



Sydney Building Approval  
Centre  
ACN: 081 945 904  
DETAILS NOTED

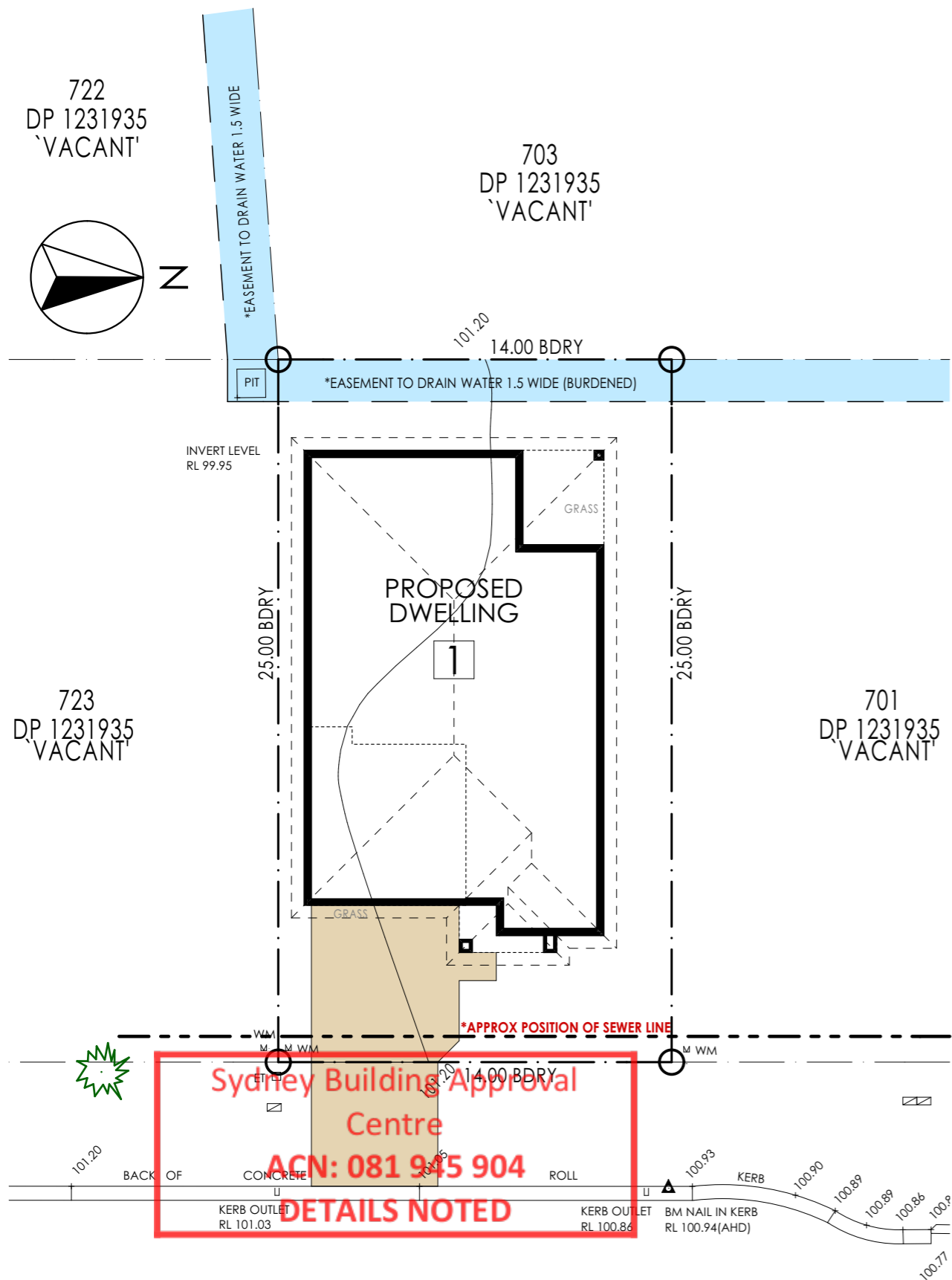
Proposed:  
S-Storey Dwelling

Client:  
Brolen Homes

Location:  
Lot 702 HN:# DP:1231935  
Courtney Loop, Oran Park

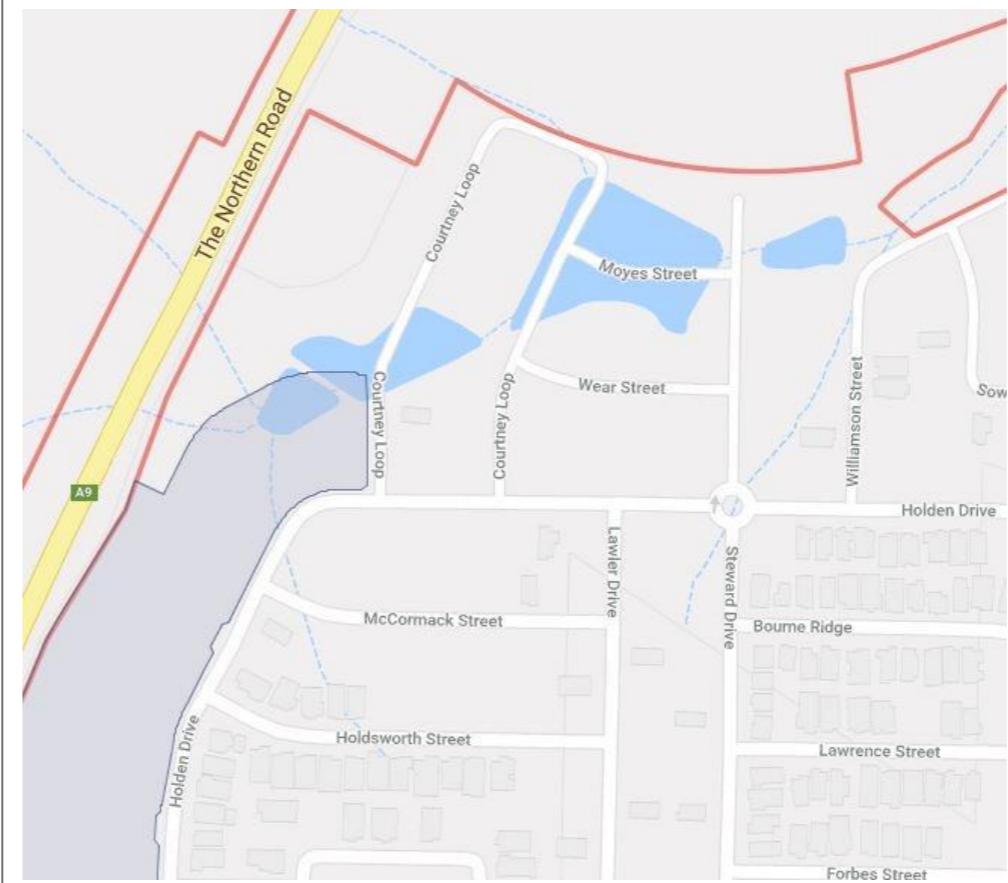
Reference:  
MB095-18  
BUILDERS JOB #:  
170121

**NOTE:** ARTISTIC IMPRESSION IS FOR ILLUSTRATION PURPOSES ONLY. COLOURS AND MATERIAL FINISHES WILL BE SUBJECT TO BUILDERS FINAL TENDER.



COURTNEY LOOP

GREENFIELD HOUSING CODE



Site & Context Analysis Plan  
Scale 1:200

REVISION SCHEDULE

ISSUE	DESCRIPTION	BY	DATE
A-0	PRELIM PLAN	NK	20.12.18
B-0	LODGEMENT PLAN	NK	25.01.19

GENERAL BUILDING NOTES

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SPECIFICATIONS PROVIDED.
2. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH BUILDERS TENDER/CONTRACT DOCUMENTATION
3. FIGURED DIMENSIONS MUST TAKE PREFERENCE TO SCALING.
4. LEVELS SHOWN ARE APPROXIMATE AND TO BE CONFIRMED ON SITE BY SURVEYOR.
5. DRAINAGE CONCEPT PLAN IS SCHEMATIC ONLY. RELATED WORKS TO BE VERIFIED BY LICENCED DRAINER AND/OR HYDRAULIC ENG PRIOR TO WORK COMMENCING.
6. IF ENGINEERS DRAWINGS ARE REQUIRED SUCH MUST TAKE PREFERENCE TO THESE DRAWINGS.
7. ALL BOUNDARY CLEARANCES MUST BE VERIFIED BEFORE COMMENCEMENT OF BUILDING WORKS BY REGISTERED SURVEYOR.
8. BUILDING WORKS TO BE CARRIED OUT STRICTLY IN ACCORDANCE TO THESE DRAWINGS.
9. BUILDER IS TO STRICTLY COMPLY WITH ALL RELEVANT BUILDING CODE OF AUSTRALIA CONSTRUCTION REQUIREMENTS AND AUSTRALIAN STANDARDS.
10. IN CASE OF ALTERATIONS OR DISCREPANCIES NOTIFY MARRETTA DESIGN IMMEDIATELY.



