BASIX® Certificate

Building Sustainability Index www.basix.nsw.gov.au

Multi Dwelling

Certificate number: 986136M_05

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 10/09/2020 published by the Department. This document is available at www basix nsw.gov.au

Secretary
Date of issue: Monday, 13 September 2021
To be valid, this certificate must be lodged within 3 months of the date of issue.

NSW GOVERNMENT | Planning, Industry & Environment

Project summary	
Project name	61318, 24 Claremont St_05
Street address	24 Claremont Street Campsie 2194
Local Government Area	Canterbury-Bankstown Council
Plan type and plan number	deposited 4357
Lot no.	61
Section no.	-
No. of residential flat buildings	0
No. of units in residential flat buildings	0
No. of multi-dwelling houses	4
No. of single dwelling houses	0

Project score		
Water	✔ 40	Target 40
Thermal Comfort	✔ Pass	Target Pass
Energy	✔ 50	Target 50

Certificate Prepared by
Name / Company Name: Max Brightwell
ABN (if applicable): 95897024384

Description of project

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Project type	
No. of residential flat buildings	0
No. of units in residential flat buildings	0
No. of multi-dwelling houses	4
No. of single dwelling houses	0
Site details	
Site area (m²)	650.29
Roof area (m²)	263.36
Non-residential floor area (m²)	0.0
Residential car spaces	8
Non-residential car spaces	1

Common area landscape		
Common area lawn (m²)	62.66	
Common area garden (m²)	58.5	
Area of indigenous or low water use species (m²)	0.0	
Assessor details		
Assessor number	20920	
Certificate number	0005025350	
Climate zone	56	
Ceiling fan in at least one bedroom	No	
Ceiling fan in at least one living room or other conditioned area	No	
Project score		
Water	✔ 40	Target 40
Thermal Comfort	✔ Pass	Target Pass
Energy	✔ 50	Target 50

Description of project

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

Multi-dwelling houses

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
1	4 or more bedrooms	104.9	0.0	39.81	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
2	3	100.1	6.3	10.42	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
3	3	111.7	0.0	9.6	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
4	1	124.8	0.0	19.6	0.0

Description of project

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

Common areas of the development (non-building specific)

Common area	Floor area (m^2)
Basement	295.8

Schedule of BASIX commitments

1. Commitments for multi-dwelling houses

    (a) Dwellings

        (i) Water

        (ii) Energy

        (iii) Thermal Comfort

2. Commitments for single dwelling houses

3. 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 multi-dwelling houses

(a) Dwellings

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

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	5 star	no	-	-	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All dwellings	individual water tank (no. 1)	Tank size (min) 1500.0 litres	To collect run-off from at least: 30.0 square metres of roof area;	yes	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.		✔	✔

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 4 star	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/ toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
1	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	4	2	yes	yes	yes	yes	1	no
4	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	1	1	yes	yes	yes	yes	1	yes
All other dwellings	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	1-phase airconditioning 3 star (average zone) (zoned)	3	2	yes	yes	yes	yes	2	yes

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

	Alternative energy
Dwelling no.	Photovoltaic system (min rated electrical output in peak kW)
All dwellings	-

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

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
1	21.6	15.9
2	35.4	9.3
3	28.8	8.0
All other dwellings	38.8	19.9

	Construction of floors and walls				
Dwelling no.	**Concrete slab on ground(m²)**	**Suspended floor with open subfloor (m²)**	**Suspended floor with endclosed subfloor (m²)**	**Suspended floor above garage (m²)**	**Primarily rammed earth or mudbrick walls**
1	-	5	-	58	No
2	-	-	-	52	No
3	-	8	-	44	No
All other dwellings	-	-	-	58	No

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

(b) Common areas and central systems/facilities

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

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

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

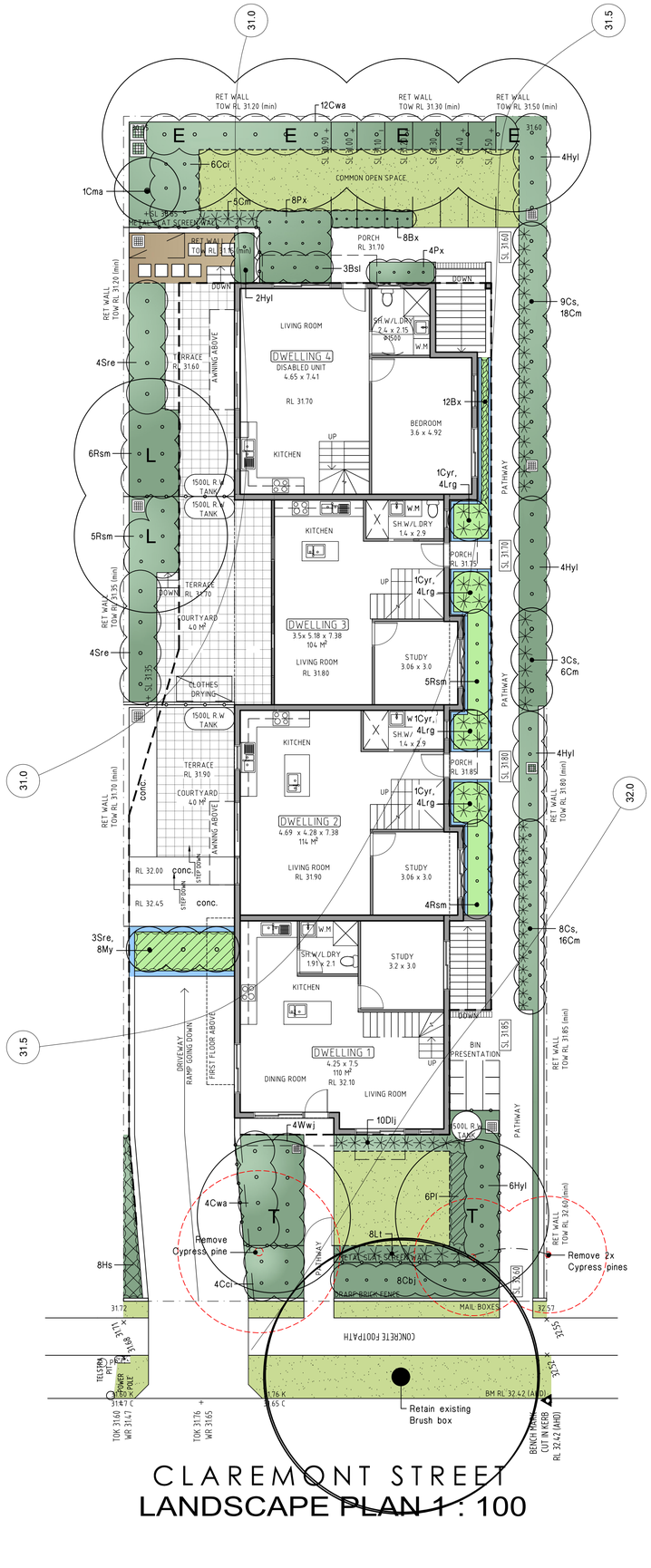
	Common area ventilation system		Common area lighting		
Common area	**Ventilation system type**	**Ventilation efficiency measure**	**Primary type of artificial lighting**	**Lighting efficiency measure**	**Lighting control system/BMS**
Basement	no mechanical ventilation	-	fluorescent	daylight sensor and motion sensor	No

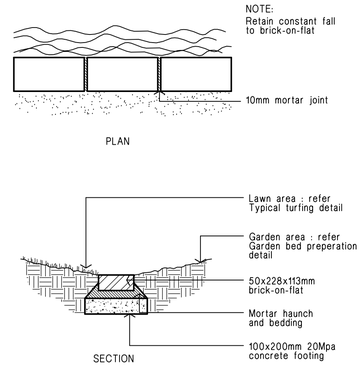
Notes

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.

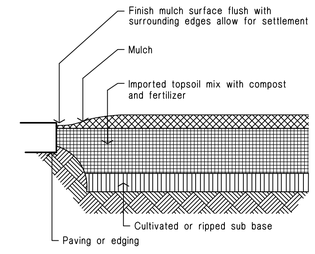
Legend

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).

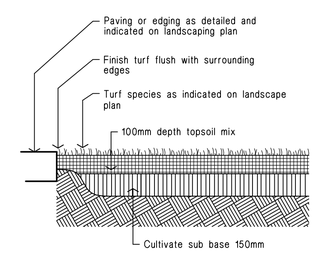




Brick garden edge Detail.



Ground preparation Planting area using imported topsoil Detail. Not.To.Scale.



Ground preparation Grassed area: turf using imported topsoil Detail. Not.To.Scale.

PLANT SCHEDULE

Code	Latin Name (Common Name - Mature Height)	Qty	Size	Stake
Trees				
E	Elaeocarpus eumundii (Smooth leaved Quandong - 8m)	4	35 litre	yes
L	Lagerstroemia indica 'Natchez' (Crepe myrtle - 5m)	2	35 litre	yes
T	Tristania laurina 'Luscious' (Water Gum - 10m)	2	35 litre	yes
Shrubs				
Bsl	Blechnum 'Silver lady' (Water fern - 0.7m)	3	5 litre	-
Bx	Buxus microphylla 'Japonica' (Box - 1m)	20	5 litre	-
Cs	Camellia sasanqua (Sasanqua - 3m)	20	15 litre	yes
Cbj	Callistemon 'Better John' (Dwarf Bottlebrush - 1m)	8	5 litre	-
Cma	Callistemon 'Macarthur' (Bottlebrush - 1.8m)	1	5 litre	-
Cyr	Cycas revoluta (Cycad - 1.5m)	4	5 litre	-
Cci	Casuarina 'Cousin it' (Prostrate casuarina - 0.3m)	10	5 litre	-
Cwa	Callistemon 'White Anzac' (White Bottlebrush - 1.5m)	16	5 litre	-
Hyl	Hymenosporum flavum 'Lushious' (Native frangipani - 0.5m)	20	5 litre	-
Px	Phillodendron xanadu (Dwarf phillodendron - 0.5m)	12	5 litre	-
Rsm	Raphiolepis 'Snow maidens' (Indian hawthorne - 0.75m)	20	5 litre	-
Sre	Syzygium australe 'Resilience' (Lilly Pilly - 3m)	11	5 litre	-
Wwj	Westringia 'Wynyabbie gem' (Coastal rosemary - 2m)	4	5 litre	-
Groundcovers				
Cm	Clivea miniata (Kaffir lilly - 0.5m)	45	150mm	pot
Dlj	Dianella 'Little jess' (Dianella - 0.4m)	10	150mm	pot
Hs	Hibbertia scandens (Guinea flower - climber)	8	150mm	pot
Lrg	Liriope 'Evergreen Giant' (Giant liriope - 0.5m)	16	150mm	pot
Lt	Lomandra longifolia 'Tanika' (Fine leaf dwarf lomandra - 0.6m)	8	150mm	pot
My	Myoporum parvifolium (Creeping Boobiala - 0.2m)	8	150mm	pot
Pl	Poa labillardierii (Native clump poa grass - 1m)	6	150mm	pot

LEGEND

turf
Excavate / grade all areas to be turfed to 120mm below required finished levels. Do not excavate within 1500mm of the trunk of any existing tree to be retained. Ensure that all surface water runoff is directed towards inlet pits, kerbs etc.. and away from buildings. Ensure that no ponding will occur. Rip the subgrade to 150mm. Install 100mm depth of imported topsoil. Just prior to spreading the turf, spread "Shirley's No. 17 lawn fertilizer" over the topsoil at the recommended rate. Lay "Kikuyu" turf rolls closely butted. Fill and small gaps with topsoil. Water thoroughly.

brick garden edging
Lay a single coarse of paving bricks in a mortar haunch (200mm wide and 100mm deep). The edges are to be laid in even curves and straight lines as shown on the plan. Where tight curves are shown use half bricks to show a more even curve. The top of the edges to finish flush with the adjacent turf and mulch levels.

existing trees to be removed
...

existing trees to be retained
...

planter boxes
Planter box on top of concrete slab (Refer to detail)

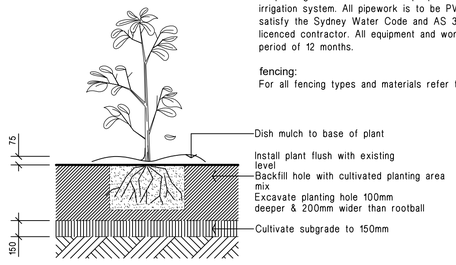
stepping stones
Precast concrete stepping stones in decorative gravel mulch

planting areas
Ensure that the mass planting areas have been excavated to 300mm below finished levels. Rip to a further depth of 150mm. Supply and install 300mm soil mix. Soil mix to comprise of one part approved compost to three parts topsoil. Topsoil shall be either imported topsoil or stockpiled site topsoil (if suitable ie: No clay). Install 75mm depth of selected mulch.

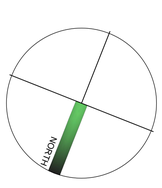
maintenance:
All landscape works are to be maintained for a period of three months from the date of practical completion. This includes all watering, weeding, spraying and re-mulching necessary to achieve vigorous growth. Any defects which arise during this period are to be rectified immediately. Any plants or areas of turf which fail during this period are to be replaced at no additional cost.

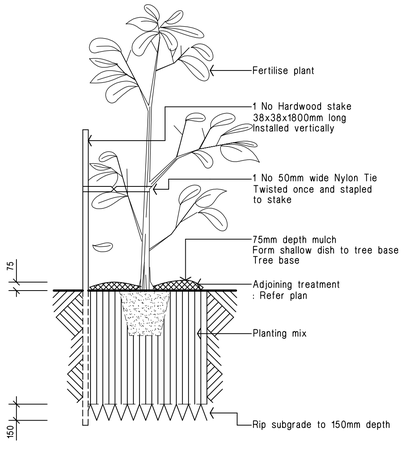
irrigation:
All planting areas on the landscape plan are to be covered by a fully automatic drip irrigation system. All pipework is to be PVC to satisfy AS 1477. All installation is to satisfy the Sydney Water Code and AS 3500. The system is to be installed by a suitable licenced contractor. All equipment and workmanship is to be guaranteed for a minimum period of 12 months.

fencing:
For all fencing types and materials refer to the Architects plans.

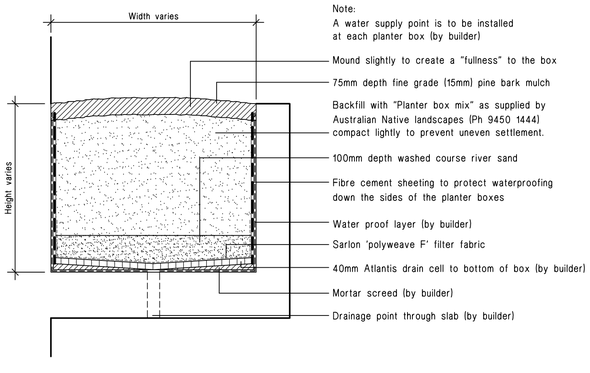


Planting in garden beds Detail. Not.To.Scale.





15 - 35 litre Tree planting Detail. Not.To.Scale.



Typical planter box Detail. Not.To.Scale.

ANDREASENS GREEN
WHOLESALE NURSERIES

DATE	AMENDMENT	ISSUE

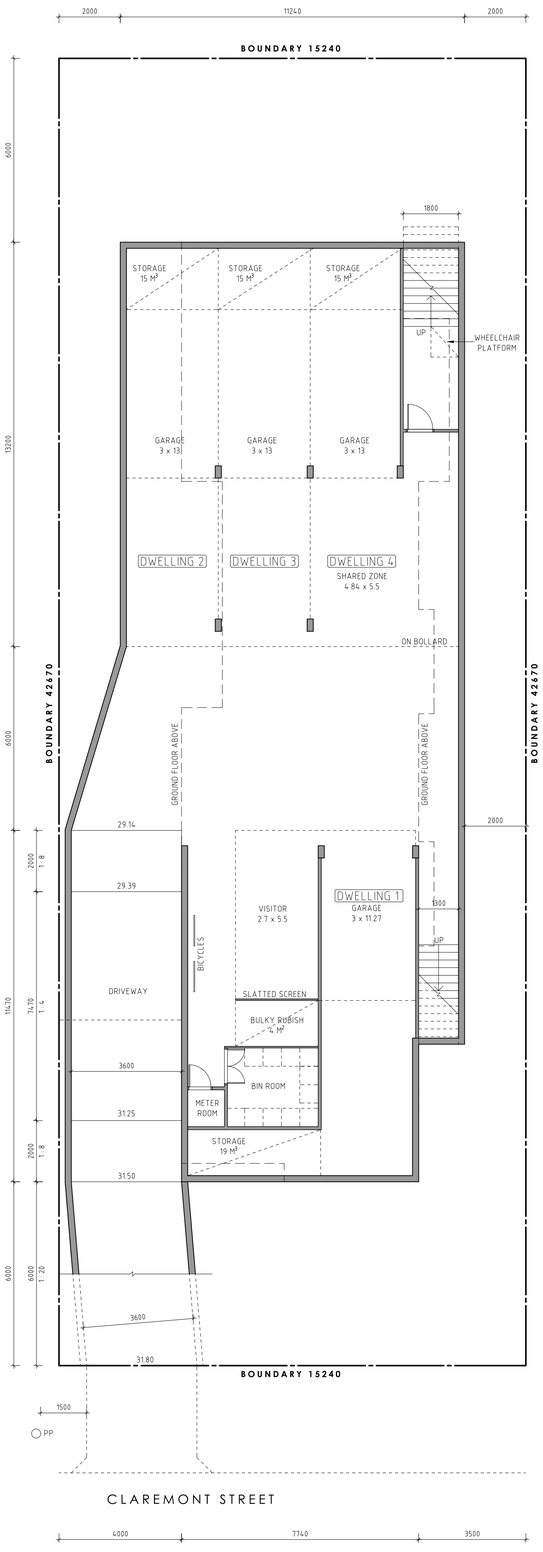
+ RAY FUGGLE ASSOCIATES
landscape architects
18 NEW FARM ROAD
WEST PENNANT HILLS
NSW 2125
email: RAY@fuggle.net.au
m 0412 294 712
landscape architects abn 76 003 773 939

