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\$ 30.00  
11/5/07 DS  
**FITZGERALD BUILDING CERTIFIERS PTY. LTD.**

199 Pennant Hills Road  
Thornleigh NSW 2120  
ph: 9980 2155  
fax: 9980 2166  
admin@fitzgeralds.com.au  
ABN: 63 119 997 590

## **CONSTRUCTION CERTIFICATE**

### **PCA ENGAGEMENT - page 2**

### **NOTICE OF COMMENCEMENT- page 2**

**Construction Certificate Number** CC 2007/220 **Approval Date:** 10/05/07  
Issued in accordance with the provisions of the Environmental & Assessment Act 1979 under Sections 109C(1)(b) and 109F

**Council:** PITTWATER COUNCIL  
**Development Consent No:** N0058/06  
**Name of Certifying Authority:**  
**Name of Accredited Certifier:**  
**Accreditation Body:**

**Approval Date:** 30.5.07, 12.07  
**Fitzgerald Certifiers**  
**Paul Fitzgerald - No. PO117**  
**DIPNR, 20 Lee Street, Sydney 2000.**

**Applicant:** Franz Gross  
**Address:** 67 Whale Beach Rd,  
Avalon NSW 2107  
**Contact Number:** 9918 2130

**Owner:** Franz Gross  
**Address:** 67 Whale Beach Rd,  
Avalon NSW 2107

**Subject Land:** Lot 155 DP 17189 (No.67) Whale Beach Rd, Avalon  
**Description of Development** – Alterations and additions to the existing dwelling.  
**Building Code of Australia Classification:** 1a **Value of Work:** \$ 150 000

#### **Owner Builder Details**

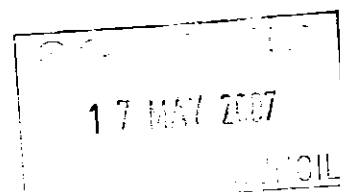
**Name:** F Gross  
**Permit Number:** 318759P  
**Address:** 67 Whale Beach Rd, Avalon  
**Contact Number:** 9918 2130

**Date Application Received:** 10.4.07

**Determination:** APPROVED **Date:** 10/05/07

**Approved Plans:** Plans prepared by N6 Design, Drawing Nos. DA-01A, DA-01B, DA-02, DA-03, DA-04, DA-05, DA-06, DA-07 & DA-08 dated NOV 2005.

Engineers details prepared by Jack Hodgson Consultants Drawing Nos. dated



**CERTIFICATION:**

I, Paul Fitzgerald, as the certifying authority am satisfied that;

- (a) The requirements of the regulations referred to in s81A (5) have been complied with. That is, work completed in accordance with the documentation accompanying the application for this certificate (with such modifications verified by the certifying authority as may be shown on that documentation) will comply with the requirements of the Regulation as referred to in section 81A (5) of the Act, and
- (b) Long Service Levy has been paid where required under s34 of the Building and Construction Industry Long Service Payments Act 1986.

Signed: \_\_\_\_\_

DATED: 10 MAY 2007

**PRINCIPLE CERTIFYING AUTHORITY:**

Name of Certifying Authority  
Name of Accredited Certifier  
Accreditation Number  
Contact Number  
Address

Fitzgerald Certifiers  
Paul Fitzgerald  
P0117  
9980 2155  
199 Pennant Hills Rd, Thornleigh 2120

**MANDATORY CRITICAL STAGE INSPECTIONS: Class 1 & 10 Buildings**

- 1) Commencement of Building Work
- 2) Piers prior to pour
- 3) Footings prior to pouring of reinforced concrete
- 4) Timber frame prior to lining
- 5) Waterproofing of wet areas
- 6) Stormwater pipes prior to backfilling
- 7) Final Inspection - issue of Occupation Certificate

SIGNED: \_\_\_\_\_

DATED: 10/05/07

**NOTICE OF COMMENCEMENT: Earliest Date Building Work Can Commence:**

SIGNED: \_\_\_\_\_

DATED: 10/05/07

**Right of appeal** - under S109K where the Certifying Authority is a Council an applicant may appeal to the Land & Environment Court against the refusal to issue a Construction Certificate within 12 months of the date of issue.

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## **LEVEL 3**

1. The proposal shall fully comply with the Bushfire conditions of development consent and Australian Standard 3959- Construction of buildings in bushfire-prone areas for the relevant requirements for **Level 3 Construction – Extreme Bushfire Attack** as follows:

### **LEVEL 3 CONSTRUCTION – EXTREME BUSHFIRE ATTACK**

#### **Flooring Systems (Clause 3.3.3)**

2. The requirements for a floor shall be one, or a combination, of the following:
  - (a) A concrete slab on-the-ground.
  - (b) A suspended floor, which may be one, or a combination of the following, supported by posts, columns, stumps, piers or poles complying with **Clause 3.4** or walls complying with **Clause 3.5**.
    - (i) A concrete floor.
    - (ii) A framed floor where the underside of any one bearer at any point is greater than 600mm above the finished ground level.
  - (c) A suspended timber floor, framed with timber or metal, where the underside of any one bearer, at any point, is not greater than 600mm above the finished ground level and which has –
    - (i) the subfloor space unenclosed and any timber flooring, bearers and joists of fire-retardant-treated timber; or
    - (ii) the subfloor space fully enclosed, either by a wall that complies with **Clause 3.5.1(a)**, or by the use of non-combustible sheet material which extends for at least 400mm above the finished ground level.

Where non-combustible fibre-reinforced cement sheets are used to enclose the subfloor space, the material shall have a minimum thickness of 6mm and all joints shall be covered or sealed. The non-combustible sheet material shall meet the bottom of the cladding material to ensure there are no gaps on the exterior face of the building.

**Note:** The bearer, joists and flooring shall be of fire-retardant-treated timber or sheeted underneath with non-combustible material.

**Clause 3.3.1** *The following comments refer to the specific items noted and apply to the need to prevent the entry of burning debris to the subfloor space:*

- (a) **Subfloor space:** *It is generally agreed that there is a need to completely enclose subfloor spaces close to the ground as they are prone to attack from burning debris. The chosen cut-off distance of 600mm from the*

*finished ground level to the underside of the lowest structural member is intended to represent the height below which access to extinguish burning debris would be difficult. In such cases of reduced accessibility, the 400mm high barrier is intended to prevent the entry of burning debris to the subfloor space.*

- (b) **Sheeting of the underside of suspended floors:** *There are a number of opinions concerning the ignition risk presented by exposed subfloors. One opinion is that bearers and joists pose few problems because they are large in section. Another opinion is that the underside of suspended floors should be clad with non-combustible cement sheet or equivalent material on the underside of the floor joists or on top of the joists and under the floorboards, to prevent wind-borne burning debris from contacting the floors. Although sheeting the underside can cause ventilation difficulties, it could help protect the floor in cases where items stored in the underfloor space are ignited. Such housekeeping measures were considered, however, to be outside the scope of this Standard and in view of the potential difficulties and additional cost involved, sheeting requirements are not included for Level 1 construction.*

NOTE: The protection of subfloor openings against the entry of burning debris by way of introducing non-combustible material, such as fibre-reinforced cement sheeting to effectively enclose the subfloor space, may conflict with the requirements for termite protection and should therefore, take into consideration the provisions of AS 3660.1.

#### **Supporting Posts, Columns, Stumps, Piers and Poles (Clause 3.4.3)**

3. The requirements for supporting posts, columns, stumps, piers and poles shall be one, or a combination, of the following:
- (a) Non-combustible.
  - (b) Fire retardant treated timber mounted on galvanized metal shoes with a clearance of not less than 75mm above the adjacent finished ground level or paving level.

The above do not apply where the subfloor space is totally enclosed as described in **Clause 3.3.1(c)(ii)**.

**Note:** All timber shall be fire-retardant-treated to full height.

#### **External Walls (Clause 3.5.3)**

4. The requirements for external walls shall be as follows:
- (a) External walls shall be one, or a combination, of the following:
    - (i) A wall having an external leaf of masonry, concrete, pise, rammed earth or stabilised earth.
    - (ii) A framed wall that incorporates either –

- (A) breather-type sarking complying with AS/NZS 4200.1 and with a flammability index of not more than 5 (see AS 1530.2) installed immediately behind the external cladding; or
- (B) an insulation material conforming to the appropriate Australian Standard for that material.

NOTE: PVC cladding is not permitted and all external wall cladding shall be of fire-retardant treated timber.

- (iii) A wall of timber logs that have the butting faces of adjacent logs, gauge-planed, and the space between the logs sealed in a manner that prevents the entry of burning debris and which allows for building movement.

*C3.5.1(a)(iii) There is little field evidence on the performance of timber log construction under attack from burning debris. The requirements for gauge-planing and sealing are considered necessary to prevent the passage of burning debris to the interior of the building.*

#### **Windows (Clause 3.6.3)**

- 5. All openable windows, including louvres shall be screened with corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm in such a way that the entire opening remains screened when the window is open.

*C3.6.1 A maximum aperture size of 1.8mm was selected for mesh to be used as screening in order to facilitate the use of the screen as an insect-screen.*

**Note:** Aluminium mesh shall not be used.

In addition to the above, the following applies:

- (a) Where timber is used, it shall be fire-retardant-treated timber except where protected by non-combustible shutters.
- (b) Where leadlight windows are used, they shall be protected by shutters constructed of a non-combustible material or of toughened glass.

**Note:** Where the windows are not protected by non-combustible shutters, they shall be glazed with toughened glass.

#### **External Doors (Clause 3.7.3)**

- 6. External doors shall be fitted with –
  - (a) weather strips or draught excluders to prevent the penetration or build-up of burning debris beneath the door; and
  - (b) tight fitting door screens fitted with corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

*C3.7.1 A maximum aperture size of 1.8mm was selected for mesh to be used as*

*screening in order to facilitate the use of the screen as an insect-screen.*

**Note:** Aluminium mesh shall not be used.

If leadlight glazing panels are incorporated in the doors, they shall be protected by shutters constructed of a non-combustible material or of toughened glass.

- (a) timber doors shall be fire-retardant-treated or shall have a non-combustible covering on the exterior surface; or
- (b) doors shall be protected by shutters of non-combustible material.

#### **Vents and Weepholes (Clause 3.8.3)**

7. Vents and weepholes shall be protected with spark guards made from corrosion-resistant-steel or bronze mesh with a maximum aperture size of 1.8mm.

**Note:** Aluminium mesh shall not be used.

#### **Roofs (Clause 3.9.3)**

##### *General (C3.9.1.2)*

8. The following general requirements shall apply to all types of roofing systems:
- (a) Timber shakes or shingles shall not be used for the roof covering.
  - (b) The roof/wall junction shall be sealed either by the use of fascia and eaves linings, or by sealing the gaps between the rafters with a suitable non-combustible material.
  - (c) Sarking shall have a flammability index of not more than 5 (see AS 1530.2).

##### *Tiled roofs (C3.9.1.2)*

9. Tiled roofs shall be fully sarked. The sarking shall be located directly below the tiling battens and shall cover the entire roof area including the ridge.