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**marretta**  
design and developments

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PROPOSED:  
S-Storey Dwelling

CLIENT:  
Brolen Homes

LOCATION:  
Lot 702 HN:# DP:1231935  
Courtney Loop,  
Oran Park

COUNCIL:  
Camden

SHEET:  
03 of 12

DATE DRAWN:  
25.10.18

HOUSE DESCRIPTION:  
Harmony 19  
Classic Facade

MARRETTA REF #:  
MB095-18

DESIGNED BY:  
FS

DRAWN BY:  
NK

BUILDERS REF #:  
170121

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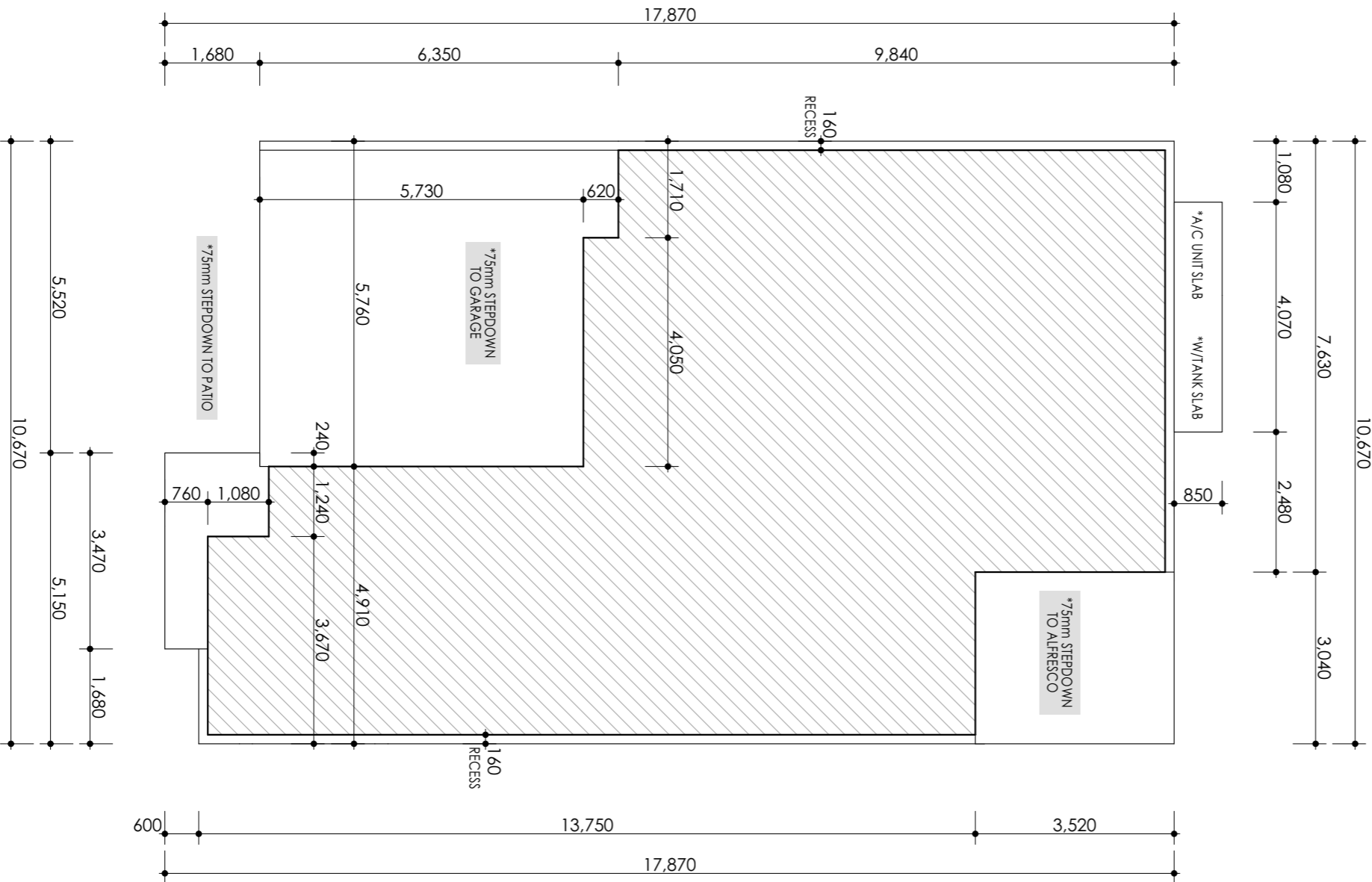
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MARRETTA REF #:  
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DESIGNED:  
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Sydney Building Approval  
Centre  
ACN: 081 945 904

IMPORTANT SLAB SETOUT NOTES!!!!  
DETAILS NOTED

THE "SLAB LAYOUT PLAN" IS TO BE READ AND USED AS AN ADDITIONAL GUIDE FOR THE SOLE PURPOSE OF "SETTING OUT" THE SLAB. THE SLAB LAYOUT PLAN TO BE READ IN CONJUNCTION WITH ARCHITECTURAL PLANS AT ALL TIMES. QUERIES OR DISCREPANCIES ARE TO BE RESOLVED PRIOR TO THE COMMENCEMENT OF ANY PIERING AND ANY FORMWORK.

REFER TO ENGINEER'S DRAWINGS FOR STRUCTURAL DETAILS & CONCRETE SPECIFICATIONS & TO DETERMINE THE LOCATION OF THICKENING BEAMS AND OTHER STRUCTURAL ELEMENTS.. REFER TO ENGINEER'S DRAWINGS FOR PLUMBING & OTHER SERVICE PENETRATION DETAILS. IF IN DOUBT... CONTACT THE BUILDING DESIGNER PRIOR TO COMMENCEMENT OF WORKS.

NOTE: ALL PROPOSED FINISH FLOOR LEVELS ARE SUBJECT TO CONFIRMATION WITH STEPDOWN NOMINATED PRIOR TO EXCAVATION BY BUILDER, EXCAVATOR AND/OR CONCRETOR.

Slab Layout Plan

Scale 1:100

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PROPOSED:  
S-Storey Dwelling

CLIENT:  
Brolen Homes

LOCATION:  
Lot 702 HN:# DP:1231935  
Courtney Loop,  
Oran Park

COUNCIL:  
Camden

SHEET:  
05 of 12

DATE DRAWN:  
25.10.18

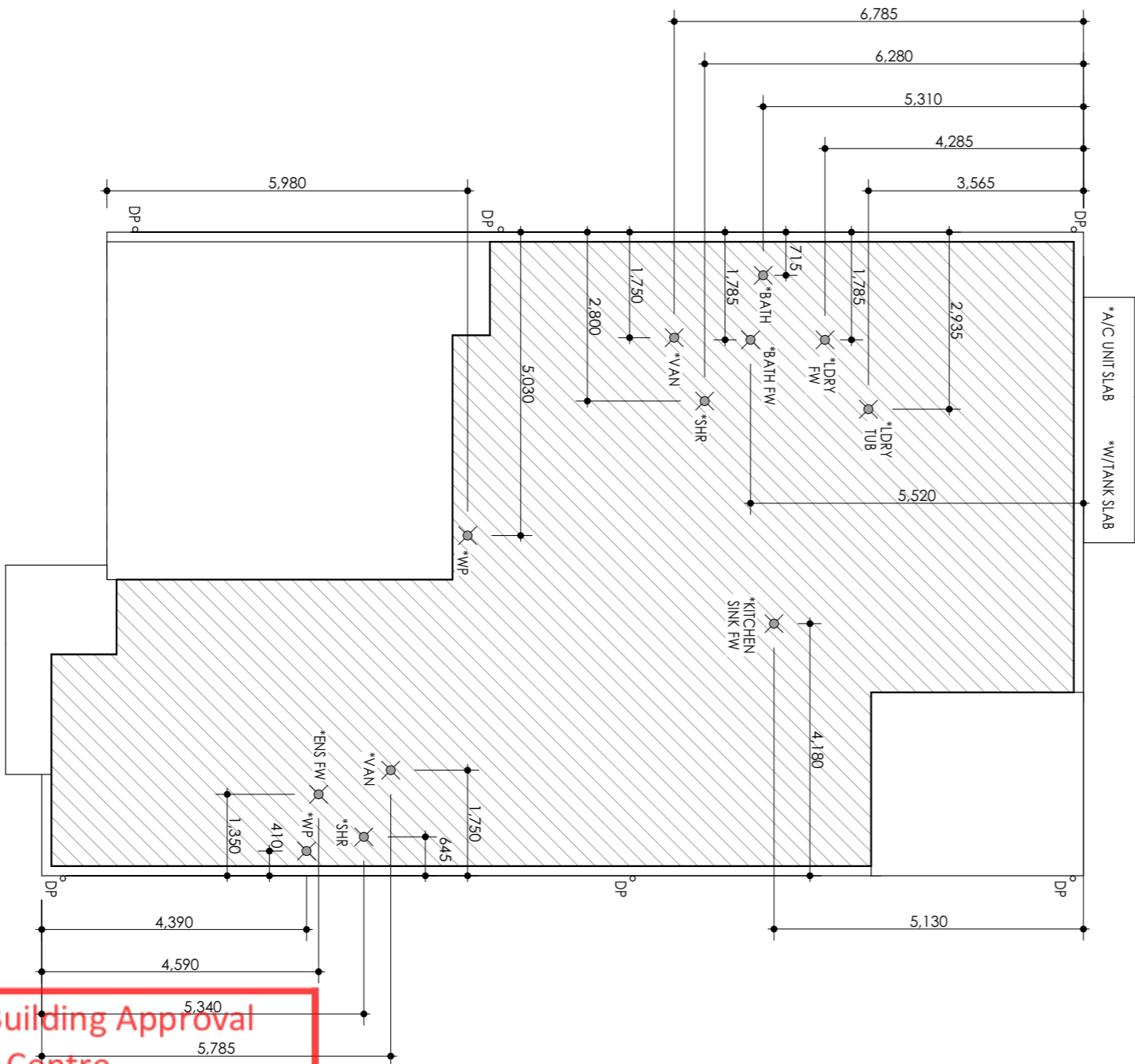
HOUSE DESCRIPTION:  
Harmony 19  
Classic Facade

