLOOR PLAN**

SCALE  
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1:200 @ A3

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DRAWN  
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DATE  
NOV 2018

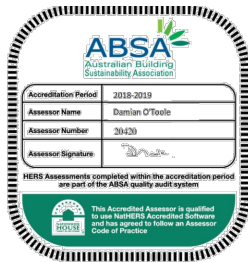
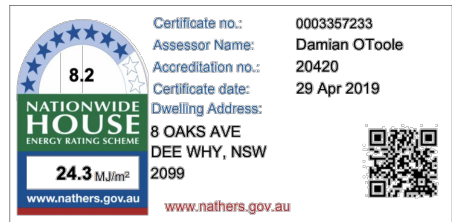
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OAKS AVENUE  
SOUTH ELEVATION

SCALE 1:100 @ A1  
1:200 @ A3

APPROVED PG  
DRAWN MT  
CHECKED -

DATE NOV 2018  
STATUS DA

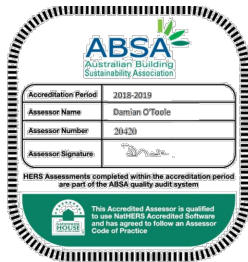
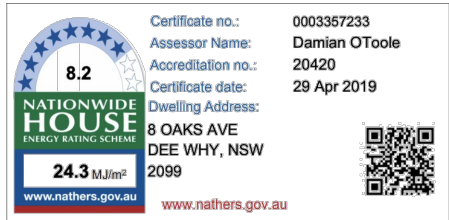
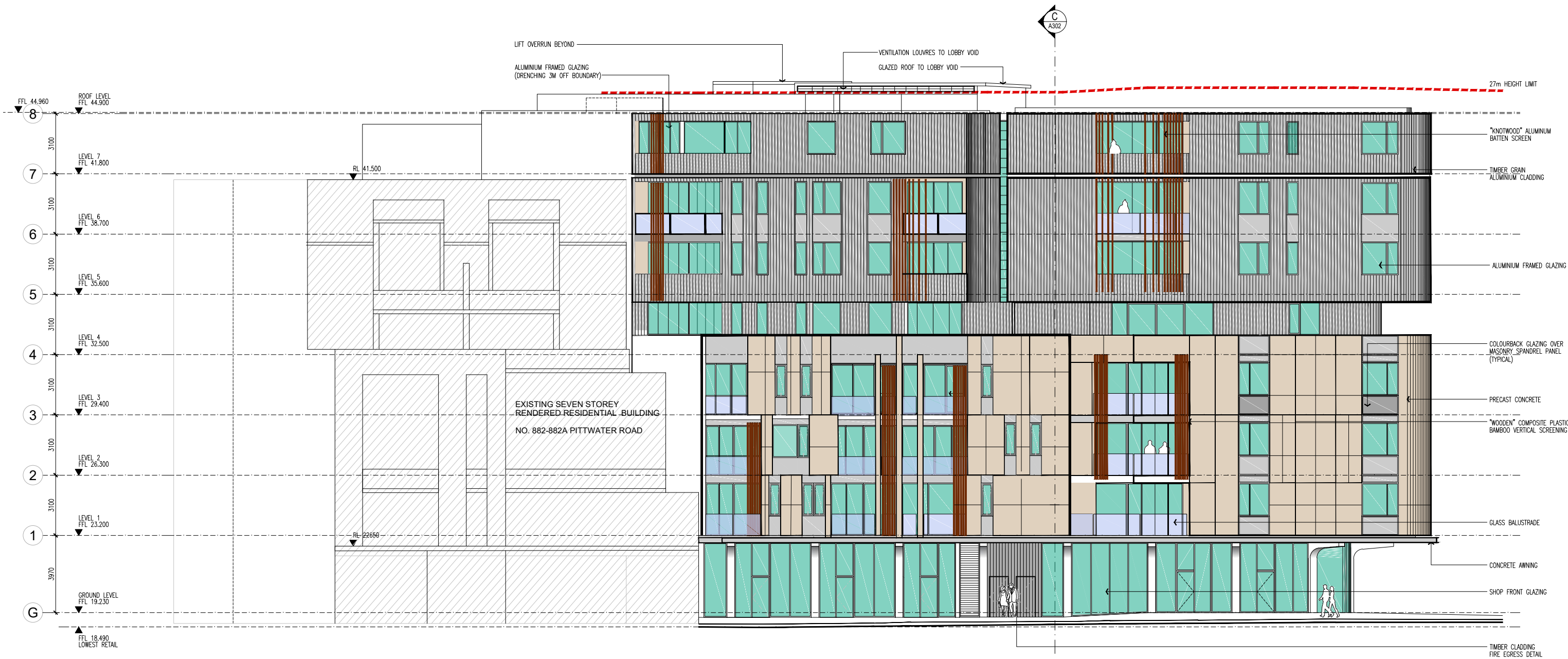
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MIXED USE DEVELOPMENT  
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8 OAKS AVENUE, DEE WHY NSW 2099

PITTWATER ROAD ELEVATION

SCALE 1:100 @ A1  
1:200 @ A3

APPROVED PG  
DRAWN MT  
CHECKED -

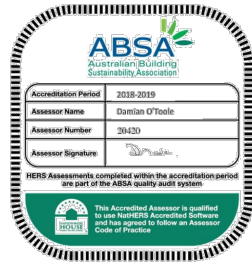
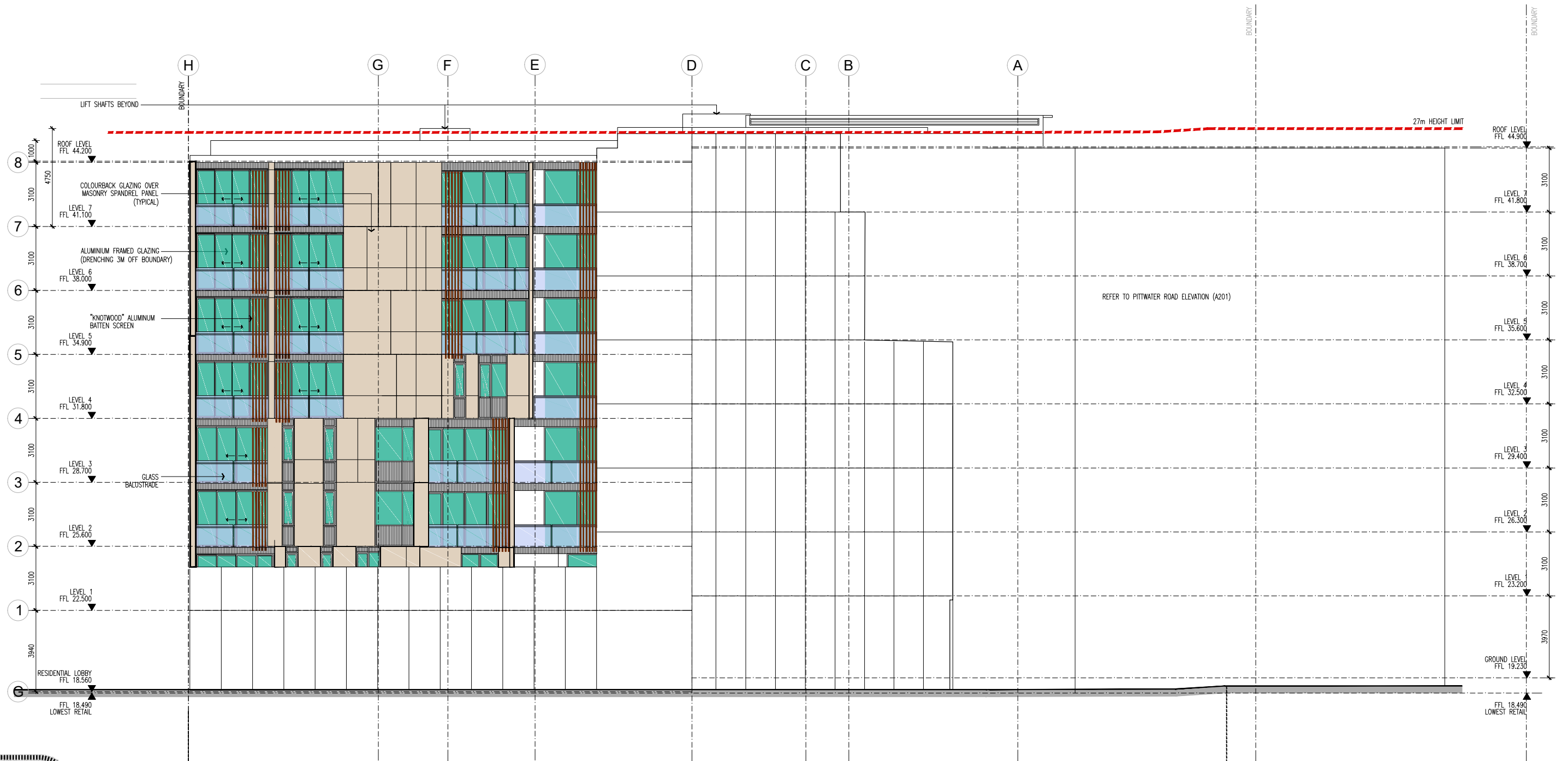
DATE NOV 2018  
STATUS DA

PROJECT NUMBER 18041  
DRAWING NUMBER

A201

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DEVELOPMENTLINK

MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

NORTH ELEVATION

SCALE 1:100 @ A1  
1:200 @ A3

APPROVED PG  
DRAWN MT  
CHECKED -

DATE NOV 2018  
STATUS DA

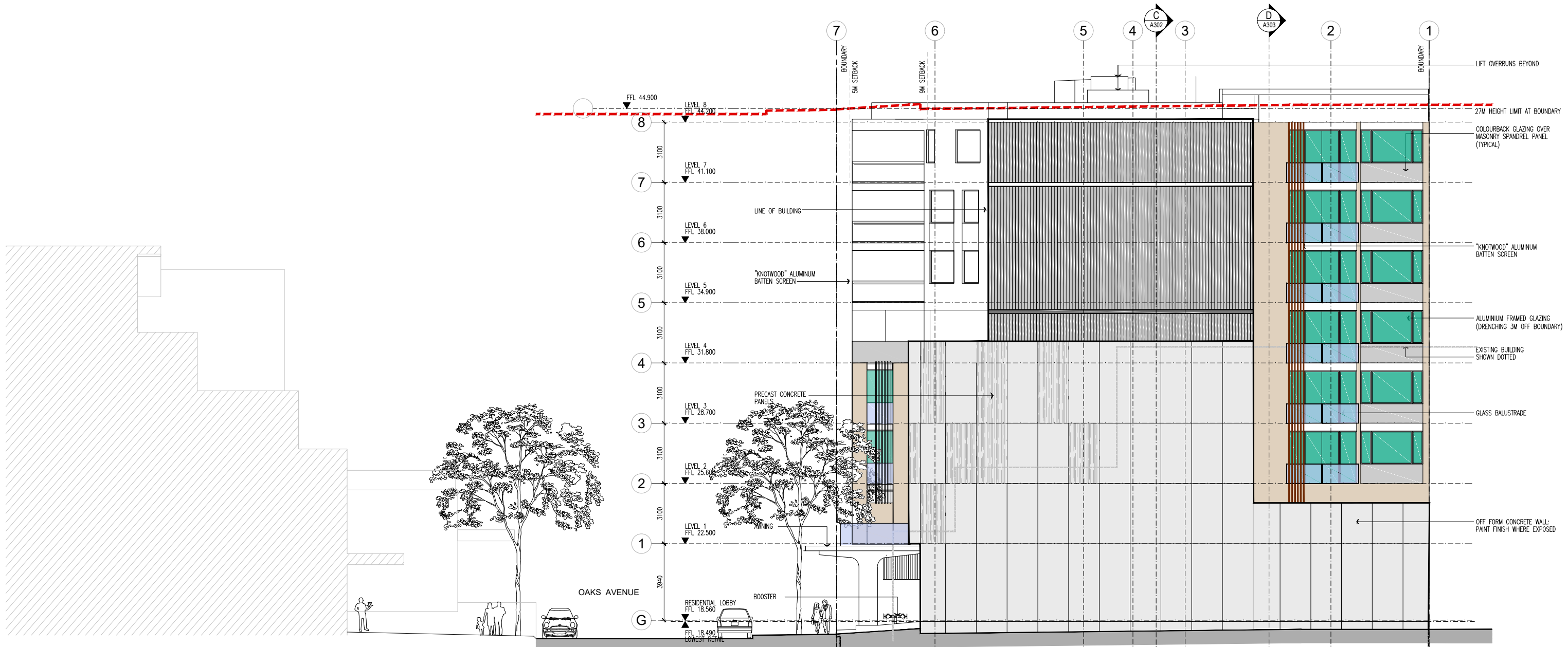
PROJECT NUMBER 18041  
DRAWING NUMBER

A202

ISSUE

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8.2

NATIONWIDE  
HOUSE

ENERGY RATING SCHEME

24.3 MJ/m²

www.nathers.gov.au

Certificate no.: 0003357233

Assessor Name: Damian O'Toole

Accreditation no.: 20420

Certificate date: 29 Apr 2019

Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

ABSA

Australian Building Sustainability Association

Accreditation Period: 2019-2023

Assessor Name: Damian O'Toole

Assessor Number: 20420

Assessor Signature: [Signature]

HERS Assessments completed within the accreditation period are part of the ABSA quality audit system

This Accredited Assessor is qualified to use NABERS Accredited Software and has agreed to follow an Assessor Code of Practice





