DEMLAKIAN
ENGINEERING
Intelligent Thinking in Engineering

19 March 2019
REF: 217130rpt20190319_DW_Flood Impact Report_Version D

Demlakian Strata & Remedial Pty Limited
T/A Demlakian Consulting Engineers
ABN 42 651 771 142
Level 2, 5 Ridge Street
North Sydney 2060
P.O. Box 6553 North Sydney 2059
E-mail: info@demlakian.com.au
www.demlakian.com.au

Telephone: (02) 9955 4485
Facsimile: (02) 9955 6122

Development Link
C/- Crawford Architects
Suite 3.01, Level 3, 80 Mount Street
NORTH SYDNEY NSW 2060

Attn: Mr Paul Godsell

RE: MIXED USE DEVELOPMENT – 8 OAKS AVENUE, DEE WHY NSW
FLOOD RISK MANAGEMENT REPORT – VERSION D

1.0 Introduction

Demlakian Consulting Engineers have been commissioned to prepare a flood impact report and flood risk management plan for the proposed mixed-use development at the above site in support of the Development Application. The site is located within the Northern Beaches Council Local Government Area. The site is proposed for a mixed-use development and is located within flood prone land. The aim of this report is to demonstrate that the proposed development will comply with the flood related development controls outlined in the Warringah Development Control Plan 2011. Relevant factors have been addressed. This report should be read in conjunction with all relevant documents included in the Appendices.

2.0 Proposed Development and Context

The site is located within a mixed-use area in Dee Why approximately 21 km north of the Sydney CBD. The site is bounded by mixed-use properties to the North and East, Pittwater Road to the West and Oaks Avenue to the South. The site is indicated in Figure 1. The current site encompasses Nos. 874 to 878 Pittwater Road, but the new site will be known as 8 oaks Avenue DEE WHY.

The site is currently occupied by two-storey buildings with retail shops at ground floor and residential above. The existing buildings cover the entire site. Accordingly, flooding and overland flows do not occur through the site.

The survey plan indicates that storm water runoff splits into two catchments. West of the site, Pittwater Road drains to the North, and South of the site storm water drains to the East along Oaks Avenue. The site is located within the Dee Why Lagoon South Catchment. A copy of the architectural drawings and survey plan is provided in Appendix A.

The main objectives of this report are:

- To ensure that the Flood Planning Requirements of the Warringah City Council – Section 6.3 of the Local Environment Plan 2011 are met.
- To outline measures that have been incorporated into the Architectural design to address the flood impacts in the 100 year ARI storm event.
- To advise on safety of occupants and/or evacuation measures.

Figure 1 – Locality Plan

The proposed development consists of high density commercial and residential premises. The structure proposes four (4) basement levels with an eight-storey structure above. Details of the proposal are shown on the Architectural drawings, a copy of which is provided in Appendix A.

3.0 Referenced documents

The following documents have been referenced in this report:

1. Architectural drawings prepared by Crawford Architects, Project #18041, Version, dated March 2019;
2. Site survey plan prepared by Adam Clerke Surveyors Pty Ltd, Ref #7917 dated 20th July 2017;
3. Warringah City Council – Part E11 of the Development Control Plan 2011;
4. Warringah City Council – Section 6.3 of the Local Environment Plan 2011;
5. Warringah City Council – Flood Risk Assessment Report Guidelines 2014;
6. Warringah City Council – Dee Why South Catchment Flood Study, August 2013;
7. Reducing Vulnerability of Buildings to Flood Damage - Guidance on Building in Flood Prone Area.

4.0 Flood Analysis Information

The site is flood affected as identified on the Council website. Figure 2 indicates the extent of the Medium Flood Risk Planning Precinct. Accordingly, the flood controls in the Warringah City Council – Section 6.3 of the Local Environment Plan 2011 apply.

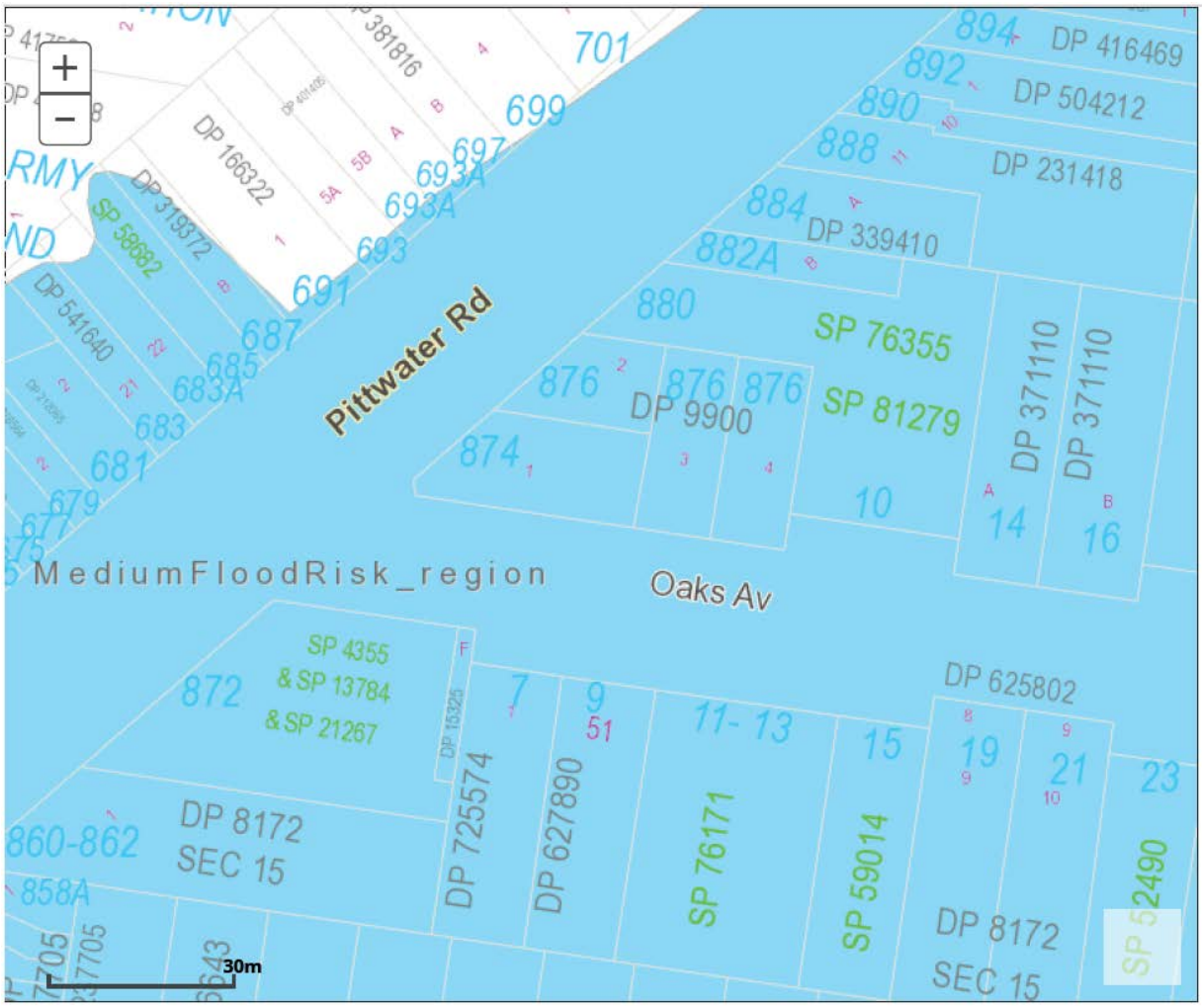


Figure 2 – Medium Flood Risk Planning Precinct

Flood level information has been obtained in written advice from the Northern Beaches Council received on 24th August 2017 in regard to an earlier development application for this site and Minutes from the Pre-Lodgement Meeting no PLM2017/0087. A copy of this advice is provided in Appendix C.

This advice indicates that overland flow occurs along Pittwater Road and Oaks Avenue adjacent to the site. The depth of flow in the 100 year ARI storm event is advised to be less than 200 mm in depth. Figure 3 indicates the path of the overland flow. Figure 4 presents summarized Flood Planning Levels. Locations are marked on Figure 3. Refer also to the detailed mark up of locations in Appendix D.

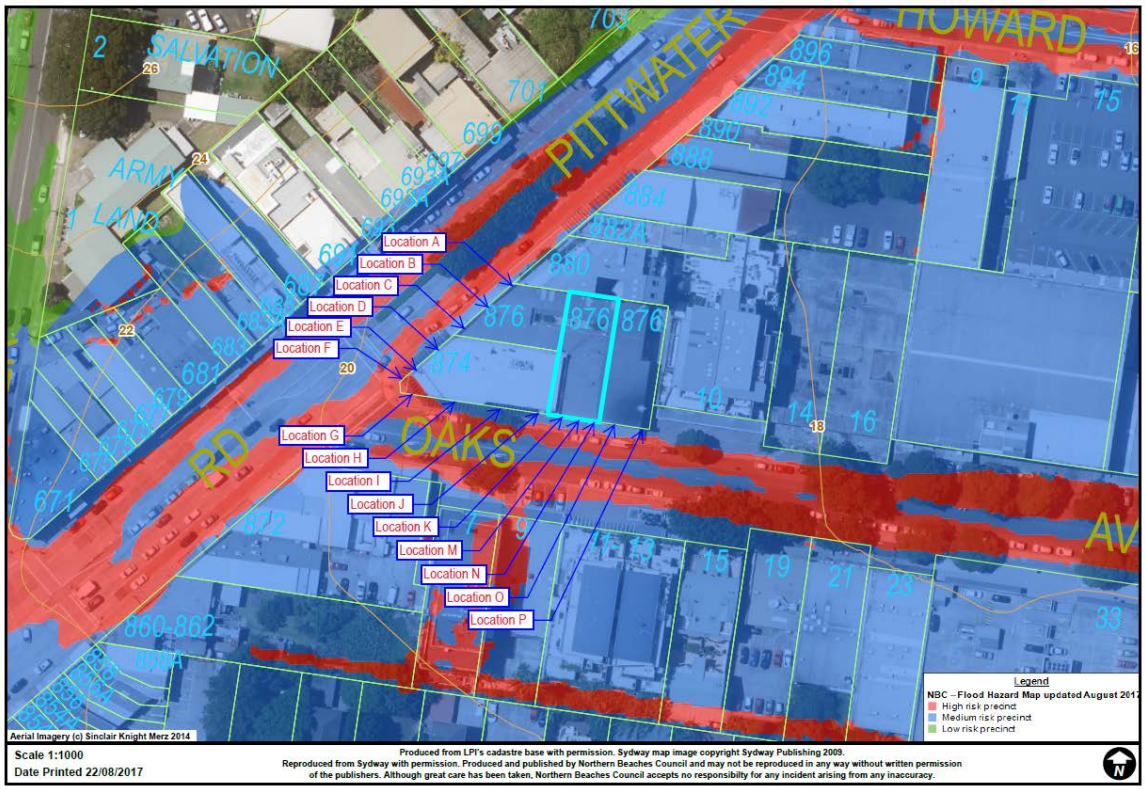


Figure 3 – Overland Flow Paths

Location	Property Frontage	Gutter Invert Level (m AHD)	Flood Planning Level (m AHD)
A	Pittwater Road	18.470	18.970
B	Pittwater Road	18.530	19.030
C	Pittwater Road	18.570	19.070
D	Pittwater Road	18.600	19.100
E	Pittwater Road	18.700	19.200
F	Pittwater Road	18.730	19.230
G	Oaks Avenue	18.440	19.040
H	Oaks Avenue	18.360	18.960
I	Oaks Avenue	18.290	18.890
J	Oaks Avenue	18.210	18.810
K	Oaks Avenue	18.100	18.700
L	Oaks Avenue	18.040	18.640
M	Oaks Avenue	17.960	18.560
N	Oaks Avenue	17.890	18.490
O	Oaks Avenue	17.830	18.430
P	Oaks Avenue	17.640	18.240

Figure 4 – Flood Planning Levels

5.0 Flood Risk Assessment Requirements

Since the site is affected by flooding, Northern Beaches Council requires a Flood Risk Assessment. A copy of the documented requirements is provided in Appendix B. The requirements of the report guidelines are addressed as follows:

Flood Analysis

- As noted above the flood depth and flow information has been provided by Council.

Assessment of Impacts

- The specific impacts are outlined in detail in the following sections of this report.
- In summary, the existing site is fully occupied by the existing building structures. Accordingly, overland flow does not occur through or across the site. Therefore, the proposed development does not reduce the existing flood conveyance, which occurs in the roadways. Therefore, the proposed development does not impact the existing flood regime.
- The existing site does not allow for flood storage. Therefore, the proposed development does not result in loss of flood storage. The habitable floor levels and high points on basement access ramps have been set above the required Flood Planning Levels. This is outlined in later sections of this report in written and diagrammatic format.
- The development does not include any fencing that impacts the existing flood regime.
- The proposed development addresses the requirements for safe occupation and evacuation.

A detailed assessment of the Flood Risk is provided in accordance with the medium Flood Risk Matrix requirements as outlined in the Northern Beaches Council Development Control Plan – Part E11. A copy of the matrix is provided in Figure 5.

		Medium Flood Risk						
		Critical Uses	Vulnerable Uses	Subdivision	Residential	Business & Industrial	Recreational & Environmental	Concessional
A	Flood effects caused by Development	A1 A3 A4	A1 A3 A4	A1 A3	A1 A3	A1 A3	A2 A3	A2 A3
B	Drainage Infrastructure & Creek Works	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	
C	Building Components & Structural	C1 C2 C3	C1 C2 C3		C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3
D	Storage of Goods	D1 D2	D1 D2		D1 D2	D1 D2	D1 D2	D1 D2
E	Flood Emergency Response	E1 E2 E3	E1 E2 E3	E1 E4	E1 E2	E1 E2 E3	E1	E1
F	Floor Levels	F2 F3 F7	F2 F3 F7	F5	F1 F2 F3 F4 F6 F8 F9	F1 F2 F3 F4 F6 F8 F9 F10 F11	F2	F1 F2 F3 F4 F6 F11
G	Car Parking	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1	G1 G2 G3 G5 G6 G7 G8	G1 G2 G3 G4 G5 G6 G7	G1 G2 G3 G4 G5 G6 G7	G1 G2 G3 G4 G5 G6 G7
H	Fencing	H1	H1	H1	H1	H1	H1	H1
I	Pools	I1	I1	I1	I1	I1	I1	I1

Figure 5 – Medium Flood Risk Matrix

Flood Risk Matrix Detailed Assessment

For each item, the requirements of the matrix are indicated in italics. Subsequently the manner in which the requirements have been met is outlined.

A. Flood effects caused by Development

A1 Jetty

A3 The applicant shall include in their submission, calculations to illustrate that any fill or other structures that reduce the total flood storage are replaced by Compensatory Works.

In response to these requirements, the proposed development, complies as follows:

- The proposed development does not include construction of a jetty.
- The proposed development is located on lots which are fully covered with existing buildings therefore the proposed development does not result in loss of flood storage.

Accordingly, the proposed development has no impact.

B. Drainage Infrastructure and Creek Works

B1 Flood mitigation works or storm water devices that modify a major drainage system, storm water system, natural water course, floodway or flood behavior within or outside the development site may be permitted subject to demonstration through a Flood Management Report that they comply with the Flood Prone Land Design Standard found on Council's webpage.

B2 A Section 88B notation under the Conveyancing Act 1919 may be required to be placed on the title describing the location and type of flood mitigation works with a requirement for their retention and maintenance.

In response to these requirements, the proposed development, complies as follows:

- The Council Flood Risk Map (Figure 2) demonstrates that overland flow occurs through Pittwater Road and Oaks Avenue. The proposed development is located on lots, which are fully covered with existing buildings and will not affect the floodway or flood behaviours.
- The proposed development does not require modifications to the existing major drainage systems or stormwater system as the area of the collected stormwater will not change.

Accordingly, the proposed development has no impact on drainage infrastructure or creeks.

C. Building Components and Structural Soundness

C1 All buildings shall be designed and constructed as flood compatible buildings in accordance with Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas, Hawkesbury Nepean Floodplain Management Steering Committee (2006).

C2 All structures must be designed and constructed to ensure structural integrity up to the Flood Planning Level, taking into account the forces of floodwater, wave action, flowing water with debris, buoyancy and immersion. Structural certification shall be provided confirming the above. Where shelter-in-place refuge is to be provided, the structural integrity is to be to the Probable Maximum Flood level.

C3 All new electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections must be waterproofed and/or located above the Flood Planning Level. All existing electrical equipment and power points located below the Flood Planning Level must have residual current devices installed that turn off all electricity supply to the property when flood waters are detected.

In response to these requirements, the proposed development complies with the following:

- All structural elements below the Flood Planning Level are to be constructed of reinforced concrete and/or reinforced concrete masonry and designed to withstand the forces of flood water, debris and buoyancy. Considering the flow depth does not exceed 200 mm this can be readily achieved with conventional construction practices.
- Potentially, if the overland flow reaches the structure, the reinforced concrete slab and subfloor walls of this structure may be subject to stormwater. These elements are to be constructed from flood compatible building materials.
- The electrical design shall ensure that all new electrical equipment and similar have suitable waterproofing or are located above the Flood Planning Level and that all existing electrical equipment, etc. shall have suitable devices cutting of electricity supply should flood waters are detected.
- The floor level of retail areas, entry staircases, etc. located on the ground level of the proposed development shall be located at or above the required Flood Planning Level.

By considering the above, the proposed development will comply with the Building Components and Structural Soundness requirements.

D. Storage of Goods

D1 Hazardous or potentially polluting materials shall not be stored below the Flood Planning Level unless adequately protected from floodwaters in accordance with industry standards.

D2 Goods, materials or other products which may be highly susceptible to water damage are to be located/stored above the Flood Planning Level.

As noted above the building levels have been set to prevent the ingress of storm water by ensuring that habitable levels are at or above the Flood Planning Level. Accordingly, any goods stored on the habitable floors will be above the Flood Planning Level.