MARRETTA REF #:  
MB095-18

DESIGNED:  
FS

DRAWN BY:  
NK

BUILDERS REF #:  
170121



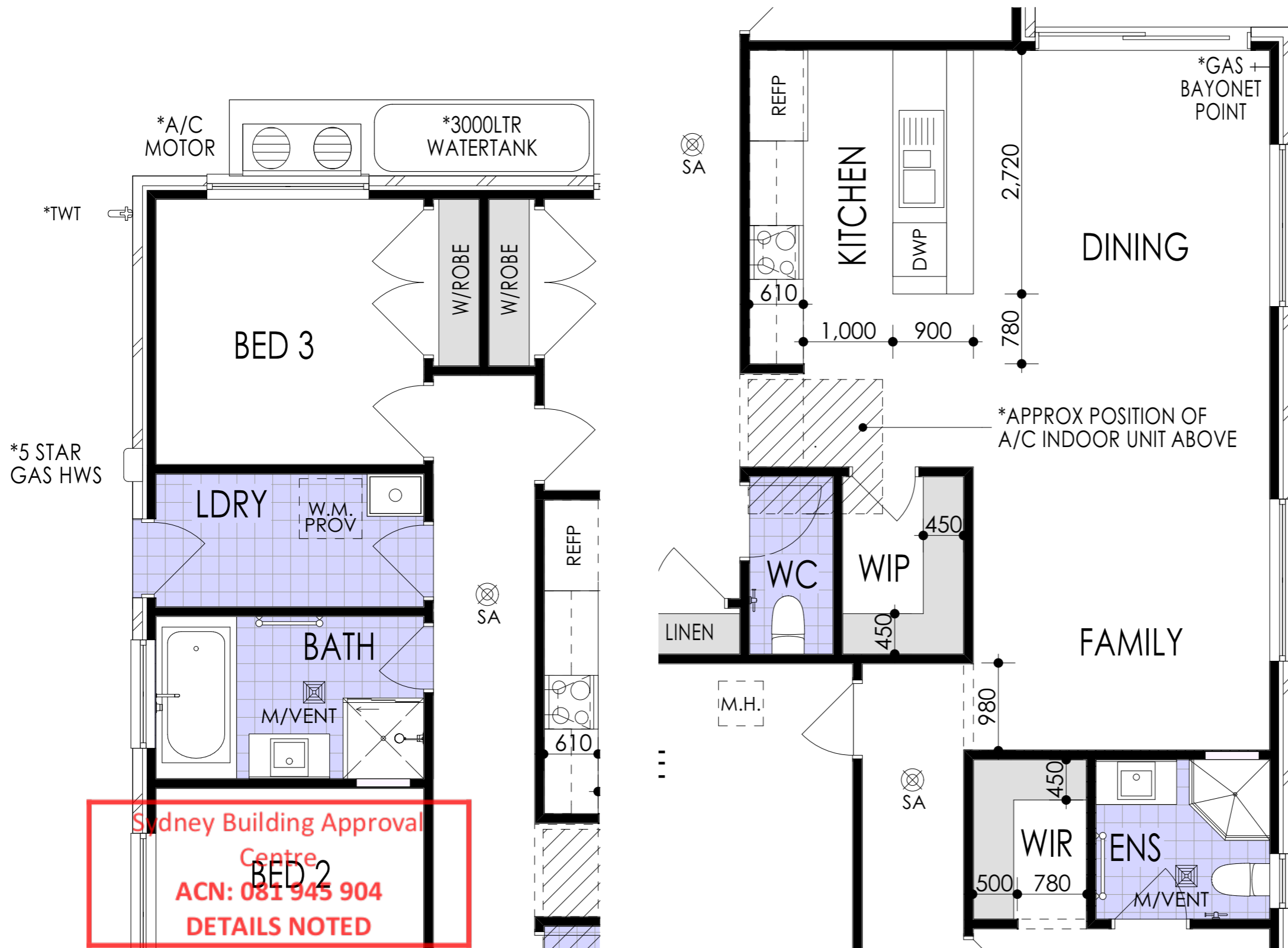
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DETAILS NOTED

Drainage Layout Plan

Scale 1:100

COPYRIGHT OF DESIGN PREPARED BY MARRETTA DESIGN FOR BROLEN HOMES SHALL REMAIN THE EXCLUSIVE PROPERTY OF BROLEN HOMES UNLESS A LICENCE IS ISSUED STATING OTHERWISE.

**\*\*note: final services layout to be completed by builder\*\***



Services Layout Grd Floor

## REVISION SCHEDULE

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## Brolen Homes

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PROPOSED:

## PROPOSED: S-Storey Dwelling

CLIENT:

## Broken Homes

LOCATION:

Lot 702 HN:# DP:1231935  
Courtney Loop,  
Oran Park

	COUNCIL:
--	----------

Camden

SHEET:
--------

11 of 12

DATE DRAWN:

DATE DRAWN  
25.10.18

NAME:	HOUSE DESCRIPTION:
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N. HOUSE DESCRIPTION  
Harmony 19  
Classic Facade

MARRETTA REF #:

MB095-18

DESIGNED:

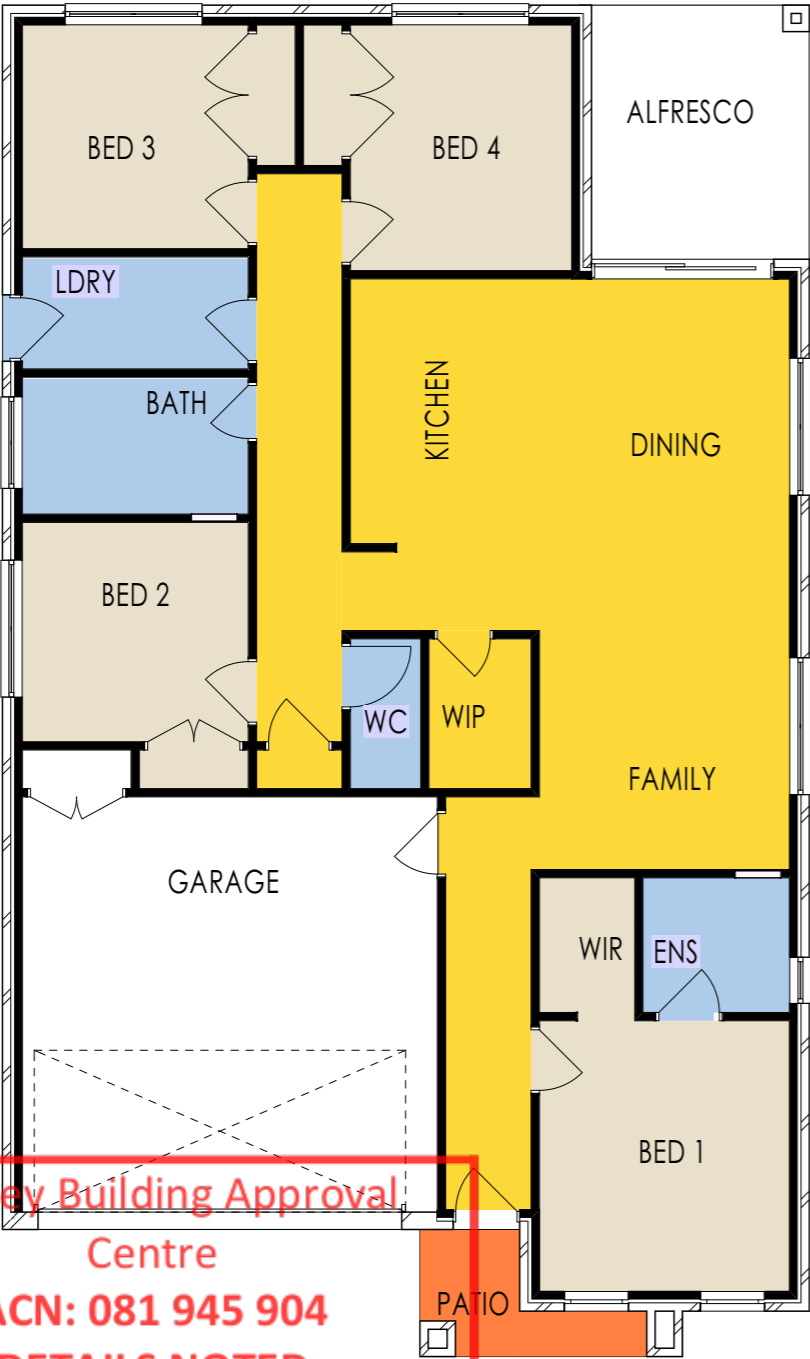
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DRAWN BY:	
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NK

BUILDERS REF #:	1
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170121



FLOOR COVERINGS SCHEDULE

\*ALL FLOOR FINISHES TO BE CONFIRMED WITH TENDER.

Lot 702 HN:# DP:1231935 Courtney Loop,  
Oran Park 350sqm

EXTERNAL TILING	
PATIO TILES:	3.00
	3.00 m <sup>2</sup>

TILED FLOOR	
ENTRY/DIN/FAM/KITCHEN:	44.12
LINEN/HALLWAY:	9.16
WIP:	2.91
	56.19 m <sup>2</sup>

CARPETED FLOOR	
BED 1/WIR:	14.28
BED 2/ROBE:	9.65
BED 3/ROBE:	10.14
BED 4/ROBE:	10.75
	44.82 m <sup>2</sup>

WET AREAS	
BATHROOM:	5.62
ENSUITE:	3.55
LAUNDRY:	4.75
WC:	2.04
	15.96 m <sup>2</sup>

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PROPOSED:  
S-Storey Dwelling

CLIENT:  
Brolen Homes

LOCATION:  
Lot 702 HN:# DP:1231935  
Courtney Loop,  
Oran Park

COUNCIL: Camden SHEET: 12 of 12

DATE DRAWN: 25.10.18 HOUSE DESCRIPTION: Harmony 19 Classic Facade MARRETTA REF #: MB095-18

