INsight building certifiers pty ltd

# Construction Certificate
## Determination

issued under the Environmental
Planning and Assessment Act 1979
Section 109C (1) (b) 81A (2) and 81A (4)

### Certificate No 2009/3353

| | |
|---|---|
| **Council** | Pittwater |
| **Determination** | Approved |
| date of issue | 1 July 2009 |
| **Subject land** | |
| Address | 4 Yachtsmans Paradise Newport |
| Lot No, DP No | Lot 28 DP 233779 |
| **Applicant** | |
| Name | Mr Lance Horton |
| Address | 4 Yachtsmans Paradise Newport NSW 2106 |
| Contact No | 0405 330 745 |
| **Owner** | |
| Name | Mr Lance Horton |
| Address | 4 Yachtsmans Paradise Newport NSW 2106 |
| Contact No | 0405 330 745 |
| **Description of Development** | |
| Type of Work | Alterations & Additions to an Existing Dwelling |
| **Builder or Owner/Builder** | |
| Name | Lance Horton |
| Contractor Licence No/Permit | 147071C |
| **Value of Work** | |
| Building | $212 000 00 |

**Attachments**

- Copy of completed Construction Certificate Application Form
- Pittwater Council receipt no 261204 for payment of Long Service Levy & Section 139 Consent
- BASIX Certificate no A57461 dated 10 May 2009

R-261599
$30.00
02/07/09

COUNCIL

SCANNED
- 6 JUL 2009
PITTWATER COUNCIL

Suite 13/90 Mona Vale Road Mona Vale NSW 2103 PO Box 326 Mona Vale NSW 1660 **ph 9999 0003** fax 9979 1555
**email** info@insightcert com au **web** www insightbuildingcertifiers com au **ABN** 54 115 090 456

## Plans & Specifications certified

The development is to be carried out in compliance with the following plans and documentation listed below and endorsed with *Insight Building Certifiers* stamp

- Architectural Details & Construction Specifications reference no 001 Drawing nos S01 S02 S03 S04 S05 S06 S07 & S08 (Revision O) prepared by Cutting Edge Building dated 2 May 2009
- Stormwater Management Plan and Stormwater Design Certificate reference no 1018A/2009 Sheet no 1 prepared and endorsed by N Koloff & Associates Consulting Engineers dated 18 June 2009
- Structural Details reference no 1018/2009 Sheet nos 1 2 & 3 accompanied by a Structural Design Certificate prepared & endorsed by N Koloff & Associates Consulting Engineers dated 18 June 2009
- Driveway Design Details reference no 001 Drawing no S11 prepared by Cutting Edge Building accompanied by a Compliance Statement issued by N Koloff & Associates Consulting Engineers dated 29 June 2009 with Access Driveway Levels and Section 139 Consent issued by Pittwater Council dated 30 April and 23 June 2009 respectively
- Certificate of Structural Adequacy issued by N Koloff & Associates Consulting Engineers dated 18 June 2009

# Certificate

I hereby certify that the above Plans documents or Certificates satisfy

- The relevant provisions of the Building Code of Australia
- The relevant conditions of this Development Consent

and that work completed in accordance with the documentation accompanying the application for this Certificate (and any modifications as verified by me and shown on that documentation) will comply with the requirements of the Environmental Planning & Assessment Regulation referred to in Section 81A(5) of the Environmental Planning & Assessment Act 1979

**Signed** TBowden

**Date of endorsement** 1 JUL 2009

**Certificate No** **2009/3353**

**Certifying Authority**

| | |
|---|---|
| Name of Accredited Certifier | Tom Bowden |
| Accreditation No | BPB0042 |
| Accreditation Authority | Building Professionals Board |
| Contact No | (02) 9999 0003 |
| Address | 13/90 Mona Vale Road Mona Vale NSW 2103 |

**Development Consent**

| | |
|---|---|
| Development Application No | **NO172/09** |
| Date of Determination | **26 May 2009** |

**BCA Classification** **1a**

insight building certifiers pty ltd

# APPLICATION FOR A CONSTRUCTION CERTIFICATE

RECEIVED
29 JUN 2009

Construction Certificate [X]
**Modified** Construction Certificate [ ]

## 1. Applicant's details

It is important that we are able to contact you if we need more information Please give us as much details as possible

Mr [X] Mrs [ ] Ms [ ] Dr [ ] Other [ ]

Given Names (or ACN): LANCE
Family Name (or Company): HORTON

Postal Address (we will post all mail to this address)

4 YACHTSMANS PARADISE NEWPORT

Post Code: 2106

Daytime telephone:
Alternate no:
Mobile no: 0405 330 745

## 2. Owner's consent

Every owner of the land must sign this form If the owner is a company the form must be signed by an authorised director and the common seal must be stamped on this form If the property is a unit under the strata title or a lot in a community title then in addition to the owner s signature the common seal of the body corporate must be stamped on this form over the signature of the owner and signed by the Chairman or Secretary of the Owners Corporation or the appointed Managing Agent

Owner(s): LANCE HORTON

Address: 4 YACHTSMANS PARADISE NEWPORT.

As owner(s) of the land to which this application relates I/We consent to this application I/We also consent for the Principal Certifying Authority and/or Accredited Certifier to enter the land to carry out inspections relating to this application

Signature(s)

Without the owner s consent we will not accept the application This is a very strict requirement for all applications If you are signing on the owner s behalf as the owner s legal representative you must state the nature of your legal authority and attach documentary evidence (eg power of attorney executor, trustee, company director etc)

## 3. Location of property

Unit/Street no: 4
Street name: YACHTSMANS PARADISE

Suburb: NEWPORT
Post code: 2106

Legal Property Description (these details are shown on your rate notices property deeds etc)

Lot no: 28
DP no: 233779

## 4. Description of work

What type of work do you propose to carry out?

Please describe briefly everything that you want approved

EXTENTION TO EXISTING DWELLING
INCLUDING NEW SECOND FLOOR/ GARAGE/ LIVING/ DECKS.

## 5. Estimated cost of work

The estimated cost of the development or contract price may be subject to review

Estimated cost of work $212,000

## 6. Development Consent

Council Consent no. 172/09

Date of Determination 26/6/09

## 7. Building Code of Australia classification

This can be found on the development consent

BCA Classification 1a

## 8. Builder's details

If known, to be completed in the case of residential building work

Name LANCE HORTON

Licence no 147071C

Owner/builder permit no

## 9. Applicant's declaration

I apply for a Construction Certificate to carry out building works as described in this application. I declare that the above Development Consent is valid and that no building works associated with this application have commenced. To the best of knowledge, all the information in this application and checklist is true and correct

Signature

Date 29/6/09.

## *SUBMISSION REQUIREMENTS*

### A GENERAL

Are the plans submitted with the Construction Certificate Application in accordance with the Development Consent?

Yes ☑ No ☐

Have all the conditions of Development Consent relating to the issue of the Construction Certificate been fully complied with?

Yes ☑ No ☐

**If you have answered NO to either of the above questions, then you will need to speak with the Accredited Certifier BEFORE LODGING YOUR APPLICATION**

### B ALL PROPOSALS (has the following required information been submitted?)

| Yes | No | Not Applicable | In the case of an application for a Construction Certificate for building work |
|---|---|---|---|
| ☐ | ☐ | ☐ | Three (3) copies of detailed architectural plans and specifications |
| ☐ | ☐ | ☐ | The plan for the building must consist of a general plan drawn to a scale not less than 1 100 and a site plan drawn to a scale not less than 1 200 The general plan of the building is to<br>a) show a plan of each floor section<br>b) show a plan of each elevation of the building<br>c) show the levels of the lowest floor and of any yard or unbuilt on area belonging to that floor and the levels of the adjacent ground<br>d) indicate the height design and full construction details<br>e) indicate the provision for fire safety and fire resistance (if any) |
| ☐ | ☐ | ☐ | Where the proposed building work involves any alteration or addition to or rebuilding of an existing building all copies of the general plan are to be coloured or otherwise marked to the satisfaction of the Council to adequately distinguish the proposed alteration addition or rebuilding with a separate letter listing the proposed changes being submitted |
| ☐ | ☐ | ☐ | 3 copies of a specification<br>a) to describe the construction and materials of which the building is to be built and the method of drainage sewerage and water supply<br>b) state whether the materials proposed to be used are new or second hand and give particular |
| ☐ | ☐ | ☐ | Where the proposed building work involves a modification to previously approved plans and specifications the general plans must be coloured or otherwise marked to the satisfaction of the Accredited Certifier to adequately distinguish the modification |
| ☐ | ☐ | ☐ | If the proposed building work involves a modification to previously approved plans and specification which were subject of a Development Consent has the original Development Consent been modified by Council? |
| ☐ | ☐ | ☐ | Except in the case of an application for or in respect of domestic building work<br>a) a list of any fire safety measures that are proposed to be implemented in the building or on the land on which the building is situated and<br>b) if the application relates to a proposal to carry out any alteration or rebuilding of or addition to an existing building a separate list of such of those measures as are currently implemented in the building or on the land on which the building is situated This list must specify the standard of design of each of those fire safety measures to which they were originally installed<br>c) This list must describe the extent capability and basis of design of each of the measures concerned |
| ☐ | ☐ | ☐ | Copy of BASIX Certificate & Schedule of BASIX Commitments |
| ☐ | ☐ | ☐ | Copy of signed BASIX Compliance Statement |
| ☐ | ☐ | ☐ | All other documentation to satisfy conditions of Development Consent |

**HOME BUILDING ACT 1989 (as amended) OWNER/BUILDER REQUIREMENTS**

Applicants for work at a residential property with a value of work over $12 000 require insurance as specified in the Home Building Act 1989

Owner Builders require Property Owner Builder s Permit issued by the Department of Fair Trading for all projects over $5 000 In addition to this permit all projects valued in excess of $12 000 may also require a contract of insurance under the provisions of the Home Building At 1989 as amended This requirement will take effect should the property owner offer the property for sale in the ensuing period of 7 years

Enquiries on any matters relevant to this section should be taken up with the Department of Fair Trading at Level 21 Astra House 227 Elizabeth Street Sydney (ph 133220)

**LONG SERVICE LEVY (applies to all classes of buildings)**

A Long Service Levy at 0 35% of the cost of works is payable on projects valued $25 000 or more This sum can be paid directly to the Long Service Payments Corporation or to Council acting as an agent to the Corporation Partial exemption from the levy may be granted to non profit organizations churches and to owner/builders The levy may also be paid in instalments Application forms for these exemptions are available from Council but all enquiries in this regard should be address to the Long Service Payments Corporation

**THE CONSTRUCTION CERTIFICATION CANNOT BE ISSUED UNLESS THE LONG SERVBICE LEVY AND HOME BUILDING ACT 1989 INSURANCE (APPLICABLE TO RESIDENTIAL PROPERTIES) HAVE BEEN PAID OR EVIDENCE OF THE EXEMPTION PROVIDED TO COUNCIL**

**PARTICULARS OF THE PROPOSAL**

| | |
|---|---|
| What is the area of the land ($m^2$)? 738m² | Gross floor area of building ($m^2$) as proposed 312m² |
| What are the current uses of all or parts of the building(s)/land? RESIDENTIAL | Location NEWPORT<br>Use HOME |
| Does the site contain a dual occupancy? NO | What is the gross floor area of the proposed addition or new building (sq metres)? 312m² |
| What are the proposed uses of all parts of the building(s land? RESIDENTIAL | Number of pre-existing dwellings 1 |
| Number of dwellings to be demolished 0 | How many dwellings proposed? 1 |
| How many storeys will the building consist of? 2 | Will the new building be attached to the existing building? YESS<br>Will the new building be attached to any new building? |

**MATERIALS TO BE USED**

***The following information must be supplied for the Australian Bureau of Statistics***

**Place a tick (√) in the box which best describes the materials the new work will be constructed of**

| WALLS | | FLOOR | | ROOF | | FRAME | |
|---|---|---|---|---|---|---|---|
| Brick veneer | ☒ | Concrete | ☒ | Aluminium | ☐ | Timber | ☒ |
| Full brick | ☐ | Timber | ☒ | Concrete | | Steel | ☐ |
| Single brick | ☐ | Other | ☐ | Concrete tile | ☐ | Other | ☐ |
| Concrete block | ☐ | Unknown | ☐ | Fibrous cement | ☐ | Unknown | ☐ |
| Concrete/masonry | ☐ | | | Fibreglass | ☐ | | |
| Concrete | ☐ | | | Masonry/terracotta shingle | ☐ | | |
| Steel | ☐ | | | Tiles | ☐ | | |
| Fibrous cement | ☐ | | | Slate | ☐ | | |
| Hardiplank | ☐ | | | Steel | ☒ | | |
| Timber/weatherboard | ☒ | | | Terracotta tile | ☐ | | |
| Cladding aluminium | ☐ | | | Other | ☐ | | |
| Curtain glass | ☐ | | | Unknown | ☐ | | |
| Other | ☐ | | | | | | |
| Unknown | ☐ | | | | | | |

Suite 13/90 Mona Vale Road Mona Vale NSW 2103 PO Box 326 Mona Vale NSW 1660 ph 9999 0003 fax 9979 1555
Email info@insightcert com au ABN 54 115 090 456

# BASI Certificate

Building Sustainability Index www basix nsw gov au

## Alterations and Additions

Certificate number A57461

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 Alterations and Additions Definitions" dated 29/9/2006 published by Department of Planning This document is available at www basix nsw gov au

Director General
Date of issue Sunday 10 May 2009

NSW GOVERNMENT
**Department of Planning**



| Project address | |
|---|---|
| Project name | Horton Residence |
| Street address | 4 Yachtsmans Paradise Newport 2106 |
| Local Government Area | Pittwater Council |
| Plan type and number | Deposited Plan 1 |
| Lot number | 28 |
| Section number | 0 |
| **Project type** | |
| Dwelling type | Separate dwelling house |
| Type of alteration and addition | My renovation work is valued at $50,000 or more, and does not include a pool (and/or spa) |

| Fixtures and systems | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|
| **Lighting** | | | |
| The applicant must ensure a minimum of 40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or light emitting-diode (LED) lamps | | ✓ | ✓ |
| **Fixtures** | | | |
| The applicant must ensure new or altered showerheads have a flow rate no greater than 9 litres per minute or a 3 star water rating | | ✓ | ✓ |
| The applicant must ensure new or altered toilets have a flow rate no greater than 4 litres per average flush or a minimum 3 star water rating | | ✓ | ✓ |
| The applicant must ensure new or altered taps have a flow rate no greater than 9 litres per minute or minimum 3 star water rating | | ✓ | |

| Construction | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|
| **Insulation requirements** | | | |
| The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m2, b) insulation specified is not required for parts of altered construction where insulation already exists | ✓ | ✓ | ✓ |

| Construction | Additional insulation required (R-value) | Other specifications |
|---|---|---|
| suspended floor with enclosed subfloor framed (R0 7) | R0 60 (down) (or R1 30 including construction) | |
| floor above existing dwelling or building | nil | |
| external wall brick veneer | R1 16 (or R1 70 including construction) | |
| external wall framed (weatherboard, fibro, metal clad) | R1 30 (or R1 70 including construction) | |
| internal wall shared with garage plasterboard (R0 36) | nil | |
| raked ceiling, pitched/skillion roof framed | ceiling R1 50 (up), roof foil backed blanket (55 mm) | light (solar absorptance < 0 475) |

| Glazing requirements | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|
| **Windows and glazed doors** | | | |
| The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below Relevant overshadowing specifications must be satisfied for each window and glazed door | ✓ | ✓ | ✓ |
| The following requirements must also be satisfied in relation to each window and glazed door | | ✓ | ✓ |
| Each window or glazed door with standard aluminium or timber frames and single clear or toned glass may either match the description, or, have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below Total system U-values and SHGCs must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions | | ✓ | ✓ |
| Each window or glazed door with improved frames, or pyrolytic low-e glass or clear/air gap/clear glazing, or toned/air gap/clear glazing must have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below Total system U-values and SHGCs must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions The description is provided for information only Alternative systems with complying U-value and SHGC may be substituted | | ✓ | ✓ |
| For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill | ✓ | ✓ | ✓ |
| Pergolas with polycarbonate roof or similar translucent material must have a shading coefficient of less than 0 35 | | ✓ | ✓ |
| Pergolas with fixed battens must have battens parallel to the window or glazed door above which they are situated, unless the pergola also shades a perpendicular window The spacing between battens must not be more than 50 mm | | ✓ | ✓ |
| Pergolas with adjustable shading may have adjustable blades or removable shade cloth (not less than 80% shading ratio) Adjustable blades must overlap in plan view | | ✓ | ✓ |
| Overshadowing buildings or vegetation must be of the height and distance from the centre and the base of the window and glazed door, as specified in the 'overshadowing' column in the table below | ✓ | ✓ | ✓ |

## Windows and glazed doors glazing requirements

| Window / door no. | Orientation | Area of glass inc. frame (m2) | Overshadowing Height (m) | Overshadowing Distance (m) | Shading device | Frame and glass type |
|---|---|---|---|---|---|---|
| W1 | E | 2 7 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) |

| Glazing requirements | | | | | | | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|---|---|---|---|---|---|
| Window / door no. | Orientation | Area of glass inc. frame (m2) | Overshadowing Height (m) | Overshadowing Distance (m) | Shading device | Frame and glass type | | | |
| W2 | S | 0 66 | 2 2 | 0 1 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U value 6 44, SHGC 0 75) | | | |
| W3 | E | 1 62 | 0 | 0 | pergola (adjustable shade) >=900 mm | improved aluminium single clear, (U-value 6 44, SHGC 0 75) | | | |
| W4 | W | 2 53 | 4 5 | 1 9 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W5 | W | 2 09 | 4 5 | 1 9 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value 6 39, SHGC 0 56) | | | |
| W6 | W | 2 09 | 4 5 | 1 9 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W7 | N | 3 71 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W8 | S | 7 62 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W9 | E | 5 1 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W10 | S | 0 99 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value 6 39, SHGC 0 56) | | | |
| W11 | S | 2 4 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value 6 39, SHGC 0 56) | | | |
| W12 | N | 3 71 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W13 | N | 2 31 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value 6 39, SHGC 0 56) | | | |
| W14 | W | 1 8 | 1 8 | 2 5 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |

| Glazing requirements | | | | | | | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|---|---|---|---|---|---|
| Window / door no. | Orientation | Area of glass inc. frame (m2) | Overshadowing Height (m) | Overshadowing Distance (m) | Shading device | Frame and glass type | | | |
| W15 | W | 1 8 | 1 8 | 2 5 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W16 | E | 1 8 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium single clear, (U-value 6 44, SHGC 0 75) | | | |
| W17 | E | 1 5 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| W18 | E | 2 4 | 0 | 0 | pergola (adjustable shade) >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| D1 | S | 5 67 | 2 7 | 0 1 | awning (fixed) >=900 mm | timber or uPVC, single toned, (or U value 5 67, SHGC 0 49) | | | |
| D2 | S | 7 06 | 0 | 0 | pergola (adjustable shade) >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| D10 | N | 10 08 | 0 | 0 | awning (fixed) >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| D11 | N | 8 82 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| D12 | N | 8 82 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value 6 39, SHGC 0 56) | | | |
| D13 | N | 5 04 | 0 | 0 | awning (fixed) >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |
| B1 | E | 3 58 | 0 | 0 | awning (fixed) >=900 mm | improved aluminium, single clear, (U-value 6 44, SHGC 0 75) | | | |

| 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 & 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 for the development may be issued |

Pittwater Council

# OFFICIAL RECEIPT

23/06/2009 Receipt No 261204

To Lance Horton

3 Fauli Close
Mona Vale NSW 2103

| Application Reference | Amount |
|---|---|
| GL Re 5575-Eng 1 x @172/09 | $742.00 |
| GL Re 0659-Bu... 1 x @172.9 | $742.00 |

| | |
|---|---|
| Total | $668.00 |
| Amounts Tendered | |
| Cash | $0.00 |
| Cheque | $0.00 |
| Dr/Cr Card | $668.00 |
| Money Order | $0.00 |
| Agenc, Rec | $1.00 |
| Total | $668.00 |
| Rounding | $0.00 |
| Change | $0.00 |
| Nett | $668.00 |

Printed 23/06/2009 at 2:37
Cashier Debbi

FORM NO

OFFICE USE ONLY

PLEASE PRINT ALL DETAILS USING CAPITALS

TON
CE
AUL CL
AVALE

Postcode 2103 Bus hours phone 0405330745

ACHTSMANS PARADISE
PORT

Postcode 2106

06 Y 2009 Estimated finish date D 30 M 11 Y 2009

TWATER
109

212000.00 Levy payable $ 742.00

ide DA number here

Business hours phone

Contract amount $

Phone number

Date D M Y

this form may result in prosecution under Section 58A
on this form is true and correct to the best of my knowledge

Name LANCE HORTON Signature Date D 23 M 06 Y 2009

Exemption Approval Certificate No

$742.00
23/6/09
REC 261204

# N.KOLOFF & ASSOCIATES

**N KOLOFF** B E (Hon) M Eng L G E M I E Aust
CIVIL & STRUCTURAL ENGINEER
LICENSED BUILDER - LICENCE No 8860C
ASSOCIATES
**K.FRANCIS** B Town Planning
**L CONTIGIANI** B Arch
**A W MUNDINE** O B E – Building Supervisor

CIVIL & STRUCTURAL ENGINEERS TOWN PLANNERS ARCHITECTS SURVEYORS

Postal Address P O Box 99
Annandale NSW 2038
Sydney Australia

Telephone +61 2 9560 0064
Facsimile +61 2 9560 0065
Mobile 0417 485 481

## STRUCTURAL CERTIFICATE

**18 06 2009**

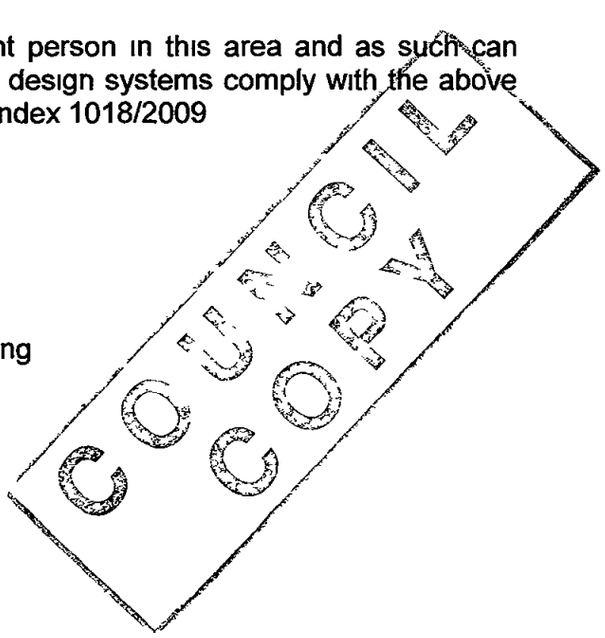
**RE PROPOSED ALTERATIONS AND ADDITIONS TO AN EXISTING HOUSE AT No 4 YACHTSMANS PARADISE, NEWPORT NSW 2106 / DA CONCENT No 172/09**

Pursuant to the provisions of **clause A2 2 of the Building Code of Australia**, I certify that the structural design for the above project is in accordance with normal engineering practice and meets the requirements of the Building Code of Australia, Part 7 of the Environmental Planning and Assessment Regulations, relevant Australian Standards and relevant conditions of Development Consent

In particular the design is in accordance with the following Australian Standards

- **AS 3600 - 2001 - CONCRETE STRUCTURES CODE**
- **AS 1170 1 & 2 – 1989 – DEAD, LIVE AND WIND LOADS**
- **AS 4100 - 1998 - STEEL STRUCTURES CODE**
- **AS 1684 – 1999, Parts 2,3 &4 - RESIDENTIAL TIMBER FRAMES CONSTRUCTION**
- **AS 1720 – 1997, Part 1 - TIMBER STRUCTURES CODE**
- **AS 3700 - 2001 - MASONRY STRUCTURES**

I am an appropriately qualified and competent person in this area and as such can certify that the design and performance of the design systems comply with the above and which are detailed on structural drawings Index 1018/2009




**N Koloff - Structural Engineer**
B E (Hon), M Eng , L G E , M I E Aust , C P Eng
Membership No 616868

Enclosed Structural Details Index 1018/2009

# N.KOLOFF & ASSOCIATES

**CIVIL & STRUCTURAL ENGINEERS, ARCHITECTS, TOWNPLANNERS, SURVEYORS**

**POSTAL ADDRESS**
**P O BOX 99, ANNANDALE**
**NSW 2038, AUSTRALIA**

**PHONE (02)9560 0064**
**FAX (02) 9560 0065**
**MOBILE 0417 485 481**


DESCRIPTION OF WORKS
STORMWATER DRAINAGE STRUCTURE FOR PROPOSED NEW ALTERATIONS AND ADDITIONS TO AN EXISTING HOUSE AT
**No 4 YACHTSMANS PARADISE**
**NEWPORT NSW 2106**

INDEX 1018A/2009
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APPROVED BY Nikolai Koloff
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Registration No 616868

**Date 18 06 2009**

## GENERAL NOTES

1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED THE COURSE OF THE CONTRACT

2 DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS REFER TO ARCHITECTURAL DRAWINGS FOR SET OUT PLAN MEASUREMENTS

3 SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE BUILDER.

4 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED THE BUILDER SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE WORKS DURING CONSTRUCTION

5 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS OF THE SAA CODES AND THEBY LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITY

6 THE SECTIONS ON THESE DRAWINGS ARE INTENDED TO GIVE THE STRUCTURAL DETAILS ONLY AND ARCHITECTURAL DETAILS ARE ILLUSTRATIVE ONLY

7 ALL SLABS AND FOOTINGS ARE TO BE INSPECTED BY THE ENGINEER PRIOR TO THE POURING OF CONCRETE GIVE 24 HOURS NOTICE TO THE ENGINEER FOR ALL REQUIRED INSPECTIONS

8 BRITTLE FLOOR COVERINGS SUCH AS CERAMIC TILES SHOULD BE LAID USING AN APPROVED FLEXIBLE ADHESIVE SYSTEM TO CONTROL THE EFFECT OF SHRINKAGE CRACKING A MINIMUM PERIOD OF THREE MONTHS DRYING OF THE CONCRETE IS USUALLY REQUIRED BEFORE THE PLACEMENT OF BRITTLE FLOOR COVERINGS.

9 SUBTERRAINEAN TERMITE PROTECTION IS TO BE PROVIDED IN ACCORDANCE WITH AS 3660 1 WITH ALL JOINTS ADEQUATELY LAPPED AND TAPED AT PENETRATIONS

10 ENSURE ALL WET AREAS ARE WATERPROOOFED IN ACCORDANCE WITH AS3740

## FOOTING & FOUNDATION NOTES

1 FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING CAPACITY OF 150 KPa

2 THE ASSUMED FOUNDING LEVELS OF THE FOOTINGS ARE TO BE AS INDICATED ON THE DRAWINGS EXCAVATION SHALL CONTINUE UNTIL THE REQUIRED BEARING CAPACITY IS FOUND THE OVER EXCAVATION THE OVER EXCAVATION SHALL BE BACK-FILLED WITH A MASS CONCRETE MIX TO THE APPROVAL OF THE ENGINEER

3 ALL WALLS AND COLUMNS SHALL BE CONCENTRIC WITH SUPPORTING FOOTING UNLESS NOTED OTHERWISE ON DRAWINGS

## SITE PREPARATION NOTES

1 ALL TOPSOIL, ORGANIC AND DELETERIOUS MATERIAL IS TO BE STRIPPED FROM THE BUILDING SITE

2 THE SITE IS TO BE CUT AND FILLED TO FORM A LEVEL BUILDING PLATFORM BATTERS AROUND THE HOUSE SHOULD BE DESIGNED TO WITHSTAND WEATHER EROSION

3 THE OWNERS ATTENTION SHOULD BE DRAWN TO APPENDIX B OF AS 2870 PERFORMANCE REQUIREMENTS AND FOUNDATION MAINTENANCE" ON COMPLETION OF THE JOB

4 EXCAVATION SHALL NOT EXTEND BELOW A LINE DIPPING AT 45 FOR CLAY OR AND AWAY FROM THE NEAREST UNDERSIDE CORNER OF ANY EXISTING FOOTINGS

5 FILL MATERIAL BENEATH SLAB IS TO BE COMPACTED IN ACCORDANCE WITH AS 2870 PIERING IS REQUIRED WHERE THIS FILL MATERIAL IS GREATER THAN 400mm. NOT MORE THAN 300mm FOR SAND MATERIAL OR 400mm COMPACTED IN LAYERS NOT MORE THAN 150mm FOR OTHER MATERIAL.