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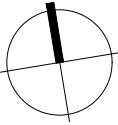
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A	19/05/03	DA ISSUE
ISSUE	DATE	AMENDMENTS

CLIENT  
**DEVELOPMENTLINK**

PROJECT  
**MIXED USE DEVELOPMENT**  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
**PHOTOMONTAGE**  
**VIEW 1 - BEFORE AND AFTER**



SCALE  
PG  
MT  
APPROVED  
DRAWN  
CHECKED  
DATE  
STATUS

PROJECT NUMBER  
**18041**

DRAWING NUMBER  
**A210**

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**A**

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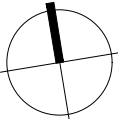
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ISSUE	DATE	AMENDMENTS

CLIENT  
DEVELOPMENTLINK

PROJECT  
MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
PHOTOMONTAGE  
VIEW 2 - BEFORE AND AFTER



SCALE  
APPROVED PG  
DRAWN MT  
CHECKED -  
DATE NOV 2018  
STATUS DA

PROJECT NUMBER  
18041

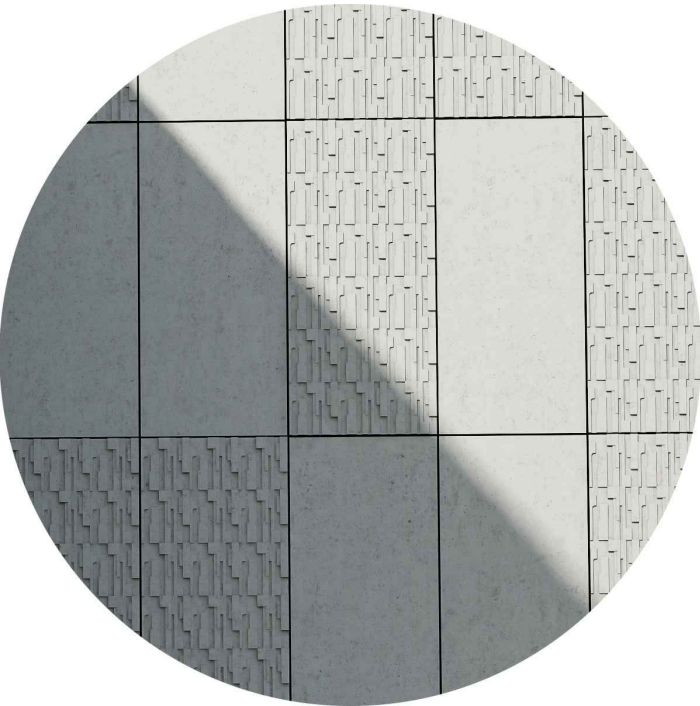
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A211

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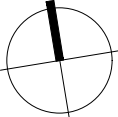
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A	19/05/03	DA ISSUE
ISSUE	DATE	AMENDMENTS

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DEVELOPMENTLINK

PROJECT  
MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
MONTAGES  
WITH LANDSCAPING



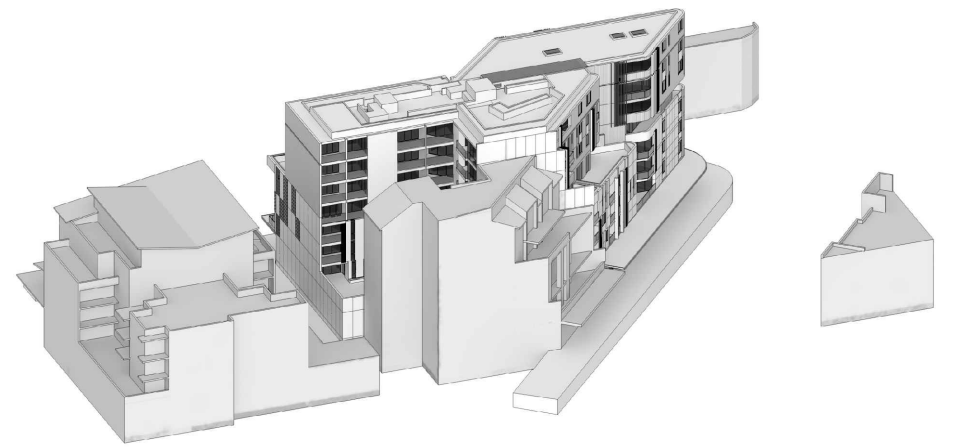
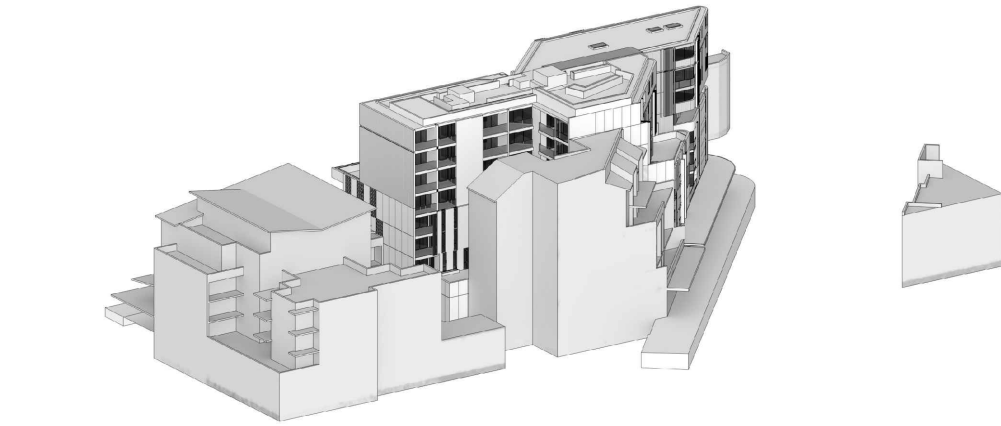
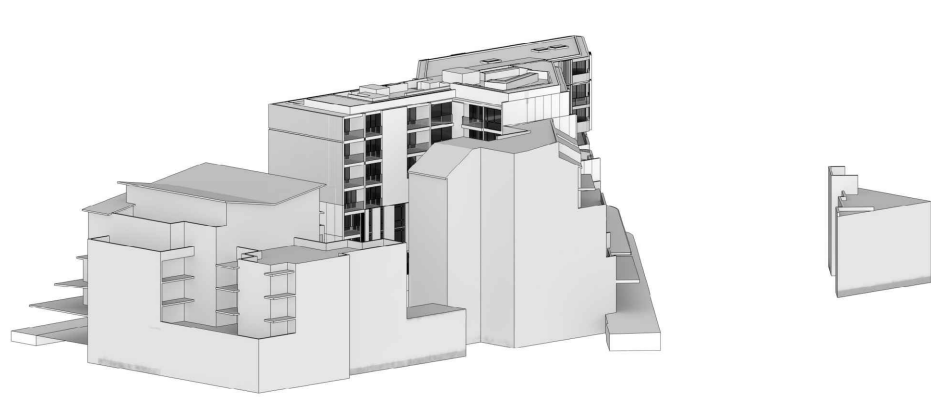
SCALE -  
APPROVED PG  
DRAWN MT  
CHECKED -  
DATE NOV 2018  
STATUS DA

PROJECT NUMBER  
18041

DRAWING NUMBER  
A213

ISSUE  
A  
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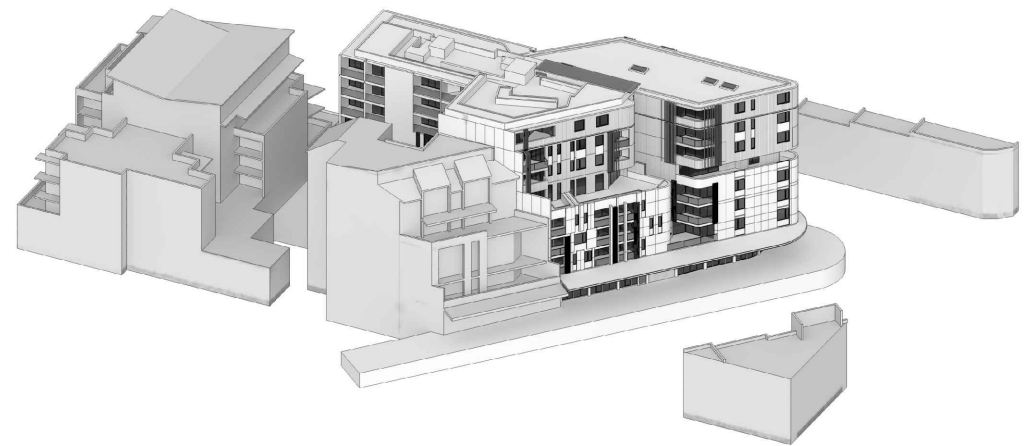
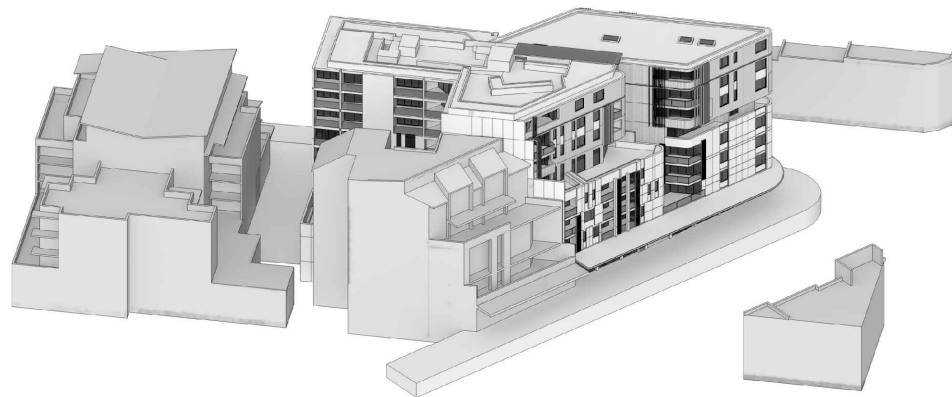
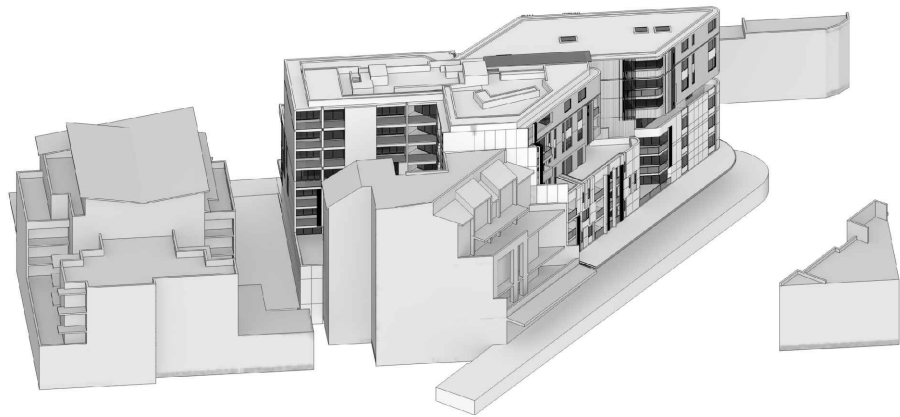




8:00am  
21st JUNE

9:00am  
21st JUNE

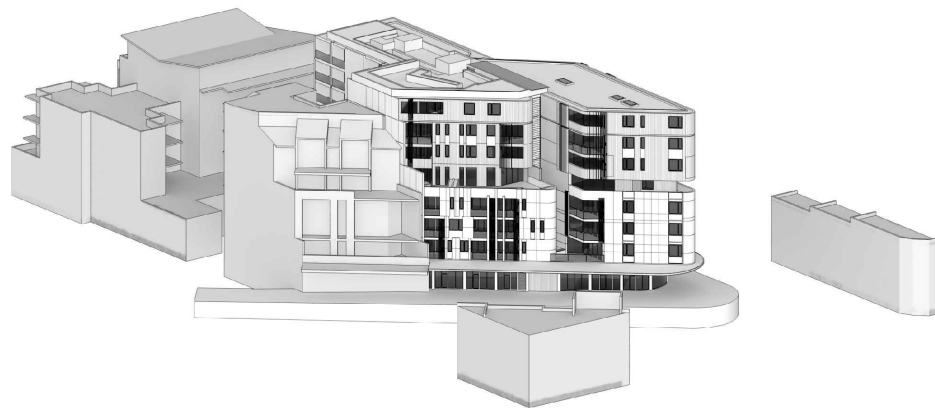
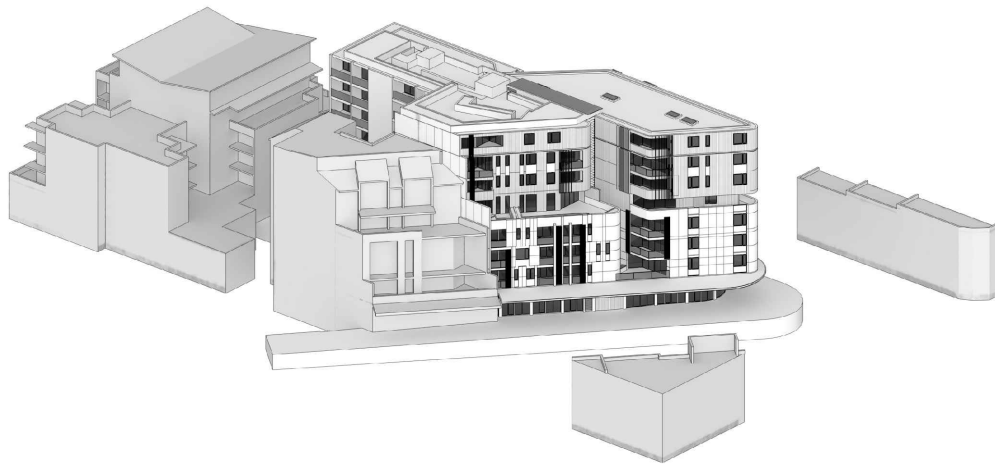
10:00am  
21st JUNE