DESIGNED: FS DRAWN BY: NK BUILDERS REF #: 170121

Floor Finishes Grd Flr

Scale 1:100

CONCRETE PAD, REFER  
TO SHEET 2 FOR DETAILS

CUT & FILL LINE  
FOR RESIDENCE

POD EXTENSION WHERE  
REQUIRED, REFER TO  
SHEET 2 FOR DETAIL

Sydney Building Approval  
Centre  
ACN: 081 945 904  
DETAILS NOTED

POD EXTENSION WHERE  
REQUIRED, REFER TO  
SHEET 2 FOR DETAIL

### GENERAL CONSTRUCTION NOTES

- THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER WORKING DRAWINGS AND SPECIFICATIONS AND ANY OTHER WRITTEN INSTRUCTIONS ISSUED DURING CONSTRUCTION. ALL DISCREPANCIES AND VARIATIONS SHALL BE REFERRED TO THE ENGINEER, BEFORE PROCEEDING WITH THE WORK
- DURING CONSTRUCTION THE STRUCTURE AND ANY ADJACENT STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED
- DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS
- THE CONTRACTOR IS RESPONSIBLE TO ESTABLISH THE LOCATION, SIZE AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORKS
- ALL SITE SAFETY MEASURES AND WORK METHOD STATEMENTS PREPARED BY BUILDER/SUB-CONTRACTORS ARE TO BE IMPLEMENTED DURING CONSTRUCTION. NO WORK IS TO COMMENCE UNTIL SUPERVISOR/BUILDER HAS IDENTIFIED AND APPROPRIATELY ACTED ON ANY POTENTIAL HAZARDS
- BUILDER TO ADHERE TO ANY GEOTECHNICAL REPORT RECOMMENDATIONS PREPARED FOR THE SITE
- ALL WORKMANSHIP AND MATERIALS TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF RELEVANT AUSTRALIAN STANDARD CODES AND THE REGULATIONS OF THE RELEVANT BUILDING AUTHORITY
- UNLESS REQUESTED AND PRODUCED ON THE PLANS, THE BUILDER IS TO ENSURE THAT ARTICULATION JOINTS ARE SHOWN ON THEIR ARCHITECTURAL DRAWINGS AND BE SATISFIED THAT THEY ARE IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS AND BUILDING CODES
- REFER TO THE ARCHITECTURAL PLANS FOR LOCATIONS OF ANY CONCRETE PADS REQUIRED
- FOUNDATION MATERIAL SHALL BE APPROVED PRIOR TO CONSTRUCTION
- A 1.0 METRE WIDE APRON, WITH 25 CROSS FALL AWAY FROM SLAB EDGE IS TO BE FORMED ALL AROUND THE RAFT SLAB WHERE APPLICABLE
- ADDITIONAL CONCRETE PIERS MAY BE REQUIRED UNDER SLAB TO EVEN BEARING IN SOIL AS RECOMMENDED BY AUSTRALIAN STANDARD AS 2870.
- ALL SITE FILLING PLACED BENEATH SLAB TO BE TREATED IN ACCORDANCE WITH CLAUSE 6.4. OF AS 2870.2 - 2011.
- NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS ARE TO BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR ENGINEER'S APPROVAL
- IF THE LOCATION OF THE SLAB IS NEXT TO AN ABOVE OR BELOW ON SITE DETENTION SYSTEM OR BELOW GROUND RAINWATER TANK, THE BUILDER IS TO ADVISE ENGINEER IN ORDER TO ENSURE THAT CONCRETE PIERS ARE TAKEN 500mm BELOW THE INVERT OF TANK OR THE FOOTING OF THE SUPPORTING WALL FOR AN ABOVE GROUND DETENTION SYSTEM PREPARED FOR THE SITE
- FOOTINGS ARE DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 100kPa.
- REINFORCEMENT SYMBOLS ARE FOLLOWS:  
(N) - HOT ROLLED DEFORMED BARS (400 n)  
(SL) - HARD -DRAWN WIRE REINFORCING FABRIC (450 sl)  
(S) - STRUCTURAL GRADE DEFORMED BARS
- CONSTRUCTION JOINTS THAT ARE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER
- ALL REINFORCEMENT TO BE ADEQUATELY SUPPORTED IN ITS REQUIRED POSITION AND COVER DURING PLACEMENT OF CONCRETE
- PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER
- ALL CONCRETE TO BE MECHANICALLY VIBRATED AND SHALL BE CAREFULLY WORKED AROUND THE REINFORCEMENT AND INTO THE CORNERS OF FORMWORK
- PIER HOLES ARE DESIGNED FOR ALLOWABLE BEARING PRESSURE OF 300kPa.
- CONCRETE SPECIFICATION (F'c 28 DAYS) TO BE AS FOLLOWS: ADOPT TYPE 'A' CEMENT WITH MAX AGGREGATE SIZE OF 20mm AND 80mm SLUMP

LOCATION	SALINE AFFECTED F'c
PIERS	32 MPa
SLAB	32 MPa
STRIP FOOTING	32 MPa

- CLEAR COVER TO REINFORCEMENT TO BE AS FOLLOW:

LOCATION	FORMED & SHELTERED	FORMED & EXPOSED	POURED ON GROUND
SLABS & WALLS	20	30	65
BEAMS	25	40	65
COLUMNS	40	50	-
STRIP FOOTING	-	-	65

- CONCRETE PIERS
  - SEWER AFFECTED PIERS
  - ⊗ REINFORCED CONCRETE PIERS
  - ⊕ SCREW PIERS
  - ♀ ARTICULATION JOINT
  - \* STARTING POINT
- BUILDER / HOME OWNER IS TO ADHERE TO CSIRO BROCHURE, "FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE: A HOMEOWNER'S GUIDE".

THESE STRUCTURAL ENGINEERING DETAILS ARE IN ACCORDANCE WITH

- AS2870-2011 RESIDENTIAL SLAB & FOOTING CODE
- AS4100 STEEL STRUCTURE CODE
- AS1170.1 & AS1170.2 WIND, DEAD & LIVE LOAD CODE
- BUILDING CODE OF AUSTRALIA: SECTION B STRUCTURES

THE SLAB HAS BEEN DESIGNED FOR SALINE & ACID SULPHATE AFFECTED SOILS. REFER TO SHEET 1 & 2 FOR REQUIREMENTS

REFERENCE HAS BEEN MADE TO RAFELETOS ZANUTTINI'S BOREHOLE & SOIL CLASSIFICATION REPORT UNDERTAKEN FOR THE PROPERTY

### STRUCTURAL SLAB PLAN

CLIENT BROLEN HOMES  
LOCATION LOT 702 COURTNEY LOOP, ORAN PARK

CLASSIFICATION	(P)H1	SHEET SIZE	A3	SHEET No.	1
REFERENCE	170121	SCALE	1 : 100	JOB No.	85186PB

BH  
Brolen Homes

### REVISION SCHEDULE

A ORIGINAL ISSUE	SH 16/01/19

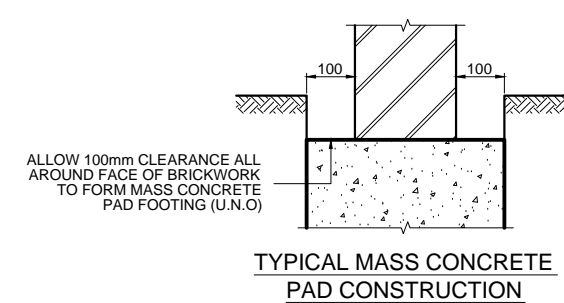
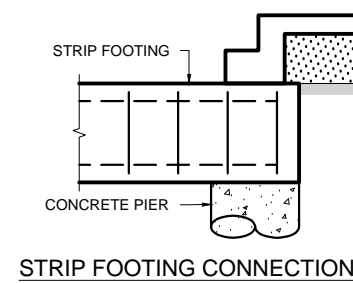
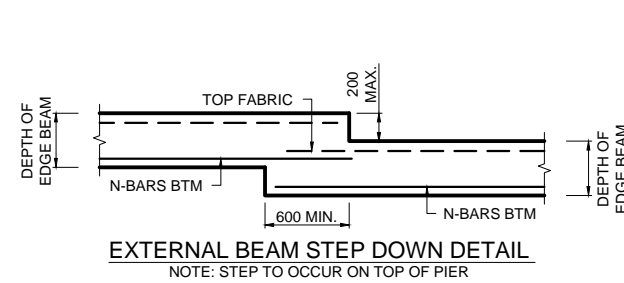
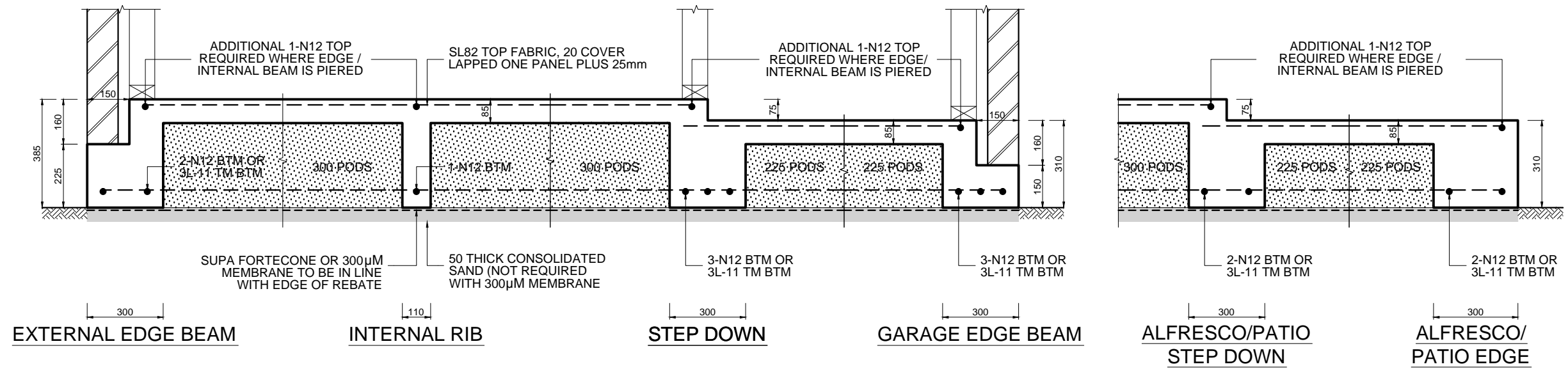


**RAFELETOS ZANUTTINI**  
Consulting Engineers

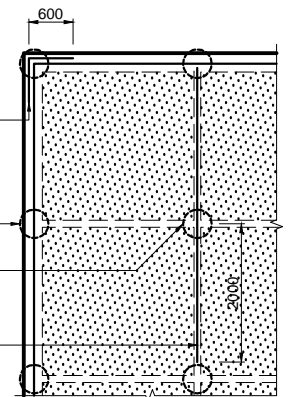
ABN: 35 04 047 466  
PO BOX 91 KINGSGROVE NSW 2208  
Level 2, 103 VANESSA ST KINGSGROVE NSW 2208