***C3.9.1.1 and C3.9.1.2** Where roofing systems are fully sarked, effectively restricting or excluding airflow, it may be necessary to provide ventilation to prevent moisture (condensation) from occurring in the roof space. If roof vents need to be provided to address moisture, they need to be sealed, to protect against the entry of sparks and embers, with corrosion-resistant steel or bronze mesh having a maximum aperture of 1.8mm.*

##### *Sheeted roofs (C3.9.1.3)*

10. The requirements for sheeted roofs are as follows:
- (a) No fibre reinforced cement or aluminium sheet shall be used.
  - (b) All gaps under the corrugations or ribs of the roofing material where it meets the fascia or wall line shall be sealed or protected –
    - (i) by fully sarking the roof; or

- (ii) by providing corrosion-resistant steel or bronze mesh, with a maximum aperture size of 1.8mm, profiled metal sheet, neoprene seal, compressed mineral wool or similar material.
- (c) All roof sheeting shall be non-combustible and sarked.

Notes:

1. The method of protection in Item (b) (ii) can only be achieved on a roof without valleys and having the deck fixed directly to, but not structurally supported by, the fascia.
  2. It is generally recognised that where compressed mineral wool is used for sealing against bushfire attack or for other purposes, adequate ventilation should be provided to stop condensation on the mineral fibre causing corrosion in the roof sheeting or supporting structure.
- (c) Rib caps and ridge capping shall be sealed in accordance with **Clause 3.9.1.3(b)**, or preformed rib caps or ridge capping shall be used.

Rooflights (C3.9.1.4)

11. The requirements for rooflights are as follows:

- (a) All penetrations of the roof space for the installation of rooflights and associated shafts shall be sealed with a non-combustible sleeve or lining.

**Note:** Thermoplastic material or toughened glass shall not be used as the glazing for rooflights.

Rooflight glazing shall be of wired glass.

AS 1288 and AS 4285 sets out specific requirements for glazing and skylights.

- (b) Vented rooflights shall be provided with corrosion-resistant steel or bronze mesh having a maximum aperture size of 1.8mm.

Roof ventilators (C3.9.1.5)

12. All components of roof ventilators, including the rotary type shall be constructed of non-combustible material and shall be sealed against the entry of sparks and embers with corrosion-resistant steel or bronze mesh having a maximum aperture size of 1.8mm.

Roof-mounted evaporative cooling units (C3.9.1.6)

13. Roof-mounted evaporative cooling units shall only be used if the openings to the cooling unit are encased in corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

**Note:** The evaporative cooler shall be manufactured from a non-combustible material.

<b>C3.9.2 Assemblies such as awnings, pergolas, blinds, coverings and shades,</b>
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*designed to provide shelter to persons, or protect the building from the effects of sun or rain, are not covered by this Standard. The awnings, or similar assemblies, may be located in front of a window or door or over a balcony or deck and may be constructed from metal or a combustible material such as canvas or a thermoplastic material. These assemblies may be fixed or retractable. Awnings and similar assemblies, in many cases, may be added to the building after construction is completed.*

*Building designers and building owner should be aware that potential dangers may be present where the awning or similar assembly is made from a combustible material.*

#### **Eaves (Clause 3.10.3)**

14. All eaves shall be enclosed, and the fascia or the gaps between the rafters shall be sealed.

**Note:** All timber eaves lining and joining strips shall be of fire-retardant-treated timber.

Aluminium shall not be used.

#### **Fascias (Clause 3.11.3)**

15. All materials used for fascia shall be either non-combustible or of fire-retardant-treated timber.

**Note:** Fibre-reinforced cement or aluminium sheet shall not be used.

#### **Gutters and Downpipes (Clause 3.12.3)**

16. Any materials or devices used to stop leaves collecting in the gutters shall have a flammability index of not greater than 5 when tested in accordance with AS 1530.2.

**C3.12** *An alternative approach would be to build gutters and downpipes.*

#### **Verandahs and Decks (Clause 3.13.3)**

17. Verandahs, decks, and the like, forming part of a building shall comply with one, or a combination, of the following:

(a) Slab

A reinforced concrete suspended slab floor, supported by posts or columns complying with **Clause 3.4** or walls complying with **Clause 3.5**, or a slab-on-the-ground floor complying with **Clause 3.3**.

(b) Sheeted or tongued and grooved solid flooring

The requirements for flooring are as follows:

- (i) Compliance with the flooring requirements shall be in accordance with **Clause 3.3**.



- (ii) Where the clearance between the finished ground level and the underside of the fill or is not greater than 400mm above finished ground level, all joints in the flooring shall be covered (above the floor level) or shall be sealed.

(c) Spaced decking

The requirements for spaced decking are as follows:

- (i) The decking timbers shall be fixed with a clearance of not less than 5mm between adjacent timbers.
- (ii) The external perimeter beneath the decking shall not be enclosed nor shall access to the space beneath the decking be impeded.

NOTE: This requirement is designed to ensure that access to extinguish fires and remove burning material is maintained.

- (iii) Any supports for the decking shall be treated as set out in **Clause 3.4**.
- (iv) Decking timbers shall not be allowed to connect with the remainder of the building unless measures are used to prevent the spread of fire into the building;
- (v) All materials shall be non-combustible or where timber is used, it shall be fire-retardant-treated (including any balustrades).

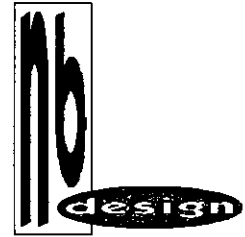
**C3.13.1** *The dangers represented by timber decks is significantly different to other parts of the building such as roofs due to the timber species, method of fixing, elevation and conditions of exposure. For these reasons, timber decking is not excluded.*

*The required spacing, for spaced decking, of at least 5mm between deck timbers is nominal and was selected to allow water to be sprayed up from underneath the deck and reach both the deck surface and adjacent walls. This is facilitated by the external perimeter ground/floor gap not being sealed.*

*These requirements apply to low level verandas and decks even though access for firefighting purposes may be more restricted.*

**Service Pipes (Water and Gas) (Clause 3.14.3)**

18. All exposed piping, for water and gas supplies shall be metal. Pipes of other materials shall be buried to a depth of at least 300mm below the finished ground level.
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30 March, 2007

Dilapidation Report  
Kerb and Gutter  
67 Whale Beach Road  
Whale Beach, NSW

This report is the result of an on-site inspection of the above property taken in March, 2007. This report is to establish a base line condition of an existing kerb and gutter prior to works being undertaken to 67 Whale Beach Road. This inspection is not comprehensive in that it is not intrusive. Underlying problems not readily viewed by site were not included in this inspection.



A view of the driveway from the centre of Whale Beach Road, looking East. Evidence of a major crack through the middle of the gutter, kerb cut and footpath. Cracks either side of the joints to the footpath.

Council  
Copy

This is the plan/spec. referred to in  
Fitzgerald Building Certifiers Certificate  
Cert. No: 2007/20~  
10.5.07  
Paul Fitzgerald Accreditation No 117

NB Design Pty Limited  
ACN 077523481 ABN 50077523481

996 Settlers Road Central Macdonald, NSW 2775  
Tel (02) 4568 2282 Fax (02) 4568 2272



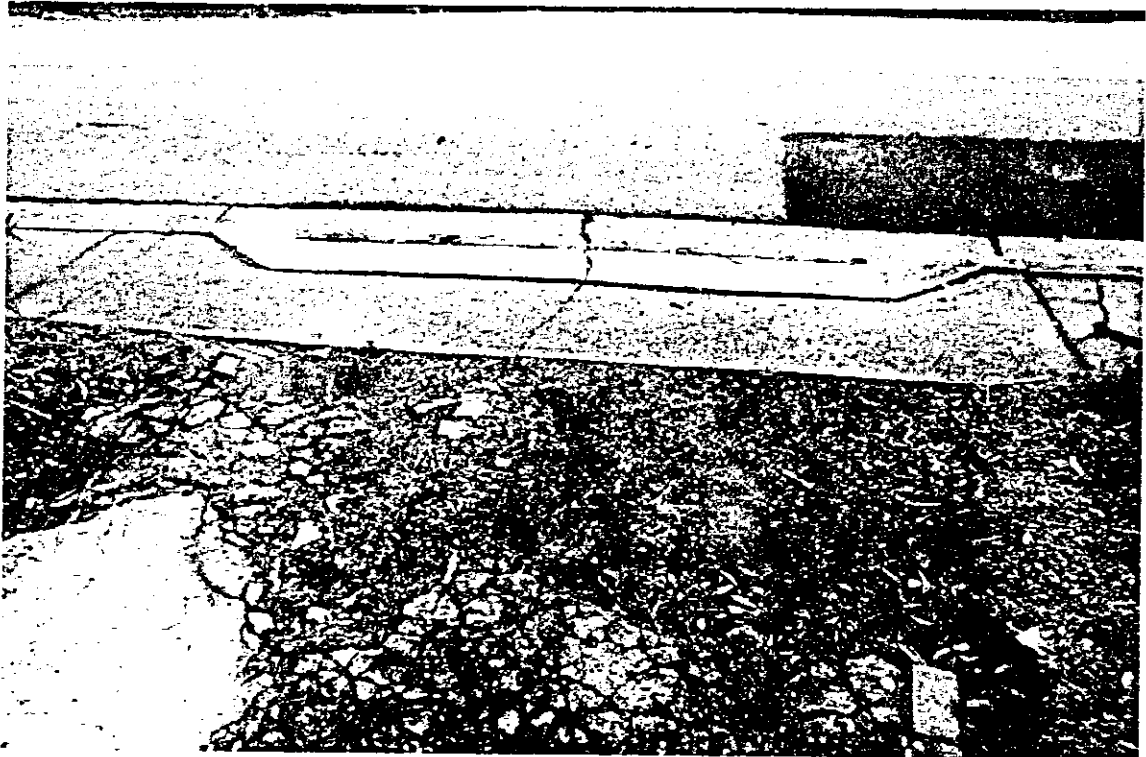
View from the North side of the driveway looking South. Cracks visible in the footpath before the joint of the crossing. Major crack in the middle of the kerb cut, gutter and footpath



View of driveway looking North from the South side. Crack in footpath South of the driveway joint. Crack in middle of crossing through gutter, kerb, and footpath.



Closer view of major crack in gutter, kerb and footpath through middle of crossing.



View from East side in driveway looking West. Major crack visible through middle of crossing in gutter, kerb and footpath. Cracks in footpath visible on either side of joints to crossing.

Concrete to footpath, kerb and gutter are all quite weathered. Chip out of the edge of footpath along driveway edge evident.



FRANZ XAVER GROSS  
67 WHALE BEACH ROAD  
AVALON 2107

HOME BUILDING ACT 1989  
OWNER BUILDER PERMIT

Permit :318759P  
Receipt:AA2356624

Issued:14/03/2007  
Amount:\$135.00

**Building Site:**

LOT 155, 67 WHALE BEACH ROAD, AVALON 2107

**Authorised Building Work:**

DA 0058/06 EXTENTION TO EXISTING HOUSE  
ENLARGING FLOOR AREA AND KITCHEN AREA & BEDROOM  
DA00812/06 CONSTRUCTION OF A SEPARATE STUDIO

ISSUED BY PITTWATER COUNCIL

Should the property be sold within 6 years of completion of the work it will be necessary to obtain home warranty building insurance from approved insurers if the value of the work was greater than \$12,000. A certificate of insurance must be attached to any contract for sale.

You should obtain professional advice from general insurers regarding public liability and property damage cover, etc.

Note: This permit is only valid when an official receipt has been imprinted.

If payment is made by cheque, the permit is conditional on the cheque being met at presentation.