Project:
PROPOSED FOUR TOWNHOUSES
No. 24 Claremont Street,
CAMPSIE

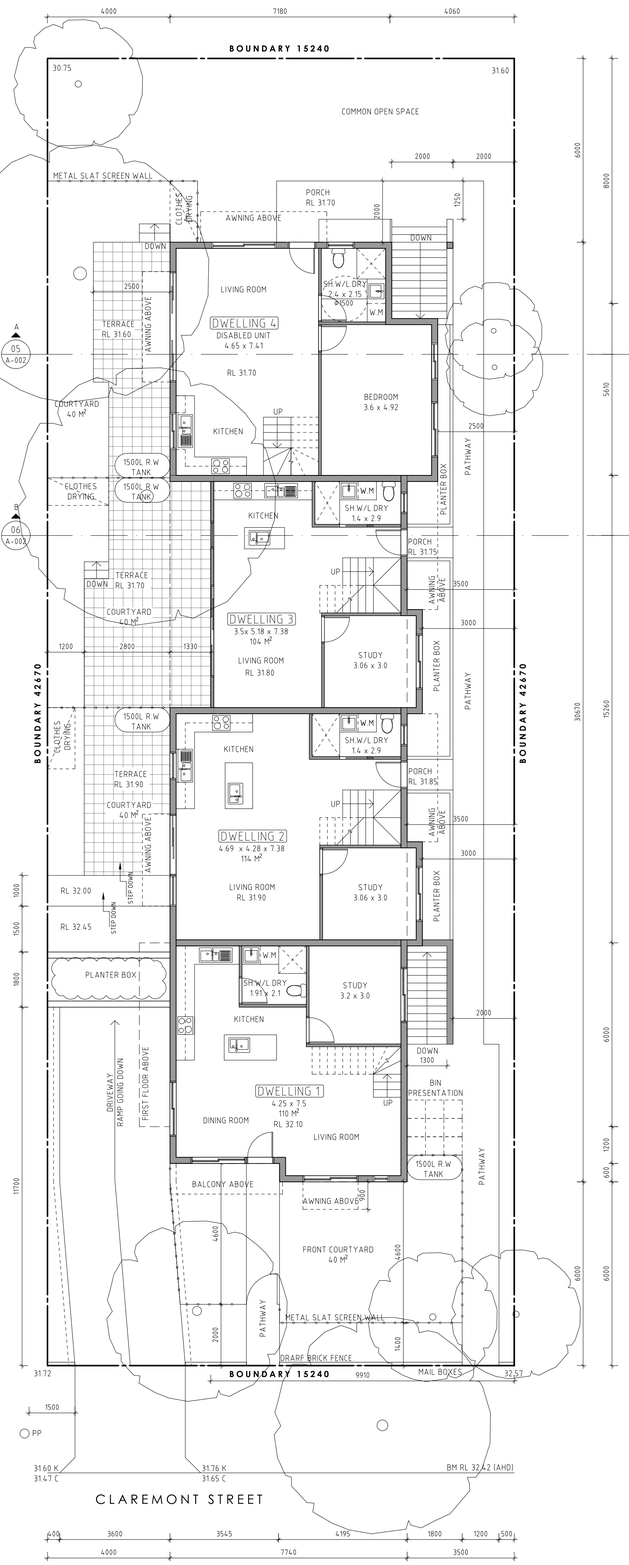
Client:
J L S DEVELOPMENTS PTY LTD

Drawing Title:
LANDSCAPE PLAN

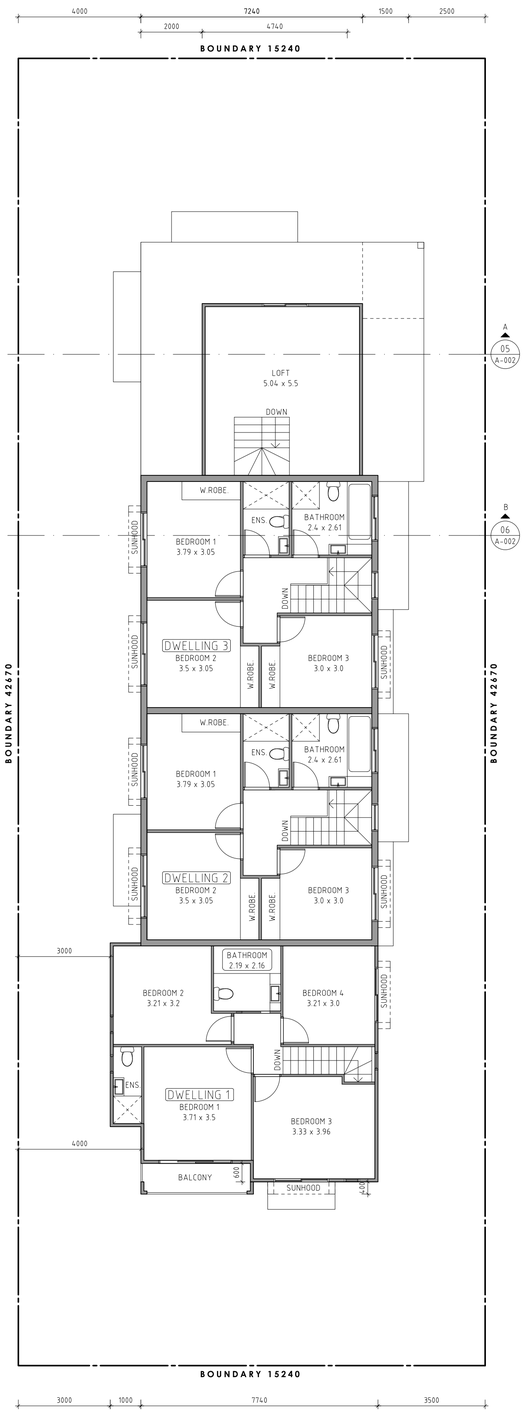
issue:	DA	date:	23/08/21	issue no:	A
file name:			c:\	drawing No:	
drawn:	HK	scale:	1:100 @ A1		L-01
checked:	RF	project No:	4712a		



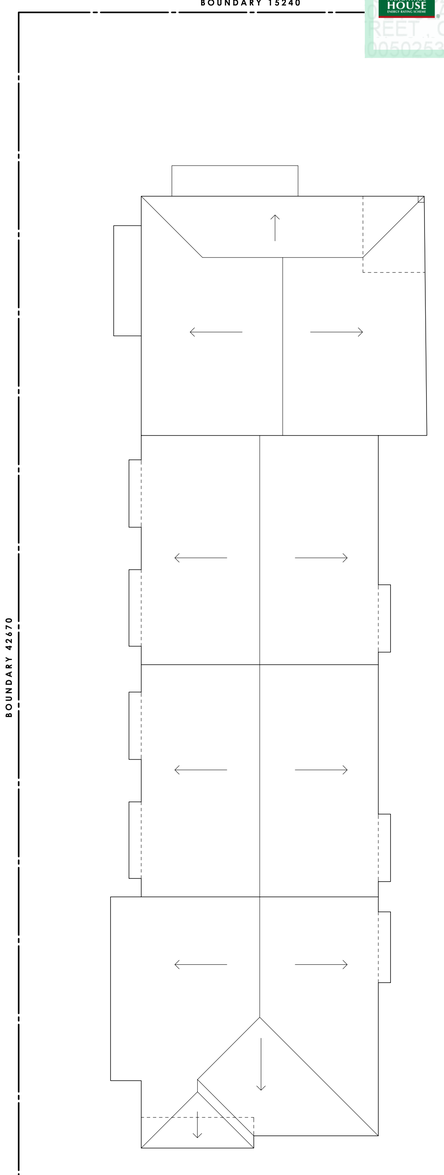
01 A-001 BASEMENT FLOOR PLAN
SCALE 1:100 @ A1



02 A-001 GROUND FLOOR PLAN
SCALE 1:100 @ A1



03 A-001 FIRST FLOOR PLAN
SCALE 1:100 @ A1



04 A-001 ROOF PLAN
SCALE 1:100 @ A1

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N

ZONE 4	
SITE AREA	650.29 M²
ALLOWABLE FSR	0.75:1 = 487.7 M²
PROPOSED FSR	0.63:1 = 410 M²
PROPOSED AREA	- DWELLING 1: 110 M² - DWELLING 2: 114 M² - DWELLING 3: 104 M² - DWELLING 4: 82 M²

NOTES:

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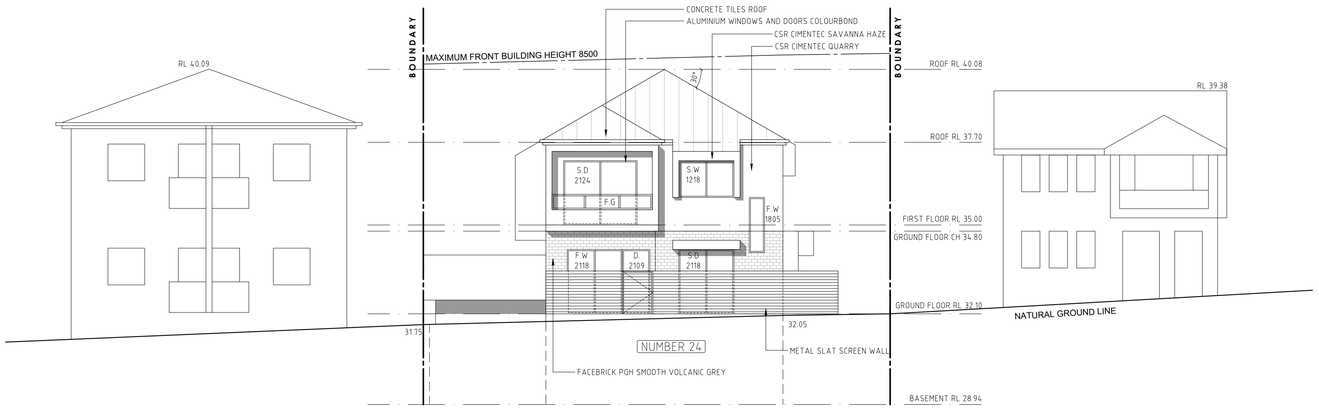
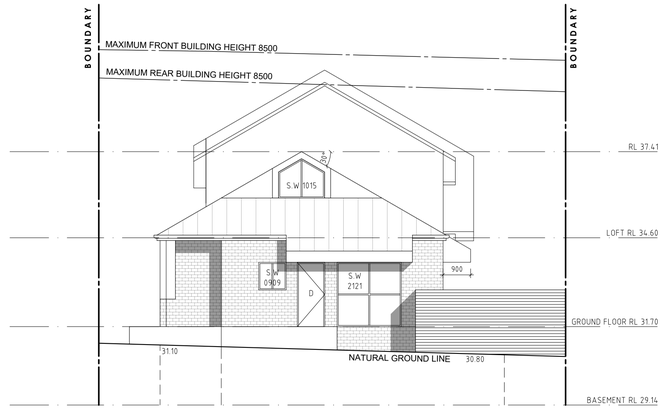
PROJECT NAME:	PROPOSED FOUR TOWNHOUSES
ADDRESS:	24 CLAREMONT ST, CAMPSIE NSW
CLIENT:	J L S DEVELOPMENTS PTY LTD
	404/23 CORUNNA RD, STANDMORE NSW 95163872

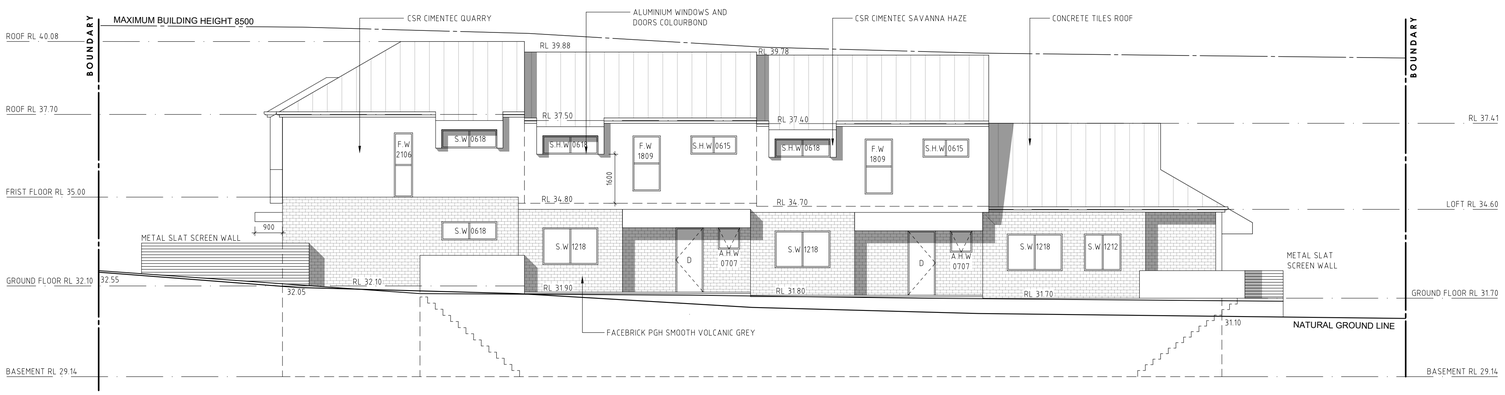
DWN BY:	MINH THU TU
DWN DATE:	06/07/2021
DWN NO.	A-001/2
JOB NO.	2021/B
SCALE:	1:100 @ A1
	17/05/2021



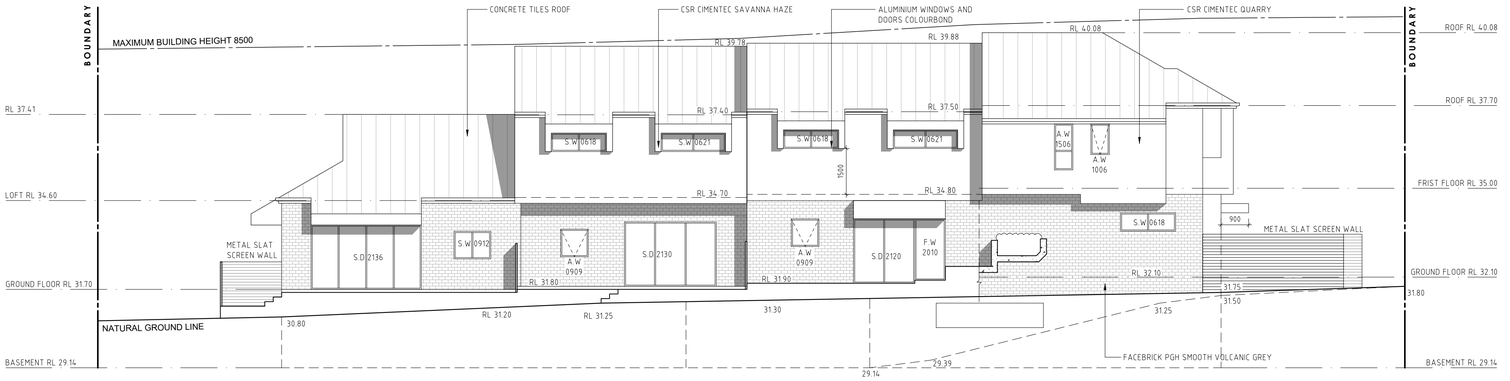
01 A-002 NORTH WEST (FRONT) ELEVATION
SCALE 1:100 @ A1



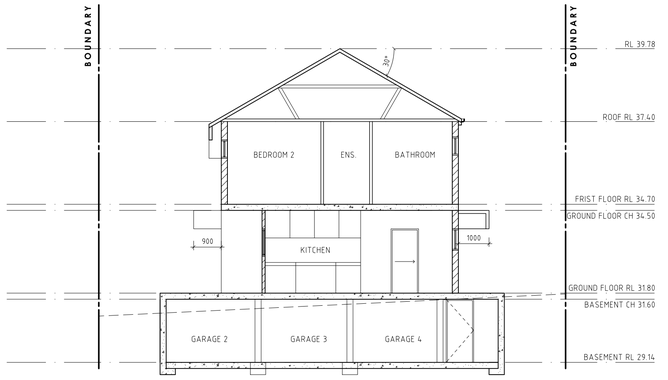
04 A-002 SOUTH EAST (REAR) ELEVATION
SCALE 1:100 @ A1



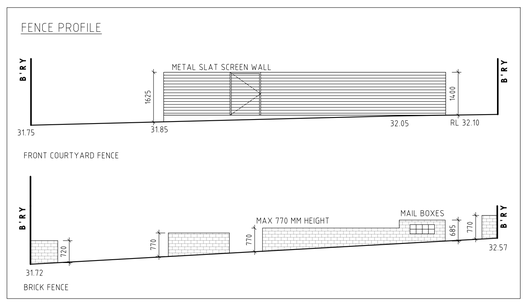
02 A-002 SOUTH WEST ELEVATION
SCALE 1:100 @ A1



05 A-002 SECTION AA
SCALE 1:100 @ A1



03 A-002 NORTH EAST ELEVATION
SCALE 1:100 @ A1



06 A-002 SECTION BB
SCALE 1:100 @ A1

2021
0 1 5 10

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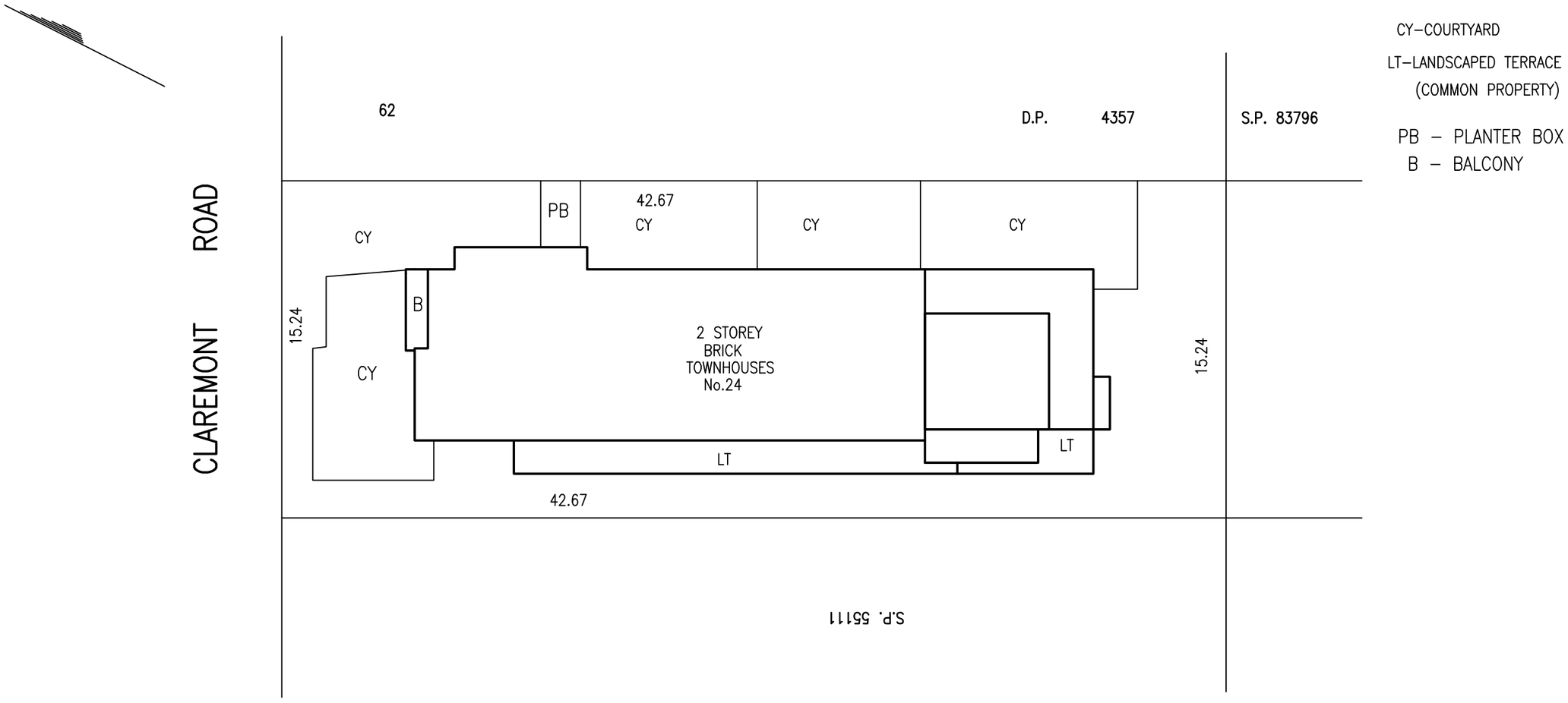
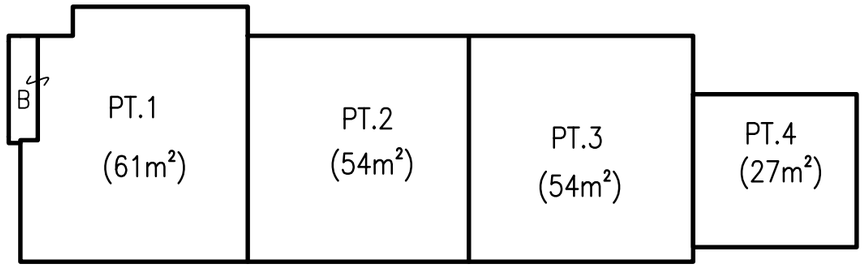
17/05/2021



LOCATION PLAN

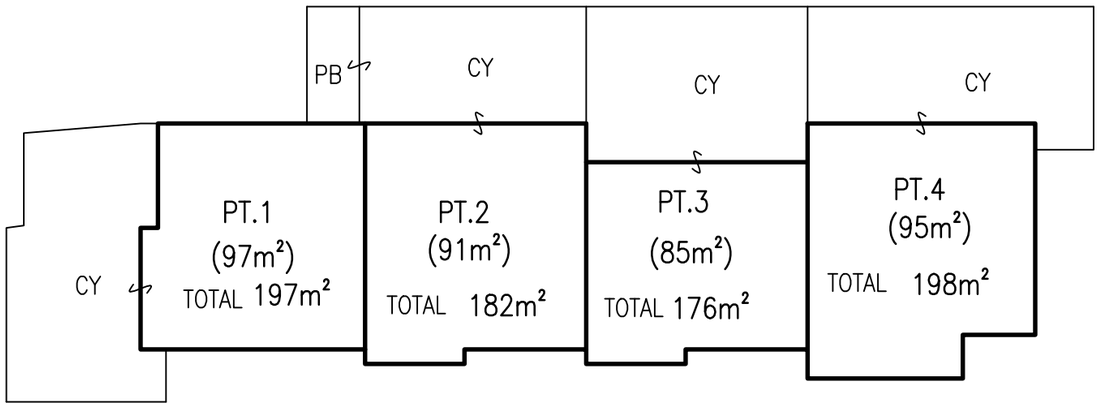
SURVEYOR Name: VICTOR JOHN MANSELL Date: Reference: 205032–2	PLAN HEADING PLAN OF SUBDIVISION OF LOT 100 D.P.1252449	L.G.A CANTERBURY BANKSTOWN Locality: CAMPSIE Reduction Ratio: 1: 200 Lengths are in metres	REGISTERED	DRAFT



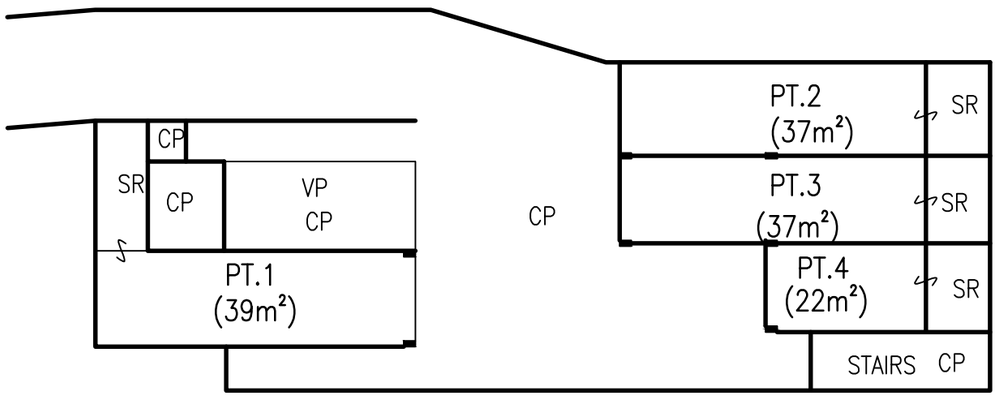
FIRST FLOOR

DENOTES PROLONGATION OF FACE OF COLUMN

DENOTES PROLONGATION OF CENTRE LINE OF COLUMN



GROUND FLOOR



BASEMENT GARAGES

CP–COMMON PROPERTY

B–BALCONY

SR–STORE ROOM

PB – PLANTER BOX

VP–VISITOR PARKING

CY–COURTYARD

AREAS ARE APPROXIMATE AND INCLUDE AREAS OF GARAGES, STOREROOMS, BALCONY AND COURTYARDS.

