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# Appendix G

## BASIX Assessment

# Assessor Certificate

## Multiple Dwellings

Certificate Version 6.1 Prior versions not valid after 1 March 2006

Issued in accordance with  
BASIX Thermal Comfort Simulation Method



<b>Assessor</b>							
<b>Name</b>	Joel Clayton	<b>Company</b>	Cundall	<b>ABSA #</b>	20888		
<b>Address</b>	Level 7 657 Pacific Highway ST LEONARDS 2065						
<b>Phone</b>	(02) 8424 7000	<b>Fax</b>	(02)8424 7099	<b>Email</b>	jclayton@cundall.com.au		
<b>Declaration of interest</b>	The Assessor has provided design advice to the Applicant						
<b>Client</b>							
<b>Name</b>	Michael Viskovich	<b>Company</b>	ARV				
<b>Address</b>	Level 2 Century Corporate Centre 62 Norwest Boulevard Baulkham Hills NSW 2153						
<b>Phone</b>	02 9421 5316	<b>Fax</b>	02 9421 2217	<b>Email</b>	michael.viskovich@arv.org.au		
<b>Project</b>							
<b>Address</b>	6 Macpherson St Randwick Warriewood NSW 2102						
<b>Applicant</b>	ARV	<b>LGA</b>	Pittwater				
<b>Assessment</b>							
<b>Date</b>	07/10/2010	<b>File ref</b>	1002801	<b>Software</b>	AccuRate	<b>Version</b>	1.1.4.1

### Documentation

All details upon which this assessment has been based are included in the project documentation that has been stamped and signed by the Assessor issuing this certificate as identified below

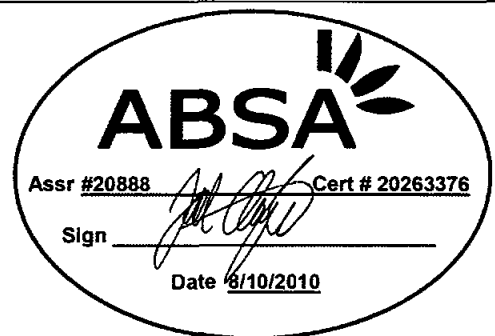
### Thermal Performance Spec

Affixed to drawings Page# arsk0001

### Drawings

arsk0001 → arsk0003

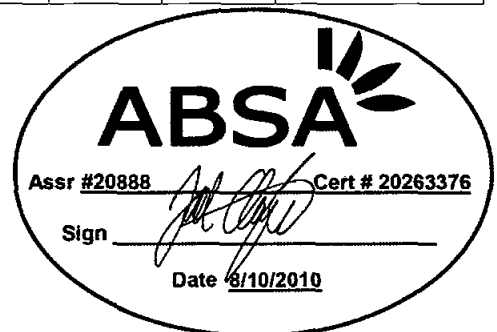
**Building Specifications** (Title Ref # Revision Issue date etc)



**ABSA Assessor Certificate** Assessor # 20888 Certificate # 20263376 Issued: 07/10/2010  
**Thermal performance specifications** Page 1 of 2

Unit number(s)	Certificate number	Floor area (M <sup>2</sup> )		Predict loads (MJ/M <sup>2</sup> /y)		U Value	SHGC	Qualify for ventilation bonus
		Cond	Uncond	Heat	Cool (Sens & Lat)			
1	20263376	98.5	5.5	37.7	5.6	5.83	0.75	
2	88151981	108.4	5.5	47.8	7.0	5.83	0.75	
3	83615361	98.5	5.5	36.2	6.5	5.83	0.75	
4	26280344	93.6	5.94	22.5	9.0	5.83	0.75	
5	75425186	83	3.73	32.7	17.9	5.83	0.75	
6	58634777	122	3	56.7	16.2	2.32	0.65	
7	81258518	113.3	4	60.7	18.9	2.32	0.65	
8	71441316	122	3	58.2	18.0	2.32	0.65	
9	99518857	122	3	62.4	16.2	2.32	0.65	