  
Issuing Officer

\*\*\*\*\* END OF PERMIT \*\*\*\*\*

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# Specifications

for

RESIDENTIAL DWELLING  
ALTERATIONS AND ADDITIONS

to

**67 WHALE BEACH ROAD, WHALE BEACH**

in the

Municipality of Pittwater

for

Sam and Sema  
of  
67 Whale Beach Road, Wahle Beach

**Council  
Copy**

This is the plan/spec. referred to in  
Fitzgerald Building Certifiers Certificate  
Cert. No: 2007/220  
10.5.07  
Paul Fitzgerald Accreditation No 117

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# Specifications

67 Whale Beach Road, Whale Beach

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## A. PRELIMINARIES

### A1 General

It is hereby agreed that all clauses of the New South Wales acceptable standards of construction as issued by the lending authority shall be indicated in and form part of the general specification relating to the proposed building and where there is any difficulty or variations between the conditions contained in either, the N.S.W. Acceptable Standard of Construction will prevail at all times.

### A2 Interpretations

**Approved** - means approved by the Proprietor and where there is a lending body, also by that lending body.

**Proprietor/s** - means the owner/s or other party or parties entering into Agreement with the Builder.

**Provide** - means the supply and complete building in of materials, fittings or other items indicated.

**Plans on the job** - the Builder will maintain on the job a legible copy of the plans and specifications bearing the approval of the Authority concerned.

**Dimensions** - figure dimensions take preference to scale.

### A3 Site Sign

The Owner shall display in a prominent position a sign showing the Owners name and the Lot Number before building commences. The builder upon commencement of the works shall display a site sign showing the name of licensee, the words 'Licensed (or Licd) Builder' and the number of the full licence.

### A4 Levels

Contractor is to visit the site, note level and allow any minor variations before the contract is signed as no allowance will be made once the work is commenced, except when provisional allowances have been made.

### A5 Surveys

The land shall be block and peg surveyed before work commences. The cost of the survey shall be included in the price unless specified otherwise and any further surveys required will be met by the allowance shown on the P.C. Schedule.

### A6 Insurance

Builder to insure as required against fire, storm and tempest in joint names of Owner, Builder and Lending Body. Builder to insure as required under Workers Compensation and Employers Liability Acts.

### A7 Notices and Fees

The Builder shall comply with all regulations of local government.

### A8 Variations

Variations to drawings, specifications or services may not be made unless by agreement or otherwise in accordance with the building contract, and must be authorised in writing by the owner and agreed to by the builder. Special conditions or services required by Local Government or other authorities that vary the plans and specifications shall also be treated as extra work.

# Specifications

67 Whale Beach Road, Whale Beach

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## A9 Items Supplied by Owner

For all items stated in the Specification to be supplied by the Owner or where during construction of the dwelling it is agreed between the Owner and the Builder that the Owner shall supply any particular item, it is the responsibility of the Owner to arrange for delivery, payment, protection against damage and theft of such item.

## A10 Materials

Generally to be sound and free of defects that might effect strength, durability and or external appearance.

## A11 Workmanship

The work is to be carried out in a tradesman like manner.

## A12 Access by Owner

The Owner or his representative will be allowed access to the building during normal working hours of the Builder or as otherwise agreed.

## A13 On Completion

The Builder on completion will remove all surplus materials and construction debris from the site. The floors and windows will be cleaned, sashes and doors eased and locks oiled, gutters and drains cleared and all fittings tested.

## A14 Possession

The Owner shall not occupy the completed building until the Builder has received a signed release from the Owner and settlement of the final account, then the Builder will provide the Owner with all keys properly labelled.

## A15 Defects Liability Period

The Builder shall notify the Owner when the works are completed and ready for occupation. The Owner shall within fourteen days notify the Builder in writing of any items he considers require attention. These items shall be rectified before occupation of the Building. Other defects or faults which may appear shall be notified to the Builder in writing within a thirteen week period from the date completed. The Builder shall not be responsible for any normal settlement shrinkage.

## A16 Site Preparation

The Builder, unless otherwise agreed, shall clear the Building Site, grub all stumps, roots etc. to a minimum distance of three metres outside the building lines (or to the boundaries of the allotment), remove spoil and provide all weather access for the Builder from the main thoroughfare to the proposed Building for Builders vehicles and deliveries. Sediment fencing to be erected per hydraulic engineer's drawings as required by the staging of the project. Review drawings and erect as required for construction stage.

## A17 Amenities

The Builder shall comply with all Government and Local Government requirements in this regard.

## A18 Water

Where water is not available at the commencement of the works, the Owner, unless otherwise agreed, shall arrange for sufficient supply for building purposes.

# Specifications

67 Whale Beach Road, Whale Beach

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## A19 Electricity

Power is to be made available by the owner for building purposes. In the event that power is not available, the provision of same by the builder shall be an extra to the contract. In the event of the supply authority requiring any special installation work necessary to provide power to the building, this will be an extra to the contract.

## A20 Rock Excavation

Should rock of any type be encountered in excavation, the cost of removal will be an extra pursuant to the provisions of the contract. The Owner is to be notified when rock is encountered.

### WARNING

The parties must read Rock Excavation subject to reference clause 13 of BC4 Contract which is not altered by the above clause.

## A21 New Product Techniques

Where products or techniques not mentioned in this specification are shown on plan, they may be used if fixed or used in strict accordance with manufacturers instructions and only if approved by relevant authorities.

## B. SITE CLASSIFICATION

### B1 Site Classification

Site Classification is the basis for determination of all footing requirements. All sites shall be classified in accordance with the requirements of A.S. 2870.1 - 1988.

Refer engineer's report for site classification.

## C. EXCAVATOR

### C1 Site Excavation

Excavate the site according to levels shown on the plans (Refer P.C. Schedule and Clause A20).

### C2 Trenches

Excavate in natural ground to a minimum depth of 500mm for Class A for all beam footings, for walls to secure solid bottoms and even bearing throughout (Refer D3.1).

Bottoms to be levelled and stepped as necessary. At the completion of foundation, wall and piers, all excavations to be filled, well rammed to ground level and surplus soil spread evenly over the site unless otherwise directed by and agreed with in writing by the owner. Should pier and beaming or other variations to footings be required, this will be charged as an extra to the contract price. The Builder will obtain approval of trenches and reinforcement pursuant to the requirements of the relevant authorities before pouring concrete.

## D. CONCRETOR

### D1 Generally

Concrete is to consist of 4 parts blue metal or other approved aggregate, 2 parts clean sharp sand, 1 part fresh Portland cement, and sufficiency of water, all well mixed mechanically. Concrete supplied ready mixed of an approved strength may be used.

# Specifications

## 67 Whale Beach Road, Whale Beach

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### D2 Structural Engineer

Where reinforced concrete work is designed by a Structural Engineer, provision of the foregoing clauses will not necessarily apply. All such concrete and reinforcement shall be placed in accordance with such detail.

### D3 Concrete Footings

Provide reinforced concrete footings, as under external and fender walls. Refer to bricklayer for foundations under piers and sleeper piers. Unless indicated otherwise, foundation concrete will be 20 MPa strength.

#### D3.1 Footing Design

##### **Design of Footing Systems**

Footing system shall be selected to suit the site classification and in accordance with the following table and shall in all cases comply with the requirements of A.S.2870.1 - 1988.

#### D3.2

These designs shall not apply for -

- (a) Footings longer than 25m.
- (b) Two storey construction with a suspended concrete floor at the first floor level or unless approved by a Practising Consulting Structural Engineer.
- (c) Support of columns or fireplaces or other concentrated point loads or unless approved by a Practising Consulting Structural Engineer.
- (d) Buildings including wing walls or masonry arches unless they are detailed for movement in accordance with

Cn. 9 "Articulated Walling" published by the Cement and Concrete Association of Australia.

#### D3.3

Separate footing shall not be used unless the construction support is structurally isolated from the rest of the building.

#### D3.4

Partial Rock Foundation.

Where part of the footing is on rock and part is on soil, the design shall be referred to a Practising Consulting Structural Engineer.

#### D3.5

Rock Outcrop.

Where a footing encounters a single local rock outcrop or floater over a length less than 1m, its depth can be reduced by up to one third provided that the amount of top and bottom reinforcement is tripled and extended 500mm past the section with reduced depth.

Alternatively, the footing can be stepped or raised provided the structural stiffness is preserved.

Concrete cover on steel - 50mm side and top, 60mm bottom. Stirrups W8 hard draw wire spaced at not more than 900mm centres. Footings are to be set centrally under the walls, where practicable, and run continuously under openings with overlap of 600mm where steps occur.

Any additional work required on the footings other than as stated in this clause (e.g. Pier and Beams) as may be directed by the Local Council or Lending Authority will be chargeable to the Owner where at the direction of the Local Council or Lending Authority it becomes apparent that an alternative footing is required due to nature of soil or terrain, then such alternative footing shall be designed by a Consulting Structural Engineer.

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## D4 Pier & Beam Footings

Piers shall be of concrete in solid column form or as otherwise designed and nominated by the structural engineer. Piers must in all instances be taken to bottoms approved by the supervising structural engineer.

Beams must be reinforced concrete and a level bearing on piers. Architect's or structural engineer's design specified detail indicating dimensions of beams, piers and reinforcement and pier centres may be required by the Lending Authority.

## D5 Solid Rock Foundations

As specified under D 3.4.

## D6 Concrete Floors

Concrete floors if shown on plan to a detached laundry, detached WC or EC, garage and carport and wherever else shown on the drawings to be laid on levelled solid ground, well rammed and a minimum thickness of 100mm. Provide concrete floors to bathroom, laundry, patio, terrace, landing and WC if shown on the drawing (Refer F3 for detail).

## D7 Screeding

Concrete floor where indicated on plan top to be screeded with good fall to outlets, or level as required.

## D8 Paving

The Builder is to provide concrete paving as shown on plan, to be of concrete, as previously specified and surface finished in one operation. Garage floor and car tracks 100mm thick, and paths 75mm thick. Paving to be laid with bituminous felt jointing strips, not more than 2 metres apart and to full thickness of concrete and rendering to be "V" jointed over same. Prepare for and lay paths to even grade true to line or curve. All concrete surfaces requiring other finishes to be left off screed.

## D9 Slab-On-Ground Concrete Floors

All concrete floor slabs where required to be on excavated ground, or on solid filling, shall be minimum 100mm thick and properly graded to outer edges or to suitable outlet where required. These slabs shall have reinforcement consisting of F72 hard drawn steel reinforcing fabric set 38mm from top of concrete. The concrete slab is to be laid on a moisture proof membrane with 50mm sand bed under. All membrane joints to be lapped

and joined with suitable tape or adhesive. Turn up 150mm at edges of slab at wall abutment. Levels of these floors shall be above adjacent ground surface to a minimum two brick course step down from top floor height and drainage shall be provided so as to ensure no accumulation of run-off or seepage water. In any event to comply with Cement and Concrete Association's code or Engineer's detail.

## E. BRICKLAYER

### E1 Workmanship

Set out as shown on scale drawings, build to gauge to suit bricks used, maintain bond, grout all joints in solid mortar. Bricks to be wetted before laying, where required. Footing courses to be grouted solid with cement mortar. All brickwork to be properly bonded, laid in full bed and all perpends filled, except where required for weep holes (see D15). All piers to be built solid and each course grouted as the work proceeds. Carry all work true and plumb to even gauge and in level courses to the full height and thickness required.

# Specifications

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E2 Bricks  
Bricks are to be as selected to match existing.