11:00am  
21st JUNE

12:00pm  
21st JUNE

1:00pm  
21st JUNE



2:00pm  
21st JUNE

3:00pm  
21st JUNE

4:00pm  
21st JUNE

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ISSUE	DATE	AMENDMENTS

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PROJECT  
MIXED USE DEVELOPMENT  
LOTS 1,2,3,4 - D.P.9900  
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE  
DIRECT SOLAR ANALYSIS

SCALE  
N.T.S.  
APPROVED  
DRAWN  
CHECKED  
DATE  
STATUS

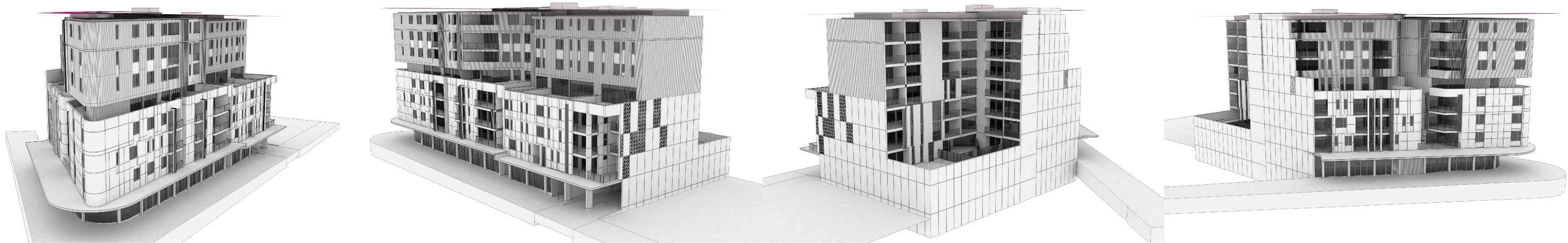
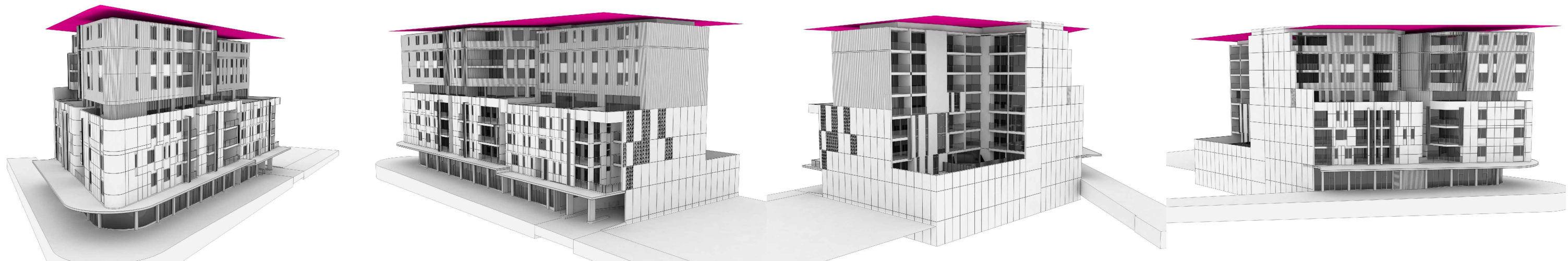
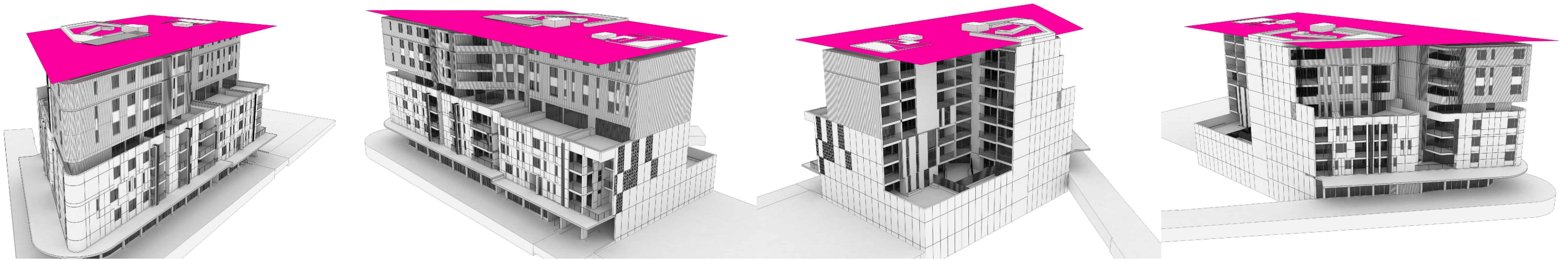
N.T.S.  
PC  
LP  
-  
NOV 2018  
DA

PROJECT NUMBER  
DRAWING NUMBER  
18041

A400

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TITLE  
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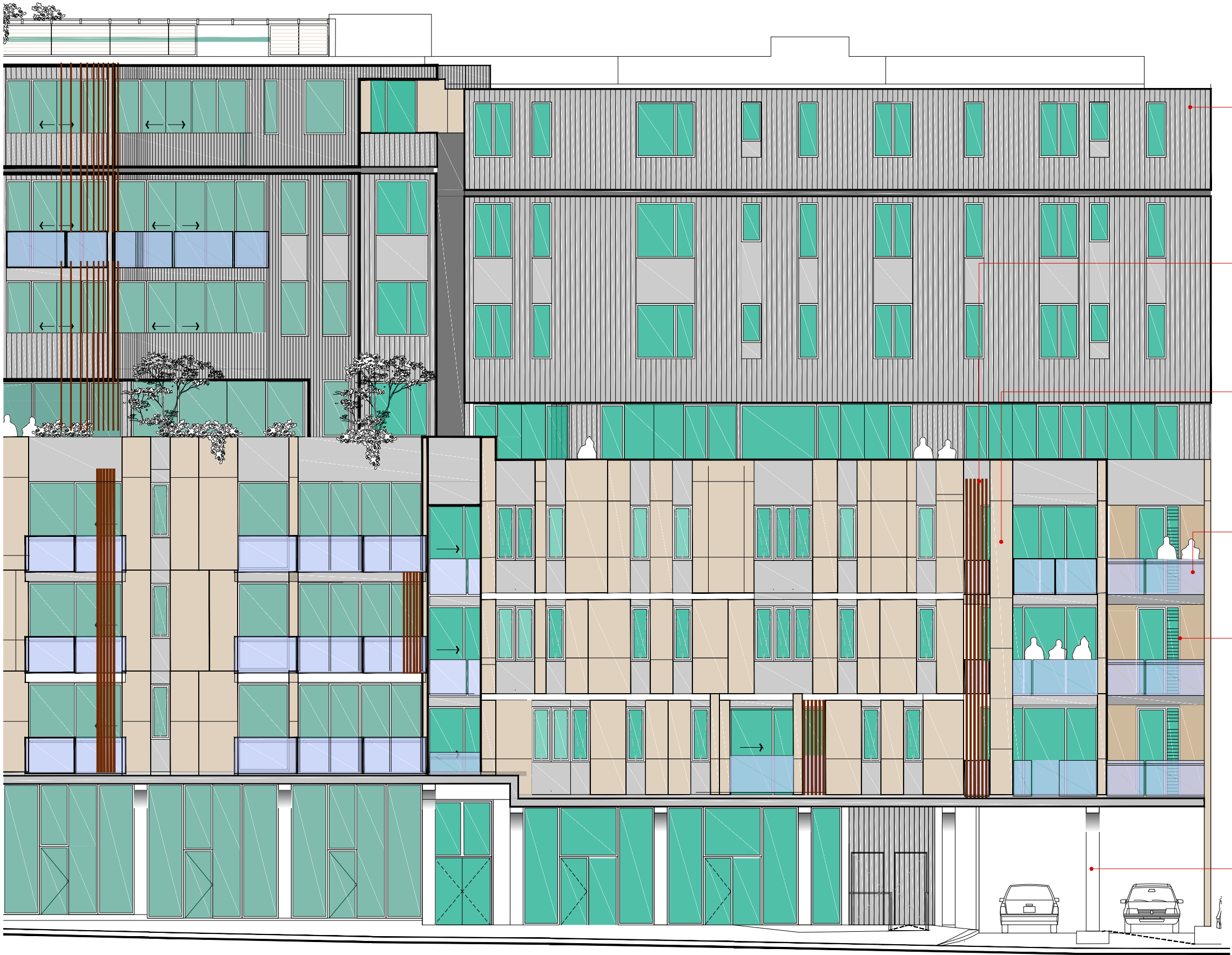
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APPROVED PC  
DRAWN LP  
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DATE NOV 2018  
STATUS DA

PROJECT NUMBER 18041  
DRAWING NUMBER

A410

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URBANLINE CLAD  
DARK CEDAR



BATTEN SCREENS - 'KNOTWOOD'  
CODE: KEB20050F-6050 - 200X50mm



PRECAST CONCRETE PANELS  
FINISH: GREY PEBBLE P14B1



GLASS BALUSTRADE



ALUMINIUM FRAMED GLAZING  
COLOUR: PC MONUMENT



SHAPED OFF FORM CONCRETE COLUMN  
COLOUR: VIVID WHITE SW1G1

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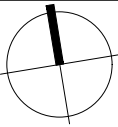
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ISSUE	DATE	AMENDMENTS

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MIXED USE DEVELOPMENT  
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8 OAKS AVENUE, DEE WHY NSW 2099

ELEVATION  
MATERIALS AND FINISHES



SCALE N.T.S.  
APPROVED PG MT  
DRAWN CHECKED -  
DATE NOV 2018  
STATUS DA

PROJECT NUMBER  
18041

DRAWING NUMBER  
A420

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# 8 OAKS AVENUE

# DEE WHY

## Landscape Development Application

### DRAWINGS

DWG NO.	DRAWING TITLE	SCALE
000	COVER SHEET	
101	LANDSCAPE PLAN - LEVEL 1	1:50
102	LANDSCAPE PLAN - LEVEL 4	1:100
103	LANDSCAPE PLAN - ROOF	1:75
501	LANDSCAPE DETAILS	AS SHOWN
502	LANDSCAPE DETAILS	AS SHOWN
503	LANDSCAPE SPECIFICATION	AS SHOWN

PLANT SCHEDULE						
Symbol	Botanic Name	Common Name	Mature H x W (m)	Pot Size	Spacing	Quantity
Level 1						
Trees						
MLG	Magnolia 'Little Gem'	Dwarf Magnolia	4 x 3	200L	as shown	4
Shrubs & Accents						
Ai	Alcantarea imperialis 'Rubra'	Bromeliad	0.7 x 0.7	300mm	as shown	28
By	Beschornera yuccoides	Mexican Lily	1 x 1	300mm	as shown	25
RSM	Raphiolepis indica 'Snow Maiden'	Snow Maiden	0.75 x 0.5	300mm	as shown	54
Vo	Viburnum odoratissimum	Sweet Viburnum	3 x 2	300mm	as shown	88
Groundcovers & Grasses						
Dr	Dichondra repens	Kidney Weed	0.1 x 0.1	150mm	5/m <sup>2</sup>	135
LEG	Liriope 'Evergreen Giant'	Giant Liriope	0.6 x 0.6	150mm	5/m <sup>2</sup>	76
LSL	Liriope 'Silver Lawn'	Silver Lawn	0.35 x 0.4	150mm	5/m <sup>2</sup>	45
Tj	Trachelospermum jasminoides	Star Jasmine	0.2 x 1	150mm	5/m <sup>2</sup>	89
Level 4						
Trees						
Pr	Plumeria rubra	Frangipani	6 x 3	100L	as shown	6
Shrubs & Accents						
Aa	Agave attenuata	Fox tail Agave	1.2 x 1	300mm	as shown	22
RSM	Raphiolepis indica 'Snow Maiden'	Snow Maiden	0.75 x 0.5	300mm	as shown	209
Groundcovers & Grasses						
Dr	Dichondra repens	Kidney Weed	0.1 x 0.1	150mm	5/m <sup>2</sup>	193
LEG	Liriope 'Evergreen Giant'	Giant Liriope	0.6 x 0.6	150mm	5/m <sup>2</sup>	155
Tj	Trachelospermum jasminoides	Star Jasmine	0.2 x 1	150mm	5/m <sup>2</sup>	40
Roof						
Trees						
MLG	Magnolia 'Little Gem'	Dwarf Magnolia	4 x 3	200L	as shown	4
Pr	Plumeria rubra	Frangipani	6 x 3	100L	as shown	3
Shrubs & Accents						
Aa	Agave attenuata	Fox tail Agave	1.2 x 1	300mm	as shown	12
Pt	Phormium tenax 'Bronze Baby'	Bronze Baby	0.75 x 0.75	300mm	as shown	7
RSM	Raphiolepis indica 'Snow Maiden'	Snow Maiden	0.75 x 0.5	300mm	as shown	83
SC	Syzygium Cascade	Cascade Lillipilly	2 x 2	300mm	as shown	29
Groundcovers & Grasses						
Cg	Carpobrotus glaucescens	Pig Face	0.2 x 1	150mm	5/m <sup>2</sup>	128
LEG	Liriope 'Evergreen Giant'	Giant Liriope	0.6 x 0.6	150mm	5/m <sup>2</sup>	139
LSL	Liriope 'Silver Lawn'	Silver Lawn	0.35 x 0.4	150mm	5/m <sup>2</sup>	70