6 THE SLAB IS TO BE ENTIRELY UNDERLAID WITH A 0.2mm POLYETHYLENE VAPOUR BARRIER WITH ALL JOINTS ADEQUATELY LAPPED AND TAPED AT PENETRATIONS

## PIER NOTES

1 ALL PIERS ARE TO BE CLEANED AND DEWATERED PRIOR TO THE PLACEMENT OF CONCRETE
2. THE ENGINEER IS TO INSPECT AND APPROVE PIERS BEFORE THE POURING OF CONCRETE
3 WHEREVER PIERS ARE NOMINATED THESE SHOULD BE SOCKETED A MIN OF 300mm INTO STIFF CLAY 200mm INTO SHALE OR 100mm INTO ROCK DEPENDING ON THE BEARING CALLED UP (REFER TO PLAN)

## CONCRETE NOTES

1 CONCRETE SPECIFICATION TO BE AS FOLLOWS.

| LOCATION | CONCRETE GRADE | SLUMP | MAX. AGG SIZE | CEMENT | EXPOSURE CLASSIFICATION |
|---|---|---|---|---|---|
| PIERS | N20 | 80 | 20 | TYPE A | A1 |
| SLABS ON GROUND & FOOTINGS | N25 | 80 | 20 | TYPE A | A1 |
| SUSPENDED SLABS | N32 | 80 | 20 | TYPE A | A1 |

2. CONCRETE COVER SPECIFICATION TO BE AS FOLLOWS

| LOCATION | TOP | BOTTOM | SIDE |
|---|---|---|---|
| SLABS ON GROUND | 20 | 30 | 40 |
| SUSPENDED SLABS | 20 | 20 | 40 |
| FOOTINGS | 40 | 40 | 40 |
| BALCONY/VERANDAH | 40 | 30 | 40 |

3 REINFORCEMENT SYMBOLS ARE AS FOLLOWS
R STRUCTURAL GRADE ROUND BARS (250 R)
Y HOT ROLLED DEFORMED BARS (400 Y)
SL HARD-DRAWN WIRE MESH REINFORCING FABRIC (500SL)

N12-300 — TYPE OF REINFORCEMENT; BAR SIZE (mm); SPACING (mm)
3N28 — NUMBER OF BARS; TYPE OF REINFORCEMENT; BAR SIZE (mm)

4 ALL REINFORCEMENT TO BE ADEQUATELY SUPPORTED IN ITS REQUIRED POSITION BY CHAIRS GENERALLY AT NOT GREATER THAN 900mm CENTRES BOTHWAYS

5 SPLICES IN REINFORCEMENT SHALL BE TRENCH MESH AND FABRIC 2 TRANSVERSE WIRES (FULL SQUARE MESH) PLUS 25mm BARS AS PER THE TABLE

| REINF BAR | LAP LENGTH |
|---|---|
| N12 | 500 |
| N16 | 600 |
| N20 | 750 |
| N24 | 850 |
| N28 | 1000 |

6 CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.

7 NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS TO BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER

8 ALL CONCRETE IN SLABS BEAMS COLUMNS AND WALLS SHALL BE MECHANICALLY VIBRATED DURING POUR.

9 FORMWORK SUPPORTING SUSPENDED SLABS BEAMS COLUMNS AND WALLS MUST BE LEFT IN POSITION FOR AT LEAST 21 DAYS AFTER CONCRETE IS POURED

## MASONRY NOTES

1 LOAD BEARING MASONRY SHALL COMPLY WITH AS3700 AND THE PROJECT SPECIFICATION

2 THE MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH OF THE MASONRY UNITS AS DESCRIBED IN AS3700 SHALL BE 15MPa U N O
MORTAR -MASONRY TO BE EMBEDDED IN FRESHLY PREPARED MORTAR
ONCRETE SOLID AND HOLLOW UNITS MORTAR TO BEUNIFORMLY MIXED IN THE RATIO OF ONE PART CEMENT ONE ART LIME AND SIX PARTS SAND CONFORMING TO AS2701
(BRICKIES LOAM SHALL NOT BE USED)

3 GROUT SHALL HAVE A COMPRESSIVE STRENGTH (F'c) OF 15 MPa AT 28 DAYS A SLUMP OF 125mm IN 150mm SLUMP CONE. A MAXIMUM AGGREGATE SIZE OF 10mm AND BE IN ACCORDANCE WITH AS3700 PART 1

4 BEDDING OF MASONRY SHALL BE FULL WITH CROSS JOINTS PROPERLY FILLED JOINT THICKNESS SHALL NOT EXCEED 12mm

5 PROVIDE WALL TIES AT 600mm MAXIMUM CENTRES VERTICALLY AND HORIZONTALLY

6 KEEP CAVITY CLEAN AND CLEAR OF OBSTRUCTIONS CAVITY SHALL NOT EXCEED 200mm AND SHALL NOT BE SMALLER THAN 40mm

7 ALL WALLS TO BE KEPT STABLE AT ALL STAGES OF CONSTRUCTION AND NOT TO BE OVER STRESSED AT ANYTIME

8 UNLESS NOTED OR SHOWN OTHERWISE ON DRAWINGS THERE ARE TO BE NO CHASES OR RECESSES PERMITTED IN MASONRY WALLS WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL DESIGN ENGINEER

9 REFER TO ARCHITECTURAL DRAWINGS FOR THE LOCATION OF GALVANISED WALL STIFFENERS AND THE STRUCTURAL ENGINEERS DRAWINGS FOR THE STRUCTURAL DETAILS OF WALL STIFFENERS

10 MASONRY WALLS MUST NOT BE BUILT ON CONCRETE SLABS OR BEAMS UNTILL ALL FORMWORK/PROPS SUPPORTING THESE SLABS AND BEAMS HAVE BEEN REMOVED

## NON LOAD BEARING BRICK WALL LINTEL NOTES

1 SCHEDULE OF SIZES

| MAXIMUM SPAN (mm) | LINTEL DIMENSION (mm) |
|---|---|
| 900 | 75x10PL – |
| 900-1200 | 90x10PL – |
| 1200 2100 | 100x100x8 L_ |
| 2100 3600 | 150x100x10 L_ |

2. PROVIDE 1 LINTEL TO EACH WALL LEAF DO NOT CUT ON SITE. KEEP LINTELS 6MM CLEAR OF HEADS AND FRAMES PACK MORTAR BETWEEN THE ANGLE UPSTAND UNEQUAL ANGLE LINTELS SHOULD HAVE THEIR LONG LEG VERTICAL.

3 MINIMUM BEARING AT EACH TO BE. SPAN LESS THAN 1800MM = 150MM, SPAN GREATER THAN 1800MM = 230MM.

4 TO PREVENT DEFLECTION OR EXCESSIVE ROTATION TEMPORARILY PROP PROPRIETARY COLD FORMED LINTELS UNTIL THE MASONARY REACHES ITS REQUIRED STRENGTH MINIMUM PROPPING PERIOD IS 3 DAYS

5 ALL LINTELS TO BE HOT DIPPED GALVANISED

## TIMBER WORK NOTES

1 ALL TIMBER FRAMING CONSTRUCTION INCLUDING CONNECTIONS AND BRACING TO BE CARRIED OUT INACCORDANCE WITH AS1684.2 1999 (TIMBER FRAMING CODE) AND SHALL ALSO COMPLY WITH AS1720 1

2. ALL TIMBER MEMBERS SHALL BE MIN F7 STRESS GRADE U N O HARDWOOD SHALL BE F11 STRESS GRADE OR BETTER U N O

3 REFER TO MANUFACTURERS SPECIFICATIONS FOR INSTALLATION OF I-JOISTS SUCH AS 'HYBEAM' FLOOR JOISTS WHERE APPLICABLE

4 ALL LVL (LAMINATED VENEER LUMBER) USED SHALL COMPLY WITH AS 4357 (STRUCTURAL LAMINATED VENEER LUMBER CODE) AND MUST BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS SUCH AS HYSPAN OR SIMILAR.

5 TIMBER FLOORS IN WET AREAS (EG BATHROOMS LAUNDRIES) SHALL BE PROTECTED FROM MOISTURE IN ACCORDANCE WITH THE B.C.A.

6 ALL EXPOSED TIMBER SHALL COMPLY WITH THE REQUIREMENTS OF APPENDIX C OF AS 1684.2 (IE. PROVIDE PRESERVATIVE TREATMENT)

7 T7 HOLES FOR BOLTS UNLESS OTHERWISE DETAILED, SHALL BE MADE OVERSIZE AS FOLLOWS BOLT DIAMETER 15MM OR LESS 2MM OVERSIZE BOLT DIAMETER 18mm AND GREATER 3mm OVERSIZE

8 SHANK AND THREAD OF BOLTS SHALL BE THOROUGHLY COATED WITH A HEAVY WATERPROOF GREASE BEFORE INSERTING INTO THE TIMBER.

9 EDGE DISTANCES FOR FASTERNERS IN TIMBER (FROM ENDS AND SIDES) SHALL BE IN ACCORDANCE WITH AS1720 1 U N O

10 TERMITE PROTECTION
ALL CONSTRUCTION WORK SHOULD BE IN ACCORDANCE WITH AS3660 1 2000 PROTECTION OF BUILDINGS FROM SUBTERRANEAN TERMITES PART 1 NEW BUILDINGS IF THE REQUIREMENTS IN THIS CODE ARE UNABLE TO BE MET AUSTRALINE RECOMMENDS THE USE OF TERMITE RESISTANT STRUCTURAL TIMBER IN ACCORDANCE WITH AS1604-1997 AS SHOWN BELOW·

| ENVIRONMENT | CLASS |
|---|---|
| INTERIOR ABOVE GROUND | HAZARD LEVEL H2 |
| EXTERIOR ABOVE GROUND | HAZARD LEVEL H3 |
| EXTERIOR IN GROUND | HAZARD LEVEL H4 & H5 |

11 UNLESS NOTED OTHERWISE ALL LINTELS TO BE AS FOLLOWS

| TIMBER LINTEL SCHEDULE | |
|---|---|
| SPAN | LINTEL SIZE & GRADE |
| 900 | 100x50 F7 |
| 1200 | 150x50 F7 |
| 1500 | 150x75 F7 |
| 1800 | 250x50 F7 |
| 2100 | 250x50 F7 |
| 2400 | 250x75 F7 |
| 2700 | 300x75 F7 |
| 3000 | 2/250x45 F7 |
| 3600 | 2/300x45 F7 |

## STRUCTURAL STEEL

1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100 AND EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS

2. UNLESS OTHERWISE NOTED ALL STEEL SHALL BE IN ACCORDANCE WITH
AS 3679 1 GRADE 300 FOR ROLLED SECTIONS.
AS 1163 GRADE 350 FOR RHS SECTIONS
AS 1163 GRADE 350 FOR CHS SECTIONS
AS 3378 GRADE 350 FOR ALL PLATE.
AS 3679 1 GRADE 350 FOR ALL FLAT
AS 1397 GRADE 450 FOR 1 5 1 9 2.4 AND 3 0 BMT OF COLD-FORMED STEEL SECTIONS

3 THE BUILDER SHALL PREPARE WORKSHOP DRAWINGS AND SHALL SUBMIT THREE COPIES OF EACH DRAWING FOR CONDITIONAL APPROVAL. FABRICATION SHALL NOT COMMENCE UNTIL THIS APPROVAL HAS BEEN GIVEN

4 ALL WELDS SHALL BE 6mm CONTINUOUS FILLET WELDS U.N.O AND ALL GUSSET PLATES SHALL BE 10mm THICK.

5 BUTT WELDS WHERE INDICATED IN THE DRAWINGS ARE TO BE COMPLETE PENETRATION BUTT WELDS AS DEFINED IN AS 1554

6 ALL BOLTS SHALL BE 20 DIA. COMMERCIAL GRADE CONFORMING TO AS 1111 U N O WITH A MINIMUM OF 2 BOLTS PER CONNECTION HIGH STRENGTH (H.S ) BOLTS SHALL CONFORM TO AS 1252 AND SHALL BEINSTALLED IN ACCORDANCE WITH AS 4100 ALL BOLTS FOR PURLINS AND GIRTS SHALL BE M12-4 6 (COMMERCIAL GRADE). ALL BOLTS, NUTS ARE TO BE GALVANISED

7 ALL BOLTS FOR PURLINS AND GIRTS SHALL BE M12-4.6 (COMMERCIAL GRADE) ALL BOLTS NUTS ARE TO BE GALVANISED

8. THE BUILDER SHALL PROVIDE ALL CLEATS AND HOLES FOR FIXING STEEL TO STEEL AND TIMBER TO STEEL AS REQUIRED BY ENGINEERING AND ARCHITECTURAL DRAWINGS WHETHER SHOWN OR NOT

9 ALL STRUCTURAL STEEL SHALL BE PAINTED WITH 2 COATS OF ZINC PHOSPHATE PRIMER WITH A MINIMUM DRY FILM THICKNESS OF 75 MICRONS UNLESS NOTED OTHERWISE.

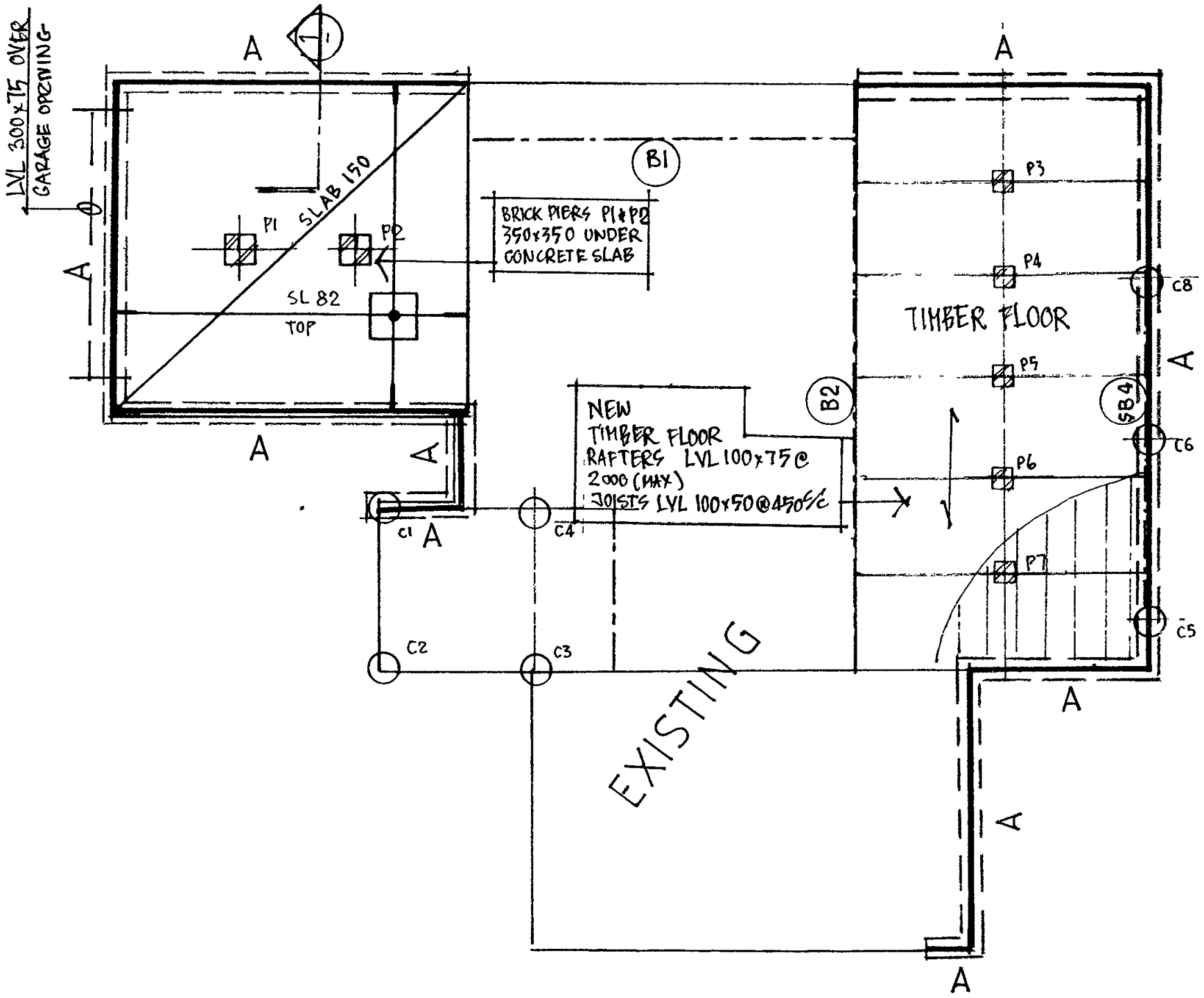
10 THE BUILDER IS TO BE PRESENT WHEN ALL HOLDING DOWN BOLTS ARE INSTALLED TO ENSURE THEY ARE NOT DISPLACED DURING CONCRETE PLACEMENT

11 THE BUILDER IS TO MAKE GOOD AND/OR REPAIR ALL DAMAGED SURFACES DURING PERFORMANCE OF THE WORK.

12 THE ROOF STRUCTURE HAS BEEN DESIGNED FOR NORMAL ROOF LOADS ONLY AND DOES NOT ALLOW ANY EXTRANEOUS LOADS SUCH AS HOISTS MONORAILS ETC UNLESS NOTED OTHERWISE.

13 ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANISED IN ACCORDANCE WITH AS 1650 WITH A MINIMUM COATING THICKNESS OF 85 MICRONS UNLESS NOTED OTHERWISE.

14 SURFACES OF EXISTING MATERIAL, WHICH ARE TO BE STRENGTHENED REPAIRED OR WELDED SHALL BE CLEANED OF DIRT RUST AND OTHER FOREIGN MATTER EXCEPT ADHERENT SURFACE PROTECTION THE PORTIONS OF SUCH SURFACES THAT ARE TO BE WELDED SHALL BE CLEANED THOROUGHLY OF ALL FOREIGN MATTER, INCLUDING PAINT FILM, FOR A DISTANCE OF 50mm FROM EACH SIDE OF THE OUTSIDE LINES OF THE WELDS. THE WELDING SEQUENCE SHALL BE CHOSEN SO AS TO MINIMIZE DISTORTION OF THE MEMBER AND ENSURE THAT ITS STRAIGHTNESS REMAINS WITHIN THE APPROPRIATE STRAIGHTNESS LIMITS OF CLAUSES IN 14 4 OF AS4100-1998.




# GROUND FLOOR PLAN

(scale 1:100)

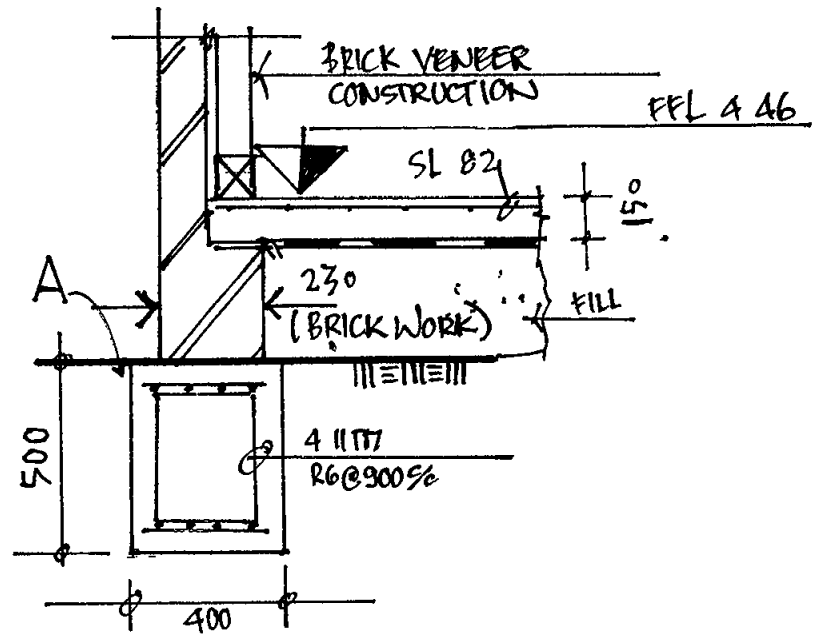
## MEMBERS SCHEDULE

**1 COLUMNS** C1 TO C8 SHS 75x75x3
ON CONCRETE OR BRICK FOOTINGS, TOP & BTM PL 150x150x6

**2 BEAMS**
B1 & B2 HJ 300 (TIMBER)
B3, B4 & B5 LVL (TIMBER)
SB4 150UC 30
SB1, SB2 & SB3 PFC 200x75x25

**SPECIAL CONDITIONS**

ROOF PURLINS REQUIRE ANGE 50x50x3 BRACING FOR WIND LOAD 40m/s




# SECTION 1

(scale 1:20)

**N.KOLOFF & ASSOCIATES**
**CIVIL & STRUCTURAL ENGINEERS, ARCHITECTS, TOWNPLANNERS, SURVEYORS**

**POSTAL ADDRESS**
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DESCRIPTION OF WORKS
STRUCTURAL DETAILS
FOR PROPOSED NEW ALTERATIONS AND ADDITIONS TO AN EXISTING HOUSE AT
**No 4 YACHTSMANS PARADISE**
**NEWPORT NSW 2106**

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B E (Hon) L G E M I E.AUST M Eng C P Eng
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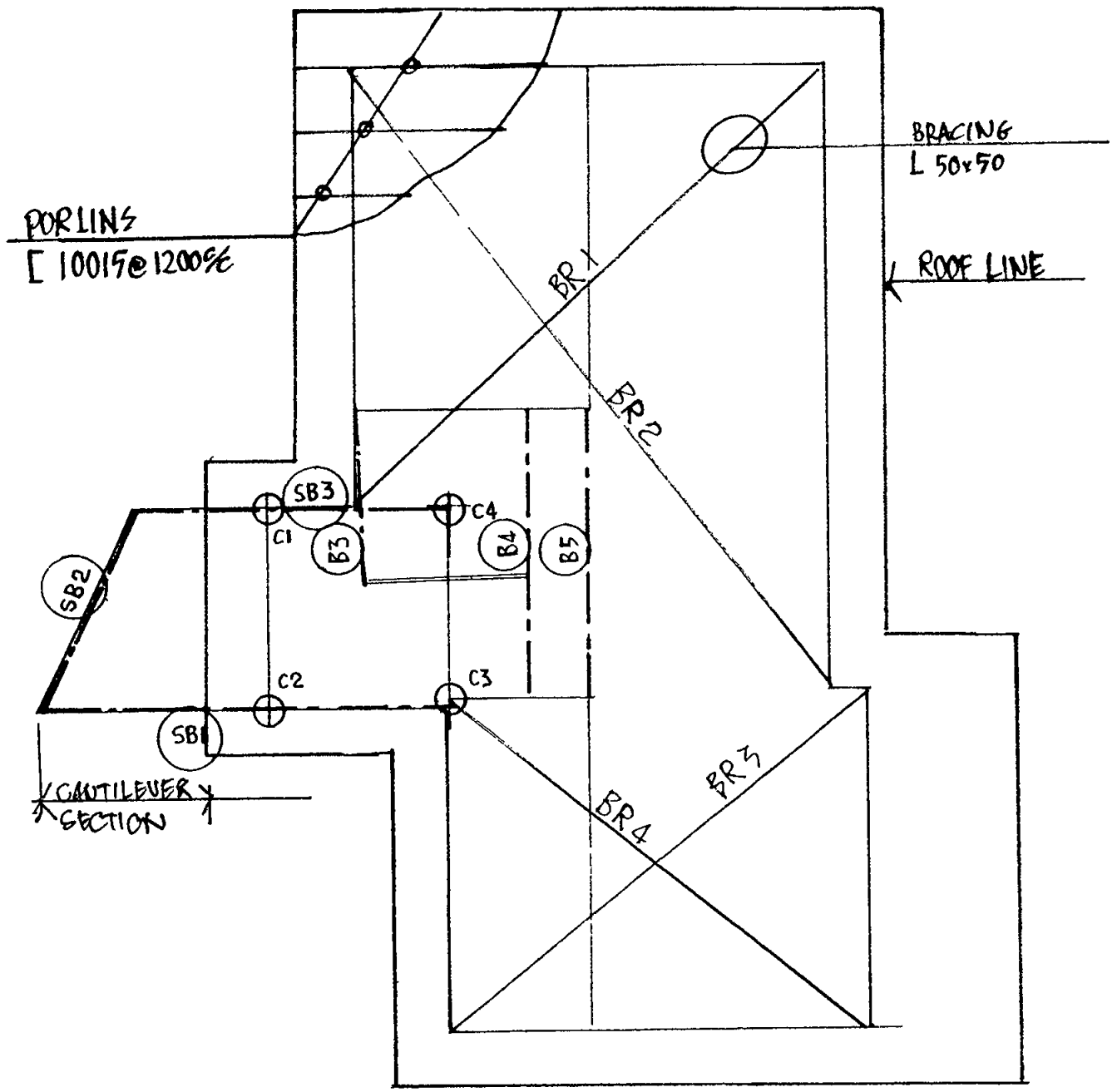
**Date 18 06 2009**




# FIRST FLOOR & ROOF PLAN

(scale 1:100)

**N.KOLOFF & ASSOCIATES**

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Registration No 616868

**Date 18 06 2009**

# BASIX Certificate

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

## Alterations and Additions

Certificate number: A57461

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 Alterations and Additions Definitions" dated 29/9/2006 published by Department of Planning. This document is available at www.basix.nsw.gov.au

Director-General
Date of Issue: Sunday, 10, May 2009

NSW GOVERNMENT
**Department of Planning**

Description of project

| Project address | |
|---|---|
| Project name | Horton Residence |
| Street address | 4 Yachtsmans Paradise Newport 2106 |
| Local Government Area | Pittwater Council |
| Plan type and number | Deposited Plan 1 |
| Lot number | 28 |
| Section number | 0 |
| **Project type** | |
| Dwelling type | Separate dwelling house |
| Type of alteration and addition | My renovation work is valued at $50,000 or more, and does not include a pool (and/or spa). |

| Fixtures and systems | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|
| **Lighting** | | | |
| The applicant must ensure a minimum of 40% of new or altered light fixtures are fitted with fluorescent, compact fluorescent, or light-emitting-diode (LED) lamps. | | ✓ | ✓ |
| **Fixtures** | | | |
| The applicant must ensure new or altered showerheads have a flow rate no greater than 9 litres per minute or a 3 star water rating. | | ✓ | ✓ |
| The applicant must ensure new or altered toilets have a flow rate no greater than 4 litres per average flush or a minimum 3 star water rating. | | ✓ | ✓ |
| The applicant must ensure new or altered taps have a flow rate no greater than 9 litres per minute or minimum 3 star water rating. | | ✓ | |

| Construction | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|
| **Insulation requirements** | | | |
| The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m2, b) insulation specified is not required for parts of altered construction where insulation already exists. | ✓ | ✓ | ✓ |

| Construction | Additional insulation required (R-value) | Other specifications |
|---|---|---|
| suspended floor with enclosed subfloor: framed (R0.7). | R0.60 (down) (or R1.30 including construction) | |
| floor above existing dwelling or building. | nil | |
| external wall: brick veneer | R1.16 (or R1.70 including construction) | |
| external wall: framed (weatherboard, fibro, metal clad) | R1.30 (or R1.70 including construction) | |
| internal wall shared with garage: plasterboard (R0.36) | nil | |
| raked ceiling, pitched/skillion roof: framed | ceiling: R1.50 (up), roof: foil backed blanket (55 mm) | light (solar absorptance < 0.475) |

**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 & 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 for the development may be issued.

| Glazing requirements | Show on DA Plans | Show on CC/CDC Plans & specs | Certifier Check |
|---|---|---|---|
| **Windows and glazed doors** | | | |
| The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below. Relevant overshadowing specifications must be satisfied for each window and glazed door. | ✓ | ✓ | ✓ |
| The following requirements must also be satisfied in relation to each window and glazed door: | | ✓ | ✓ |
| Each window or glazed door with standard aluminium or timber frames and single clear or toned glass may either match the description, or, have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below. Total system U-values and SHGCs must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions. | | ✓ | ✓ |
| Each window or glazed door with improved frames, or pyrolytic low-e glass, or clear/air gap/clear glazing, or toned/air gap/clear glazing must have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below. Total system U-values and SHGCs must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions. The description is provided for information only. Alternative systems with complying U-value and SHGC may be substituted. | | ✓ | ✓ |
| For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill. | ✓ | ✓ | ✓ |
| Pergolas with polycarbonate roof or similar translucent material must have a shading coefficient of less than 0.35. | | ✓ | ✓ |
| Pergolas with fixed battens must have battens parallel to the window or glazed door above which they are situated, unless the pergola also shades a perpendicular window. The spacing between battens must not be more than 50 mm. | | ✓ | ✓ |
| Pergolas with adjustable shading may have adjustable blades or removable shade cloth (not less than 80% shading ratio). Adjustable blades must overlap in plan view. | | ✓ | ✓ |
| Overshadowing buildings or vegetation must be of the height and distance from the centre and the base of the window and glazed door, as specified in the 'overshadowing' column in the table below. | ✓ | ✓ | ✓ |

**Windows and glazed doors glazing requirements**

| Window / door no. | Orientation | Area of glass inc. frame (m2) | Overshadowing Height (m) | Overshadowing Distance (m) | Shading device | Frame and glass type |
|---|---|---|---|---|---|---|
| W1 | E | 2.7 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W2 | S | 0.66 | 2.2 | 0.1 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W3 | E | 1.62 | 0 | 0 | pergola (adjustable shade) >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W4 | W | 2.53 | 4.5 | 1.9 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W5 | W | 2.09 | 4.5 | 1.9 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value: 6.39, SHGC: 0.56) |
| W6 | W | 2.09 | 4.5 | 1.9 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W7 | N | 3.71 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W8 | S | 7.62 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W9 | E | 5.1 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W10 | S | 0.99 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value: 6.39, SHGC: 0.56) |
| W11 | S | 2.4 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value: 6.39, SHGC: 0.56) |
| W12 | N | 3.71 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W13 | N | 2.31 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value: 6.39, SHGC: 0.56) |
| W14 | W | 1.8 | 1.8 | 2.5 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W15 | W | 1.8 | 1.8 | 2.5 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W16 | E | 1.8 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W17 | E | 1.5 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| W18 | E | 2.4 | 0 | 0 | pergola (adjustable shade) >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| D1 | S | 5.67 | 2.7 | 0.1 | awning (fixed) >=900 mm | timber or uPVC, single toned, (or U-value: 5.67, SHGC: 0.49) |
| D2 | S | 7.06 | 0 | 0 | pergola (adjustable shade) >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| D10 | N | 10.08 | 0 | 0 | awning (fixed) >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| D11 | N | 8.82 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| D12 | N | 8.82 | 0 | 0 | eave/verandah/pergola/balcony >=900 mm | improved aluminium, single toned, (U-value: 6.39, SHGC: 0.56) |
| D13 | N | 5.04 | 0 | 0 | awning (fixed) >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |
| B1 | E | 3.58 | 0 | 0 | awning (fixed) >=900 mm | improved aluminium, single clear, (U-value: 6.44, SHGC: 0.75) |