E3 Precast Concrete Blocks  
These blocks may be used for building purposes, feature walls or screen walls as shown on drawings and are to be manufactured in strict accordance with the Standards Association standards for Concrete Block for Masonry Construction or Concrete Bricks, and are erected in accordance with the manufacturer's instructions. Concrete bricks or masonry units shall be manufactured in accordance with AS 2733. Concrete bricks or masonry units shall not be wetted in any manner prior to laying and at cessation of each laying period. The top course shall be covered to prevent moisture entering the bricks or units. They shall be protected from the weather until built into position by stacking free from contact with the ground and covered with some suitable material arranged to permit air circulation through the stack. Block work construction of concrete masonry units shall comply with AS 3700.

E4 Sand  
To be clean, sharp and free from salt and/or vegetable matter.

E5 Cement Mortar (Excluding Concrete Masonry)

Location	Portland Cement	Parts by Volume Hydrated Lime of Lime Putty or Approved Product	Fine Aggregate (sand)
Below dampcourse	1	1	6
Above dampcourse	1	2	9

E6 Bonds & Joints  
Brick to be laid in stretcher bond unless otherwise specified. Where stack bond is used, brickwork is to be reinforced with "Bricktor" or similar approved material in every fourth course. Joints in faced work to be raked, struck or ironed unless otherwise directed.

E7 Brick Walls, Piers & Engaged Piers  
Bearers piers of brick, solid filled concrete masonry units or concrete shall be built to a minimum of 200mm x 200mm up to 1800mm high, spaced at not more than 1800mm centres where 100mm x 75mm hardwood bearers are used. If any peers exceed this height, the additional lower portion thereof shall be increased by a minimum of 50mm all round. Tops of piers shall finish accurately at exact levels to give full bearing to bearers.  
Engaged piers to a minimum of 200mm x 90mm spaced at not more than 1800mm centres shall be bonded to all foundation and fender walls of either brick or masonry to support bearers and at similar centres to stiffen walls. 75mm to 110mm unsupported brick walls over 3000mm high shall be certified by an Engineer as to their structural adequacy. All walling which acts as a retaining wall shall be designed as such and full particulars, including seepage control, shown on drawings.  
  
Pipe columns or other steel supports may be used in lieu of masonry supports. Suitable fixings sealing the tube shall be welded to both ends for fixing to footings and to bearers or beams.

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### E8 Brick Veneer Buildings

External walls shall have one leaf of brickwork providing a clear cavity of not less than 25mm from timber frame. Construction of outer leaf masonry or concrete shall have no gaps of greater than 1.8mm. In two-storey constructions where hardwood timber is used in each floor framing, the clear space shall be 20mm on the first floor. For slab-on-ground construction, it will not be necessary to provide the above clearances in single-storey buildings but in two-storey construction a clearance space of 10mm shall be provided on the first floor. All load bearing framed walls and jamb studs to openings over 1800mm wide and posts carrying point loads shall be adequately supported on piers.

### E9 Wall Ties

Wall ties for brick and brick veneer buildings shall be corrosion resistant and suitable for the environmental conditions of the building location. Ties shall be spaced at a maximum of 600mm apart in both directions and at 300mm around openings and edges of brickwork in accordance with AS 3700 - 1988 and have a duty classification as required by AS 2699 - 1984.

Wall ties, cavities and vermin-proofing shall be free from mortar droppings. Brick veneer buildings shall have wall ties set staggered, sloping downwards towards the outside and secured to wall studs.

### E10 Timber Frame Buildings

Curtain or fender walls shall be one leaf thick and where required, engaged piers as previously described, shall be provided.

No PVC external cladding is to be used and timber external cladding is to be fire-resistant timber. Sarking with a flammability index of not more than 5, installed immediately behind the external cladding allowing gaps no greater than 1.8mm and has any cladding less than 400mm above the adjacent finished ground level, or horizontal projections from the wall surface having an angle less than 18 degrees to the horizontal and being greater than 110mm in width from the wall surface.

### E11 Veneered Walls

All external veneer walls to be built in brickwork using stretcher bond and compo mortar from dampcourse upwards. Tie veneer to timber framing with approved galvanised wall ties every second stud and every fourth course. Construction of outer leaf brickwork shall have no gaps of greater than 1.8mm. Clean cavities on completion and leave weep holes at dampcourse level.

### E12 Lintels

Provide mild steel angles or bars over all brick openings, all having 90mm bearing at each end. All angles and bars in external walls to be primed or hot dip galvanised before fixing. Engineering tables for the use of steel beams and lintels are available from the Newcastle MBA.

### E13 Dampcourse

On all brickwork, all level not higher than bottom of floor bearers, provide a continuous run of approved dampcourse material to full width of wall thickness, and to engage piers and place under all ant capping. Dampcourse material is to be run in long lengths, lapping 150mm at joints and full width at all intersections. To walls 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 and laundry.

### E14 Ant Caps/Termite Control

Continuous ant capping shall be provided at level of underside of bearers, over all foundation walls and piers, sleeper piers and fender walls, etc. To be 0.45mm galvanised iron, projected a minimum of 38mm all round and turned down at angles of 1:1 slope. Provide approved proprietary termite barriers and controls which comply with AS 3660.

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## E15 Sills

Unless otherwise noted on plans, sills shall be brick on edge type with adequate fall.

## E16 Flashing

Build in under all window sills flashing of approved material, to be turned up 25mm at back of sill and 50mm at each end of same. Flashing to be bent down across cavity and built 25mm into outer leaf of external wall.

Approved flashing is to be built in over all exposed window and external door openings. Where openings are under eaves projecting not less than 300mm, omission of this flashing may be approved. Provide flashing over meter box.

## E17 Weep Holes

Perpend joints shall be left open in external brick walls spaced at approximately every 600mm immediately over flashing to all exposed openings and above chimney tray, also to brick retaining walls and fender walls, etc., as required or directed.

Weepholes shall be fitted with ember guards made from non-combustable material, corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

## E18 Vermin Proofing

In brick veneer constructions to be a continuous strip of 11.8mm mesh galvanised wire netting fixed to bottom plate and carried across the cavity, and built into brickwork. This can be omitted in second storey construction. All wire to be left free of mortar droppings.

## E19 Ventilation

**Adequate Access** - Adequate Access to the entire under-floor area shall be provided.

**Below Floor** - The space between the ground and the underside of the floor shall be thoroughly ventilated and cross ventilated by means of suitable and sufficient air bricks in external walls, or by other effectual methods to provide evenly distributed openings set in the external walls having an unobstructed area of not less than 21mm x 100mm or equivalent per 1000mm run of external wall. Openings of at least 200mm x 200mm shall be left in all internal walls between all engaged piers and full area left under doorways. Similarly, ventilation shall be provided under verandahs and/or suspended concrete floor slabs and no section of the under floor area shall be constructed in such a manner that it will hold pockets of still air. Vents shall be fitted with ember guards made from non-combustable material, corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

Provide new vent under existing study.

## E20 Brick Steps

Alternative to concrete steps as specified under "Concretor" and "Precast Concrete Steps" brick steps may be built to match foundation walls.

To be built solid or, where side walls are provided, on well-consolidated filling. Treads to be a minimum of 230mm wide, risers a maximum of 175mm.

## E21 Completion

Clean all exposed brickwork using approved method. Wash down with clean water and leave free from cement and mortar stains.



# Specifications

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## E22 Foundation Door

Provide access door if required, built into brickwork below bearer height. Door to be approximately 600mm wide and fixed with a suitable pad bolt.

## F. CARPENTER

### F1 Timber Generally

Timber shall comply with the provisions of AS 1684, and AS 3959 and be of the class specified; reasonably straight grained and free from those defects which might affect its durability and/or strength. Sizes of timber for constructional purposes to be nominal size mentioned with allowable tolerances as provided by the appropriate standard issued by the Standards Association of Australia. Scantlings to be in long lengths, accurately cut and fitted, well spiked and securely fixed.

**Note:** In the whole of Section F as an alternative to the timber sizes specified, timber framing may be constructed in accordance with the provisions of the Light Timber Framing Code, or NSW Timber Framing Manual.

### F2 Floor Framing

All floors not specified to be concrete are to be framed at level shown with hardwood. Flooring within 600mm of ground level shall be fire retardant timber. Plates and bearers are to be laid true and level.

The sub-floor shall be fully enclosed with corrosion-resistant steel or bronze mesh or perforated sheet with maximum aperture size of 1.8mm and supported on non-combustable or fire-retardant timber framing – refer engineer's details.

Provide 100mm x 75mm bearers set on the edge of walls and piers as already specified at maximum 1,800mm centres.

Provide 100mm x 38mm hardwood joists continuous over two or more spans or 100mm x 50mm joists supported at two points only (with double joists under walls) set on edge at maximum of 600mm centres and fix to plates and/or bearers by double nailing at each crossing. Joists to be finished true and level.

Provide suitable centres over wider areas where shown on plan.

Unsupported spans exceeding 2,700mm to have 50mm x 50mm herringbone strutting or solid blocking spaced at maximum of 1,800mm centres. For spans in excess of 4,800mm, an Architect's or Engineer's certificate as to structural adequacy is required. Refer engineer's details.

### F3 Flooring

Suitable seasoned tongue and groove flooring with a finish thickness of joists at 600mm centres - 25mm shall be laid on joists, tightly cramped, with every board nailed at each bearing with nails punched below surface. Boards of nominal width of 75mm shall be fixed with at least one nail at each joists, and boards exceeding 75mm nominal width with two nails at each joist.

All flooring used in platform construction shall be sealed with a water repellent at time of fixing.

When flooring is to be used and finished for decorative purpose, it shall not be laid until walls and roof are in a waterproof condition.

Flooring (or timber decking) laid in an exposed position, e.g. verandahs or decks, shall be nailed with galvanised nails.

NOTE: See Addenda for type of flooring to be used.

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**Sheet flooring:** Minimum height of sheet flooring above ground level and under floor ventilation shall be according to manufacturer's instructions.

**Structural plywood:** Shall be manufactured in accordance with AS085 or AS089 and sheets stamped on the face side with manufacturer's name or trademark. Sheets shall be fixed in accordance with the manufacturer's instructions.

**Particle board:** Board approved by the lending authority and bonded with phenolic resin to achieve a type "A" bond as defined in AS090 for plywood may be used in platform construction or as fitted flooring. Boards shall be fixed in accordance with manufacturer's instructions. The perimeter of flooring shall be fully supported by joists or noggings. Other particle board flooring approved by the lending authority may be used providing it is a minimum of 2,100mm above the ground, well ventilated and the building completely weatherproof prior to fixing of the floor.

**Compressed fibre cement or approved product:** Sheet flooring not less than 18mm thick at a joist spacing of 600mm, or 15mm thick at a joist spacing of 450mm with a density of not less than 1.85g/cm<sup>3</sup>, may be used in lieu of suspended concrete floors. Sheets shall be fixed in accordance with manufacturer's instructions to floor joists, adequately flashed and suitably finished.

**Deck Flooring:** Deck flooring to be of non-combustable material meeting AS3959 requirements, and suitable for tile installation.

## F4 Wall Framing

Plates are to be trenched to a depth of approximately 10mm to provide uniform thickness where studs are to be fixed. Where plates are machine gauged to a uniform thickness, trenching may be omitted. Each wall section is to be diagonally braced and studs are to be trenched accurately to receive braces which are to finish flush with the faces of the studs. Wall framing is to be seated on top of floor joist erected plumb and straight, and securely fastened at all parts.