Unit number(s)	Certificate number	Floor area (M <sup>2</sup> )		Predict loads (MJ/M <sup>2</sup> /y)		U Value	SHGC	Qualify for ventilation bonus
		Cond	Uncond	Heat	Cool (Sens & Lat)			
10	46314912	101.6	3	57.8	16.8	2.32	0.65	
11	80256064	86.7	3.73	55.7	31.5	5.83	0.75	
12	54660865	107.7	5	42.1	10.6	5.83	0.75	
13	11749397	121.5	3	47.9	13.1	5.83	0.75	
14	75575601	107	3	41.2	10.8	5.83	0.75	
15	18749392	112	3	52.1	10.7	5.83	0.75	
16	21234473	112	3	54.9	11.0	5.83	0.75	
17	57602197	95.4	3	36.3	9.8	5.83	0.75	
18	62265123	106.9	3	62.0	9.3	5.83	0.75	
19	66882164	106.9	3	62.1	9.6	5.83	0.75	
20	44615433	109.2	3.53	51.4	17.0	5.83	0.75	
21	67902567	109.2	3.53	65.9	11.7	5.83	0.75	
22	26834754	96.6	3.53	58.8	9.3	2.32	0.65	
23	74316273	118.4	3	47.8	6.8	2.32	0.65	
24	57640045	95.4	2.6	51.9	14.8	2.32	0.65	
25	17379854	95.4	3	62.0	6.2	2.32	0.65	



Assessor # 20888

Certificate # 20263376

Issued 08/10/2010

**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	Detail
		Single Clear	Aluminium	5.83	0.75	All except below
		Double Clear	Aluminium	2.32	0.65	6-10 22-25

Skylights	Product ID	Glass	Frame	U value	SHGC	Area M <sup>2</sup>	Detail
None							

Window and skylight U and SHGC values if specified are according to NFRC 100. 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
Brick Veneer		R2.5	Dark	All Units
Timber (Exposed Studs) + Brick Veneer		R2.5	Dark	Units 6-25

Internal walls	Construction	Insulation	Detail
Plasterboard on studs		None	

Floors	Construction	Insulation	Covering	Detail
Concrete		None	Carpet & Tile	As per Plan

Ceilings	Construction	Insulation	Detail
Timber Lining		None	

Roof	Construction	Insulation	Colour – solar abs	Detail
Metal Deck		R4.0	Dark	As per Plan

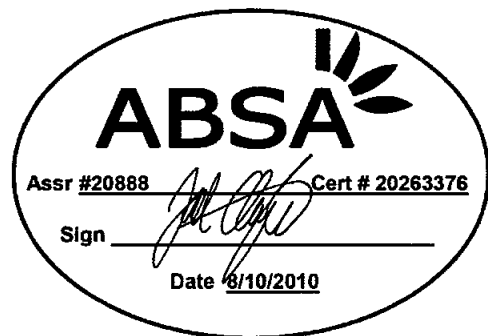
Window cover	Internal (curtains)	External (awnings shutters etc)
None		None

Fixed shading	Eaves (width - inc gutters h't above windows)	Verandahs Pergolas (type description)
		Balconies

Overshadowing	Overshadowing structures	Overshadowing trees

Orientation, Exposure Ventilation and Infiltration	
Orientation of nominal north	Vanes
Terrain category	Suburban
Roof ventilation	Unventilated
Cross ventilation	Standard
Subfloor	Open/Enclosed
Living area open to entry	Yes
Doors separate living areas	No
Stair open to heated areas	No
Seals to windows and doors	Yes
Exhaust fans without dampers	No
Ventilated skylights	No
Open fire unflued gas heat	No
Vented downlights	No
Wall and ceiling vents	No

ABSA Assessor stamp



# BASIX<sup>®</sup> Certificate

Building Sustainability Index [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

## Multi Dwelling

Certificate number 334372M

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 29/06/2009 published by the Department of Planning. This document is available at [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

Director General

Date of issue Friday 08 October 2010



Planning

Project summary	
Project name	Warriewood Brooks Retirement DA Oct 2010
Street address	6 Macpherson Street Warriewood 2102
Local Government Area	Pittwater Council
Plan type and plan number	deposited 400488
Lot no	B
Section no	-
No of unit buildings	1
No of units in unit buildings	25
No of attached dwelling houses	0
No of separate dwelling houses	0
Project score	
Water	✓ 42 Target 40
Thermal Comfort	✓ Pass Target Pass
Energy	✓ 35 Target 35

### Certificate Prepared by (please complete before submitting to Council or PCA)

Name / Company Name

ABN (if applicable)