Access passageways and ramps that are below the Flood Planning Level have been designed in a watertight manner, and bunded to a level above the Flood Planning Level, thus preventing water ingress to lower levels. Goods and hazardous materials should not be stored in these passageways.

The access to the basement levels has been provided with a high point (hump) above the Flood Planning Level that prevents ingress of flood water to the basement levels.

The above measures ensure adequate protection to stored goods and hazardous materials.

E. Flood Emergency Response

E1 Development shall comply with Council's Flood Emergency Response Planning for Development in Pittwater Policy and the outcomes of any Flood Risk Emergency Assessment Report where it applies to the land.

E2 New development must provide an appropriately sized area to safely shelter in place above the Probable Maximum Flood level and appropriate access to this area should be available from all areas within the development.

E3 Adequate Warning Systems, Signage and Exits shall be installed to allow safe and orderly evacuation without reliance upon the SES or other authorised emergency services personnel.

In response to these requirements, the proposed development should comply with the following:

- The building habitable floor levels at Ground Floor and at all levels above, are above the Flood Planning Level and the PMF. Accordingly, there is more than adequate floor area available for occupants to safely reside during the storm event.
- The basement levels are protected from inundation by flood waters by the location of humps and other high pints in access ways that are at a level above the Flood Planning Levels.
- The lower levels of the building are provided with egress ramps and stairs that allow access to higher levels in the building, located above the Flood Planning Level and the PMF.
- Since the characteristic of the flooding are shallow overland flow during a flash flood storm event, evacuation from the site would not be an appropriate emergency response during the storm event. The most appropriate course of action would be to shelter in place in parts of the building above the flood planning and PMF level.
- Following conclusion of the storm event the overland flow would quickly dissipate and allow easy evacuation by the specified paths of egress.
- There would be no need for reliance on the emergency services to evacuate the building following conclusion of the storm event.

Accordingly, the proposed development will comply with the Flood Emergency Response requirements.

F. Floor Levels

F1 New floor levels within the development shall be at or above, the Flood Planning Level. A reduced Flood Planning Level may be considered only where it is permitted in this Development Control Plan. The structure must be flood proofed (wet or dry) to the Flood Planning Level. This control cannot be applied to critical or vulnerable uses.

F2 All development structures must be designed and constructed so as not to impede the floodway or flood conveyance on the site, as well as ensuring no loss of flood storage in a 1% AEP Event. Where the dwelling is located over a flow path it must be elevated on suspended pier/pile footings such that the level of the underside of all floors including balconies and decks within the flood affected area are at or above, or raised to the Flood Planning Level to allow clear passage of the floodwaters under the building. The development must comply with the Flood Prone Land Design Standard.

F3 Where the lowest floor has been elevated to allow the passage of flood waters, a restriction shall be imposed on the title of the land, pursuant to S88B of the Conveyancing Act confirming that the undercroft area is not to be enclosed.

F4 A one-off addition or alteration below the Flood Planning Level of less than 30 square metres or an increase of less than 10% of the ground floor area (whichever is the lesser) for residential development may be considered only where:
(a) it is an extension to an existing room

(b) the Flood Planning Level is incompatible with the floor levels of the existing room

This control will not be permitted if this provision has previously been utilised since the making of this Plan.

The structure must be flood proofed to the Flood Planning Level.

F6 Any existing floor level may be retained below the Flood Planning Level when undertaking a first-floor addition provided that:
(a) it is not located within a floodway;
(b) there is no increase to the building footprint below the Flood Planning Level;
(c) it is flood proofed to the Flood Planning Level;

F8 The minimum floor level of any first floor additions shall be at or above the Probable Maximum Flood Level.

F9 Foyers – consideration may be given to a minimum floor level of a foyer being set at the 5% AEP flood level, provided it can be demonstrated that it complies with the Flood Prone Land Design Standard.

F10 Consideration may be given to a minimum floor level for the first 5 metres from the street front of new development in business zonings below the Flood Planning Level provided it can be demonstrated that it complies with the Flood Prone Land Design Standard.

In response to these requirements, the proposed development should comply with the following:

- In Response to Item F1, the main stream flood level along the Pittwater Road during the 100-year ARI flood varies from RL 18.470 to 18.730 (as noted in Section 4.0). Therefore, the habitable floor level must be no less than FFL 18.970 on the Northern end along Pittwater Road to FFL 19.230 at the junction with Oaks Avenue to satisfy the condition of 500mm freeboard. The main stream flood level along the Oaks Avenue during the 100 year ARI flood varies from RL 18.400 to RL 17.66 (as noted in Section 4.0). Therefore, the habitable floor level must be no less than FFL 19.000 near the junction with Pittwater Road to FFL 18.240 in the Eastern corner of the property along Oaks Avenue to satisfy the condition of 600mm freeboard. Please refer table below:
  - Compliance with the requirements for Item F1 is demonstrated on the diagram located in Appendix D.
  - In response to F2 the existing lots are fully covered with existing buildings. Therefore, the site does not provide flood storage or conveyance. Therefore, no loss of flood storage will occur.
  - Item F3 does not apply to this site.
  - Item F4 does not apply to this development.
  - Item F6 does not apply to this development.
  - Item F8 does not apply to this development. All habitable floor levels are located above the Flood Planning Level and PMF. Some access ramps are located below the Flood Planning Level but are constructed as water tight up to the Flood Planning Level. Where these access ramps lead to building levels below the Flood Planning Level they are provided with watertight bunding and landings above the required level before the stairs descend. In the case of the ramps accessing the basement levels, these are provided with watertight humps to above the Flood Planning Level.
  - Item F9 does not apply to this development.

- Item F10 does not apply to this development.

By considering the above, the proposed development will comply with the Floor Levels requirement.

G. Car Parking

G1 Open carpark areas and carports shall not be located within a floodway.

G2 The lowest floor level of open carparks and carports (unroofed or with open sides) shall be constructed no lower than the natural ground levels.

G3 All enclosed car parks must be protected from inundation up to the relevant Flood Planning Level. For example, basement carparks must be provided with a crest at the entrance, the crest of which is at the relevant Flood Planning Level.

All access, ventilation and any other potential water entry points to any enclosed car parking shall be above the relevant Flood Planning Level.

Council will not accept any options that rely on electrical, mechanical or manual exclusion of the floodwaters from entering the enclosed carpark

G4 Vehicle barriers or restraints are to be provided to prevent floating vehicles leaving the site where there is more than 300mm depth of flooding in a 1% AEP flood event.

The minimum height of the vehicle barriers or restraints must be at or above the Flood Planning Level.

Vehicle barriers or restraints must comply with the Flood Prone Land Design Standard.

G5 Enclosed Garages must be located at or above the 1% AEP level.

G6 Carports must comply with the Flood Prone Land Design Standard.

G7 Where a driveway is required to be raised it must be demonstrated that there is no loss to flood stage in the 1% AEP flood event and no impact on flood conveyance through the site.

G8 Multi Dwelling Housing and Shop Top Housing residential carparking – consideration may be given to a minimum floor level for open or covered carparking being set at the 5% AEP flood level, provided it can be demonstrated that it complies with the Flood Prone Land Design Standard.

The proposed development complies with these requirements as follows:

- Item G1 does not apply to this development.
- Item G2 does not apply to this development.

- The main stream flood level along the Oaks Avenue, where the entry to the underground garage of the proposed development is located, during the 100-year ARI flood is 17.640. The crest at the entry driveway of the proposed non-habitable underground garage shall therefore to be no less than RL 18.240, which is the gutter level plus 600mm as required by Council. All access, ventilation and any other potential water entry points are located above the Flood Planning Levels. The drawings demonstrate compliance.
- Item G4 does not apply to this development.
- Item G5 does not apply to this development.
- Item G6 does not apply to this development.
- In regard to Item G7, the driveway hump is located in an area that is currently covered by a two-storey building. Accordingly, there is no loss of flood storage or conveyance.

By considering the above, the proposed development will comply with the Car Parking requirements.

H. Fencing

H1 Fencing, including pool fencing, shall be designed so as not to impede the flow of flood waters and not to increase flood affectation on surrounding land. Appropriate fencing must comply with the Flood Prone Land Design Standard in addition to other regulatory requirements of pool fencing.

- The proposed development does not include construction of a fence that impedes the flow of flood waters.

By considering the above, the proposed development will comply with the Fencing requirements.

I. Pools

I1 Pools located within the 1% AEP flood extent are to be inground, with coping flush with natural ground level. Where it is not possible to have, pool coping flush with natural ground level, it must be demonstrated that the development will result in no net loss of flood storage and no impact on flood conveyance on or from the site.

All electrical equipment associated with the pool (including pool pumps) is to be waterproofed and/or located at or above the Flood Planning Level.

All chemicals associated with the pool are to be stored at or above the Flood Planning Level.

In response to these requirements, the proposed development should comply with the following:

- The proposed development does not include construction of a pool at the ground level.

By considering the above, the proposed development will comply with the Pools requirements.

6.0 Conclusions

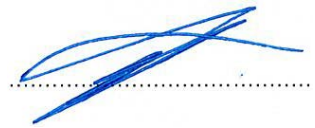
The floor levels of the proposed development should have in excess of 500mm of freeboard to the gutter level along Pittwater Road and in excess of 600mm freeboard to the gutter level along Oaks Avenue. This means a minimum floor level varying from 18.970 to 19.230 is required for the part of the building adjacent Pittwater Road and from 18.240 to 19.040m for Oaks Avenue.

As the proposed development is located on lots which are already covered with existing buildings neither flood storage nor the floodway will be affected by it.

We confirm that the project design shown on these drawings and as outlined above provides suitable compliance with the requirements of the Warringah City Council requirements as specified in Part E11 of the Development Control Plan 2011.

We trust the above provides the information required at this time. Should there be any questions please do not hesitate to contact the undersigned.

Yours faithfully,



David Wilcox
B.E. (Hons I), FIEAust, CPEng, NER APEC Engineer IntPE (Aus) RPEQ
Director
DEMLAKIAN CONSULTING ENGINEERS

Encl.:

Appendix A – Architectural Drawings and Site Survey Plan

Appendix B – Flood Risk Assessment Report Guidelines

Appendix C – City of Northern Beaches (Warringah) Council Email and PLM Minutes

Appendix D – Flood Planning Levels and Mitigation

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		■				■			50.0m²	8.0m²	■	■		■	> 3.6m	1	1
102A	1		■				■			50.5m²	8.0m²	■	■		■	3.6m	1	1
103A	1			■			■			68.6m²	8.7/36.2m²	■	■	■		> 4m	1	1
104A	1		■				■		■	56.3m²	8.6/12.6m²	■			■	3.6m	1	1
105A	1				■		■	■		97.7m²	14.7/36.4m²	■	■	■		> 4m	1.2	1.2
106A	1				■		■	■		91.4m²	15.5m²	■		■	■	4m	1.2	1.2
107A	1		■				■			58.6m²	8.0m²	■		■	■	> 4m	1	1
108A	1				■		■	■		84.9m²	10.3m²	■		■	■	4m	1.2	1.2
109A	1				■		■	■		90.6m²	17.7m²	■	■	■		> 4m	1.2	1.2
101B	1				■		■	■		90.7m²	10.4/10.2m²	■	■	■		> 4m	1.2	1.2
102B	1			■			■			67.5m²	10.6m²	■		■	■	3.6m	1	1
103B	1				■		■	■		87.2m²	16.1/85.5m²	■	■	■		4.0m	1.2	1.2
201A - 301A	2 - 3		■				■			50.0m²	8.0m²	■	■		■	> 3.6 m2	1	1
202A - 302A	2 - 3		■				■			50.5m²	8.0m²	■	■		■	3.6m2	1	1
203A - 303A	2 - 3			■			■			67.6m²	8.7m²	■	■	■		> 4m2	1	1
204A - 304A	2 - 3		■				■		■	56.3m²	9.7m²	■			■	3.6m2	1	1
205A - 305A	2 - 3				■		■	■		101.2m²	11.5m²	■	■	■		> 4m2	1.2	1.2
206A - 306A	2 - 3				■		■	■		91.4m²	15.5m²	■		■	■	4 m2	1.2	1.2
207A - 307A	2 - 3		■				■			58.6m²	8.0m²	■		■	■	> 3.6m2	1	1
208A - 308A	2 - 3				■		■	■		84.9m²	10.3m²	■		■	■	4m2	1.2	1.2
209A - 309A	2 - 3				■		■	■		90.6m²	10.0m²	■	■	■		> 4m2	1.2	1.2
201B - 301B	2 - 3				■		■	■		99.8m²	10.0m²	■	■	■		> 4m2	1.2	1.2
202B - 302B	2 - 3			■			■			67.8m²	10.4m²	■		■	■	3.6m2	1	1
203B - 303B	2 - 3				■		■	■		87.2m²	10.0m²	■	■	■		4.0m2	1.2	1.2
401A	4		■				■			50.0m²	12.8m²	■	■		■	> 4m2	1	1
402A	4		■				■			63.3m²	8.0m²	■	■	■		> 4m2	1	1
403A	4		■				■		■	55.0m²	9.7m²	■			■	3.6m2	1	1
404A	4		■				■			55.1m²	8.1m²	■	■	■		> 4m2	1	1
405A	4				■		■			70.6m²	21.0m²	■		■	■	> 4m2	1.2	1.2
406A	4				■		■	■		74.0m²	24.5m²	■		■	■	> 4m2	1.2	1.2
407A	4					■	■	■		106.1m²	53.9m²	■	■	■		> 4m2	1.5	1.5
401B	4				■		■			86.7m²	10.4m²	■		■		> 4m2	1.2	1.2
402B	4		■				■			59.0m²	14.4m²	■		■		> 4 m2	1	1
403B	4	■					■			40.9m²	6.7m²	■	■	■		4m2	1	1
501A - 601A	5 - 6		■				■			50.1m²	8.1m²	■	■		■	> 3.6m2	1	1
502A - 602A	5 - 6		■				■			60.8m²	9.0m²	■	■	■		> 4m2	1	1
503A - 603A	5 - 6		■				■		■	55.0m²	9.7m²	■			■	3.6m2	1	1
504A - 604A	5 - 6		■				■			55.1m²	8.1m²	■	■	■		> 4m2	1	1
505A - 605A	5 - 6				■		■			70.9m²	10.4m²	■		■	■	> 4m2	1.2	1.2
506A - 606A	5 - 6		■				■			52.6m²	9.0m²	■		■	■	3.6m	1	1
507A - 607A	5 - 6				■		■	■		83.1m²	10.0m²	■		■	■	> 4m2	1.2	1.2
508A - 608A	5 - 6				■		■	■		90.6m²	10.0m²	■	■	■		> 4m2	1.2	1.2
501B - 601B	5 - 6				■		■	■		77.2m²	10.1m²	■	■	■		4m2	1.2	1.2
502B - 602B	5 - 6		■				■			54.7m²	8.4m²	■	■	■		3.6m2	1	1
503B - 603B	5 - 6	■					■			40.1m²	6.7m²	■	■		■	> 3.6m2	1	1
701A	7					■	■	■		110.6m²	12.5m²	■	■	■		> 4m2	1.5	1.5
702A	7		■				■		■	53.6m²	9.7m²	■			■	>3.6m2	1	1
703A	7		■				■			54.1m²	8.1m²	■	■	■		> 3.6m2	1	1
704A	7		■				■			55.0m²	8.2m²	■		■	■	> 4m2	1	1
705A	7		■				■			52.6m²	9.0m²	■		■	■	>3.6m2	1	1
706A	7				■		■	■		83.1m²	10.0m²	■		■	■	> 3.6m2	1.2	1.2
707A	7				■		■	■		90.6m²	10.0m²	■	■	■		> 4m2	1.2	1.2
701B	7				■		■			73.1m²	10.1m²	■	■	■		> 4m2	1.2	1.2
702B	7		■				■			54.7m²	8.4m²	■	■	■		3.6 m2	1	1
703B	7	■					■			40.1m²	6.7m²	■	■		■	> 3.6m2	1	1
TOTAL		4	33	6	32	2	78 UNITS		12	5566.9m²			56.4% (44/78)	75.6% (59/78)	55.1% (43/78)		86	86

RETAIL

RETAIL SPACE	AREA	STORAGE AREA	PARKING REQUIRED	PARKING PROVIDED
1	60.5m2	25.0m2		
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	1 space per 16.4m2 GLFA	
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	TOTAL
REQUIRED	86	15.4 (77/5)	37.5	140.9
PROVIDED	92	16	39	147

Assessor # 20420 Certificate # 0003357233 Issued: 151118

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 M²*	*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 M²*	*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, h't above windows)*	*Location*
	As plans – eaves /soffits	*As plans – eaves/soffits/louvres 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**		