COURTYARDS LIMITED TO A DEPTH OF 2.5 BELOW AND TO A HEIGHT OF 2.5 ABOVE THE UPPER GROUND FLOOR SURFACE LEVEL OF THE TOWNHOUSE TO WHICH THEY ARE ATTACHED, EXCEPT WHERE COVERED WITHIN THIS LIMIT.

BALCONY LIMITED TO A HEIGHT OF 2.5 ABOVE THE UPPER TILED FLOOR SURFACE LEVEL OF THE BALCONY, EXCEPT WHERE COVERED WITHIN THIS LIMIT.

SURVEYOR	PLAN HEADING		REGISTERED	
Name: VICTOR JOHN MANSELL Date: Reference: 205032–2	PLAN OF SUBDIVISION OF LOT 100 D.P.1252449	L.G.A **CANTERBURY BANKSTOWN** Locality: **CAMPSIE** Reduction Ratio: 1: 200 Lengths are in metres		DRAFT

SP FORM 3.07 (2019)	STRATA PLAN ADMINISTRATION SHEET	Sheet 2 of 4 sheet(s)

Office use only

Registered:

Office use only

DRAFT

VALUER'S CERTIFICATE

I, *.....of .....

being a qualified valuer, as defined in the Strata Schemes Development Act 2015 by virtue of having membership with:

Professional Body:.....

Class of membership:.....

Membership number:.....

certify that the unit entitlements shown in the schedule herewith were apportioned on.....(being the valuation day) in accordance with Schedule 2 Strata Schemes Development Act 2015

Signature: ..... Date .....

* Full name, valuer company name or company address

SCHEDULE OF UNIT ENTITLEMENT

LOT NO.	UNIT ENTITLEMENT
1	
2	
3	
4	
AGGREGATE	

Surveyor's Reference: 205032–2

SP FORM 3.04	STRATA PLAN ADMINISTRATION SHEET	Sheet 1 of 4 sheet(s)

Office use only

Registered:

Office use only

DRAFT

STRATA PLAN OF SUBDIVISION OF:

LOT 100 D.P.1252449

LGA: CANTERBURY BANKSTOWN
Locality: CAMPSIE
Parish: ST GEORGE
County: CUMBERLAND

This is a ***FREEHOLD/*~~LEASEHOLD~~** Strata Scheme

Address for Service of Documents

24 CLAREMONT STREET, CAMPSIE NSW 2194

Provide an Australian postal address including a postcode

The by–laws adopted for the scheme are:

Model By–laws for residential strata schemes together with:
Keeping of Animals: Option *A/~~*B~~
Smoke penetration: Option *A/~~*B~~
(see Schedule 3 Strata Schemes Management Regulation 2016)

*The strata by–laws lodged with plan.

Surveyor's Certificate

I, VICTOR JOHN MANSELL OF W. BUXTON P/L

of 76 WILLISON ROAD, CARLTON NSW 2218

being a land surveyor registered under the Surveying and Spatial Information Act 2002, certify that the information shown in the accompanying plan is accurate and each applicable requirement of Schedule 1 of the Strata Schemes Development Act 2015 has been met.

~~*The building encroaches on:~~
*(a) a public place;

*(b) land other than ~~a public place~~ and an appropriate ~~easement~~ to permit the encroachment has been ~~created by^.....~~

Signature: .....

Date: .....

Surveyor ID SU 001566

Surveyor's Reference: 205032–2

^insert the deposited plan number or dealing number of the instrument that created the easement

Strata Certificate (Accredited Certifier)

I..... being on Accredited certifier, accreditation number....., certify that in regards to the proposed strata plan with this certificate, I have made the required inspections and I am satisfied the plan complies with clause 17 Strata Schemes Development Regulation 2016 and the relevant parts of Section 58 Strata Schemes Development Act 2015:

*(a) This plan is part of the development scheme.

*(b) The building encroaches on a pubic place and in accordance with section 62(3) Strata Schemes Development Act 2015 the local council has granted a relevant planning approval that is in force for the building with the encroachment or for the subdivision specifying the existence of the encroachment.

*(c) The certificate is given on the condition contained in the relevant planning approval that lot(s)..^.....will be created as utility lots and restricted in accordance with section 63 Strata Schemes Development Act 2015.

Certificate Reference: .....

Relevant Planning Approval No: .....

issued by: .....

Signature: .....

Date: .....

#Insert the name of the local council.
^Insert lot numbers of proposed utility lots.

*Strike through if inapplicable.

SP FORM 3.08 (Annexure)	**STRATA PLAN ADMINISTRATION SHEET**	Sheet 3 of 4 sheet(s)

Office use only

Registered:

Office use only

DRAFT

This sheet is for the provision of the following information as required:

- Any information which cannot fit in the appropriate panel of any previous administration sheets.
- Statements of intention to create and release affecting interests in accordance with section 88B Conveyancing Act 1919
- Signatures and seals – see section 22 Strata Schemes Development Act 2015.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919 AND SECTION 38(1) OF THE STRATA SCHEMES DEVELOPMENT ACT 2015, IT IS INTENDED TO CREATE:

1. RESTRICTION ON USE OF LAND
2. POSITIVE COVENANT

AS SET OUT IN THE ACCOMPANYING INSTRUMENT SIGNED BY COUNCIL.

PRELIMINARY STRATA PLAN NOT FOR LTO EXAMINATION

THIS PLAN HAS BEEN COMPILED FROM....ARCHITECTURAL PLANS

SUPPLIED BY.....MINH THU TU.....DATE..29/7/2021...

DIMENSIONS AND AREAS SHOWN ARE INDICATIVE. THE PLAN IS SUBJECT TO FINAL SURVEY AND COMPLIANCE WITH COUNCILS CONDITIONS OF APPROVAL

DATE OF ISSUE: 6 FEBRUARY 2019 – CONTRACT ISSUE

Executed under Section 127
Corporations Act 2001
JLS Developments Pty. Ltd.
ABN 50 622 482 482

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Cedric Constantine – Director

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Joshua Stanton – Director

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Luke Stanton – Director

SURVEYOR'S REFERENCE: 205032–2

SP FORM 3.08 (Annexure)	**STRATA PLAN ADMINISTRATION SHEET**	Sheet 4 of 4 sheet(s)

Office use only

Registered:

Office use only

DRAFT

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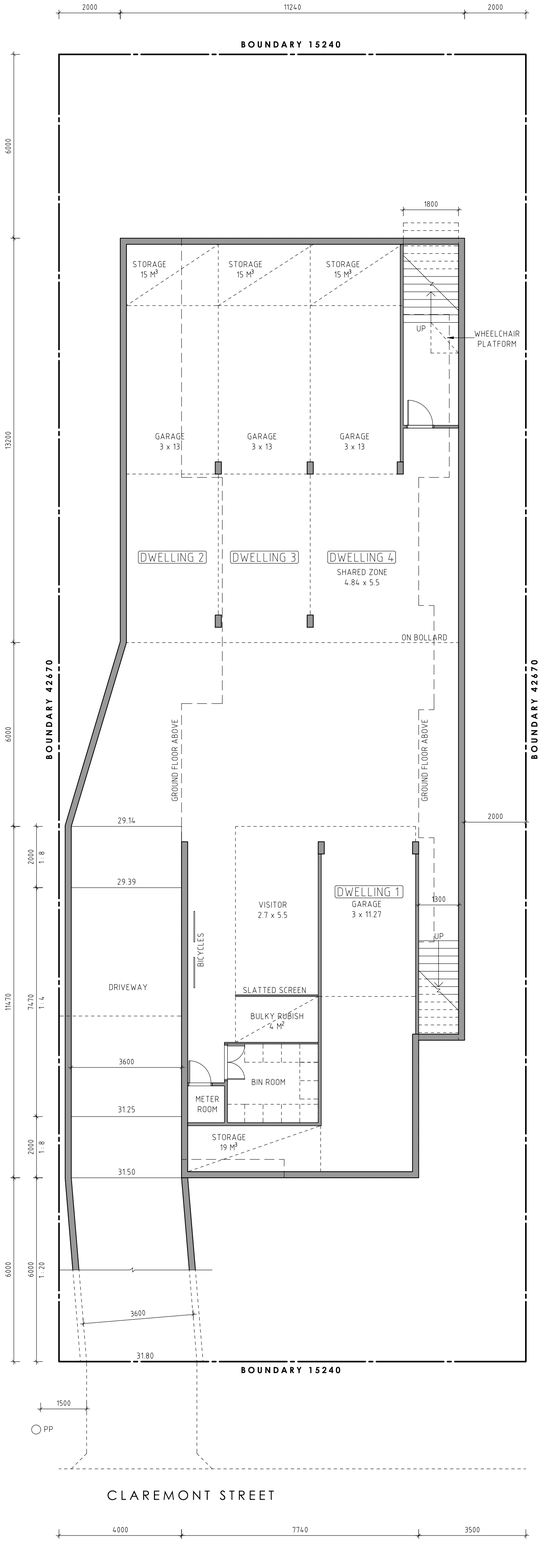
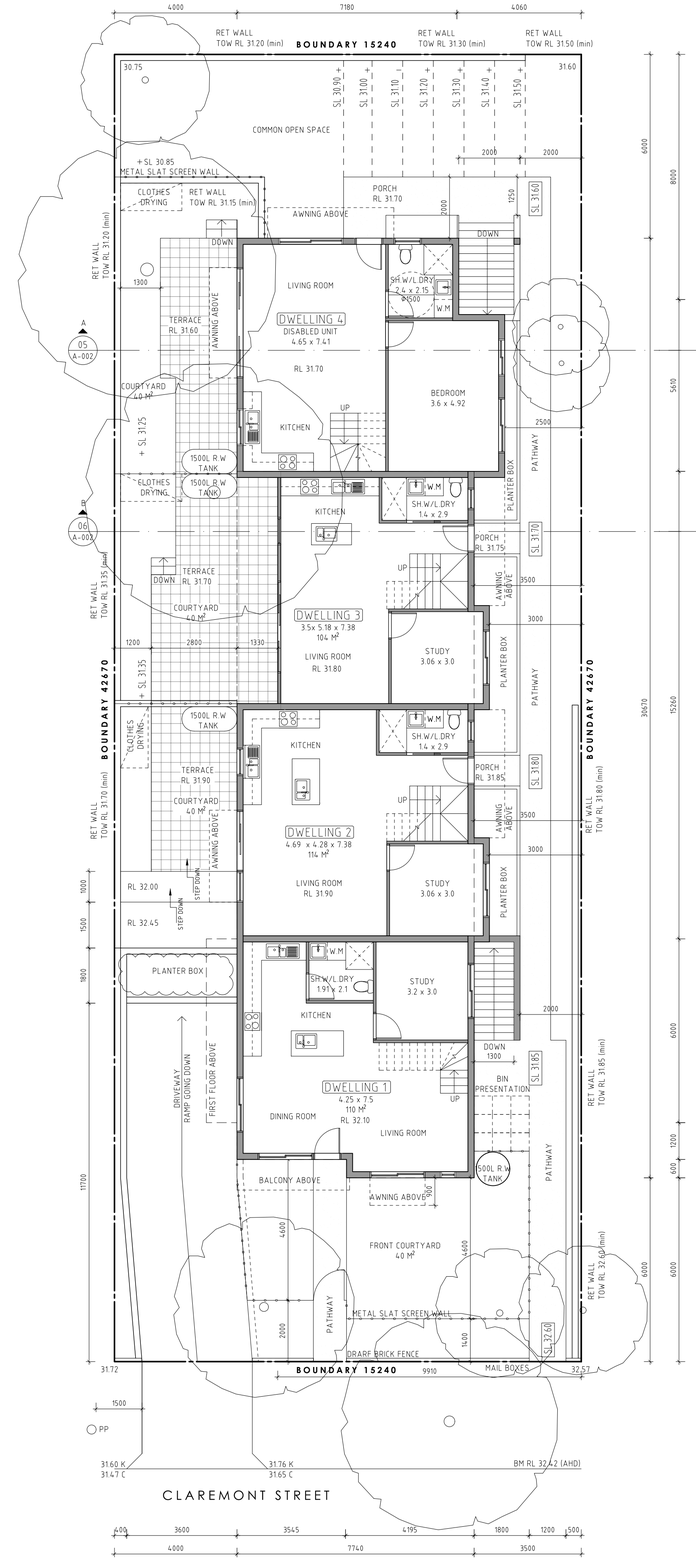
Lot Number	Sub–Address number	Address number	Road name	Road Type	Locality Name
1	1	24	CLAREMONT	STREET	CAMPSIE
2	2	24	CLAREMONT	STREET	CAMPSIE
3	3	24	CLAREMONT	STREET	CAMPSIE
4	4	24	CLAREMONT	STREET	CAMPSIE
CP	–	24	CLAREMONT	STREET	CAMPSIE

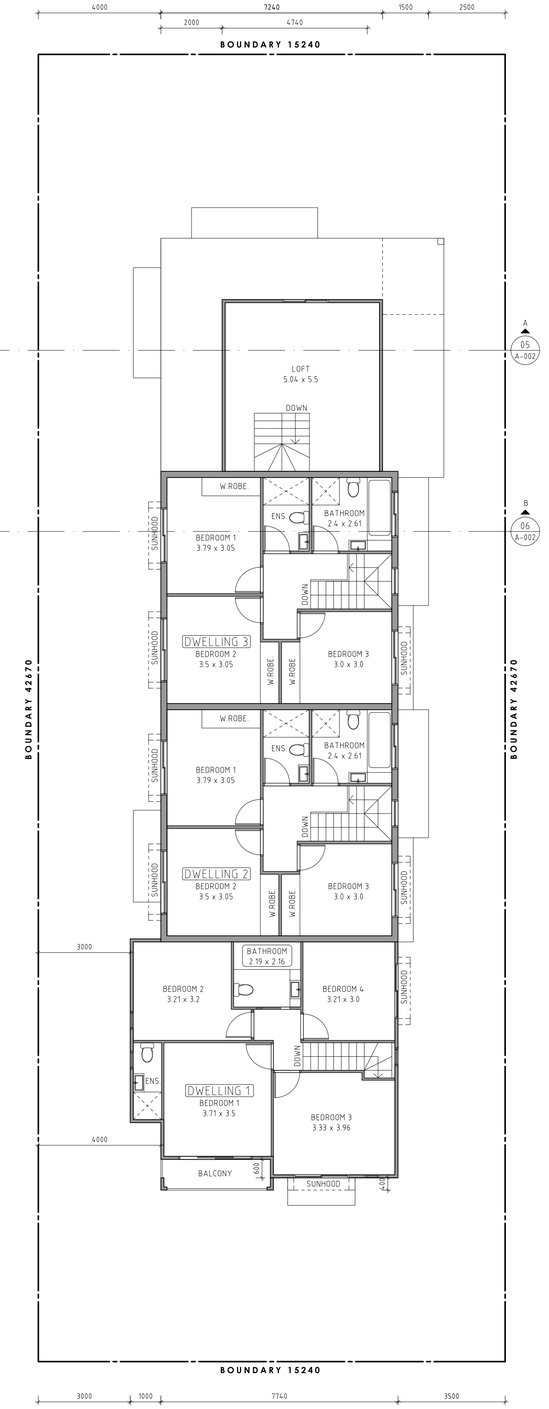
SURVEYOR'S REFERENCE: 205032–2



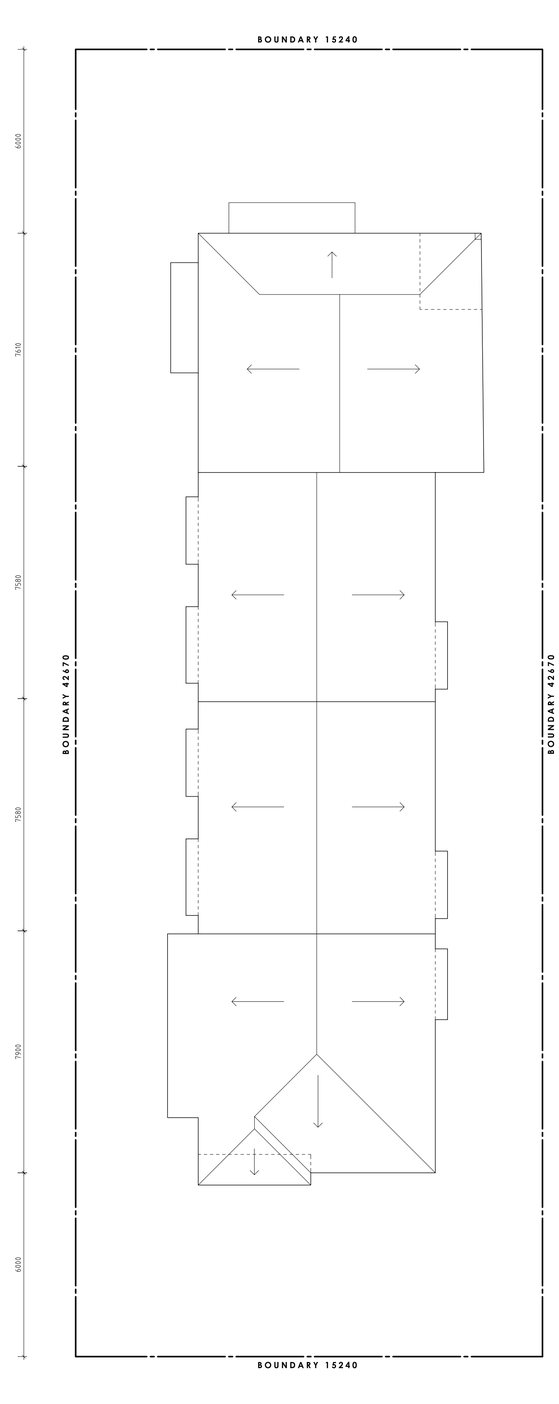
01 A-001 BASEMENT FLOOR PLAN
SCALE 1:100 @ A1



02 A-001 GROUND FLOOR PLAN
SCALE 1:100 @ A1



03 A-001 FIRST FLOOR PLAN
SCALE 1:100 @ A1



04 A-001 ROOF PLAN
SCALE 1:100 @ A1

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ZONE 4	
SITE AREA	650.29 M²
ALLOWABLE FSR	0.75:1 = 487.7 M²
PROPOSED FSR	0.63:1 = 410 M²
PROPOSED AREA	- DWELLING 1: 110 M² - DWELLING 2: 114 M² - DWELLING 3: 104 M² - DWELLING 4: 82 M²