PTY LTD  
PH: 9554 9311 FAX: 9554 9764  
EMAIL: admin@rafzan.com.au

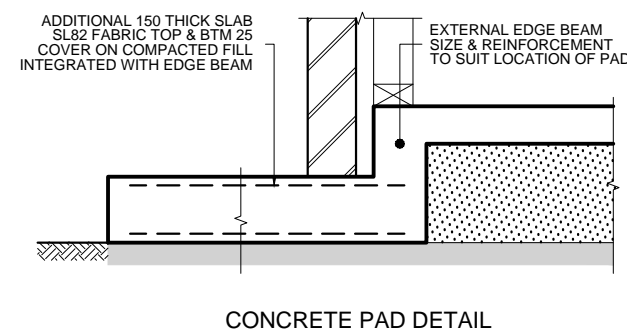
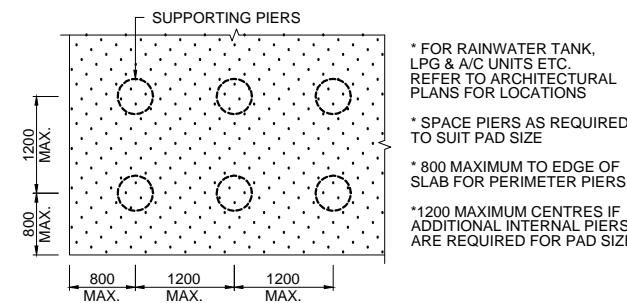
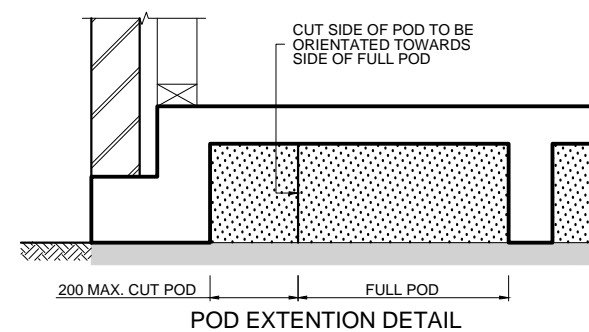
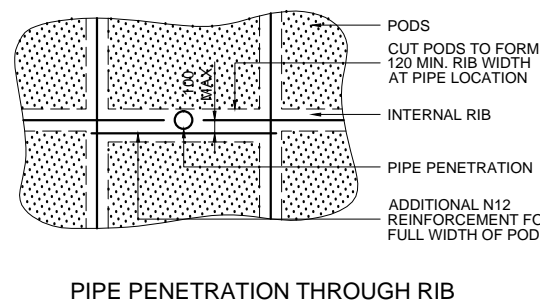
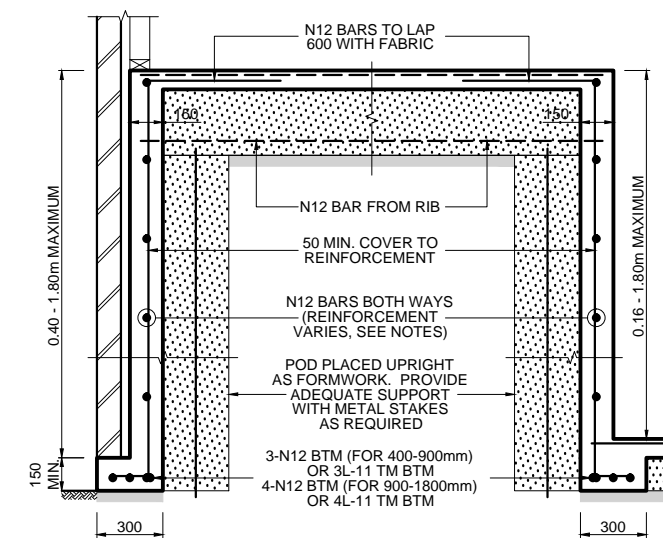
B.E. M.I.E. AUST.



AT ALL EXTERNAL BEAM CORNER LOCATIONS TOP & BTM  
 PROVIDE ADDITIONAL 2-N12 'L' BARS 1200 LONG BENT AROUND CORNERS TO LAP 600 MINIMUM WHERE BOTTOM N12 EDGE BEAM REINFORCEMENT IS DISCONTINUOUS  
 NOTE: NO 'L' BARS REQUIRED IF USING TRENCH MESH



EXTERNAL LOAD BEARING BEAM & PIER  
 INTERNAL RIB BEAM PIERS  
 WHERE INTERNAL RIB BEAMS OR CONCRETE PADS ARE PIERED, THEN ADDITIONAL 1-N12 TOP BAR ALONG THE RIB IS REQUIRED IN ONE DIRECTION ONLY & IS TO BEGIN FROM THE EXTERNAL EDGE BEAM & EXTEND 2000 BEYOND LAST PIER



EXTERNAL DEEP BEAM	INTERNAL DEEP BEAM
DEEP BEAM DEPTH	BEAM REINFORCEMENT
160 - 400MM	N12 BARS AT 1200 CENTRES & 1-N12 HORIZONTAL
400 - 900MM	N12 BARS AT 600 CENTRES & 1-N12 CENTRALLY
900 - 1500MM	N12 BARS AT 200 CENTRES BOTH WAYS
1500 - 1800MM	N12 BARS AT 200 CENTRES BOTH WAYS

THIS IS TO CERTIFY THAT THE SLAB HAS BEEN DESIGNED FOR SALINE/ ACID SULPHATE AFFECTED SOILS  
 PROVIDE 400 DIA. CONCRETE PIERS TO CLAY & SAND, OR 300 DIA. TO ROCK OR SHALE  
 SPACE PIERS AT 2400 CTS. AS SHOWN ALONG EXTERNAL EDGE BEAM, UNLESS NOTED OTHERWISE  
 PIERS REQUIRED UNDER INTERNAL RIB BEAMS WHEN CONSTRUCTED ON MORE THAN 300mm OF UNCONTROLLED / NON-COMPACTED MATERIAL OR AS SHOWN  
 N12 BARS CAN BE REPLACE WITH 10.65mm HDW (450MPa STRESS GRADE)

REINFORCEMENT FOR RIBS & BEAMS		
WIDTH	TOP STEEL	BTM STEEL
301 - 330	1-N12	3-N12
331 - 440	2-N12	4-N12
441 - 550	3-N12	5-N12
551 - 660	4-N12	6-N12



**Rafeletos Zanuttini**  
 Consulting Engineers

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 Level 2, 103 VANESSA ST KINGSGROVE NSW 2208

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 EMAIL: admin@rafzan.com.au

CLIENT BROLEN HOMES  
 LOCATION LOT 702 COURTNEY LOOP, ORAN PARK

*[Signature]*  
 B.E. M.I.E. AUST.

SALINE / ACID SULPHATE  
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CLASSIFICATION (P)H1  
 SCALE NTS

SHEET No. 2  
 JOB No. 85186PB



#### REVISION SCHEDULE

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Brolen Homes Pty Ltd

# Building Specification

Building and Construction

Ross Molluso  
6/5/2015

Sydney Building Approval  
Centre

**ACN: 081 945 904**

**DETAILS NOTED**

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## 1 General

Where Owner(s) is mentioned throughout this specification it shall mean also proprietor(s). Where the builder is mentioned throughout this Specification it shall also mean Contractor. The Builder hereinafter referred to shall be: BROLEN HOMES PTY LIMITED

### 1.1 FEES

The builder will obtain permits, pay all standard lodgement fees and notify Local Authorities to enable the works to be carried out within the limits of the working drawings and this specification. Additional fees for non-standard approvals will be provided by the owner(s).

### 1.2 SITE & BOUNDARIES

The house site shall be delivered to the builder in time for the works to commence in accordance with the home Building Agreement cleared of long grass, shrubs and trees. Should an all-weather access be required to reach the site and provide suitable traction for all types of vehicles and machinery which the builder considers necessary for the construction of the works then the Owner(s) will provide one at no cost to the builder, or as noted in the tender.

Should the condition of the site or the existing weather conditions necessitate the provision of a concrete pump due to the site not being cleared and or accessible as described above then any expense incurred shall be charged as an extra to the contract sum.

Any time lost as a result of having to clear the site, provide access or inclement weather shall be added to the contract time and the contract time shall be extended until the builder is able to recommence the works.

The Owner shall indicate to the builder the boundaries of the said land and decide upon the position of the works and accept responsibility for the correctness of the position indicated to the Builder. If there are any doubts as to the accuracy of the boundary positions for the setting out of the works or fencing the Owner agrees to have the land resurveyed and pegged at the owners expense.

### 1.3 SANITARY

Prior to the commencement of any works, unless toilet facilities exist on site, the Builder will provide sanitary accommodation to comply with Local Government Authority regulations and will remove on completion of the works.

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## 1.4 PLANT & LABOUR

The Builder shall supply all materials, scaffolding, tools and plant and do all works in all trades as described in the tender, working drawings and schedule of fittings necessary to carry out the true intent of this specification to a reasonable and satisfactory completion of the contract in all respects.

## 1.5 MATERIALS

All materials used throughout the works are to be new (unless otherwise specified) and of good quality of their several respective kinds as hereinafter specified. Any defective materials are to be removed from the site.

## 1.6 DIMENSIONS

Figures dimensioned on the working drawings shall be given preference to scaled dimensions. Internal dimensions are to be taken between timber plates. External dimensions shall be taken over brickwork. Ceiling heights shall be taken between the top of the concrete floor level to the underside of the ceiling timbers.

## 1.7 COLOURS

The Owner shall provide to the builder upon request selected colours for all items and materials specified on the colour selection schedule.

## 1.8 SUBSTITUTION

Should any items or materials to be used in the construction of the works and are not available or are deemed to be unsuitable for use in construction of the works, until after a period in which the opinion of the builder will cause unwarranted delay, then the Owner(s) shall within fourteen (14) days from receipt from a written request from the builder select other readily available items or materials which shall take the place of those originally chosen. Should the Owner(s) fail to comply with the written request within the stipulated period, the builder reserves the right to select an alternative item or material equal in quality to the original choice and use in substitution.

## 1.9 VARIATION OF COLOUR & TEXTURE

Manufacturing processes may vary colour and texture of samples from which selections are made. Variations in clay base material deposits and climatic conditions may from time to time vary colour and texture of bricks supplied. The builder shall not accept any responsibility for any such variation

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in colour or texture provided that the supplied items or materials are of the same brand name, colour type or description as selected by the Owner.