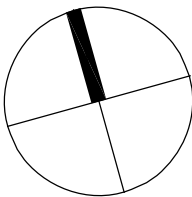
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D	Architectural Coordination	JM	NM	19.03.2019
C	Architectural Coordination	JM	NM	17.10.2018
B	For Review	JM	NM	18.09.2018
A	For Review	JM	NM	18.09.2017
Issue	Revision Description	Drawn	Check	Date

#### LEGEND



SITE IMAGE

Landscape Architects  
Level 1, 3-5 Baptist Street  
Redfern NSW 2016  
Australia  
  
Tel: (61 2) 8332 5600  
Fax: (61 2) 9698 2877  
www.siteimage.com.au

Client:  
DEVELOPMENTLINK

Project:  
8 Oaks Avenue  
Dee Why

Drawing Name:

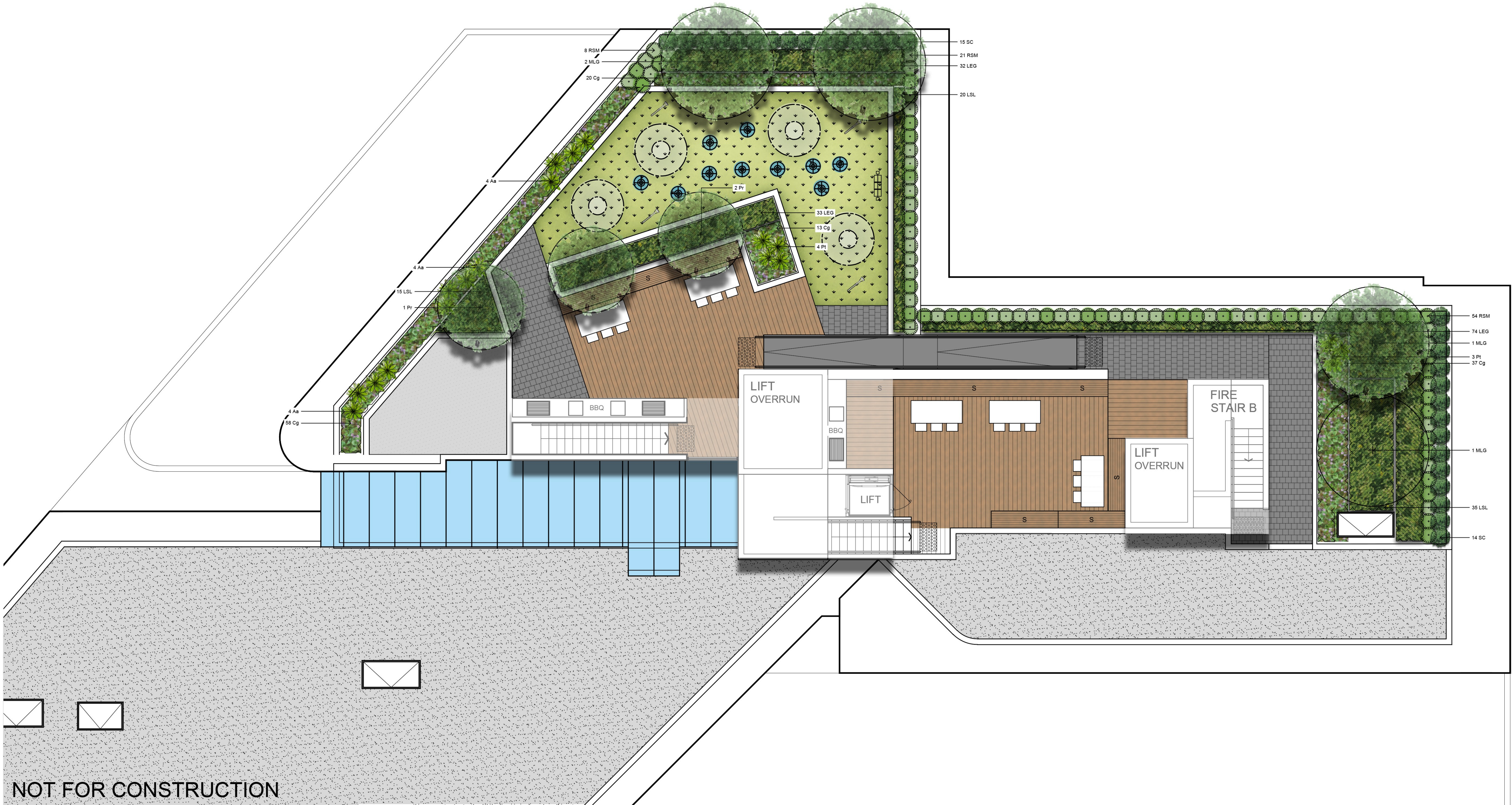
Cover Sheet

DEVELOPMENT APPLICATION

Scale:  
Job Number:  
SS17-3607

Drawing Number:  
Issue:  
000 D



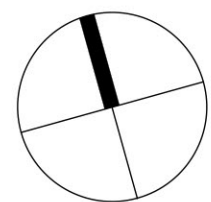


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D	Architectural Coordination	JM	NM	11.07.2018
C	Architectural Coordination	JM	NM	17.10.2018
B	For Review	JM	NM	18.09.2018
A	For Review	JM	NM	18.09.2017
Issue	Revision Description	Drawn	Check	Date

	<b>Proposed Tree</b> (Refer Detail & Plant Schedule)		<b>Synthetic Turf</b> (Refer Detail)		<b>Steel Edge</b>
	<b>Shrubs &amp; Accents</b> (Refer Detail & Plant Schedule)		<b>Paving</b>		<b>Stepping Stones</b>
	<b>Groundcover/ Grasses</b> (Refer Detail & Plant Schedule)		<b>Timber Decking</b>		<b>Timber Seat</b>