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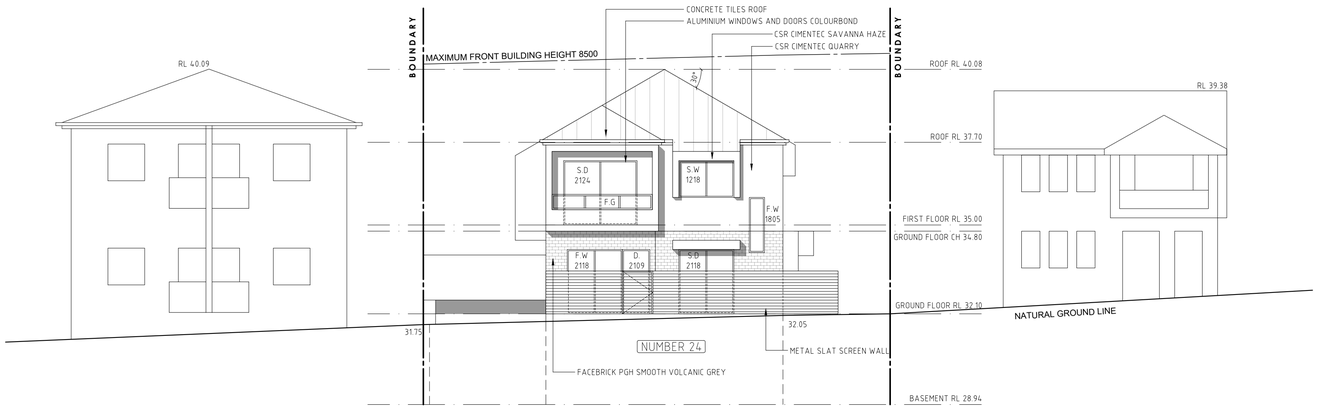
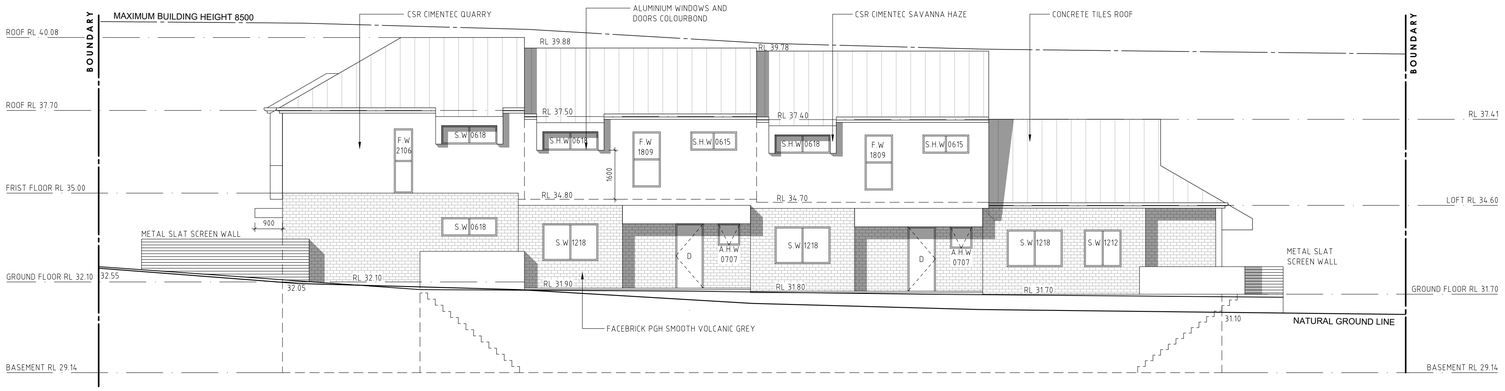


01 A-002 NORTH WEST (FRONT) ELEVATION
SCALE 1:100 @ A1



02 A-002 SOUTH WEST ELEVATION
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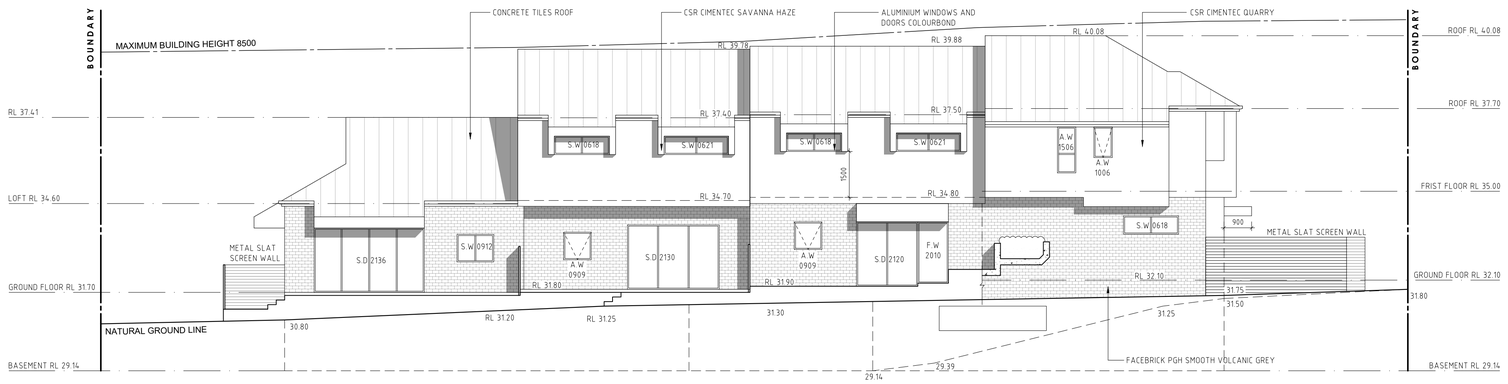

03 A-002 NORTH EAST ELEVATION
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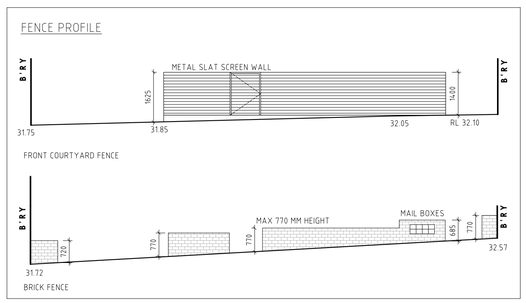
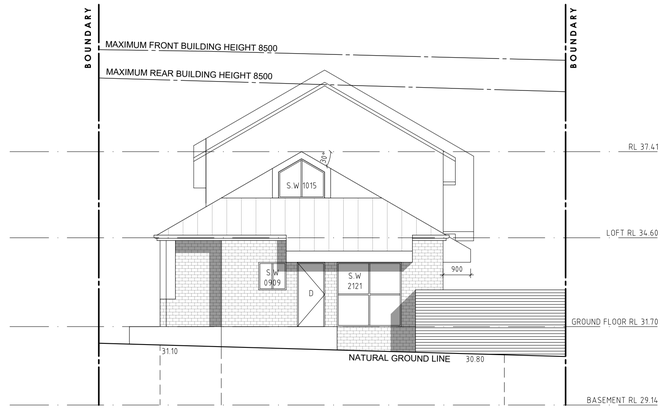
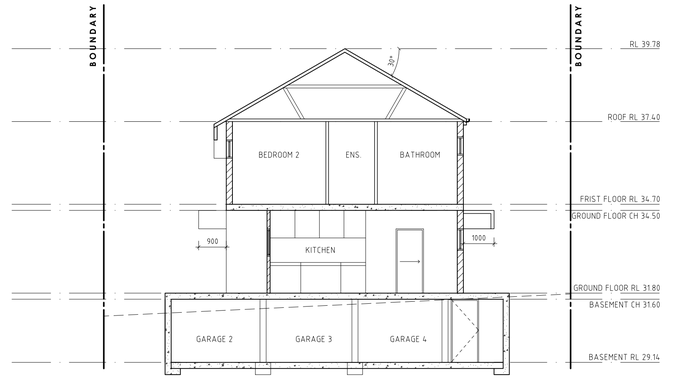


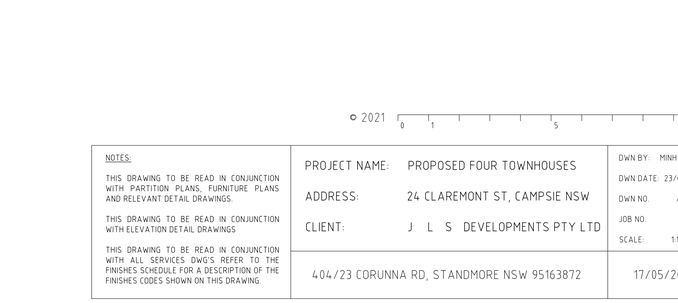
04 A-002 SOUTH EAST (REAR) ELEVATION
SCALE 1:100 @ A1



05 A-002 SECTION AA
SCALE 1:100 @ A1



06 A-002 SECTION BB
SCALE 1:100 @ A1



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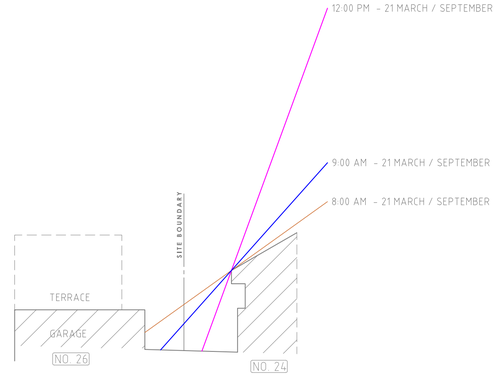
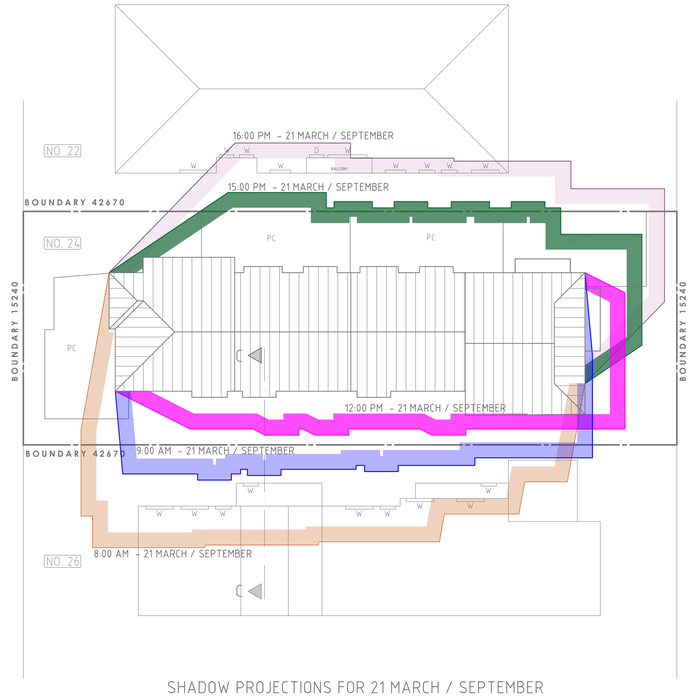
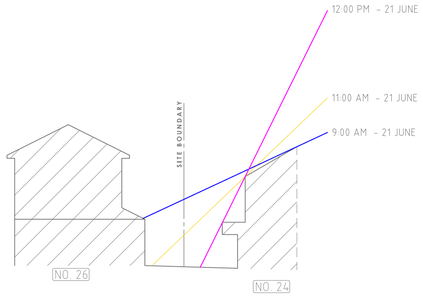


SECTION CC

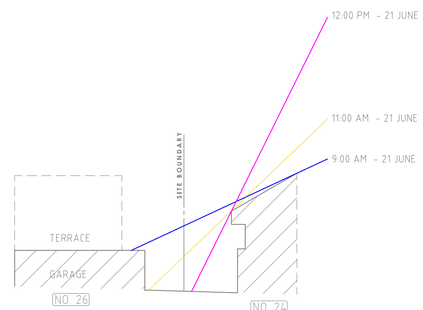
CLAREMONT STREET



SHADOW PROJECTIONS FOR 21 MARCH / SEPTEMBER

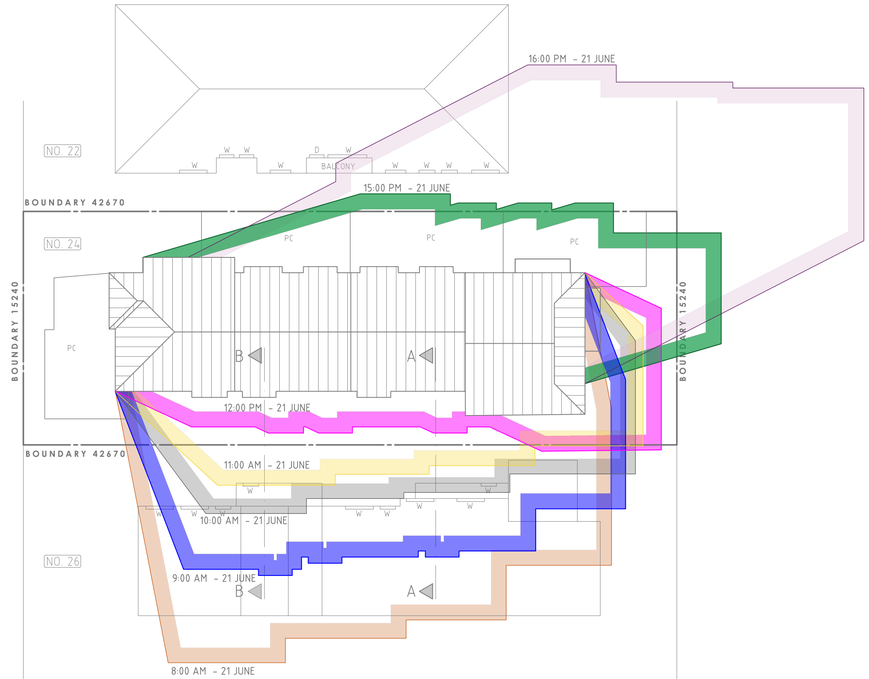


SECTION AA



SECTION BB

CLAREMONT STREET



SHADOW PROJECTIONS FOR 21 JUNE

SHADOW DIAGRAM FOR 24 CLAREMONT ST, CAMPSIE NSW

0 2 10 20

LEGENDS

PC - PRIVATE COURTYARD
W - WINDOW
D - DOOR

8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
15:00 PM
16:00 PM

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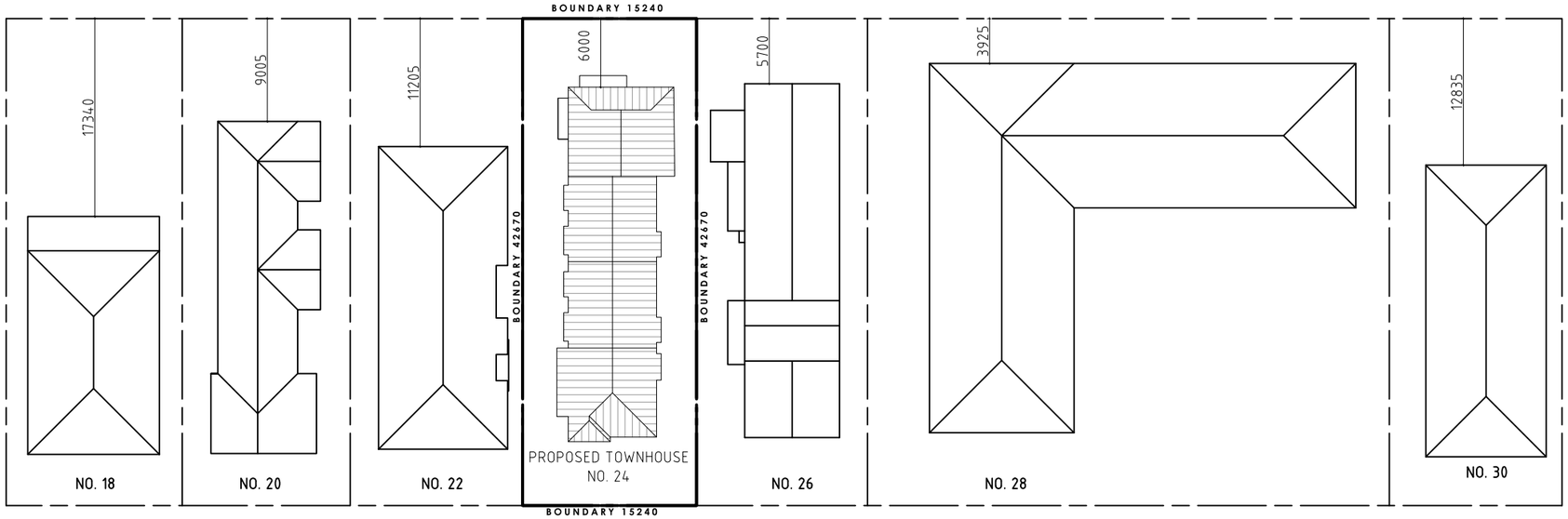
PROJECT NAME: PROPOSED FOUR TOWNHOUSES
ADDRESS: 24 CLAREMONT ST, CAMPSIE NSW
CLIENT: J L S DEVELOPMENTS PTY LTD

404/23 CORUNNA RD, STANDMORE NSW 95163872

DWN BY: MINH THU TU (M.ARCH UTS)
DWN DATE: 23/07/2021
DWN NO. A-003/3
JOB NO. 2021/B
SCALE: 1:200 @ A1

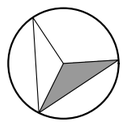
24/05/2021



CLAREMONT STREET

SITE COMPARISON DIAGRAM FOR 24 CLAREMONT ST, CAMPSIE NSW

0 5 10 20 50



NOTES:

THIS DRAWING TO BE READ IN CONJUNCTION WITH PARTITION PLANS, FURNITURE PLANS AND RELEVANT DETAIL DRAWINGS.

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DWN NO. A-004

JOB NO. 2021/B

SCALE: 1:500 @ A3

24/05/2021

Thermal Performance Requirements - Multi Units

LJS Developments **24 Claremont Street** **Campsie** **NSW** **2194**	Prepared by Chapman Environmental Services www.basixcertificates.com.au 1300 004 914

Thermal Performance Assessment Based on the Following Requirements

Floor Types	Suspended concrete slab		with	R1.4 Foilboard insulation (U04: R3.5)
Floor Coverings	Tiles	Living / Wet areas	Timber	Bedrooms
External Walls	Cavity brick		with	R1.2 cavity board (U02, U03), (U04: R1.9) Medium
	Timber framed CSR Cementec clad direct fix		with	Sarking and R2.5 bulk insulation Medium
Internal Walls	Plasterboard		with	R2.5 bulk insulation (U04 bath)
Party Walls	Cavity Brick		with	Nil
Ceiling (floor over)	Concrete above plasterboard		with	Nil
	Timber above plasterboard		with	Nil
Ceiling (roof over)	Timber above plasterboard.		with	R3.5 bulk insulation
Roof	Tiles	30 degrees	with	Sarking Light

Windows and Doors	AF single glazed clear to all windows and glazed doors unless noted otherwise	Group A | ALM-001-01 | U-Value 6.70 or less | SHGC 0.57 +/- 5% Group B | ALM-002-01 | U-Value 6.70 or less | SHGC 0.70 +/- 5%
	AF double glazed argon filled LowE All U04 except bath	Group B | ALM-006-03 | U-Value 4.10 or less | SHGC 0.52 +/- 5%
	Group A windows are Awning, Bifold, Casement or Tilt'n'turn	Group A doors are Bifold, Entry, French or Hinged
	Group B windows are Double hung, Fixed, Louvre or Sliding	Group B doors are Sliding or Stacker
	AF = Aluminium Framed | TB = Thermally Broken Aluminium Framed | TF = Timber Framed	

Notes

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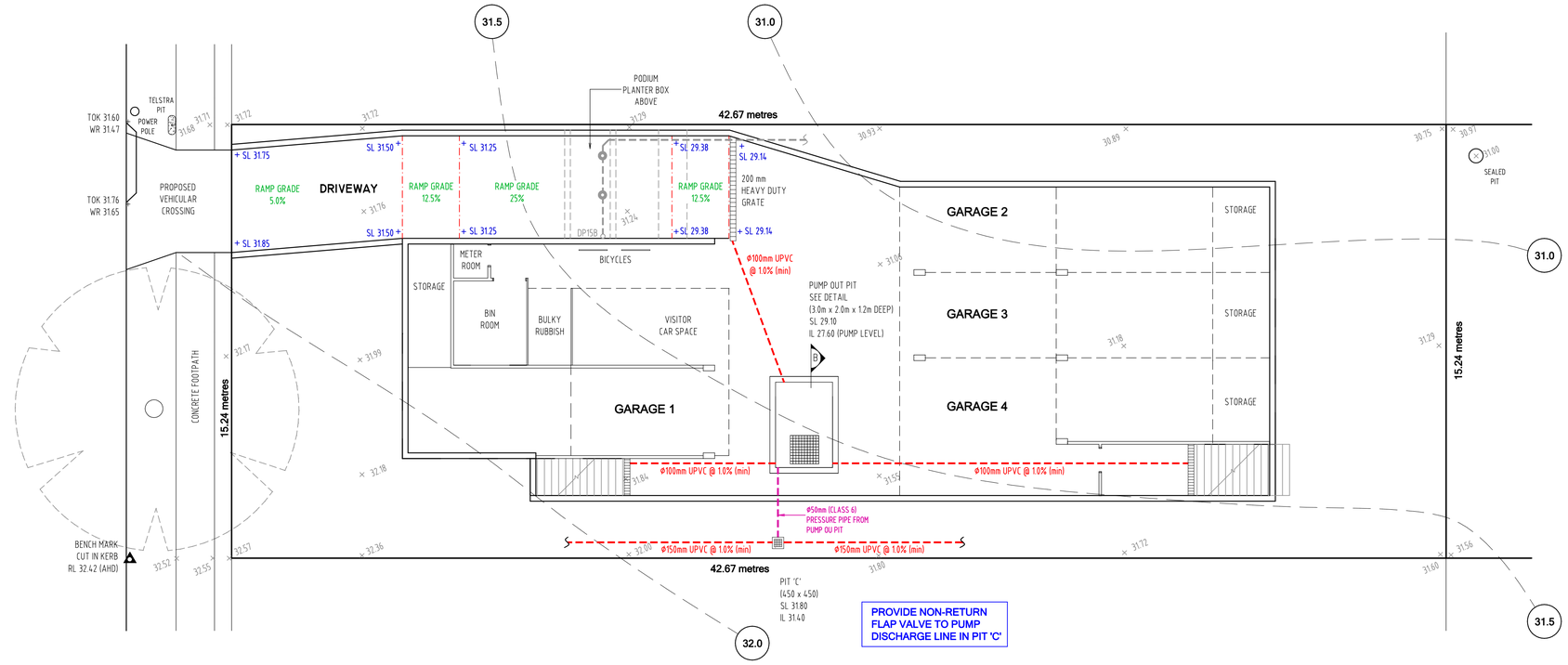
DIAL1100 BEFORE YOU DIG

NOTES: SERVICES

NO EXCAVATION IN FOOTPATH WITHOUT CHECKING FOR DEPTH AND LOCATION OF SERVICES

CLAREMONT STREET



NOTE: WATERPROOFING

ALL BASEMENT WALLS TO BE WATERPROOFED AND TANKED.