## 2 Services

### 2.1 WATER

The Contract Price allows for the house water supply to be available from an existing main of the local authority located directly in front of the site. When the contract price provides for tapping an existing water main located on the opposite side of the street of the site such price allows for the existence of an under road conduit and does not allow under road boring or road opening costs. Should such additional work have to be undertaken the cost incurred shall be charged as an extra to the contract sum. When no reticulated water supply exists the owner is to arrange a temporary fresh water supply for tradesman and building purposes with tanks or other means satisfactory to the builder and is to be available prior to the commencement of construction.

### 2.2 GAS SERVICE

The Owner shall make application to the Gas Authority for connection to the main and pay the necessary fees when requested by the Builder. Where Liquid Petroleum gas type equipment is specified the builder will provide the supply lines from the appliances to a wall connection point for the gas cylinders on the external brickwork. The gas cylinders are to be provided at the expense of the owner. The owner is responsible for the arrangement of the supply of the gas cylinders and connection of the cylinders to the supply line along with all other associated equipment and fittings.

### 2.3 AERIAL/UNDERGROUND POWER SUPPLY

The contract allows for the power supply to be connected to the dwelling directly from the Authority's 240 volt power supply terminal not more than 18 meters away from the works. Should the power supply be further away any extension costs or heavier cable requirements needed due to low voltage or underground cable are to be carried out at the expense of the owner. Underground power, when available, shall have an electrical pillar located at the property boundary and not further than 7m from the house position.

### 2.4 SEWER CONNECTION

Sewer connection to be carried out by licensed drainer to boards or council junction point as per sewer diagram in accordance with Australian Standards.

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### 2.5 SEPTIC CONNECTION

Septic connection to be carried out by nominated licensed sub-contractor in accordance with Council approval plans.

## 3 Site Preparations

Explanatory information:

These provisions relate to general site preparation for footings, services, drainage and installation of termite barriers to assist in termite management.

### 3.1 EARTH WORKS

Construction earth works will be carried out as per 3.1.1.1 of the Building Code of Australia (BCA)

### 3.2 DRAINAGE

The BCA does not require the installation of drainage systems. Accordingly these requirements need only be applied when these systems are used. Information on the need for drainage systems may be obtained from the appropriate authority. The legal discharge point from a building site is generally determined by local government authorities. Drainage needs to be designed and constructed in accordance with AS/NZS 3500.3 and section 3.1.2 of the BCA

### 3.3 SERVICE TRENCHES

The Builder shall excavate service trenches to a minimum cover of 150mm where site conditions allow.

### 3.4 DEMOLITION

Demolition by the owner shall occur before works is carried out by the builder. All demolition works need to comply with AS 2601. No used or excess material shall be buried on the site.

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### 3.5 TREE TO BE RETAINED

Trees nominated by Council that are to be retained shall be marked using suitable, easily visible and removable means of identification.

### 3.6 TERMITE TREATMENT

Provide a termite barrier treatment in accordance with part 3.1.3 BCA of the housing provisions or AS 3660.1 in all areas where the Local Authority requires such treatment.

NOTE: Many of the materials used in the construction of your home may be subject to termite attack. You should ensure that your home is checked at least annually by an appropriate expert in termite control whose advice should be sought and followed.

## 4 Footings, Slabs, External Steps and Paths

Explanatory information:

This Part specifies the requirements for the excavation and filling for the footing or slab together with the construction of various alternative concrete slab and footing configurations.

### 4.1 PREPARATION OF FOOTINGS AND SLABS

The preparation of footings and slabs will be in accordance with section 3.2.2 of the BCA

### 4.2 CONCRETE

Concrete will comply with section 3.2.3 of the BCA and as follows unless otherwise stated in the engineering drawings/specifications:

- (a) Concrete must be manufactured to comply with AS 3600; and—
  - (i) have a strength at 28 days of not less than 20 MPa (denoted as N20 grade); and
  - (ii) have a 20 mm nominal aggregate size; and
  - (iii) have a nominal 100 mm slump.

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- (b) Water must not be added to the mix to increase the slump to a value in excess of that specified.
- (c) Concrete must be placed and compacted in accordance with good building practice.

### 4.3 STEEL REINFORCEMENT

Materials used for reinforcing steel must comply with AS 2870 and be—

- (i) welded wire reinforcing fabric; or
- (ii) trench mesh; or
- (iii) steel reinforcing bars.

### 4.4 SITE CLASSIFICATION

The foundation where the footing is to be located must be classified in accordance with AS 2870. Also Table 3.2.4.1 of the BCA provides the general definition of site classes.

### 4.5 FOOTING AND SLAB CONSTRUCTION

Footing and slab construction will be in accordance with sections 3.2.4 and 3.2.5 of the BCA and AS 2870.

### 4.6 INSPECTIONS

All footing trenches shall be inspected by the Local authority and approved by either the Local authority and / or a qualified engineer prior to concrete placement.

### 4.7 CONCRETE SLAB ON GROUND (WAFFLE POD)

Concrete slab to be 85mm reinforced concrete with rebated edge and integral beams in accordance with engineer requirements ref AS1379.

### 4.8 CONCRETE PORCHES (IF BY BUILDER AND VARIATION)

Concrete porches and porch slabs shall be constructed as described in the tender and shown on working drawings and to engineering details.

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### 4.9 PRECAST CONCRETE STEP TREADS (TIMBER FLOOR CONSTRUCTION ONLY)

Provide concrete treads and risers to ground level as shown on working drawings and noted as included in the tender document.

### 4.10 CONCRETE PATHS

External concrete paths shall be generally as described in the tender and shown on plans and finished with a wooden float in accordance with AS3727.

### 4.11 CONCRETE DRIVEWAYS

Concrete driveways shall be generally as described in the tender and shown on plans and constructed in accordance AS3727.

## 5 Masonry

### 5.1 GENERAL

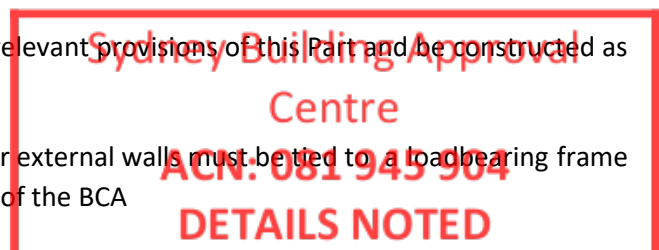
Bricks used shall be the same as those selected on the colour selection schedule. Brickwork is to be laid to the various heights and thickness as shown on the working drawings. Brick cavity to be minimum 25mm with galvanised wall ties tied to timber frame at 600mm spacing's horizontally and vertically where required. Provide 1 damp proof course in brickwork at underside of bearer for timber floors and 1 bed joint for concrete slab.

### 5.2 MASONRY WALLS

Masonry walls are to be constructed in accordance to section 3.3.1 of the BCA and AS 3700.

### 5.3 EXTERNAL WALLS

- (a) Masonry veneer must comply with the relevant provisions of this Part and be constructed as follows:
  - (i) Bracing requirements — masonry veneer external walls must be tied to a loadbearing frame constructed in accordance with Part 3.4 of the BCA



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- (ii) Masonry veneer walls, non-loadbearing, must be constructed with a leaf of masonry not less than 90 mm wide.

### 5.4 INTERNAL WALLS

Internal masonry walls will be constructed in accordance with section 3.3.1.3 of the BCA

### 5.5 ISOLATED MASONRY PIERS

Isolated masonry piers supporting carports, veranda's, porches and similar roof structures, which form part of the main roof, or are attached to a wall of a Class 1 building must be not less than 290×290 mm and comply with section 3.3.1.4 of the BCA

### 5.6 MORTAR MIXES

Mortar mixes are in accordance to section 3.3.1.6 of the BCA and also comply with AS 3700

### 5.7 MORTAR JOINTS

Unless otherwise specified masonry bed and perpend joints are to be a nominal 10 mm and where raked joints are used they must not be deeper than 10 mm in accordance with section 3.3.1.7 of the BCA

### 5.8 VERTICAL ARTICULATION JOINTS

3.3.1.8 Vertical articulation joints used in the masonry construction will be in accordance with section 3.3.1.8 of the BCA

### 5.9 SUB-FLOOR VENTILATION

Sub-floor ventilation under suspended floors must be in accordance with Section 3.4.1 of the BCA

### 5.10 WALL TIES

Wall ties will be installed in accordance with section 3.3.3.2, Figure 3.3.3.1, Table 3.3.3.1 of the BCA and to AS/NZS 2699.1

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### 5.11 FIXING STRAPS AND TIE-DOWN SYSTEMS

Fixing straps and tie-down systems will be installed in accordance to section 3.3.3.3 and Figures 3.3.3.3 (a) and (b) of the BCA

### 5.12 LINTELS

Lintels in masonry may be according to section 3.3.3.4, Figures 3.3.3.4 and 3.3.3.5 of the BCA—

- (i) steel lintels complying with this Part; or
- (ii) steel lintels complying with AS 4100, AS/NZS 4600; or
- (iii) reinforced concrete beams designed in accordance with AS 3600.

### 5.13 CORROSION PROTECTION

Corrosion protection of built-in structural steel members such as lintels, shelf angles, connectors, accessories (other than wall ties) and the like must be in accordance with section 3.3.3.5 and table 3.3.3.2.

### 5.14 WINDOW SILLS

Window sills shall be face brickwork on edge unless otherwise specified.

### 5.15 BRICK CLEANER

All face brickwork is to be cleaned with diluted hydrochloric acid and washed with clean water.

## 6 Waterproofing of Masonry

Explanatory information: Weatherproofing of masonry will be carried out in accordance with the appropriate provisions of AS 3700.

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### 6.1 WIDTH OF CAVITY

In brick veneer and cavity masonry construction, a cavity must be provided between the inner and outer masonry leaves or the masonry leaf and the supporting frame in accordance with section 3.3.4.2 of the BCA and as follows:

- (a) Brick veneer—not less than 25 mm width.
- (b) Cavity masonry—not less than 35 mm nor more than 65 mm width.
- (c) Except for mullions, the minimum cavity width specified in (a) and (b) is to be maintained between the outer masonry leaf and any services, insulation or sheet bracing located in the cavity.
- (d) Where mullions are located within a cavity as permitted by (c), a vertical DPC must be placed between the outer masonry leaf and the mullion to prevent moisture penetration.