<b>Project address</b>	
Project name	Warewood Brooks Retirement DA Oct 2010
Street address	6 Macpherson Street Warewood 2102
Local Government Area	Pittwater Council
Plan type and plan number	deposited 400488
Lot no	B
Section no	-
<b>Project type</b>	
No of unit buildings	1
No of units in unit buildings	25
No of attached dwelling houses	0
No of separate dwelling houses	0
<b>Site details</b>	
Site area (m <sup>2</sup> )	7377
Roof area (m <sup>2</sup> )	4025
Non-residential floor area (m <sup>2</sup> )	1677
Residential car spaces	26
Non-residential car spaces	11

<b>Common area landscape</b>	
Common area lawn (m <sup>2</sup> )	1007
Common area garden (m <sup>2</sup> )	1878
Area of indigenous or low water use species (m <sup>2</sup> )	1878
<b>Assessor details</b>	
Assessor number	20888
Certificate number	20263376
Climate zone	56
<b>Project score</b>	
Water	✓ 42 Target 40
Thermal Comfort	✓ Pass Target Pass
Energy	✓ 35 Target 35

## Description of project

The tables below describe the dwellings and common areas within the project

### Unit building - Building1, 25 dwellings, 2 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m <sup>2</sup> )	Unconditioned floor area (m <sup>2</sup> )	Area of garden & lawn (m <sup>2</sup> )	Indigenous species (min area m <sup>2</sup> )	Dwelling no.	No. of bedrooms	Conditioned floor area (m <sup>2</sup> )	Unconditioned floor area (m <sup>2</sup> )	Area of garden & lawn (m <sup>2</sup> )	Indigenous species (min area m <sup>2</sup> )	Dwelling no.	No. of bedrooms	Conditioned floor area (m <sup>2</sup> )	Unconditioned floor area (m <sup>2</sup> )	Area of garden & lawn (m <sup>2</sup> )	Indigenous species (min area m <sup>2</sup> )	Dwelling no.	No. of bedrooms	Conditioned floor area (m <sup>2</sup> )	Unconditioned floor area (m <sup>2</sup> )	Area of garden & lawn (m <sup>2</sup> )	Indigenous species (min area m <sup>2</sup> )
1	2	1020	00	0	0	2	2	1020	00	0	0	3	2	1060	00	0	0	4	3	1170	00	0	0
5	2	1050	00	0	0	6	3	1220	00	0	0	8	3	1260	00	0	0	16	3	1260	00	0	0
9	3	1180	00	0	0	10	3	1180	00	0	0	11	2	960	00	0	0	12	2	990	00	0	0
13	3	1210	00	0	0	14	3	1340	00	0	0	15	3	1330	00	0	0	16	2	1010	00	0	0
17	3	1210	00	0	0	18	2	1170	00	0	0	19	2	950	00	0	0	20	3	1260	00	0	0
21	2	1120	00	0	0	22	3	1270	00	0	0	23	3	1270	00	0	0	24	2	1040	00	0	0
25	2	1040	00	0	0																		

## Description of project

The tables below describe the dwellings and common areas within the project

### Common areas of unit building - Building1

Common area	Floor area (m <sup>2</sup> )	Common area	Floor area (m <sup>2</sup> )	Common area	Floor area (m <sup>2</sup> )
Indoor pool &/or spa area	30	Gym	12	Car park area	1020
Lift car (No 1)	-	Lift car (No 2)	-	All Switch/Comm rooms	20
All Garbage rooms	35	All Plant or service rooms	22	Multipurpose Room	40
Kitchen/caf�	30	Large meeting room	10	small lounge/meeting rooms	32
store	38	Ground floor lobby type	60	All Hallway/lobby type	62



## Schedule of BASIX commitments

- 1 Commitments for unit building - Building 1
  - (a) Dwellings
    - (i) Water
    - (ii) Energy
    - (iii) Thermal Comfort
  - (b) Common areas and central systems/facilities
    - (i) Water
    - (ii) Energy
- 2 Commitments for attached dwelling houses
- 3 Commitments for separate dwelling houses
- 4 Commitments for common areas and central systems/facilities for the development (non-building specific)
  - (i) Water
  - (ii) Energy