WATERPROOF TO BE DETERMINED AS REQUIRED BY THE BUILDER ON SITE IN CONJUCTION WITH THE ARCHITECTURAL & STRUCTURAL ENGINEERING DETAIL TO BE PROVIDED WITH THE CONSTRUCTION CERTIFICATE

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS

COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY CANTERBURY BANKSTOWN COUNCIL.

NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS

ALL STORMWATER DRAINAGE ELEMENTS PROPOSED WITHIN THE ROAD RESERVE AND FOOTWAY SHALL BE CONSTRUCTED UNDER THE SUPERVISION AND TO THE SATISFACTION OF COUNCIL'S ENGINEER.

DRAINAGE PLAN

BASEMENT LEVEL

SCALE 1:100

DA PLANS

NOT FOR CONSTRUCTION

NOTES:

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2. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
3. MINIMUM GRADES FOR ALL PIPE - 1.0%
4. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
6. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.

LEGEND:

DP	DOWN PIPE
SG	SPREADER
CE	AIR TIGHT / SCREW DOWN CLEAN OUT POINT
EL 49.45+	EXISTING LEVEL 49.45
SL 49.45+	PROPOSED SURFACE LEVEL 49.45
IL 49.45 +	PROPOSED INVERT LEVEL 49.45
WR 49.45+	PROPOSED WATER RUN LEVEL 49.45
TOK 49.45+	TOP OF KERB LEVEL LEVEL 49.45
RW 49.45	TOP OF RETAINING WALL 49.45
KIP	KERB INLET PIT

AMENDMENT 'C' ARCHITECTURAL CHANGES	DATE 07 07 2021
AMENDMENT 'B' ARCHITECTURAL CHANGES	DATE 18 06 2020
AMENDMENT 'A' DRAINAGE RE-DESIGN TO INCLUDE EASEMENT	DATE 04 06 2019

ACE CIVIL & HYDRAULIC ENGINEERS

PROPOSED RESIDENTIAL DEVELOPMENT
24 CLAREMONT STREET
CAMPSIE N.S.W.

DESIGNED: PAUL ARRAJ
BE, GRAD.IE(AUST), P. Eng

DATE 29 01 2019
DRAWN BY: P.A.
SCALE: AS SHOWN

ACE-CIVIL & HYDRAULIC ENGINEERS
8 LEIGHDON STREET
BASS HILL, NSW, 2197
PHONE / FAX: (02) 9790 7921
MOBILE: 0412 331151
EMAIL: arraj@smartchat.net.au

1819-41

DRAWING No. :
SHEET No. 1
No. OF SHEETS: 13

DRAINAGE PLAN A1

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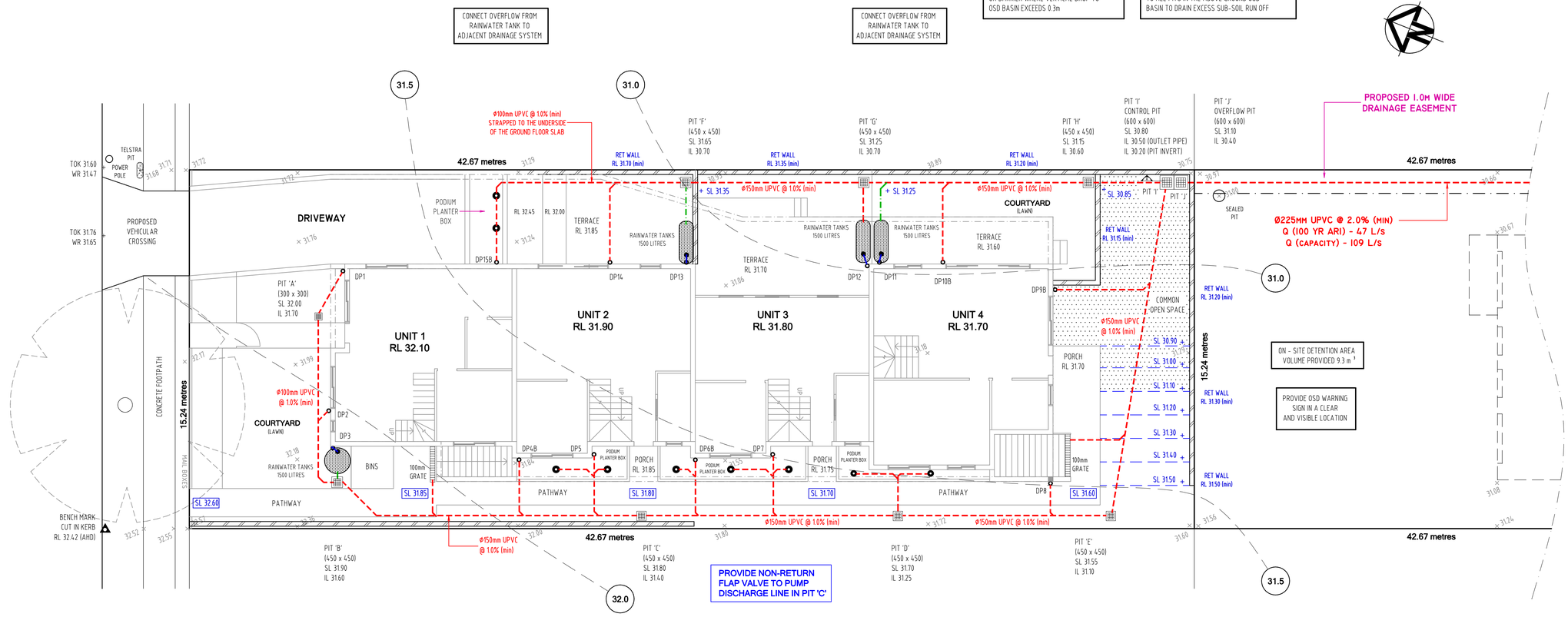
NOTES: SERVICES
NO EXCAVATION IN FOOTPATH WITHOUT CHECKING FOR DEPTH AND LOCATION OF SERVICES

CLAREMONT STREET

NOTE: SAFETY FENCE
PROVIDE 1.2 m POOL TYPE SAFETY FENCE OR BARRIER WHERE VERTICAL DROP TO OSD BASIN EXCEEDS 0.3m

NOTE: SUB-SOIL DRAINAGE
PROVIDE Φ90mm 'AGG' LINE ADJACENT TO ALL PITS IN THE ABOVE GROUND OSD BASIN TO DRAIN EXCESS SUB-SOIL RUN OFF



DRAINAGE PLAN
GROUND FLOOR
SCALE 1:100

NOTES: RAINWATER TANKS
1. RAINWATER TANK CAPACITY OF 1500 LITRES.
2. THE SYSTEM TO BE DESIGNED WITH THE FOLLOWING GUIDELINES
   - A 'FIRST FLUSH' DIVERSION TO REMOVE ROOF CONTAMINANTS
   - ADEQUATE SCREENING TO PREVENT MOSQUITO BREEDING AND ENTRY OF ANIMALS OR FOREIGN MATTER
3. TANKS TO BE PLUMBED TO TOP-UP FROM THE POTABLE WATER SUPPLY DURING DRY PERIODS WHEN THE TANKS ARE 80% EMPTY.
4. NO DIRECT CROSS-CONNECTION WITH THE SYDNEY WATER POTABLE SUPPLY AND AN AIR GAP MAINTAINED ABOVE THE OVERFLOW IN THE TANK.
5. A SIGN TO BE INSTALLED STATING "NOT FOR HUMAN CONSUMPTION.
6. RAINWATER TANK TO BE CONNECTED AS PER BASIX REQUIREMENTS.
7. OVERFLOW FROM THE TANK SHALL BE PIPED TO THE DRAINAGE SYSTEM.

RAINWATER TANKS

	MODEL	CAPACITY	DIMENSIONS
UNIT 1	ROUND	1500 Litres	1100mm (diameter) x 1560mm (high)
UNIT 2	SLIMLINE	1500 Litres	1800mm (length) x 600mm (width) x 1560mm (high)
UNIT 3	SLIMLINE	1500 Litres	1800mm (length) x 600mm (width) x 1560mm (high)
UNIT 4	SLIMLINE	1500 Litres	1800mm (length) x 600mm (width) x 1560mm (high)

MANUFACTURED BY DESIGNER TANKS WATER PTY LTD
WEBSITE:DESIGNERTANKS.COM.AU (PH: 02 4605 0635)

NOTES: DRAINAGE LINES
DRAINAGE LINES SHOWN DASHED
TO COLLECT SURFACE WATER TO OSD SYSTEM
DRAINAGE LINES SHOWN DASHED
TO COLLECT ROOF WATER ONLY TO RAINWATER TANK
DRAINAGE LINES SHOWN DASHED
TO DISCHARGE OVERFLOW FROM RAINWATER TANK

NOTES: COUNCIL ISSUED FOOTWAY DESIGN LEVELS
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NOTES: ROAD RESERVE & FOOTWAY DRAINAGE ELEMENTS
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SITE DETAILS

SITE AREA (m²)	650
SITE AREA TO BASIN (m²)	650
PERCENTAGE OF SITE TO BASIN (%)	100
IL(CONTROL PIT)	30.50
TWL	31.10
VOLUME PROVIDED (m³)	9.30
VOLUME REQUIRED (m³)	8.20
ORIFICE DIAMETER (mm)	78
PSD – 100 YR ARI (L/s)	9.75

HATCHED AREA DENOTES OSD AREA

NOTES:
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA A.S.3500.3, COUNCILS STANDARD SPECIFICATION CODES AND THE THE SATISFACTION OF COUNCIL'S SUPERVISING OFFICER.
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LEGEND:
- DP — DOWN PIPE
- SG — SPREADER
- CE — AIR TIGHT / SCREW DOWN CLEAN OUT POINT
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- WR 49.45+ — PROPOSED WATER RUN LEVEL 49.45
- TOK 49.45+ — TOP OF KERB LEVEL LEVEL 49.45
- RW 49.45 — TOP OF RETAINING WALL 49.45
- KIP — KERB INLET PIT

NOTE: RETAINING WALLS & 'AGG' LINES
ALL RETAINING WALLS ARE TO BE WATERPROOFED AND CONSTRUCTED WITH Φ100mm AGRICULTURAL LINES AT THE BASE AND CONNECTED TO THE NEAREST PIT IN THE COURTYARD.

NOTES: OSD CONSTRUCTION
1. ALL WALLS FORMING THE DETENTION BASIN SHALL BE CONSTRUCTED WHOLLY WITHIN THE PROPERTY BOUNDARIES OF THE SITE BEING DEVELOPED.
2. ALL WALLS FORMING THE DETENTION BASIN SHALL BE OF MASONARY CONSTRUCTION AND BE WATERTIGHT.
3. LANDSCAPE AREAS WITHIN THE OSD STORAGE AREAS ARE TO BE MULCHED WITH DECORATIVE ROCK MULCH (IE NON FLOATABLE).

DA PLANS
NOT FOR CONSTRUCTION

AMENDMENT 'C' ARCHITECTURAL CHANGES	DATE 07 07 2021
AMENDMENT 'B' ARCHITECTURAL CHANGES	DATE 18 06 2020
AMENDMENT 'A' DRAINAGE RE-DESIGN TO INCLUDE EASEMENT	DATE 04 06 2019

ACE CIVIL & HYDRAULIC ENGINEERS

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CAMPSIE N.S.W.

DESIGNED: PAUL ARRAJ
BE, GRAD.IE(AUST), P. Eng

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BASS HILL, NSW, 2197
PHONE / FAX: (02) 9790 7921
MOBILE: 0412 331151
EMAIL: arraj@smartchat.net.au

DATE 29 01 2019
DRAWN BY: P.A.
SCALE: AS SHOWN
1819-41
DRAWING No. :
SHEET No. 2
No. OF SHEETS: 13

DRAINAGE PLAN A1

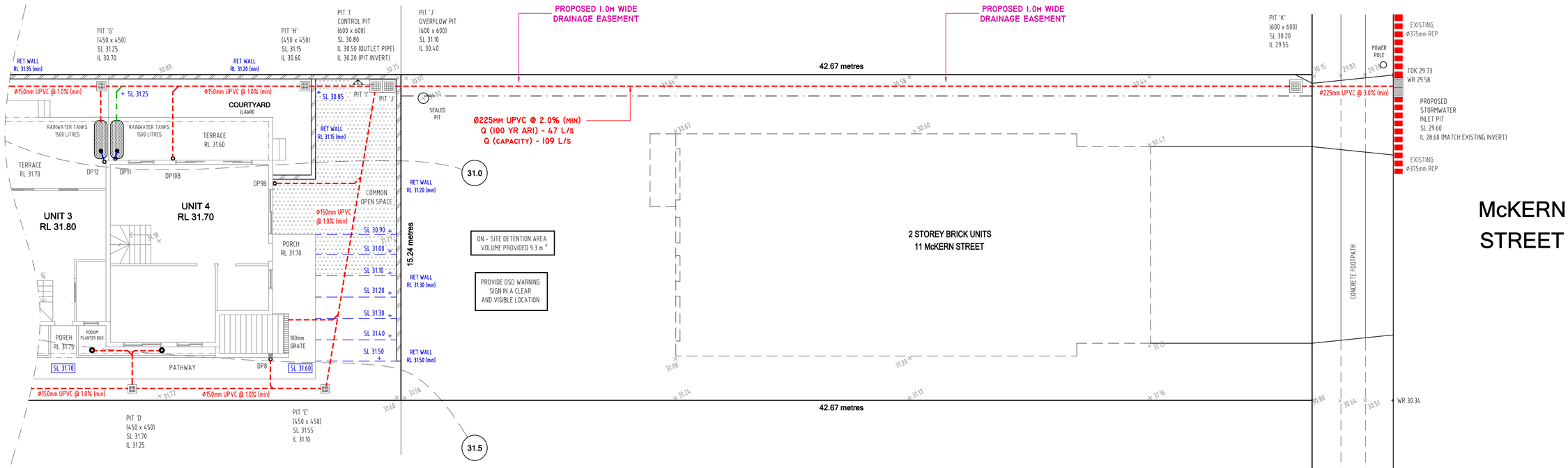
NOTE: SAFETY FENCE

PROVIDE 1.2 m POOL TYPE SAFETY FENCE OR BARRIER WHERE VERTICAL DROP TO OSD BASIN EXCEEDS 0.3m

NOTE: SUB-SOIL DRAINAGE

PROVIDE Φ90mm 'AGG' LINE ADJACENT TO ALL PITS IN THE ABOVE GROUND OSD BASIN TO DRAIN EXCESS SUB-SOIL RUN OFF

CONNECT OVERFLOW FROM RAINWATER TANK TO ADJACENT DRAINAGE SYSTEM



DRAINAGE PLAN

EASEMENT PLAN

SCALE 1:100

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HATCHED AREA DENOTES OSD AREA

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DATE 29 01 2019
DRAWN BY: P.A.
SCALE: AS SHOWN
1819-41
DRAWING No. :
SHEET No. 3
No. OF SHEETS: 13

DRAINAGE PLAN A1

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NOTES: SERVICES
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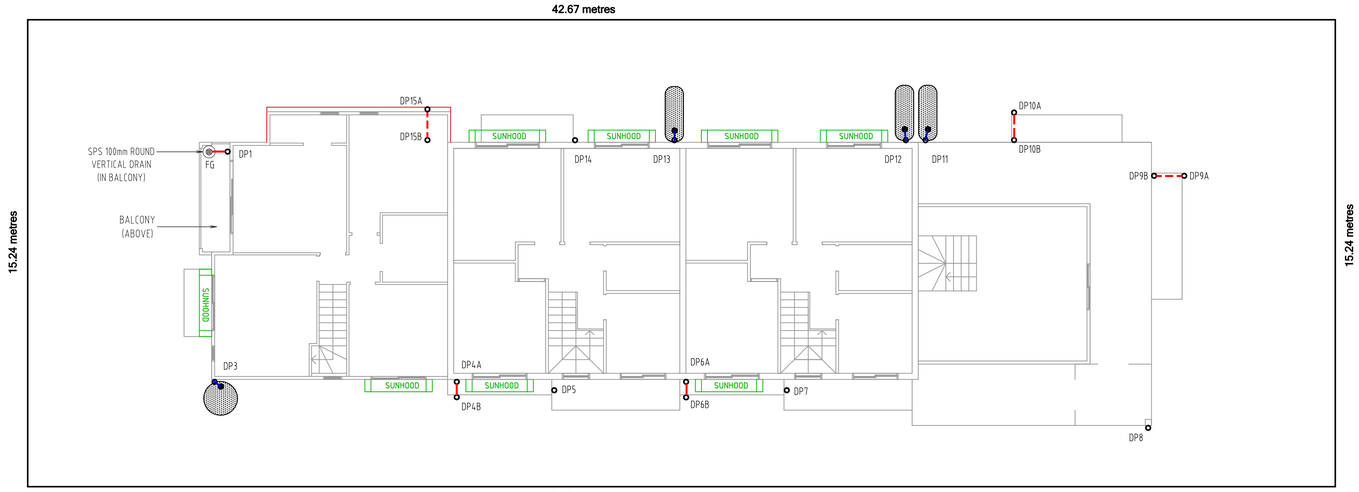
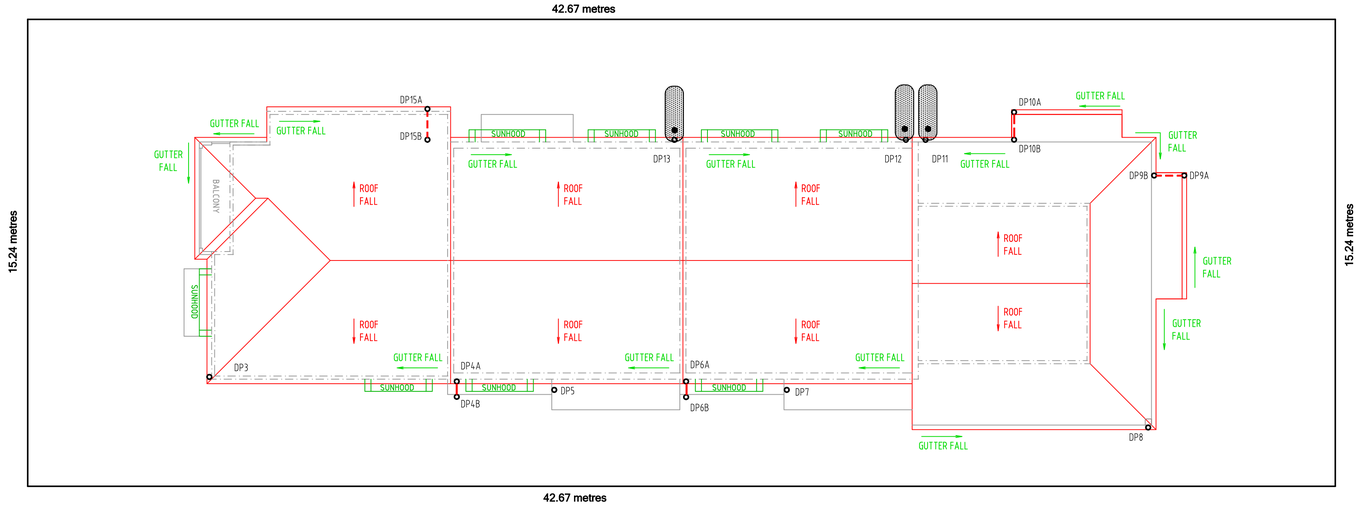
CLAREMONT
STREET