**Bottom and Top Plates:**  
For 100mm studs provide 100mm x 50mm plates.

For tiled roofing, where roof trusses are placed more than 50mm from a wall stud, the thickness of the top wall plate shall not be less than 75mm.

**Studs:** To single storey or upper storey of two-storey building and not exceeding 3,000mm in length, provide 100mm x 38mm or 75mm x 50mm.

To lower storey of two-storey building and not exceeding 2,700mm in length, provide 100mm x 50mm (F4) or 100mm x 38mm (F8).

Well block and securely fasten studs at all wall angles and intersections. Studs to each side of openings to be of thickness shown below.

Clear opening	THICKNESS OF STUDS	
	For single or top storey	For lower or two storey
Up to 900mm	50mm	50mm
1,800mm	50mm	75mm
3,600mm	75mm	100mm

Studs are to be checked to receive heads over openings and trimmers under windows.

**Heads:** To be approved, timber must have a stress grade of F8 or better. Where depth exceeds 150mm, timber is to be seasoned. Heads are to be placed on edge and to be checked or housed into studs and be not

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less than the sizes indicated below. Where practicable and for openings 3,600mm and over, heads are to be carried through and fixed to the adjoining stud or a secondary stud.

Where supporting conventional roof construction:

Span (mm)	For tiled roof construction	For sheet roof construction (metal or fibre cement)
Up to 900	75 x 50 or 100 x 50	75 x 50
1,200	75 x 50 or 100 x 50	75 x 50
1,500	125 x 50 or 100 x 100	100 x 38
1,800	175 x 50 or 150 x 75	125 x 50 or 100 x 100
2,100	200 x 50 or 175 x 75	150 x 50 or 125 x 75
2,400	225 x 50 or 200 x 75	175 x 50 or 150 x 75
2,700	250 x 50 or 225 x 75	200 x 50 or 175 x 75
3,000	300 x 50 or 250 x 75	225 x 50 or 200 x 75

For Sheet Roof Construction (metal or fibre cement)

Span of truss (mm)			
Span	6,000mm	7,500mm	9,000mm
Up to 1,200mm	100 x 50	125 x 50 or 100 x 75	125 x 50 or 100 x 75
1,500mm	125 x 50 or 100 x 100	150 x 50 or 125 x 75	150 x 50 or 125 x 75
1,800mm	150 x 50	175 x 50 or 150 x 75	175 x 50 or 150 x 75
2,100mm	175 x 50 or 150 x 75	200 x 50 or 175 x 75	200 x 50 or 175 x 75
2,400mm	200 x 50 or 175 x 75	225 x 50 or 200 x 75	250 x 50 or 200 x 75
2,700mm	225 x 50 or 200 x 75	250 x 50 or 225 x 75	300 x 50 or 225 x 75
3,000mm	250 x 50 or 225 x 75	300 x 50 or 250 x 75	300 x 75 or 250 x 75

**Bracing:** Diagonal braces to be 50mm x 15mm to each wall section, or other approved braces.

**Nogging (Bridging):** To be fixed between studs at not more than 1,200mm centres. Where wall cladding is to be jointed thereon, noggings are to be 38mm thick and finished flush with the face of the studs. Where cladding is not be jointed in such a manner, nogging may be 38mm thick and finished not more than 6mm behind the face of the studs.

### F5 Ceiling Joists

Use 100mm x 38mm hardwood at maximum 600mm centres. Fix trimmers to ceiling joists where required at maximum 600mm centres. Where two lengths of joists are used, they are to be lapped and well spiked together over partition walls. All to be secured to hangers with ceiling dogs. Ceiling joists, where

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## 67 Whale Beach Road, Whale Beach

practicable, are to be at right angles to ridge and securely fixed to rafters to form a tie to prevent spreading of the roof. No ceiling height is to be less than 2.4 metres.

### F6 Hangers

To be provided so that the unsupported length of ceiling joist does not exceed 2,100mm, double nail to each ceiling joist and secure to side of rafters where practicable.

	Stress Grade F8	Stress Grade F5
Up to 2,400mm	150mm x 38mm	150mm x 50mm
2,401mm to 3,000mm	175mm x 38mm	200mm x 38mm
3,001mm to 3,600mm	200mm x 38mm	200mm x 50mm
3,601mm to 4,200mm	225mm x 50mm	250mm x 38mm
4,201mm to 4,800mm	250mm x 38mm	300mm x 38mm

Where length of hanger exceeds 4,800mm, the hanger is to be supported by a beam as for Strutting Beams and the size of hanger is to be governed by new span.

NOTE: Roof is not to be strutted off hangers or beam supporting hanger.

### F7 Roof

**Slope of Roof** is to be as shown on elevations and where practicable length of rafters to longest ridge is to be gauged to suit full tile courses. Roof timbers are to be seated on timber wall framing.

**Rafters** to be birds-mouthed over plates; accurately cut and fitted, positioned beside ceiling joists, and, together with all other timbers used in roof construction, are to be secured by double nailing at all parts where practicable.

**Roof timbers** to be of dimensions as under:

**Rafters - Conventional roof construction:** Tiled roof 100mm x 38mm hardwood unless otherwise specified at maximum 600mm centres. Profiled/corrugated metal roofing 100mm x 38mm hardwood at maximum 900mm centres. Corrugated fibre cement roofing 100mm x 38mm hardwood stress at maximum 600mm centres.

Ridges and Hips - 150mm x 25mm

Valleys - 150mm x 38mm

Purlins - Tiled roof 100mm x 75mm at maximum spacing of 2,100mm

Profiled/corrugated roofing 100mm x 50mm at maximum spacing of 2,100mm.

Collar Ties - to be fixed to alternate pairs of rafters and be of the following sizes:

up to 4,200mm - 75mm x 38mm stress grade F8 or 75mm x 50mm stress grade F5.

over 4,200mm - 100mm x 38mm stress grade F8 or 100mm x 50mm stress grade F5.

**Struts:** To be 100mm x 50mm hardwood up to a length of 2,100mm spaced under purlins at maximum of 2,100mm centres. Length over 2,100mm to be 75mm x 75mm. Struts must be seated on, or directly above walls and must be tightly fitted and securely fastened.

**Strutting Beams:** Where required are to be the sizes shown hereunder and when placed in position are to be packed up from the walls so as to be 12mm above the level of ceiling joists.

	Stress Grade F8	Stress Grade F5
Up to 3,000mm span	175mm x 75mm	200mm x 75mm
3,001mm to 3,600mm	200mm x 75mm	225mm x 75mm
3,601mm to 4,200mm	225mm x 75mm	250mm x 75mm

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4,201mm to 4,800mm	250mm x 75mm	300mm x 75mm
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NOTE: Strutting beams must not be used as hangers for ceiling joists nor to support hangers unless specifically so designed.

**Roof Timbers to Flat Roof, Skillion, Open Span, Roof, etc.** Unless indicated on plan, timber size to comply with light timber framing code.

**Roof trusses** are to be constructed and fixed in accordance with the Architect's/Engineer's detailed drawings, or manufactured truss. Trusses are to be kept clear of all internal walls with a minimum clearance of 13mm at point of maximum deflection after loading. Bottom chord of truss is to be fixed to top plate of internal walls by means of self-adjusting fastenings.

**Valley Gutter Boards:** To be 19mm thick and the full width of valley gutter. Where deep-ribbed valley gutter is specified, valley boards may be omitted.

**Battens:** To be nailed at all crossings.

To be 75mm x 31mm spaced at maximum of 900mm centres for corrugated metal roofing and at 750mm centres for corrugated fibre cement roofing.

**Roof sheets** shall be non combustable. Gaps under corrugation or ribs of sheet roofing shall be sealed at the fascia or wall line and at valleys to prevent gaps greater than 1.8mm by fully sarking the roof with material having a flamibility index of not more than 5, to be located directly below sheeting battens, and by covering the entire roof area including the ridge. Rib caps and ridge and hip capping shall be preformed or the gaps between capping shall be sealed to prevent gaps greater than 1.8mm.

Roof ventalators, including rotary type shall be constructed of non-combustable material and shall be sealed with corrosion-resistant steel, bronze, or aluminum mesh with a maximum aperture size of 1.8mm.

### F8 Manhole

Trim as required between ceiling joists for a manhole, 600mm x 400mm. Line the opening and provide a suitable cover.

### F9 Verandah Posts

Verandah posts unless otherwise specified to be 100mm x 100mm metal, non-combustable material, or fire-retardant timber for a minimum 400mm above the ground level. Where fixed to concrete the base of the verandah post is to be supported on a galvanised metal dowel and stirrup or plate with dowel set in the concrete timber is to be not less than 75mm above the ground.

### F10 Verandah Plates

To be 150mm x 50mm fire retardant-timber stress grade F8 or 150mm x 75mm stress grade F5 where the unsupported length of plate does not exceed 2,100mm. Plates exceeding 2,100mm but less than 3,000mm to be 200mm x 75mm fire-retadant timber stress grade F5 to F8.

### F11 Gables

Form as shown on drawings. If needed project plates, purlins, ridges, etc., and provide suitable non-combustable or fire-resistant timber barge boards - capped with non-combustable material to allow for verge. Frame gable faces as specified for walls and cover as per details on plans. Line soffits as for eaves.

### F12 Eaves

Project rafters at eaves to give soffit measured square and fix a suitable fascia board to ends of rafters. Form a level soffit with non-combustable or fire-retardant timber let into a groove at back of fascia, secured to 50mm x 38mm supporting sprockets, fixed at all joints and spaced intermediately at a maximum 1,200mm centres. Construction shall not have gaps greater than 1.8mm.

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Provided all necessary cover and angle mouldings. Alternatively, line the underside of rafters with non-combustable or fire-retardant timber, cover all joints with selected moulding.

### F13 Porch Roof

To be constructed where shown on plan and of suitable non-combustable or fire-resistant timber. Porch supports to be securely fixed top and bottom.

Provide 25mm fascia round ready to receive eaves gutter.

Roof covering to match main roof unless otherwise indicated on plan.

Provide ceiling of non-combustable material complete with cover and angle mouldings as required.

Construction

## G. JOINER

### G1 Generally

All fixing out timbers to be seasoned and free from those defects which might affect its appearance or durability. All to be D.A.R. accurately cut and securely fixed. Frames to be properly housed and framed, mouldings and trimmings only mitred or scribed. All surfaces to be prepared for painting or staining. External joinery to be primed on all faces at place of assembly.

### G2 External Door Frames

To all door openings provide solid rebated frames of non-combustable or fire-resistant timber. All frames to be packed plumb and true and fixed securely to door opening studs or brickwork.

### G3 Internal Door Frames

To be solid rebated or out of 25mm jamb linings with plant on stops.

### G4 Thresholds

To be terrazzo/select hardwood/tiles or other selected material.

### G5 Doors (see Schedule)

Hang rear doors with three 85mm steel butts, and other doors, unless specified elsewhere, with two 85mm steel butts.

External doors are to be of non-combustable material or fire-retardant timber, tight-fitting and provided with weather striping or draught excluders at their base.

Doors as indicated on door schedule shall also be fitted with screen door with corrosion-resistant steel or bronze mesh with maximum aperture of 1.8mm.

Furnish with locks and furniture as per schedule.