COUNCIL COPY

A3 ORIGINAL SIZE

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

Cutting Edge BUILDING

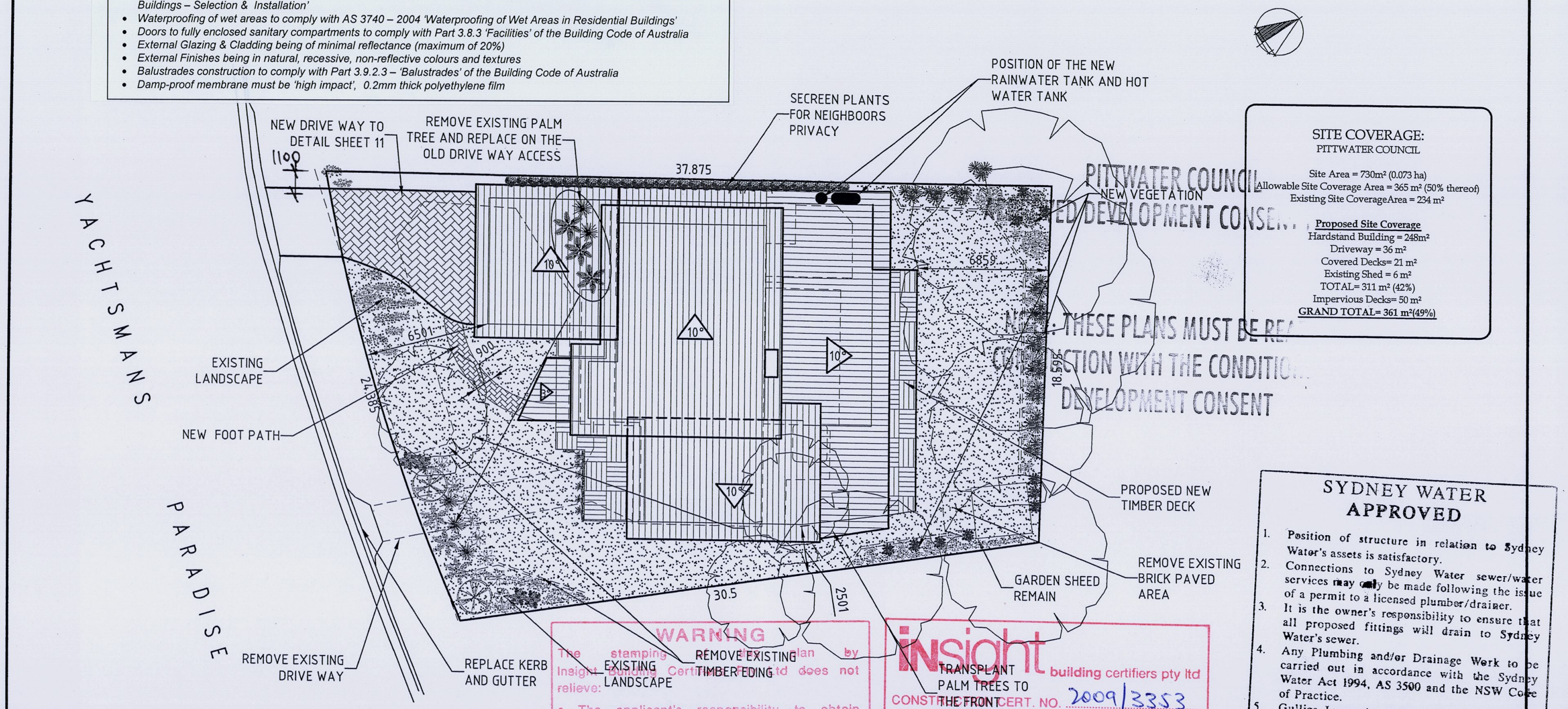
PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport

For Mr Lance Horton

Basix Requirements

DATE: 02 May 2009
SCALE: 1:100 & 1:200
DRAWN: Dias
JOB: 001
DWG.: S01
REV: 0

- *Building to incorporate BASIX commitments to comply with the attached BASIX Certificate No* A57461 *dated* 10/5/09
- *Smoke Alarms to be installed in accordance with AS 3786-1993 'Smoke alarms'*
- *Termite Management to comply with AS 3660 – 2000 'Termite Management – New Building Work'*
- *Glazing to comply with AS 1288 – 2006 'Glass in Buildings – Selection & Installation' and AS 2047 – 1999 'Windows in Buildings – Selection & Installation'*
- *Waterproofing of wet areas to comply with AS 3740 – 2004 'Waterproofing of Wet Areas in Residential Buildings'*
- *Doors to fully enclosed sanitary compartments to comply with Part 3.8.3 'Facilities' of the Building Code of Australia*
- *External Glazing & Cladding being of minimal reflectance (maximum of 20%)*
- *External Finishes being in natural, recessive, non-reflective colours and textures*
- *Balustrades construction to comply with Part 3.9.2.3 – 'Balustrades' of the Building Code of Australia*
- *Damp-proof membrane must be 'high impact', 0.2mm thick polyethylene film*




PITTWATER COUNCIL
APPROVED DEVELOPMENT CONSENT
NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT

**SITE COVERAGE:**
PITTWATER COUNCIL

Site Area = 730m² (0.073 ha)
Allowable Site Coverage Area = 365 m² (50% thereof)
Existing Site CoverageArea = 234 m²

**Proposed Site Coverage**
Hardstand Building = 248m²
Driveway = 36 m²
Covered Decks= 21 m²
Existing Shed = 6 m²
TOTAL= 311 m² (42%)
Impervious Decks= 50 m²
**GRAND TOTAL= 361 m²(49%)**

## SITE & LANDSCAPE LAYOUT PLAN
1:200

A3 ORIGINAL SIZE

**WARNING**
The stamping of this plan by Insight Building Certifiers Pty Ltd does not relieve:
- The applicant's responsibility to obtain approvals from [illegible] utilities
- The Structural Engineer of their responsibility to ensure the structural adequacy of this project.
- The Applicant, Structural Engineer or other Professional of their responsibility to ensure these stamped details are consistent with the issued Construction Certificate Architectural Details.

insight building certifiers pty ltd
CONSTRUCTION CERT. NO. 2009/3353
CONSTRUCTION CERTIFICATE PLANS
I certify that the work completed in accordance with these plans & specifications will comply with the regulations referred to in Section 81A(5) of the Environmental Planning & Assessment Act 1979
Dated: 1 JUL 2009
T. Bowden Accreditation No. BPB0042

SYDNEY WATER
**APPROVED**
1. Position of structure in relation to Sydney Water's assets is satisfactory.
2. Connections to Sydney Water sewer/water services may only be made following the issue of a permit to a licensed plumber/drainer.
3. It is the owner's responsibility to ensure that all proposed fittings will drain to Sydney Water's sewer.
4. Any Plumbing and/or Drainage Work to be carried out in accordance with the Sydney Water Act 1994, AS 3500 and the NSW Code of Practice.
5. Gullies, Inspection Shafts and Boundary Traps shall not be placed under any Roof, Balcony, Verandah, Floor or other cover unless otherwise approved by Sydney Water.
6. Property No. 5466843

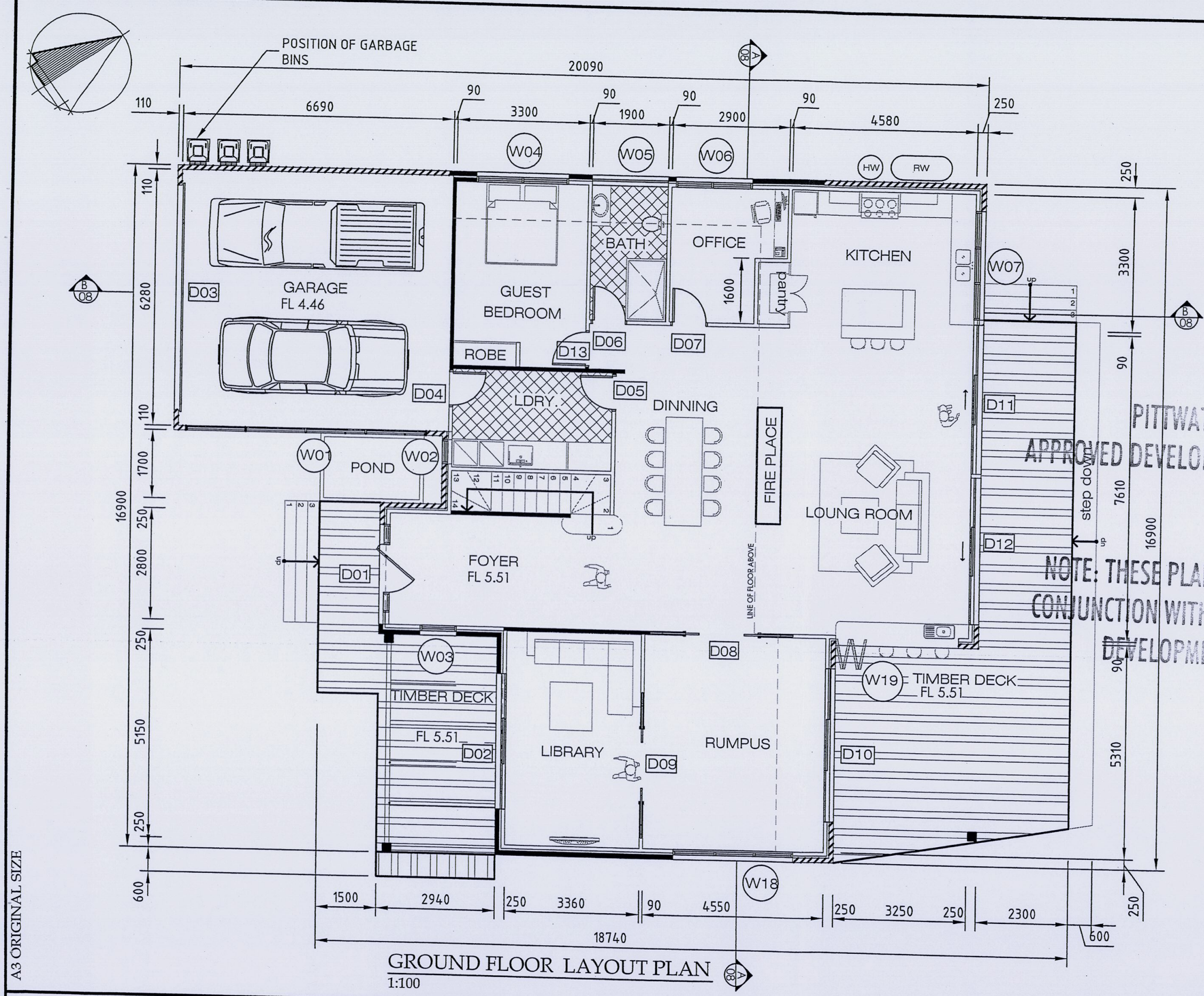
*Reece, Mona Vale*
Quick Check Agent on behalf of
SYDNEY WATER
Per: Reece 29/06/09

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

Cutting Edge BUILDING

PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport
For Mr Lance Horton
Site & Landscape Layout Plan

DATE: 02 May 2009
SCALE: 1:200
DRAWN: Dias
JOB: 001
DWG.: S02
REV: 0




## SPECIFICATION NOTES

10 degree roof pitch

ROOF:colourbond

Rendered brick- Ground floor
Shadowclad- First floor

Aluminium framed awning sash windows
wrc timber framed bi-fold glazed doors
aluminium framed sliding sash windows
glazing type to be single clear glass

weather seals to all windows and external doors

minimum R 1.5 wall insulation to brick veneer walls
minimum R 2.0 ceiling insulation

install smoke alarms to BCA. requirements

termite protection to manufacturers details and specifications to all concrete ground floor slabs

all structural steel and timber beams, posts reinforced concrete footings and floor slabs to structural engineers details and specifcations

refer hydraulic engineers drawings and specifications for all drainage and water management systems

refer landscape designers drawings and specifications for all landscaping details

refer surveyors drawing for all survey details

rainwater tank to be 2,000 litre capacity minimum

3A rated shower heads installed
3A rated toilets installed
3A rated taps installed to all bathrooms and kitchen
solar,gas gas boosted hot water system installed

gas cooktop and wall oven to be installed

provide a well ventilated refrigerator space as defined by BASIX



DRAWING KEY

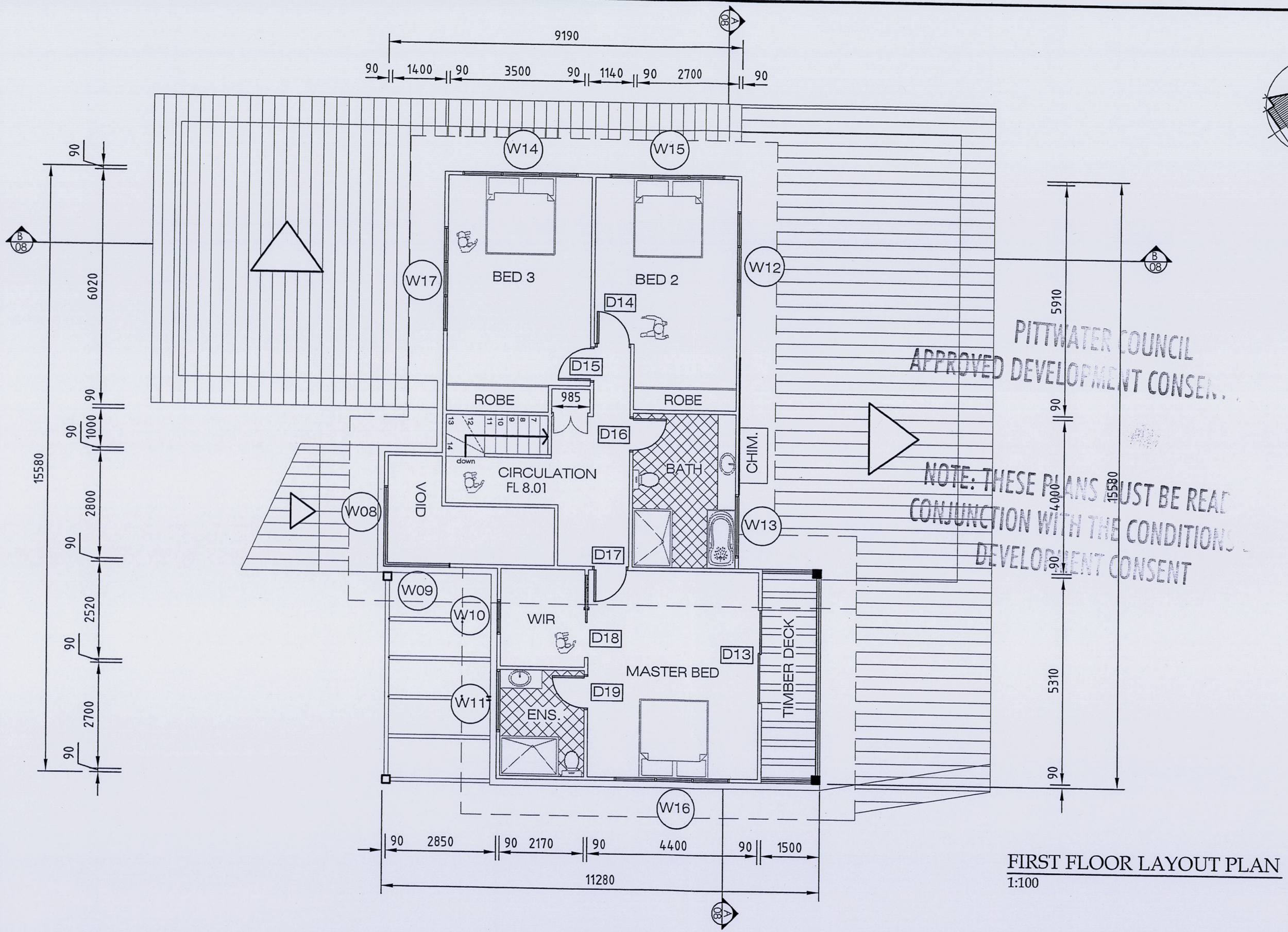
- MASONRY WALL
- EXISTING WALL TO REMAIN
- TIMBER RETAINING WALL
- WATERPROOF PAVING

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |

Cutting Edge BUILDING

PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport
For Mr Lance Horton
Ground Floor Layout Plan

DATE: 02 May 2009
SCALE: 1:100
DRAWN: Dias
JOB: 001
DWG.: S03
REV: 0




PITTWATER COUNCIL
APPROVED DEVELOPMENT CONSENT

NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT

## FIRST FLOOR LAYOUT PLAN
1:100

A3 ORIGINAL SIZE

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

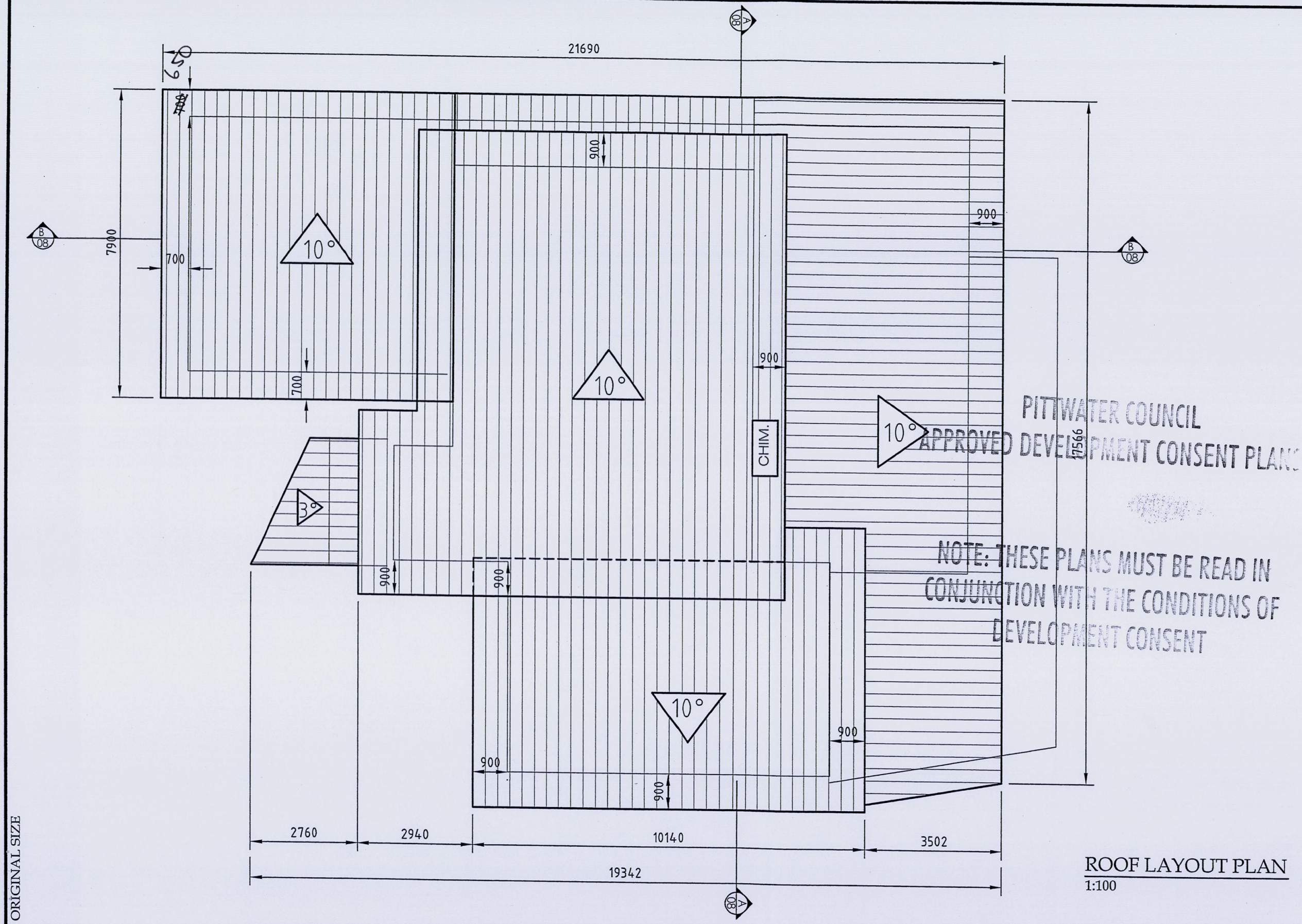
Cutting Edge BUILDING

PROJECT:
Proposed Alterations& Additions
4 Yatchsmans Parade, Newport

For Mr Lance Horton

Frist Floor Layout Plan

DATE: 02 May 2009
SCALE: 1:100
DRAWN: Dias
JOB: 001
DWG.: S04
REV: 0




PITTWATER COUNCIL
APPROVED DEVELOPMENT CONSENT PLANS
17566

NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT

ROOF LAYOUT PLAN
1:100

A3 ORIGINAL SIZE

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

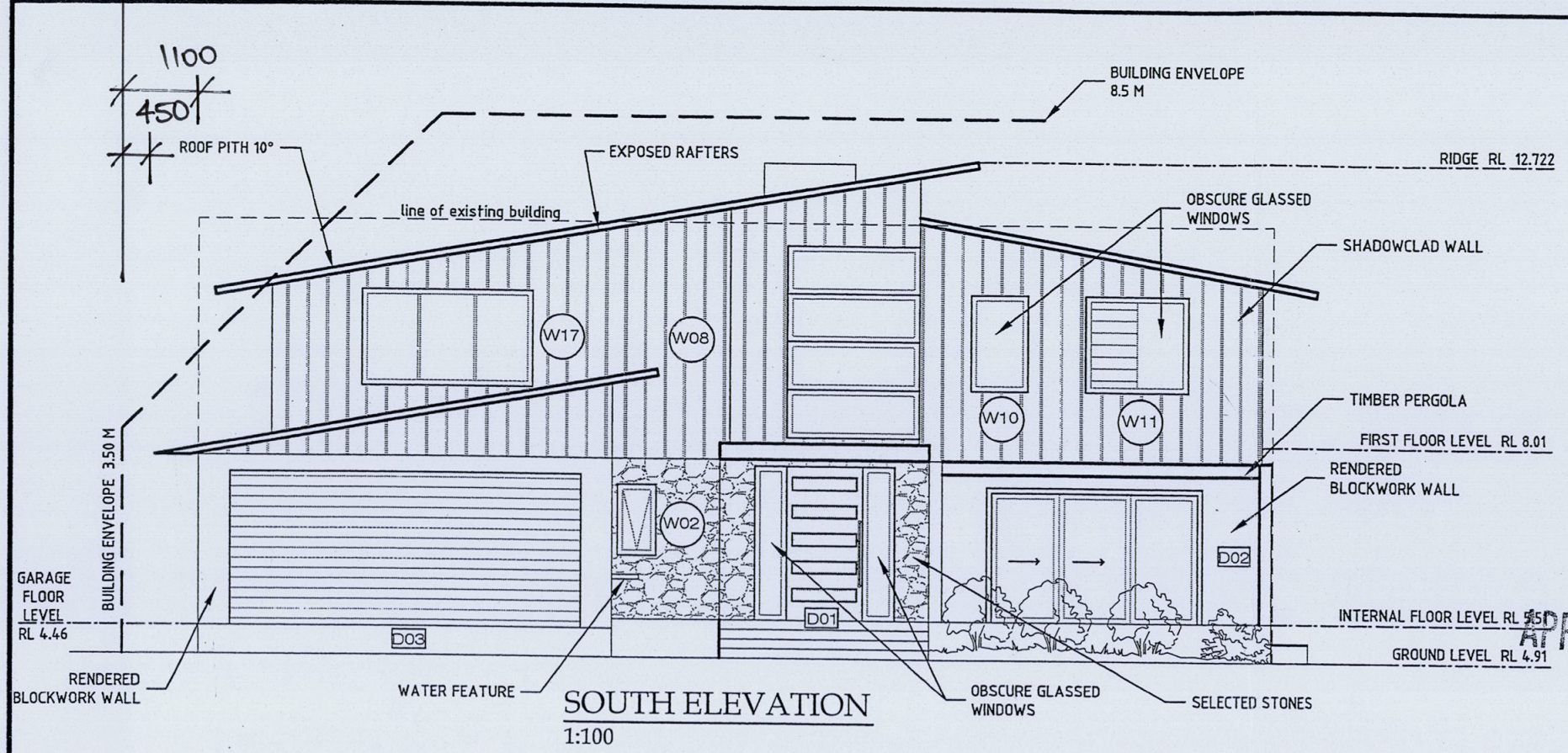
Cutting Edge BUILDING

PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport

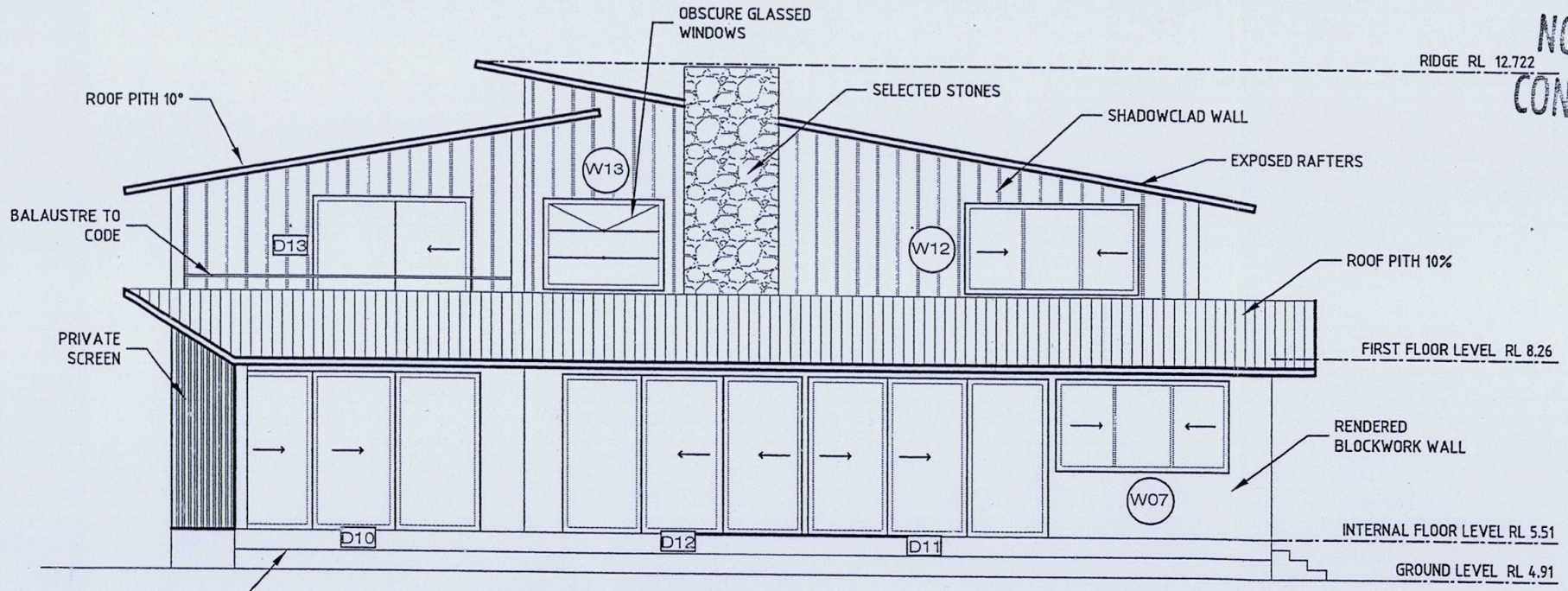
For Mr Lance Horton

Roof Layout Plan

DATE: 02 May 2009
SCALE: 1:100
DRAWN: Dias
JOB: 001
DWG.: S05
REV: 0




SOUTH ELEVATION
1:100




NORTH ELEVATION
1:100

| WINDOWS & DOORS SCHEDULE | | | |
|---|---|---|---|
| MARK | DESCRIPTION | SECTION( mm x mm) | GRADE |
| W1 | Window | 4500 wide x 600 high | Aluminium |
| W2 | Window | 600 wide x 1100 high | Aluminium |
| W3 | Window | 900 wide x 1800 high | Aluminium |
| W4 | Window | 2300 wide x 1100 high | Aluminium |
| W5 | Window | 1900 wide x 1100 high | Aluminium |
| W6 | Window | 1900 wide x 1100 high | Aluminium |
| W7 | Window | 2650 wide x 1400 high | Aluminium |
| W8 | Window | 2090 wide x 3000 high | Aluminium |
| W9 | Window | 1700 wide x 3000 high | Aluminium |
| W10 | Window | 900 wide x 1500 high | Aluminium |
| W11 | Window | 1600 wide x 1500 high | Aluminium |
| W12 | Window | 2650 wide x 1400 high | Aluminium |
| W13 | Window | 1650 wide x 1400 high | Aluminium |
| W14 | Window | 3000 wide x 600 high | Aluminium |
| W15 | Window | 3000 wide x600 high | Aluminium |
| W16 | Window | 1650 wide x 1500 high | Aluminium |
| W17 | Window | 8590 wide x 550 high | Aluminium |
| W18 | Window | 1650 wide x 1500 high | Aluminium |
| W19 | Window | 3000 wide x 1100 high | Aluminium |
| W20 | Window | 5710 wide x 400 high | Aluminium |
| W21 | Window | 2190 wide x 400 high | Aluminium |
| | | | |
| D1 | Front Door | 1200 wide x 2400 high | Timber |
| D2 | Door | 8360 wide x 2100 high | |
| D3 | Garage Door | 5500 wide x 2400 high | Colorbond |
| D4 | Internal Door | 820 wide x 2100 high | |
| D5 | Internal Door | 820 wide x 2100 high | |
| D6 | Internal Door | 820 wide x 2100 high | |
| D7 | Internal Door | 820 wide x 2100 high | |
| D8 | Sliding Door | 1800 wide x 2100 high | 2 sheets |
| D9 | Sliding Door | 1800 wide x 2100 high | 2 sheets |
| D10 | Sliding Door | 4500 wide x 2400 high | 3 sheets |
| D11 | Sliding Door | 3675 wide x 2400 high | 3 sheets |
| D12 | Sliding Door | 3675 wide x 2400 high | 3 sheets |
| D13 | Sliding Door | 2400 wide x 2100 high | 2 sheets |
| D14 | Door | 820 wide x 2100 high | |
| D15 | Door | 820 wide x 2100 high | |
| D16 | Door | 820 wide x 2100 high | |
| D17 | Door | 820 wide x 2100 high | |
| D18 | Sliding Door | 1230 wide x 2100 high | 1 sheets |
| D19 | Door | 820 wide x 2100 high | |
| D20 | Door | 820 wide x 2100 high | |



Refer to Basix certificate no. A57461 for glass type and all other required commitments