DRAINAGE PLAN
FIRST FLOOR
SCALE 1:100



DRAINAGE PLAN
ROOF FLOOR
SCALE 1:100

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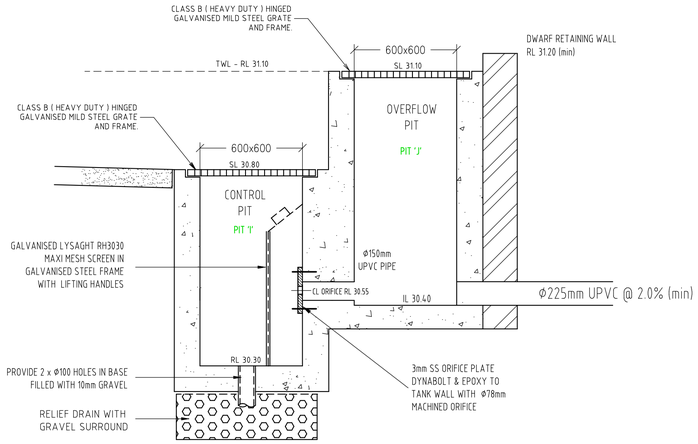
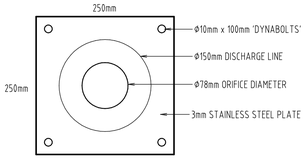
SHEET No. 4
No. OF SHEETS: 13

DRAINAGE PLAN | A1



DISCHARGE CONTROL PIT DETAIL
(SECTION A)

NTS



ORIFICE PLATE DETAIL

NTS

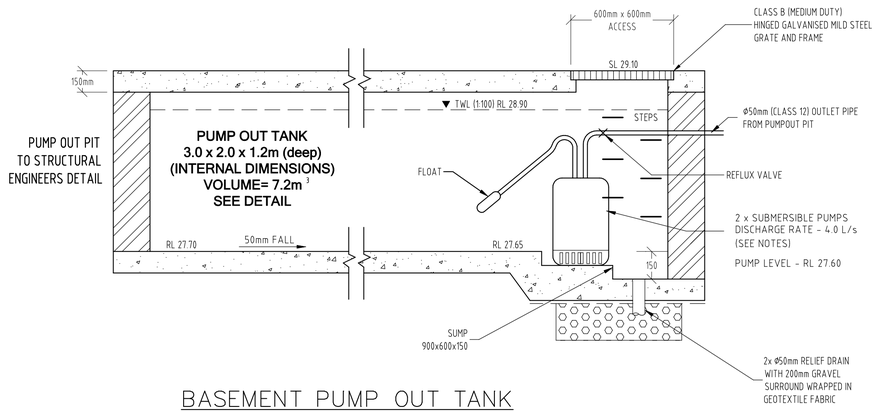
OSD BASIN WARNING SIGN

NTS

PROVIDE OSD SIGN ADJACENT TO THE ON-SITE DETENTION SYSTEM IN A CLEAR AND VISIBLE POSITION

COLOURS:

TRIANGLE AND "WARNING"	RED
WATER	BLUE
FIGURE AND OTHER LETTERING	BLACK
MATERIALS	POLYPROPYLENE



BASEMENT PUMP OUT TANK
(SECTION B)

NTS

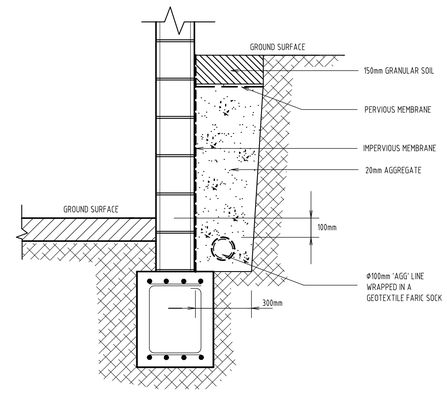
CONFINED SPACE WARNING SIGN

NTS

PROVIDE CONFINED SPACE ENTRY SIGN ADJACENT TO PUMP OUT PIT

COLOURS:

"DANGER" AND BACKGROUND	WHITE
ELLIPTICAL AREA	RED
RECTANGLE CONTAINING ELIPSE	BLACK
OTHER LETTERING AND BORDER	BLACK
MATERIALS	POLYPROPYLENE



TYPICAL SUB SOIL DRAIN

NTS

PUMP MODEL DETAILS

PRORIL TANK SERIES - HIGH CHROME DEWATERING PUMP
MODEL - TANK 215
DISCHARGE RATE - 4.0 L/s
SUPPLIER: ALL-PUMPS - PH 1300 255 785

PUMPOUT DESIGN NOTES

1. THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY SO AS TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
2. A LOW LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THE FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS.
3. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE AND DRAIN THE TANK TO THE LEVEL OF THE LOW-LEVEL FLOAT.
4. A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
5. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED ADJACENT TO THE TANK. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.

PRIOR TO THE INSTALLATION OF PUMPS OR PUMP OUT LINE BUILDER / PLUMBER TO CONTACT A LINE PUMPS OR ALTERNATE PUMP SUPPLIER TO ENSURE REQUIREMENTS OF PUMP AND DISCHARGE LINE ARE CORRECT
ALL PUMPS - PH 1300 255 786

DA PLANS
NOT FOR CONSTRUCTION

NOTES:

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2. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
3. MINIMUM GRADES FOR ALL PIPE - 1.0%
4. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
6. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.

LEGEND:

DP	DOWN PIPE
SP	SPREADER
CE	AIR TIGHT / SCREW DOWN CLEAN OUT POINT
EL 49.45+	EXISTING LEVEL 49.45
SL 49.45+	PROPOSED SURFACE LEVEL 49.45
IL 49.45 +	PROPOSED INVERT LEVEL 49.45
WR 49.45+	PROPOSED WATER RUN LEVEL 49.45
TOK 49.45+	TOP OF KERB LEVEL LEVEL 49.45
RW 49.45	TOP OF RETAINING WALL 49.45
KIP	KERB INLET PIT

AMENDMENT 'C' ARCHITECTURAL CHANGES	DATE	07 07 2021
AMENDMENT 'B' ARCHITECTURAL CHANGES	DATE	18 06 2020
AMENDMENT 'A' DRAINAGE RE-DESIGN TO INCLUDE EASEMENT	DATE	04 06 2019

ACE — CIVIL & HYDRAULIC ENGINEERS

PROPOSED RESIDENTIAL DEVELOPMENT
24 CLAREMONT STREET
CAMPSIE N.S.W.

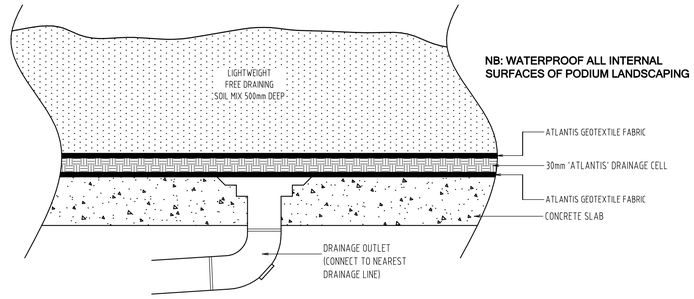
DESIGNED: PAUL ARRAJ
BE, GRAD.IE(AUST), P. Eng

DATE 29 01 2019
DRAWN BY: P.A.
SCALE: AS SHOWN

ACE-CIVIL & HYDRAULIC ENGINEERS
8 LEIGHDON STREET
BASS HILL, NSW, 2197
PHONE / FAX: (02) 9790 7921
MOBILE: 0412 331151
EMAIL: arraj@smartchat.net.au

1819-41
DRAWING No. :
SHEET No. 5
No. OF SHEETS: 13

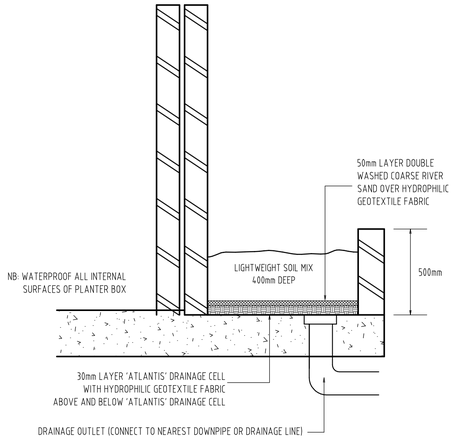
DRAINAGE PLAN — A1



NB: WATERPROOF ALL INTERNAL SURFACES OF PODIUM LANDSCAPING

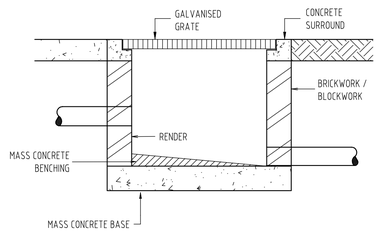
PODIUM LANDSCAPING / PLANTER BOXES

NTS



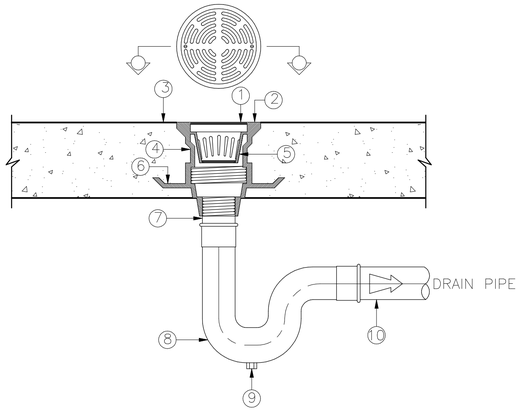
TYPICAL PLANTER BOX DETAIL

NTS



TYPICAL PIT DETAIL

NTS

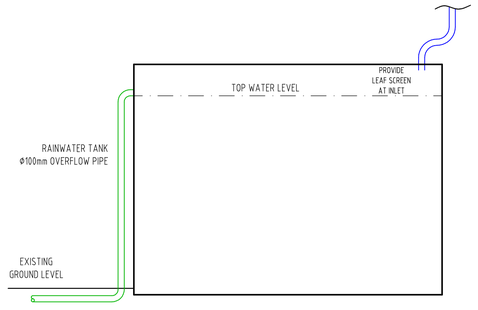


FLOOR GRATE DETAIL (FG)

SPS 100mm ROUND VERTICAL DRAIN

NTS

1. GRATE
2. SECURING SCREW
3. DRAINAGE SLOPE
4. ADJUSTABLE HOUSING
5. SEDIMENT BUCKET
6. CLAMPING COLLAR
7. ADAPTOR
8. P–TRAP
9. CLAENOUT PLUG
10. WASTEWATER DRAIN PIPE



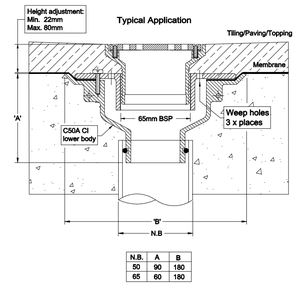
1500 Litre RAINWATER TANK

NTS

SPS 100mm Round Vertical Drain (Vari-Level)

Specification code:
R100G/C (bronze grate, CI lower body)
R100N/C (nickel bronze grate, CI lower body)
R100S/C (316 stainless steel grate, CI lower body)

- Round grate available in Bronze, nickel bronze or 316 Stainless Steel.
- Cast iron lower body and reversible membrane clamp collar with female 65mm BSP thread.



N.B.	A	B
50	90	180
65	60	180

Speciality Plumbing Supplies Pty Ltd
Tel: (02) 9416 8031 Fax: (02) 9416 7614 E-mail: sps@bigpond.net.au

NOTES: RAINWATER TANKS

1. RAINWATER TANK CAPACITY OF 1500 LITRES.
2. THE SYSTEM TO BE DESIGNED WITH THE FOLLOWING GUIDELINES
   - A 'FIRST FLUSH' DIVERSION TO REMOVE ROOF CONTAMINANTS.
   - ADEQUATE SCREENING TO PREVENT MOSQUITO BREEDING AND ENTRY OF ANIMALS OR FOREIGN MATTER
3. TANKS TO BE PLUMBED TO TOP-UP FROM THE POTABLE WATER SUPPLY DURING DRY PERIODS WHEN THE TANKS ARE 80% EMPTY.
4. NO DIRECT CROSS-CONNECTION WITH THE SYDNEY WATER POTABLE SUPPLY AND AN AIR GAP MAINTAINED ABOVE THE OVERFLOW IN THE TANK.
5. A SIGN TO BE INSTALLED STATING "NOT FOR HUMAN CONSUMPTION.
6. RAINWATER TANK TO BE CONNECTED AS PER BASIX REQUIREMENTS.
7. OVERFLOW FROM THE TANK SHALL BE PIPED TO THE DRAINAGE SYSTEM.

RAINWATER TANKS

	MODEL	CAPACITY	DIMENSIONS
UNIT 1	ROUND	1500 Litres	1100mm (diameter) x 1560mm (high)
UNIT 2	SLIMLINE	1500 Litres	1800mm (length) x 600mm (width) x 1560mm (high)
UNIT 3	SLIMLINE	1500 Litres	1800mm (length) x 600mm (width) x 1560mm (high)
UNIT 4	SLIMLINE	1500 Litres	1800mm (length) x 600mm (width) x 1560mm (high)

MANUFACTURED BY DESIGNER TANKS WATER PTY LTD
WEBSITE:DESIGNERTANKS.COM.AU (PH: 02 4605 0635)

DA PLANS
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TOK 49.45+	TOP OF KERB LEVEL LEVEL 49.45
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KIP	KERB INLET PIT

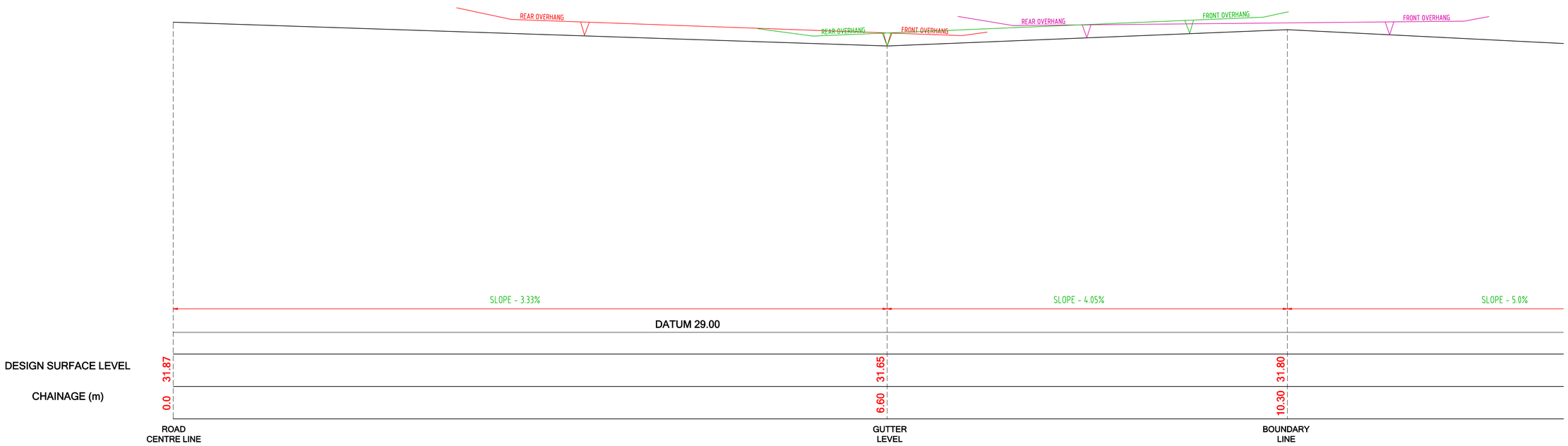
AMENDMENT 'C' ARCHITECTURAL CHANGES	DATE 07 07 2021
AMENDMENT 'B' ARCHITECTURAL CHANGES	DATE 18 06 2020
AMENDMENT 'A' DRAINAGE RE–DESIGN TO INCLUDE EASEMENT	DATE 04 06 2019

ACE CIVIL & HYDRAULIC ENGINEERS

PROPOSED RESIDENTIAL DEVELOPMENT
24 CLAREMONT STREET
CAMPSIE N.S.W.

DESIGNED: PAUL ARRAJ BE, GRAD.IE(AUST), P. Eng	DATE 29 01 2019 DRAWN BY: P.A.
ACE–CIVIL & HYDRAULIC ENGINEERS 8 LEIGHDON STREET BASS HILL, NSW, 2197 PHONE / FAX: (02) 9790 7921 MOBILE: 0412 331151 EMAIL: arraj@smartchat.net.au	SCALE: AS SHOWN 1819-41 DRAWING No.: SHEET No. 6 No. OF SHEETS: 13

DRAINAGE PLAN — A1



DRIVEWAY LONGSECTION

VEHICULAR MOVEMENT DOWN THE DRIVEWAY

SCALE 1:20 (VERTICAL & HORIZONTAL)

DA PLANS

NOT FOR CONSTRUCTION

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AMENDMENT 'C' DATE 07 07 2021
ARCHITECTURAL CHANGES

AMENDMENT 'B' DATE 18 06 2020
ARCHITECTURAL CHANGES

AMENDMENT 'A' DATE 04 06 2019
DRAINAGE RE-DESIGN TO INCLUDE EASEMENT

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DATE 29 01 2019
DRAWN BY: P.A.
SCALE: AS SHOWN

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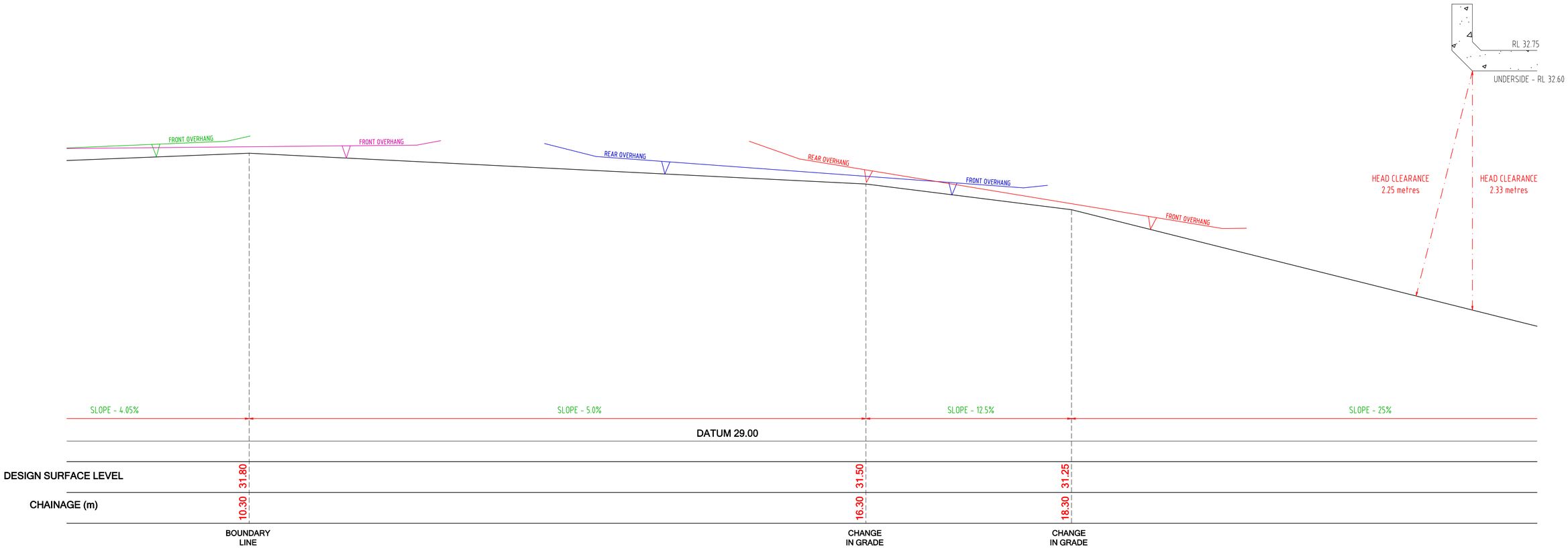
1819-41
DRAWING No. :
SHEET No. 7
No. OF SHEETS: 13