NATIONWIDE HOUSE ENERGY RATING SCHEME
8.2
24.3 MJ/m²
www.nathers.gov.au

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

www.nathers.gov.au

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

8 OAKS AVENUE DEE WHY NSW 2099

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

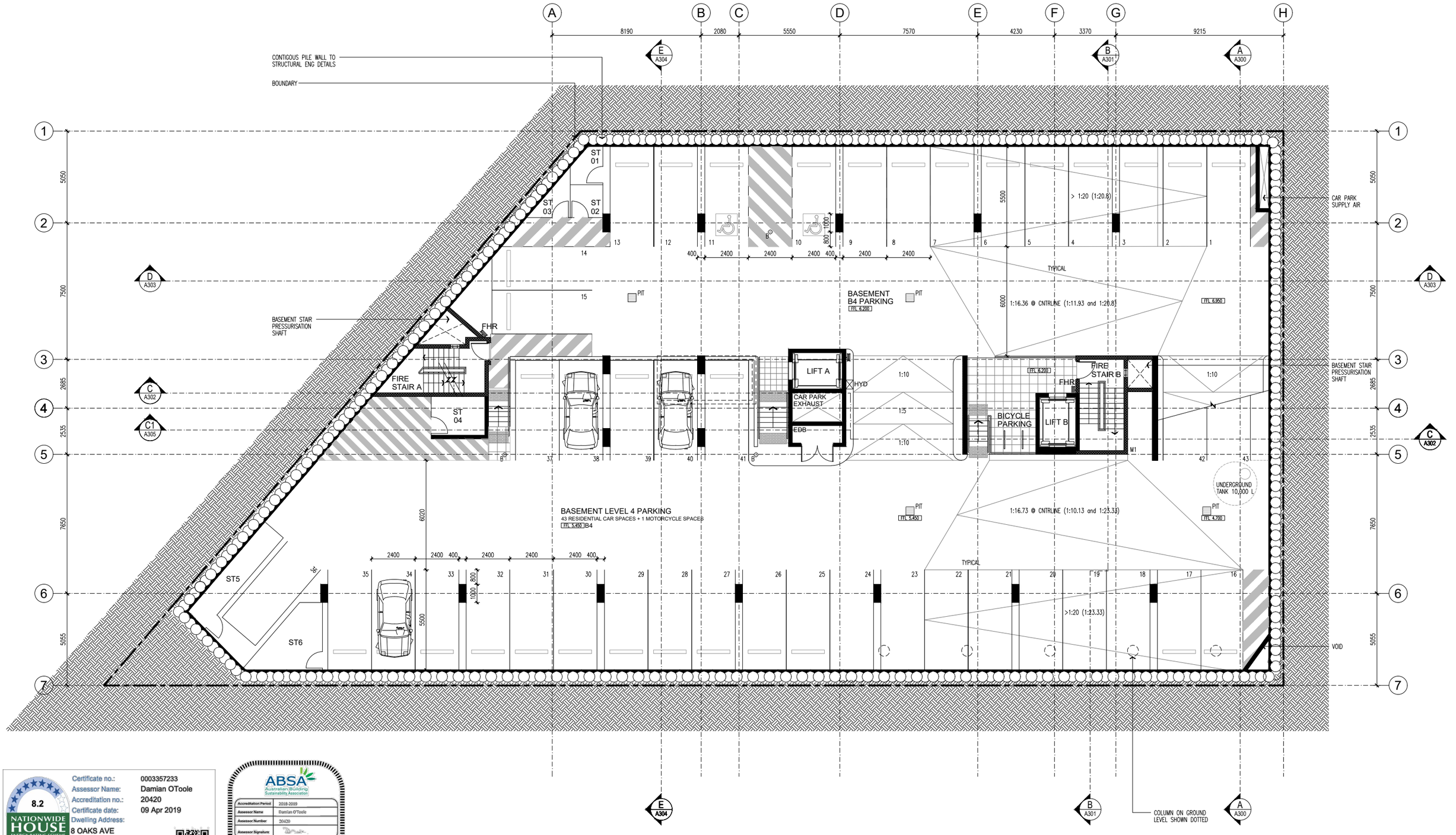
PROJECT: MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE: COVERSHEET SCHEDULE

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

PROJECT NUMBER 18041
DRAWING NUMBER A001
ISSUE A

crawford architects



Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

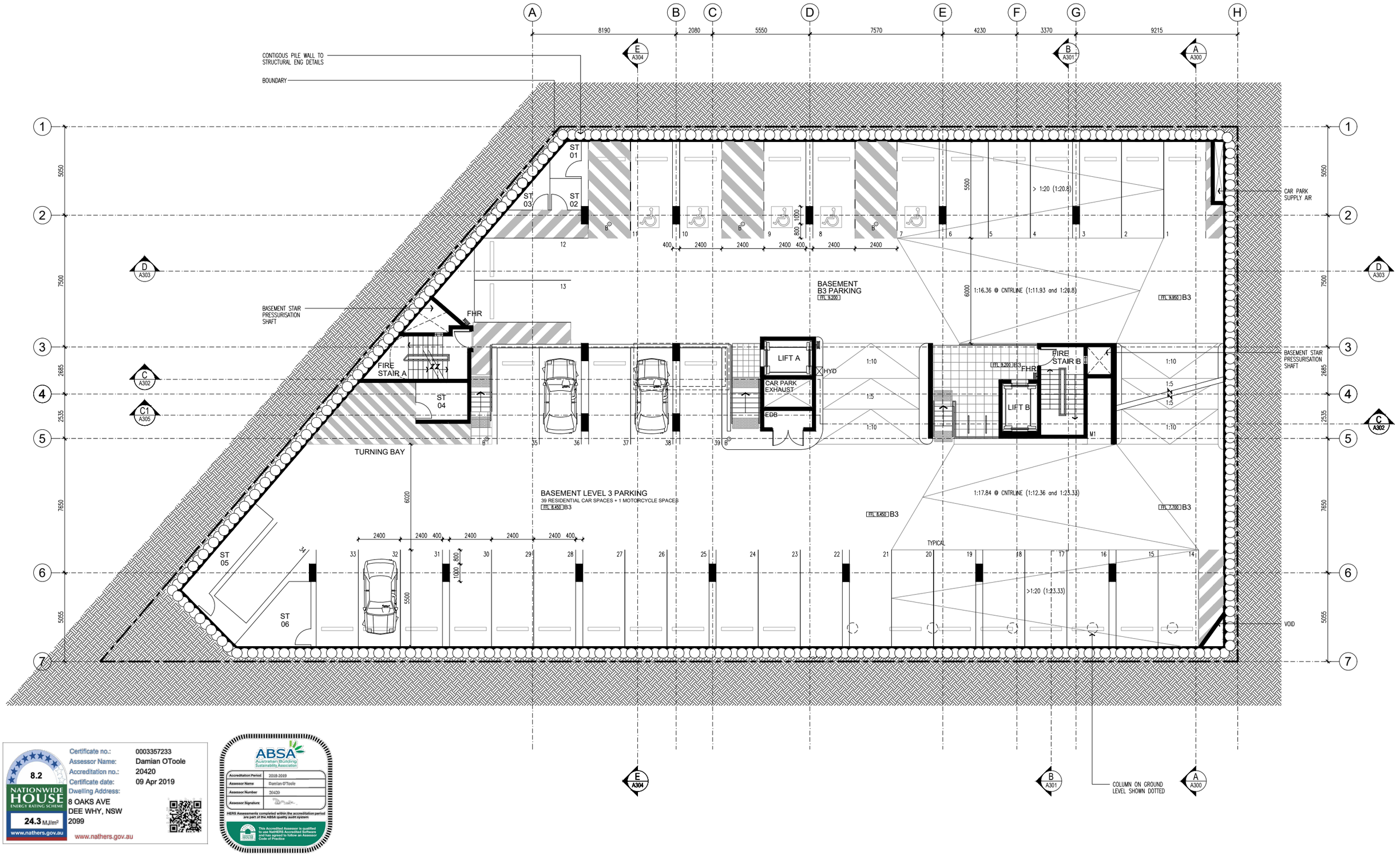
PROJECT: MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE: BASEMENT LEVEL 4 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN HP
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A100
ISSUE A

crawford architects



Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

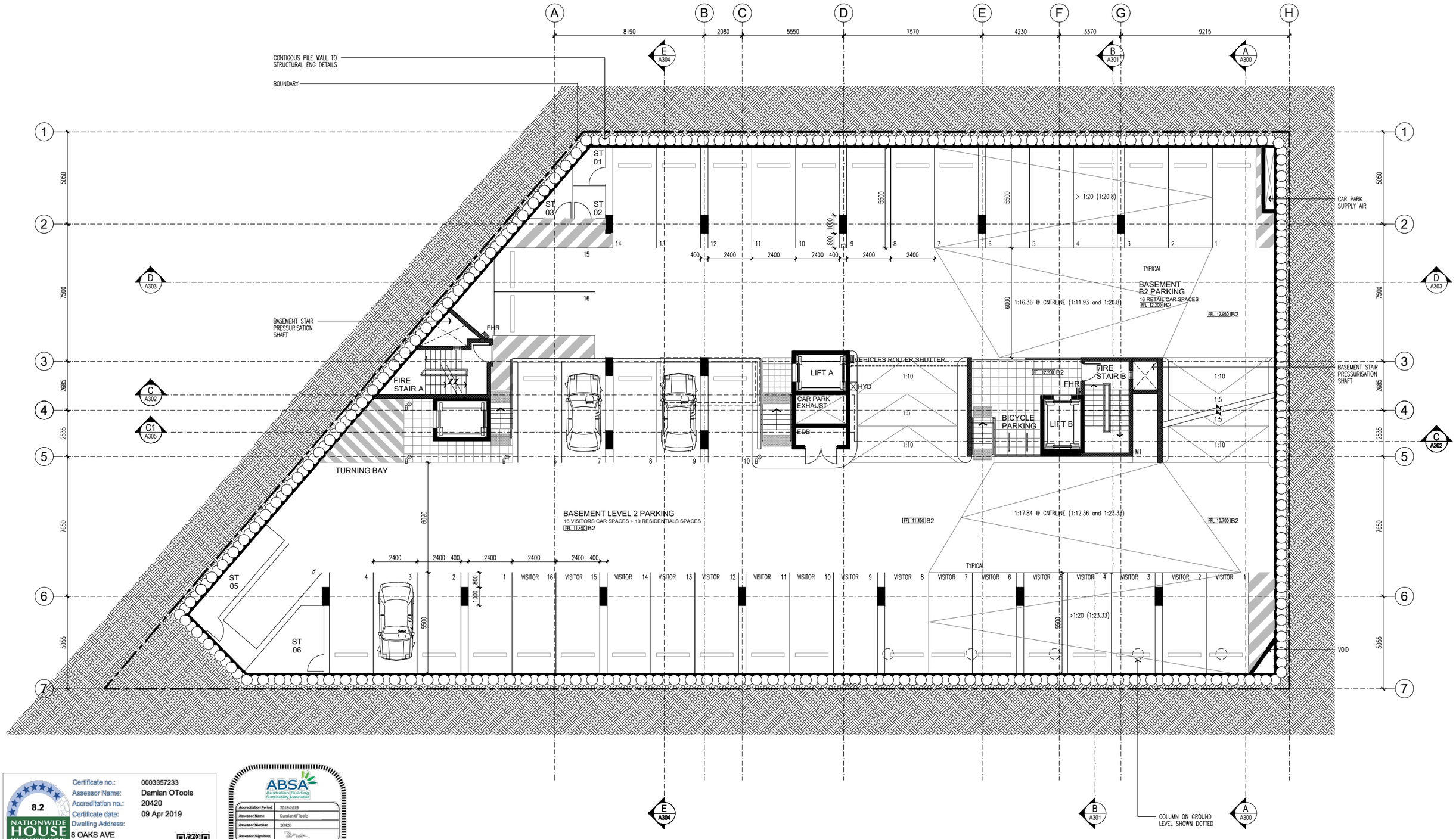
PROJECT: MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE: BASEMENT LEVEL 3 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MT
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A101
ISSUE A

crawford architects



Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

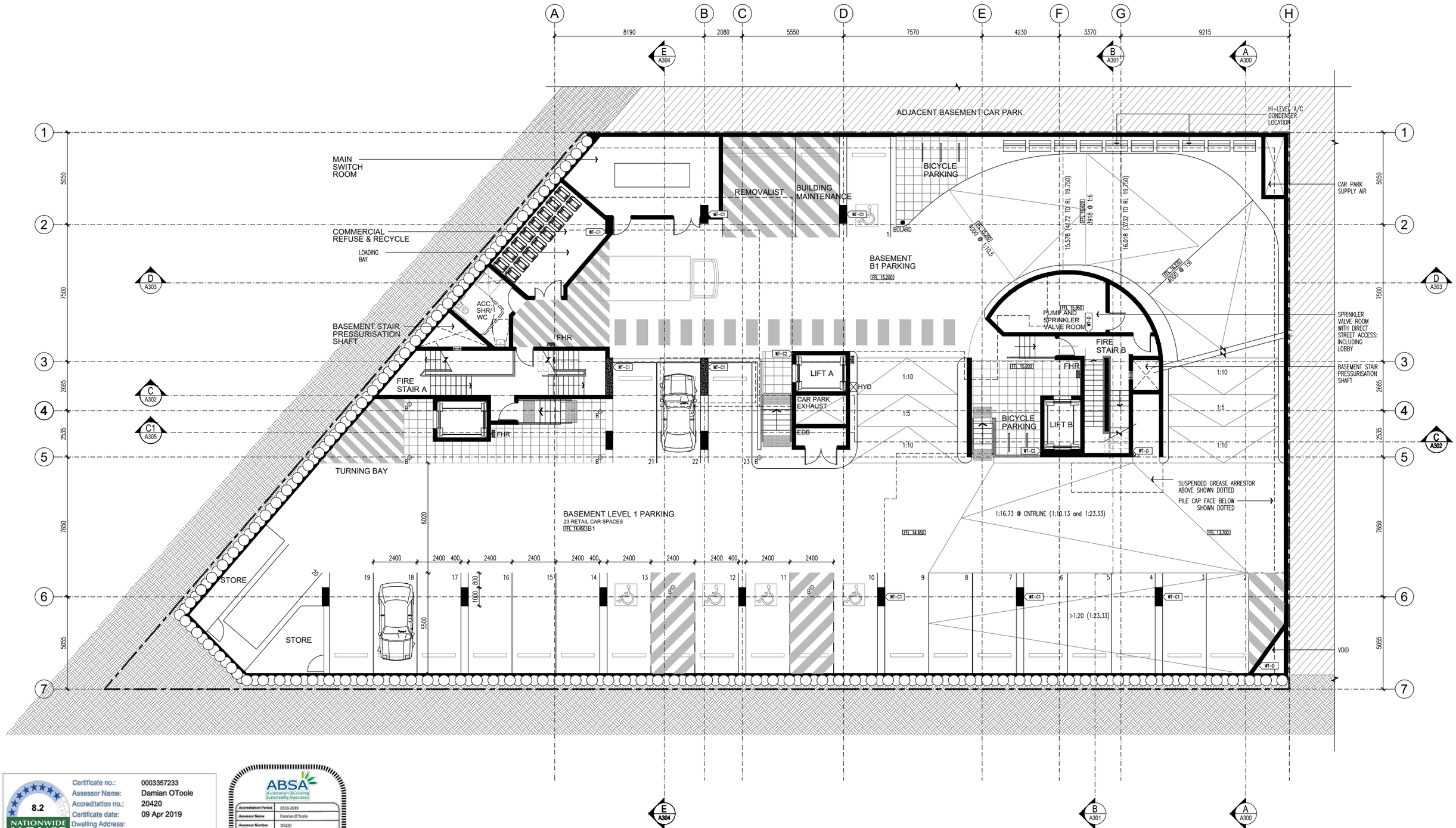
PROJECT: MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE: BASEMENT LEVEL 2 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MT
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A102
ISSUE A

crawford architects



Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

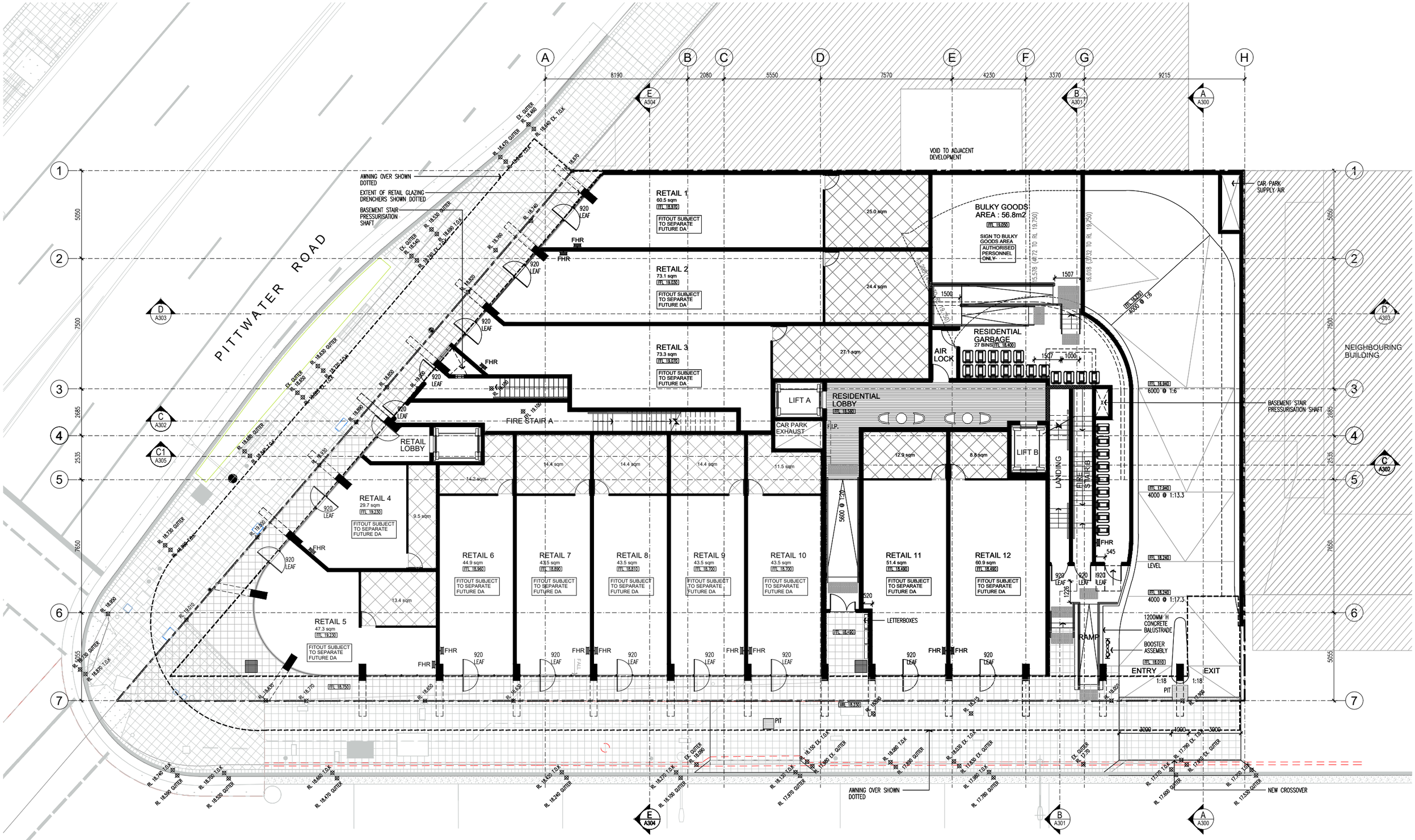
PROJECT: MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE, DEE WHY NSW 2099