A3 ORIGINAL SIZE

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

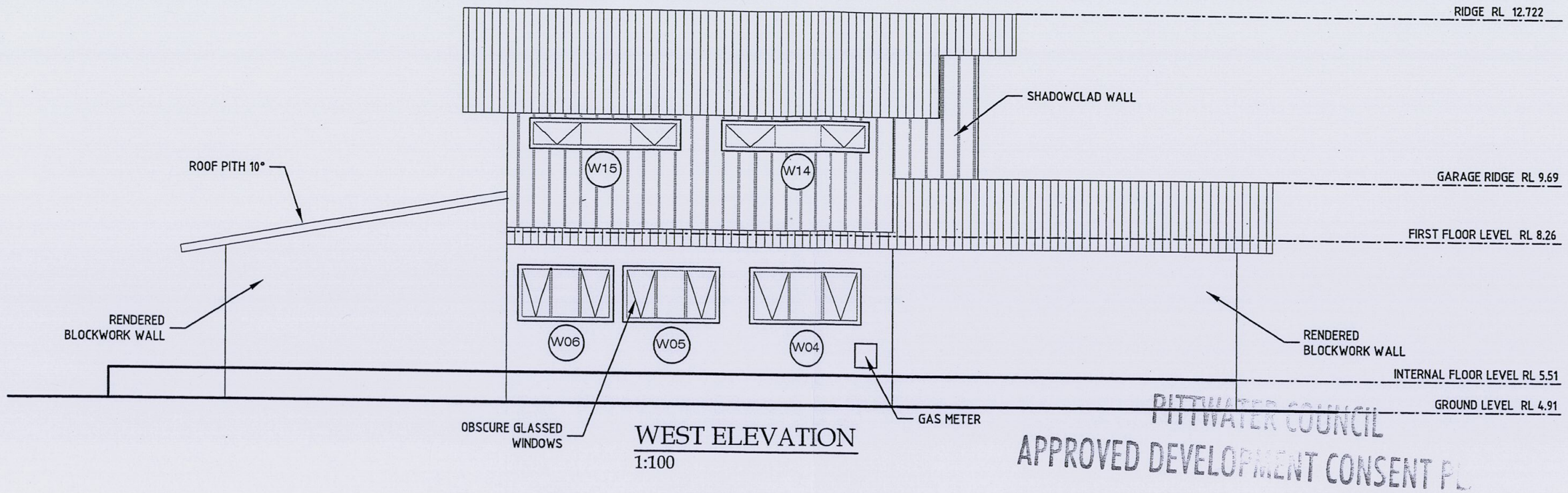
Cutting Edge BUILDING

PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport

For Mr Lance Horton

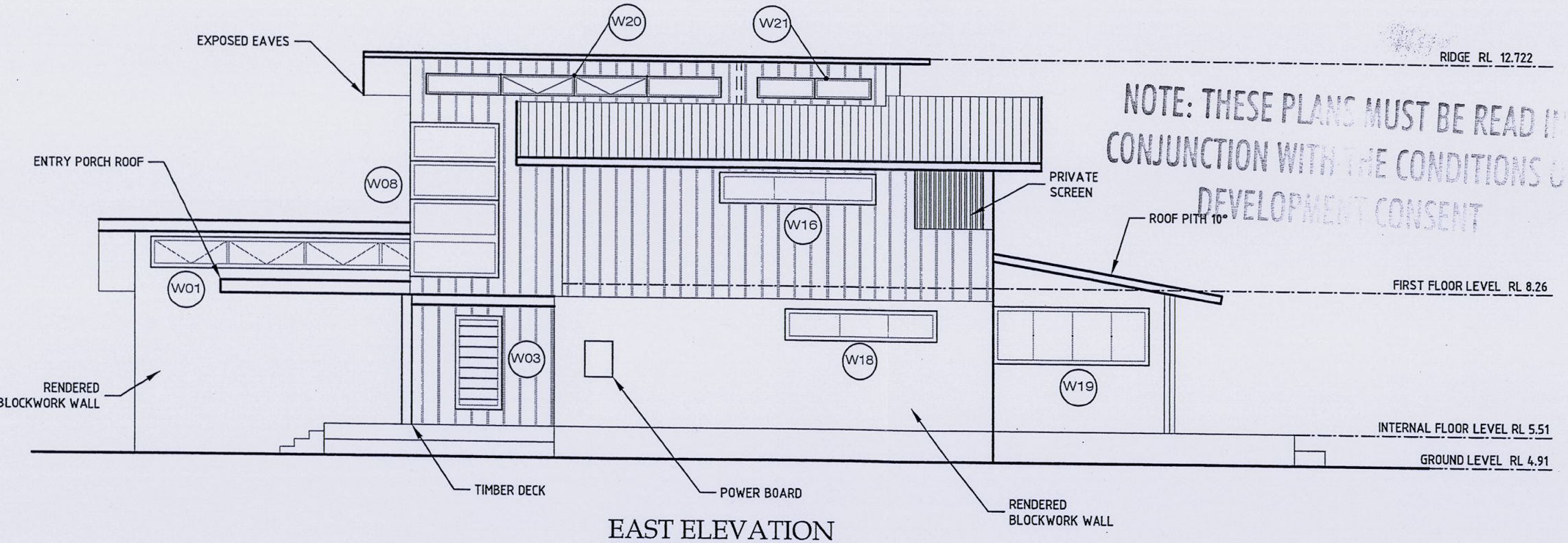
Elevations & Schedule

DATE: 02 May 2009
SCALE: 1:100
DRAWN: Dias
JOB: 001
DWG.: S06
REV: 0




WEST ELEVATION
1:100






EAST ELEVATION
1:100

A3 ORIGINAL SIZE

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

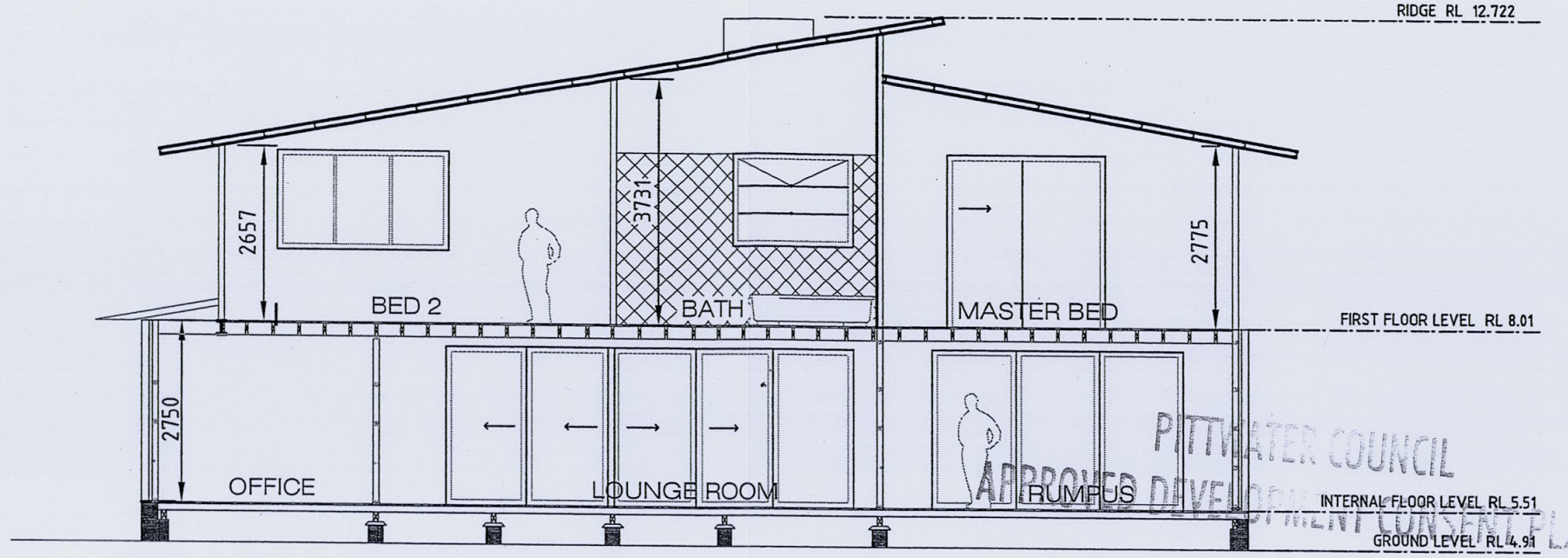
Cutting Edge BUILDING

PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport

For Mr Lance Horton

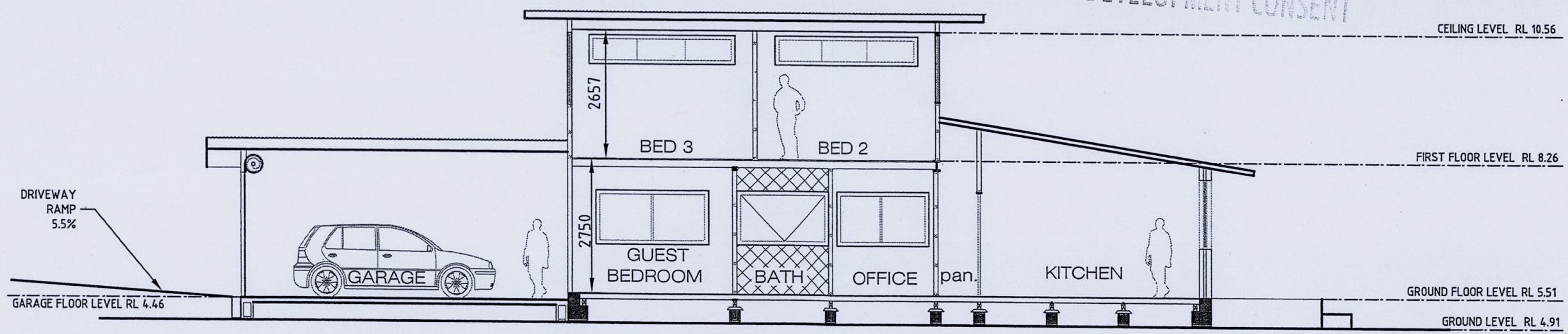
Elevations Sheet 2

DATE: 02 May 2009
SCALE: 1:100
DRAWN: Dias
JOB: 001
DWG.: S07
REV: 0




SECTION A
1:100






SECTION B
1:100

A3 ORIGINAL SIZE

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

Cutting Edge BUILDING

PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport

For Mr Lance Horton

Sections

DATE: 02 May 2009
SCALE: 1:100
DRAWN: Dias
JOB: 001
DWG.: S08
REV: 0

# N.KOLOFF & ASSOCIATES

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ASSOCIATES
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**A.W MUNDINE** O B E – Building Superviso

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Annandale NSW 2038
Sydney Australia

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Facsimile +61 2 9560 0065
Mobile 0417 485 481

## HYDRAULIC CERTIFICATE

**18 06 2009**

**RE PROPOSED ALTERATIONS AND ADDITIONS TO AN EXISTING HOUSE AT No 4 YACHTSMANS PARADISE, NEWPORT NSW 2106 / DA CONSENT No 172/09**

Pursuant to the provisions of clause A2 2 of the Building Code of Australia, I hereby certify that the designed stormwater system for the above project is in accordance with normal engineering practice and meets the requirements of the Building Code of Australia, Part 7 of the Environmental Planning and Assessment Regulations, relevant Australian Standards and relevant conditions of Development Consent

In particular the design is in accordance with the following Australian Standard

- **AS 3500 - 2001 - STORMWATER DRAINAGE CODE**
- **AR & R - 1997**
- **PITTWATER COUNCIL'S DRAINAGE CODE**

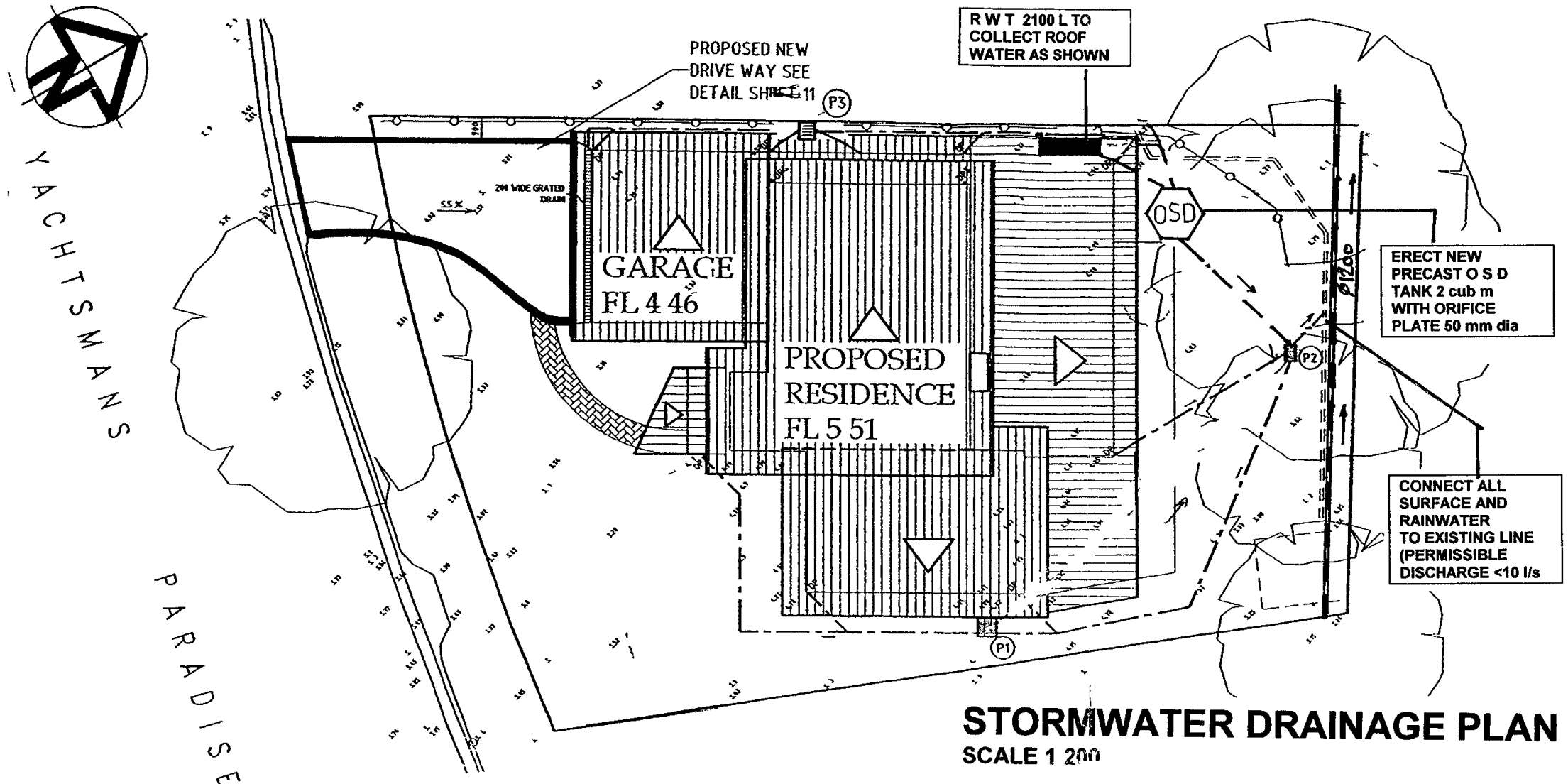
*I am an appropriately qualified and competent person in this area and as such can* certify that the design and performance of the design systems comply with the above

I possess professional indemnity insurance

---

**N Koloff Structural & Civil Engineer**
B E (Hon), M Eng , L G E , M I E Aust C P Eng
Membership No 616868

Enclosed Stormwater concept design Index 1018A/2009




## STORMWATER DRAINAGE PLAN

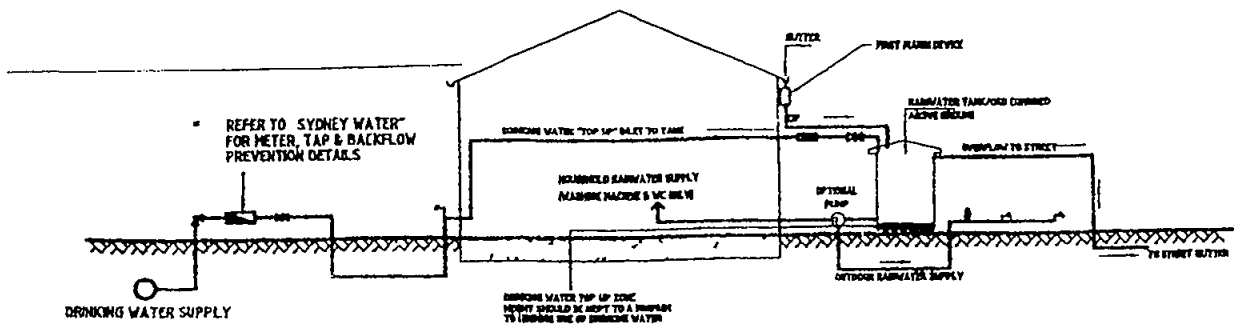
SCALE 1 200

LEGEND

- DP 100x50 RHS DOWN PIPE
- STORMWATER PIPE 100ϕ @ 1% MIN.
- DENOTES DIRECTION OF PIPE FLOW
- DENOTES ROOF FALL
- DOWN PIPE WITH SPREADER

## GENERAL DRAINAGE NOTES

1. THIS DRAINAGE PLAN SHOULD BE READ STRICTLY IN ACCORDANCE WITH THE COUNCIL APPROVED ARCHITECTURAL PLANS
2. LOCATION OF DOWN PIPES TO BE CONFIRMED BY ARCHITECT
3. DEPTH AND LOCATIO OF SERVICES TO BE ESTABLISHED PRIOR TO COMMENCEMENT OF DRAINAGE WORKS
4. ALL GUTTERS TO BE 150mm SEMI ROUND MIN OR EQUIVALENT
5. ALL BALCONIES TO HAVE FLOOR WASTE CONNECTED TO DOWNPIPE
6. ALL DRAINAGE PIPES ARE TO BE UPVC GRADE U N O
7. THE MINIMUM COVER OVER ALL DRAINAGE PIPES IS TO BE 150mm
8. ALL DRAINAGE PIPES ARE TO HAVE A MINIMUM PIPE GRADIENT OF 1%
9. ALL DRAINAGE PITS ARE TO BE INSTALLED WITH A CHILD PROOF SAFETY LATCH ON THE ACCESS PLATE.
10. ALL DOWNPIPES ARE TO BE Ø100 PVC PIPE U N O
11. ALL PITS TO BE CONSTRUCTED ARE SHOWN IN REINFORCED CONCRETE HOWEVER PRECAST OR BRICK PITS OF SIMILAR SIZE AND CONSTRUCTION AND TO THE SAME LEVELS ARE ACCEPTABLE
12. ALL EXTERNAL IMPERVIOUS AREAS TO HAVE A COLLECTION OUTLET TO THE SILT ARRESTOR PIT
13. THE DOWNHILL BOUNDARY OF THE SITE IS TO BE PROTECTED BY HAY BALES OR A FILTER FABRIC FENCE DURING THE CONSTRUCTION PERIOD REFER TO DETAIL
14. THE DOWNSTREAM STREET DRAINAGE PIT NEAREST TO THE SITE SHALL BE PROTECTED FROM SEDIMENTS WITH HAY BALES
15. A SINGLE CONSTRUCTION ENTRANCE MUST BE PROVIDED DURING THE WORKS
16. SEDIMENT CONTROL DEVICES MUST BE PLACED PRIOR TO ANY SITE SURFACE DISTURBANCES AND MUST REMAIN IN PLACE UNITL THE SITE IS PAVED AND/OR TURFED




## "SYDNEY WATER" RAINWATER TANK CONNECTION DIAGRAM

NOT TO SCALE

- BALL VALVE RIGHT ANGLE TYPE
- DUAL CHECK VALVE
- METER
- GARDEN TAP
- PRESSURE VESSEL
- PUMP
- FLOAT VALVE
- MAX 2 L/min FLOW REGULATOR

DRAWINGS FOR CONSTRUCTION

## DIAGRAM NOTES

1. DRAWING TO BE READ IN CONJUNCTION WITH SYDNEY WATER PLUMBING REQUIREMENTS
2. SYDNEY WATER S APPROVAL IS REQUIRED FOR ANY TOP UP FROM DRINKING WATER SUPPLY REGARDLESS OF TANK SIZE
3. NO DIRECT CONNECTION IS ALLOWED BETWEEN THE DRINKING WATER SUPPLY AND THE RAINWATER TANK SUPPLY
4. RAINWATER PIPE WORK IS SHOWN ON THE DIAGRAM AS SUPPLYING INTERNAL & EXTERNAL RAINWATER USES CUSTOMERS MAY WANT ONLY ONE OR THE OTHER
5. THE INLET FILLING RATE FROM DRINKING WATER SUPPLY IS TO BE RESTRICTED TO A MAXIMUM OF TWO (2 LITRES PER MINUTE FOR EACH HOUSE TOWN HOUSE OR UNIT SUPPLIED FROM THE TANK

**N.KOLOFF & ASSOCIATES**

**CIVIL & STRUCTURAL ENGINEERS, ARCHITECTS, TOWNPLANNERS, SURVEYORS**

**POSTAL ADDRESS**
**P O BOX 99, ANNANDALE**
**NSW 2038, AUSTRALIA**

**PHONE. (02)9560 0064**
**FAX. (02) 9560 0065**
**MOBILE 0417 485 481**

DESCRIPTION OF WORKS
STORMWATER DRAINAGE STRUCTURE FOR PROPOSED NEW ALTERATIONS AND ADDITIONS TO AN EXISTING HOUSE AT
**No 4 YACHTSMANS PARADISE**
**NEWPORT NSW 2106**

INDEX 1018A/2009
Sheet 1 of 1

APPROVED BY Nikolai Koloff
**N Koloff** – Civil & Structural Engineer
B E (Hon ) L G E M I E AUST M Eng C P Eng
Registration No 616868

**Date 18 06 2009**

# N.KOLOFF & ASSOCIATES

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ASSOCIATES
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**A.W MUNDINE** O B E – Building Supervisor

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Sydney Australia

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Facsimile +61 2 9560 0065
Mobile 0417 485 481

## STRUCTURAL CERTIFICATE

**18 06 2009**

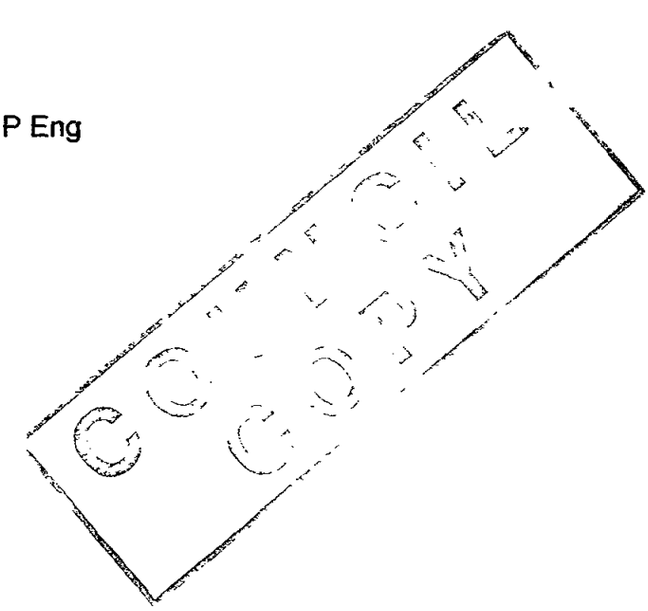
**RE PROPOSED ALTERATIONS AND ADDITIONS TO AN EXISTING HOUSE AT No 4 YACHTSMANS PARADISE, NEWPORT NSW 2106 / DA CONCENT No 172/09**

Further to my site inspection on 18 June 2009 at the above location together with examination of architectural drawings prepared by CUTTING EDGE BUILDING, Job No 001/May 2009, it is my opinion to certify, that

The existing footings and load bearing walls will be **will be structurally adequate** to carry out all live, dead and wind loads superimposed by the proposed alterations and additions as per the approved architectural drawings

I am an appropriately qualified and competent person in this area and as such can certify the above

**N Koloff - Civil & Structural Engineer**
B E (Hon), M Eng , L G E , M I E Aust , C P Eng
Registration No 616868



# N.KOLOFF & ASSOCIATES

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Facsimile +61 2 9560 0065
Mobile 0417 485 481

## CIVIL ENGINEERING CERTIFICATE

**29 06 2009**

**RE PROPOSED ALTERATIONS AND ADDITIONS TO AN EXISTING HOUSE AT No 4 YACHTSMANS PARADISE, NEWPORT NSW 2106 / DA CONSENT No 172/09**

Further to my site inspections at the above location and examination of access driveway / longitudinal section and driveway layout plan designed by CUTTING EDGE BUILDING, Job No 01/ DWG S11 / 02/05/ 2009, it is my opinion to certify, that

1 The plan and longitudinal section are designed in accordance with Council's street levels certificate, dated 30/04/2009

2 The design of the proposed access and internal driveways are designed and comply with Pittwater Council's 21 DCP and in particular Control B 6 1

I am an appropriately qualified and competent person in this area and as such can certify the above

**N Koloff - Civil & Structural Engineer**
B E (Hon), M Eng , L G E , M I E Aust , C P Eng
Registration No 616868

Enclosed Driveway Longitudinal Section and Layout Plan
Pittwater Council Levels Certificate

# PITTWATER COUNCIL

## Information for Access Driveway Profiles
## 1 July 2008 – 30 June 2009

| | | | |
|---|---|---|---|
| **To** | Lance Horton | **Date** | 30/04/09 |
| **Postal Address** | 2 Paul Close<br>Mona Vale NSW 2103 | | |
| | | **Receipt No** | |
| | | **Amount** | $73 00 |

**ACCESS DRIVEWAY PROFILE AT** **4 Yachtsman Paradise, Newport NSW 2106**

- The proposed vehicular access driveway profile shall be as per the enclosed plan **NL**
- **Type of Construction** Domestic
    - **For Residential single & dual occupancy** - 20MPa Concrete 150mm thick
    - **For Other** - 20MPa Concrete 180mm thick with F72 mesh
- **Slab Construction** Vehicular access slab 5 2m long 3 5m wide at gutter crossing to 3 5m wide at the boundary

***NB REMOVE REDUNDANT DRIVEWAY AND REPLACE LAYBACK WITH KERB & GUTTER***

- Council will only permit an absolute maximum gradient of 25% (1 in 4) measured at any point on the driveway and that an ease may be required for access into the car stand area carport or garage Refer to relevant attached profile
- All work within the road reserve (including excavation) in connection with the above is to be carried out by authorised Contractors only,
- Quotations for the work specified above should be obtained from any of the contractors on Council's list and should be for the whole of the work stated,
- Construction of vehicular access will be strictly in accordance with the profile supplied and
- A formwork inspection by Council is required prior to construction (Provide minimum 24 hours notice)

**1 NOTE THAT THIS INFORMATION SHEET DOES NOT CONSTITUTE AN APPROVAL TO COMMENCE OR PROCEED WITH ANY WORK ON SITE**

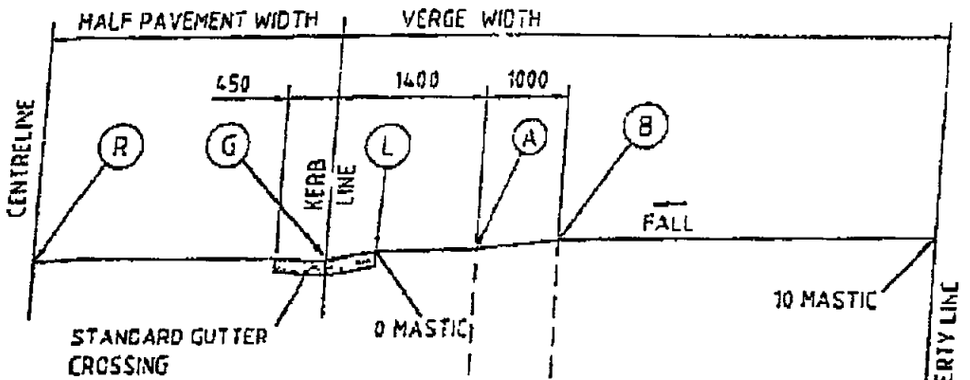
**2. A SECTION 139 CONSENT UNDER THE ROADS ACT – 1993 IS REQUIRED (FORM UI203)**

**3 FAILURE TO OBTAIN SUCH CONSENT PRIOR TO COMMENCING WORK WILL INCUR A PENALTY**

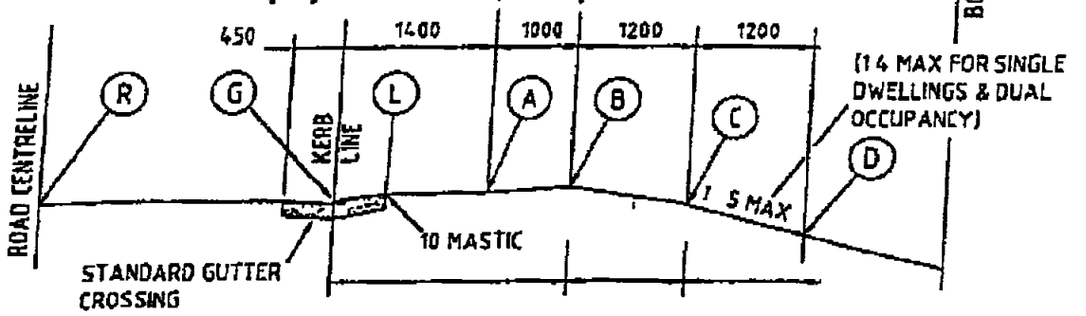
S. Meldens

Sigi Meldens
**ASSETS / RESTORATIONS OFFICER**
**Telephone 9970 1348**

# NORMAL (N)




# LOW LEVEL (L)




*(1 6) (1 6—1 2) (1 2)*
*(MAX BATTER FROM EDGE OF DRIVEWAY TO FINAL G L)*
*(WHERE THERE IS NO CONSTRUCTED FOOTPATH)*

| POINT | REMARKS | LEVELS |
|---|---|---|
| R | ROAD CENTRELINE | |
| G | INVERT OF GUTTER | |
| L | BACK OF LAYBACK | 100 ABOVE "G" |
| A | 1400 FROM KERB LINE | 130 ABOVE "G" |
| B | 2400 FROM KERB LINE | 150 ABOVE "G" |
| C | 3600 FROM KERB LINE | MAX 20 ABOVE "G" |
| D | 4800 FROM KERB LINE | MAX 130 BELOW "G" |

## NOTE

- To be read in conjunction with Pittwater 21 Development Controls

**PITTWATER COUNCIL**

Standard Driveway Profile

NORMAL TO LOW

PLAN No. PWC-DW6

REV No. B

DATE 26/8/05

File No P:\Urban\Drawings - Current\Blocks & Standards\Standards\Driveways\ PWC-DW10.DWG Plot Date: 26 August 2005 - 9:46 AM

FAX 9979 1555

PITTWATER COUNCIL

Form No UI 203

## Consent by Road Authority for Work in Road Reserve
## Section 139 – Roads Act 1993
## 1 July 2008 - 30 June 2009

PLEASE PRINT

Applicant LANCE HORTON

Postal Address 2 PAUL CL MONA VALE Postcode 2103

Phone (W) _____ (M) 0405 330 745

Property Address 4 YACHTSMANS PARADISE NEWPORT

Subject to the payment of the appropriate fee the Applicant is hereby permitted to construct the driveway (and/or associated work) as detailed below in strict accordance with the **CONDITIONS** overleaf

***I/We the undersigned agree to abide by the said conditions***

*Applicant's Signature* _____ *Date* 23/6/09

**FEES (includes GST)**

| | |
|---|---|
| Consent for access driveway construction only (includes 2 site inspections) per allotment for **RESIDENTIAL SINGLE/ DUAL OCCUPANCY** | **$146 00** |
| Consent for access driveway construction only (includes 2 site inspections) per allotment for **RESIDENTIAL SINGLE/ DUAL OCCUPANCY** which ***includes any of major retaining structures, stairs or special landscape treatment*** | **$366 00** |
| Consent for access driveway construction only (includes 2 site inspections) per allotment for **OTHER THAN RESIDENTIAL SINGLE/DUAL OCCUPANCY** | **$171 00** |
| Consent for access driveway construction only (includes 2 site inspections) per allotment for **OTHER THAN RESIDENTIAL SINGLE/DUAL OCCUPANCY** which ***includes any of retaining structures stairs or special landscape treatment*** | **$487 00** |
| Fee per additional site inspection as required | **$133 00** |