### 6.2 CAVITY VENTILATION AND DRAINAGE

Open perpendicular joints (weepholes) must be created in the course immediately above any DPC or flashing at centres not exceeding 1.2 m in accordance with section 3.3.4.3 of the BCA, except in the following situations:

- (a) Weepholes are not required for head or sill openings less than 1 m wide.
- (b) Weepholes are not required where—
  - (i) the external masonry is weatherproofed in accordance with section 3.3.4.12(a) of the BCA; and
  - (ii) the perimeter joint of all windows are sealed; and
  - (iii) a damp-proof course is installed in accordance with section 3.3.4.5. of the BCA

### 6.3 DAMP-PROOF COURSES - MATERIALS

Damp-proof courses will be installed in accordance with section 3.3.4.4 of the BCA and must consist of—

- (a) a material that complies with AS/NZS 2904; or
- (b) embossed black polyethylene film of high impact resistance and low slip, with a nominal thickness of 0.5 mm prior to embossing, and meeting the requirements of clause 7.6 of AS/NZS 2904; or

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- (c) polyethylene coated metal, that has an aluminium core of not less than 0.1 mm thick, is coated both sides with bitumen adhesive enclosed in polyethylene film of not less than 0.1 mm thick on each face, and has a nominal total thickness of not less than 0.5 mm prior to embossing; or
- (d) bitumen impregnated materials of not less than 2.5 mm thickness, that meet the requirements of clause 7.5 of AS/NZS 2904, when used in walls which are not higher than 7.8 m above the level of the DPC; or
- (e) termite shields (with no penetrations) continuous through the wall or pier.

The installation of the damp-proof courses material will be done in accordance with section 3.3.4.5 of the BCA

### 6.4 FLASHINGS

Flashings materials will comply with AS/NZS 2904 or Table 3.3.4.1 of the BCA and —

- (a) be built-in as the work proceeds; and
- (b) where electrolytic action could otherwise occur, different materials must be isolated in accordance with Table 3.5.1.2 of the BCA.
- (c) lead flashings must not be used on any roof that is part of a potable water catchment area.

Note, other related flashing, waterproofing standards and BCA items:

- The location of the flashing will be in accordance with section 3.3.4.7 of the BCA
- Flashings at the base of cavity walls are in accordance with section 3.3.4.8 of the BCA
- Sill and Head Flashing will be in accordance with section 3.3.4.9 of the BCA
- Flashing at a roof abutting a wall will be in accordance with section 3.3.4.10 of the BCA
- Chimney flashing will be in accordance with section 3.3.4.11 of the BCA
- Weatherproofing for single skin masonry walls will be in accordance with section 3.3.4.12 of the BCA

### 6.5 STEEL BEAMS – COLUMNS

Structural steel work where required in works shall be supplied to comply with engineers computations and details as to comply with Australian Standards.

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### 6.6 SLEEPER PIERS

Sleeper piers up to a height of 1800mm shall be 230mm x 230mm brick. Over 1800mm high to a maximum of 2700mm the lower portion pier shall be 350mm x 350mm.

## 7 Framing

### 7.1 GENERAL

Pre-Fabricated walls and trusses used in the works shall be certified by the manufacturer.

Steel Framing – Pre fabricated wall frames and trusses are to be manufacturer AS3623 and certified by the manufacturer.

Timber Framing – All wall and roof frames shall be constructed in accordance with AS1684.2 or part 3.4.3 BCA.

### 7.2 SUB-FLOOR VENTILATION

The sub-floor space between a suspended floor of a building and the ground must be in accordance with the following section 3.4.1 of the BCA and where applicable (excessively damp areas or subject to frequent flooding) AS 1684 Parts 2, 3 or 4.

### 7.3 BEARERS

Bearers shall be 100mm x 75mm placed on top of piers at spacing's as shown on working drawings or otherwise in accordance with AS 1684.2.

### 7.4 FLOOR JOISTS

Floor joists shall be either 100mm x 50mm at 600mm centres secured to bearers.

Floor joists to 1st and 2nd storey work shall be in accordance with Building Code of Australia at maximum centres as noted on the working drawings.

Where joists run parallel within internal walls provide and fix double joists under bottom plate. Otherwise they are to be in accordance with AS 1684.2.

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### 7.5 TOP & BOTTOM PLATES

Plates are to be in long lengths, halved and or butted at joints and intersections. Provide gang nail plates where top plates are butted.

### 7.6 STUDS

Wall studs are to be at a maximum 600mm centres. Studs are to be checked to receive heads over openings and trimmers under windows.

### 7.7 HEADS OVER OPENINGS

All heads over openings shall comply with AS 1684.2.

### 7.8 BRACING

Bracing shall be in accordance with AS 1684.2 and designed in accordance with AS 4055-1992 wind loads for housing.

### 7.9 NOGGING

Each wall panel shall be stiffened by means of solid timber noggins fixed between studs.

### 7.10 ROOF MEMBERS

Roofs are to be pitched to the slope as shown on the plans. All rafters, hips, ridges, valleys, purlins, struts, collar ties and wind bracing as well as stress grades are to comply with AS 1684-1992.

### 7.11 CEILING JOISTS

Ceiling joists to be maximum 600mm centres and where possible be laid in the same direction as the roof rafters. Fix ceiling joists to rafters and where lapped over partition walls spike together.

### 7.12 COLLAR TIES

Collar ties to comply with AS 1684.2 and fixed to alternative pairs of rafters.

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### 7.13 STRUTS

Struts are to be 75mm x 75mm minimum up to a length of 2100mm and spaced at maximum 2100mm.

### 7.14 VALLEY BOARDS

Valley Boards shall be 19mm thick and sufficiently wide enough to support valley gutters.

### 7.15 ROOF TRUSSES

Roof trusses where used shall be fabricated in a proper factory and each truss shall be suitably marked to identify the manufacturer. Roof trusses shall be erected fixed and braced in accordance with the fabricators written instructions.

### 7.16 MAN HOLE

Provide a manhole in ceiling trimmed between ceiling joist to a minimum size of 560mm x 560mm. Provide a suitable cover. Man hole to be positioned between bottom chords of roof trusses near nominated position as indicated on working drawings, or where roof truss location permits a viable entry point.

### 7.17 VERANDAH POSTS

To be located as shown on plan and where fixed to concrete the base of the post is to be supported on a galvanised metal base with a metal dowel set in concrete or dyna-bolted.

### 7.18 GABLES

Provide gables as shown on drawings and provide cover as specified. Where a pre-formed metal verge system is used it is to be fixed in accordance with the manufacturer's specification.

### 7.19 EAVES

Top Chords are to overhang the external walls as per the measurement shown on the drawings. Top Chords to be plumb cut and fitted with the fascia as specified. Where a pre-formed metal fascia system is used it is to be fixed in accordance with the manufacturer's specification. Line eaves soffits have 4.5mm thick fibre cement sheets and plastic moulds at joints.

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### 7.20 FLOORING

Floor joists are to be covered with either strip or sheet flooring as specified. Sheet flooring is to be installed in accordance with manufacturer's instructions and to comply with AS 1684.2 or part 3.4.3. BCA 04

### 7.21 STRUCTURAL STEEL MEMBERS

Structural steel member need to comply with section 3.4.4 of the BCA and:

- (a) AS 4100 — Steel structures.
- (b) AS/NZS 4600 — Cold-formed steel structures.

## 8 Roof and Wall Cladding

### 8.0 ROOF CLADDING

Roof cladding will be installed in accordance with section 3.5.1 of the BCA and:

- (a) AS 2049 — Roof tiles, and AS 2050 — Installation of roof tiles.
- (b) AS 1562.1 — Design and installation of sheet roof and wall cladding —  
Metal
- (c) AS/NZS 4256 Pts 1, 2, 3 and 5; and AS/NZS 1562.3 — Plastic sheet roofing
- (d) AS/NZS 1562.2 — Design and installation of sheet roof and wall cladding — Corrugated  
fibre-reinforced cement.
- (e) ASTM D3018-90 — Asphalt shingles
- (f) AS/NZS 4200 — Installation of pliable membrane and underlay

### 8.1 WALL CLADDING

Wall cladding will be installed in accordance with section 3.5.3 of the BCA and in the event that external fibre-cement sheets and claddings must comply with AS/NZS 2908.2 or ISO 8336.

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## 9 Fascia & Gutter

### 9.1 GENERAL

All work must comply with the requirements of the relevant authority and all work is to be carried out by a licensed tradesperson in accordance with AS2179.1-1994, AS/NZS3500.3.2 and/or AS/NZS3500.5.

### 9.2 GUTTERS

Provide selected guttering to all eaves set in position with fall to downpipes and secured with the appropriate brackets.

### 9.3 DOWNPIPES

Provide downpipes as required connected to gutter and roof water drains. Downpipes to be secured to external walls and with all approved fixing method.

### 9.4 VALLEY GUTTERS

Fix valley gutters to valley boards lapped in the direction of water flow.

## 10 Glazing

### 10.1 Application

Glazing compliance will be in accordance with section 3.6.1 of the BCA and:

- (a) the building is located in an area with a design wind speed of not more than N3; and
- (b) glass is of a type recognised by AS 1288; and
- (c) safety glazing is legibly marked in accordance with AS 1288; and
- (d) glazing used in balustrades complies with AS 1288; and
- (e) safety glazing is made visible in accordance with 3.6.4.6, and
- (f) the glazing is not for the following assemblies in an external wall:

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- (i) Windows excluding those listed in (g).
- (ii) Sliding doors with a frame.
- (iii) Adjustable louvres.
- (iv) Window walls with one piece framing; and
- (g) the glazing is for all assemblies not covered by (f) and the following glazed assemblies:
  - (i) All glazed assemblies not in an external wall.
  - (ii) Hinged doors, including French doors and bi-fold doors.
  - (iii) Revolving doors.
  - (iv) Fixed louvres.
  - (v) Skylights, roof lights and windows in other than the vertical plane.
  - (vi) Sliding doors without a frame.
  - (vii) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047.
  - (viii) Second-hand windows, re-used windows, recycled windows and replacement windows.
  - (ix) Heritage windows.