## Schedule of BASIX commitments

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

### 1 Commitments for unit building - Building1

#### (a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below as private landscaping for that dwelling (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table)	✓	✓	✓
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling where indicated for a dwelling in the "HW recirculation or diversion" column of the table below		✓	✓
(e) The applicant must install <ul style="list-style-type: none"> <li>(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling where indicated for a dwelling in the "HW recirculation or diversion" column of the table below and</li> <li>(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling</li> </ul>		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling with a volume exceeding that specified for it in the table below	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both)		✓	
(g) The pool or spa must be located as specified in the table	✓	✓	
(h) The applicant must install for the dwelling each alternative water supply system with the specified size listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system) and to divert overflow as specified. Each system must be connected as specified	✓	✓	✓

Dwelling no.	Fixtures					Appliances			Individual pool				Individual spa		
	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded	
All dwellings	3 star (> 7.5 but <= 9 L/min)	4 star	6 star	6 star	no	-	4 star	-	-	-	-	-	-	-	

Dwelling no.	Alternative water source		Configuration	Size	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
	Alternative water supply systems	Central systems							
All dwellings	central water tank (no 1)	See central systems	See central systems	-	yes	yes	no	no	no
None	-	-	-	-	-	-	-	-	-

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

<b>(ii) Energy</b>	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the Natural lighting column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: <ul style="list-style-type: none"> <li>(aa) install the system specified for the pool in the 'Individual Pool' column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer to control the pool's pump; and</li> <li>(bb) install the system specified for the spa in the 'Individual Spa' column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.</li> </ul>		✓	
(h) The applicant must install in the dwelling: <ul style="list-style-type: none"> <li>(aa) the kitchen cook-top and oven specified for that dwelling in the 'Appliances &amp; other efficiency measures' column of the table below;</li> <li>(bb) each appliance for which a rating is specified for that dwelling in the 'Appliances &amp; other efficiency measures' column of the table; and ensure that the appliance has that minimum rating; and</li> <li>(cc) any clothes drying line specified for the dwelling in the 'Appliances &amp; other efficiency measures' column of the table.</li> </ul>		✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is well ventilated.		✓	✓

	Hot water	Bathroom ventilation system	Kitchen ventilation system	Laundry ventilation system
Dwelling no.	Hot water system	Each bathroom	Each kitchen	Each laundry
All dwellings	central hot water system 1	individual fan ducted to façade or roof	individual fan not ducted	individual fan ducted to façade or roof
		Operation control	Operation control	Operation control
		manual on / timer off	manual on / timer off	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
All dwellings	1-phase airconditioning 2.5 Star (new rating)	1-phase airconditioning 2.5 Star (new rating)	1 phase airconditioning 2.5 Star (new rating)	1-phase airconditioning 2.5 Star (new rating)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Appliances & other efficiency measures										
	Individual pool					Individual spa					Private outdoor or unsheltered clothes drying line
Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	
1 2 3 4 5	-	-	-	induction cooktop & electric oven	-	no	4 star	-	2.5 star	no	yes
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	-	-	-	induction cooktop & electric oven	-	no	4 star	-	2.5 star	no	no

**(iii) Thermal Comfort**

(a) The applicant must attach the certificate referred to under Assessor details on the front page of this BASIX certificate (the Assessor Certificate) to the development application and construction certificate application for the proposed development (or if the applicant is applying for a complying development certificate for the proposed development to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.

Show on DA plans	Show on CC/CDC plans & specs	Certifier check

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

<b>Thermal loads</b>			
<b>Dwelling no.</b>	<b>Area adjusted heating load (in mJ/m<sup>2</sup>/yr)</b>	<b>Area adjusted cooling load (in mJ/m<sup>2</sup>/yr)</b>	
1	37.7	5.6	
2	47.8	7	
3	36.2	6.5	
4	22.5	9	
5	32.7	17.9	
6	56.7	16.2	
7	60.7	18.9	
8	58.2	18	

Thermal loads		
Dwelling no.	Area adjusted heating load (in mJ/m <sup>2</sup> /yr)	Area adjusted cooling load (in mJ/m <sup>2</sup> /yr)
9	62 4	16 2
10	57 8	16 8
11	55 7	31 5
12	42 1	10 6
13	47 9	13 1
14	41 2	10 8
15	52 1	10 7
16	54 9	11
17	36 3	9 8
18	62	9 3
19	62 1	9 6
20	51 4	17
21	65 9	11 7
22	58 8	9 3
23	47 8	6 8
24	51 9	14 8
All other dwellings	62	6 2

**(b) Common areas and central systems/facilities**

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but ≤ 9 L/min)	4 star	5 star	5 star