**Office Use Only**

**Inspected by** _____ **Date** _____

**Approved**

**Not approved**

***Comment*** _____

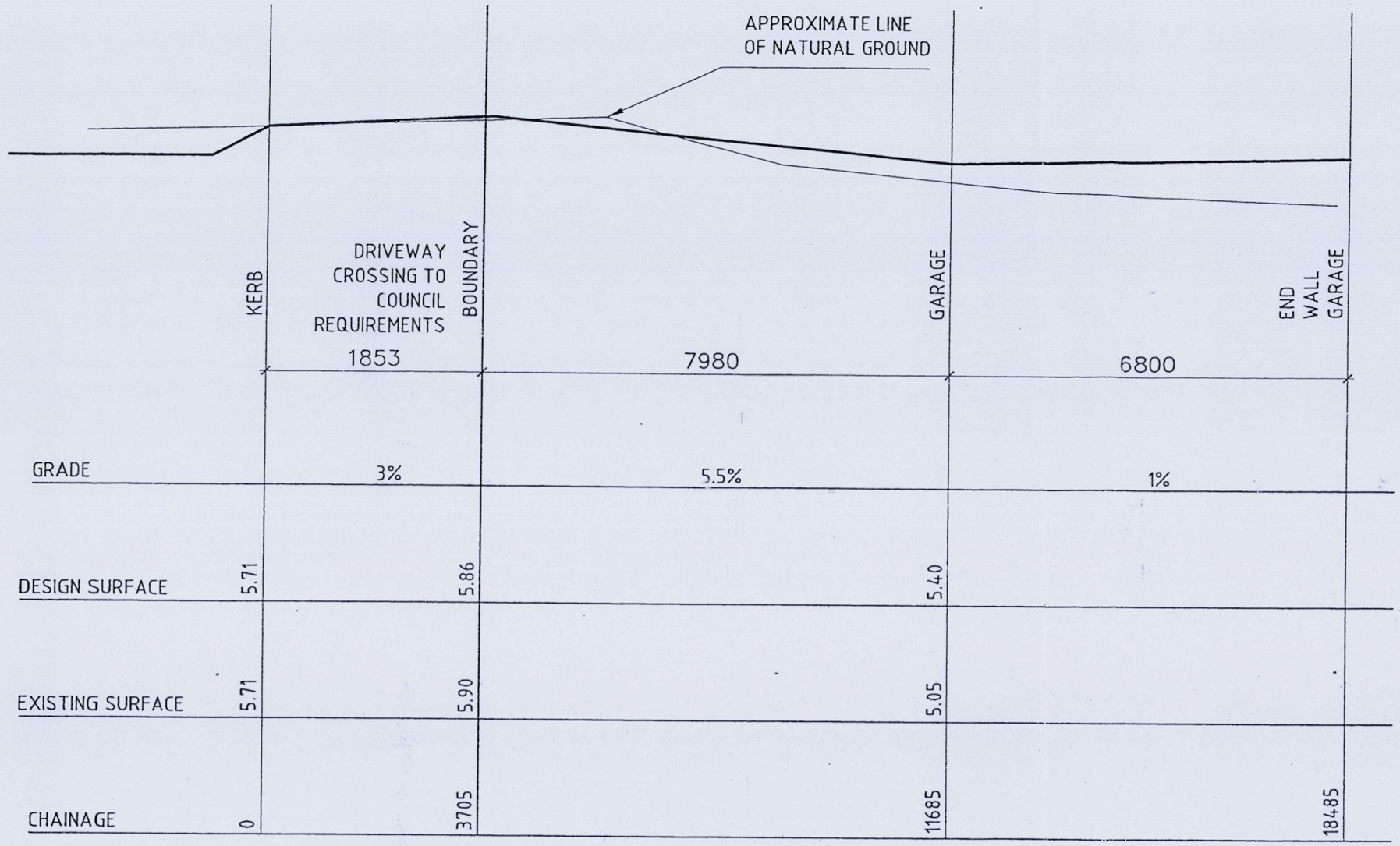
_____

**CODE** ESTR 1 7 08 30 6 09 **Late Fee $618 when work commenced prior to issue of Consent Form No UI 203**

**FEE PAID $** 146 00 **RECEIPT NO** 261204 **ISSUED BY** _____ **DATE** 22/6/09

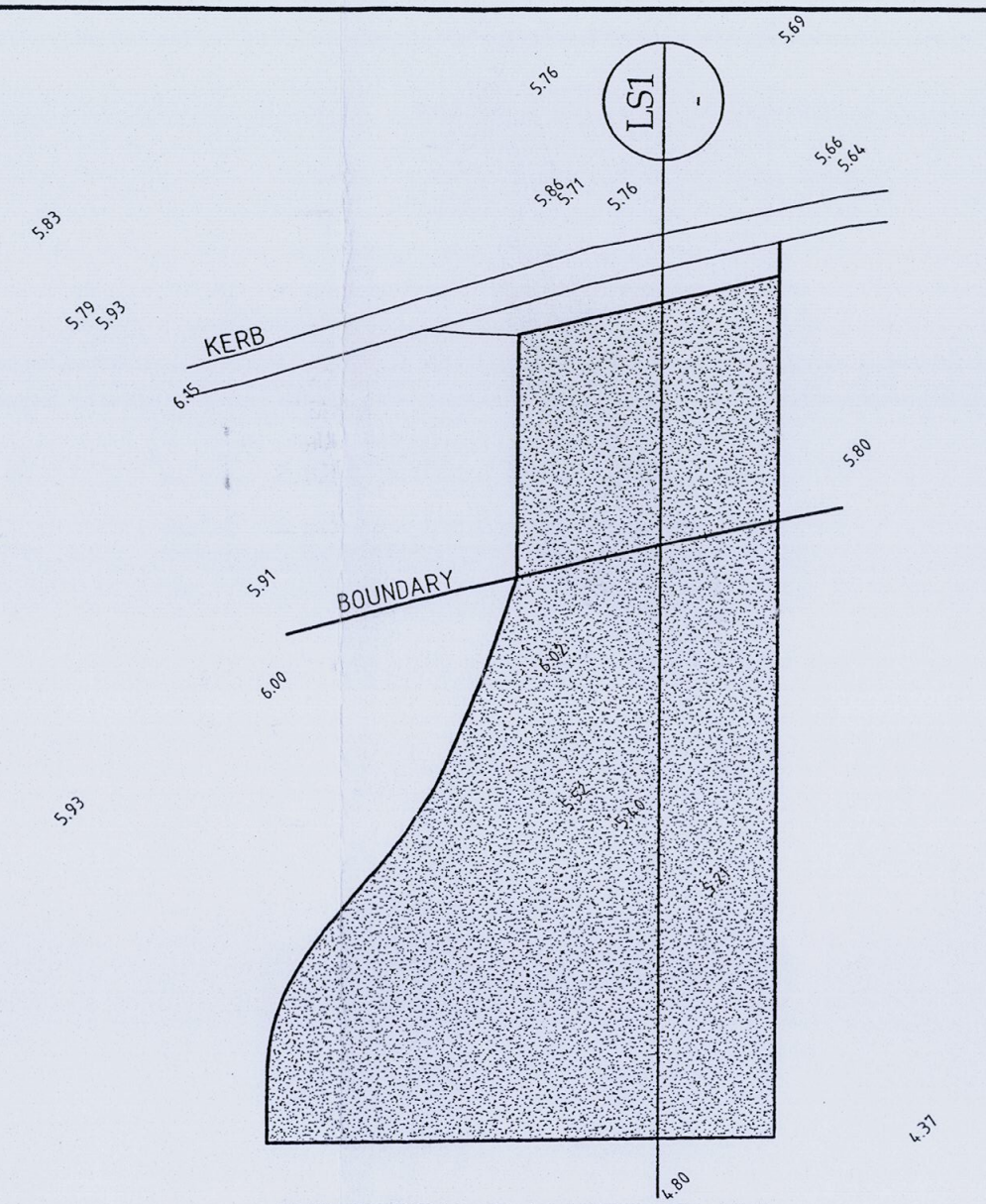
***NOTE TO CUSTOMER SERVICE PHOTOCOPY APPLICATION FORM AND STAPLE WITH RECEIPT FOR CUSTOMER'S RECORD***

DataWorks Document Number 3498476




LS1
-

LONGITUDINAL SECTION ALONG THE CENTER LINE OF DRIVEWAY
1:100




DRIVEWAY LAYOUT PLAN
1:100

A3 ORIGINAL SIZE

| REV. | AMENDMENT DESCRIPTION | DATE |
|---|---|---|
| | | |
| | | |

Cutting Edge BUILDING

PROJECT:
Proposed Alterations & Additions
4 Yatchsmans Parade, Newport

For Mr Lance Horton

Driveway Layout Plan & Section

DATE: 02 May 2009
SCALE: 1:100
DRAWN: Dias
JOB: 001
DWG.: S11
REV: 0

# SPECIFICATION
# OF
# BUILDING WORKS

SOUTHspec
revision 19

**BUILDING TYPE**

| | | |
|---|---|---|
| SINGLE DWELLING ☐ | VILLA OR TOWNHOUSE ☐ | INDUSTRIAL BUILDING ☐ |
| DUAL OCCUPANCY ☐ | GARAGE ☐ | OFFICE BUILDING ☐ |
| MEDIUM DENSITY UNITS ☐ | RETAIL BUILDING ☐ | ADDITION ☐ |
| FARM SHED ☐ | ☐ | ☐ |

**CONSTRUCTION**

| | | |
|---|---|---|
| CAVITY BRICK ☐ | TIMBER FRAMED ☐ | A A C BLOCK/PANEL ☐ |
| BRICK VENEER ☐ | STEEL FRAMED ☐ | MASONRY BLOCK ☐ |
| SINGLE BRICK ☐ | STEEL CLAD ☐ | CONCRETE PANEL ☐ |
| | | F/C SHEET ☐ |

## ADDENDUM

If any difference in requirements exists between this specification and the Building Code of Australia or relevant Standard that may apply to the construction of any building nominated by this specification then the requirements of the Building Code of Australia and/or the appropriate Standard shall take precedence over this specification for any construction

**DISTRIBUTORS** **SOUTHspec PUBLISHING**
**P O BOX 3381**
**NORTH NOWRA NSW 2541**

**Phone (02) 44460358**
**Mobile 0410 470358**
**Fax (02) 44460773**

REVISION 19 – AUGUST 2008
**BCA 2008**
***BASIX (NSW only)***

# SPECIFICATION

FOR THE ERECTION AND COMPLETION OF BUILDING AT LOT No 28 DP No 233779

ADDRESS 4 Yachtsman Paradise TOWN/AREA Newport

MUNICIPALITY / SHIRE / CITY Pittwater POST CODE 2106

FOR Mr Lance Horton Hereinafter called the Proprietor

The builder must ensure that relative drawings plans and construction comply with the prescribed construction the Local Government Act the Building Code of Australia and that the work and services performed by the Builder are to the satisfaction of the Proprietor and Lending Authorities

**INSPECTION NOTICE**

This is to apply only if inspections are required by the Lending Authority The building is to be inspected by the Society or Bank Representative at the following stages of construction and the Builder is to give the Lending Authority and Owner at least (2) clear working days notice that inspections are required

1. When trenches for footings have been prepared or rock surfaces scabbled and in the case of reinforced concrete footings when reinforcement and depth pegs have been placed in position just prior to placing of concrete Footings must not be commenced until the trenches have been inspected and approved by the Society Representative
2. On completion of floor wall and roof framing with noggins in position and veneer walling but before flooring is cut down roof covering is laid and wall linings and sheetings are secured
3. When the internal wall coverings have been secured and fixing out commenced apron mouldings must not be fixed until flashings have been inspected and approved
4. ON COMPLETION OF BUILDING The owner is cautioned that if works have advanced beyond these stages without the requisite notices being given inspections made and unsatisfactory conditions are discovered later the offer of a loan or the terms and conditions of a loan may be varied by the lending authority

**REGULATIONS AND NOTICES**

The builder is to comply with the Building Code of Australia as amended and as applicable to the particular State or Territory in which the building is being constructed and the requirements of legally constituted Authorities for local Government and/or Services The Builder is to give all notices obtain all permits and pay all fees required by such Authorities If any difference in requirements exists between this specification and the Building Code of Australia or relevant Standard that may apply to the construction of any building nominated by this specification then the requirements of the Building Code of Australia and/or the appropriate Standard shall take precedence over this specification for any construction Where materials components design factors and construction methods comply with the Performance Requirements of the B C A these may be accepted by approval authorities as an alternative as per the Deemed to Satisfy Provisions

**INSURANCE**

Insurance of the works against fire will be effected as nominated in the Building Contract The Builder shall at his own expense adequately insure against Public Risk and arrange indemnification in respect of his liability under the Workers Compensation Act Work Cover and/or other regulations as applicable

**VISIT THE SITE**

Builders tendering are to visit the site and satisfy themselves to the nature and extent of the work the facilities available and the difficulties entailed in the execution of the said works No amount above the accepted price will be allowed because of work arising due to neglect of this precaution or assumptions made

**LABOUR AND MATERIALS**

The Builder is to provide all materials labour fittings and plant required to construct and complete the work Materials shall be of the standard specified and workmanship in each trade shall be performed by tradesmen of that particular trade and in conformity with current good building practice

**SET OUT**

The Builder shall be responsible for the accuracy and clear delineation of the site boundaries and location of the buildings there on The Builder is to set out and maintain the works in accordance with the drawings Figured dimensions to be taken in preference to scale

**PLANS AND SPECIFICATIONS**

Any work indicated on the plans and not in the specification or vice versa and any item not shown on either plans or specifications but which is obviously necessary as part of proper construction and/or finish is to be considered as so shown or specified and is to be duly done as part of the contract Any variations to plans or specifications are to be agreed and recorded by the proprietor and the builder/contractor

**PLANS ON JOB**

The builder must at all times maintain on the job a legible copy of the plans and specifications bearing the approval of the Municipal Authority concerned or Principal Certifying Authority

**STANDARDS**

Where an Australian Standard (AS) or Australian New Zealand Standard (AS/NZS) is nominated in this specification then that nomination refers to the latest revision of that Standard unless the Building Code of Australia references a different revision

**EARTHWORKS AND EXCAVATIONS BCA part 3 1**

All earthworks shall be designed and constructed in accordance with the guidelines of AS3798 Stormwater and other surface water drainage by underground piping or surface diversions shall be in accordance with AS/NZS3500

All siteworks shall be in accordance with the Environmental Planning and Assessment Act and Regulations for siteworks for the erection of a building safeguarding excavations backfilling preventing soil movement and supporting neighbouring buildings Drainage requirements must be determined according to the soil classifications BCA part 3 1 1 and part 3 1 2

**FOOTINGS AND PIERS BCA part 3 2 2**

Excavate for all footings piers etc to dimensions and minimum depth shown on plans or otherwise specified or to depths necessary to secure solid bottoms and even bearing throughout similar strata Bottoms of excavations to be level and stepped where necessary Grade fill and ram where necessary to receive concrete floors where shown on ground level

At completion of foundations all excavations to be filled well rammed to ground level and surplus soil spread as directed All seepage and soakage water to be effectively dealt with and diverted clear of the building Excavate for and lay agricultural drains to back of walls retaining earth and to any other sections of foundations as may be necessary and/or directed

**ROCK EXCAVATIONS**

Should rock of any type be encountered in excavation of the works the cost of its removal is to be considered as an extra to the contract and charged for at a rate per cubic metre as indicated in the schedule of rates The Proprietor is to be notified when rock is encountered in excavations

**CONCRETE - BCA part 3 2 3**

All structural concrete shall be ready mixed and in compliance with AS3600 and unless otherwise specified on Engineers drawings shall be of N20 grade

The concrete shall be supplied by an approved firm and delivery dockets shall be kept on the job for inspection by the proprietor if he so desires The concrete for minor works where strength of concrete is not critical such as paving on solid ground may have a minimum compressive strength of 15MPA if unreinforced and 20 MPA if reinforced Alternatively such concrete may be mixed on site where the aggregate proportions and water/cement ratio can be controlled so that the required compressive strengths can be obtained

All concrete work shall comply with the AS3600 Maximum slump shall be 80mm unless otherwise specified by Engineer Concrete shall be carefully handled and placed to avoid segregation and shall be adequately compacted Reinforcing mesh fabric to AS 1304 and all reinforcing bars mild steel grade unless otherwise specified

**FOOTINGS BCA parts 3 2 3, 3 2 4 and 3 2 5**

Where sites have soils or foundations of reactive nature or problem sites footings shall be approved by a practising structural engineer and in the case of known highly swelling soils or other unstable soils special precautions may have to be taken in the design and construction of concrete footings In the case of concrete suspended floors to first floor it will be necessary for size of footings to be specified by a practising structural engineer Footing sizes to be as per AS2870 part 1

At completion of footing excavations fill to the underside of floor slab with approved hardcore so as to provide a minimum depth of 100mm Such hardcore may be carried under minor interior footings if required

**TERMITE PROTECTION BCA part 3 1 3**
Where the building is being erected in a prescribed termite area and protection is required by regulation of local government or state authority then protection against subterranean termites shall be installed in accordance with AS 3660 Details of method of protection to be used shall be submitted where required prior to commencement of building works Written certification signed by the installer that the method used and the manufacturers specification complies with the Australian Standard shall be provided to the relevant authority and owner where required A durable notice must be permanently fixed in a prominent location in the building prior to its occupation indicating 1 The method and date of installation of the system and the need to inspect and maintain the system on a regular basis 2 Where a chemical barrier is used the life expectancy as listed on the National Registration Authority label and recommended date of renewal Note that AS3660 and BCA lists the minimum acceptable level of protection only Owners and/or builders may specify and install additional protection if desired

**PATHS (see AS 3727 for guide to residential pavement construction)**
Provide paths as indicated on plans Concrete to be as previously specified and surfaced with wooden float Excavate for and lay paths to even grades true lines and curves Car tracks to be a minimum of 100mm thick and paths a minimum of 75mm Provide expansion joints in paths at a maximum spacing of 1200mm with bitumen impregnated felt joining strips the full thickness of concrete with tooled V joints above same

**CROSS SECTION DIMENSIONS OF REINFORCED CONCRETE FOOTINGS** for buildings with timber framed floors for sites classified a or s *according to AS2870*

| CONSTRUCTION OF WALL | Normal thickness of wall to be supported (not more than) | Size of Concrete (width x depth) | |
|---|---|---|---|
| | | For stable soil foundations Class A | Other foundations not subject to significant movement Class S |
| | mm | mm | mm |
| Brick single storey with wall height not exceeding 4200mm excluding any gable | 270 | 400x300 | 400X400 |
| | 110 | 300x300 | 400x400 |
| Brick two storey with external wall height not exceeding 7200mm excluding any gable internal wall height not exceeding 7200mm use 11TM reinforcement Top and Bottom | 270 | 400x400 | 400x500 |
| Brick veneer single storey with wall height not exceeding 4200mm excluding any gable | 110 | 300x300 | 300x400 |
| Brick veneer two storey with external wall height not exceeding 7200mm excluding any gable | 110 | 300x300 | 300x400 |
| Timber frame single storey – foundation walling measured from the top of the strip footing | | | |
| Up to 1500mm height | 110 | 300x300 | 300x400 |
| Exceeding 1500mm and up to 3000mm height | 110 | 300x400 | 300x400 |

| REINFORCEMENT FOR STRIP FOOTINGS | Width of Strip Footing | Minimum number of main wires per layer using 8TM or 11TM fabric | Minimum number of 10mm dia bars per layer | Minimum number of 12mm dia bars per layer |
|---|---|---|---|---|
| | 300 | 3 | 3 | 3 |
| | 400 | 4 | 4 | 4 |

Where wall thickness exceeds as specified above increase footing width to maintain the offset and provide additional bar or bars so that bar centres do not exceed 200mm or an additional width of trench mesh maintaining in all cases the required concrete cover

**CONCRETE FLOORS BCA parts 3 2 5**
Provide concrete floors where indicated on plans Where not specifically detailed floors are to be a minimum of 100mm thick reinforced with No F72 hard drawn reinforcing fabric set 32mm below top of concrete Floor slabs to be full thickness and free from grooves and ridges Finish surface in one operation as required for tiling or otherwise to fine finish with float or steel trowel and sponge Thickness of floors shall be maintained under tiling *recesses in all cases*
Note that in Climate Zones 6 7 and 8 the edges and underneath some concrete slab construction may require thermal insulation
**INTEGRAL FLOOR SLABS AND SLAB ON GROUND BCA part 3 2 5**
Grade whole area occupied by floor to a minimum depth as required to remove top soil and grass roots etc Determine level of top of floor to habitable rooms a minimum of 150mm above highest point of adjacent proposed external ground level (adjust for fill or general excavation as required) or as otherwise required by Local Council The external finished ground surface must be graded to drain water away from the building at a minimum slope away of 50mm over the first 1m as per BCA Part3 1 2 3
Excavate for perimeter and other main footings to minimum depths as shown on Engineers drawings or to depths necessary to obtain solid bottoms and even bearing throughout a similar strata Allow for sufficient recess for brickwork if carried under main floorings so as to reduce the amount of concrete necessary provided that the fill is retained from displacement under the footings (by a temporary earth bank or similar) and provided also that a minimum of 100mm depth of the same hardcore is provided under all footings in such case roadbase or ungraded bluemetal is recommended as hardcore coalwash is NOT to be used Reinforce to Engineers detail and pour in one continuous operation in concrete Grade 20 unless otherwise nominated *Residential slabs and footings must be constructed in accordance with AS2870 as amended*
**SUSPENDED REINFORCED CONCRETE SLABS**
All concrete slabs to separate areas within or adjoining a building generally of timber floor construction shall be suspended Temporary formwork must be removed prior to final inspection Permanent metal formwork approved by the lending authority may be used with slab sizes and reinforcement according to manufacturers recommendation
Suspended floor slabs to have minimum of 100mm bearing on at least two opposite sides and spans are not to exceed 2100mm except where specifically detailed Solid fill forming may be used under concrete floors (eg laundry garage) adjoining the building providing that the level of the top of the slab is not less than 50mm below antcap and/or dampcourse level of the main building For spans exceeding 2100mm slabs supporting walls cantilever slab floors or where beams and columns are used to support the slab a practising structural engineers details shall be submitted with the drawings and specifications
**PRE STRESSED BEAM FLOORING**
Pre stressed beams for areas to be constructed by this method shall be delivered to site and stacked for storage on timber packers to avoid damage and where stacked one above the other the timber packers shall be positioned in vertical lines
Beams shall be purpose made by the manufacturer for this particular project designed in accordance with AS3600 Beams shall be individually marked for their respective location on the job and positioned in the work to comply with manufacturers key drawing Cutting or drilling into beams or modification in any way shall be done only with the express authority of the manufacturer or their site representative
Spacing of beams and fibre cement infill panel placement shall be strictly to manufacturers detail Topping slab concrete shall have a 28 day strength of not less than 20 MPA and thickness shall not exceed 50mm unless shown on the drawings Reinforce with nominal F52 Mesh U N O
Topping slabs shall be continuously cured for 7 days to prevent non structural cracking

**BRICK AND BLOCKWORK** - (construction of masonry building shall be as per AS3700) BCA part 3 3
**CLAY BRICKS**
To be sound hard of well burnt clay and shale and comply with specifications AS1225 Burnt Clay and Shale Building Bricks
**SAND LIME BRICKS** To Comply with AS1654 Calcium Silicate Bricks and have a transverse strength no less than as per Specification AS1640 Clay Bricks
**CONCRETE BLOCKS OR BRICKS** To comply with AS4455 Masonry Building Blocks/Pavers
**SAND** To be clean sharp and free from all impurities
**CEMENT MORTAR** To be one part fresh cement to 3 parts sand
**LIME MORTAR BCA part 3 3 1 6**
*To be one part lime to 3 parts sand Lime to be well slaked before use*
**COMPO MORTAR** To be one part cement one part lime and 6 parts sand All bricks to be well wetted before use This not to apply to textured bricks Footing courses to be grouted solid with cement mortar All brickwork to be properly bonded laid on full bed and all perpends filled All piers are to be built solid and each course grouted as work proceeds Carry up all work true and plumb to even gauge and in level courses the full height and thickness required The brickwork faces above damp course level to be finished with neatly ironed or raked joints Beds and joints to be kept to a reasonable thickness Finish all other exposed brickwork faces with neat struck joints

**BUILD THE FOLLOWING IN CEMENT MORTAR BCA part 3 3 1**
All brickwork to underside of floor bearers level All 110mm thick brickwork All copings steps brick balustrade walls sills piers wing walls retaining walls Brick Fences on alignment and/or brickwork under timber fencing also concrete blocks or bricks **Build compo mortar** All other Brickwork including concrete masonry

**SLEEPER PIERS BCA table 3 2 5**
230 x 230mm up to 1 5 high footings are to be two courses of 350mm work Where pier height exceeds 1 5m up to a maximum of 2 4m footings are to be two courses of 470 work and lower portion of pier to be 350 x 350 Concrete footings must be 500mm square and 200mm thick for an effective supported floor area of not more than 20m² All footings must have Engineers details for soil other than class A or S

**ENGAGED PIERS BCA figure 3 3 1 2**
To be minimum of 230 x 350 (including wall thickness) spaced at not more than 1 8m centres up to 2700 high to support floor bearers and at similar centres to stiffen walls supporting concrete slabs All stack bonded piers to be anchored to walls with specified wall ties every fourth course Areas with design wind speeds greater than N2 must be vertically reinforced with at least 1 off Y12 bar tied to the footing

**VENEER WALLS BCA 3 3**
To be 110mm Brickwork built in Compo Mortar on foundation walls as previously specified Internal faces to be 38mm from timber frames Build in 3mm galvanised wall ties opposite each alternate stud four courses above level of bottom plate then every fourth course and spaced not more than 460mm horizontally and 610mm vertically or 610mm horizontally and 460mm vertically Ties to be left open for attachment to studs A cavity space of between 25mm and 50mm must be maintained throughout Where thermal insulation is required to comply with Energy Efficiency requirements clear cavity spaces must be maintained Cavities and weep holes to be clean and clear at damp course level All mortar droppings to be caught on paper or other material and removed before internal linings are fixed Mortar joints on inside face walls to be flush with brickwork

**SPECIAL WALLS (if shown on plans)**
Walling not of timber Veneer on timber or masonry to be constructed as per Structural Engineers Detail and Certificate

**SINGLE LEAF MASONRY (Garage Walls etc )**
Footings as per BCA part 3 2 5 engaged piers and reinforcing to be as per part 3 3 1

**ACCESS**
Adequate access in the external foundation wall must be provided with a weatherproof lockable door and crawl access is to be provided to all under floor areas

**VENTILATION BCA part 3 4 1**
Sub floor areas shall be ventilated by means of evenly distributed openings with an unobstructed area of 7300mm2 per lineal metre of external wall Where particle board flooring is used the unobstructed area shall be increased to 7500mm2 per lineal metre and evenly spaced Ventilation of internal walls shall be a minimum of 22000mm 2/m run of wall Vents to be immediately below bearers and similarly provide vents under verandah floors and suspended floor slabs Sufficient cross ventilation to be provided through all walls below floors No section of the under floor area should be so constructed that is will hold pockets of still air Appropriate special provision to be made where a gas bath heater is installed Ventilation may be varied by Local Council

**BRICK REINFORCEMENT**
In full brick cavity walls at two courses above level of the highest opening built into each 110mm thickness one continuous strand of 64 wide galvanised metal reinforcement lapped 100mm at joints and full width of layer at intersections

**ANT CAPS**
To all brickwork and piers at the level of underside of floorbearers ant capping of 0 5mm gauge galvanised steel or other approved metal is to be set projecting 38mm beyond the internal faces of all brickwork and turned down at a 45 degree angle lapped 13mm and soldered or crimped at all joints and corners so as to provide a continuous and effective barrier against termites throughout the length of the material Whole of house protection against subterranean termite attack shall be installed in accordance with AS 3660

**TIES BCA PART 3 3 3**
Wall ties complying with AS/NZS2699 shall be used for all tie requirements Corrosion protection and installation of wall ties is to comply with AS3700

**STEPS**
If shown on plan in bricks to match other exposed brickwork To be built in solid work or where side walls are provided in consolidated filling Treads are to be brick on edge or pre cast concrete units with a maximum of 355mm going and a maximum of 190mm and minimum of 115mm rises

**LINTELS BCA PART 3 3 3 4**
Provide galvanised mild steel angle iron or bars of the following sizes over openings to each 110mm thickness (or part thereof) of brickwork all having a minimum of 110 bearing each end All lintel angles to be placed with the longer leg vertical

| UPPER STOREY | EXTERNAL WALLS | INTERNAL WALLS |
|---|---|---|
| Up to 1210mm span | One 76mmx10mm bar | One 76mmx10mm bar |
| Up to 1570mm span | One 76x51x10 angle | One 76x51x10 angle |
| Up to 2410mm span | One 127x76x10 angle | One 127x51x10 angle |
| Up to 3010mm span | One 152x89x10 angle | One 152x89x10 angle |

| LOWER STOREY OR BASEMENT | EXTERNAL WALLS | INTERNAL WALLS |
|---|---|---|
| Up to 910mm span | One 76x76x10 angle | One 76x76x10 angle |
| Up to 1210mm span | One 102x76x10 angle | One 127x76x10 angle |
| Up to 1810mm span | One 152x76x10 angle | One 152x89x10 angle |
| Up to 2410mm span | One 152x102x10 angle | One 152x102x10 angle |