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
ISSUE A

crawford architects



ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. ALL BOUNDARIES & CONTOURS SUBJECT TO SURVEY. ALL RIGHTS RESERVED. THIS DRAWING MAY NOT BE REPRODUCED OR TRANSMITTED, IN PART OR IN WHOLE WITHOUT THE PERMISSION OF CRAWFORD ARCHITECTS PTY LTD

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS APPROVED BY A DIRECTOR OF CRAWFORD ARCHITECTS PTY LTD

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

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 MN
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A104
ISSUE A

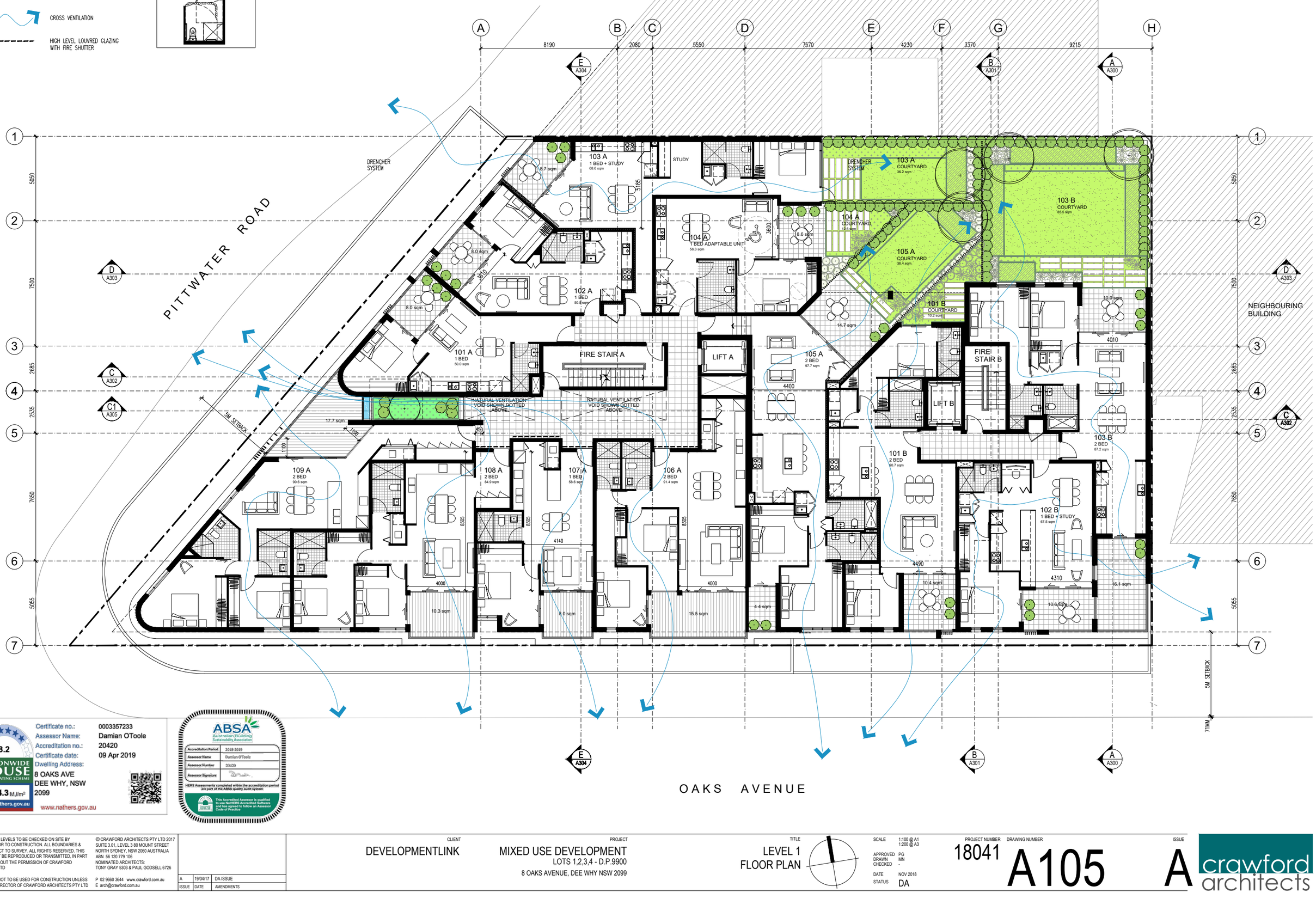
crawford architects

KEY

CROSS VENTILATION

HIGH LEVEL LOUVRED GLAZING WITH FIRE SHUTTER

ADAPTABLE BATH FOR UNIT 104A



8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME
24.3 MJ/m²
www.nathers.gov.au

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

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

TITLE: LEVEL 1 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MN
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A105
ISSUE A

crawford architects

KEY

CROSS VENTILATION

HIGH LEVEL LOUVRED GLAZING WITH FIRE SHUTTER

ADAPTABLE BATH FOR UNIT 304A

PITTWATER ROAD

OAKS AVENUE

NEIGHBOURING BUILDING

5M SETBACK

DRENCHER SYSTEM

900MM HIGH SPANDREL

203 A
1 BED + STUDY
67.6 sqm

204 A
1 BED ADAPTABLE UNIT
56.3 sqm

202 A
1 BED
50.5 sqm

201 A
1 BED
50.0 sqm

205 A
2 BED
103.2 sqm

201 B
2 BED
99.8 sqm

203 B
2 BED
87.2 sqm

202 B
1 BED + STUDY
67.5 sqm

209 A
2 BED
90.6 sqm

208 A
2 BED
84.9 sqm

207 A
1 BED
58.6 sqm

206 A
2 BED
91.4 sqm

FIRE STAIR A

FIRE STAIR B

LIFT A

LIFT B

NATURAL VENTILATION VOID

10.0 sqm

10.3 sqm

8.0 sqm

15.5 sqm

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address:
8 OAKS AVE
DEE WHY, NSW
2099

www.nathers.gov.au

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

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

TITLE
LEVEL 2
FLOOR PLAN

SCALE 1:100 @ A1
1:200 @ A3
APPROVED PG
DRAWN MN
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A106
ISSUE A

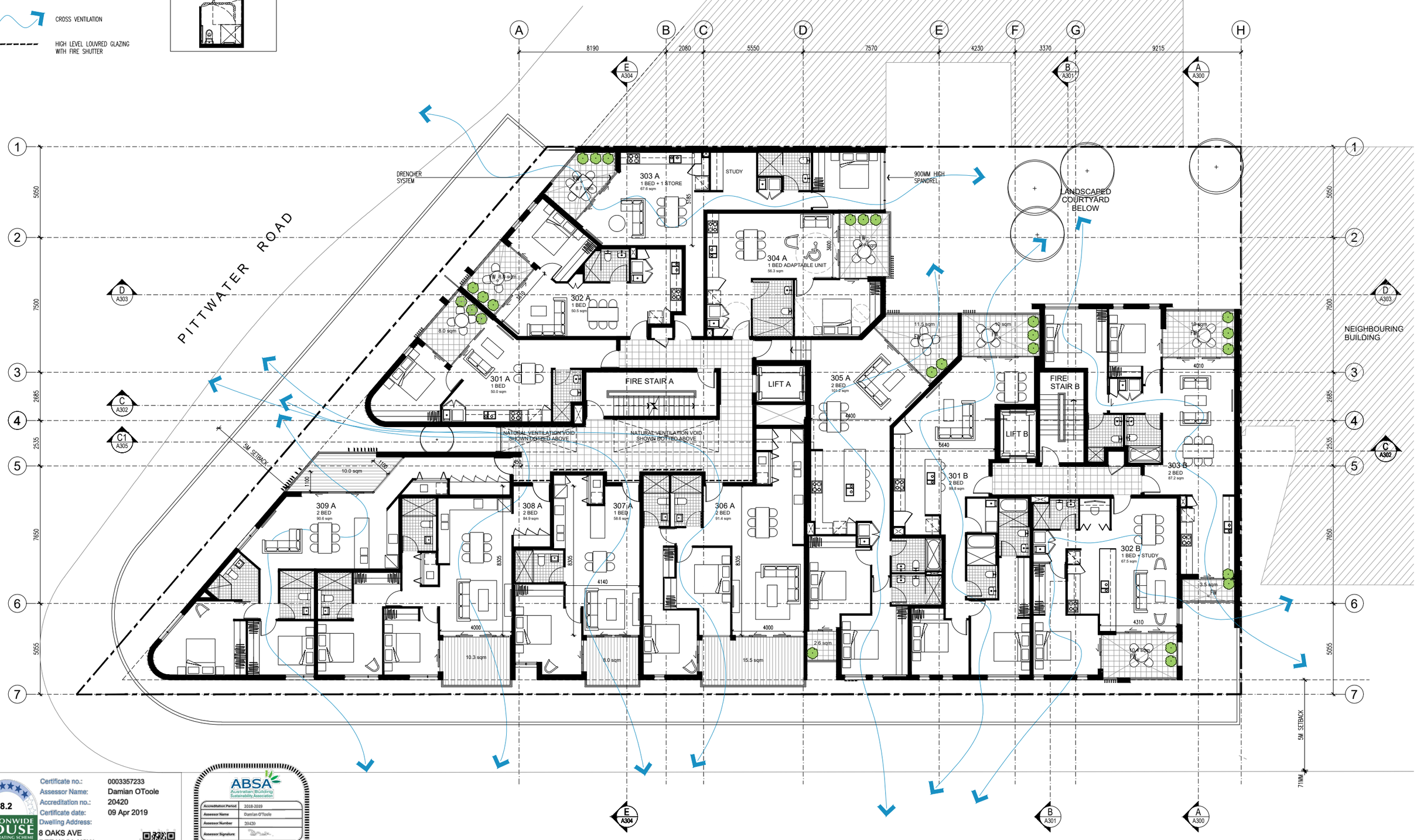
crawford architects

KEY

CROSS VENTILATION

HIGH LEVEL LOUVRED GLAZING WITH FIRE SHUTTER

ADAPTABLE BATH FOR UNIT 304A



Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

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

TITLE: LEVEL 3 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MN
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A107
ISSUE A

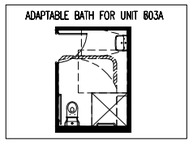
crawford architects

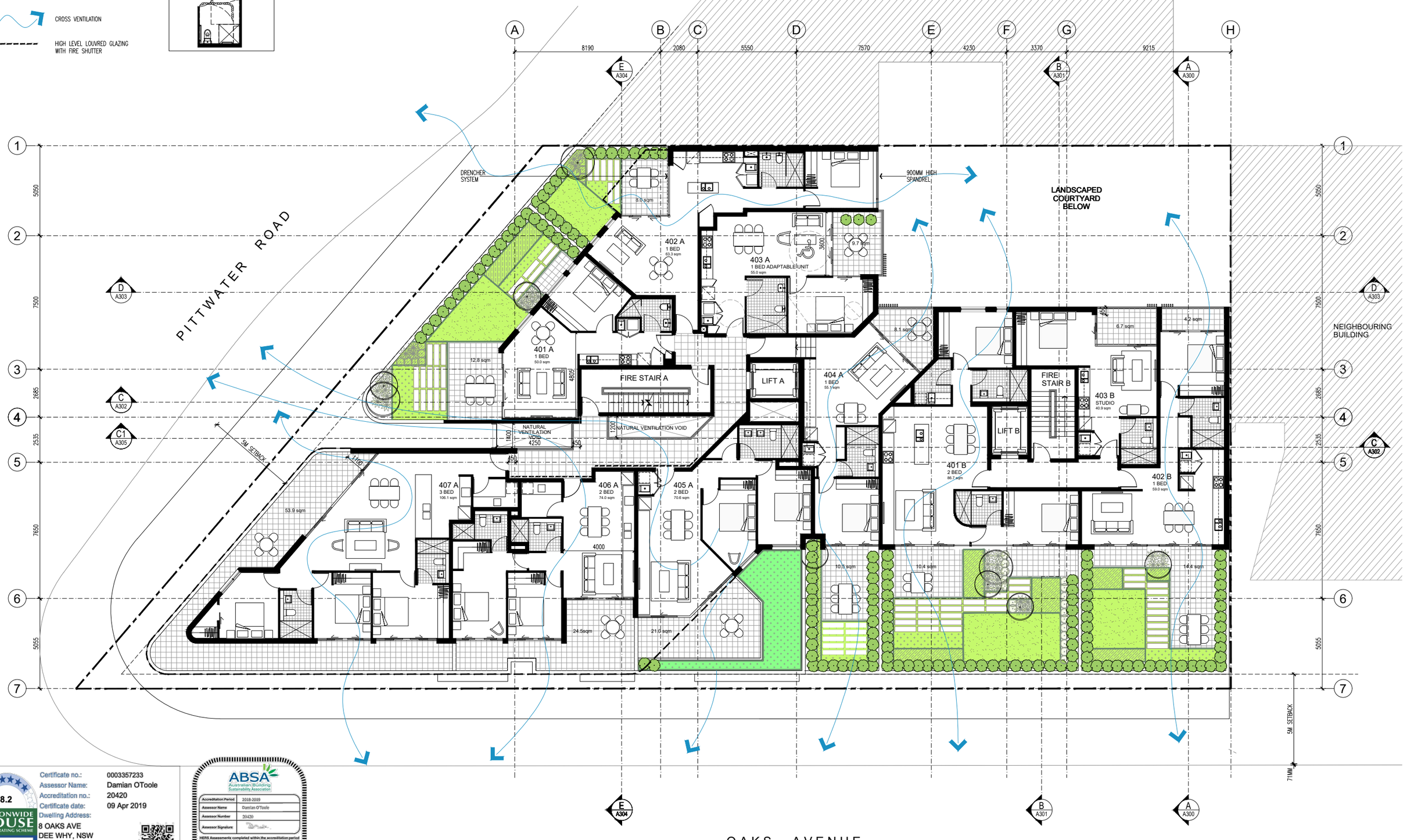
KEY

CROSS VENTILATION

HIGH LEVEL LOUVRED GLAZING WITH FIRE SHUTTER

ADAPTABLE BATH FOR UNIT 803A





OAKS AVENUE

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

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

TITLE: LEVEL 4 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MT
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A108
ISSUE A

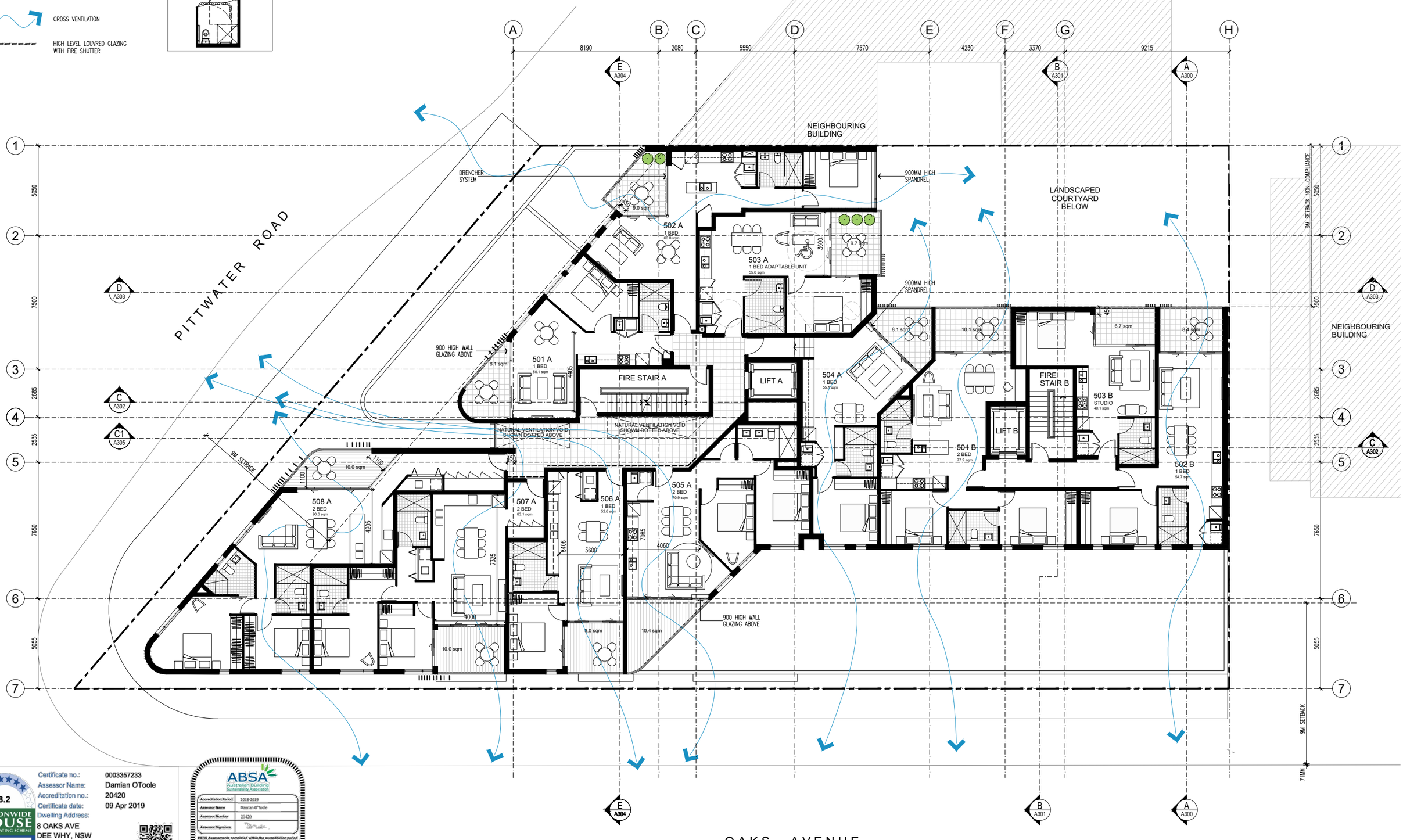
crawford architects

KEY

CROSS VENTILATION

HIGH LEVEL LOUVRED GLAZING WITH FIRE SHUTTER

ADAPTABLE BATH FOR UNIT 503A



Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

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

TITLE: LEVEL 5 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MT
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A109
ISSUE A