Internal doors to be as selected; fitted with latch and suitable furniture, and clearance off the floor to be approximately 30mm unless otherwise specified. Double doors to be as shown on plan and furnish with suitable furniture.

NOTE: If toilet door is less than or equal to 1.2 metres away from door opening then door to have lift off hinges.

### G6 Windows (see Schedule)

Provide pre-fabricated toughened glass metal framed windows units as shown on drawings and per schedule all to comply with the relevant Standards Australia codes including bushfire standards.

Openable window sashes and louvres shall be screened with corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm in such a way that the opening remains screened when sash or louvre is open.

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All works and materials to meet AS1288 and AS2047.

All existing windows to be re-painted on the outside surfaces with exception to the first floor master bedroom which will require painting inside and out.

### G7 Flashings

Provide approved flashing under each window frame. The flashing is to be turned up 50mm at each end and 25mm at the back of the sill and be bent down across the cavity and built not less than 25mm into the veneer wall.

Provide approved flashing over exposed door and window openings. The flashing is to be not less than 225mm wide and extend 150mm beyond each end of the openings bend down across the cavity and built not less than 25mm into the veneer wall.

Provide approved flashing over meter box. The flashing is to be bent down across the cavity and turned down over angle weather striping.

All flashings are to be properly dressed at each change of direction and must not be cut at those parts.

### G8 Storm Moulds

Provide storm moulds to external door, window and other openings as required.

### G9 Architraves

Provide architraves as selected to all door, window and other openings internally and externally, where necessary. All architraves to match existing unless unable to locate in which case a suitable substitute shall be submitted for approval.

External architraves to be constructed of non-combustable or fire-resistant timber. Construction shall not have gaps greater than 1.8mm

### G10 Skirtings

Provide skirtings to match existing first floor unless unable to locate in which case a suitable substitute shall be submitted for approval. All skirtings to ground floor are to be replaced with new to match existing unable to locate in which case a suitable substitute shall be submitted for approval.

### G11 Cornice

Provide cornice to match that located in existing areas, to be verified on site, reworked ceiling to wall junctions. New areas to ground floor to have have 90mm cornice as approved by owner.

### G12 Existing First Floor Bedrooms

Re-work existing built-in robe and table as required in bedroom 3, to make it stable and back to original state and Re-finish.

Existing robe to master bedroom to be relocated to bedroom 4 behind door and make good.

### G13 Kitchen Cupboards

Kitchen cupboards to be as selected by owner and supplied and installed by seperate contractor. Allow for all services to be roughed-in prior to installation. Lias with kitchen contractor for current layout plan.

### G14 Bathroom Cabinet

Provide cabinets for new bathroom to ground floor and new ensuite to first floor.

### G15 Bath

Under exposed edges of bath, provide a properly constructed frame or brick-up ready to receive covering as specified elsewhere. Make provision for the fixing of two approved vents or vent to external wall.

# Specifications

67 Whale Beach Road, Whale Beach

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## G16 Balustrades

Balustrades in general to have no opening greater than 122mm. Interior stair to be 90mm x 90mm timber uprights with stainless steel horizontal stainless steel wire system. Exterior to be stainless steel uprights with horizontal stainless steel wire system.

## H. PLUMBER

### H1 Guttering

Provide 114mm x 0.60mm Zincalume guttering or as specified in Addenda to all eaves as shown on plans. Lap at joints 100mm in direction of flow, seal and set with sufficient fall to downpipes where shown or directed, secure at 1200mm maximum centres with Zincalume brackets to rafters or fascia.

### H2 Downpipes

Provide 100mm x 50mm x 0.60mm Zincalume downpipes or as specified in Addenda where shown on plans, well entered and sealed at joints, connected at head to gutter and entered at foot to stormwater. Fasten with astrigals.

### H3 Valleys

Provide 450mm x 0.60mm Zincalume valleys with edges turned up, with lap and seal joints. Refer F7 and J3.

### H4 Alternatives

Rainwater goods of other profile or material may be used as specified in the plans.

### H5 Flashing

Flash all pipes, vents, etc. entering through the roof with approved flashing. Refer F7

### H6 Cold Water Service

Lay on water from the Supply Authority's main to the boundary of the lot in copper tubing and provide a stop crop and hose cock. Extend with galvanised, copper tube or alternate as approved within the National Plumbing Code AS 3500 to house and provide as hose cock at wall of dwelling. Branch off to cistern, bath, shower, wash basin, wash tubs, sink, hot water unit and washing machine (see schedule). Piping concealed behind wall linings must be copper or as approved in AS 3500. Secure all piping with suitable holdfasts.

### H7 Hot Water Service

Install 13mm copper tube or alternate as approved by AS 3500 from Hot Water Service to all plumbing fittings requiring hot water. Existing gas water heater to be relocated to garage in position as instructed by owner. All water plumbing is to be carried out by a licensed plumber to the requirements and regulations of the Supply Authority.

### H8 Fittings

Taps and tap sets are to be selected and provided by owner. All new bathroom and ensuite fixtures to be selected and provided by the owner. Existing bathroom fittings to be re-used. Vanity cabinets to be supplied by contractor.

### H9 Gas Service

The whole of the work to be carried out in accordance with the requirements of the Supply Authority. Where LP gas is to be installed, it shall be in accordance with the requirements of the Australian Liquefied Petroleum Gas Association. All above ground, exposed piping shall be metal.



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# Specifications

## 67 Whale Beach Road, Whale Beach

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### H10 Fire hose

A 30 metre long x 19mm diameter fire hose and reel shall be provided and mounted on the north eastern corner of the structure. Water supply should be sized to ensure adequate flow/pressure at the fire hose.

### H10 Rainwater Tank

Owner to supply for installation rain water tank. Tank to be installed under these works in suitable position as agreed to by owner.

## I. DRAINER

### I1 Generally

All drainage work has to be carried out by a licensed drainer. Sanitary drains to comply with the by-laws and requirements of the authority concerned.

### I2 Stormwater

To be in accordance with Stormwater Drainage/Sediment Control Details as approved with Development Application Approval.

### I3 Sewerage

Drainage work shall be in accordance with authority's requirements. On site hook-up available – refer hydraulic drawings.

### I4 Water Supply

All work is to be carried out in accordance with all applicable authorities requirements. On site connection available – refer hydraulic drawings. All above ground, exposed piping shall be metal.

### I5 Owner's Note

Unless a junction position is available from the appropriate authority at the time of tendering, the Builder is to allow for 30 metres of sewerage drains and the Owner will be responsible for cost in excess thereof. It will be the Owner's responsibility if extra costs are incurred due to excavation through rock.

## J. ROOFING

### J2 Metal Roofing

All metal roofing to be fixed in accordance with manufacturer's instructions. Refer addenda for finish.

### J3 Roof Gutters and Valleys

All gutters and valleys to be leaf proofed by the installation of an external gutter protection shroud or a gutter system that denies all leaves from entering the gutter and building up on that gutter. Any material used in such a system should have a flammability index of no greater than 5 ( as measured against AS 1530.2)

## K. INSULATION

Refer Addenda for requirements and Nathers report drawings for additional insulation requirements.

## L. ELECTRICIAN

### L1 Generally

The Builder is to arrange for connection of the mains to meter board (refer A19). The installation to house is to be carried out in accordance with the SAA Wiring Rules.

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# Specifications

67 Whale Beach Road, Whale Beach

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## L2 Outlets

The installation is to satisfy any test required by the Supply Authority on completion. Provide for the proper installation and connection of electricity to electric range, hot water unit, and other appliances (see Addenda). Provide light points and power outlets of number as indicated on Electrical Plan. Approved switch for each light is to be mounted where indicated. Light fittings are to be provided. Allow for installation.

## L3 Meter Box

Relocate existing meter box as indicated on electrical plan in accordance with the requirements of the Authority concerned.

## L4 Smoke Alarm

Provide and install smoke alarm as required to meet AS3786.

## M. TILELAYER

### M1 Fixing

Where applied to brick walls, fix with mortar in the proportions of 3 parts sand and 1 part cement or fix with adhesive to cement render. To other areas, tiles to be fixed over suitable sheet material with approved adhesive.

### M2 Floors

Cover floor of new bathroom to ground floor and new ensuite to first floor as indicated on plan with selected tiles, set to an approved pattern. Owner to select and provide tiles. Existing first floor bathroom to remain as is.

### M3 Walls

Wall tiles to be fixed to walls within new ensuite to first floor and new bathroom to ground floor. Floor to ceiling shall be the height of wall tiles. Owner shall select and provide tiles. Existing first floor bathroom to remain as is.

### M4 Rates

Owner's Note: These are allowed for 100mm x 100mm ceramic wall tiles and 200mm x 200mm floor tiles.

### M5 Waterproofing

All wet areas to be waterproofed in accordance with AS3740.

Existing shower to be re-waterproofed if required upon inspection. Contractor to verify on site and confirm to owner if re-waterproofing is required.

### M6 Shower Recess

Shower recess to be installed in accordance with R1.88 Wet Area Construction in Dwellings.

## N. CEILING AND WALL FIXER

### N1 WALLS

Fix in accordance with manufacturer's instructions. Recessed edge gypsum plasterboards to all internal walls, except as required in wet areas, or other type of panelling as indicated in Schedule and plans.

### N2 Cornices

Fix suitable cornice to the above ceilings neatly mitred and scrimmed and set at all angles. (See Schedule). Refer above G11.

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# Specifications

## 67 Whale Beach Road, Whale Beach

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### N3 Vents

Provide all necessary plaster vents as required by Building Code of Australia at F4.5.

### N4 Angles

All external and internal angles to be neatly set straight and plumb.

### N5 Ceilings

Fix in accordance with manufacturer's instructions recessed edge gypsum board or other suitable material to all internal ceilings. All ceiling heights to be no less than 2.4 metres.

### N6 Wall Sheeting (if requested in lieu of wall tiles)

Fix in accordance with manufacturer's instructions.

## O. PAINTER

### O1 Generally

All paint to be supplied by reputable manufacturer.

All paint to be applied in accordance with manufacturer's instructions.

All colours are to be selected by owner from standard colour charts and shall consist of an industry standard number of colours.

### O2 Preparation

All surfaces shall be properly prepared.

All external woodwork that is not primed before delivery to the job site to be given a coat of external primer.

Primed woodwork to be checked and touched up, where necessary.

### O3 Externally

**Woodwork:** All exposed woodwork to be cleaned, prepared, primed, then given a coat of undercoat and finished with one coat of selected paint.

**Ironwork:** Gutters, DPs and pipe supports, meter box, vents and service pipes to be cleaned of dirt and grease and given one coat of metallic paint undercoat and given one final coat of selected paint all round.

**Fibre Cement Sheeting:** To receive two coats of flat plastic paint.

Re-finish all exterior surfaces to existing windows.

### O4 Internally

**Woodwork:** To be cleaned and prepared, then given a coat of primer, an undercoat and a coat of selected paint as finished coat.

Alternatively, woodwork may be treated with an approved two-coat stain finish.

**Walls & Ceilings:** Where gypsum boards are used, prepare surfaces, apply two coats of selected plastic paint.

**Fibre Cement Sheeting:** To be thoroughly cleaned, then painted with two coats of approved flat plastic paint.

**Existing doors:** All existing doors and frames to be sanded and clear coated.

Re-finish all existing bedrooms and hall ways to first floor as required. All ground floor to be re-finished.

Re-finish existing built-in cupboard and table to first floor bedroom 3.

Existing staeps from garage to house to be sanded and re-painted.