**FIREPLACE CHIMNEY and FLUES BCA part 3 2 5 5 and 3 7 3**
Reinforced concrete footings 300mm wider all round than brick construction to be provided Build 110mm brick wall and/or corbel courses to support hearth Non combustible material to be used for upper surface of hearth with a minimum thickness of 155mm and shall extend not less than 300mm beyond the front of the fireplace opening and not less that 150mm beyond each side of the opening Local council may vary this requirement Provide fireplace and chimney in position as shown and to the dimensions on plan Mild steel bars or angles of suitable sizes and with a 110mm bearing at each end to support work over openings Up to the level of 300mm above the underside of the arch or lintel the back and sides of the fireplace to be constructed in two separate sections of solid masonry minimum 190mm thick not including cavity Concrete masonry not permitted in construction of inner section balance of walling to be minimum of 90mm thick Flue to be rendered minimum 12mm thick Mix 1 cement 2 lime 10 sand or L C approved material Chimney stack is to be not less that the height of the main roof ridge and is to be built in compo mortar The flue is to be 250 x 250mm or one tenth of the area of the fireplace opening whichever is the greater gathered over to break daylight and pargetted to the full height An 0 6mm galvanised steel tray in one piece holed for flue is to be set at level of one course above roof covering on the high side of the roof The internal edges are to be shaped to form a quadrant gutter 25mm wide sweated at corners The tray is to project a minimum of 25mm beyond the external faces of brickwork turned up and/or down as required Where the tray is turned up a clearance of at least 6mm is to be maintained between the brickwork and the tray Provide weep holes by leaving open vertical joints in brickwork above tray Rake joints in brickwork ready to receive flashing to be provided by Plumber A loose brick must be left on the back of the chimney stack This brick must not be set until after the tray has been cleared of all mortar droppings

**HEATING APPLIANCES BCA part 3 3 4**
Heating appliances installed in brick or blockwork surrounds shall be in conformance with AS 1691 or AS 2918 as applicable

**DAMPCOURSE AND WEATHERPROOFING OF MASONRY BCA part 3 3 4**
Provide a continuous run of L C Approved dampcourse material to full width of wall thickness on all brickwork at level not higher than bottom of floor bearers and engaged piers Dampcourse material is to be run in long lengths lapped minimum 100mm at joints and full width at all intersections To wall surrounding concrete and/or solid floors an additional run of dampcourse is to be laid one full course above floor level and stepped down to meet lower dampcourse where other walls abut walls of bathroom shower recess or laundry Damp proof courses and flashings shall be installed to give performance as specified in AS/NZS 2904

**VERMIN PROOFING**
13mm mesh galvanised bird wire to be built into brickwork and taken across cavity and secured to bottom plate

**FLASHING BCA part 3 3 4**
L C approved dampcourse material to be built in under all window sills 25mm at back of wood sill and 50mm at each end of same Flashing to be bent down across cavity and built 25mm into veneer wall L C approved dampcourse material to be built in over all exposed window and external door openings

**WEEP HOLES**
Perpend joints are to be left open in exterior brick walls spaced approx 600mm in course immediately over flashings of all exposed openings and to brick retaining walls fender walls etc as required See Bushfire Clauses for protection of weep holes in bush fire areas

**RETAINING WALLS**
Retaining walls not specifically detailed and foundation walling required to retain earth are to be a minimum of 230mm thick up to a height of 750mm of retained earth Cavity walls used to retain earth are to have the leaf adjacent to the retained earth a minimum of 230mm thick to a maximum of 900mm of retained earth height All to be properly bonded (see Bonded Walls) and provide with a properly constructed agricultural drain to the earth side of retaining wall For walls in excess of the above heights of retained earth an Engineers detail will be required

**BONDED WALL**
Solid brick walls more than one brick width which are used to retain earth or are otherwise noted as Bonded Walls shall be bonded throughout the thickness of the wall by either header bricks or equivalent tying Where header bricks are used every sixth course shall be a header course or there shall be at least one header or equivalent tie to every 0 13sq metres (every third course at 480mm centres) Walls 350mm or more in thickness shall have overlapping headers or ties to provide a continuous tie through the wall
**CAVITY WALLS**
Walls indicated as cavity walls to be constructed with two leaves 110mm thick spaced nominally at 60mm apart Where thermal insulation is required to comply with Energy Efficiency requirements clear cavity spaces must be maintained Connect the two leaves with wall ties as per AS2699 set nominally 600mm apart in every fifth course Keep ties clean of mortar droppings and cavity clear as work proceeds
**STRAPS BCA part 3 3 3**
To full brick cavity walls secure door and window frames with 1 6mm galvanised iron straps set in brickwork Straps to be 25mm wide and at least 300mm long where practicable and spaced at a maximum of five courses apart Set 25mm x 1 6mm galvanised iron straps 1800 apart and 1200mm down cavity with ends turned 75mm into brickwork to secure wall top plates

**COMPLETION**
Clean all cavities Wait upon and make good after other trades Replace all damaged and defective bricks Clean all exposed brickwork with diluted spirits of salts or as otherwise recommended by brick manufacturers wash down with clean water and leave free from cement and mortar stains

## CONCRETE BRICK A S 1346 BCA part 3 3

**MORTAR** For normal conditions mortar to consist of

| | | | |
|---|---|---|---|
| Above Dampcourse | 1 part cement<br>2 parts lime or lime putty<br>9 parts clean sand | Below Dampcourse | 1 part cement<br>1 part lime or lime putty<br>6 parts clean sand |

Mortar mixes must comply with A S 3700 and BCA part 3 3 1 6
The substitution of other plasticisers for lime is not recommended Under no circumstances should the proportion of cement be increased
**JOINTS** BCA part 3 3 1 7Finish all external brickwork and internal feature walls with raked joints Finish all other brickwork with neat struck joints

**JOINT REINFORCEMENT AND ARTICULATION JOINTS BCA part 3 3 1 8** In addition to reinforcement over openings as later *specified provide joint reinforcement in bed joints at vertical spacings not exceeding 600mm Control joints providing a continuous vertical* separation through the entire thickness of the wall are to be provided where indicated on plans or where walls exceed 9m in length as close as practical building will permit Reinforcement not to extend across control joints

## AUTOCLAVED AERATED CONCRETE BLOCKS
Lightweight blockwork shall be Autoclaved Aerated Concrete blocks consisting of sand cement and lime and shall be installed to areas as indicated on drawings Site provisions for storage of materials and for the mixing of adhesive shall be as recommended by the manufacturer
**WORKMANSHIP**
Fixings fastenings anchors lugs and the like shall be of a type approved by the manufacturer and shall transmit the loads and stresses imposed and ensure the rigidity of the assembly Block laying shall be in accordance with the manufacturers current published specifications
**TOLERANCES**
Maximum planar misalignment shall be 2mm along butt joints The thickness and width of walls shall not vary by more than 5mm from design sizes Deviation from plumb level or dimensional angle must not exceed 5mm per 3 5m of length of member or 6mm in total run in any line
**INSTALLATIONS**
All lightweight blockwork shall be installed using thin bed adhesive mortar to all horizontals and perpends The first course must be made true and level using a normal thick bed mortar with thin bed adhesive to fully seal the perpends All thin bed adhesive shall be applied using a recommended notched trowel to obtain an even distribution of adhesive to achieve joint thickness of 2 3mm All lightweight blockwork shall be laid in a format that the vertical joint of the lower course must be staggered at least 100mm relative to the vertical joint of the overlaying course A slip/joint bond breaker must be installed between the first course and the foundations or slab on all internal and external walls to allow for differential movement between the blocks and the supporting structure Build in as necessary all flashings reinforcements arch bars lintels frames straps bolts lugs wall ties metalwork precast units sills partitions joists and the like Carefully set out and leave openings for other trades to eliminate cutting
**COMPLETION**
On completion clean out all blocks mortar droppings debris etc and remove all scaffolding make good all put log holes and other blemishes and leave all work in perfect condition and protect until handover

## CONCRETE BLOCK and REINFORCED MASONRY AS 3700 - BCA part 3 3 2
All masonry units shall comply with AS1500 Hollow Load Bearing Concrete Units Masonry shall be stacked on planks off the ground and in wet weather shall be covered with tarpaulins or otherwise kept dry At the end of each days work the top of the wall shall be covered with tar paper polyethylene sheets or by other means protected from becoming excessively wet Masonry units shall not be dampened prior to laying and shall be laid in dry state
**MORTAR BCA PARTS 3 3 1 6**
Mortar shall comply with AS 3700 in all respects Plasticisers may be used when approved and where tests show the mortar with plasticisers meets the requirements of these specifications
**CONSTRUCTION BEDDING**
All face and end joints shall be fully filled with mortar and joints shall be squeezed tight Slushing of mortar into joints shall not be permitted The first course of blocks shall be laid in a full bed or mortar
***JOINTS BCA part 3 3 1 7***
Joints on all exposed surfaces shall be as specified The joint shall be formed by striking the mortar flush and after it has partially set tooling with the proper shaped tool to adequately compact the surface The tool shall be of sufficient length to form a straight line free from waves Internal joints shall be ironed Where flush joints are left exposed they shall be first compacted then repointed and excess mortar removed Joints shall be 10mm thick unless otherwise specified or directed
**PATTERNS AND BOND**
All walls shall be built plumb true and level to the thickness shown on the plans and with the pattern indicated or running bond U N O
**ARTICULATION JOINTS**
Shall be located where shown and shall form a continuous vertical break from top to bottom of wall or from bond beam Provision shall be made for adequate lateral stability Joint shall be filled with mortar raked back 16mm and pointed with a non hardening plastic filler No reinforcing shall be carried across control joint
**JOINT REINFORCEMENT**
*Reinforce every 600mm in height and in the two courses immediately above and below window openings Lap mesh at least 150mm at all joints and* intersections except at articulation and expansion joints where a slip joint may be required
**BRACING DURING CONSTRUCTION**
Masonry walls constructed in locations where they may be exposed to highwinds during erection shall not be built higher than ten times their thickness unless adequately braced or unless provision is made for prompt installation of permanent bracing such as intermediate floor or roof structure Back filling shall not be placed against foundation walls or retaining walls before mortar or grouting has sufficiently hardened or before wall has been permanently braced to withstand horizontal pressure
**WEATHERPROOFING BCA part 3 3 4**
All concrete masonry walls exposed to the weather or below ground level shall be adequately water proofed using an approved paint or other coating and applied in accordance with the directions of the manufacturer
**CLEANING**
During the progress of the work every effort shall be made to keep walls that are to be left exposed clean Mortar smears shall be allowed to dry for *a short period and shall then be promptly removed by trowel or wire brush or both Care shall be taken to avoid damage to the mortar joint when* brushing Mortar burrs shall be promptly removed At the conclusion of the work walls shall be cleaned down all scaffolding and debris removed and the wall left in good clean condition

## BUSHFIRE PRONE AREAS – BCA 3 7 4

Performance requirements are satisfied for a class 1 building in a bushfire prone area if constructed in accordance withAS3959 NSW variation excludes Section 2 of that standard which is replaced by Planning for Bushfire Protection appendix 3 Site Assessment for Bushfire Attack
OR in consultation with NSW rural Fire Service under Sec 79B of the Environmental Planning and Assessment act1979
OR as modified for development consent under section 100B of the Rural fires Act

**CONSTRUCTION OF CLASS 1 BUILDINGS as per acceptable methods in BCA clause 3 7 4 1 (for information only)**

| BUILDING COMPONENT | BUSH FIRE ATTACK CATEGORY | | |
|---|---|---|---|
| | MEDIUM | HIGH | EXTREME |
| Flooring system | (a) Concrete slab on ground<br>(b) Suspended concrete floor<br>(c) Framed floor with all joists and bearers above 600mm above ground<br>(d) Framed floor where timbers are less than 600mm above ground<br>(i) All timbers fire retardant<br>OR (ii) subfloor space fully enclosed as per the wall above<br>OR (iii) fully enclosed with non combustible material or 6mm thick F R cement sheets | As per medium requirements | As per medium requirements except that where bearers and joists are greater than 600mm above ground and not enclosed all timbers must be fire retardant treated or sheeted underneath with non combustible material |
| Supporting posts piers stumps poles (except where enclosed as per flooring systems) | (a) Non combustible material<br>(b) Fire retardant treated timber to 400mm above ground<br>(c) Timber mounted on 75mm high stirrups | As per medium requirements | As per medium requirements except that all timber is to be fire retardant treated |
| External Walls | (a) Masonry concrete or earthwall<br>(b) Framed wall with<br>(i) sarking having a flammability index not more than 5<br>OR (II) an insulation material of that standard<br>(c) *Timber logs with all joints between the logs planed and sealed*<br>(d) Combustible sheet cladding if cladding within 400mm of ground is covered by non combustible sheet material | As per medium requirements except that<br>(a) P V C cladding must not be used and<br>(b) *Timber wall cladding must be* fire retardant treated | *As per high attack category* |
| Windows | *The openable part of a window must be screened with* aluminium steel or bronze corrosion resistant mesh with 1 8mm max aperture size | *As per medium requirements* except that<br>(a) timber must be fire retardant treated except if enclosed by non combustible shutters<br>(b) Leadlight windows must be protected with non combustible material or toughened glass<br>(c) Window screens must not be aluminium | As per high requirements except that windows not protected by non combustible shutters shall be glazed with toughened glass |
| External doors | External doors must be fitted with<br>(a) weather strips or draught excluders to prevent build up of burning debris and<br>(b) tight fitting screen doors with corrosion resistant mesh as per windows | As per medium requirements except that<br>(i) aluminium mesh must not be used and<br>(ii) leadlight panels must be protected by non combustible *shutters or panels* | As per high bushfire requirements except that<br>(a) Timber doors must be fire retardant treated OR<br>(b) Protected by non combustible shutters OR<br>(c) *Solidcore doors min 35mm* |
| Vents and weepholes | Vents and weepholes must be protected by spark guards of corrosion resistant 1 8mm max mesh size aluminium steel or bronze | As per medium category except that aluminium mesh must not be used | As per high category requirements |
| Roof covering eaves and fascias | (a) Timber shakes or shingles are not allowed<br>(b) Sheet roofing must be metal or fibre reinforced cement<br>(c) Seal gaps under corrugations at wall or eaves line by<br>(i) fully sarking roof OR<br>(ii) corrosion resistant mesh as per weepholes or profiled metal sheet or mineral wool<br>(d) Hip and ridge capping must be preformed with no gaps or gaps sealed as per (c)<br>(e) Roof wall junctions must be sealed by<br>(i) fascia and eaves lining OR<br>(ii) sealing to u/side of roofing at wall line with non combustible material<br>(f) Tiled roofs must be fully sarked (including ridge) with sarking directly under tiling battens<br>All sarking must have Flammability Index less than 5 | As per medium requirements except that<br>(a) all roof sheeting must be non combustible and sarked and<br>(b) Timber eaves lining and/or trimming strips must be of fire retardant treated timber and<br>(c) Fascias must be non combustible or fire retardant treated | As per high category requirements except that<br>(a) Fibre reinforced cement or aluminium sheet must not be used for roof sheeting or fascias and<br>(b) Aluminium must not be used for eaves linings |
| Roof lights | (a) rooflight penetrations and shafts must be sealed with non combustible sleeve and linings<br>(b) A rooflight may be of metal framed thermoplastic provided that the diffuser at ceiling level is wired or toughened glass in a metal frame<br>(c) Vents in rooflights must have a steel or bronze mesh *screens with 1 8mm max aperture size* | As per medium requirements except that<br>(a) roof light glazing must be wired glass<br>(Thermo plastic or toughened glass must not be used) | As per the requirements for high category attack |
| Roof Ventilators | All components of roof ventilators including rotary ventilators must be of non combustible materials and ventilation openings must be protected by 1 8mm max aperture size non corrosive steel or bronze screens | | |
| Gutters and downpipes | Must be constructed of non combustible materials including materials or devices to stop leaves collecting or clogging | | |
| *Verandah and decks* | *Supporting posts columns and piers and external walls must comply with previous requirements as per this table for all categories*<br>If sheeted or tongue and grooved solid flooring is used the flooring system must comply with previous requirements for flooring systems | | |
| | (a) spaced timber deck flooring<br>(i) gaps in deck strips must not be less than 5mm<br>(ii) the perimeter of the deck must not be enclosed<br>(iii) The deck flooring must be separated from main building so fire will not spread | (a) spaced timber deck flooring must be fire retardant treated | (a) as per high category except that all timber (including balustrades) must be fire retardant treated or all materials must be non combustible |

NOTES (a) Fire retardant timber must comply with requirements of AS/NZS3837 Some timber varieties naturally meet the Ignition and Heat Radiance Parameters when tested to ASTM D2898 Method B without having to be fire retardant treated
(b) External timbers in a verandah patio deck or the like are regarded as protected also if they are under a roof or similar structure that projects to a line at an angle of 30 off the vertical from the base of the wall
(c) Where roofing systems are fully sarked mesh protected vents may be necessary to reduce condensation in some areas
(d) Where sub floor areas are enclosed termite protection must not be compromised

**ENERGY EFFICIENCY – BCA part 3 12**

Performance provisions of the BCA part 2 6 requires that a building must have a level of thermal performance so that greenhouse gas emissions are reduced using energy efficiently This level of thermal performance must facilitate the efficient use of energy for cooling and heating This will be achieved by selection of materials and methods of construction of Building Fabric External Glazing Building sealing Air movement and services as best suited to the particular Climatic Zone in which the building is sited A building must have an energy rating of not less than 5 stars complying with the ABCB protocol for House Energy Rating ( Note BCA part 2 6 does not apply in N S W) Map of Australian Climate Zones for Thermal Design can be viewed on the Australian Building Code Boards website at www abcb gov au

**R** Value is the Thermal Resistance of a component to heat and cold movement Thermal movement is upwards or downward through a roof or a combination of both

| **THERMAL RESISTANCE minimum TOTAL R Value required for various climatic zones** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BUILDING COMPONENT | CLIMATE ZONE | | | | | | | | |
| ROOFS | 1 | 2 Altitude less than 300 | 2 Altitude 300m or more | 3 | 4 | 5 | 6 | 7 | 8 |
| Direction of heat flow | Downwards | | Downwards and upwards | | Upwards | | | | |
| Minimum Total R Value required | 2 2 | 2 2 | 2 5 | 2 2 | 3 0 | 2 7 | 3 2 | 3 8 | 4 3 |

| BUILDING COMPONENT | CLIMATE ZONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| WALLS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Minimum Total R – Value required | 1 4 | | | 1 7 | 1 4 | 1 7 | 1 9 | 2 8 |
| **QLD** Variation minimum Total R Value | 1 0 | | | n a | 1 4 | n a | | |

Special Condition apply to two storey houses

| FLOORS | CLIMATE ZONES | 6 | 7 | 8 | Enclosed perimeters and heated slab floors have |
|---|---|---|---|---|---|
| Suspended floors without heating and unenclosed around perimeter | | 1 0 | 1 0 | 2 5 | special requirements Consult authorities |

Added insulation to achieve minimum R Values for various climate zones can be (a) Reflective Insulation or (b) Bulk insulation or a combination of both Reflective Insulation must be installed with not less than 20mm air space between the more reflective side and a building lining or cladding (note cavity clearances are not to be reduced) and closely fitted against any penetration and or door/window frame be adequately supported and overlapped to adjoining sheet not less than 150mm Bulk insulation must be installed so that it maintains its position by not slumping and forming voids and must abut other installation or building members Care should be taken that insulation does not interfere with the safety or performance of services or fittings Insulation as manufactured must comply with AS/NZS4859 1

| **R VALUE OF INSULATION TO BE ADDED TO BUILDING COMPONENT TO MEET TOTAL R VALUE REQUIRED** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ROOF TYPE | ROOFS | CLIMATE ZONE | | | | | | | |
| | | 1 2 Below 300m AHD altitude | 1 2 at or over 300m AHD | 3 | 4 | 5 | 6 | 7 | 8 |
| Minimum required Total R Value for roofs | | 2 2 | 2 5 | 2 2 | 3 0 | 2 7 | 3 2 | 3 8 | 4 3 |
| FLAT ROOF SKILLION ROOF AND CATHEDRAL CEILING – CEILING LINING UNDER RAFTERS | | | | | | | | | |
| TILED | Total R Value of roof materials | 0 4 downwards | 0 4 down and up | | 0 40 upwards | | | | |
| | Minimum R Value of insulation to add | 1 8 | 2 1 | 1 8 | 2 59 | 2 29 | 2 79 | 3 39 | 3 89 |
| FLAT ROOF SKILLION ROOF AND CATHEDRAL CEILING – CEILING ON TOP OF EXPOSED RAFTERS | | | | | | | | | |
| TILED | Total R Value of roof materials | 0 4 downwards | 0 41 down and up | | 0 41 upwards | | | | |
| | Minimum R Value of insulation to add | 1 79 | 2 09 | 1 79 | 2 59 | 2 29 | 2 79 | 3 39 | 3 89 |
| FLAT CEILING WITH PITCHED ROOF – CAVITY ROOF SPACE | | | | | | | | | |
| TILED | Total R Value of roof materials | 0 7 downwards | 0 35 down and up | | 0 35 upwards | | | | |
| | Minimum R Value of insulation to add | 1 5 | 2 15 | 1 85 | 2 65 | 2 35 | 2 85 | 3 4 | 3 95 |
| FLAT ROOF SKILLION ROOF AND CATHEDRAL CEILING – CEILING LINING UNDER RAFTERS | | | | | | | | | |
| METAL | Total R Value of roof materials | 0 38 downwards | 0 35 down and up | | 0 39 upwards | | | | |
| | Minimum R Value of insulation to add | 1 82 | 2 12 | 1 82 | 2 61 | 2 31 | 2 81 | 3 41 | 3 91 |
| FLAT ROOF SKILLION ROOF AND CATHEDRAL CEILING – CEILING LINING OF TOP OF EXPOSED RAFTERS | | | | | | | | | |
| METAL | Total R Value of roof materials | 0 37 downwards | 0 37 down and up | | 0 39 upwards | | | | |
| | Minimum R Value of insulation to add | 1 83 | 2 13 | 1 83 | 2 61 | 2 31 | 2 81 | 3 41 | 3 91 |
| FLAT CEILING WITH PITCHED ROOF – CAVITY ROOF SPACE | | | | | | | | | |
| METAL | Total R Value of roof materials | 0 5 downwards | 0 4 down and up | | 0 4 upwards | | | | |
| | Minimum R Value of insulation to add | 1 7 | 2 1 | 1 8 | 2 6 | 2 3 | 2 8 | 3 4 | 3 9 |

A roof must achieve the minimum Total R Value specified In Climate Zones 1 2 and 3 pitched roof material with a flat ceiling must have a Solar Absorbance value less than 0 55 RBM installed below the roof and the roof space ventilated by roof gable eaves or ridge vents that allow an unobstructed air flow with no dead air spaces Vents must have a total fixed open area of not less than 1% of the ceiling area OR not less than 2 wind driven ventilators in association with fixed vents subject to approval

**TYPICAL SOLAR ABSORPTANCE VALUES OF COLOURED ROOFS**

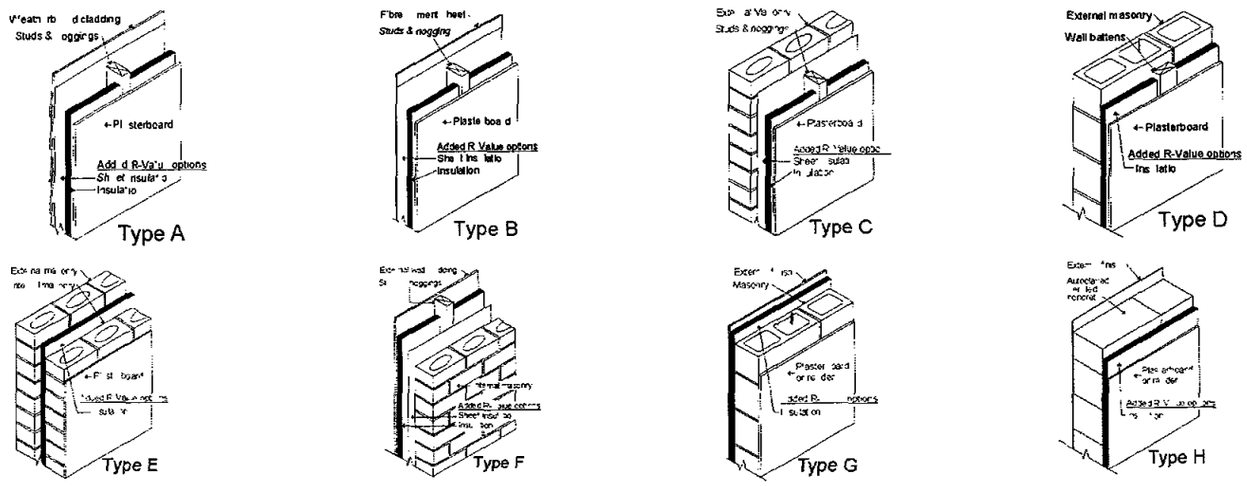
| | | | | | |
|---|---|---|---|---|---|
| Slate (dark grey) | 0 9 | | | Light Grey | 0 45 |
| Red Green | 0 75 | Zinc Aluminium (dull) | 0 55 | off white | 0 35 |
| Yellow Buff | 0 6 | Galvanised steel (dull) | 0 55 | Light Cream | 0 3 |

**EXTERNAL WALLS**

An external wall must achieve the minimum Total R Value for the relevant Climate Zone or in Climate Zones 1 2 and 3 to be shaded by a verandah balcony carport eaves and gutter or the like The horizontal projection from the external face of the building must be not less than one quarter of the overall height of the wall measured from the internal floor vertically to the underside of the projection This applies to all stories NOTE In Climate Zones 4 5 6 7 and 8 all walls must achieve a surface density of not less than 220 Kg/m2 and in Climate Zone 6 be constructed on a flooring system that is in direct contact of ground i e concrete slab or in Climate Zones 6 7 and 8 incorporate insulation with an R Value not less than 1 0 to the edges and underneath the slab

These requirements to not apply to South facing walls in Climate Zones 1 2 and 3 south of latitude 20 south

| **R VALUE OF INSULATION TO BE ADDED TO BUILDING COMPONENT TO MEET TOTAL R VALUE REQUIRED** | | | | | |
|---|---|---|---|---|---|
| TYPICAL WALL CONSTRUCTION | R VALUES | CLIMATE ZONE | | | |
| | | 1 2 3 5 | 4 6 | 7 | 8 |
| | Minimum required Total R – Value for Walls | 1 4 | 1 7 | 1 9 | 2 8 |
| (A) Weatherboard minimum 70mm Timber Frame | Total R Value of Wall Materials | 0 47 | | | |
| | Minimum R Value of insulation to add | 0 93 | 1 23 | 1 43 | 2 33 |
| (B) Cement or Metal Sheet 70mm timber frame | Total R Value of Wall Materials | 0 4 | | | |
| | Minimum R Value of insulation to add | 1 0 | 1 3 | 1 5 | 2 4 |
| (C) Clay Masonry Veneer minimum 110mm Veneer | Total R Value of Wall Materials | 0 54 | | | |
| | Minimum R Value of insulation to add | 0 86 | 1 16 | 1 36 | 2 26 |
| (D) Concrete Block Masonry minimum 140mm Masonry | Total R Value of Wall Materials | 0 52 | | | |
| | Minimum R Value of insulation to add | 0 88 | 1 18 | 1 38 | 2 28 |
| (E) Cavity Clay Masonry 110 ext veneer 90mm internal (min) | Total R Value of Wall Materials | 0 67 | | | |
| | Minimum R Value of insulation to add | 0 73 | See note above | | |
| (F) External insulated Clay Masonry Minimum 110 mm masonry | Total R Value of Wall Materials | 0 5 | | | |
| | Minimum R Value of insulation to add | 0 9 | 1 2 | 1 4 | 2 3 |
| (G) External insulated Corner Masonry minimum 140mm thick | Total R Value of Wall Materials | 0 48 | | | |
| | Minimum R Value of insulation to add | 0 92 | 1 22 | 1 42 | 2 32 |
| (H) Autoclaved Aerated Masonry minimum 200mm thick | Total R Value of Wall Materials | 1 73 | | | |
| | Minimum R Value of insulation to add | Nil | Nil | Nil | 1 07 |




**ENERGY EFFICIENT EXTERNAL GLAZING – BCA part 3 12 2**
This part of the BCA applies to Class 1 buildings and class 10a buildings with a conditioned space
Acceptable Construction Practice The effective glazing area of a building must not exceed the percentages of the building area as per BCA Table 3 12 2 1 This table defines the maximum effective glazing area (Total glazed area of all windows in a storey) as a percentage of the total floor area of a storey The glazing area limits listed provide only the minimal protection against overheating (heat flow into the building via the glazing) and heat loss (through the glazing) in cold conditions The heat loss or gain can be controlled by siting of windows shading use of protective films double glazing with air or gas fill in a sealed unit and size of windows Window manufacturers can supply windows to suit the requirements for the site Climate Zone and the window construction depends on shading of the glazed area by verandahs balcony fixed canopies etc or a shading device A shading device must restrict at least 80% of the solar radiation when in use and can be a shutter blind vertical or horizontal screen with blades battens slats etc and be adjustable by the building occupants Where necessary the nomination of glazing types window locations shading etc should be carried out by an approved specialist
*NSW requirements to comply with BASIX Specifications are selectable in Nathers 2 32A*

**CARPENTRY**
All timber shall comply with the appropriate standard as listed below Timber sizes shall be selected so that the building as constructed complies with AS1170 2 or AS4055 for serviceability and Design Wind Gust Velocities (permissible stress) of 33 M/s minimum Substitution of some members may be required for higher Gust Wind Velocities and advice of local authorities Building Department or Structural Engineer should be sought as whether design to N3 or higher is required
**STRESS GRADES**
*Visually Stress Graded Timber Timbers whose species or place of growth is known may be visually graded for quality in accordance* AS 2082
Mechanically Stress Graded Timber of required stress grade according to AS/NZS 1748 may be used regardless of species
Seasoned Timbers All timber shall be regarded as seasoned only if its moisture content does not exceed 18 per cent
**FRAMING BCA part 3 4 3**
Timber sizes in this specification are based on AS1684 4 Simplified Non cyclonic areas with restrictions as follows Maximum wind classification N2 (33m/s) maximum roof pitch 30° maximum building width 12 0m maximum rafter overhang 750mm maximum wall height at ext walls floor to ceiling 2400mm The sizes are for information only and should not be used for construction All design for a structure within these limits should be carried out to AS1684 4
**NOTE** for wind classification N3 (W41N) and N4 (W50N) Non cyclonic areas with building widths 12 0m and up to 16 0m and with roof slopes exceeding 30° and up to 35° design according to AS1684 2 is required For construction in Cyclonic Areas wind classification C1 to C3 refer to AS 1684 3