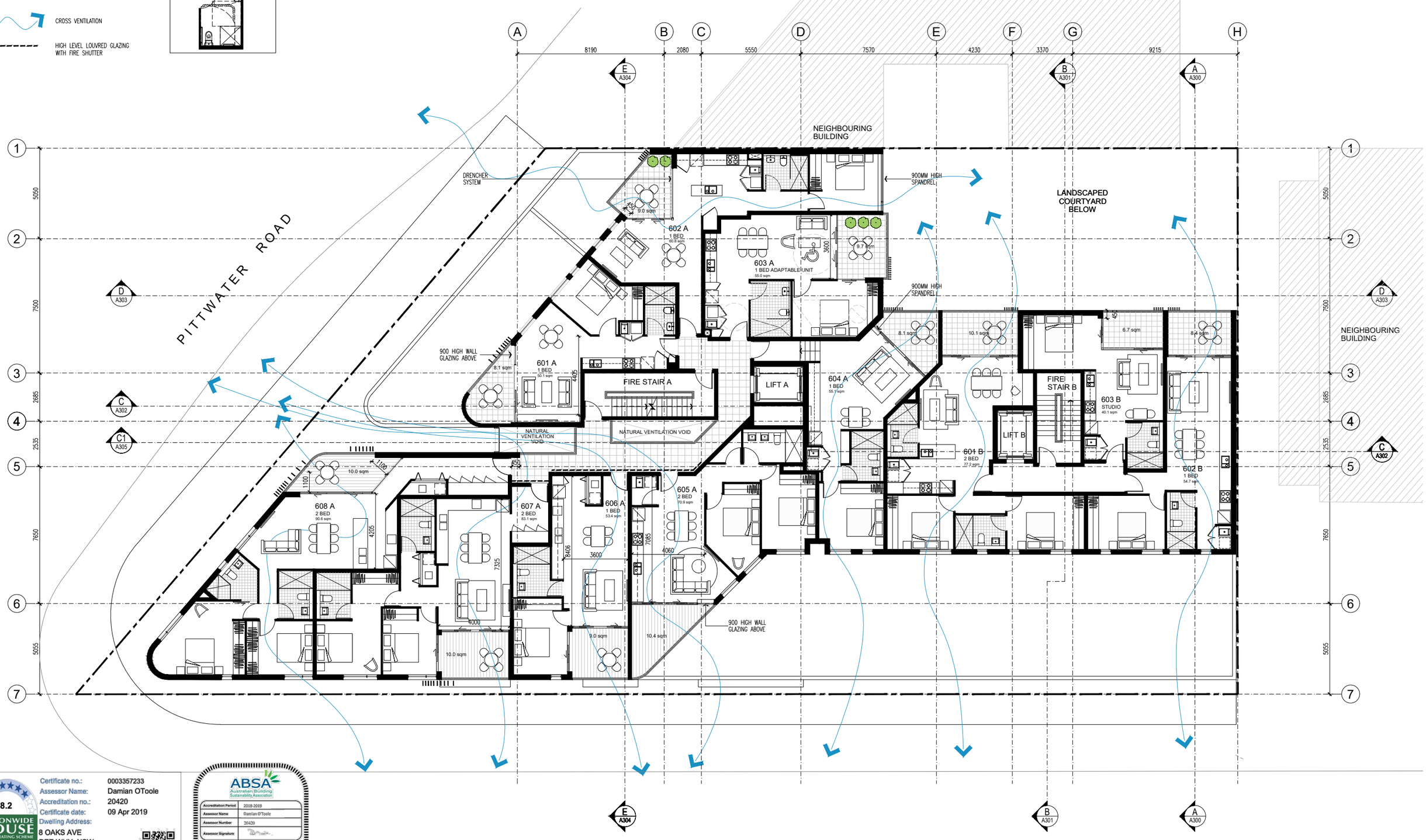
crawford architects

KEY

CROSS VENTILATION

HIGH LEVEL LOUVRED GLAZING WITH FIRE SHUTTER

ADAPTABLE BATH FOR UNIT 603A



Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME 24.3 MJ/m² www.nathers.gov.au

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

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

TITLE: LEVEL 6 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MT
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A110
ISSUE A

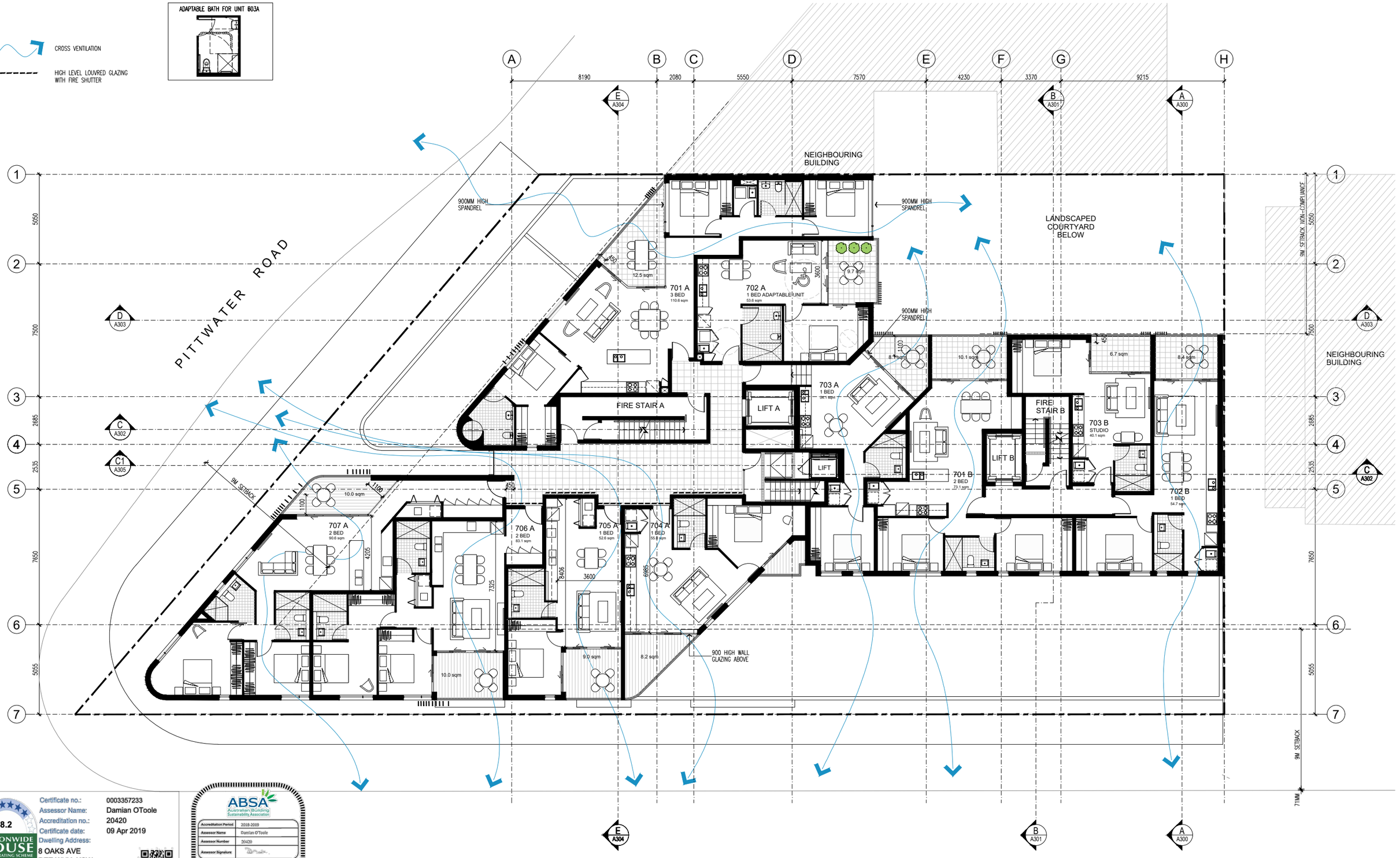
crawford architects

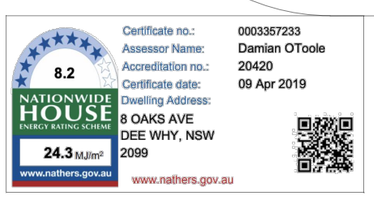
KEY

CROSS VENTILATION

HIGH LEVEL LOUVRED GLAZING WITH FIRE SHUTTER

ADAPTABLE BATH FOR UNIT 603A





Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

www.nathers.gov.au

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

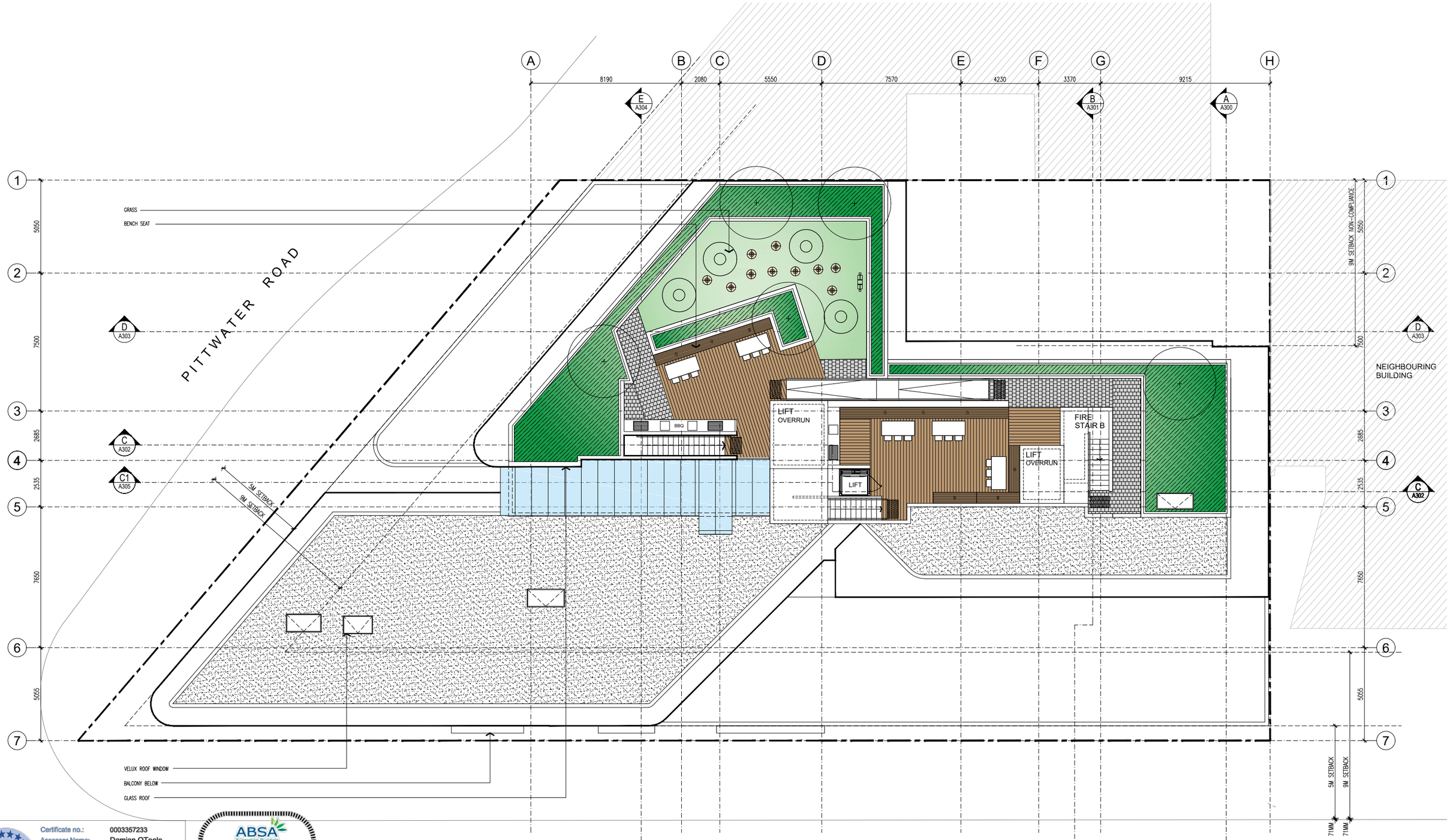
PROJECT
MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE
LEVEL 7
FLOOR PLAN

SCALE 1:100 @ A1
1:200 @ A3
APPROVED PG
DRAWN MN
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A111
ISSUE A

crawford architects



8.2 NATIONWIDE HOUSE ENERGY RATING SCHEME
24.3 MJ/m²
www.nathers.gov.au

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

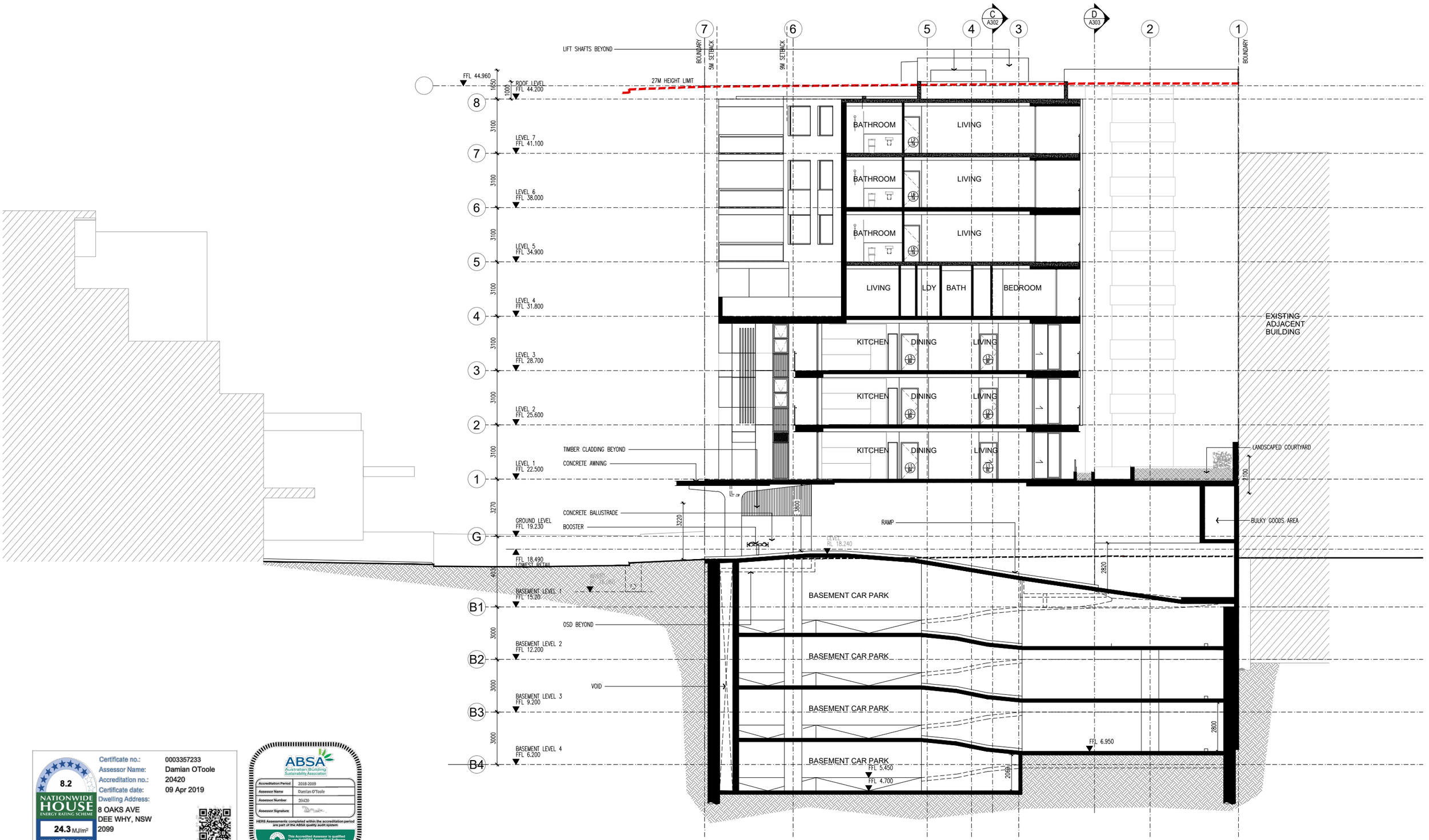
PROJECT: MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE, DEE WHY NSW 2099

TITLE: LEVEL 8 FLOOR PLAN

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED PG
DRAWN MT
CHECKED -
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A112
ISSUE A

crawford architects



8.2
NATIONWIDE HOUSE ENERGY RATING SCHEME
24.3 MJ/m²
www.nathers.gov.au

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address: 8 OAKS AVE DEE WHY, NSW 2099