## 11 Fit Out

### 11.1 SKIRTINGS & ARCHITRAVES

Provide and fix architraves and skirting's to all designated areas neatly mitred or scribed at corner.

### 11.2 DOOR JAMBS & DOORS

Provide and fix rebated door jambs to suit thickness of the finished wall. Hang front and rear doors with three (3) 85mm steel butt hinges. Hang internal doors with two (2) 85mm steel butt hinges. Doors are to be as specified and furnished with selected lock and furniture.

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### 11.3 KITCHEN CUPBOARDS

Provide kitchen cupboards to floor and walls of kitchen as shown on working drawings. Provide doors and bench tops as selected.

### 11.4 WARDROBES

Provide built-in wardrobes as shown on working drawings and tender finished with one shelf and one hanging rail. Provide door furniture as specified.

### 11.5 LINEN CUPBOARD

Provide linen cupboard as shown on working drawings.

## 12 Plumbing

### 12.1 GENERAL

All work shall comply with the requirements of the relevant local authority and with AS/NZS3500.

### 12.2 WATER SUPPLY

Provide and lay water supply line from the meter to the house. Provide extensions (Rehau or copper or other approved material as the Builder selects) to the hot water service, kitchen sink, bath, basin(s), shower(s), W.C. cistern(s), laundry trough, and washing machine, dishwasher (if applicable) as well as front and rear taps.

### 12.3 HOT WATER UNIT

Install hot water system in an approximate position as shown on the working drawings. The hot water service shall be connected to the kitchen sink, bath, basin(s), shower(s), laundry trough and washing machine point.

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### 12.4 GAS PLUMBER (WHERE APPLICABLE)

Provide gas service from existing main at front of residence to meter position and extend service to nominated gas appliance positions.

### 12.5 GAS APPLIANCES

If nominated in the tender provide gas service for the connection of hot water unit, hot plate and room heater.

## 13 Electrician

### 12.1 GENERAL

Provide all labour and materials suitable for the installation of the electrical service in accordance with AS/NZS3000:2000. All work to be carried out by a licensed electrician and in accordance with the local supply authority.

### 13.2 CONSUMER MAIN

Provide and install consumer mains from the main supply line located in the front of the block to the meter and switchboard.

### 13.3 LIGHTING

Connect all light points in positions as shown on the Electrical working drawings.

### 13.4 POWER

Connect all power points in positions as shown on Electrical working drawings.

### 13.5 ACCESSORIES

All accessories are to be quality plastic fittings.

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### 13.6 APPLIANCES

Provide power to all electrical appliances as shown on the working drawings.

### 13.7 TELEPHONE

Telephone points as shown on the working drawings. Telephone connection account shall be the responsibility of the owner.

### 13.8 SMOKE DETECTORS

Smoke detection units are to be placed in accordance with section 3.7.2 BCA housing provisions and comply with AS 3786 with AS3786.

## 14 Internal Linings

### 14.1 GENERAL

The walls and ceilings are lined with gypsum plasterboard. Wet areas are to be lined with approved water-resistant sheets in accordance with the Building Code of Australia.

### 14.2 WALL LININGS

Wall linings shall be 10mm thick plasterboard sheets fixed to studs by adhesive, clouts or screws. Sheets are to have recessed edges and be fixed in accordance with the manufacturer's recommendations.

### 14.3 CEILING LININGS

Ceiling linings shall be 10mm thick fixed to ceiling timbers by screws. Sheets are to have recessed edges and fixed in accordance with manufacturers recommendations.

### 14.4 CORNICE

Provide cornice to ceiling as required. Cornices are to be installed where possible in full wall lengths properly fixed and set at all angles.

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### 15 Wet Areas

15.1 All internal wet areas are to be waterproofed and flashed using an approved waterproofing method and comply with AS3740-2004 and section 3.8.1 of the BCA.

Where sheet flooring is used in a wet area the whole of the floor area should be waterproofed (except under bath). An approved shower tray may be used in lieu of waterproof membrane in shower compartments.

### 16 Ceramic Tiles

#### 16.1 WALLS

Cover specified wall faces with selected tiles. Tiles are to be fixed directly to wall sheeting with approved adhesive and neatly grouted on completion.

#### 16.2 FLOORS

Lay specified floor tiles to bathroom, ensuite, laundry and W.C. in sand and cement mortar or approved adhesive where specified. Provide even fall to floor wastes where necessary

### 17 Painter

#### 17.1 External woodwork to be given:-

- (a) Two (2) coats of acrylic finish or
- (b) Two (2) coats of stain

#### 17.2 METALWORK

Service pipes exposed structural steel and lintels etc. are to be cleaned primed and painted in accordance with the manufacturers' specification.

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### 17.3 FIBRE-CEMENT

Clean surfaces and finish with two (2) coats of acrylic paint.

### 17.4 INTERNAL WOODWORK

Internal woodwork is to be given one (1) coat of undercoat stopped and sanded and completed with one (1) finish coat. Unless noted otherwise in the tender.

### 17.5 CEILINGS (INTERNAL)

To be cleaned and finished with two (2) coats of ceiling white.

### 17.6 WALLS (INTERNAL)

To be cleaned and finished with two (2) coats of washable low sheen or equivalent.

### 17.7 GENERAL

All paints, stains, sealers etc. are to be of approved brands as selected. Paint finish is to be free of dust, hair, paint skins, etc.

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# BASIX<sup>®</sup>Certificate

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

## Single Dwelling

Certificate number: 989215S

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 06/10/2017 published by the Department. This document is available at [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

Secretary

Date of issue: Tuesday, 15 January 2019

To be valid, this certificate must be lodged within 3 months of the date of issue.



Planning &  
Environment

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### Project summary

Project name	Brolen Homes - 170121
Street address	Courtney Loop ORAN PARK 2570
Local Government Area	Camden Council
Plan type and plan number	deposited 1231935
Lot no.	702
Section no.	-
Project type	separate dwelling house
No. of bedrooms	4

### Project score

Water	✓ 46	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 53	Target 50

### Certificate Prepared by

Name / Company Name: Frys Energywise

ABN (if applicable): 61012522051

# Description of project

## Project address

Project name	Brolen Homes - 170121
Street address	N/A Courtney Loop ORAN PARK 2570
Local Government Area	Camden Council
Plan type and plan number	Deposited Plan 1231935
Lot no.	702
Section no.	-

## Project type

Project type	separate dwelling house
No. of bedrooms	4

## Site details

Site area (m <sup>2</sup> )	350
Roof area (m <sup>2</sup> )	207
Conditioned floor area (m2)	106.0
Unconditioned floor area (m2)	10.0
Total area of garden and lawn (m2)	118

## Assessor details and thermal loads

Assessor number	BDAV/12/1441
Certificate number	0003535358
Climate zone	28
Area adjusted cooling load (MJ/m <sup>2</sup> .year)	24
Area adjusted heating load (MJ/m <sup>2</sup> .year)	39

## Project score

Water	✓ 46	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 53	Target 50

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## 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.

Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Fixtures</b>			
The applicant must install showerheads with a minimum rating of 3 star (> 4.5 but <= 6 L/min) in all showers in the development.		✓	✓
The applicant must install a toilet flushing system with a minimum rating of 4 star in each toilet in the development.		✓	✓
The applicant must install taps with a minimum rating of 5 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 3 star in each bathroom in the development.		✓	
<b>Alternative water</b>			
<b>Rainwater tank</b>			
The applicant must install a rainwater tank of at least 3000 litres on the site. This rainwater tank must meet, and be installed in accordance with, the requirements of all applicable regulatory authorities.	✓	✓	✓
The applicant must configure the rainwater tank to collect rain runoff from at least 150 square metres of the roof area of the development (excluding the area of the roof which drains to any stormwater tank or private dam).		✓	✓
The applicant must connect the rainwater tank to: <ul style="list-style-type: none"> <li>all toilets in the development</li> <li>the cold water tap that supplies each clothes washer in the development</li> <li>at least one outdoor tap in the development (Note: NSW Health does not recommend that rainwater be used for human consumption in areas with potable water supply)</li> </ul>		✓ ✓ ✓	✓ ✓ ✓

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Thermal Comfort Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Simulation Method</b>			
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 an occupation certificate for the proposed development.			
The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX certificate, including the Cooling and Heating loads shown on the front page of this certificate.			
The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Assessor Certificate 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. 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.	✓	✓	✓
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.		✓	✓
The applicant must construct the floors and walls of the dwelling in accordance with the specifications listed in the table below.	✓	✓	✓

Floor and wall construction	Area
floor - concrete slab on ground	All or part of floor area square metres

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Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Hot water</b>			
The applicant must install the following hot water system in the development, or a system with a higher energy rating: gas instantaneous with a performance of 5 stars.	✓	✓	✓
<b>Cooling system</b>			
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The cooling system must provide for day/night zoning between living areas and bedrooms.		✓	✓
<b>Heating system</b>			
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The heating system must provide for day/night zoning between living areas and bedrooms.		✓	✓
<b>Ventilation</b>			
The applicant must install the following exhaust systems in the development: At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: manual switch on/off  Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off  Laundry: natural ventilation only, or no laundry; Operation control: n/a		✓ ✓ ✓	✓ ✓ ✓
<b>Artificial lighting</b>			
The applicant must ensure that the "primary type of artificial lighting" is fluorescent or light emitting diode (LED) lighting in each of the following rooms, and where the word "dedicated" appears, the fittings for those lights must only be capable of accepting fluorescent or light emitting diode (LED) lamps: • at least 4 of the bedrooms / study;		✓	✓

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Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<ul style="list-style-type: none"> <li>• at least 1 of the living / dining rooms;</li> <li>• the kitchen;</li> <li>• all bathrooms/toilets;</li> <li>• the laundry;</li> <li>• all hallways;</li> </ul>		✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
<b>Natural lighting</b>			
The applicant must install a window and/or skylight in 2 bathroom(s)/toilet(s) in the development for natural lighting.	✓	✓	✓
<b>Other</b>			
The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling.		✓	
The applicant must install a fixed outdoor clothes drying line as part of the development.		✓	

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## Legend

In these commitments, "applicant" means the person carrying out the development.

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).

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.

Commitments identified with a ✓ in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate (either interim or final) for the development may be issued.

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