**CUTTING, ASSEMBLY AND ERECTION OF FRAMING ABOVE GROUND FLOOR LEVEL**
Where framing is cut assembled and erected on site particular care should be taken that member sizes and fixings are designed to comply with stress grades for the particular number of stories and roof loads according to AS1684
**FLOOR FRAMING**
Ground floor timbers shall be only of hardwood cypress pine or pressure treated Radiata or Canada Pine below a height of 300mm above finished ground level and must not be built into brickwork Subfloor ventilation shall conform to BCA part 3 4 1 In Bushfire Prone Areas special conditions apply Where termite barriers need to be inspected 400mm clearance is required between the underside of bearer and ground surface BCA FIGURE 3 4 1
**ANT CAPS**
To all brickwork and piers at the level of underside of floorbearers and capping of 0 5mm gauge galvanised steel or other approved metal is to be set projecting 38mm beyond the internal faces of all brickwork and turned down at a 45 degree angle lapped 13mm and soldered or crimped at all *joints and corners so as to provide a continuous and effective barrier against termites throughout the length of the material Whole of house* protection against subterranean termite attack shall be installed in accordance with AS 3660 1
**BEARERS**
Bearers should be laid in straight and normally parallel lines with top surfaces arranged to give level bedding for joists Unless specifically noted as otherwise bearers shall be located directly under all load bearing walls except where walls are located at right angles to line of bearers in which case piers or other approved supports shall be provided for bearers at points where they cross under such walls Bearers having minor excesses in depth shall be brought to required level by checking out underside over supports Packing is to be avoided but where there is no alternative corrosion resistant and incompressible sheet material over full area of contact may be permitted Bearers having not more than permitted spring shall be placed so that they tend to straighten under loading Joints in bearers unless specifically detailed otherwise shall be made only at points of support on which adequate bearing for both members can be provided and the joint shall be secured by means of bolting or spiking against displacement or separation
**JOISTS**
Joists shall be laid over bearers in straight and normally parallel lines with top surfaces set accurately to a common level to receive flooring Underside of joists having minor excesses in depth are to be notched out over bearers to obtain required common level Packing may be employed if unavoidable similar to that for bearers such packing to be securely fixed Joists having not more than the permitted amount of spring shall be laid so that they tend to straighten under loading Joints unless specifically detailed shall be made only over bearers or other supports Joints occurring in joists which are parallel and support wallplates shall be made at points of support which provide adequate bearing for both ends which shall be butted or scarfed to maintain a straight line Posts shall be securely skew nailed from both sides to bearers at all points of support
Where floor joists abut solid masonry or concrete walls they shall be supported on timber wall plates or bearers carried on walling off sets or *attached piers where such method is not practicable and height of floor is more than 1800mm above ground the ends of joists or bearers may bear* in pockets formed in the wall which allow at least 12mm clear air space at sides and ends of members and provide solid bearing at least 100mm in depth
Where the unsupported span of deep joists exceed 2700mm 50mm x 50mm herringbone strutting or solid blocking of 25mm min thickness shall be *provided in continuous rows between joists at not more than 1800mm centres*

**EAVES BEAMS AND VERANDAH PLATES**
Eaves beams and verandah plates shall be provided to support rafters or trusses over full height openings or recesses in walls or over verandahs or porches covered by main roof structure Any reduction in nominal size through mill dressing or scalloping shall be allowed for so that the minimum size listed is not reduced The ends of eaves beams and verandah plates that are supported on stud wall shall be carried by studs or stud groups as

for heads for equivalent spans End fixing shall provide resistance to uplift or displacement Verandah Posts to be not less than 100mm x 100mm in timber F11 If supporting roof loads they shall be as per AS1684 2

**ROOFING BATTENS** Supporting roofing only (Note roofing battens are not suitable for the safe support of workers prior to fixing roof cladding) Battens should be continuous over a minimum of two spans and their design to suit rafter/truss spacing and batten spacing must be in accordance with AS1684 for the allowable roof mass

**MANHOLE**

Trim as required between ceiling joists or trusses for manhole 600 x 400mm minimum size Line the opening and provide a suitable cover

**EAVES**

Project rafters to give a soffit at eaves of directed width and fix 200 x 25mm timber fascia or colourbond steel as directed Where eaves are boxed in soffit bearers (sprockets) of 50 x 38mm shall be provided spaced to suit eaves lining and attached directly to outer ends of rafters In brick veneer buildings the inner ends of soffit bearers shall be fixed to the frame so as to be 20mm or more clear above top of brickwork at time of construction In solid masonry buildings the inner ends of soffit bearers shall be located by means of 50 x 25mm hangers from rafters or wall plates In Bushfire Prone Areas fascias and eaves linings have special requirements

**PREFABRICATED TIMBER WALL FRAMES AND TRUSSES – BCA part 3 4 3**

Where prefabricated frames and/or trusses are used for construction of the building the manufacturers certification of construction according to AS1684 2 or AS1684 4 for the building on the particular site must be obtained Where certification is attached to truss or framing members the certification labels shall be left in place after erection for approval by the appropriate Building Surveyor P C A or Council Authority Timber trusses purpose manufactured for this project and engineer designed according to AS1720 1 are to be spaced at centres as directed erected and fixed in accordance with the manufacturers instructions as approved Support only on ends or designed bearing points Where spacing of trusses exceeds 600mm centres provide intermediate ceiling joists in 100mm x 38mm hardwood (in F7) or 100mm x 50mm (in F8) supported from hangers at maximum of 2100 centres Hanging beams shall be supported not more than 600mm from bottom chord panel points unless hangers are provided to nearest top chord panel points

## MASSES OF TYPICAL ROOF CONSTRUCTION

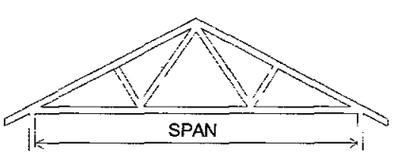
| MASS OF ROOF | MATERIAL |
|---|---|
| 10 kg/m2 | Steel sheet roofing 0 50mm thick and battens |
| 20 kg/m2 | Metal sheet tiles or medium gauge steel sheet roofing battens 12mm softwood ceiling lining sarking and lighweight insulation |
| 30 kg/m2 | Steel sheet roofing 0 775mm thick 13mm plaster ceiling roof and ceiling battens sarking and lightweight insulation |
| 40 kg/m2 | Steel sheet roofing 0 75 thick battens graded purlins and high density fibreboard ceiling lining |
| 60 kg/m2 | Terracotta or concrete tiles and battens |
| 75 kg/m2 | Terracotta or concrete tiles roofing and ceiling battens 10mm plasterboard sarking and insulation |
| 90 kg/m2 | Terracotta or concrete tiles purlins roofing and ceiling battens 19mm hardwood ceiling lining sarking and insulation |

**DEFINITIONS**

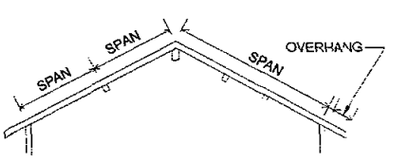
Spacing Where this term is used the measurement shall be the centre to centre distance between members

Span Where this term is used the measurement shall be the face to face distance between members

Reference is made to effective roof spans in the tables the span is an indicator of the mass of roof being carried by the outer wall members




TRUSSED ROOF




ROOF WITH LOADBEARING RIDGEBEAMS AND WALLS

**TABLES OF TIMBER SIZES**

| Framing Member Stud Height 2400 | Span | SINGLE STOREY TILED ROOF Unseasoned F8 | Seasoned F5 | Seasoned MGP10 | Seasoned MGP12 | SINGLE STOREY SHEET ROOF Unseasoned F8 | Seasoned F5 | Seasoned MGP10 | Seasoned MGP12 |
|---|---|---|---|---|---|---|---|---|---|
| **BEARERS** | | | | | | | | | |
| Strutted roof – max rafter span 3000 @ 1800 spacing continuous over two or more spans load bearing | 1500 | 100 x 75 | 2/120 x 35 | 2/120 x 35 | 2/90 x 35 | 100 x 75 | 2/90 x 35 | 2/90 x 35 | 2/90 x 35 |
| | 1800 | 125 x 75 | 2/140 x 35 | 2/120 x 35 | 2/90 x 35 | 125 x 75 | 2/120 x 35 | 2/120 x 35 | 2/90 x 35 |
| Trussed Roof 9 0 Span External Wall 1800 spacing continuous over two or more spans load bearing | 1500 | 175 x 75 | 2/170 x 35 | 2/140 x 35 | 2/140 x 35 | 125 x 75 | 2/120 x 35 | 2/120 x 35 | 2/90 x 35 |
| | 1800 | 150 x 75 | 2/190 x 35 | 2/190 x 35 | 2/140 x 35 | 200 x 75 | 2/190 x 35 | 2/190 x 35 | 2/170 x 35 |
| **JOISTS** | | | | | | | | | |
| 450 spacing continuous over two or more spans | 1800 | 125 x 38 | 120 x 45 | 120 x 35 | 120 x 35 | 125 x 38 | 120 x 45 | 120 x 35 | 120 x 35 |
| **LINTELS** | 900 | 100 x 75 | 2/90 x 35 | 90 x 45 | 90 x 35 | 100 x 50 | 2/90 x 35 | 90 x 45 | 90 x 35 |
| Trussed Roof 9000 Span | 1200 | 125 x 75 | 2/120 x 35 | 120 x 45 | 2/90 x 45 | 125 x 50 | 140 x 45 | 2/90 x 45 | 2/90 x 35 |
| | 1500 | 175 x 75 | 2/140 x 45 | 2/120 x 45 | 2/120 x 45 | 150 x 50 | 2/120 x 35 | 2/140 x 35 | 2/90 x 45 |
| | 1800 | 200 x 75 | 2/170 x 45 | 2/170 x 35 | 2/140 x 35 | 150 x 75 | 2/140 x 35 | 2/120 x 35 | 2/120 x 35 |
| | 2100 | 225 x 75 | 2/240 x 35 | 2/170 x 45 | 2/170 x 35 | 175 x 75 | 2/170 x 35 | 170 x 45 | 2/120 x 45 |
| | 2400 | 275 x 75 | 2/240 x 35 | 2/240 x 35 | 2/190 x 45 | 200 x 75 | 2/170 x 45 | 2/170 x 35 | 2/140 x 45 |
| | 3000 | -- --- | 2/290 x 45 | 2/290 x 35 | 2/240 x 45 | 250 x 75 | 2/240 x 35 | 2/190 x 45 | 2/190 x 35 |
| | 3600 | ---- -- | --- -- | -- | 2/290 x 45 | -- | 2/290 x 45 | 2/290 x 35 | 2/240 x 45 |

**UNCOUPLED ROOF WITH LOADBEARING RIDGEBEAMS AND/OR WALLS**

Rafters supporting roof and ceiling loads – non coupled cathedral roof single span

| Rafter Span | Rafter Spacing | Unseasoned F5 | Unseasoned F7 | Unseasoned F8 | Unseasoned F11 | Seasoned F5 | Seasoned MGP10 | Seasoned MGP12 | Seasoned F17 |
|---|---|---|---|---|---|---|---|---|---|
| Tiled Roof Ceiled | | | | | | | | | |
| 3000 | 600 | 200 x 38 | | 175 x 50 | 175 x 50 | 175 x 45 | 140 x 45 | 140 x 45 | 140 x 35 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 3600 | 600 | 250 x 50 | | 225 x 50 | 200 x 50 | 240 x 35 | 170 x 45 | 170 x 45 | 170 x 35 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 4200 | 600 | 275 x 50 | | 250 x 50 | 250 x 50 | 240 x 45 | 240 x 35 | 190 x 45 | 190 x 45 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 4800 | 600 | 275 x 75 | | 300 x 50 | 275 x 50 | 290 x 35 | 240 x 45 | 240 x 35 | 240 x 35 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 5400 | 600 | ----- | | 300 x 75 | 275 x 75 | -- --- | 290 x 35 | 290 x 35 | 240 x 45 |
| Overhang | | | | 750 | 750 | | 750 | 750 | 750 |
| Sheet Roof Ceiled | | | | | | | | | |
| 3000 | 900 | 175 x 50 | | 175 x 50 | 150 x 50 | 140 x 45 | 140 x 35 | 120 x 45 | 120 x 45 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 3600 | 900 | 225 x 50 | | 200 x 50 | 200 x 50 | 170 x 45 | 170 x 35 | 140 x 45 | 140 x 45 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 4200 | 900 | 250 x 50 | | 225 x 50 | 225 x 50 | 240 x 35 | 190 x 45 | 170 x 45 | 170 x 45 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 4800 | 900 | 300 x 50 | | 275 x 50 | 250 x 50 | 240 x 45 | 240 x 35 | 190 x 45 | 190 x 45 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |
| 5400 | 900 | 300 x 75 | | 300 x 50 | 275 x 50 | 290 x 35 | 240 x 45 | 240 x 35 | 240 x 35 |
| Overhang | | 750 | | 750 | 750 | 750 | 750 | 750 | 750 |

**NOTE**
1 Allowable overhangs are based on a maximum birdsmouth depth of D/3 Where rafters are not birdsmouthed the allowable overhang may be increased to 30% of the single span for that member provided that the overhang does not exceed 50% of the actual backspan
2 Overhang limits are only applicable where rafter ends are supported by a structural fascia

**NOTE** Sizes shown in tables in this specification are intended only as a guide to the size and stress grade for a particular member of a building frame All timber framing should be designed and constructed in accordance with AS1684 2 and/or AS1684 4
Sizes in this specification are based on AS1684 4 Simplified Non cyclonic areas with restrictions as follows
• Maximum wind classification N2 (33m/s) • Maximum Roof pitch 30° • Maximum building width 12 0m
Where a building exceeds the restrictions as listed above design to comply with AS1684 2 will allow wind speeds up to N4 (50 m/s) roof slopes up to 35°and building widths up to 16 0m

**PERMANENT BRACING OF WALLS AS PER AS1684 2 Section 8 BCA parts 3 4 3**
This section Permanent Bracing of walls as per AS1684 shows typical bracing applicable to timber frame construction as explanatory information only
**TYPE A UNITS** (Design racking resistance of 2kN) The following bracing units are deemed satisfactory type A braces
1 A pair of diagonal timber or metal section braces in opposite directions from each end of the wall as per fig (A) OR galvanised metal tensioned strap bracing as per fig (B)
2 Single diagonal timber or metal section brace as per figure (C)
3 A 900mm minimum wide panel of structural plywood as per figure (D)

| **Type 'A' Bracing – Pair of diagonals from each end of wall** | | |
|---|---|---|
| Timber | Metal Section | Tensioned Straps |
| 50mm x 19mm for studs up to 2 7m long<br>75mm x 19mm for studs over 2 7m long<br>Fixing galvanised flat head nail 2 8mm dia x 50mm long to each plate and stud | 18mm x 16mm x 1 2mm min galvanised angle brace fixed with one 2 8mm dia x 30 long galvanised flat head nail to each plate and stud edge | Flat galvanised straps 0 8mm thick x 20 wide Fixings one galvanised flat head nail 2 8mm dia x 30mm long to each plate and stud edge Tension straps |

| **Type 'A' Bracing – Single diagonal at end of wall** | |
|---|---|
| Timber | Metal Section |
| 75mm x 19mm min fixed with two 2 8mm dia x 50mm long flat head galvanised nails to each stud and plate | Galvanised angle brace fixed with two 2 8mm dia x 30 long galvanised flat head nails to each plate and stud |

**Type B UNITS** (design racking resistance of 4kN The following bracing units are deemed to be satisfactory type B braces
1 A pair of diagonal galvanised metal tension straps of minimum nominal dimension 30mm x 0 8mm in opposing directions on one side of timber frame Ends of straps shall be bent over top and bottom faces of plates and fixed with four 3 15mm dia x 30mm long galvanised flat head nails Braces shall be fixed to stud edges with two similar nails to each crossing End studs of braces section shall be strapped to top and bottom plates with 30mm x 0 8mm galvanised strap looped over plate and fixed to studs with four galvanised flat head nails 3 15mm dia x 30mm long each end of loop
2 A 900mm minimum wide panel of structural plywood as shown in figure (D) Fixed as follows

| | | |
|---|---|---|
| Plywood stress grade F8 | Stud spacing 450mm to be 7mm thick ply | Stud spacing 600mm to be 9mm thick ply |
| Plywood stress grade F11 | Stud spacing 450mm to be 6mm thick ply | Stud spacing 600mm to be 7mm thick ply |
| Plywood stress grade F14 | Stud spacing 450mm to be 4mm thick ply | Stud spacing 600mm to be 6mm thick ply |

Fixing 2 8mm dia x 30mm long galvanised flat head nails at 50mm centres along top and bottom plates 150mm centres along vertical edges and 300mm centres along intermediate studs

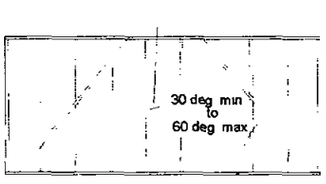


fig (A)

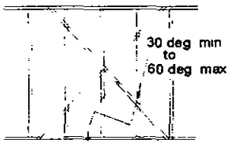


fig (B)

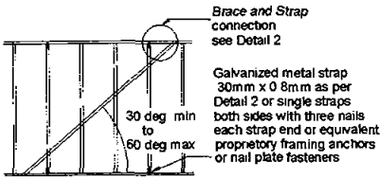


fig (C)

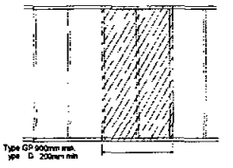


fig D

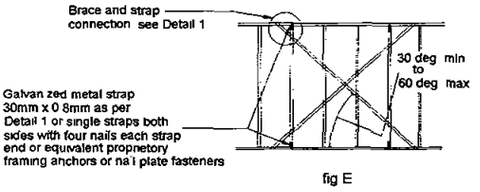
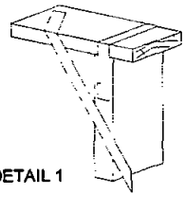
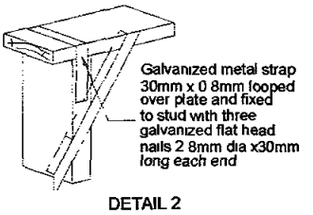


fig E


DETAIL 1



DETAIL 2

Diagrams as shown and explanation of the various types of bracings are not intended to specify bracing requirements for any timber frame construction All bracing requirements for a particular design in timber framing must be determined in accordance with Section 8 of AS1684 2 or AS1684 4 as applicable

**TIEDOWN REQUIREMENTS BCA tables 3 4 3**
Tie down requirements for timber frame construction can be determined from AS1684 4 Section 9 for maximum design gust wind speeds of 33m/sec For wind speeds in excess of 33m/sec design as per AS1684 2 is required

Tie down fixings should be determined for the following connections

| | | |
|---|---|---|
| a) bearers to piers | d) studs to bottom and top plates | g) battens and/or purlins to rafters |
| b) floor joists to bearers | e) rafters to top plates | h) collar ties to rafters |
| c) Bottom plates to floor joists or concrete slabs | f) rafters to ceiling joists | i) verandah plates and eaves beams to posts |

**NOTE** Special fastening requirements are required for type A and B wall bracing for connections (c) and (d) above

**CYCLONIC AND OTHER HIGH WIND AREAS BCA part 3 10 1**
Where buildings are to be constructed in regions B C and D as per AS/NZS1170 2 and AS1170 2 compliance with the AS1170 2 Minimum Design Loads on Structures or AS4055 Australian Wind Loads for Housing
**NOTE** High wind areas exist outside of cyclone regions B C and D Clarification of the category at the site should be sought from local authorities
Cyclonic Regions of Australia and Tasmania are shown on Map BCA fig 3 10 1 4

## STEEL FRAMING AND OR TRUSSES BCA part 3 4 2

**MATERIALS** All framing sections shall be manufactured from galvanised steel conforming to AS1397 Galvanised materials up to 3 2mm thick shall have minimum coating mass of 200 g/m2 Design fabrication and fixing shall be as per recommendations of the component manufacturers design manual Design for Residential and Low Rise Steel Framing may conform to NASH standard as alternative to AS3623

**FABRICATION AND ERECTION**

All structural components fabricated into frames and/or trusses and shall be cut accurately to length to fit firmly against abutting members and held so until fastened Studs shall be seated squarely in bottom plates with webs at 90deg to the face of the wall and accurately located plumbed and securely fixed to top and bottom plates Multiple studs shall be used as specified at concentrated load points Plates shall be securely spliced to maintain continuity Splices in studs are not permitted Structurally adequate heads shall be fitted over openings in walls All frames shall be adequately braced for transport and resist wind loads in service Preferred fastening is by MIG welding All welds shall be cleaned and painted with zinc rich paint The bottom plate shall be securely fastened to sub floor at centres as recommended and all site connections shall be as specified in design manual Holes for electrical wiring other cables and plumbing services shall be max 33mm dia flanged holes Service pipes shall be effectively separated from framing by lagging and be securely fixed in cavities Permanent electrical earthing of a steel frame building shall be carried out in accordance with the requirements of the local electrical authority Where power tools are used on site temporary earthing to the frame shall be made during construction On completion of framing all debris shall be removed from cavities and bottom plates Domestic metal framing shall be designed to comply with the load combinations as per AS3623

## STRUCTURAL STEEL BCA part 3 4 4

All steel work is to be fabricated to details as shown on engineers drawings all work to be in accordance with AS4100 Steel Structures

**PURLINS AND GIRTS**

To roof and walls of building provide purlins and girts according to engineers details Cover roof and walls of building in full length sheets complete with all necessary flashings cappings etc Secure as recommended by manufacturer and provide panels of selected translucent sheeting as indicated or directed

## ROOFING BCA part 3 5 1

### TILE ROOFING BCA part 3 5 1 2

Provide all roofs with first quality roofing tiles Where pitch of rafters is less than 1 2 75 terra cotta Marseilles pattern 1 3 7 Swiss pattern 1 3 3 concrete tiles are used the roof shall be sarked with either 2 ply bituminous felt or double faced aluminium foil covered reinforced fabric as per AS1736 Between 1 3 7 and 1 4 5 slope perimeter of roof shall be provided with an anti ponding board or device to ensure that all water will be discharged into eaves gutter a clear space must be provided between edge of the device and the lowest side of the first batten so as to allow a free flow of water into the gutter Where one section of the roof discharges into a lower section the discharge is to be widely distributed and the roof is to be fully sarked Elsewhere where a spreader is used the roof shall be sarked from the point of discharge to Eaves with a minimum width of 1800mm approved sarking Cover all ridges and hips with capping starters and apex caps necessary and bed all capping and verge tiles on lime mortar and point with coloured cement mortar

**TERRA COTTA TILES**

To be glazed and manufactured in accordance with AS 2049 To be fixed to timber battens with copper wire ties every alternate tile all fixed in accordance with AS2050

**CONCRETE TILES**

To conform to AS1757 and AS1758 and to be produced by manufacturers who provide a comprehensive guarantee and fix in accordance with AS1787 Tiles are to have an end lap of not less than 75mm Where wiring holes are provided every alternate tile in each course is to be tied to battens with approved wire Where holes are provided for nailing every tile in each third course is to be fixed with galvanised flat head nails at least 19mm into tile batten Fixing to be as per AS2050

**CORRUGATED FIBRE CEMENT ROOFING**

To conform to AS1611 and fixed in accordance with AS1562 Pt 2 Minimum pitch of roof is to be 1 8 for large corrugations and 1 11 where the rafter length can be covered with a single sheet Where pitch of roof is less than 1 6 in the case of large corrugations and 1 4 5 in the case of small corrugation end laps shall be at least 225mm and sealed Sheets to be fixed with galvanised round head screws and felt washers set in mastic to each run of battens with side and end laps or other approved method in accordance with manufacturers instructions All necessary accessories are to be provided and the roof is to be adequately birdproofed

**PROFILED STEEL ROOF BCA part 3 5 1 3**

To be material as nominated on drawings All necessary accessories to be provided and fixed according to manufactures recommendations Roof is to be bird proofed Sheet fixings and spacings are to be strictly as per manufacturers recommendations for the design wind speed for the area Design and installation shall be in accordance with AS/NZS 1562 Cover roof and walls of building in full length sheets complete with all necessary flashings and cappings etc Secure as recommended by manufacturer and provide panels of selected translucent sheeting as indicated or directed

**SARKING**

Where sarking is specified or required by any authority the selection of and fixing shall be in accordance with the code of practice as specified in AS1736 for pliable roof sarking and/or AS1903 04 for reflective foil laminates All installations must comply with the requirements of BCA part 3 7 4 in Bushfire prone areas

## FLOORING - BCA part 3 4 3

### T & G STRIP FLOORING BCA table 3 4 3 1

Flooring shall be seasoned and stored in a way to preserve its delivery condition Flooring boards shall be laid in straight and parallel lines with tongues fitted into grooves and cramped together with pressures suited to moisture content and seasonal conditions End joints shall be made on a joist and joints in adjoining boards shall be staggered Flooring shall be kept 12mm clear of walls or wall plates parallel with the direction of laying Boards of normal width of 75mm and less shall be fixed with one nail at each joist and boards over 75mm shall be fixed with two nails at each joist Nails in faces of boards are to be well punched to allow for subsequent sanding and stopping Boards profiled for secret nailing are to be skew nailed through tongues at each joist with nail punched to permit the full entry of the tongue into the groove Flooring is not to be cut in and fixed before roofing is complete external walls sheeted or lined and all external openings covered

**SHEET FLOORING**

The minimum height of sheet flooring above ground level and under floor ventilation shall be in accordance with manufacturers instructions or as required by Council or Lending Authority

Where sheet flooring is used in platform construction and a decorative finish is required it shall be sealed with a water repellent at time of fixing

a) Structural Plywood shall be manufactured in accordance with AS2269 and sheets stamped on the face side with manufacturers name or trade mark Sheets shall be fixed in accordance with manufacturers instructions as approved

b) Particle Board Approved board bonded with phenolic resin to achieve a type A bond as defined in AS1860 for plywood may be used in platform construction or as fitted flooring Boards shall be fixed in accordance with manufacturers instructions as approved The perimeter of flooring should be fully supported by joists or noggins Other approved particle board may be used providing it is a minimum of 2100mm above the ground

c) Compressed Fibre Cement Sheet flooring not less than 18mm thick with density of not less than 1 8g/cm3 may be used in lieu of suspended concrete floors Sheets shall be fixed in accordance with manufacturers instructions adequately flashed and suitably finished

## ELECTRICAL INSTALLATIONS

Provide all labour and materials necessary for the proper installation of electrical services in accordance with the appropriate AS Rules and requirements of the Local Supply Authority Arrange with the supply Authority for connection from supply main to meter board Provide for the proper installation and connect electricity stove/s and hot water unit/s Provide light and power points as indicated on drawings or as directed and in accordance with AS/NZS1680 Provide box to enclose meters in accordance with the requirements of the Authority concerned Arrange for inbuilt wiring for telephone television computer and security installation as required AS/NZS 3000 specifies the minimum requirements including safety provisions

## SMOKE DETECTORS/ALARMS BCA part 3 7 2

Fire/smoke detectors selected by the owner and complying with the requirements of the Local Government Act and/or state or territory regulations must be fitted in the locations required and approved by the regulatory authority and shall be installed in accordance with AS3786

## LIGHTNING PROTECTION

Where lightning protection is specified by the proprietor or required under regulatory provisions it shall be installed in accordance with AS1768

## EXTERNAL WALL CLADDING BCA part 3 5 3

**WEATHERBOARDS OR PROFILE SHEETING** or other cladding as approved by the leading authority shall be fixed and flashed in accordance with manufacturers instructions and to the satisfaction of the lending authority Weatherboards with laps as specified by the relevant AS shall be hardwood pressure treated radiata pine or slash pine cypress pine baltic pine or western red cedar The boards shall have a maximum moisture content of 15% be in long lengths with staggered end joints securely nailed and fitted with angle stops Western red cedar used externally shall be fixed with galvanised or cadmium plated fasteners Boards exceeding 100mm in width shall be double fastened at all bearings All boards shall be primed or sealed all around including rebates and ends before fixing Where vertical boarding is used it shall be fixed to battens at not more than 600mm centres and sarking acceptable to the lending authority placed behind the battens to provide air space and fixed to the frame work with adequate provision for discharge of moisture External boarding shall be in one length or have joints specially designed for external use

**FIBRE CEMENT**
a) Flat Sheeting Fibre cement sheeting shall be not less than 4 5mm thick and close jointed to full height of walling or above sill level where weatherboard dadoes are specified Horizontal joints shall be flashed with 0 42mm galvanised steel turned up 13mm against stud faces and down 12mm over sheet faces lapped 25mm at joints Internal angles of walls shall be flashed with 38mm x 38mm x 0 42mm minimum base thickness galvanised steel angles or bitumen coated metal flashing to full height of studs and lapped 50mm at joints All vertical and horizontal joints and angles shall be covered with timber fibre cement mouldings as approved by the lending authority Trimmers of not less than 75mm x 38mm timber shall be provided between ends of floor bearers to support lower edge of sheeting
b) Profiled sheeting and Weatherboard As approved by the lending authority shall be fixed and flashed in accordance with the manufacturers instructions and to the satisfaction of the lending authority

## INTERNAL LININGS
Line all internal walls not specified as otherwise with Gypsum plaster board fixed horizontally in full length sheets or with staggered end joints to ceiling height Sheets to have recessed edges and of thickness as recommended by the manufacturer for the stud batten or support spacing Fixing is to be with galvanised clouts manufacturer approved screws and/or approved adhesive and be strictly in accordance with manufacturers instructions Set all internal angles Note Where below 1200mm in laundry bathroom and W C and at back of kitchen sink unit and below 1800mm in shower recess only approved water repellent sheet shall be used Note Adhesives must not be used to fix sheets in tiled areas
**FIBREBOARD**
Sheets shall not be less than 4 5mm thick except where tiled Sheets to be tiled shall not be less than 6mm thick Where flush jointing is required fibreboard sheets shall be used fixed and jointed in accordance with manufacturers instructions

## CEILING LININGS
Provide Gypsum plaster board to all internal ceilings unless otherwise specified Sheets to have recessed edges and to be 10mm thick when fixed to ceiling battens/joists spaced at not more than 450mm and 13mm thick for 600mm spacings Fixing is to be with galvanised clouts and/or approved adhesive and is to be in accordance with manufacturers recommendations as approved Provide selected cornices neatly mitred properly fixed and scrimmed and set at all joints in full wall lengths where practicable Gypsum plaster board for ceilings and walls shall be as per AS2589 Sheets of different thickness may be used at other spacings where their manufacture and installation complies with the Deemed to Satisfy Provisions

## PLASTER AND RENDER
To all brick walls not specified as feature brickwork or otherwise (with exception of garage) apply render to minimum thickness of 12mm Render to consist of one part fresh cement to 3 parts clean sand with 10 per cent hydrated lime added Use only whilst fresh All brickwork to be well wetted before plastering is commenced Point up all flashings externally with cement mortar and make good as required after other trades