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

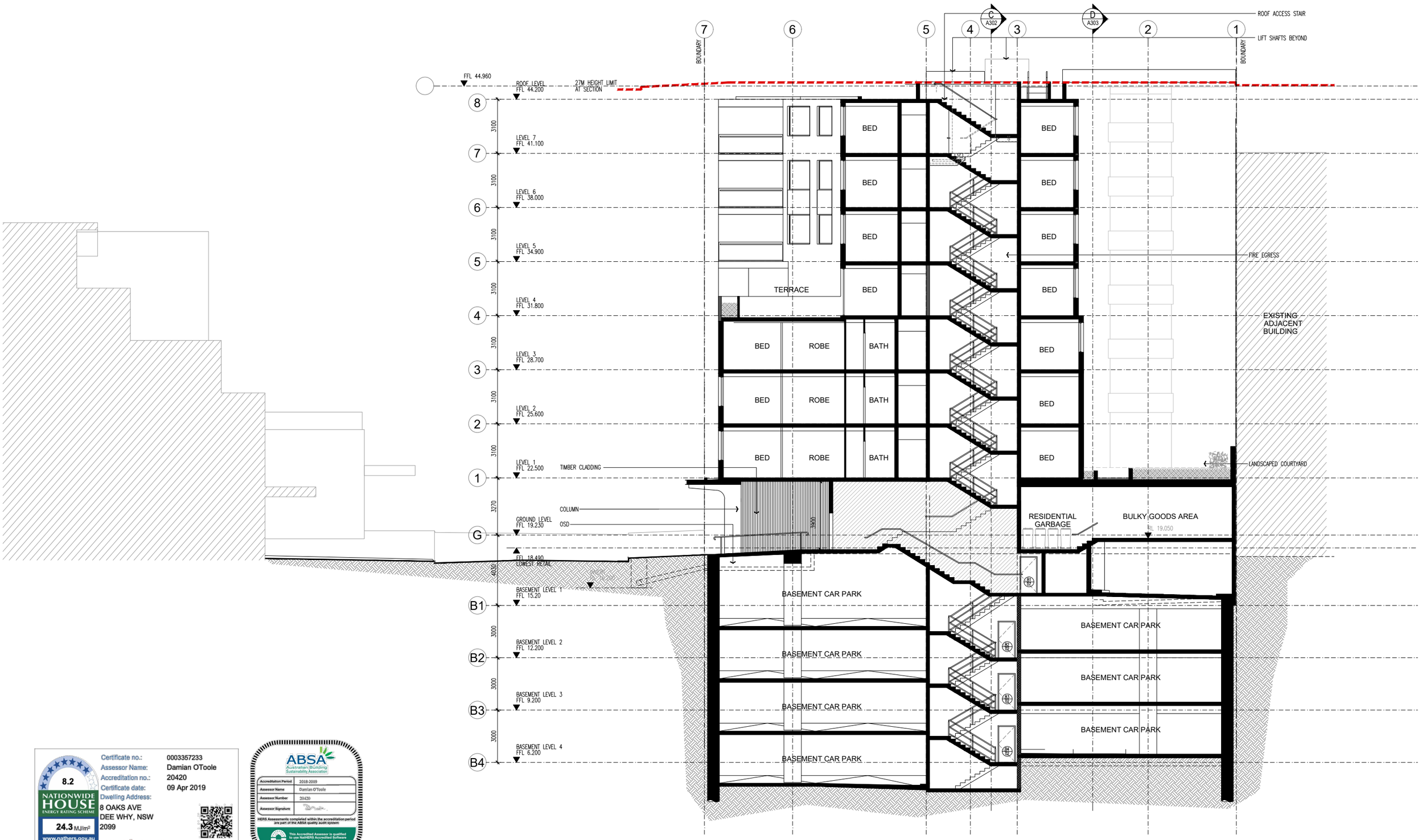
PROJECT
MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE

TITLE
SECTION AA

SCALE 1:100 @ A1, 1:200 @ A3
APPROVED
DRAWN MK - MT
CHECKED PG
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A300
ISSUE A

crawford architects



8.2
NATIONWIDE HOUSE ENERGY RATING SCHEME
24.3 MJ/m²
www.nathers.gov.au

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address:
8 OAKS AVE
DEE WHY, NSW
2099

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

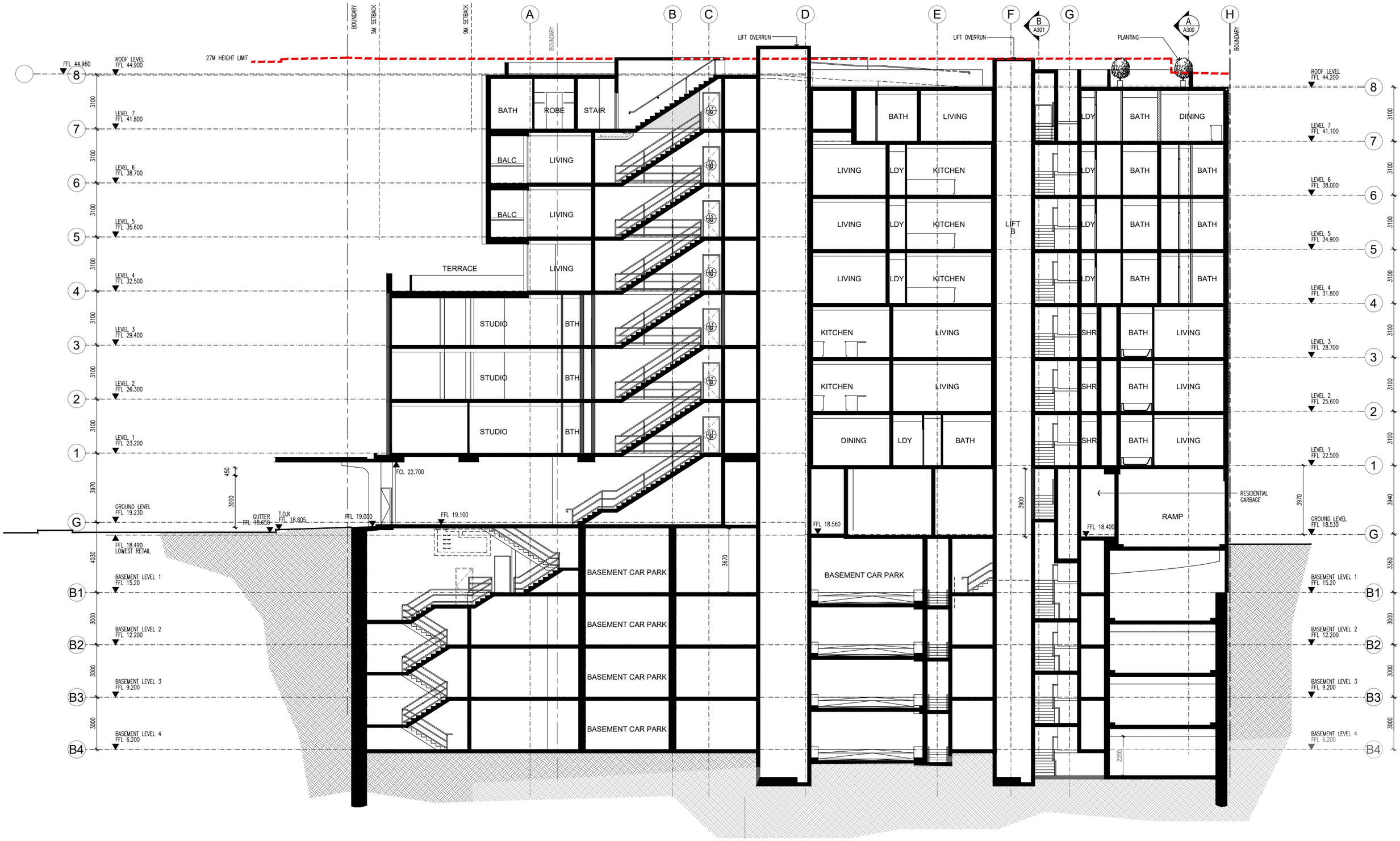
PROJECT
MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE

TITLE
SECTION BB

SCALE 1:100 @ A1
1:200 @ A3
APPROVED
DRAWN MK - MT
CHECKED PG
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A301
ISSUE A

crawford architects



SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

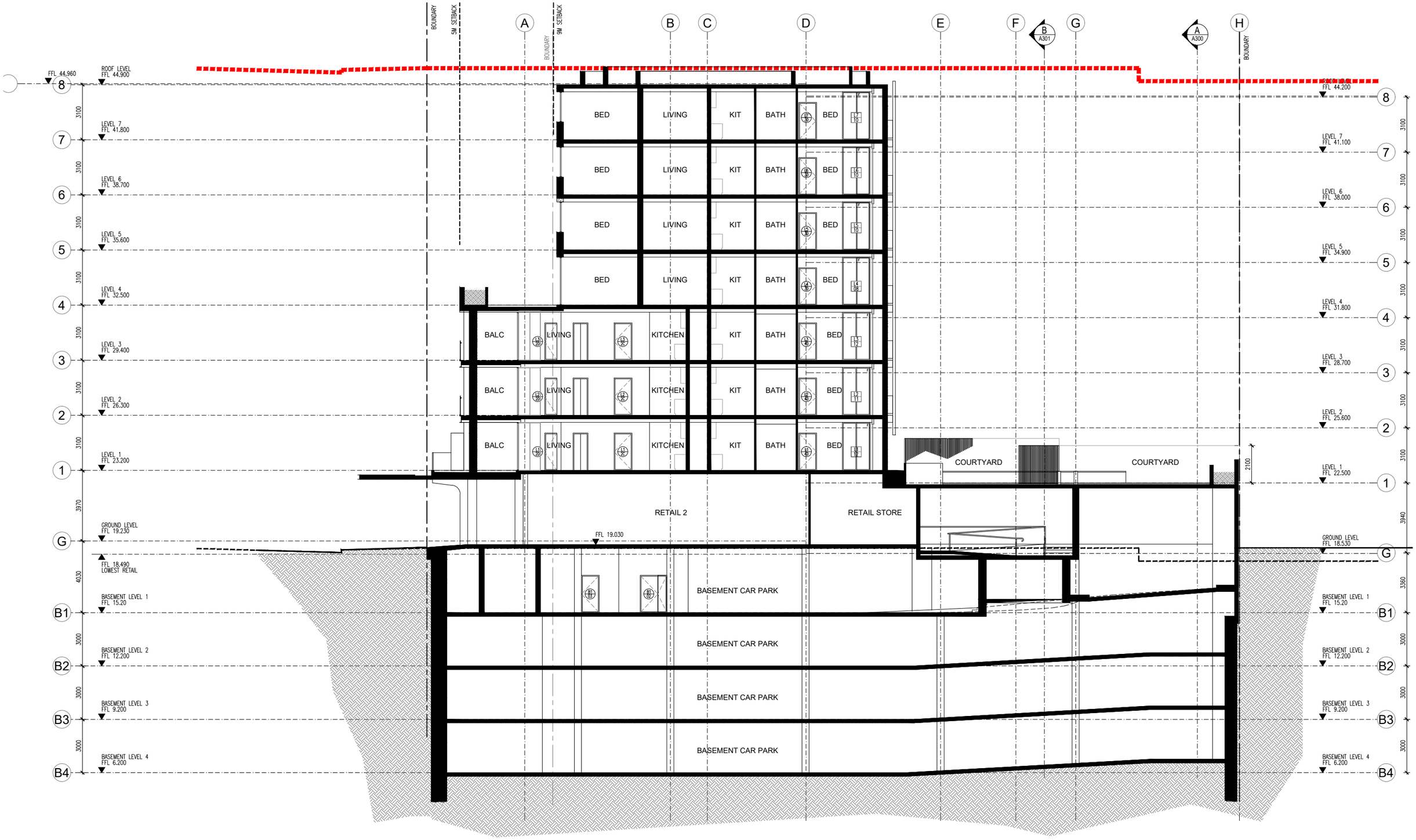
PROJECT
MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE

TITLE
SECTION CC

SCALE 1:100 @ A1
1:200 @ A3
APPROVED -
DRAWN MT
CHECKED PG
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A302
ISSUE A

crawford architects



© CRAWFORD ARCHITECTS PTY LTD 2017
SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

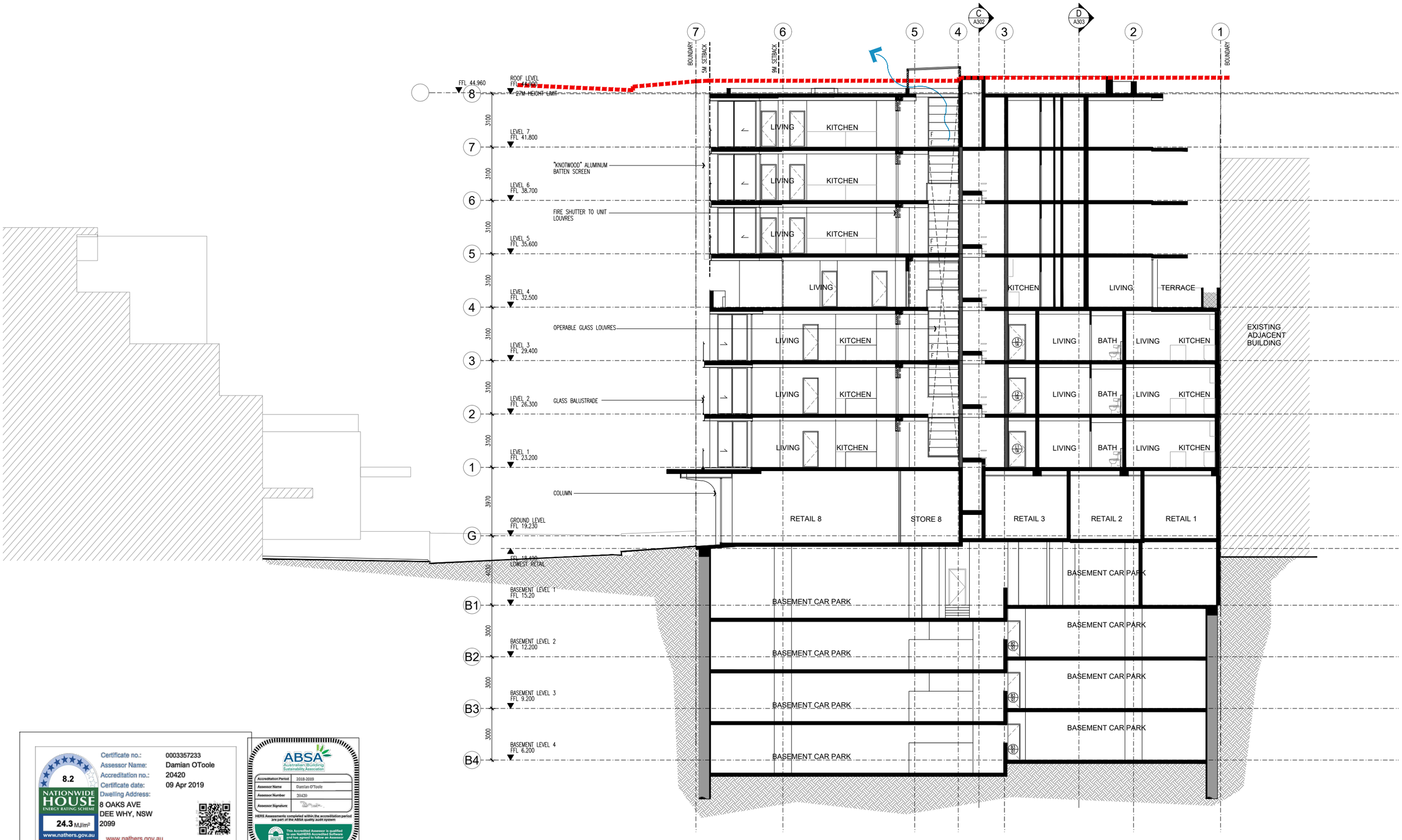
PROJECT
MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE

TITLE
SECTION DD

SCALE 1:100 @ A1
1:200 @ A3
APPROVED -
DRAWN MK - MT
CHECKED PG
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A303
ISSUE A

crawford architects



8.2
NATIONWIDE HOUSE ENERGY RATING SCHEME
24.3 MJ/m²
www.nathers.gov.au

Certificate no.: 0003357233
Assessor Name: Damian OToole
Accreditation no.: 20420
Certificate date: 09 Apr 2019
Dwelling Address:
8 OAKS AVE
DEE WHY, NSW
2099

www.nathers.gov.au

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

SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT
DEVELOPMENTLINK

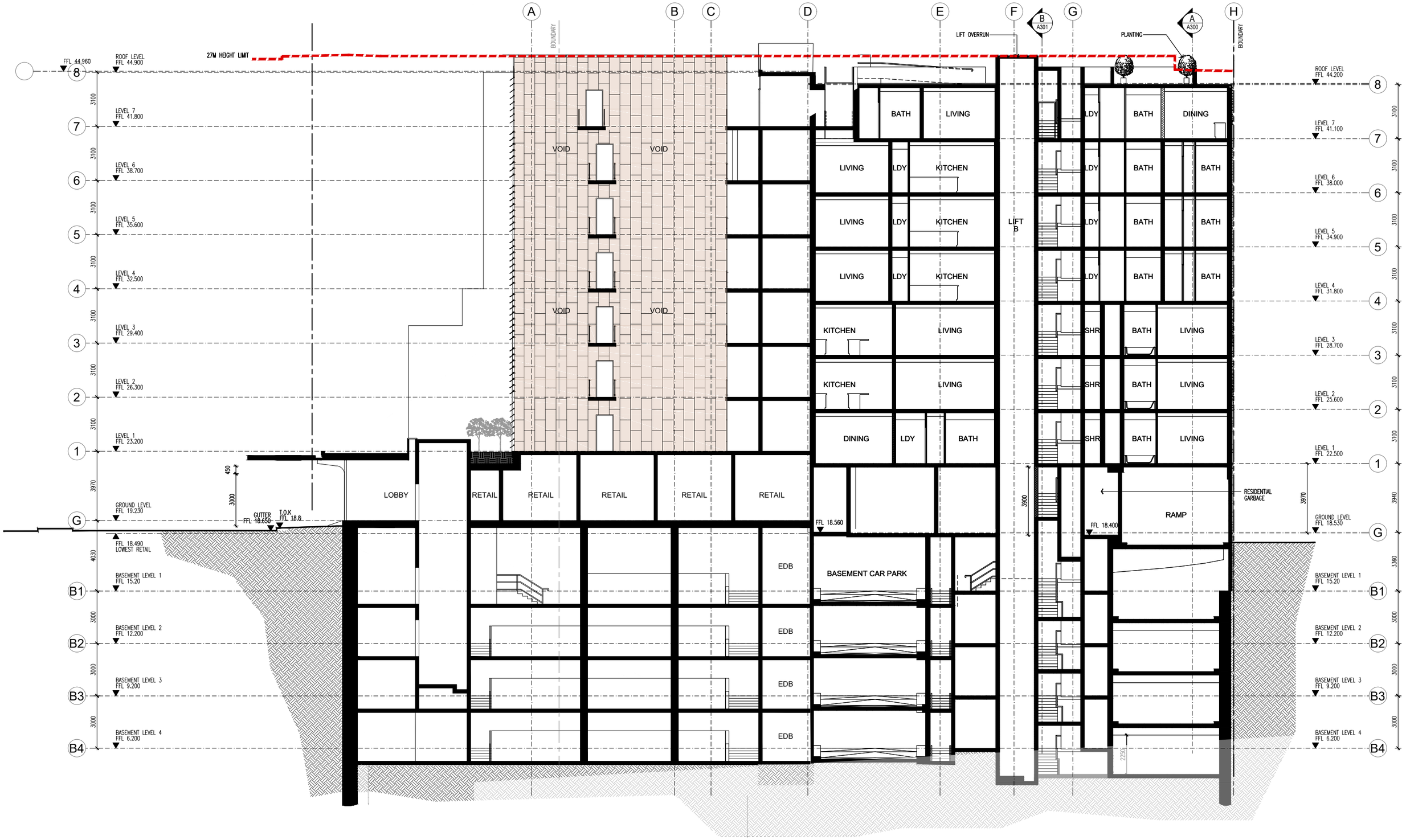
PROJECT
MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE

TITLE
SECTION EE

SCALE 1:100 @ A1
1:200 @ A3
APPROVED -
DRAWN MK
CHECKED PG
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A304
ISSUE A

crawford architects



SUITE 3.01, LEVEL 3 80 MOUNT STREET
NORTH SYDNEY, NSW 2060 AUSTRALIA
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

ISSUE	DATE	AMENDMENTS
A	19/04/17	DA ISSUE

CLIENT: DEVELOPMENTLINK

PROJECT: MIXED USE DEVELOPMENT
LOTS 1,2,3,4 - D.P.9900
8 OAKS AVENUE

TITLE: SECTION CC-1

SCALE 1:100 @ A1
1:200 @ A3
APPROVED -
DRAWN MT
CHECKED PG
DATE NOV 2018
STATUS DA

PROJECT NUMBER 18041
DRAWING NUMBER A305
ISSUE A

crawford architects

PITTWATER ROAD

OAKS AVENUE

S.P.76355

2
D.P.9900

1
D.P.9900

3
D.P.9900

4
D.P.9900

AREA.. 1060m²
(TOTAL)

APPROXIMATE VOID

No.874
2 STOREY
RENDERED
BUILDING
METAL ROOF

No.876
2 STOREY
BRICK SHOPS
CORRUGATED
FIBRO ROOF

No.10
2 STOREY
RENDERED &
BRICK RESIDENTIAL
& COMERCIAL
BUILDING
BASEMENT PARKING
METAL ROOF

NORTH

APPROX. TRUE

0 10

ADAM CLERKE SURVEYORS PTY LTD
Incorporating PAUL KEEN & COMPANY
LAND & ENGINEERING SURVEYORS
38 KEVIN AVENUE, AVALON 2107
TEL...9918 4111

DETAILS AND LEVELS OVER PART OF
LOTS 2, 3 & 4 IN D.P. 9900

876 PITTWATER ROAD, DEE WHY

DATE... 20/07/17 REF... 7917
SCALE...1:100(A0) DATUM...A.H.D

NOTES:

- TREE SPREADS & HEIGHTS ARE INDICATIVE ONLY.
- ONLY VISIBLE SERVICES HAVE BEEN SHOWN. UNDERGROUND SERVICES HAVE NOT BEEN LOCATED. NOTIFICATION OF ALL RELEVANT AUTHORITIES SHOULD BE UNDERTAKEN. BEFORE CARRYING OUT ANY CONSTRUCTION ACTIVITY IN OR NEAR THE SURVEYED AREA.
- THIS SURVEY HAS BEEN CARRIED OUT FOR INFORMATION PURPOSES ONLY AND SURVEY MARKS SHOULD BE PLACED IF STRUCTURES ARE TO BE ERECTED ON OR NEAR THE BOUNDARIES. BOUNDARIES ARE NOT TO BE ESTABLISHED FROM INFORMATION SHOWN ON DRAWING.
- CONTOUR INTERVAL – 1 METRE. CONTOURS ARE INDICATIVE ONLY. SPOT LEVELS SHOULD BE ADOPTED FOR DESIGN AND CALCULATION PURPOSES. CRITICAL SPOT LEVELS SHOULD BE CONFIRMED WITH SURVEYOR.
- ORIGIN OF LEVELS: S.S.M. 18989 R.L. 21.932 A.H.D. (SCIMS)
-
- SUBJECT LAND AFFECTED BY COVENANT A494891

Attachment A

NORTHERN BEACHES COUNCIL
STANDARD HYDRAULIC CERTIFICATION FORM
FORM A/A1 – To be submitted with Development Application

Development Application for

Address of site: 874 PITTWATER ROAD, DEE WHY, NSW 2099

Declaration made by hydraulic engineer or professional consultant specialising in flooding/flood risk management as part of undertaking the Flood Management Report:

I, David Wilcox (Insert Name) on behalf of Demlakian Consulting Engineers (Trading or Business/ Company Name)

on this the 10th October 2018 (Date) certify that I am engineer or a professional consultant specialising in flooding and I am authorised by the above organisation/ company to issue this document and to certify that the organisation/ company has a current professional indemnity policy of at least $2 million.

***Flood Management Report* Details:**

Report Title:

217130rpt20181010_IZ_Flood Impact Report_Version B

Report Date: 10th October 2018

Author: David Wilcox

Author's Company/Organisation: Demlakian Consulting Engineers

I: David Wilcox (Insert Name)

Please tick all that are applicable (more than one box can be ticked)

☑ have obtained and included flood information from Council (must be less than 12 months old) (**This is mandatory**)

☑ have followed Council's Guidelines for Preparing a Flood Management Report

☐ have requested a variation to one or more of the flood related development controls. Details are provided in the *Flood Management Report*.

Signature .....

Name David Wilcox

GUIDELINES for Preparing a Flood Management Report

Introduction

These guidelines are intended to provide advice to applicants on preparing a Flood Management Report. The purpose of a Flood Management Report is to help applicants measure and manage the flood risk to life and property on their site.

When is a Flood Management Report required?

A Flood Management Report must be submitted with any Development Application on flood prone land, for Council to consider the potential flood impacts and controls. For Residential or Commercial development, it is required for development on land identified within the Medium or High Flood Risk Precinct. For Vulnerable or Critical development, it is required if it is within any Flood Risk Precinct.

Note that the flood extents shown on the mapping are indicative only. It is recommended that flood levels are compared to registered ground survey to more accurately determine the flood extent.

There are some circumstances where a Flood Management Report undertaken by a professional engineer may not be required. However the relevant parts of the DCP and LEP would still need to be addressed, so as to demonstrate compliance. Examples where this may apply include:

- If all proposed works are located outside the relevant Flood Risk Precinct extent
- First floor addition only, where the floor level is above the Probable Maximum Flood level
- Internal works only, where habitable floor areas below the Flood Planning Level are not being increased

Note that development on flood prone land will still be assessed for compliance with the relevant DCP and LEP, and may still be subject to flood related development controls.

What is in a Flood Management Report?

The aim of a Flood Management Report is to demonstrate how a proposed development will comply with the flood related development controls outlined in the relevant LEP and DCP clauses. The report must detail the design, measures and controls needed to achieve compliance, following the steps outlined below.

A Flood Management Report should reflect the size, type and location of the development, proportionate to the scope of the works proposed, and considering its relationship to surrounding development. The report should also assess the flood risk to life and property.

Technical requirements of a Flood Management Report

The technical requirements of a Flood Management Report should include (where relevant):

1. ***Description of development***

   The description of development should identify:

   - Outline of the proposed development, with plans if necessary for clarity
   - Use of the building, hours of operation, proposed traffic usage or movement
   - Type of use, ie, critical, vulnerable, subdivision, residential, business, industrial, recreational, environmental or concessional

2. ***Flood analysis***

   The flood analysis should include:

   - Predicted 1 in 100 year flood level
   - Flood Planning Level (FPL)
   - Probable Maximum Flood (PMF) level
   - Flood Risk Precinct, ie High, Medium or Low
   - Flood Life Hazard Category (in former Pittwater Council area only)
   - Mapping of relevant extents
   - Flood characteristics for the site, eg depth, velocity, hazard and hydraulic category, and the impact these have on the proposed development

Note that if the property is affected by estuarine flooding or other coastal issues, these need to be addressed separately under the relevant DCP.

3. *Assessment of impacts*

The assessment of impacts should address the various elements of the relevant LEP and DCP. A simple compliance table should be provided, similar to the table one below.

		Compliance		
		Not Applicable	Yes	No
A	Flood effects caused by Development			
B	Drainage Infrastructure & Creek Works			
C	Building Components & Structural			
D	Storage of Goods			
E	Flood Emergency Response			
F	Floor Levels			
G	Car Parking			
H	Fencing			
I	Pools			

Further details of what is required for each of these categories can be found in the *Development Control Plan for Flood Prone Land*.

For any of these categories which are applicable, the assessment should demonstrate how the development complies, or if it doesn't, provide an explanation of why the development should still be considered.

Reporting requirements for a Flood Management Report

The Flood Management Report should include:

a) Executive summary
b) Location plan, at an appropriate scale, that includes geographical features, street names and identifies all waterways and Council stormwater pipes, pits and easements
c) Plan of the proposed development site showing the extent of the predicted 100 year, any high hazard or floodway conditions and the PMF flood event
d) Development recommendations and construction methodologies
e) Calculation formulae (particularly for flood storage)
f) Clear referencing using an accepted academic referencing system (eg. Harvard)
g) Analysis of development against relevant State Environmental Planning Policies
h) Analysis of development against relevant Local Environment Plan and Policies
i) Conclusion detailing key points
j) Standard Hydraulic Certification (Form A/A1)
k) Qualifications of author
l) Any flood advice provided by Council
m) Any other details which may be relevant

NOTE: Qualifications of Author

Council requires that the Flood Management Report be prepared by a suitably qualified Engineer with experience in flood design / management who has, or is eligible for, membership to the Australian Institute of Engineers.

For further information please contact Stormwater and Floodplain Team on 1300 434 434 or via email at floodplain@northernbeaches.nsw.gov.au

Attachment A

NORTHERN BEACHES COUNCIL
STANDARD HYDRAULIC CERTIFICATION FORM
FORM A/A1 – To be submitted with Development Application

Development Application for

Address of site: 8 OAKS AVENUE, DEE WHY, NSW 2099

Declaration made by hydraulic engineer or professional consultant specialising in flooding/flood risk management as part of undertaking the Flood Management Report:

I, David Wilcox (Insert Name) on behalf of Demlakian Consulting Engineers (Trading or Business/ Company Name)

on this the 6th November 2018 (Date) certify that I am engineer or a professional consultant specialising in flooding and I am authorised by the above organisation/ company to issue this document and to certify that the organisation/ company has a current professional indemnity policy of at least $2 million.

***Flood Management Report* Details:**

Report Title:

217130rpt20181106_IZ_Flood Impact Report_Version C

Report Date: 6th November 2018

Author: David Wilcox

Author's Company/Organisation: Demlakian Consulting Engineers

I: David Wilcox
(Insert Name)
Please tick all that are applicable (more than one box can be ticked)

☑ have obtained and included flood information from Council (must be less than 12 months old) (**This is mandatory**)

☑ have followed Council's Guidelines for Preparing a Flood Management Report

☐ have requested a variation to one or more of the flood related development controls. Details are provided in the *Flood Management Report*.

Signature ……

Name David Wilcox

northern beaches council

PRELODGEMENT ADVICE

Application No:	PLM2017/0087
Meeting Date:	22/08/2017 2:15:00 AM
Property Address:	876 Pittwater Road DEE WHY
Proposal:	Construction of a Shop top housing development consisting of 48 units, 5 retail spaces, and basement carparking
Attendees for Council:	Rodney Piggott, Development Assessment Manager Renee Ezzy, Principal Planner Sunny Jo, Traffic Engineer Andrew Ho, Waster Services Tony Goninon, Dee Why Town Centre Project Manager Duncan Howley, Senior Floodplain Management Officer Dominic Chung, Senior Urban Designer Robert Barbuto, Manager Development Engineering
Attendees for applicant:	Pierre Touma Raymond Touma Vai Ah-Ching Kristy Hodgkinson, Town Planner Paul Godsell, Architect

General Comments/Limitations of these Notes

These notes have been prepared by Council on the basis of information provided by the applicant and a consultation meeting with Council staff. Council provides this service for guidance purposes only. These notes are an account of the specific issues discussed and conclusions reached at the pre-lodgement meeting. These notes are not a complete set of planning and related comments for the proposed development. Matters discussed and comments offered by Council will in no way fetter Council's discretion as the Consent Authority. A determination can only be made following the lodgement and full assessment of the development application.

In addition to the comments made within these notes, it is a requirement of the applicant to address ALL relevant pieces of legislation including (but not limited to) any SEPP and any applicable clauses of the Warringah LEP 2011, Warringah LEP 2000 and Warringah DCP 2011 within the supporting documentation of a development application including the Statement of Environmental Effects.

You are advised to carefully review these notes. If there is an area of concern or non-compliance that cannot be supported by Council, you are strongly advised to review and reconsider the appropriateness of the design of your development for your site and the adverse impacts that may arise as a result of your development prior to the lodgement of any development application.

INTRODUCTORY DISCUSSION

Outline of the Proposal

Plans referred to in the meeting are dated July 2017 and prepared by Crawford Architects.

The proposal seeks consent for demolition works and the construction of a multi-storey mixed use retail/commercial (5 retail areas) and residential building (shop top housing) (48 apartments) with basement car parking (85 spaces) which, according to the documentation provided, includes the following:

Proposed Building Heights

Pittwater Road
- 4 storey podium +3 x levels above podium (24.7m approx).

Oaks Avenue
- 4 storey podium + 3 x levels above podium (24.7m approx).

Proposed Building Layouts

Floor	Residential (GFA m²)
Ground (Retail – 5 spaces)	439.93
Level 1	613.74
Level 2	613.74
Level 3	613.74
Level 4	463.72
Level 5	463.72
Level 6	463.72
Total GFA	**3672.31m^2**
FSR	**3.5:1**

Apartment Mix

Apartment Type	Unit Mix (%)	Unit Mix (No. of Units)
Studio	12.5%	6
1 Bedroom	50%	24
1 Bedroom + study	12.5%	6
2 Bedroom	25%	12
Total	**100%**	**48**

Vehicle Access

Vehicle access is via the proposed crossover and driveway off Oaks Avenue adjacent to the eastern boundary. The width of the driveway is shown as approximately 5.25m.

Parking
34 x residential
10 x visitor
17 x retail
Total – 85 spaces

SPECIFIC ISSUES RAISED BY APPLICANT FOR DISCUSSION

Issue/s Raised	Council Response
Flooding Relevant WDCP/WLEP Clause *Part E11*	Please refer to specific comments from Council's Floodplain Management Officer.
Setbacks	Refer to comments under Dee Why Town Centre
Unit Configuration	Concerns are raised with the number of apartments proposed on each residential level for the following reasons: • Privacy and separation for noise and amenity for apartments surrounding the courtyard area. • Depth of Unit 8 on Levels 1,2 and 3 • Use of 'snorkel windows along the Oaks Avenue façade • Number of single aspect apartments relating to ventilation and access to sunlight.
Tennis court/Roof Treatment	The proposed roof top tennis court is not supported. This element should not be included in any future application. The roof top is to be a non-trafficable area. Locating the OSD on the roof was raised during the meeting. It is recommended that the OSD not be located on the roof in a tanked arrangement but located below the roof slab in a 'slab hung' arrangement.

Surrounding Development, corner site integration	Reference is made to the Planning Principle for site amalgamation ***(Melissa Grech v Auburn Council (2004)*** and the following three (3) principles set out in the judgement: *Firstly, where a property will be isolated by a proposed development and that property cannot satisfy the minimum lot requirements then negotiations between the owners of the properties should commence as an early stage and prior to the lodgement of the development application.* *Secondly, and where no satisfactory result is achieved from the negotiations, the development application should include details of the negotiations between the owners of the properties. These details should include offers to the owner of the isolated property. A reasonable offer, for the purposes of determining the development application and addressing the planning implications of an isolated lot, is to be based on at least one recent independent valuation and may include other reasonable expenses likely to be incurred by the owner of the isolated property in the sale of the property.* *Thirdly, the level of negotiation and any offers made for the isolated site are matters that can be given weight in the consideration of the development application. The amount of weight will depend on the level of negotiation, whether any offers are deemed reasonable, any relevant planning requirements and provisions of s79C of the Environmental Planning and Assessment Act, 1979.* Details demonstrating consistency with the Planning Principle must be provided with any Development Application. Should amalgamation be unachievable, it is recommended that the proposed development be designed to be adaptable in future should the opportunity for amalgamation with the adjoining site arise.

WARRINGAH LOCAL ENVIRONMENTAL PLAN 2011 (WLEP 2011)

Note: WLEP 2011 can be viewed at Council's website.