DRAINAGE PLAN A1



DRIVEWAY LONGSECTION

VEHICULAR MOVEMENT DOWN THE DRIVEWAY

SCALE 1:20 (VERTICAL & HORIZONTAL)

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24 CLAREMONT STREET
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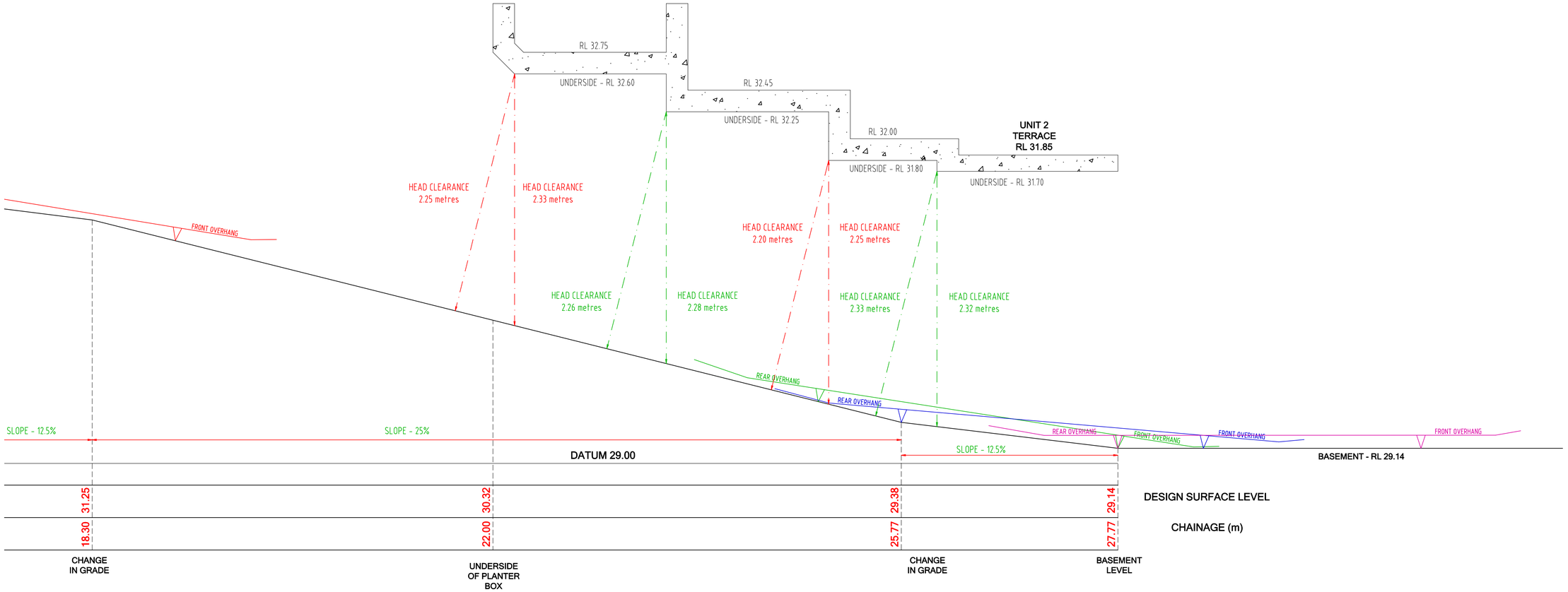
	1819-41 DRAWING No. :
	SHEET No. 8 No. OF SHEETS: 13
DRAINAGE PLAN	A1



DRIVEWAY LONGSECTION

VEHICULAR MOVEMENT DOWN THE DRIVEWAY

SCALE 1:20 (VERTICAL & HORIZONTAL)

DA PLANS

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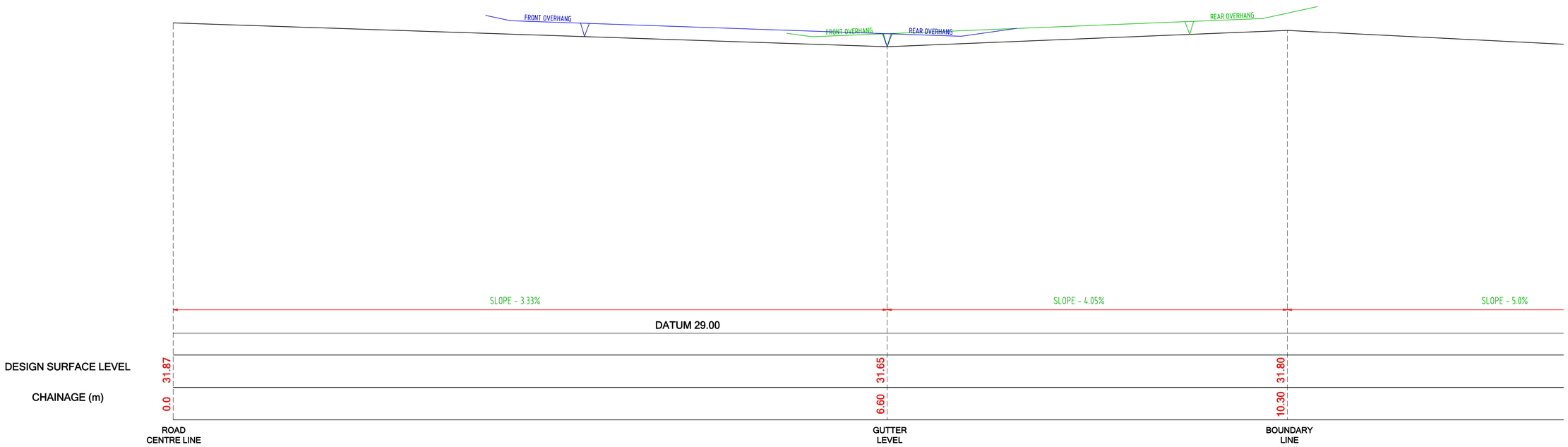
SCALE: AS SHOWN

1819-41
DRAWING No. :

SHEET No. 9
No. OF SHEETS: 13

DRAINAGE PLAN | A1



DRIVEWAY LONGSECTION

VEHICULAR MOVEMENT UP THE DRIVEWAY

SCALE 1:20 (VERTICAL & HORIZONTAL)

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24 CLAREMONT STREET
CAMPSIE N.S.W.

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DRAINAGE PLAN	A1

DRIVEWAY LONGSECTION

VEHICULAR MOVEMENT UP THE DRIVEWAY

SCALE 1:20 (VERTICAL & HORIZONTAL)

DA PLANS

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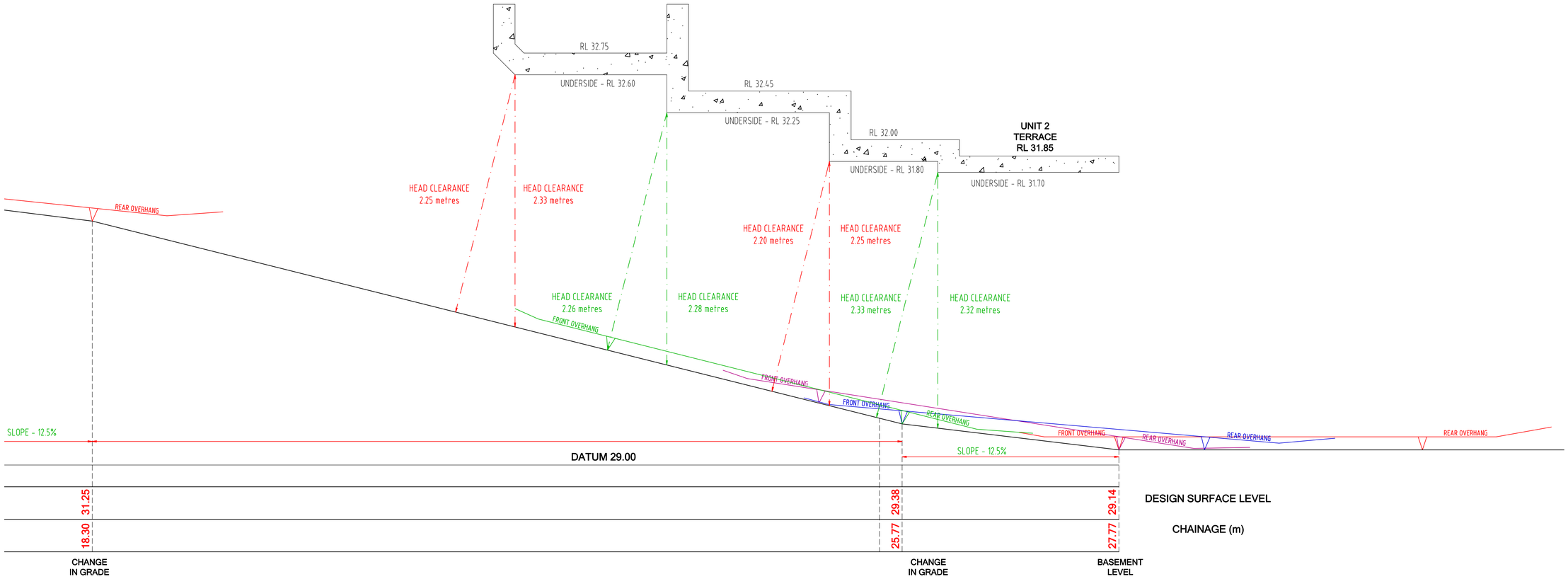
DRAINAGE PLAN | A1



DRIVEWAY LONGSECTION

VEHICULAR MOVEMENT UP THE DRIVEWAY

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CAMPSIE N.S.W.

DESIGNED: PAUL ARRAJ BE, GRAD.IE(AUST), P. Eng	DATE 29 01 2019 DRAWN BY: P.A.
ACE-CIVIL & HYDRAULIC ENGINEERS 8 LEIGHDON STREET BASS HILL, NSW, 2197 PHONE / FAX: (02) 9790 7921 MOBILE: 0412 331151 EMAIL: arraj@smartchat.net.au	SCALE: AS SHOWN 1819-41 DRAWING No. : SHEET No. 12 No. OF SHEETS: 13
DRAINAGE PLAN	A1

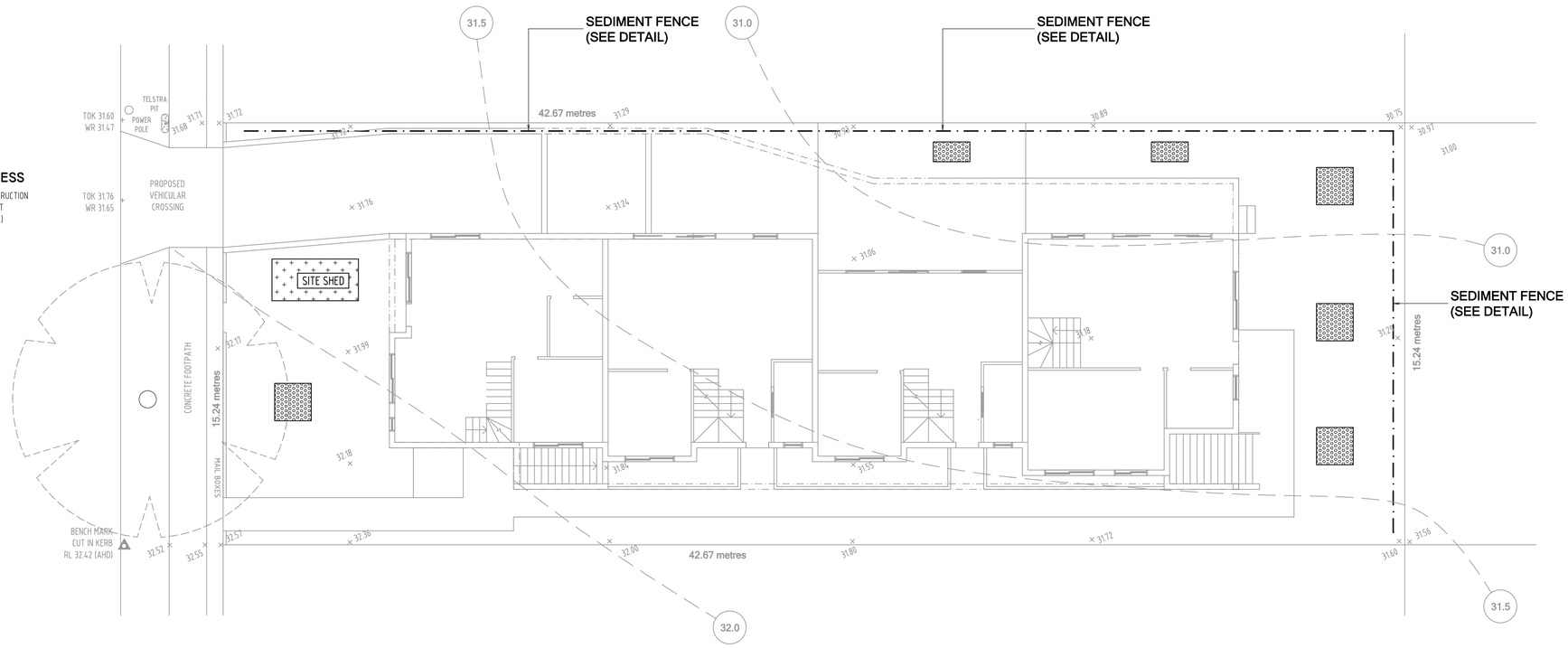
www.dialbeforeyoudig.com.au
DIAL1100 BEFORE YOU DIG

NOTES: SERVICES
NO EXCAVATION IN FOOTPATH WITHOUT CHECKING FOR DEPTH AND LOCATION OF SERVICES

NO MATERIAL TO BE STORED ON FOOTPATH

SITE ACCESS
TEMPORARY CONSTRUCTION ENTRY /EXIT (SEE DETAIL)

CLAREMONT STREET

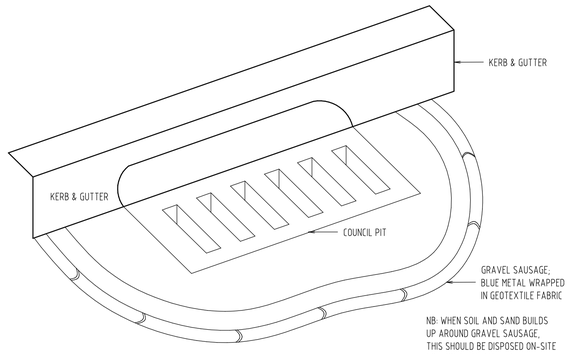


NO MATERIAL TO BE STORED ON FOOTPATH

SOIL & WATER MANAGEMENT PLAN

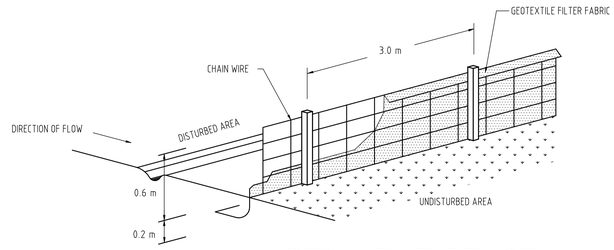
SCALE 1:100

NB: PLACE GRAVEL SAUSAGE AROUND THE NEAREST DOWNSTREAM COUNCIL STORMWATER PIT IN CLAREMONT STREET



GRAVEL SAUSAGE - GUTTER PROTECTION

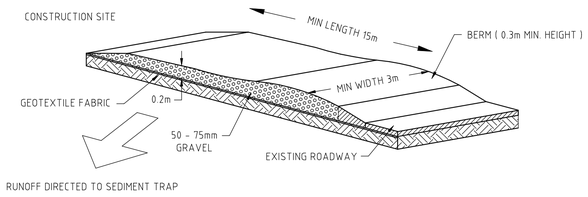
NTS



SEDIMENT FENCE

NTS

NB: PROVIDE SEDIMENT FENCE ALONG THE SOUTHERN & EASTERN BOUNDARIES AND CLEAN AND MAINTAIN DAILY.



TEMPORARY CONSTRUCTION EXIT / ENTRANCE

NTS

NOTES: SOIL & WATER MANAGEMENT

1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER.
2. MINIMISE DISTURBED AREAS.
3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
4. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
5. ROADS AND FOOTPATH TO BE SWEPT DAILY.
6. NO MATERIAL TO BE STORED ON FOOTPATH.
7. IF YOU DO NOT COMPLY YOU MAY BE LIABLE TO A $1500 FINE.

LEGEND

DP DOWN PIPE
SP SPREADER
STORMWATER INLET PIT
STOCKPILE AREA

DA PLANS
NOT FOR CONSTRUCTION

AMENDMENT 'C' ARCHITECTURAL CHANGES	DATE 07 07 2021
AMENDMENT 'B' ARCHITECTURAL CHANGES	DATE 18 06 2020
AMENDMENT 'A' DRAINAGE RE-DESIGN TO INCLUDE EASEMENT	DATE 04 06 2019

ACE CIVIL & HYDRAULIC ENGINEERS

PROPOSED RESIDENTIAL DEVELOPMENT
24 CLAREMONT STREET
CAMPSIE N.S.W.

DESIGNED: PAUL ARRAJ BE, GRAD.IE(AUST), P. Eng	DATE 29 01 2019 DRAWN BY: P.A.
ACE-CIVIL & HYDRAULIC ENGINEERS 8 LEIGHDON STREET BASS HILL, NSW, 2197 PHONE / FAX: (02) 9790 7921 MOBILE: 0412 331151 EMAIL: arraj@smartchat.net.au	SCALE: AS SHOWN 1819-41 DRAWING No. : SHEET No. 13 No. OF SHEETS: 13

SEDIMENT CONTROL PLAN | A1

Nationwide House Energy Rating Scheme — Multiple Class1-dwelling summary NatHERS Certificate No. 0005025350

Generated on 13 Sep 2021 using BERS Pro v4.4.0.1 (3.21)

Property

Address 24 Claremont Street , CAMPSIE , NSW , 2194

Lot/DP 61/4357

NatHERS climate zone 56

Accredited assessor

Terry Chapman

CHAPMAN ENVIRONMENTAL SERVICES PTY LTD

terry@basixcertificates.com.au

0414 265 292

Accreditation No. 20920

Assessor Accrediting Organisation ABSA

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=ckKEoHnHQ . When using either link, ensure you are visiting hstar.com.au

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m^2/p.a.)	Cooling load (MJ/m^2/p.a.)	Total load (MJ/m^2/p.a.)	Star rating
0006483069	01	25.8	18.3	44.2	6.6
0006483077	02	33.4	9.6	43	6.7
0006483085	03	38	11.8	49.8	6.1
0006483093	04	34.8	10.4	45.2	6.4

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated buildings are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Explanatory Notes

About this report

This is a summary of NCC Class 1 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

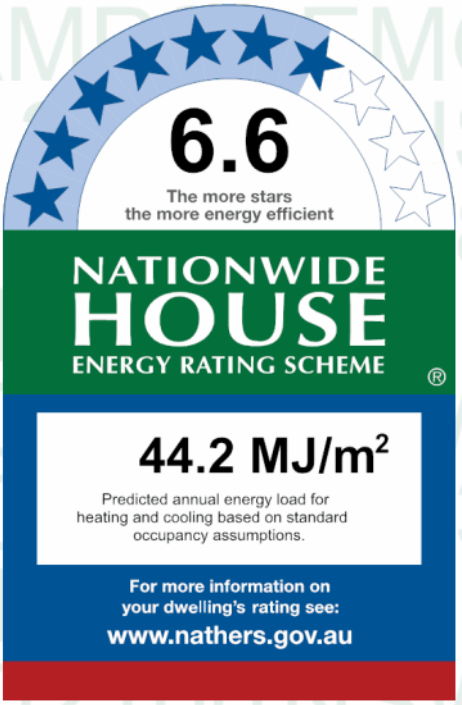
Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006483069

Generated on 13 Sep 2021 using BERS Pro v4.4.0.6 (3.21)



Property

Address	Unit 01, 24 Claremont Street , CAMPSIE , NSW , 2194
Lot/DP	61/4357
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Townhouses
Prepared by	JLS Developments Pty Ltd

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	104.0	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	104.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
25.8 MJ/m^2	18.3 MJ/m^2

Accredited assessor

Name	Terry Chapman
Business name	CHAPMAN ENVIRONMENTAL SERVICES PTY LTD
Email	terry@basixcertificates.com.au
Phone	0414 265 292
Accreditation No.	20920
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

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To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=UbTsSyYlC.
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State and territory variations and additions to the NCC may also apply.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73
ALM-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.54	0.60

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	2100	1800	n/a	45	NW	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	1800	500	n/a	00	NW	No
Kitchen/Living	ALM-002-01 A	n/a	2100	1800	n/a	00	NW	No
Kitchen/Living	ALM-001-01 A	n/a	2100	900	n/a	90	NW	No
Kitchen/Living	ALM-002-01 A	n/a	600	1800	n/a	45	NE	No
Study	ALM-002-01 A	n/a	600	1800	n/a	45	SW	No
Bedroom 1	ALM-002-01 A	n/a	2100	2400	n/a	45	NW	No
Ensuite	ALM-001-01 A	n/a	1000	600	n/a	90	NE	No
Bedroom 2	ALM-001-01 A	n/a	1500	600	n/a	60	NE	No
Stairs/Landing	ALM-002-01 A	n/a	2100	600	n/a	00	SW	No
Bedroom 3	ALM-002-01 A	n/a	1200	1800	n/a	45	NW	No
Bedroom 4	ALM-002-01 A	n/a	600	1800	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

* Refer to glossary.