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No 1)	5000	To collect run-off from at least - 323.5 square metres of roof area of buildings in the development - 0 square metres of impervious area in the development - 0 square metres of garden/lawn area in the development - 0 square metres of planter box area in the development (excluding in each case any area which drains to or supplies any other alternative water supply system)	- Irrigation of 288.4 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Pool (No 1)	Volume 12.2 KLs	Location Indoor pool &/or spa area	-



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

<b>Common area ventilation system</b>				<b>Common area lighting</b>			
<b>Common area</b>	<b>Ventilation system type</b>	<b>Ventilation efficiency measure</b>	<b>Primary type of artificial lighting</b>	<b>Lighting efficiency measure</b>	<b>Lighting control system/BMS</b>		
Indoor pool &/or spa area	air conditioning system	time clock or BMS controlled	fluorescent	daylight sensors	No		
Gym	air conditioning system	time clock or BMS controlled	fluorescent	time clocks	No		
Car park area	no mechanical ventilation		fluorescent	zoned switching with motion sensor	No		
Lift car (No 1)		-	fluorescent	connected to lift call button	No		
Lift car (No 2)		-	fluorescent	connected to lift call button	No		
All Switch/Comm rooms	ventilation exhaust only	thermostatically controlled	fluorescent	motion sensors	No		
All Garbage rooms	ventilation exhaust only	-	fluorescent	motion sensors	No		
All Plant or service rooms	ventilation (supply + exhaust)	thermostatically controlled	fluorescent	motion sensors	No		
Multipurpose Room	air conditioning system	time clock or BMS controlled	fluorescent	daylight sensor and motion sensor	No		
Kitchen/cafe	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	daylight sensor and motion sensor	No		
Large meeting room	air conditioning system	time clock or BMS controlled	fluorescent	time clocks	No		
small lounge/meeting rooms	air conditioning system	time clock or BMS controlled	fluorescent	time clocks	No		
store	no mechanical ventilation	-	fluorescent	motion sensors	No		

Common area ventilation system			Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Ground floor lobby type	ventilation exhaust only	time clock or BMS controlled	fluorescent	daylight sensor and motion sensor	No
All Hallway/lobby type	ventilation exhaust only	time clock or BMS controlled	fluorescent	daylight sensor and motion sensor	No

Central energy systems		Specification
	Type	
Central hot water system (No 1)	electric heat pump - gas boosted	Piping insulation (ringmain & supply risers) (a) Piping external to building R1.0 (~38 mm) (b) Piping internal to building R1.0 (~38 mm)
Lift (No 1)	gearless traction with V V V F motor	Number of levels (including basement) 2
Lift (No 2)	gearless traction with V V V F motor	Number of levels (including basement) 2
Pool (No 1)	Heating source electric heat pump	Solar collector area (minimum in square metres) Pump controlled by timer yes

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

##### (b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but ≤ 9 L/min)	4 star	5 star	5 star

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

Central energy systems		
Alternative energy supply	Type	Specification
	Photovoltaic system	Rated electrical output (min) 10 peak kW