### O5 Completion

The Contractor shall remove all his equipment and empty paint tins and leave the job in a clean and net condition. Fittings to be refixed and paint splashes to be removed from door handles, window fittings, switch plates, etc.

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# Specifications

67 Whale Beach Road, Whale Beach

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## P. GLAZIER

### P1 Generally

All glass throughout is to be of approved manufacture, to the full weight and/or thickness required by size of pane. Glass to be pre-fabricated metal framed toughened glass.

Remove broken glass and off-cuts and leave job in clean condition.

All works and materials to meet AS1288 and AS2047.

## Q. COLUMNS

Q1 Install columns to dimensions indicated in plan and engineer's details.

## R. STEEL BEAM TABLES

R1 Engineering tables for the use of steel beams and lintels in housing are available in printed form from the Newcastle Master Builders' Association – Refer engineer's details.

## Addenda

### **Existing House where wing is to be removed:**

Floors - Timber T & G with timber subfloor and brick foundations to match existing.

Walls – Double brick cavity wall with insulation batts to R1.5 to level of roof.

New Windows – All pre-finished Non-corosive metal window units.

Lightweight wall construction above windows – Timber framing with insulation batts to R1.5

Sheeting internally with plasterboard and externally with painted FC sheeting.

Roof – New timber framed roof with pre-finished metal deck corrugated roof sheeting and insulated batts to R2.5 and sarking.

### **Existing House Extension and New Studio:**

Floor – Steel framing with masonry subfloor walls, insulated with bulk insulation batts to R1.5 between joists.

Walls – Steel framed insulated with batts to R1.5, sheeting internally with plasterboard and externally with FC sheeting.

Windows – All pre-finished non corosive metal window units with toughened glass and steel fly mesh screens to all windows for bush fire protection.

Roof – Steel framed with pre-finished metal deck corrugated roof sheeting and insulated batts to R2.5 and sarking.

This specification is to be read inconjunction with drawings DA-01, DA-02, DA-03, DA-04, DA-05, DA-06, DA-07, DA-08, Engineers's drawings, Hydraulic drawings, and bush fire report.

# **Specifications**

## **67 Whale Beach Road, Whale Beach**

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Level 3 construction standards as per Australian Standard AS3959 'Construction of Buildings in Bush fire Prone Areas', in accordance with Part 2.3.4 of the 'Building Code of Australia' shall be applied to the existing building and addition.

All windows/doors new and existing to be fitted with non-corrosive metal screens.

All new windows/doors to be metal framed with powdercoat finish.

All external doors to be metal framed with powdercoat finish.

All doors to have two hinges, and hardware as selected by owner.

Existing doors to be re-finished and hardware to be replaced to match new hardware.

Existing under stair storage access door to be replaced.

**GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER**  
**FORM NO. 2 – To be submitted with detailed design for construction certificate**

Development Application for \_\_\_\_\_  
Name of Applicant  
Address of site 67 Whale Beach Road, Whale Beach

Declaration made by Structural or Civil Engineer in relation to the incorporation of the Geotechnical issues into the project design

I, J Hodgson on behalf of Jack Hodgson Consultants Pty Ltd  
(insert name) (trading or company name)

on this the 8<sup>th</sup> May 2007  
(date)

certify that I am a Structural or Civil Engineer as defined by the Geotechnical Risk Management Policy for Pittwater. I am authorised by the above organization/company to issue this document and to certify that the organization/company has a current professional indemnity policy of at least \$2million. I also certify that I have prepared the below listed structural documents in accordance with the recommendations given in the Geotechnical Report for the above development

Geotechnical Report Details: Geotechnical Amendment for the proposed studio at 67 Whale Beach Road, Whale Beach VS 24367

Report Date: 27<sup>th</sup> February, 2007

Author: Jack Hodgson

**Structural Documents list:**

24367-S1a, S2a and S3a

I am also aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy, including this certification as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure taken as at least 100 years unless otherwise stated and justified.

Jack Hodgson

(name)

(signature)

*Declaration made by Geotechnical Engineer or Engineering Geologist in relation to Structural Drawings*

I prepared and/or technically verified the abovementioned Geotechnical Report as per Form 1 dated \_\_\_\_\_ and now certify that I have viewed the above listed structural documents prepared for the same development. I am satisfied that the recommendations given in the Geotechnical Report have been appropriately taken into account by the structural engineer in the preparation of these structural documents. I am aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy, including this certification as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure taken as at least 100 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature \_\_\_\_\_

Name J HODGSON

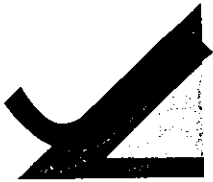
Chartered Professional Status MEngSc FIEAust

Membership No. 149 788

**Council  
Copy**

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Cert. No. 2007/220  
10.5.07  
Paul Fitzgerald Accreditation No 117





# Jack Hodgson Consultants Pty Limited

CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS

ABN: 94 053 405 011

VQ 20845D.  
19<sup>th</sup> December, 2005.  
Page 1.

The General Manager  
Pittwater Council  
P O Box 882  
MONA VALE NSW 1660

Dear Sir,

## 67 WHALE BEACH ROAD, WHALE BEACH.

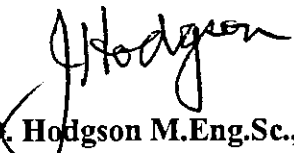
On 9<sup>th</sup> December 2005 we inspected the existing house at the subject address and examined the plans of the proposed upper level addition.

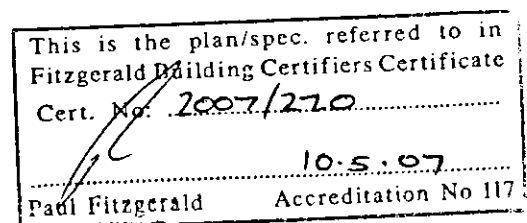
With the exception of the brick pier under the south west corner of the house the existing structure is adequate to support the loads likely to be imposed on it by the proposed upper level addition.

It is recommended that the brick pier referred to above be replaced as part of the proposed development.


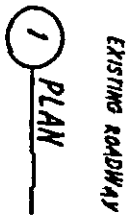
Our Mr. Jack Hodgson is appropriately qualified and experienced to provide this certificate.

## **JACK HODGSON CONSULTANTS PTY. LIMITED.**


  
**J. D. Hodgson M.Eng.Sc.,  
F.I.E. Aust., CP ENG.  
Civil & Structural Engineer.  
Nper3, Struct. Civil No. 149788.  
Director.**



DIRECTOR: J.D. HODGSON, M.Eng.Sc., F.I.E. Aust., Nper3 Struc. Civil 149788  
67 Darley Street, Mona Vale NSW 2103  
PO Box 389 Mona Vale NSW 1660  
Telephone: 9979 6733 Facsimile: 9979 6926



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THE BEST IS IN  
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 1800 500 775 23481  
 1800 500 775 23481

<p><b>CLIENT</b></p> <p>Sarn and Sarno 67 Whale Beach Road Whale Beach NSW</p>	<p><b>PROJECT</b></p> <p>DRIVEWAY LAYOUT 67 Whale Beach Road Whale Beach NSW</p>
--	--

# DRIVEWAY PLAN AND SECTION

Drawn on	Chequed	Scale 1:50 @ A4
Date Mar. 2007	add No	Drawing No D-01
		Project A



This is the plan/spec. referred to in Fitzgerald Building Certifiers Certificate

Cert. No: 2007/220

50.5.01

1. Property will drain to Sydney Water's Sewer with Ground levels as at Date of Survey.
2. Connections to Sydney Water sewer/water services may only be made following the issue of a permit to a licensed plumber/drafter.
3. Position of structure in relation to Sydney Water's assets is satisfactory.
4. Any Plumbing and/or Drainage Work to be carried out in accordance with the Water Board (Corporation) Act 1994 AS 3500 and the NSW Code of Practice.

5. **Gulches, Inspection Shafts and Boundary Traps** shall not be placed under any Roof, Balcony, Verandah, Floor or other cover unless otherwise approved by Sydney Water.

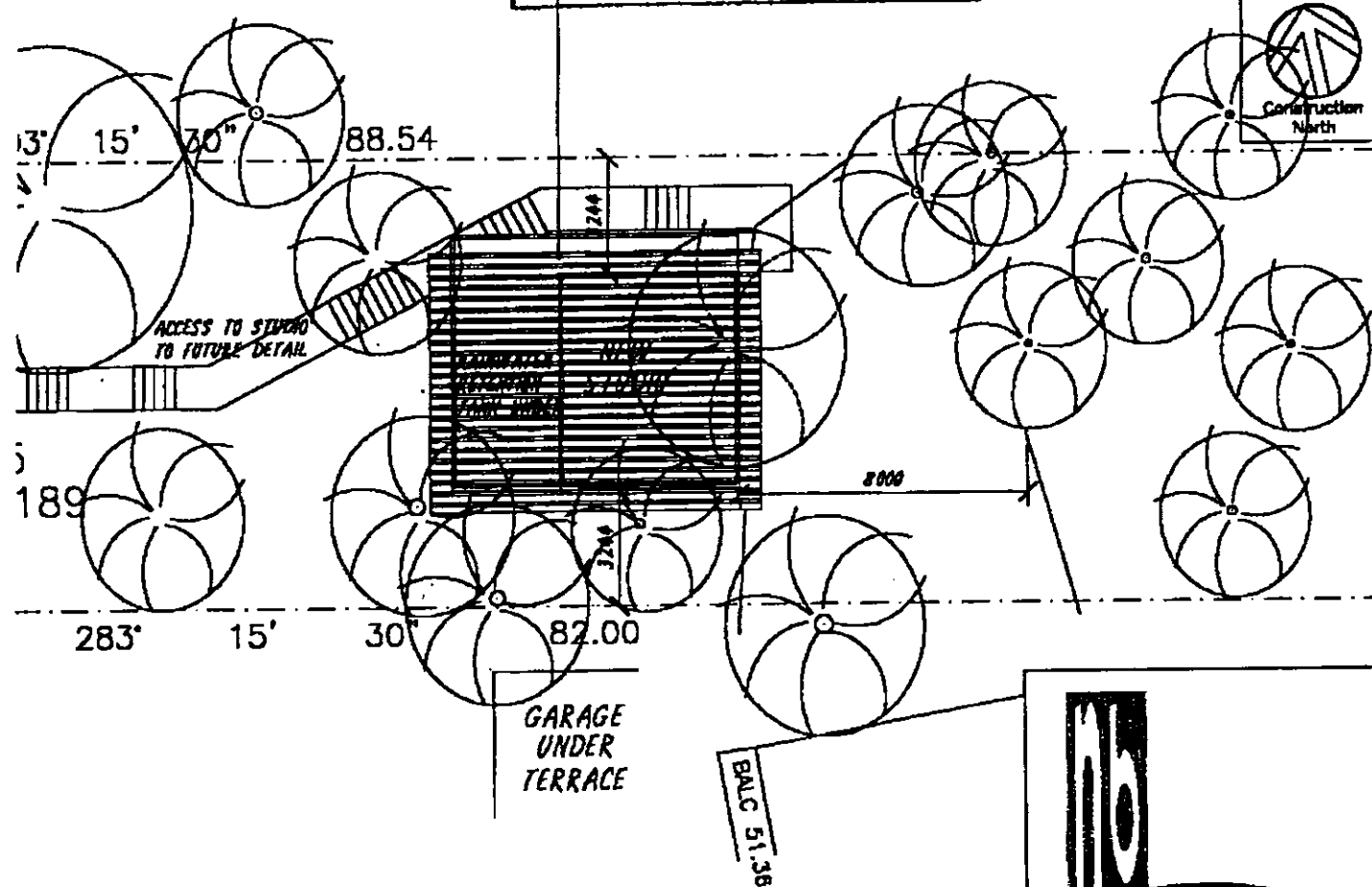
6. Prop. No. 3403975  
CITY CUSTOMER CENTRE