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	No insulation	No
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	4195	SW	0	NO
Kitchen/Living	EW-1	2700	3700	NW	1100	NO
Kitchen/Living	EW-1	2700	600	NE	3600	YES
Kitchen/Living	EW-1	2700	3600	NW	1200	YES
Kitchen/Living	EW-1	2700	6900	NE	1200	NO
Study	EW-1	2700	3295	SW	0	NO
Bedroom 1	EW-2	2700	3395	NW	1100	YES
Bedroom 1	EW-2	2700	1200	NE	0	YES
Ensuite	EW-2	2700	995	NW	0	YES
Ensuite	EW-2	2700	2395	NE	0	NO
Bedroom 2	EW-2	2700	3295	NE	0	NO
Bedroom 2	EW-2	2700	800	SE	0	NO
Stairs/Landing	EW-2	2700	1190	SW	0	NO
Bedroom 3	EW-2	2700	2995	SW	0	NO
Bedroom 3	EW-2	2700	3900	NW	500	NO
Bedroom 3	EW-2	2700	600	NE	3400	YES
Bedroom 4	EW-2	2700	3295	SW	500	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		40.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		100.00	No insulation

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Suspended Concrete Slab 150mm	37.90	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
SHW/Ldry	Suspended Concrete Slab 150mm	4.10	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Study	Suspended Concrete Slab 150mm	9.60	Enclosed	Bulk Insulation in Contact with Floor R1.4	Cork Tiles or Parquetry 8mm
Bedroom 1/Kitchen/Living	Concrete Above Plasterboard 150mm	11.80		No Insulation	Cork Tiles or Parquetry 8mm
Ensuite	Suspended Concrete Slab 150mm	2.20	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Bedroom 2/Kitchen/Living	Concrete Above Plasterboard 150mm	7.40		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2	Suspended Concrete Slab 150mm	3.20	Enclosed	Bulk Insulation in Contact with Floor R1.4	Cork Tiles or Parquetry 8mm
Bath/SHW/Ldry	Concrete Above Plasterboard 150mm	4.10		No Insulation	Ceramic Tiles 8mm
Stairs/Landing/Kitchen/Living	Concrete Above Plasterboard 150mm	5.20		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Kitchen/Living	Concrete Above Plasterboard 150mm	12.10		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 4/Study	Concrete Above Plasterboard 150mm	9.60		No Insulation	Cork Tiles or Parquetry 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete Above Plasterboard	No Insulation	No
SHW/Ldry	Concrete Above Plasterboard	No Insulation	No
Study	Concrete Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Stairs/Landing	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Bedroom 4	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	9	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
SHW/Ldry	1	Downlights - LED	150	Sealed
SHW/Ldry	1	Exhaust Fans	300	Sealed
Study	2	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	2	Downlights - LED	150	Sealed
Ensuite	1	Downlights - LED	150	Sealed
Ensuite	1	Exhaust Fans	300	Sealed
Bedroom 2	2	Downlights - LED	150	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Stairs/Landing	2	Downlights - LED	150	Sealed
Bedroom 3	2	Downlights - LED	150	Sealed
Bedroom 4	2	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.30	Light

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

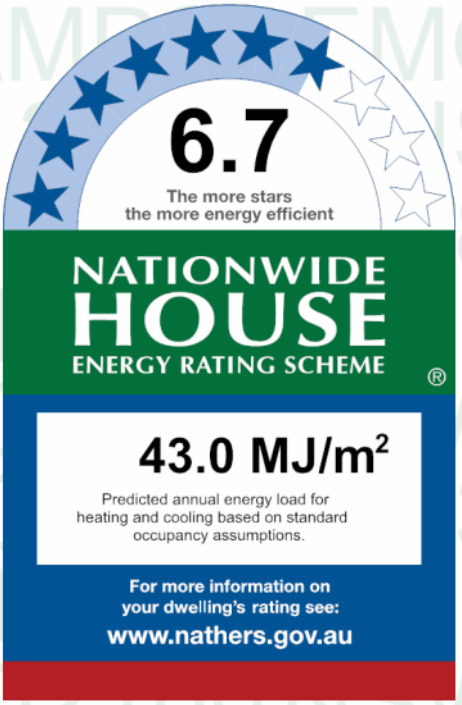
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006483077

Generated on 13 Sep 2021 using BERS Pro v4.4.0.6 (3.21)



Property

Address	Unit 02, 24 Claremont Street , CAMPSIE , NSW , 2194
Lot/DP	61/4357
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Townhouses
Prepared by	JLS Developments Pty Ltd

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	96.0	Suburban
Unconditioned*	11.0	**NatHERS climate zone**
Total	106.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
33.4 MJ/m^2	9.6 MJ/m^2

Accredited assessor

Name	Terry Chapman
Business name	CHAPMAN ENVIRONMENTAL SERVICES PTY LTD
Email	terry@basixcertificates.com.au
Phone	0414 265 292
Accreditation No.	20920
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

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The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73
ALM-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.54	0.60

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	2100	2000	n/a	45	NE	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-001-01 A	n/a	900	900	n/a	90	NE	No
Kitchen/Living	ALM-002-01 A	n/a	2000	1000	n/a	00	NE	No
Bath	ALM-001-01 A	n/a	700	700	n/a	90	SW	No
Study	ALM-002-01 A	n/a	1200	1800	n/a	45	SW	No
Stiars/Hall	ALM-002-01 A	n/a	1800	900	n/a	00	SW	No
Bedroom 1	ALM-002-01 A	n/a	600	1800	n/a	45	SW	No
Bedroom 2	ALM-002-01 A	n/a	600	2100	n/a	45	NE	No
Bedroom 3	ALM-002-01 A	n/a	600	1800	n/a	45	NE	No
Bath	ALM-002-01 A	n/a	600	1500	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation

* Refer to glossary.

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2040	820	90	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Foil Sided Bubble Wrap, Anti-glare one side	No
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	1200	SE	0	NO
Kitchen/Living	EW-1	2700	2890	SW	1200	YES
Kitchen/Living	EW-1	2700	7500	NE	1100	NO
Bath	EW-1	2700	1495	SW	1200	NO
Study	EW-1	2700	500	SE	4400	YES
Study	EW-1	2700	3100	SW	0	NO
Study	EW-1	2700	500	NW	0	NO
Stiars/Hall	EW-2	2700	1890	SW	0	NO
Bedroom 1	EW-2	2700	3095	SW	600	NO
Bedroom 2	EW-2	2700	3595	NE	600	NO
Bedroom 3	EW-2	2700	3895	NE	600	NO
Bath	EW-2	2700	2495	SW	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		77.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		89.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Suspended Concrete Slab 150mm	42.50	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Bath	Suspended Concrete Slab 150mm	4.30	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Study	Suspended Concrete Slab 150mm	9.40	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Stiars/Hall/Kitchen/Living	Concrete Above Plasterboard 150mm	8.80		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 1/Kitchen/Living	Concrete Above Plasterboard 150mm	2.70		No Insulation	Cork Tiles or Parquetry 8mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1/Study	Concrete Above Plasterboard 150mm	7.80		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Kitchen/Living	Concrete Above Plasterboard 150mm	12.10		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Kitchen/Living	Concrete Above Plasterboard 150mm	11.80		No Insulation	Cork Tiles or Parquetry 8mm
Ensuite/Kitchen/Living	Concrete Above Plasterboard 150mm	3.40		No Insulation	Ceramic Tiles 8mm
Ensuite/Bath	Concrete Above Plasterboard 150mm	0.60		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Concrete Above Plasterboard 150mm	2.50		No Insulation	Ceramic Tiles 8mm
Bath/Bath	Concrete Above Plasterboard 150mm	3.80		No Insulation	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete Above Plasterboard	No Insulation	No
Bath	Concrete, Plasterboard	No insulation	No
Bath	Concrete Above Plasterboard	No Insulation	No
Study	Concrete, Plasterboard	No insulation	No
Study	Concrete Above Plasterboard	No Insulation	No
Stiars/Hall	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	6	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Study	2	Downlights - LED	150	Sealed
Stiars/Hall	2	Downlights - LED	150	Sealed
Bedroom 1	2	Downlights - LED	150	Sealed
Bedroom 2	2	Downlights - LED	150	Sealed
Bedroom 3	2	Downlights - LED	150	Sealed
Ensuite	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Added Insulation, No air Gap	0.50	Medium
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.30	Light

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

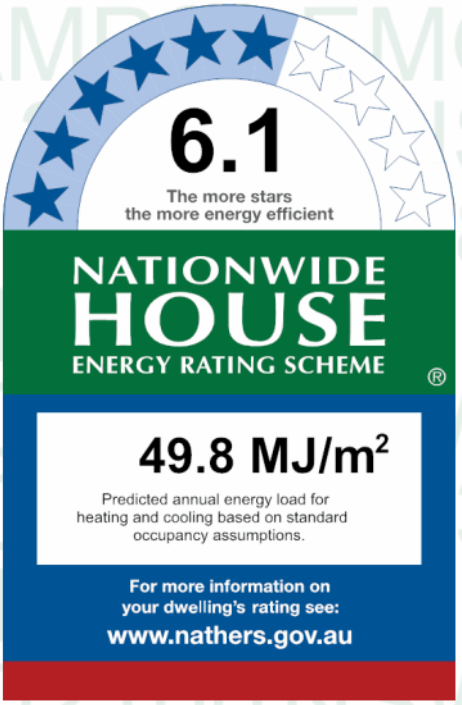
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006483085

Generated on 13 Sep 2021 using BERS Pro v4.4.0.6 (3.21)



Property

Address	Unit 03, 24 Claremont Street , CAMPSIE , NSW , 2194
Lot/DP	61/4357
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Townhouses
Prepared by	JLS Developments Pty Ltd

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	91.0	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	91.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
38.0 MJ/m^2	**11.8** MJ/m^2

Accredited assessor

Name	Terry Chapman
Business name	CHAPMAN ENVIRONMENTAL SERVICES PTY LTD
Email	terry@basixcertificates.com.au
Phone	0414 265 292
Accreditation No.	20920
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

About the rating

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

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Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

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Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

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Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73
ALM-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.54	0.60

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-002-01 A	n/a	2100	3000	n/a	60	NE	No

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-001-01 A	n/a	900	900	n/a	90	NE	No
Bath	ALM-001-01 A	n/a	700	700	n/a	90	SW	No
Study	ALM-002-01 A	n/a	1200	1800	n/a	45	SW	No
Stiars/Hall	ALM-002-01 A	n/a	1800	900	n/a	00	SW	No
Bedroom 3	ALM-002-01 A	n/a	600	1800	n/a	45	SW	No
Bedroom 2	ALM-002-01 A	n/a	600	2100	n/a	45	NE	No
Bedroom 1	ALM-002-01 A	n/a	600	1800	n/a	45	NE	No
Bath	ALM-002-01 A	n/a	600	1500	n/a	45	SW	No

Roof window *type and performance*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2040	820	90	SW

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Foil Sided Bubble Wrap, Anti-glare one side	No
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	2990	SW	900	YES
Kitchen/Living	EW-1	2700	7300	NE	1100	NO
Bath	EW-1	2700	1395	SW	900	NO
Study	EW-1	2700	400	SE	4400	YES
Study	EW-1	2700	2900	SW	0	NO
Study	EW-1	2700	400	NW	0	NO
Stiars/Hall	EW-2	2700	1890	SW	0	NO
Bedroom 3	EW-2	2700	2995	SW	600	NO
Bedroom 2	EW-2	2700	3495	NE	600	NO
Bedroom 1	EW-2	2700	3795	NE	600	NO
Bedroom 1	EW-2	2700	1800	SE	0	NO
Bath	EW-2	2700	300	SE	0	NO
Bath	EW-2	2700	2395	SW	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity brick, plasterboard		66.00	No Insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		86.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Suspended Concrete Slab 150mm	32.50	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Bath	Suspended Concrete Slab 150mm	3.90	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Study	Suspended Concrete Slab 150mm	8.50	Enclosed	Bulk Insulation in Contact with Floor R1.4	Ceramic Tiles 8mm
Stiars/Hall/Kitchen/Living	Concrete Above Plasterboard 150mm	8.40		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Kitchen/Living	Concrete Above Plasterboard 150mm	2.30		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Study	Concrete Above Plasterboard 150mm	7.30		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Kitchen/Living	Concrete Above Plasterboard 150mm	8.00		No Insulation	Cork Tiles or Parquetry 8mm

* Refer to glossary.

Location	Construction	Area (m)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	Suspended Concrete Slab 150mm	3.70	Totally Open	Bulk Insulation in Contact with Floor R1.4	Cork Tiles or Parquetry 8mm
Bedroom 1/Kitchen/Living	Concrete Above Plasterboard 150mm	7.40		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 1	Suspended Concrete Slab 150mm	4.10	Totally Open	Bulk Insulation in Contact with Floor R1.4	Cork Tiles or Parquetry 8mm
Ensuite/Kitchen/Living	Concrete Above Plasterboard 150mm	2.90		No Insulation	Ceramic Tiles 8mm
Bath/Kitchen/Living	Concrete Above Plasterboard 150mm	2.50		No Insulation	Ceramic Tiles 8mm
Bath/Bath	Concrete Above Plasterboard 150mm	3.50		No Insulation	Ceramic Tiles 8mm

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Concrete, Plasterboard	No insulation	No
Kitchen/Living	Concrete Above Plasterboard	No Insulation	No
Bath	Concrete, Plasterboard	No insulation	No
Bath	Concrete Above Plasterboard	No Insulation	No
Study	Concrete, Plasterboard	No insulation	No
Study	Concrete Above Plasterboard	No Insulation	No
Stiars/Hall	Plasterboard	Bulk Insulation R3.5	No
Bedroom 3	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 1	Plasterboard	Bulk Insulation R3.5	No
Ensuite	Plasterboard	Bulk Insulation R3.5	No
Bath	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	6	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Study	2	Downlights - LED	150	Sealed
Stiars/Hall	2	Downlights - LED	150	Sealed
Bedroom 3	2	Downlights - LED	150	Sealed
Bedroom 2	2	Downlights - LED	150	Sealed
Bedroom 1	2	Downlights - LED	150	Sealed
Ensuite	1	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	1	Exhaust Fans	300	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Added Insulation, No air Gap	0.30	Light
Roof Tiles	Foil, Gap Above, Reflective Side Down, Anti-glare Up	0.30	Light

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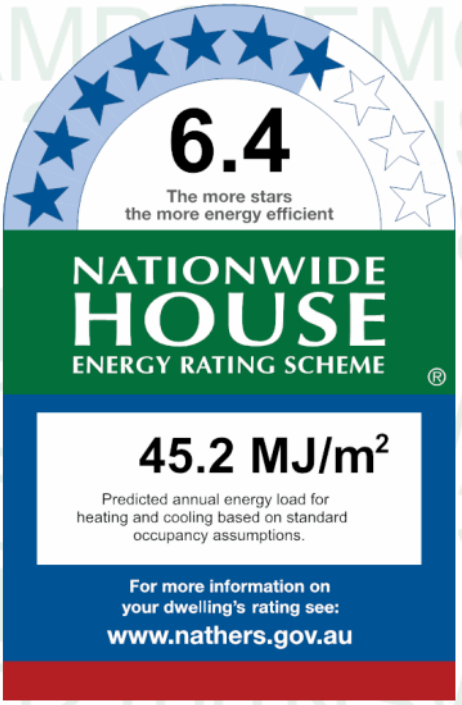
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0006483093

Generated on 13 Sep 2021 using BERS Pro v4.4.0.6 (3.21)



Property

Address	Unit 04, 24 Claremont Street , CAMPSIE , NSW , 2194
Lot/DP	61/4357
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Townhouses
Prepared by	JLS Developments Pty Ltd

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	76.0	Suburban
Unconditioned*	5.0	**NatHERS climate zone**
Total	81.0	56
Garage	0.0	

Thermal performance

Heating	Cooling
34.8 MJ/m^2	10.4 MJ/m^2

Accredited assessor

Name	Terry Chapman
Business name	CHAPMAN ENVIRONMENTAL SERVICES PTY LTD
Email	terry@basixcertificates.com.au
Phone	0414 265 292
Accreditation No.	20920
Assessor Accrediting Organisation	ABSA
Declaration of interest	Declaration completed: no conflicts

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=mCjHQxGac.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-006-03 A	n/a	2100	2100	n/a	23	SE	No

* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	ALM-006-03 A	n/a	2100	3600	n/a	45	NE	No
Kitchen/Living	ALM-006-03 A	n/a	900	1200	n/a	45	NE	No
Bath	ALM-002-01 A	n/a	900	900	n/a	45	SE	No
Bed 1	ALM-006-03 A	n/a	1200	1200	n/a	45	SW	No
Bed 1	ALM-006-03 A	n/a	1200	1800	n/a	45	SW	No
Loft/Stairs	ALM-006-03 A	n/a	1000	1500	n/a	45	SE	No

Roof window *type and performance*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2040	820	90	SE

* Refer to glossary.

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Bulk Insulation R1.9	No
EW-2	Fibro Cavity Panel Direct Fix	0.50	Medium	Anti-glare foil with bulk no gap R2.5	No
EW-3	Fibro Cavity Panel Direct Fix	0.30	Light	Anti-glare foil with bulk no gap R2.5	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	EW-1	2700	4695	SE	1000	NO
Kitchen/Living	EW-1	2700	1100	NW	0	NO
Kitchen/Living	EW-1	2700	7400	NE	900	NO
Bath	EW-1	2700	2095	SE	0	NO
Bath	EW-1	2700	2495	SW	2200	YES
Bed 1	EW-1	2700	1500	SE	2500	YES
Bed 1	EW-1	2700	4900	SW	0	NO
Bed 1	EW-1	2700	800	NW	0	NO
Loft/Stairs	EW-2	1850	5000	SE	0	NO
Loft/Stairs	EW-3	1130	5500	SW	0	NO
Loft/Stairs	EW-3	1130	5500	NE	0	NO

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		12.00	Bulk Insulation, No Air Gap R2.5
IW-2 - Cavity wall, direct fix plasterboard, single gap		13.00	No insulation
IW-3 - Cavity brick, plasterboard		27.00	No Insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	Suspended Concrete Slab 150mm	34.40	Enclosed	Bulk Insulation in Contact with Floor R3.5	Ceramic Tiles 8mm
Bath	Suspended Concrete Slab 150mm	5.00	Enclosed	Bulk Insulation in Contact with Floor R3.5	Ceramic Tiles 8mm
Bed 1	Suspended Concrete Slab 150mm	17.30	Enclosed	Bulk Insulation in Contact with Floor R3.5	Cork Tiles or Parquetry 8mm
Loft/Stairs/Kitchen/Living	Timber Above Plasterboard 150mm	15.40		No Insulation	Cork Tiles or Parquetry 8mm
Loft/Stairs/Bath	Timber Above Plasterboard 150mm	1.30		No Insulation	Cork Tiles or Parquetry 8mm
Loft/Stairs/Bed 1	Timber Above Plasterboard 150mm	10.80		No Insulation	Cork Tiles or Parquetry 8mm

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Bath	Plasterboard	Bulk Insulation R3.5	No
Bath	Timber Above Plasterboard	No Insulation	No
Bed 1	Plasterboard	Bulk Insulation R3.5	No
Bed 1	Timber Above Plasterboard	No Insulation	No
Loft/Stairs	Plasterboard	Bulk Insulation R3.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
Kitchen/Living	8	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Bed 1	4	Downlights - LED	150	Sealed
Loft/Stairs	4	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
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