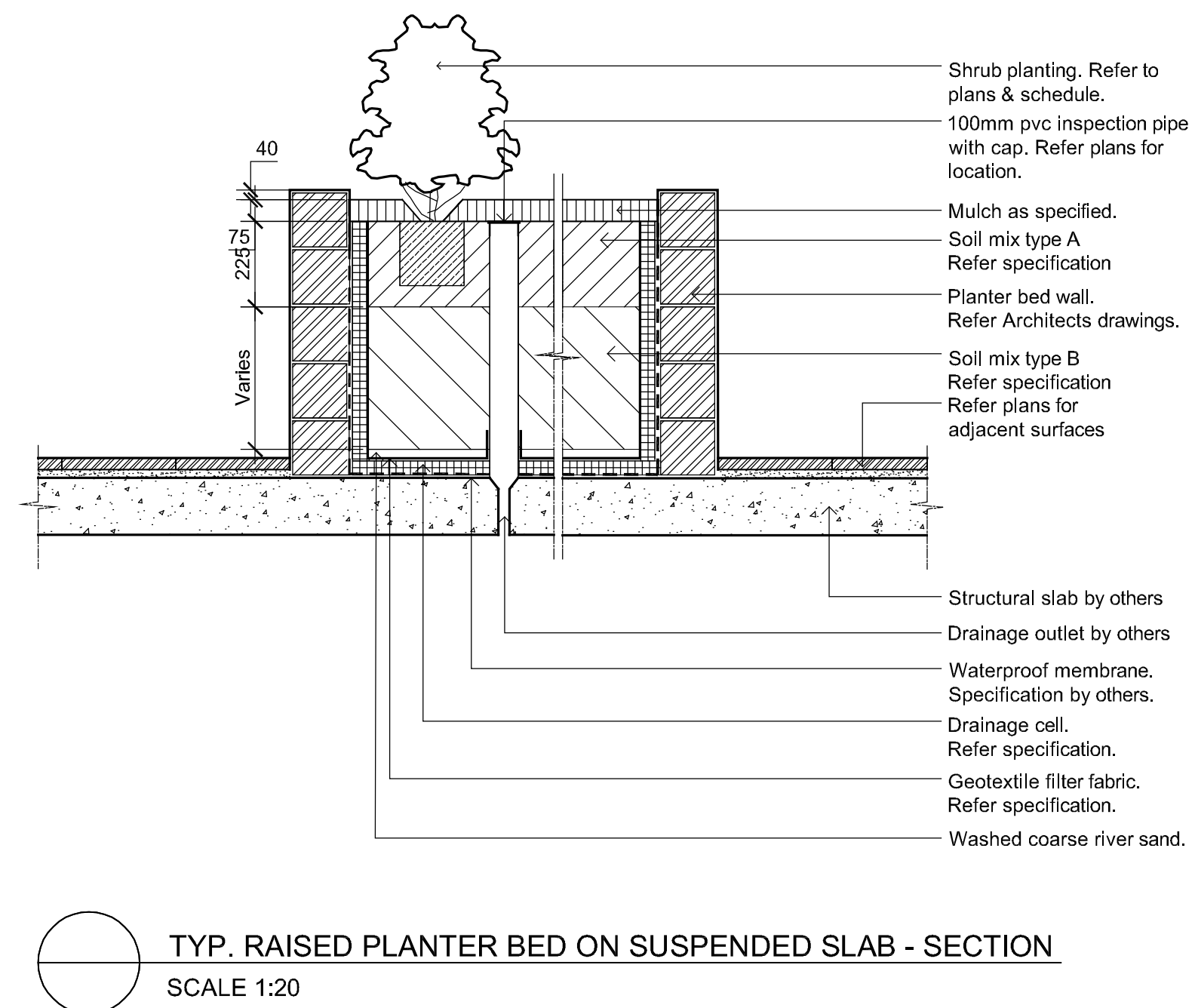
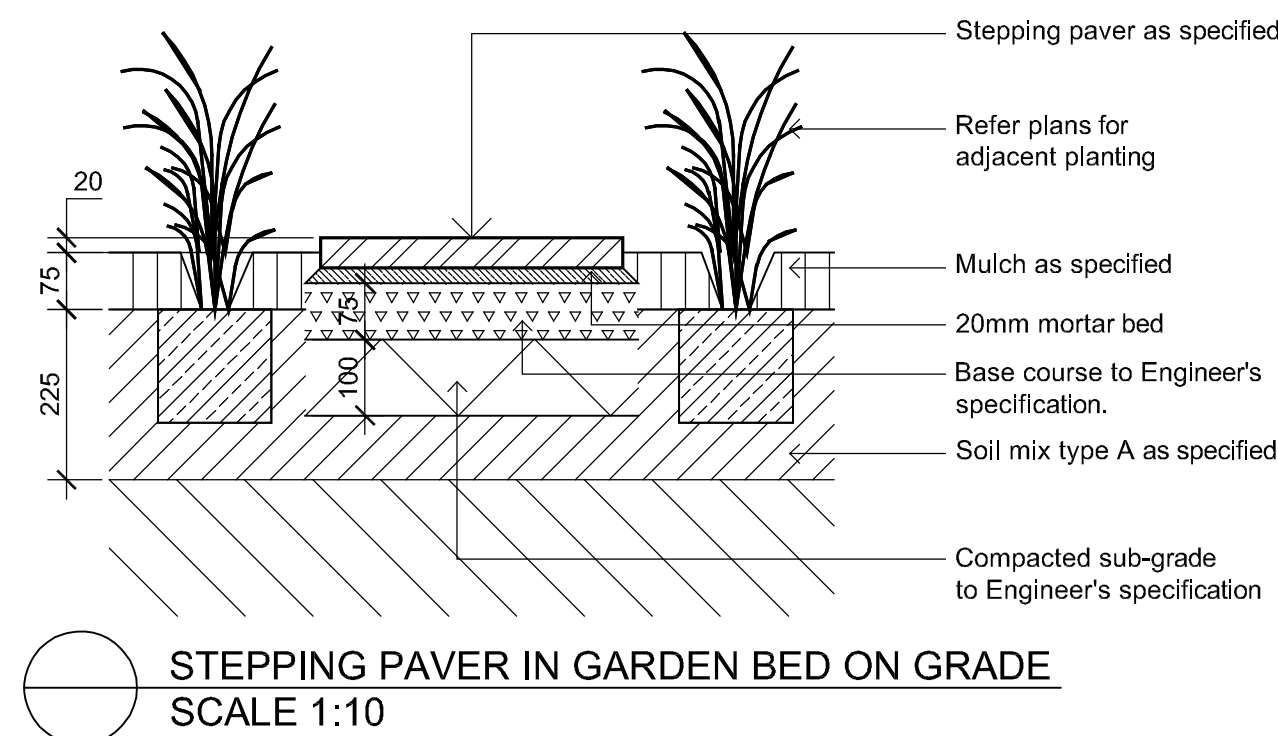
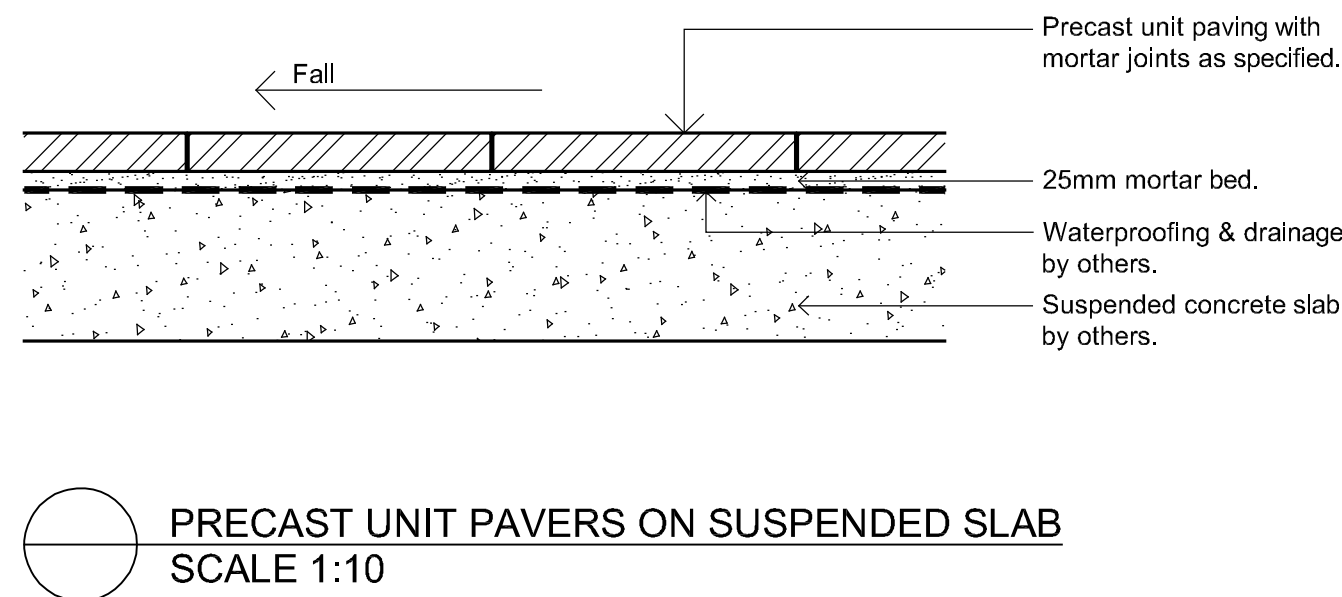
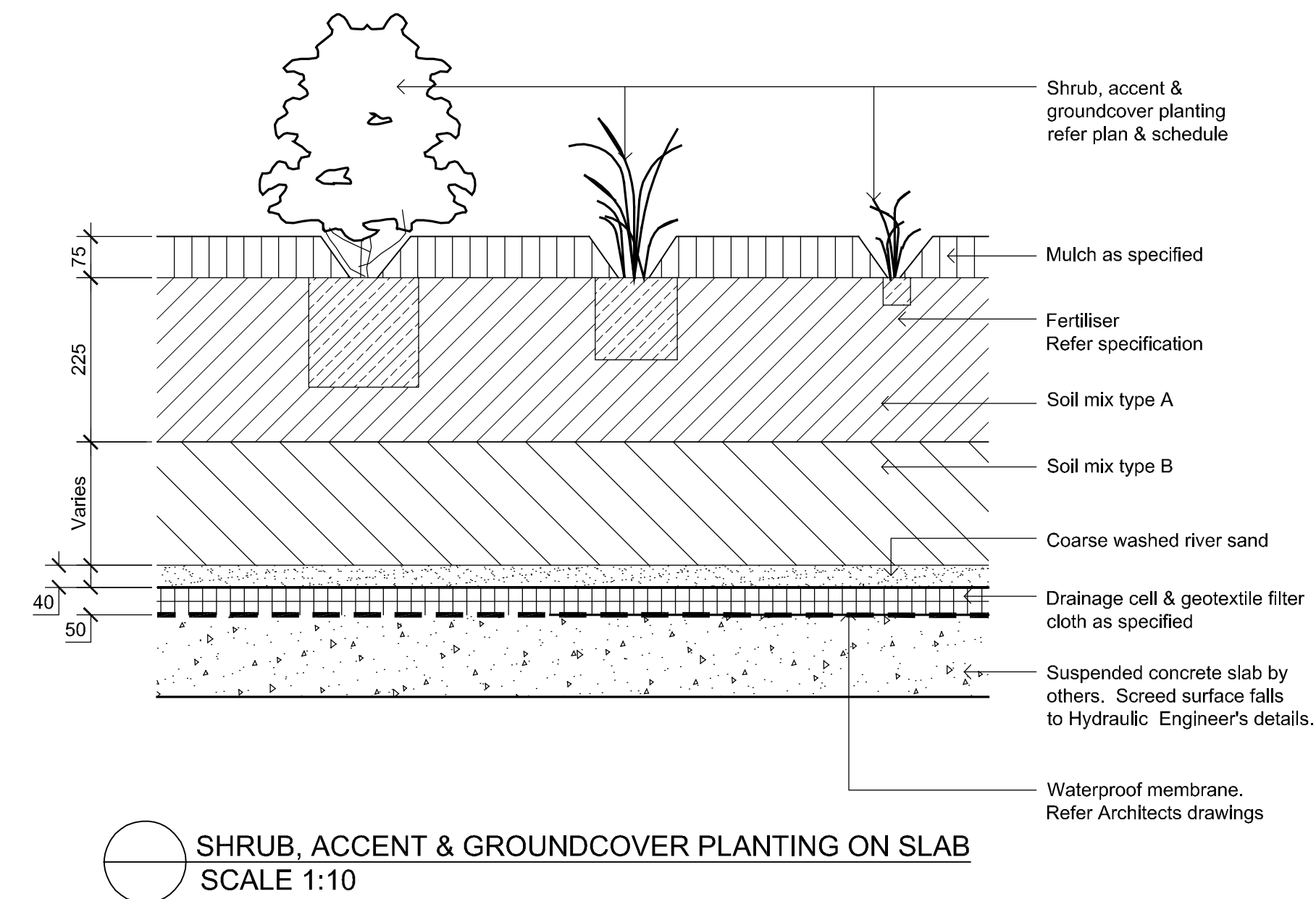
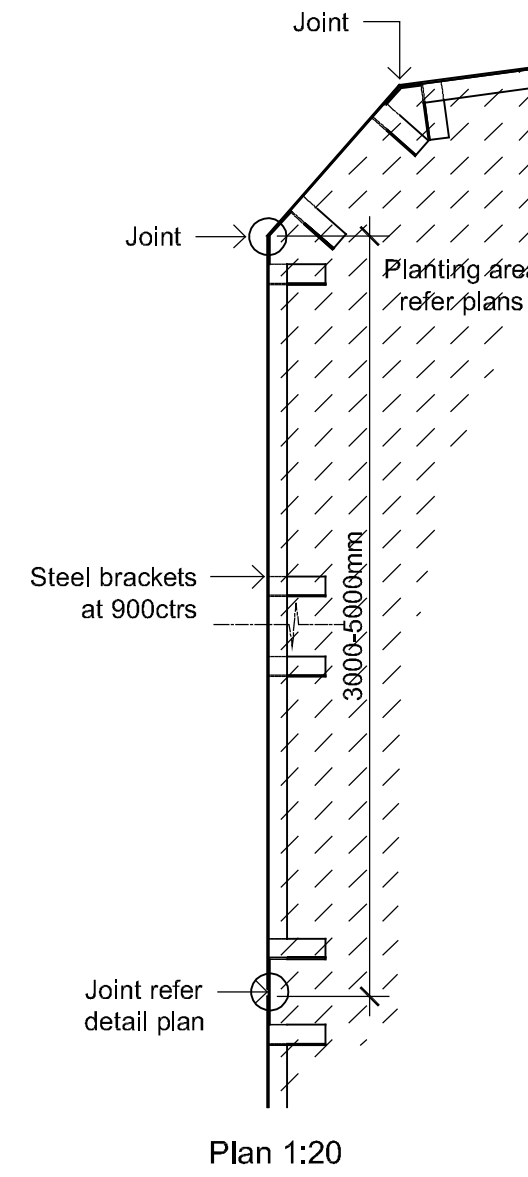
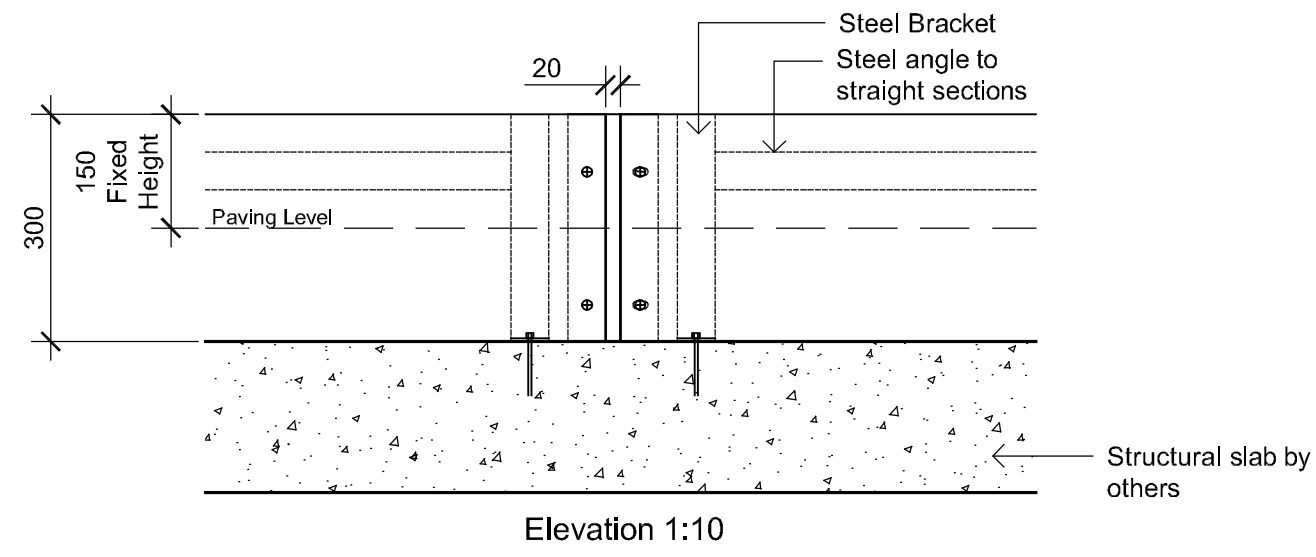
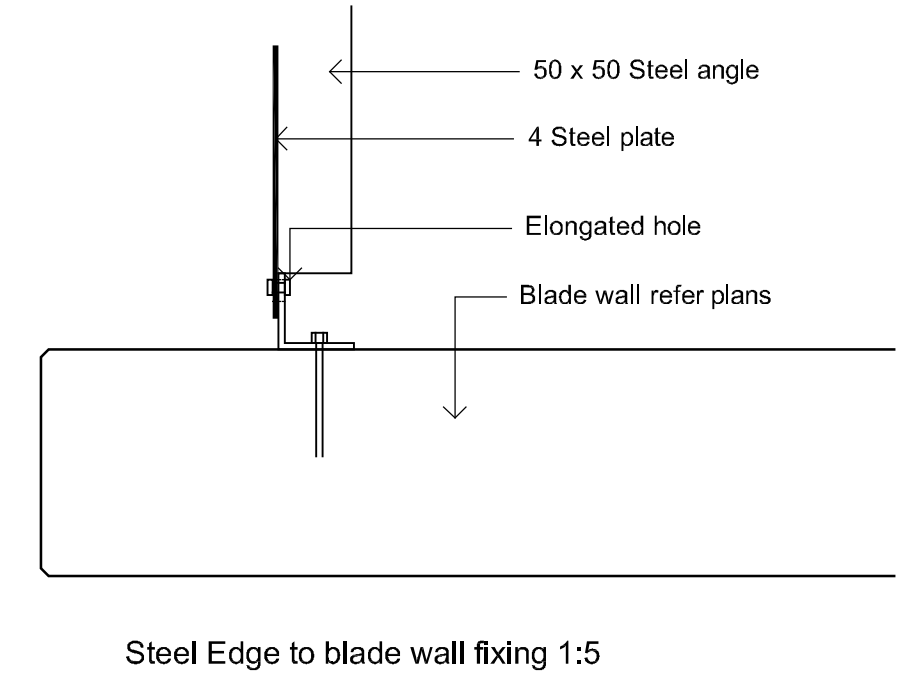
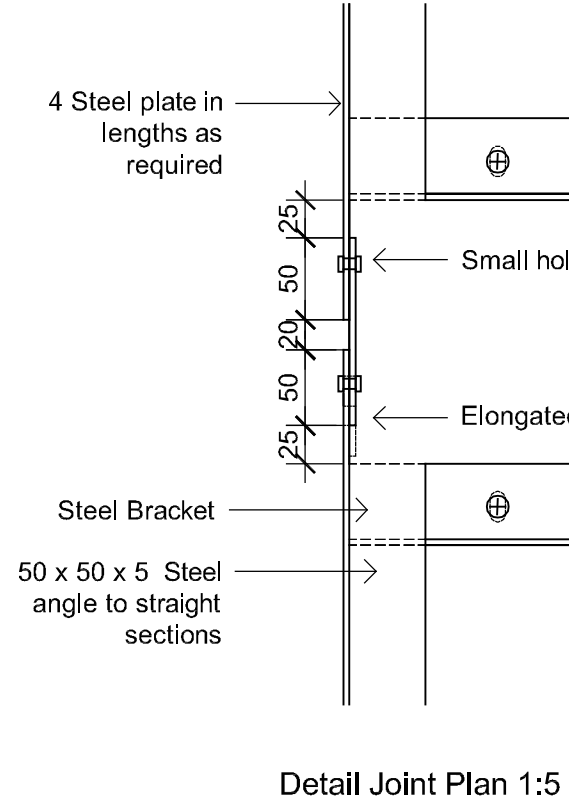
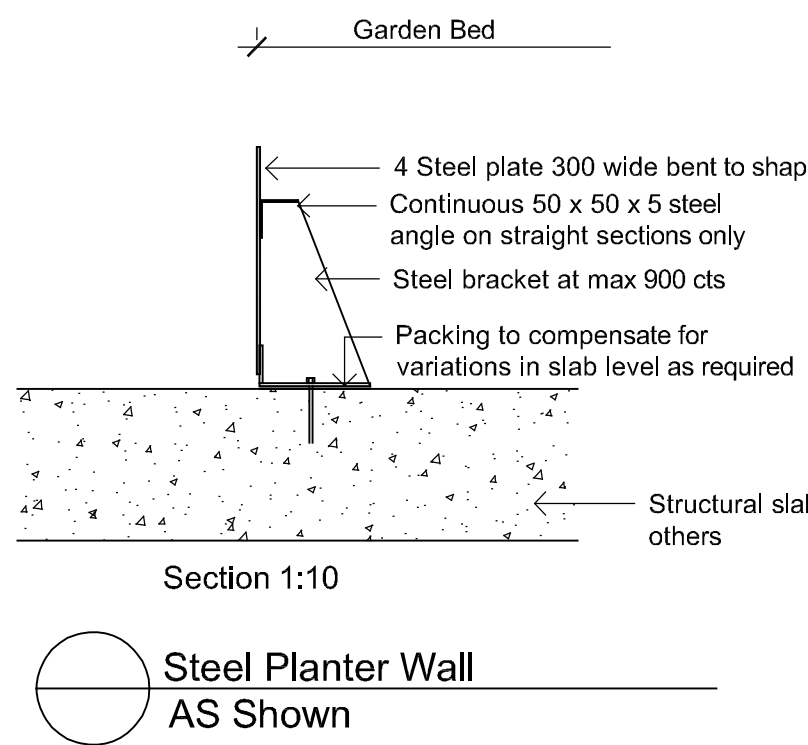