Zoning and Permissibility	
Definition of proposed development: **(ref. WLEP 2011 Dictionary)**	***shop top housing*** means one or more dwellings located above ground floor retail premises or business premises. Shop top housing is a type of *residential accommodation*
Zone:	B4 Mixed Use
Permitted with Consent or Prohibited:	Permitted with consent

Principal Development Standards:	
4.3 Height of Buildings	
Standard	**Proposed**
24m	24.7m approx. to lift overrun Pittwater Road – 3 storey podium Oaks Avenue – 2 storey podium
Comment It is recommended that the building be amended to comply with the building height requirement. Any non-compliance should be accompanied by a Clause 4.6 variation. **Note:** Building heights are measured from existing ground level.	

WARRINGAH DEVELOPMENT CONTROL PLAN 2011 (WDCP 2011)

Note: The WDCP can be viewed at Council's website.

Area 7 Dee Why Town Centre

WARRINGAH DEVELOPMENT CONTROL PLAN 2011 (PROPOSED AMENDMENTS)

Amendments to WLEP 2011 also includes changes to the controls contained under Part G of the WDCP 2011.

The draft controls include the following and are to be applied in the design of the development:

Part G1 – Dee Why Mixed Use Area

Section 2 - Desired Future Character

Section 3 – General Development Controls

Clause 3.1 – Key Warringah LEP 2011 controls

The proposal is considered to be capable of achieving consistency with this clause subject to the development being designed to satisfy the requirements in draft WLEP 2011.

Clause 3.2 – General Controls

The proposal is considered to be capable of achieving consistency with this clause subject to the development being designed to satisfy the requirements in this clause.

With regards to facilitating these controls, the following comments are provided:

Front Setback

The front setback of the two podium levels (facing Pittwater Road and Oaks Avenue respectively) are flush with the front setback and are considered consistent with the requirement under Clause 7.14.

Side Setback (East)

The eastern side setback is nil for approximately 2/3 of the building up 9m from the northern boundary where the building alignment finishes.

Side Setback (North)

The northern side setback is also nil aligning with the walls on the boundary of No. 880 Pittwater Road up to the communal courtyard in the north-eastern corner of the site. The plans include a vertical garden on the boundary against the corresponding rear section with nil setback of No. 880 Pittwater Road.

The individual apartments located on this courtyard are considered to be within too close a proximity to each other and should be reduced in number to enable greater compliance with the Apartment Design Guidelines for satisfactory solar access and natural ventilation.

Clause 3.3 – Site Amalgamation

The development will result in the amalgamation of three allotments (lots 2, 3 and 4 of DP 9900) which is consistent with this clause. However, the amalgamation of the subject site with the corner allotment to the south is considered to be a preferred option in that a more comprehensive design outcome could be achieved at a prominent Centre corner.

Evidence is to be provided that attempts have been made to the owner of the corner allotment with a view to amalgamation.

Clause 3.4 – Building Heights

The building is proposed at a height of 24.7m which exceeds the permitted height of 24m by approximately 0.7m. While the draft 'Height of Buildings' map includes a building height of 27m, the planning proposal to amend the LEP height for this site is currently with the State Government Gateway process and therefore cannot be considered for a development application at this stage.

While the minor additional height is not considered unsupportable, it is recommended that the design be refined to incorporate all height within the maximum height limit.

Specialist Advice	
Referral Body	**Comments**
Urban Design	• No ramps or steps should occur within the ground floor 5m setback from the road kerb at Pittwater Road and Oaks Avenue as they form part of the public footpath width continuation. • The proposed half tennis court at the roof level should be deleted as it will create noise nuisance and visual privacy issues. • The solar access study should address shadow impacts to the surrounding existing and new apartments. The alfresco dining area (8m setback from the kerb) on the southern side of Oaks Avenue should get adequate sunlight to ensure shops enjoy good access to natural light (Warringah Development Control Plan » Part G Special Area Controls » G1 Dee Why Mixed Use Area » Area 3 Oaks Avenue). • Building separation distances and privacy separation spaces for visual and acoustic in accordance to the Apartment Design Guide (ADG) should be addressed. • More details to be provided for full compliance of SEPP 65/ ADG especially solar access to neighbouring apartments, natural ventilation and communal open space requirements. • Central plant for air-conditioning units, etc. must not be located on the roof as the maximum building height has been reached. Placement of air-conditioning condenser units on the balconies must be designed for and appropriately screened. • The proposal will potentially isolate the neighbouring corner site to the south and west boundaries for future development. It should consider amalgamation opportunities to enable a more efficient combined basement car park layout.

Flooding Relevant WDCP Clause *Part E11*	• The subject site at 876 Pittwater Road is identified as being subject to flooding. This information is taken from the Dee Why South Catchment Flood Study, 2013. **Flooding** • Both the Pittwater Road and Oaks Avenue frontage is identified as being subject to flooding. • Council completed some major stormwater works in Oaks Avenue and Pittwater Road to reduce the flood hazard in the commercial centre of Dee Why. It is likely that these works would have produced reductions in peak flood depths applicable to 876-878 Pittwater Road. Council does not have property specific flood levels post-construction of the works. However, Council can provide a licence (for a fee) to use the existing flood model and works-as-executed drawings to determine post-construction flood levels. In addition if the peak depth of flooding is less than 300mm then the required freeboard to establish the Flood Planning Level can be reduced to 300mm. • Based on pre-stormwater works levels, the retail premises on Pittwater Road must have a finished floor level at least 500mm above the adjoining Pittwater Road gutter level. Internal ramp access within individual retail stores. • The retail premises fronting Oaks Avenue must have a finished floor level at least 600mm above the adjoining Oaks Avenue gutter level. Internal ramp access within individual retail stores. • The development must comply with all relevant conditions under Part E11 of the Warringah DCP. • Driveway access to basement carpark required to provide cresting to Australian Standards for amended floor levels.
Waste	• The residential section of the development must be serviced by Council waste collection. • 22 x 240 litre bins are required for the residential units. • Bins will need to be collected at street level. Bin storage to be accessed within 6.5m of property boundary, 1:8 grade separate from vehicle access, unobstructed path, no steps or security doors, 1.2m wide door to bin room. • Bulk waste storage to be provided at ground level. $4m^3$/10 dwellings. To be located separate from general waste bin room but adjacent to it. • Commercial waste bins to be stored in accordance with Environmental Health requirements. Private waste collection service agreement required.

Traffic	• Traffic and parking assessment required. • Provide space for removalist trucks to unload. This size of development will require a dedicated area for a removalist truck loading/unloading minimum SRV size including overhead clearance. An operational plan outlining dock use and conflict with visitor spaces would be required. • Basement driveway and layout - Parking allocation and consideration of parking in deep basement floors (i.e. no visitor spaces in B4). • Concerns raised with visitor parking conflicting with loading zone. Visitor parking not to be located within loading dock or bin storage area. • Separation of residential and retail parking to be provided with security gates/ roller shutters etc. • Driveway to be designed with possible consolidation of basement carpark with adjacent site. • Basement link showing how the corner site if not amalgamated can connect in future using the single driveway access for the subject site. As discussed at the meeting with the applicant, the corner development at 874 Pittwater Road would require a driveway and due to its limited size would have a poor layout. It is suggested that arrangements be made to provide a vehicular link to the corner site at the common boundary at basement 1 level. • Residential and retail visitor parking spaces to be provided at higher parking levels for convenience and usability • Visitor spaces to be provided at the higher parking levels. • Pedestrian sight distance at driveway and driveway width to be compliant to Australian Standards AS2890.1:2004. • Driveway width, minimum 5.5m. • Floor grade for disabled AS2890.6 not to exceed 1:40 grade. • The traffic report should outline all trip generation, impact to existing road network and outline car parking requirements. • SIDRA traffic modelling should be undertaken at the intersection of Pittwater Road and Oaks Avenue. Under Council's Dee Why Town Centre Masterplan Oaks Avenue is intended to be a left only arrangement at Pittwater Road. • A soft copy of the traffic modelling file is to be submitted with the traffic report.

Development Engineers	• Drainage – OSD to be provided for the development. • Roof tank proposed. This is not a preferred option, slab hung tank better option, gravity fed. • Basement to be tanked. • Geotechnical report required. • Stormwater discharge into Council pit. Applicant needs to check location of new stormwater pit locations as part of Dee Why Town Centre streetscape works.
Dee Why Town Centre upgrade works	• B-Line kerb splay and blister at Oaks Avenue intersection with Pittwater Road. • Street/kerb planting with new paving proposed. • No stairs/ramps within 5m setback of kerb • Fire hydrants/kiosk to be designed into building and not left as an afterthought.

Relevant Council Policies

You are advised of the following (but not limited to all) Council's policies available at Council's website:

- Applications for Development - Policy for the handling of unclear, non-conforming, insufficient and Amended applications: PDS-POL 140
- Stormwater drainage for low level properties PDS-POL 135
- Vehicle access to all roadside development: LAP-PL 315
- Waste PL 850

Documentation to accompany the Development Application

- Electronic copies (USB)
- Statement of Environmental Effects
- Request to vary a development standard
- Cost of works estimate/ Quote
- Site Plan
- Floor Plan
- Elevations and sections
- A4 Notification Plans
- Survey Plan
- Site Analysis Plan
- Demolition Plan
- Excavation and fill Plan
- Waste Management Plan (Construction & Demolition)
- Waste Management Plan Ongoing
- Certified Shadow Diagrams
- BASIX Certificate

- Energy Performance Report
- Schedule of colours and materials
- Landscape Plan and Landscape Design Statement
- Photo Montage
- Model
- Erosion and Sediment Control Plan / Soil and Water Management Plan
- Stormwater Management Plan / Stormwater Plans and On-site Stormwater Detention (OSD) Checklist
- Stormwater Drainage Assets Plan
- Geotechnical Report
- Acoustic Report
- Flood Risk Assessment Report
- Water Table Report
- Overland Flows Study
- Traffic and Parking Report
- Operational Management Plan for the loading dock
- Construction Traffic Management Plan
- Construction Methodology Plan
- Access Report
- Fire Safety Measures Schedule
- SEPP 65 Report
- Integrated Development Fees
- Contaminated Land Report
- Environmental Impact Statement

Please refer to Development Application Checklist for further detail.

Concluding Comments

These notes are in response to a pre-lodgement meeting held on 22 August 2017 to discuss a proposal for shop top housing at 876 Pittwater Road, Dee Why. The notes reference preliminary plans prepared by Crawford Architects dated July 2017.

The proposal is acceptable and may be supported subject to the amendments discussed at the meeting and detailed in this report. Generally, these issues include:

- Preference for amalgamation of site with the adjoining corner lot No. 874 Pittwater Road
- Deletion of roof top tennis court.
- Reduction in unit numbers on each level in order to achieve adequate solar access, privacy and amenity.
- Redesign of basement parking and bin storage.

Based upon the above comments you are advised to satisfactorily address the matters raised in these notes prior to lodging a development application.

Joanna Wojciechowska

From: Duncan Howley <Duncan.Howley@northernbeaches.nsw.gov.au>
Sent: Thursday, August 24, 2017 4:06 PM
To: Joanna Wojciechowska
Cc: David Wilcox
Subject: Flood information for 876 Pittwater Road, Dee Why
Attachments: 876-878 Pittwater Road, Dee Why 2017.pdf; Guidelines to Prepare a Flood Management Report, 2017.pdf

Hi Joanna,

Please find attached a map of the indicative flood risk precincts for 876-878 Pittwater Road, Dee Why. These extents are indicative only.

As shown on the map, the property is located within the Medium Risk Plan. This is currently the best available information on flooding for the area and is taken from the Dee Why South Catchment Flood Study, 2013.

As discussed Council completed some major stormwater works in Oaks Avenue and Pittwater Road to reduce the flood hazard in the commercial centre of Dee Why. It is likely that these works would have produced reductions in peak flood depths applicable to 876-878 Pittwater Road. Unfortunately Council does not have the results of flood analyses undertaken post-construction. However, Council can provide a licence (for a fee) to use the existing flood model and works-as-executed drawings to determine post-construction flood levels. In addition if the peak depth of flooding is less than 300mm then the required freeboard to establish the Flood Planning Level is 300mm.

The existing Flood Study results indicate that the depth of flooding in the gutters in Pittwater Road and Oaks Avenue in a 1% AEP event is 200mm. All habitable floor levels and basement car park entry ramps must be set at or above the relevant Flood Planning Level. Please compare the peak depth in the gutter to your survey to determine the relative level.

This property is subject to flood related development controls, as detailed in Clause 6.3 of the Warringah Local Environmental Plan 2011 (LEP) and Section E11 of the Warringah Development Control Plan (DCP). Both of the plans are available to view on the eServices section of the Council website. The property is in the Medium Risk Flood Planning Precinct and would therefore be required to address all conditions for this risk category in Section E11 of the DCP. As a general rule any development proposed to be undertaken on land identified as being subject to flooding in a 1 in 100 year flood event must submit a Flood Management Report with the Development Application. The guidelines to undertake this are attached.

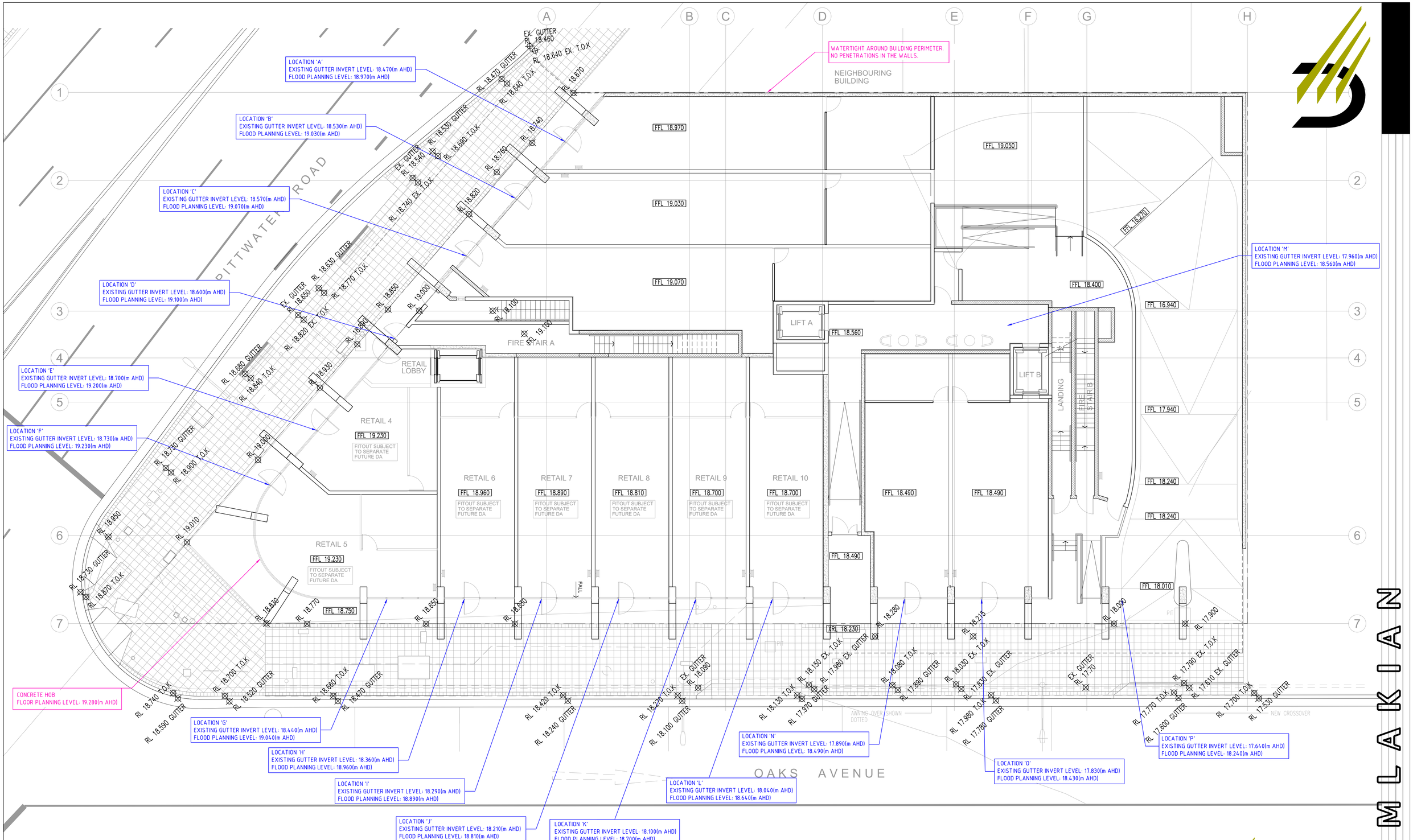
Kind Regards,

Duncan

Duncan Howley
Senior Floodplain Management Officer

Stormwater Floodplain Engineering
t 02 9942 2381 **m** 0417 439 784
duncan.howley@northernbeaches.nsw.gov.au
northernbeaches.nsw.gov.au

northern beaches council



APPENDIX D - GROUND FLOOR PLAN

SCALE 1:100

DEMLAKIAN ENGINEERING
Intelligent Thinking in Engineering

ORIGINAL: A1 DWG

Demlakian Strata & Remedial Pty Limited
T/A Demlakian Consulting Engineers
ABN 42 651 771 142

Level 2, 5 Ridge Street
North Sydney NSW 2060
T: (02) 9955 4485
F: (02) 9955 6122

P.O. Box 6553 North Sydney 2059
E-mail: info@demlakian.com.au
www.demlakian.com.au

DEMLAKIAN

REV.No	DATE	REVISION	BY
P1	19.03.19	PRELIMINARY ISSUE	RAL

NOTE: This drawing must be read in conjunction with ALL other drawings for this project including but not limited to all construction notes.

PRELIMINARY
NOT FOR CONSTRUCTION

ARCHITECT: CRAWFORD ARCHITECTS

CLIENT: DEVELOPMENT LINK

PROJECT: Mixed use Development
8 Oaks Avenue, Dee Why NSW

TITLE: APPENDIX D

DESIGNED: DW	DATE: SEP 2017
DRAWN: RAL	CHECKED: DW

217130

DRAWING: APX D | REVISION: P1