## JOINERY
Joinery timber is to be of species seasoned and free from those defects that might effect its appearance and/or durability All to be D A R accurately cut and fitted properly mitred and scribed as required and securely fixed All surfaces to be left free of mill marks or other defects filled where necessary and ready for painting or staining Where wood plugging is required it shall be a suitable species properly seasoned
**DOOR FRAMES – BRICK BUILDINGS**
Shall be at least 100mm x 50mm solid rebated properly dowelled to thresholds Mullions shall be 75mm thick and double rebated
***JAMB LININGS** – INTERIOR DOORS ALL BUILDINGS EXTERIOR DOORS TIMBER FRAMED AND BRICK VENEER*
Linings shall be a minimum of 38mm thick solid rebated to all door openings Where return plaster reveals occur linings shall be 75mm x 50mm rebated Alternatively for internal doorways 25mm linings may be used with 12mm planted stops In brick veneer and timber framed construction 12mm clearance shall be provided over jamb linings to external openings Linings to openings not having doors or to have swing doors are to be 25mm thick timber securely fixed Other proprietory linings may be approved by the owner
**DOORS** Fit accurately to door frame Hang external doors with three 88mm steel butts and internal doors unless otherwise specified with two 88mm steel butts External doors shall not be less than 2040mm x 820mm x 40mm thick Where sheeted with plywood waterproof plywood only shall be used All framed glazed doors (external or internal) shall be minimum of 40mm thick Internal doors shall be minimum of 35mm thick and free of warping
**WINDOWS AND FRAMES** In brick veneer construction 10mm clear space shall be left between underside of sill and brickwork In two storey construction with hardwood timber framing the clearance shall be increased to 20mm
**INSTALLATION**
All windows shall be installed in accordance with the requirements of AS2047-48 for Aluminium windows and AS2146-47 for timber windows
**STAIRS, HANDRAILS AND BALUSTRADES BCA 3 9 1 and 3 9 2**
Stairways shall be constructed to the layout as shown on plans with treads of equal dimensions except where shown or where winders are required All risers in any flight shall be of equal height All flights shall have a minimum of 2 and not more than 18 risers Vertical clearances above stairs shall be 2000mm min to soffit of floor or structure above when measured vertically above nose of tread Relationship of riser to going shall be between 1 2 and 1 1 35 unless otherwise directed or as permitted in AS1657 Balustrades shall be provided to all landings decks roofs other elevated platforms where the vertical distance from that level is more than 1 metre above the adjoining floor or finished ground level Height of the balustrade must be a minimum of 1 metre above landings etc and not less than 865mm above the nosings of any stair treads or floor of a ramp Openings in balustrades (decorative of otherwise) and space between treads eg riser opening must not allow a 125 mm dia sphere to pass through Resistance to loading forces of a balustrade must be in accordance with A S 1170 Materials and finish of handrails newel posts and balustrading shall be as directed or agreed by owner Where balustrades are constructed of tensioned wires provision shall be made to maintain tension applied

## ACCESS AND MOBILITY
Where access and mobility requirements are to be addressed in the construction of a new building AS1428 1 General Requirements for Access – New Building Work contains the minimum design requirements to enable access for people with disabilities Revision of the BCA in order to address requirements of the Disability Discrimination Act (DDA) as applies to the construction of buildings with public areas will require that the latest revision of AS1428 should be used

## PLUMBING AND DRAINING BCA part 3 5 2
**EAVES GUTTERS VALLEY GUTTERS AND DOWNPIPES**
Eaves gutters and downpipes of material and finish as nominated on drawings shall be installed as per manufacturers specification to all eaves as required with falls to downpipes in positions shown and to comply with AS/NZS 2179 Valley gutters of material compatible roof covering to comply with BCA 3 5 2 4
**FLASHINGS**
Flash around chimney stacks exhaust flues and wherever else required with approved flashings dressed well down onto roof slopes and taken vertically at least 75mm Wedge step flashing into brickwork joints and point up with cement mortar Eaves gutters valleys and roof flashings shall be selected from materials compatible with each other and the roof covering to prevent bi metallic corrosion (See BHP publications TB8 TB15) Use of lead for flashings gutters downpipes and roofing is prohibited if the roof will collect potable water
**WATER SERVICES**
*Where a reticulated water supply is available all work shall be carried out by a licensed water plumber All water supply installations shall be carried* out in accordance with AS3500 National Plumbing and Drainage Code
**RETICULATED RECYCLED WATER**
Where a utility supplied reticulated recycled water supply is connected as a dual reticulation it is important that no cross connection between the potable and recycled water can occur There must be at least one external tap for each system and the recycled water system must have lilac coloured components Identification markings and signage shall be installed as per AS1319 and AS1345 Recycled water cannot be used for human consumption or contact household cleaning personal washing or irrigation where fruit and crops are eaten raw or unprocessed

**WET ROOM FLASHINGS BCA 3 8 1**
Waterproofing of wet areas shall be designed and installed in accordance with requirements and construction techniques as per AS3740 and appendix for wall/floor combinations All waterproofing installations are to be inspected and approved prior to covering Where waterproof membranes are used in the construction of wet area membranes shall comply with AS/NZS4858
**HOT WATER SERVICE**
All installations must comply with AS3500 4 Provide from H/water unit with selected tubing to points necessary Terminate with taps selected Provide inlet stop cock to hot water unit
**GAS SERVICE**
The whole of the work is to be carried out as per requirements of the Local Supply Authority The plumber is to be responsible for the gas service from boundary alignment including fixing of the meter and cover for same Installations for bottled gas supply shall comply with the relevant standard
**HEATING APPLIANCES BCA 3 7 3** Domestic type Oil Gas and Solid Fuel heater installations shall comply with AS2918 Domestic solid fuel burning appliances – Installation or AS1691 Rules for installation of domestic Oil Fired appliances as applicable Installation of gas fired appliances shall be carried out by a licensed gas plumber
**SEWERED AREAS**
Provide a drainage system from pedestal pan and from wastes of all fittings unless a grey water system is to be installed and connect to the sewer main where shown on site plan all to be in accordance with the rules and requirements of the Authority for Water Supply and Sewerage Provide at least one gully outside the building The Authority Certificate to be produced at Completion of the Work

**UNSEWERED AREAS**
Provide a drainage system from all fittings and from grease trap in accordance with the requirements of the Local Authority concerned Excavate for drains to provide even falls throughout and a minimum cover of 300mm Lay 100mm socketed vitrified clay P V C or HDPA pipes to take discharge from wastes of washtubs bath shower washbasin and grease trap All pipes to be completely jointed with rubber rings or solvent cement as approved All drain lines to be laid so that water is discharged into an absorption trench provided in position shown on plan Provide an approved grease trap with lid in position shown to take the water from kitchen sink Top of trap to be 75mm above finished ground or nearby concrete paving level All drainage work from fittings to the drainage line outside the building to be in accordance with the rules and requirements of the Water Supply and Sewerage Authority for sewered areas That Authority Special Inspection Certificate of the work to be produced by the builder All plumbing and drainage shall be in accordance with the Code of Practice for state or territory and regulating local government area
**GREYWATER REUSE SYSTEMS**
Where a greywater reuse system is proposed the installation shall comply with the following Australian Standards and Codes AS1546 parts 1 and 3 AS1547 NSW Health 1998 AWTS guideline NSW Health 2000 Domestic greywater treatment guidelines and sewered single domestic premises An on site greywater reuse system is not permitted in Reticulated Recycled water areas Domestic Greywater Treatment Systems (DGTS) and Aerated Wastewater Treatment Systems (AWTS) require a certificate of accreditation from NSW Health
**SEPTIC SYSTEM**
In position shown on site plan provide and install septic system as nominated by the proprietor together with a holding tank and length of absorption trench installed in accordance with the manufacturers instructions and the requirements of the Local Authority Installations shall comply with AS1546 part 1
**STORM WATER TREATMENT METHODS**
Provide roof water drains from downpipes and from grates in paving where shown on site plan Drains to be 100mm socketed vitrified clay pipes or PVC laid to an even and regular fall so as to have a minimum cover of 150mm Drains to discharge into street gutter where possible Where outlets are shown within the site they are to discharge at least 3000mm clear of the building into rubble packing 600mm diameter and 600mm deep Acceptable solutions for stormwater drainage to be as per AS/NZS3500 part 3 Stormwater treatment systems should satisfy the following performance requirements
1 Conserve Water 2 Prevent Increases In Flooding/Erosion 3 Maintain water balance 4 Control Stormwater Pollution
Systems suitable for detached dwellings are - Roof/rainwater tanks Detention devices Infiltration devices and Filter strips These are also suitable for multi dwelling developments in addition to Stormwater tanks and Bio retention devices
**RAIN WATER TANKS**
Install rainwater tanks of selected material on slab or support as nominated by tank manufacturer Rainwater tanks may be trickle topped up (max 2litres/minute) from a potable water supply main and internally reticulated A dual supply system should have no direct or indirect connection between the mains potable supply and the rainwater tank supply Inground concrete tanks may be installed as an option with a suitable pressure pump and a testable backflow prevention device as per AS/NZS2845 1 Where an above ground tank is connected to internal reticulation a meter with a dual check valve is to be installed and a visible air gap between the mains supply and the rainwater tank as per AS3500 and AS2845 2 1 (See NSW Health circular Use of rainwater tanks where a reticulated mains water supply is available)
**NOTE** Drain pipes must not be taken through the footings of the building All seepage and soakage water is to be effectively dealt with and diverted clear of the buildings as shown on site plan Trenches for drains where running parallel to the building must not be within 600mm of the footings of the building

## WALL AND FLOOR TILES
For guidance on installation of ceramic tiles see recommendations as set out in AS3958 parts 1 and 2
**WALLS**
Cover the following wall faces with selected glazed tiles
To bathroom generally to a height of 135mm
To bath recess to a height of 1350mm
To shower recess to a height of 1800mm
To enclosing of bath and hobs
To WC to height of one row of tiles or as directed

Above kitchen sink/s and cooking area/s allow for four rows tiles Finish at top and salient angles with round edge tiles Provide vent tiles and selected recess fittings Tiles to be fixed to a backing of Fibre Cement with approved adhesive Areas for tiles can be increased by proprietors direction or as noted on plans
**FLOORS**
Cover floors of bathroom shower recess WC and ES with selected ceramic tiles set in cement mortar or approved adhesive and graded to give an even and adequate fall to floor waste

## PAINTING
All paints stains varnishes and water colours are to be of approved brands as selected Materials used for priming and undercoating are to be the same brand as the finishing paints or as recommended by the manufacturers of the finishes used All finishing colours are to be selected by the proprietor Do all necessary stopping after the priming has been applied Rub down all surfaces to a smooth finish prior the application of each successive coat of paint External joinery or other exposed woodwork to have a clear plastic finish is to be treated with a priming oil containing wood preservative and a water repellent
**EXTERNALLY All** external woodwork to be given one coat of primer one coat of oil based undercoat and one coat of gloss finish enamel or to be given one coat of clear primer one coat of flat clear plastic and one coat of clear plastic
**PRIMING WEATHERBOARDS** Any Pine is to be primed all round as well as on the ends before fixing Hardwood cypress pine radiata pine and oregon are to be primed on external faces including rebates before fixing pressure treated Canada pine is to be primed at ends before fixing
**IRONWORK**
Eaves gutters downpipes exposed service pipes and wrought iron etc to be cleaned and primed and give one coat of gloss paint all round
**FIBRE CEMENT** Clean and prepare all external fibre cement surfaces and finish with two coats of water based paint
**INTERNALLY**
All exposed woodwork in kitchen bathroom laundry WC EC to be prepared primed and then given one undercoat and finished with one coat of full gloss paint or to be stained and finished with two coats of clear liquid plastic as selected
**CEILINGS**
To be given one coat of sealer and two coats of paint The finishing coat of bathroom laundry and kitchen ceilings to be semi gloss (unless directed otherwise)
**WALLS** All rooms except bathroom laundry and kitchen to be given one coat of sealer and two coats of water based paint To bathroom kitchen WC EC and laundry where no tiled or pre surfaced material is required walls are to be given one coat of sealer one coat of undercoat and one coat of gloss oil paint system

## GLAZING BCA part 3 6
All sashes doors fixed lights and other glass in building shall be selected and installed by procedures as set out in AS1288 and/or AS2047 for type thickness and area of glass according to wind loading human impact and other considerations for glazing in frames of timber steel stainless steel aluminium and bronze according to type of frame height of building and glazing compound and for design and glazing of unframed toughened glass assemblies Specific attention should be made to the selection of frame materials glazing location in walls and orientation to the path of the sun for various climate zone Where windows are not shaded by roof eaves or other building projections advice by an approved specialist or manufacturer should be sought to ensure that all installations comply with the Energy Efficiency requirements of the BCA

**FENCING**
Provide paling fence 1500mm height to side and rear boundaries Posts to be 125 x 50mm in sawn approved durable hardwood morticed for two rails and sunk into ground 600mm at maximum of 2700 mm Posts at angles in fencing to be 125mm square Well ram around posts Where rock is encountered posts are to be set in concrete Fit two rows of 75 x 50mm hardwood rails into mortises Cover framing with hardwood palings Double nail to rails at top and bottom Cut line at top and lop corners All timber in ground or concrete to be well tarred or treated with an approved preservative Allow for repairing any existing recommendations of the manufacturer
**FRONT FENCING** *Provide front fencing as directed*

**ALPINE AREAS**
For buildings to be constructed in an alpine area compliance with the requirements of BCA part 3 7 5 is required Alpine areas are areas above Australian Height Datum (AHD) as follows NSW VIC ACT above 1 200 metres AHD TASMANIA above 900 metres AHD For sub alpine areas where significant snow loads may occur see BCA fig 3 7 5 2 Where snow loads may be applied to a building design according to AS1170 3 is required (see BCA 3 11 3)

**EARTHQUAKE**
Earthquake probability shall be determined to BCA3 11 3 and loading requirements designed to comply with AS1170 4

**LANDSCAPING**
The area to be landscaped shall comply with the landscape plan and requirements of the Local Council Authorities Appropriate landscape design will reduce water usage in lawns and gardens by up to 50% Selection of native (indigenous plants suited to the local micro climate along with exotic species from California South Africa and the Mediterranean will normally require minimal maintenance and water use *(BASIX website see table D 2 1 for indigenous plants in various local government areas)*

**CAR PARKING** All car parking and loading bays to be kerbed guttered sealed drained line marked and landscaped Drainage of surface water into neighbouring properties is NOT permitted except where an easement is obtained All car parks shall comply with the provision of Local Council Authorities

**COMPLETION**
The building shall be completed in every trade Sashes doors locks and all other equipment shall be checked and left in a satisfactory operating condition Timber floors shall be at least rough sanded Where fine sanding is specified see CA39 Code of practice for sanding interior wooden floors All plant surplus materials and rubbish is to be removed from site Gutters and drains shall be cleared and the building generally to be left clean and fit for occupation
The Builder is to furnish the Owner with
1 Notification of Completion
2 All Keys for all doors
3 Certificate of termite protection treatment
4 Certificate from Sewerage Authority re sanitary drainage
5 Invoices for all PC items required
It is the responsibility of the builder to arrange any inspections necessary by Local Council Waterboard or Lending Authorities and/or Principal Certifying Authority
*It is the responsibility of the Owner to apply to Local Supply Authorities for connection of Electricity from mains to meter box*

APPROVAL TO OCCUPY MUST BE OBTAINED

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## *BASIX* *The Building Sustainability Index – (NSW only)*

*This is a planning tool that measures the performance of a new dwelling (residential) by comparing its potential to consume less mains water supply and energy than an existing average home*

*Sustainability Indices are assessed for Energy Water Usage and Thermal Comfort The policy also factors in Stormwater reuse and Landscaping but does not score these*

*NSW Government targets of a reduction in mains potable water consumption and reduction in Greenhouse Gas emissions can be achieved by dwelling design and sustainability features These features may include design elements such as recycled water rainwater tanks ***min rated shower heads taps and toilets Heat pump or solar water heaters gas space heaters eaves awnings and insulation of walls ceilings and roofs*

*A BASIX Certificate must be submitted with Development Application Complying Development Certificate and Construction Certificate applications for all of NSW for new homes and for some alterations and additions*

*Data required to Complete a BASIX Assessment is described in the BASIX Data Input checklist and this should be used in conjunction with the BASIX Assessment Tool*

*Extracts from BASIX are reproduced by courtesy of DIPNR*

**Information shown in this specification is intended as a guide only Applicants for DACC and CDC must submit a BASIX Certificate that can be generated in the Department of Planning website *www basix nsw gov au***

***SUGGESTED ENERGY SAVING METHODS CAN BE***
*Use of gas for heating hot water and cooking Both indoor and outdoor clothes drying lines Installing energy saving light bulbs*
*To improve the efficiency of the refrigerator by ensuring there is adequate air passing over the refrigerant coils*
- *The refrigerator would be completely freestanding or at least one side or the top of the refrigeration space is completely open*

***GREYWATER***
- *Ensure that public health and the environment are not adversely affected*
- *Minimise the adverse impact on the amenity of the premises and provide for the reuse of resources*

***GREYWATER DIVERSION DEVICES (GDD)***
*A greywater diversion device must be in accordance with the NSW Health s Greywater requirements*
***DOMESTIC GREYWATER TREATMENT SYSTEMS (DGTS)must be***
- *greywater treatment system device that is accredited by NSW Health in accordance with the DTGS Accreditation Guideline or*
- *An aerated wastewater treatment system (AWTS) accredited by NSW Health or*
- *A facility that is purposed designed for a particular premises and has Local Government (Approvals) as per Regulation 1999*

***THERMAL COMFORT***

***PERFORMANCE REQUIREMENTS ( CAN BE ASSESSED BY THREE DIFFERENT METHODS)***

*Option 1* ***RAPID*** *Meet conditions listed in 10 questions within the BASIX Data Input checklist*
*NOTE only for simple single storey homes (usually) brick veneer dwellings*
*Option 2* ***DO IT YOURSELF (D I Y)*** *tick box questions on Construction type details of floors walls ceilings roof windows and skylights cross ventilation*
*Option 3* ***SIMULATION METHOD*** *Assessments of the thermal performance of the dwelling undertaken through the Simulation method Assessments are to be conducted by an accredited assessor using approved software*

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***PRECONDITIONS*** *The total area of all skylights must not occupy more than 2% of the gross floor area*
***CONSTRUCTION***
*(a) Walls Wall types See wall type diagrams in Specification section insulation R Value*

***CROSS VENTILATION***
*(a) Living area cross ventilation*
*1 The total area of ventilation openings in all living areas must be greater than 12 5% of the floor area of all living areas*
*2 Openings must be provided on opposite or adjacent walls of every living area*
*(b) Bedroom cross ventilation*
*1 The bedroom must contain at least two windows or a window and a skylight which can be opened*

***GLAZING AND SKYLIGHTS***
*(a) Orientation Windows facing different directions have varying requirements to comply with BASIX Thermal Comfort requirements*
*(b) Glazing and skylight types*
*1 Must have the characteristics nominated in Appendix1 Glazing and skylight characteristics (Available on BASIX website)*

***SHADING***
*(a) Eaves and projections*
*1 May be an eave horizontal opaque projection awning or pergola and shall be made of a durable material suitable for external use*
*2 The projection is measured horizontally from the face of the wall/building*
*3 The eave/projection must be located no greater than 2400mm vertically above the sill of the glazing system*
*(b) Vertical adjustable external shading*
*1 An adjustable shading device may comprise of shutters louvers or panels*
*(c) Vertical fixed external shading*
*1 A fixed shading device may comprise of shutters louvers or panels An adjacent building over 5 m in height and less than 3 1 m from glazing sill is equivalent to fixed vertical shading*

*(d) Controlling solar gain*
*1 BLOCKING SOLAR GAIN A shading device must restrict at least 80% of solar radiation at the summer solstice*
*2 PERMITTING SOLAR GAIN An adjustable shading device may be allowed*
*(e) Concessions to shading requirements may be allowed*

***REQUIRED INSULATION AND ROOF COLOURS*** *Lighter coloured roofing has more resistance to Solar gain (see table C2 8 in BASIX website)*
*(a) Insulation Technical and installation requirements for thermal insulation are to be in accordance with the B C A NSW Appendix*
***ROOF VENTILATION*** *Can be increased by Wind driven Ventilators and Gable End vents*

***INDIGENOUS PLANT SPECIES***
*Promote the planting of indigenous plant species to preserve the character of the local environment and promote a balanced ecosystem*
*Ensure that the species selected are adapted to the natural rainfall patterns of the locality*
***PERFORMANCE REQUIREMENTS***
*(a) The indigenous plants for each local government area are set out in Table D 2 1 of the full BASIX Specification on www basix nsw gov au*
*(b) In addition a plant species is considered to be indigenous to a local government area for the purposes of BASIX commitment if the local council for that area states in writing that the species is indigenous to that local government area*

***Generation of a BASIX Certificate can only be made in the NSW Department of Infrastructure, Planning and Natural Resources BASIX Website www basix nsw gov au***

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**ADDITIONAL BUILDING REQUIREMENTS** (All instructions for extra work or additional requirements must be in writing Dated and signed copies of instructions shall be retained by both the owner and the builder)

This is the specification referred to in the Contract dated / /

PROPRIETOR / /

Date for Completion / /

BUILDER / /

Builders Licence No

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MASONRY CONSTRUCTION** | Clay Bricks | ☐ | Face | ☐ | Commons | ☐ | Stone | ☐ |
| | Concrete Bricks | ☐ | Concrete Blocks | ☐ | AAC Blocks | ☐ | AAC Panels | ☐ |
| | Rendered | ☐ | Bagged | ☐ | Painted | ☐ | | |
| **MORTAR JOINTS** | Colour | | Ironed | ☐ | Flush | ☐ | Raked | ☐ |
| **SILLS** | Brick | ☐ | Quarry Tiles | ☐ | | | | |
| **EXTERNAL WALL SHEETING** | Timber Cladding | ☐ | Fibre Cement Cladding | ☐ | Metal Cladding | ☐ | PVC/Vinyl | ☐ |
| | Type | | Type | | Type | | Type | |
| **FLOOR CONSTRUCTION** | Timber | ☐ | Concrete | ☐ | Pre Str Beam Floor | ☐ | Steel | ☐ |
| **FLOORING** | T & G | ☐ | Species | | Compressed FC Sheet | ☐ | Structural Plywood | ☐ |
| | Particle Board | ☐ | **Tiles** Ceramic | ☐ | Terra Cotta | ☐ | Quarry | ☐ |
| **DECKING** | Treated Pine | ☐ | Other | | | | | |
| **WALL FRAMES** | Timber | ☐ | Hardwood | ☐ | Pine | ☐ | H S Galv Steel | ☐ |
| | Structural Steel | ☐ | Off site prefabricated | ☐ | Onsite cut/assembled | ☐ | | |
| **ROOF CONSTRUCTION** | Pitched Roof | ☐ | Exposed Rafters | ☐ | Oregon | ☐ | Hardwood | ☐ |
| | Roof Trusses | ☐ | Raked Ceiling | ☐ | Pine | ☐ | Steel Framing | ☐ |
| | Flat/Skillion | ☐ | | | | | | |
| **ROOF COVER** | Concrete Tiles | ☐ | Terra Cotta Tiles | ☐ | Shingles/Slate | ☐ | Corrugated FC | ☐ |
| | Zincsalume | ☐ | Colorbond | ☐ | Polycarbonate | ☐ | Profile | |
| **THERMAL INSULATION** | Roof/ceiling | ☐ | Reflective Insulation Rating R | | | | Bulk Insulation Rating R | |
| | Walls | ☐ | Reflective Insulation Rating R | | | | Bulk Insulation Rating R | |
| | Floors | ☐ | Reflective Insulation Rating R | | | | Bulk Insulation Rating R | |
| **INTERNAL WALL LININGS** | Gypsum Plasterboard | ☐ | FC Sheeting | ☐ | Timber Panelling | ☐ | Cement Render | ☐ |
| | Face Brick | ☐ | Other | | | | | |
| **WET AREA LININGS** | WR Gyp Plasterboard | ☐ | Villaboard | ☐ | Timber Panelling | ☐ | Laminated Panel | ☐ |
| **CEILINGS** | Gypsum Plasterboard | ☐ | Timber Panelling | ☐ | FC Sheeting | ☐ | | |
| **CORNICE** | Type | | Size | mm | | | | |
| **DOOR JAMBS** | Timber | ☐ | Galvanised Steel | ☐ | | | | |
| **WINDOWS** | Timber | ☐ | Aluminium | ☐ | Type/Manufacturer | | | |
| **FLYSCREENS** | Timber | ☐ | Aluminium | ☐ | Other | ☐ | | |
| **JOINERY** | Timber | ☐ | Species | | Stained/Polished | ☐ | Other | |
| | Architrave Size | mm | Skirting Size | mm | Material | | | |
| | Kitchen Cupboards | | | | Stained | ☐ | Painted | ☐ |
| | Front Door Type | | | | Stained | ☐ | Painted | ☐ |
| | Other External Doors Type | | | | Stained | ☐ | Painted | ☐ |
| | Internal Doors Type | | | | Stained | ☐ | Painted | ☐ |
| | Garage Door Type | | | | Size | mm | Colour | |
| **EXTERNAL STAIRS** | Timber | ☐ | Steel | ☐ | Concrete | ☐ | Brick | ☐ |
| **INTERNAL STAIRS** | Timber | ☐ | Steel | ☐ | Concrete | ☐ | Brick | ☐ |
| | as manufactured by | | | | Balustrade type | | | |
| **ELECTRICIAN** | **Provide** | | Light Points | | Single Switches | | Two way switches | |
| | | Power Outlets | | Single | | Double | | |
| | | Light fittings | | | Smoke Detectors | | Exhaust Fans | |
| **ROOF PLUMBER** | Quad Gutters (size ) | ☐ | Box Gutters | ☐ | Sheerline Gutters | ☐ | | |
| **GUTTERS/DOWNPIPES** | Downpipes 100 x 50 | ☐ | 100 x 75 | ☐ | 100 x 100 | ☐ | Round dia | |
| | Colorbond | ☐ | PVC | ☐ | Copper | ☐ | Zincalume | ☐ |
| | Aluminium | ☐ | Galvanised | ☐ | | | | |
| **WATER SERVICE** | Copper pipe | ☐ | PVC Pipe | ☐ | Flex pipe system | ☐ | | |
| **RETICULATED RECYCLED WATER** | All Reticulation Systems for Recycled Water must have Lilac Coloured components and markings | | | | | | | ☐ |
| **RAINWATER STORAGE TANKS** | Type | | Size | (kl) | Nos | | Pressure Pump | ☐ |
| **STORMWATER STORAGE TANKS** | Type | | Size | (kl) | | | | |
| **HOT WATER SERVICE** | Electric | ☐ | Gas | ☐ | Solar | ☐ | | |
| | Mains Pressure | ☐ | Gravity Fed | ☐ | Cylinder capacity | litres | | |
| **INTERNAL SEWER SERVICE** | Copper | ☐ | PVC | ☐ | | | | |
| **DRAINER** | Sewer connection | ☐ | Septic System | ☐ | Aerated System | ☐ | Greywater diversion | ☐ |
| | PVC pipes | ☐ | Vitrified clay pipes | ☐ | Copper pipes | ☐ | | |
| **FENCING** | Brick | ☐ | Paling | ☐ | Rail | ☐ | Brushwood | ☐ |
| | Front Boundary | ☐ | Side Boundary | ☐ | Rear Boundary | ☐ | Colorbond | ☐ |
| | As manufactured by | | | | Type | | | |
| **POOL** | Type | | Inground | ☐ | Above Ground | ☐ | Pool Cover | ☐ |

***This Schedule is to be fully completed Items applicable should be marked Items with blank spaces will NOT be included in the works***

**PROPRIETOR** **BUILDER** **DATE** / **200**

## SCHEDULE OF RATE / P C ALLOWANCES AND MATERIALS

| | ITEMS | MODEL OR TYPE | PRIME COST |
|---|---|---|---|
| 1 | CONCRETE PIERS TO FOOTINGS | | $ |
| 2 | ROCK EXCAVATION per cubic metre | | $ |
| 3 | AGRICULTURAL DRAINS per lin metre | | $ |
| 4 | STORMWATER | | $ |
| 5 | SEWER CONNECTIONS | | $ |
| 6 | CERAMIC TILES WALL $ PER M2 S/O | | $ |
| | S/O=SUPPLY ONLY FLOOR $ PER M2 S/O | | $ |
| | QUARRY $ PER M2 S/O | | $ |
| 7 | SEPTIC INSTALLATIONS | | $ |
| 8 | GREYWATER TREATMENT INSTALLATION | | $ |
| 9 | BATHROOM VANITY & CABINET | | $ |
| 10 | EN SUITE VANITY & CABINET | | $ |
| 11 | BASIN | | $ |
| 12 | BATH | | $ |
| 13 | TOWEL RAILS | | $ |
| 14 | SOAP HOLDERS | | $ |
| 15 | MIRRORS | | $ |
| 16 | TOILET SUITES | | $ |
| 17 | SHOWER SCREENS | | $ |
| 18 | LAUNDRY TUB | | $ |
| 19 | STAINLESS STEEL SINK | | $ |
| 20 | KITCHEN CUPBOARDS | | $ |
| 21 | OVEN | | $ |
| 22 | HOT PLATES | | $ |
| 23 | STOVE | | $ |
| 24 | DISHWASHER | | $ |
| 25 | EXHAUST FANS | | $ |
| 26 | RANGE HOOD | | $ |
| 27 | HOT WATER UNIT | | $ |
| 28 | SMOKE/FIRE DETECTORS | | $ |
| 29 | PHONE WIRING/FAX WIRING | | $ |
| 30 | T V WIRING/COMPUTER WIRING | | $ |
| 31 | INTERCOM WIRING | | $ |
| 32 | SECURITY INSTALLATION | | $ |
| 33 | AIR CONDITIONING SINGLE UNIT | | $ |
| 34 | INTERNAL VACUUM SYSTEM | | $ |
| 35 | FRONT GATE | | $ |
| 36 | FRONT FENCE | | $ |
| 37 | CLOTHES HOIST | | $ |
| 38 | CONCRETE PATHS per lin metre | | $ |
| 39 | GARAGE DOOR REMOTE CONTROL | | $ |
| 40 | LANDSCAPING (As per Design Supplied) | | $ |
| 41 | UNIT PAVING | | $ |
| 42 | RAINWATER TANKS | | $ |
| 43 | RETICULATED RECYCLED WATER SYSTEM | | $ |
| 44 | | | $ |
| 45 | | | $ |
| 46 | | | $ |

Where there are additional items or different types of the same item a duplicate list should be added and agreed on by the proprietor and builder

NOTE The builder is to allow Prime Costs amounts of items set out in this Schedule above All items to be selected by Owner The Builders tender is to include the provision of all items including the cost of cartage freight fixing and fitting as part of his contract Adjustment for substituted fittings will be made on the basis of the prevailing retail price

**PROPRIETOR** **BUILDER** **DATE** / /

# INDEX – SOUTHspec Standard Specification