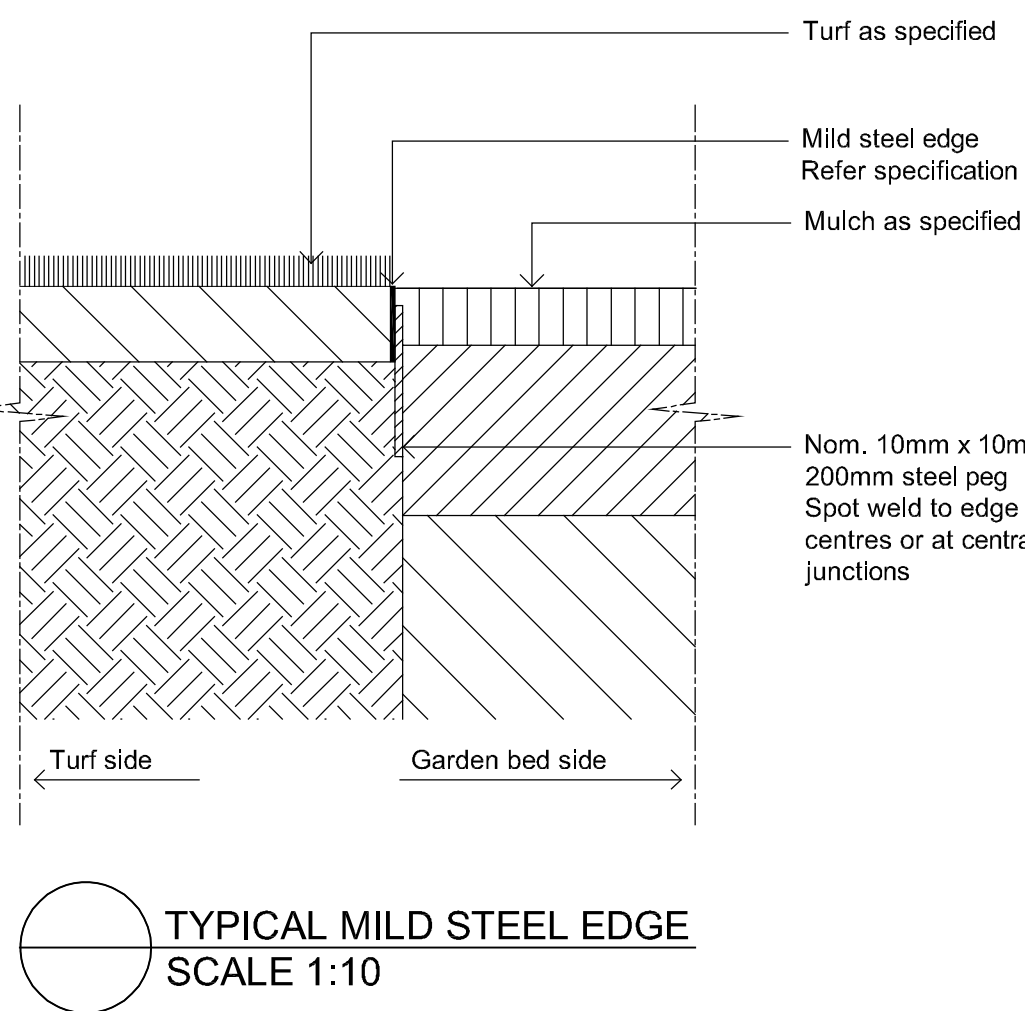
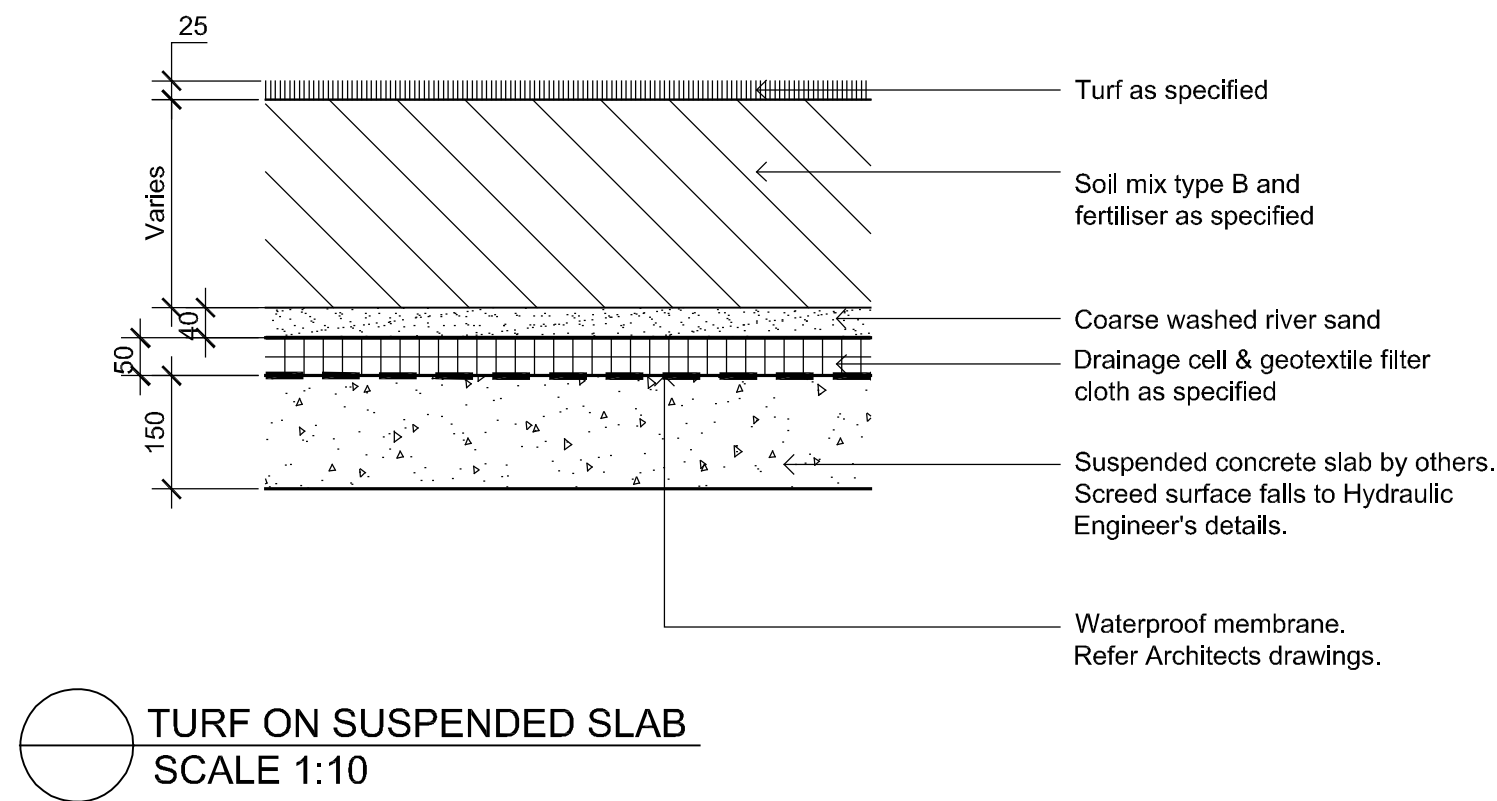
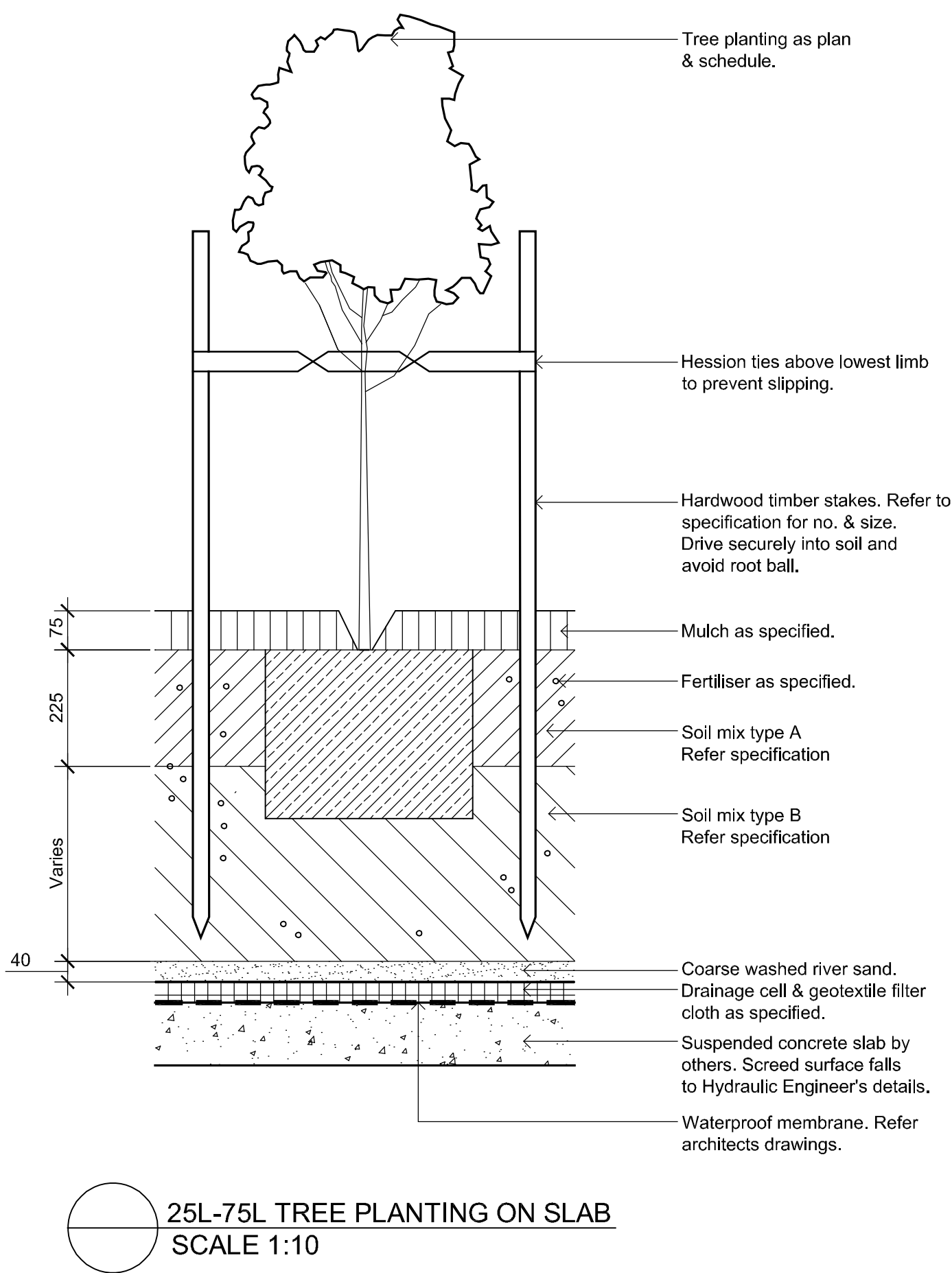
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Redfern NSW 2016  
Australia  
Tel: (61 2) 8332 5600  
Fax: (61 2) 9698 2877  
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Client:  
**DEVELOPMENTLINK**  
  