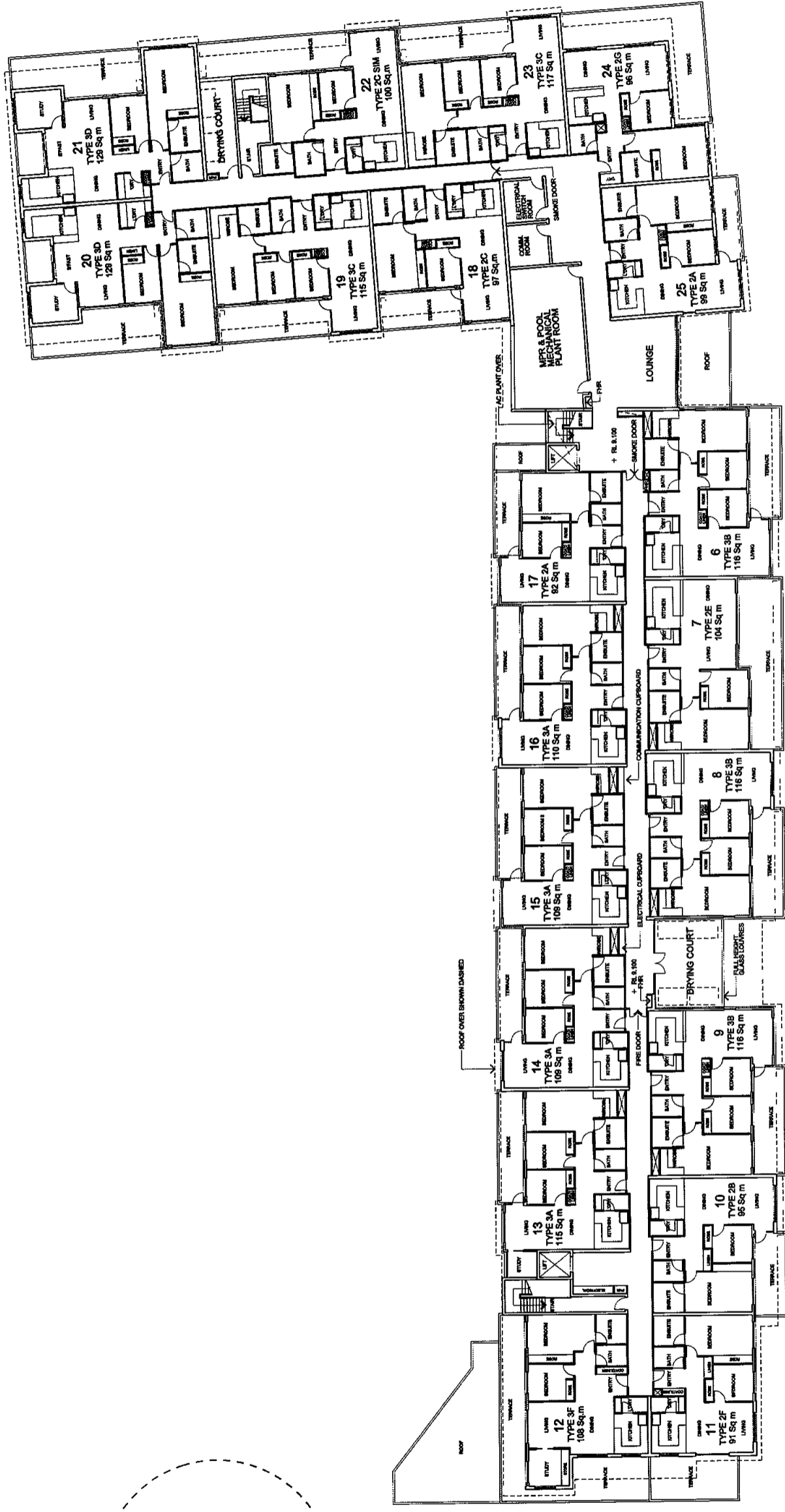
## Notes

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

## Legend

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





BOUNDARY



**PRELIMINARY**

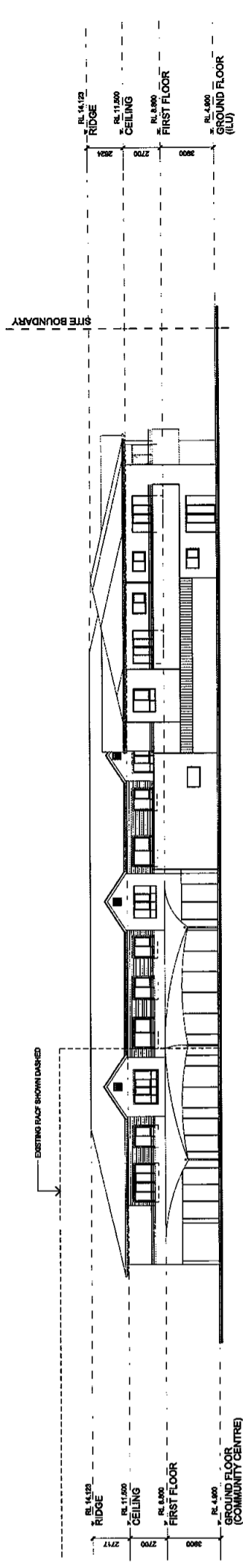


**WARRIEWOOD BROOK RETIREMENT VILLAGE STAGE 3**

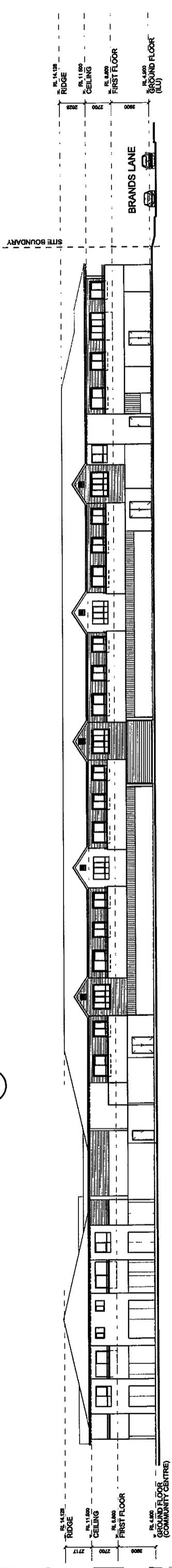
FIRST FLOOR PLAN

DATE: 22-08-10 1,200  
 PROJ NO: 5105-01  
 DRAWING NO: a18  
 ARCHITECT: nrp architecture  
 LEVEL: 8 15 help street, chatswood, NSW 2087  
 T: (02) 8886 6001 F: (02) 8886 6128  
 E: mail@nrparchitecture.com.au

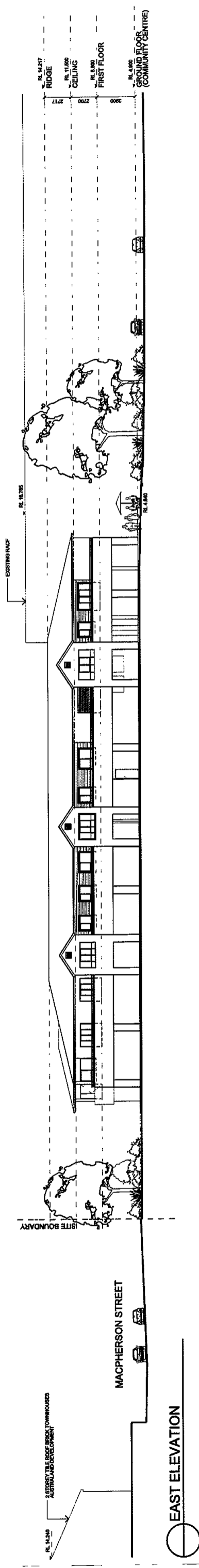
I certify that I am a registered building surveyor in New South Wales and that I have prepared this plan in accordance with the Building Act 1993 and the Building Regulation 2006. I am not providing any warranty or guarantee for the accuracy of this plan. I am not responsible for any errors or omissions in this plan. I am not responsible for any costs or expenses incurred by any party in reliance on this plan. I am not responsible for any consequences of any action taken in reliance on this plan. I