Project:  
**8 Oaks Avenue**  
**Dee Why**

Drawing Name:  
**Landscape Plan Roof**

**DEVELOPMENT APPLICATION**  
Scale: 1:75 @ A1  
Job Number: **SS17-3607**  
Drawing Number: **103**  
Issue: **D**





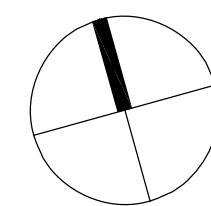
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C	Architectural Coordination	JM	NM	17.10.2018
B	For Review	JM	NM	18.09.2018
A	For Review	JM	NM	18.09.2017
Issue	Revision Description	Drawn	Check	Date

LEGEND

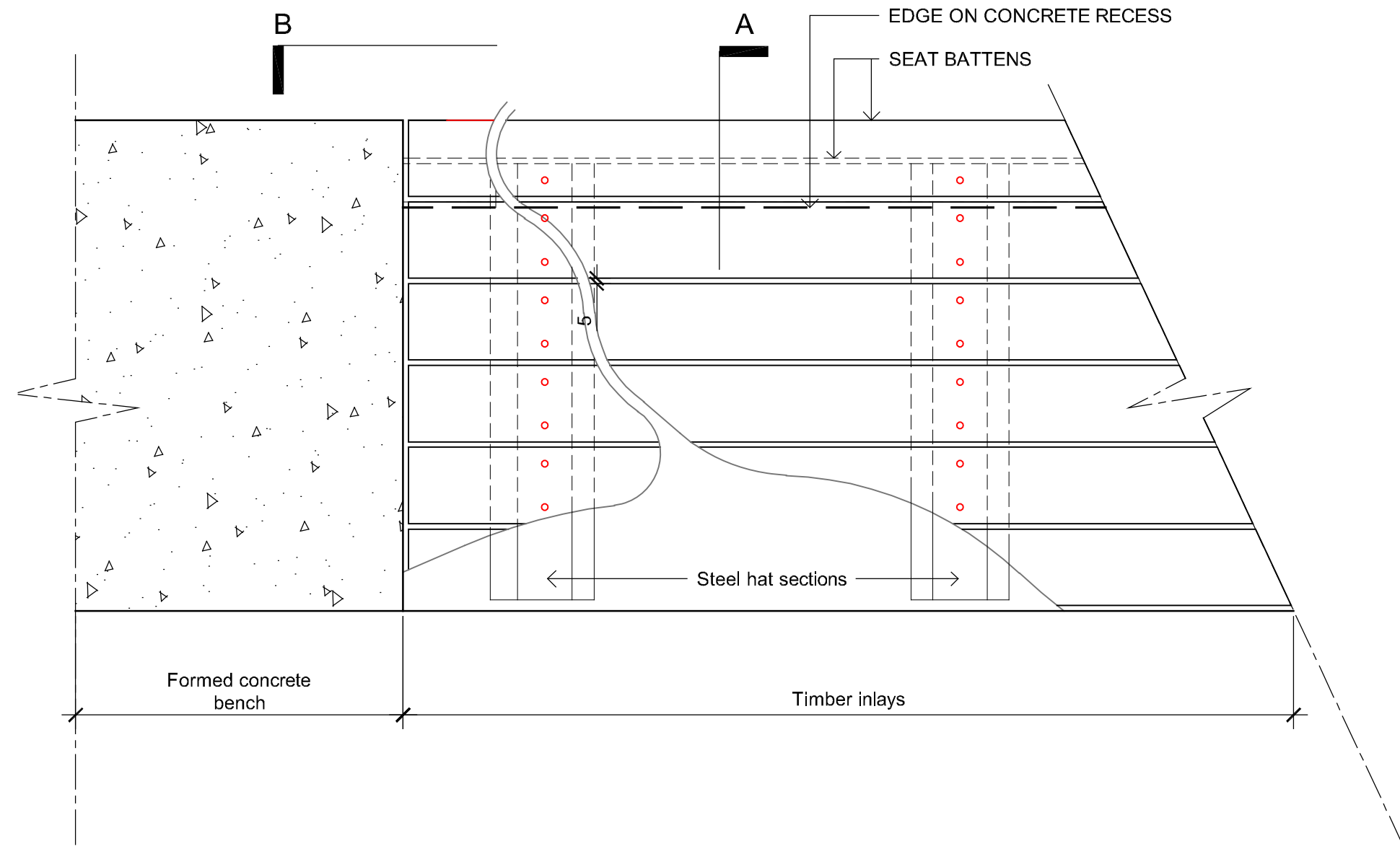


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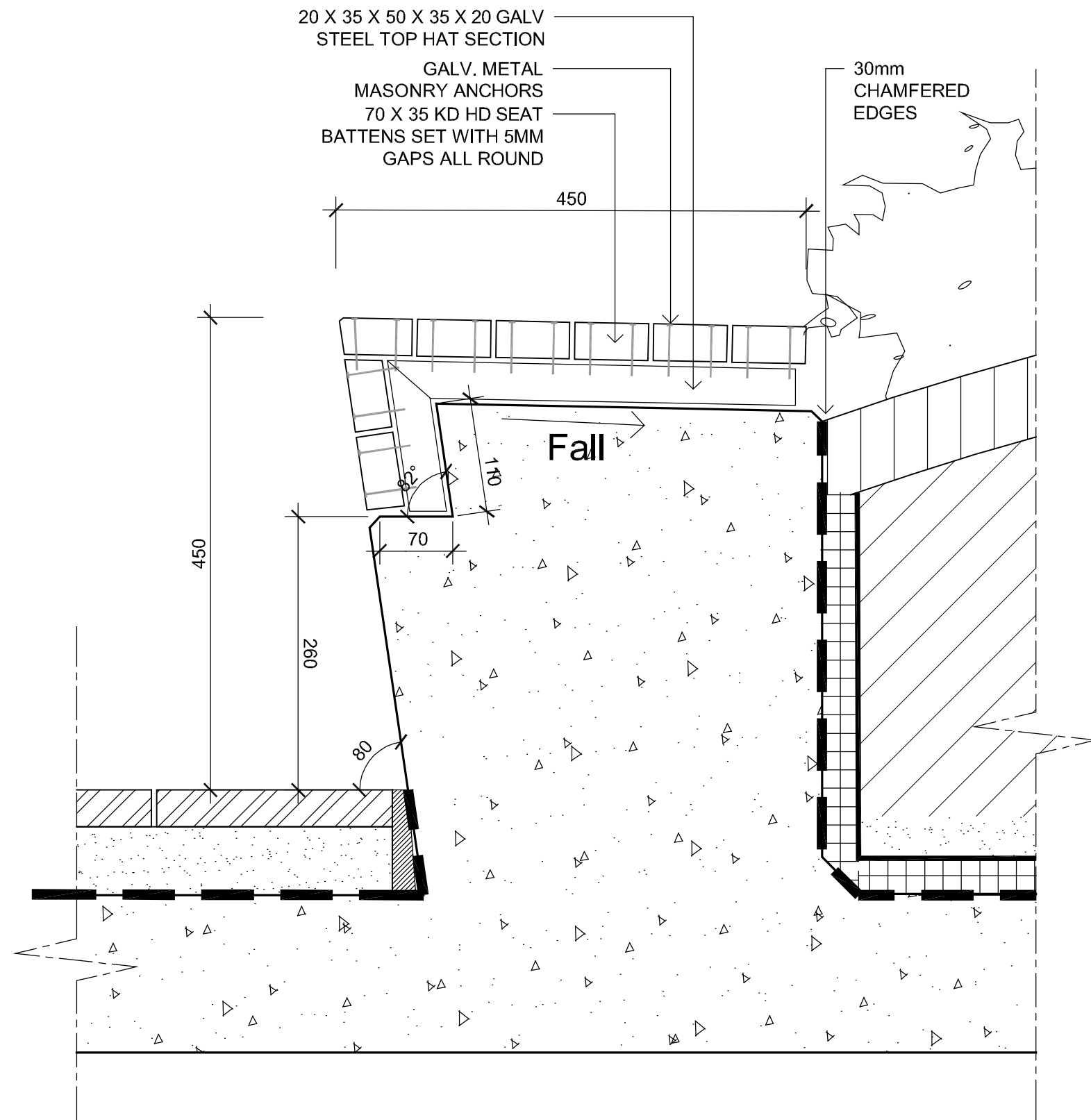
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Project:  
**8 Oaks Avenue**  
**Dee Why**

Drawing Name:  
**Landscape Details**

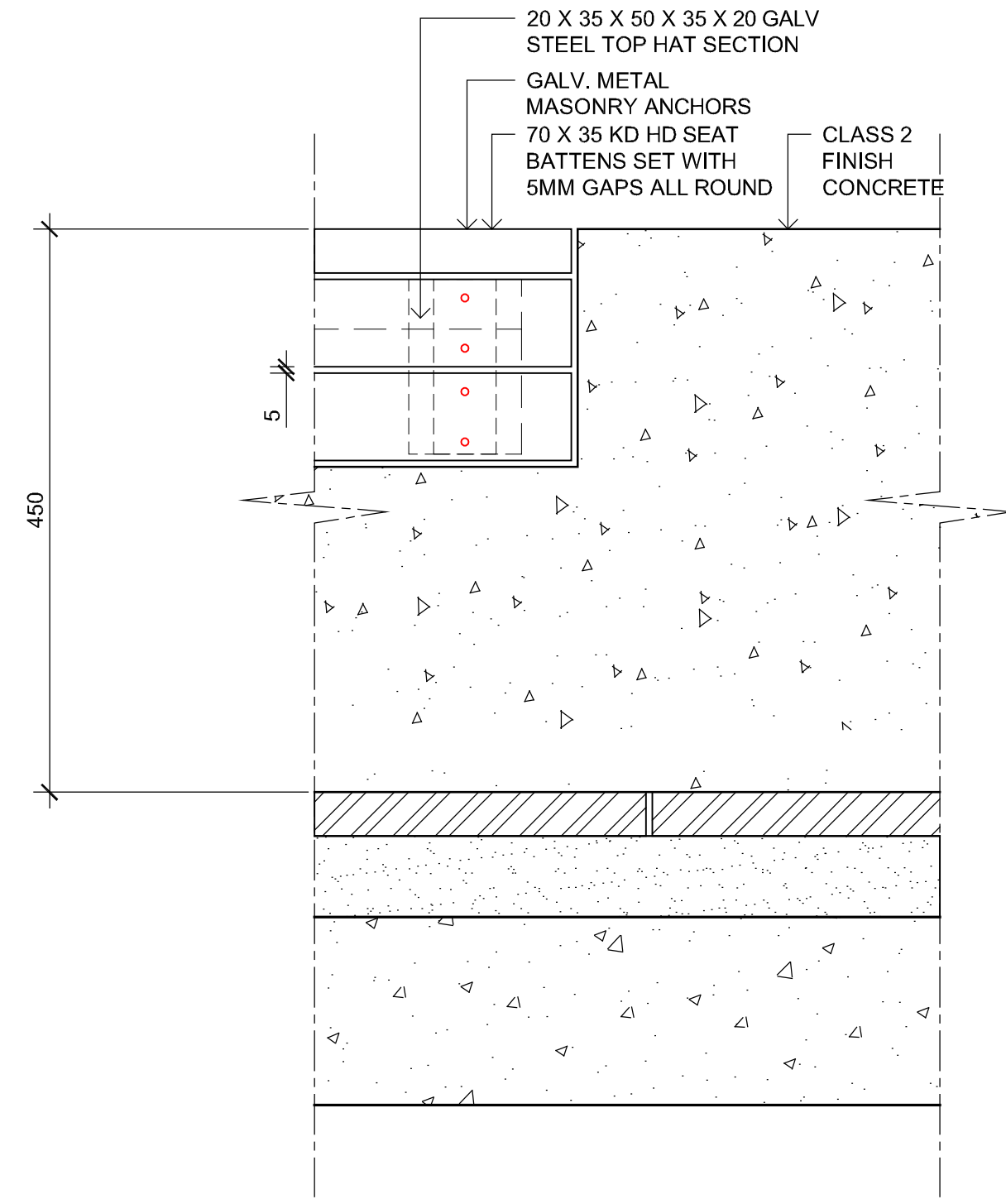
DEVELOPMENT APPLICATION  
Scale: As Shown  
Job Number: SS17-3607  
Drawing Number:  
Issue: 501 C



Plan - Timber Inlay Bench Seat (B2)  
SCALE 1:5



Section A - 450mm wide seat (B2)  
SCALE 1:5



Elevation B (B2)  
SCALE 1:5

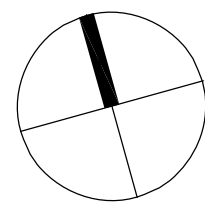
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Client:  
**DEVELOPMENTLINK**

Project:  
**8 Oaks Avenue**  
**Dee Why**

Drawing Name:  
**Landscape Details**

**DEVELOPMENT APPLICATION**

Scale: As Shown  
Job Number: SS17-3607  
Drawing Number:  
Issue: 502 C



SPECIFICATION

GENERAL NOTES

**References**  
All plans and details included in the project documents shall be read in conjunction with this specification. All structural and civil works components of the landscape design shall be referenced to engineers' details and specifications. Read this specification in conjunction with the plant and materials schedule on this drawing. If in doubt about any detail or if conflicts are found in the documents, seek advice.

**Workmanship and Materials**

The whole of the landscape works shall be carried out by a competent, trained and qualified landscape contractor who is experienced in horticultural practices, landscape construction and planting techniques. The landscape contractor shall hold a current Building Contractors License and/or be a financial member of LNA Landscape Association NSW & ACT or equivalent organisations in other states.

EXISTING TREES

**Trees to be Retained and Protected**

Identify and mark trees and shrubs to be retained using a suitable non-injurious, easily visible and removable means of Identification. Protect from damage the trees and shrubs to be retained, including those beyond the site area, both above and below the ground. If a tree becomes damaged during the works or it is proposed to perform work on a tree, give written notice immediately and obtain instructions.

**Work near Trees**

Keep the area of the drip-line free from construction material and debris. Do not place bulk materials and harmful materials under or near trees. Do not place spoil from excavations against tree trunks. Prevent wind-blown materials such as cement from harming trees and plants. Do not remove topsoil from, or add topsoil to, the area within the drip-line of trees.

EARTHWORKS

**Excavation, Trimming and Filling**

Except as otherwise note in the contract, bulk excavation is excluded from the landscape works. Trim and fill the excavated ground surfaces to achieve design levels to accommodate finish materials as detailed. Compact the finished surface as required for the finished ground treatment.

**Sub-soil Drainage**

Keep the excavated works drained and free of standing water. Allow to supply and install sub-soil drainage pipes as required for the new works to ensure that all gardens are well drained. Connect the sub-soil drainage pipes to the nearest downstream stormwater pits. Include pipe filter socks.

HARDWORKS

**Furniture, Handrails, Balustrades**

Supply and install the scheduled items in accordance the manufacturer's recommendations, as detailed and in the locations shown on plan. Provide all footings and fixings required for the items to be stable and in accordance with applicable codes and standards.

**Garden Walls, Fences, Steps, TGSi and Edging**

Construct garden walls as shown on plan, as detailed and of the material scheduled. Provide footings, step nosings, tactile surfaces to comply with standards and applicable legislation.

**Continuous, Unit and Loose Pavement**

Install the scheduled material pavement to the locations shown on plan. Ensure that all subgrade/subsurface works are complete prior to commencing paving. Confer with the engineer to ensure the structural integrity of the installation.

SOFTWORKS

**Soil Testing**

Undertake at least two (2) soil tests, in locations as advised by Project Manager, and provide results and recommendations for the improvement of plant growth and to adjust the soil to achieve appropriate planting medium (including pH levels) for successful plant growth.

**Subsoil**

Excavate all garden beds to bring the subsoil to at least 300mm below finished design levels. Shape the subsoil to fall to subsoil drains where applicable. Do not excavate within the drip line of trees to be retained. Excavate all turf areas to bring the subsoil to at least 100mm below finished design levels. Shape the subsoil to fall to subsoil drains where applicable. Do not excavate within the drip line of trees to be retained. Cultivate the subsoil to a further depth of 100mm. Remove stones exceeding 25mm, clods of earth exceeding 50mm, and weeds, rubbish or other deleterious material brought to the surface during cultivation. Do not disturb services or tree roots. If necessary cultivate these areas by hand. During cultivation, thoroughly mix in materials required to be incorporated into the subsoil, as recommended in the soil testing results and to manufacturer's recommendations. Trim the surface to design levels after cultivation.

**Topsoil**

Import topsoil for the garden and turf areas, unless the topsoil can be provided from material recovered from the site, as recommended in the soil testing results. Spread the topsoil on the prepared subsoil and grade evenly, compact lightly and uniformly in 150mm layers. Avoid differential subsidence and excess compaction and produce a finished topsoil surface which has the following characteristics:

- Finished to design levels, allowing for mulch or turf, which is to finish flush with adjoining hard surfaces such as paths and edge;
- Smooth and free from stones or lumps of soil;
- Graded to drain freely, without ponding, to catchment points;
- Graded evenly to adjoining surfaces; and
- Ready for planting.

**Compost**

Provide, in accordance with AS 4454, well rotted vegetative material or animal manure, free from harmful chemicals, grass and weed growth.

**Fertiliser**

Provide proprietary fertilisers, delivered to the site in sealed bags marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, recommended uses and application rates.

**Plants**

Supply plants in accordance with the landscape drawings and schedules, which have the following characteristics:

- Large healthy root systems, with no evidence of root rot, restriction or damage;
- Vigorous, well established, free from disease and pests, of good form consistent with the species or variety;
- Hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site, and in particular shade conditions;
- Grown in final containers for not less than twelve weeks;
- Trees, unless required to be multi-stemmed, shall have a single leading shoot; and
- Containers shall be free from weeds and of appropriate size in relation to their container.

**Plant Installation**

Following excavation of the planting hole place and spread 15gms of wetting agent pre-mixed with one (1) litre of water. Place the plant correctly orientated to north or for best presentation. Backfill the planting holes with specified topsoil mixture. Lightly tamp and water to eliminate air pockets. Ensure the topsoil is not placed over the top of the rootball. Keep the plant stem at the same height above the ground as it was above the soil in the container. Apply fertiliser, as recommended in the soil testing results or in accordance with the manufacturer's recommendations around the plants in the soil at the time of planting.

**Embankment Stabilisation**

Where necessary to prevent soil erosion or soil movement, stabilise embankments. As a minimum this should be on slopes ≥1:3. Stabilise embankments using biodegradable fibre reinforced with heavy weight polymer mesh. Lay mesh from top to bottom of slope. Install in accordance with manufacturer's specification, including 300 x 300 mm anchor trenches at top and bottom, backfilled with soil over the mesh and compacted, and U-shaped galvanised steel pegs at 1000 mm centres and 250mm centres at edge overlaps. Plant after matting is installed.

**Root Barrier**

Supply and install root control barriers to all new tree plantings adjacent to walls, paths and all trunk service trenches, where their proximity poses a threat to the stability of the infrastructure. Install in accordance with manufacturer's recommendations.

**Mulch**

Mulch shall be approved recycled wood fibre or pine bark mulch. Place mulch in all garden beds to a depth of 75mm, after all specified plants are installed. Keep mulch clear of all plant stems and rake to an even surface flush with the surrounding surfaces evenly graded between design surface levels. Over fill to allow mulch to settle to the specified depth.

**Stakes and Ties**

Stakes shall be durable hardwood, straight, free of knots and twists, pointed at one end. In the following quantiles and sizes for each of the various plant pot sizes:

- Plants (>25 lt): 1 off 38 x 38 x 1200mm;
- Semi-advanced plants (>75 lt): 2 off 50x50x 1800mm;
- Advanced (>100 lt): 3 off 50 x 50 x 2400mm.

**Turf**

Turf shall be delivered to site as 25mm minimum thick cut rolls. Obtain turf from a specialist grower of cultivated turf. Provide turf of even

thickness, free from weeds and other foreign matter. Deliver turf to the site within 24 hours of being cut, and lay it within 24 hours of delivery. Prevent it from drying out between cutting and laying. Lay the turf in the following manner:

- In stretcher pattern, joints staggered and close butted;
- Parallel long sides of level areas, with contours on slopes; &
- To finish flush, after tamping, with adjacent finished surfaces of ground.

IRRIGATION

All proposed landscape areas shall be irrigated.

The irrigation system shall be an automatic fixed drip system, with an irrigation controller self operated via a soil moisture sensor. The system shall be compatible to the type of plant material and rates of water required. Where appropriate adjustable and fully serviceable. The layout of the entire irrigation is to ensure that each individual plant receives the required amount of water to maintain healthy and vigorous growth. The irrigation system shall be such that, component theft, vandalism, over-spray and wetting of paths shall be reduced to a minimum or completely eliminated by the use of drip, pop-up sprinklers and judiciously placed fixed spray emitters. Do not use fine mist type emitters that provide a drifting mist that may wet paths and the buildings.

LANDSCAPE MAINTENANCE

The Landscape Contractor shall rectify defects during installation and that become apparent in the works under normal use for the duration of the contract Defects Liability Period. The Landscape Contractor shall maintain the contract areas by the implementation of industry accepted horticultural practices for 52 weeks. The landscape maintenance works shall include, but not be limited to, the following:

- Replacing failed plants;
- Pruning;
- Insect and pest control;
- Fertilising;
- Stakes and ties;
- Maintaining mulch;
- Mowing and top dressing;
- Irrigation and watering;
- Erosion control; and
- Weeding and rubbish removal.

**Maintenance Log Book**

Implement and keep a maintenance log book recording when and what maintenance work has been undertaken and what materials, actions and decisions have been used. Implemented and concluded to keep the landscape always looking its best.

**Maintenance Activities**

Schedule the following activities to occur on a timely basis.

- **Plant replacement** - Replace plants that have failed to mature, die or are damaged. Replacement plants shall be in a similar size and quality and identical species or variety to the plant that has failed. Replacement of plants shall be at the cost of the landscape contractor unless advised otherwise. If the cause of the failure is due to a controllable situation then correct the situation prior to replacing plants.

- **Pruning** - Prune dead wood, broken limbs, dead or infected foliage and as needed develop strong, healthy plants to achieve the shape and form expected of the plant type.
- **Insect and pest control** - Avoid spraying:
  - If ever possible;
  - In wet weather or if wet weather is imminent;
  - If target plants are still wet after rain;
  - In windy weather; and
  - If non-target species are too close.Immediately report to the Project Manager any evidence of intensive weed infestation, insect attack or disease amongst plant material. Submit all proposals to apply chemicals and obtain approval before starting this work. When approved, spray with herbicide, insecticide, fungicide as appropriate in accordance with the manufacturer's recommendations. Record in the logbook all relevant details of spraying activities including:
  - Product brand / manufacturer's name,
  - Chemical / product name,
  - Chemical contents,
  - Application quantity and rate,
  - Date of application and location,
  - Results of application, and
  - Use approval authority.
- **Fertilising** - Fertilise gardens with a proprietary slow release fertiliser applied in accordance with the manufacturer's directions and recommendations. Record in the logbook all relevant details of fertilising including:
  - Product brand / manufacturer's name,
  - Fertiliser / product name,
  - Application quantity and rate, and
  - Date of application and location.
- **Stakes and ties** - Adjust and replace as required to ensure plants remain correctly staked. Remove those not required at the end of the planting establishment period (Defects Liability Period).
- **Maintaining mulch** - Maintain the surface in a clean, tidy and weed free condition and reinstake the mulch as necessary to ensure correct depth as specified.
- **Mowing and top dressing** - Mow the turf to maintain a grass height of between 30-50mm. Do not remove more than one third of the grass height at any one time. Remove grass clippings from the site after each mowing. Top dress to a maximum of 10mm to fill depressions and hollows in the surface.
- **Irrigation and watering** - Maintain the irrigation system to sure that each individual plant receives the required amount of water to maintain healthy and vigorous growth, adjust and rectify as required. Provide additional watering, if necessary.
- **Erosion control** - Where necessary, maintain the erosion control devices in a tidy and weed free condition and reinstake as necessary to ensure control measures are effective where deemed necessary.
- **Weeding and rubbish removal** - During the plant establishment period remove by hand, rubbish and weed growth that may occur or re-occur throughout all planted, mulched and paved areas. The contractor shall target weeds that are capable of producing a major infestation of unwanted plants by seed distribution. Whenever possible, time weed removal to precede flowering and seed set.

Maintenance Program

Activity		Frequency							Action
		D	W	2W	3W	M	3M	6M	
1	Logbook	+		+		+			Complete a logbook entry every day at site and at least every two weeks. All actions listed below require a logbook entry. Upon request, make the logbook available for inspection. Submit copies of new entries in the logbook to the Contract Administrator on a monthly basis. Please note that more frequent, short, occasional inspection should result in less maintenance work when problems are observed earlier than they might otherwise have been seen.
2	Plant Replacement				+		+		Inspect and replace failed plants within 2 weeks of observation of failure. Match species, size (original) and location of new with old.
3	Mulch				+		+		Inspect and replace mulch deficiencies within 2 weeks of observation. Prior to placing new mulch aerate the soil by fork turning to a depth of at least 100mm, roughly level the soil and then place mulch. Do not disturb major plant roots while aerating soil.
4	Erosion Control				+				Inspect every two weeks and repair ground, soil and mulch immediately. Maintain erosion control device as necessary.
5	Stakes and ties				+				Inspect every two weeks, adjust and/or replace as necessary but remove as plants mature and are able to support themselves.
6	Weed and Rubbish removal				+				Inspect and remove immediately upon observation. Leave no waste on site. Dispose of waste material at a designated waste disposal site
7	Pruning				+				Inspect every 2 weeks and prune as necessary to remove dead wood, improve plant shape and promote healthy vigorous new growth.
8	Spraying				+				Inspect every 2 weeks and action as necessary. Do not spray if other non-chemical methods will satisfy the need to remove insects. Spray for disease control only when absolutely necessary.
9	Urgent Works		+						Complete within 1 week (7 days) of notification. Inspect and clear drains.
10	Planting and fertilising				+		+		Inspect every 2 weeks and remove spent flowers and dead stalks as they become apparent. Fertilise gardens every 3 months or other frequency in accordance with fertiliser manufacturer's directions.
11	Watering		+		+				Water when and where necessary every day at site and at least every 2 weeks generally. Do not allow soil and plants to dehydrate. Allow for prolonged rain, windy and dry periods. Water in the early morning or late afternoon to avoid excessive evaporation during the heat of the day.
12	Mowing, top dressing and edging			+		+		+	Summer fortnightly. Winter monthly. Top-dress 6 monthly.

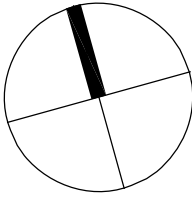
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Drawing Name:  
**Landscape Specification**

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