am not responsible for any loss or damage of any kind, including but not limited to, direct, indirect, special, consequential or punitive damages, arising out of or in connection with the use of this plan. I am not responsible for any claims, damages, losses, costs or expenses of any kind, including but not limited to, direct, indirect, special, consequential or punitive damages, arising out of or in connection with the use of this plan. I am not responsible for any claims, damages, losses, costs or expenses of any kind, including but not limited to, direct, indirect, special, consequential or punitive damages, arising out of or in connection with the use of this plan.



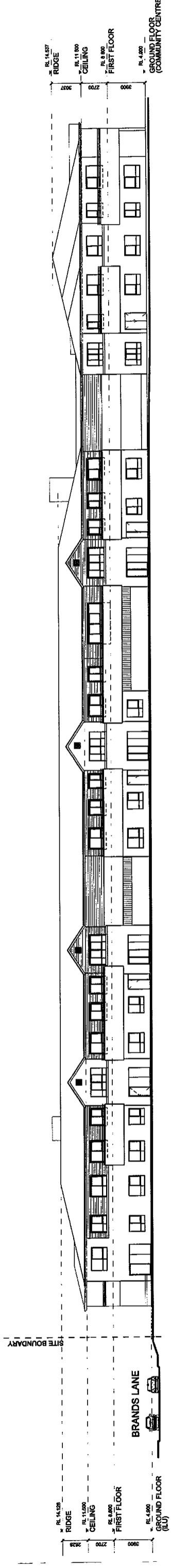
WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION



**PRELIMINARY**



**WARRIWOOD BROOK RETIREMENT VILLAGE STAGE 3**

ELEVATIONS

I, the undersigned, being a duly qualified architect, hereby certify that this is a true and correct copy of the drawings as submitted to me by the client for the purpose of obtaining a building permit for the construction of the works shown thereon.