SYDNEY WATER CORPORATION

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27000



EXISTING LOT SIZE	1065 m <sup>2</sup>
EXISTING HOUSE AREA	105 m <sup>2</sup>
EXISTING LOWER GROUND	45 m <sup>2</sup>
EXISTING LANDSCAPING	950 m <sup>2</sup>
EXISTING FSR	0.099:1

PROPOSED GROUND FLOOR AREA	132.7 m <sup>2</sup>
PROPOSED FIRST FLOOR AREA	40.1 m <sup>2</sup>
PROPOSED HOUSE AREA	172.8 m <sup>2</sup>
PROPOSED GARAGE/STORAGE AREA	50.8 m <sup>2</sup>
PROPOSED STUDIO AREA	30 m <sup>2</sup>
PROPOSED LANDSCAPING AREA	862.3 m <sup>2</sup>
PROPOSED FSR	0.162:1

IMITATION TIMBER CLAD  
RESIDENCE  
NO. 65



**AEI 500 775 23481**  
 24th St., 470 Bayview Rd., Bridgeton NJ 08303  
 Tel. (609) 884-8311 Fax (609) 884-8157

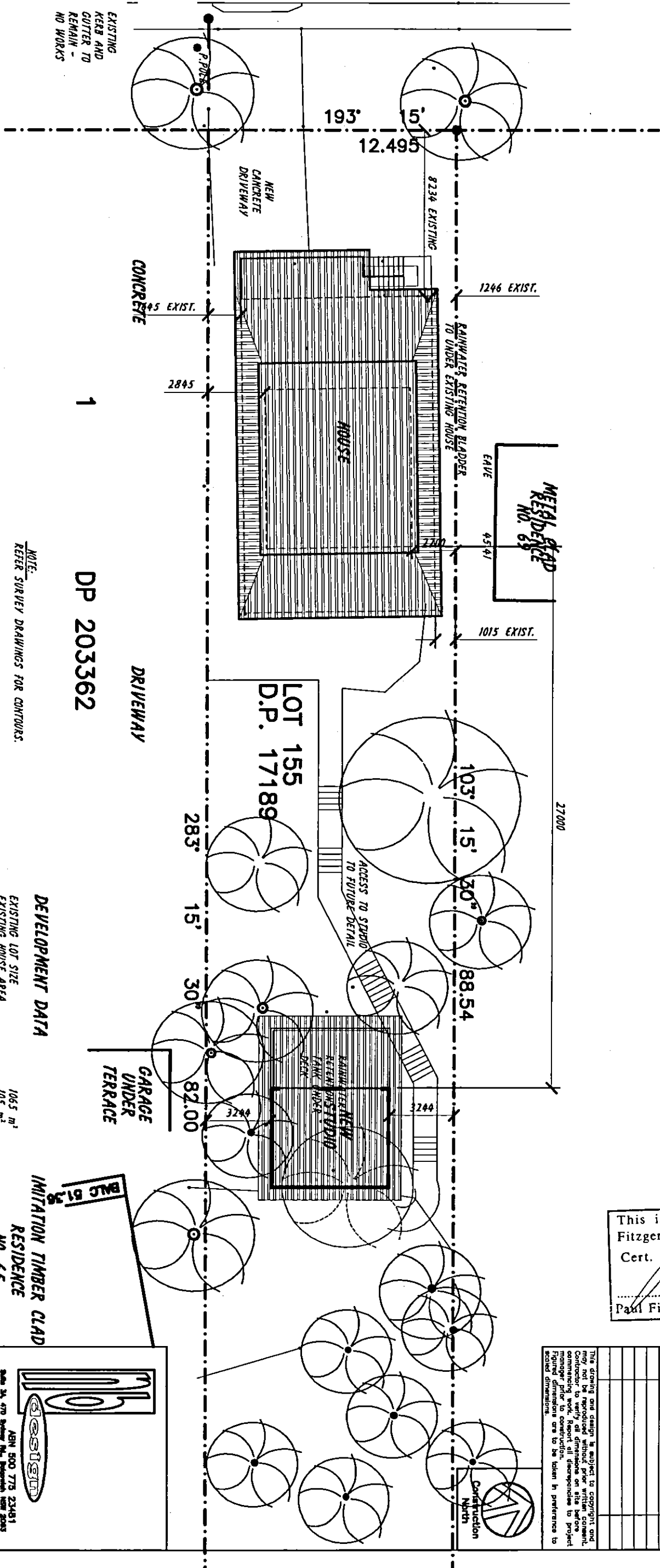
Sam and Sema  
67 Whale Beach Road  
Whale Beach NSW

Alterations and Additions  
67 Whale Beach Road  
Whale Beach NSW

## SITE PLAN

Class	incl	Classed	Rank	1:200 @ A3
Date	Nov. 2005	Job No	Drawing No	Accession
			DA-01	B

WHALE                  BEACH                  ROAD



**DP 203362**

NOTE:  
REFER SURVEY DRAWINGS FOR CONTOURS.

## DEVELOPMENT DATA

EXISTING LOT SIZE	106.5 m <sup>2</sup>
EXISTING HOUSE AREA	105 m <sup>2</sup>
EXISTING LOWER GROUND	45 m <sup>2</sup>
EXISTING LANDSCAPING	0.95 m <sup>2</sup>
EXISTING FSR	0.090/1
PROPOSED GROUND FLOOR AREA	132.7 m <sup>2</sup>
PROPOSED FIRST FLOOR AREA	40.1 m <sup>2</sup>
PROPOSED HOUSE AREA	172.8 m <sup>2</sup>
PROPOSED GARAGE/STORAGE AREA	50.8 m <sup>2</sup>
PROPOSED STUDIO AREA	30 m <sup>2</sup>
PROPOSED LANDSCAPING AREA	862.3 m <sup>2</sup>
PROPOSED FSR	0.162/1

IMITATION TIMBER CLAD  
RESIDENCE  
NO. 65

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10 MAY 2007

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## Construction North



**AEN 500 775 23481**  
Sales 34, 470 Sydney Rd., Bideford, NSW 208  
Telex (021) 9040 8311 Fax: (021) 8907 8118

**Sam and Sema  
67 Whale Beach Road  
Whale Beach NSW**

**Alterations and Additions  
67 Whale Beach Road  
Whale Beach NSW**

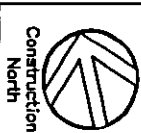
# SITE PLAN

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Date Nov. 2005	Job No	Drawing No DA-01	Amenda B

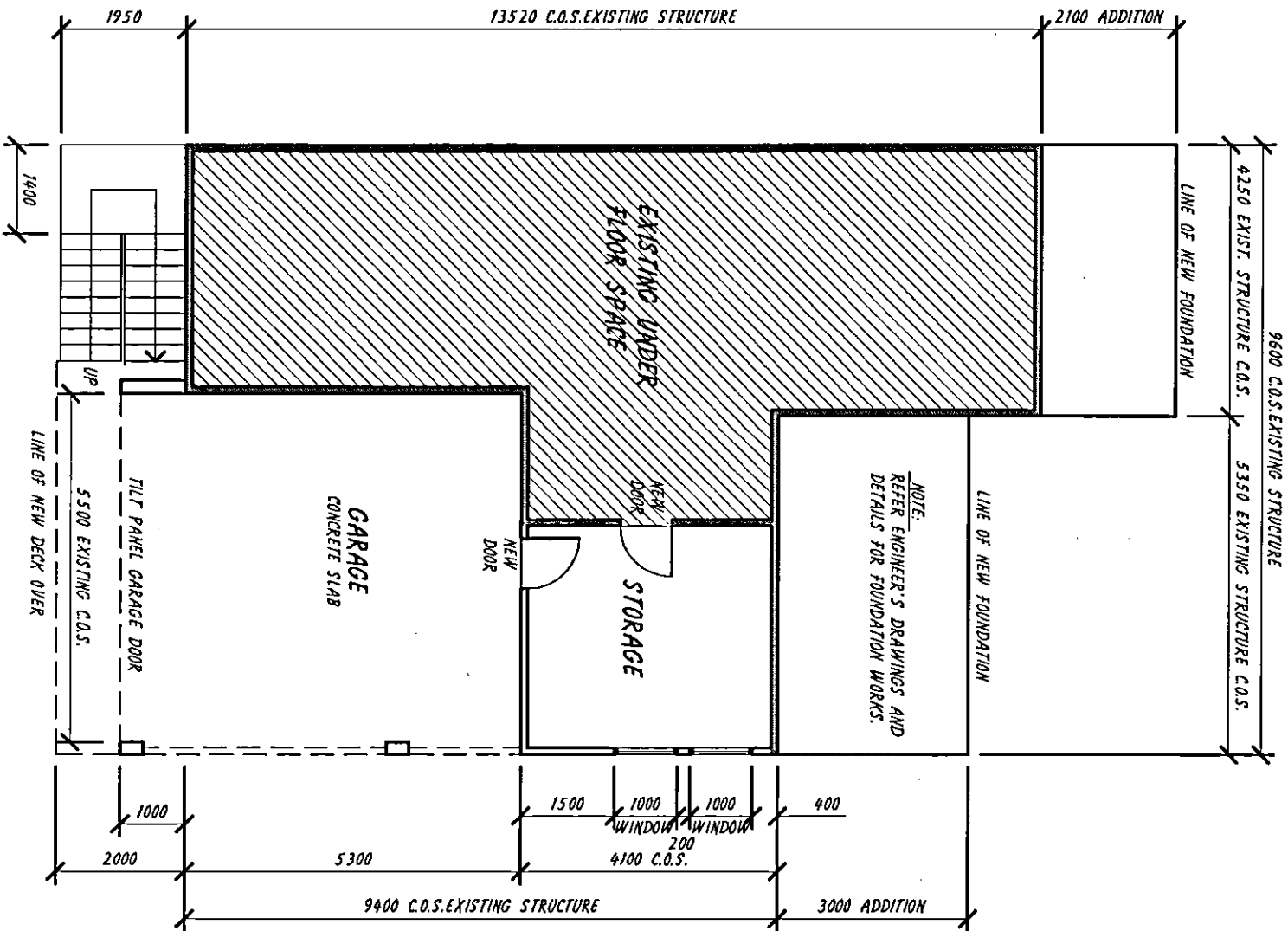


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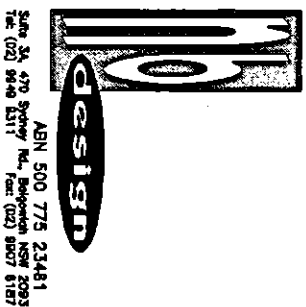
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verbal dimensions.



NOTE:  
RAINFALL RETENTION BLADE TO  
BE LOCATED UNDER EXISTING FLOOR



1 LOWER GROUND FLOOR PLAN  
EXISTING WALLS SHOWN SOLID - EXISTING  
AREAS SHOWN HATCHED - NO WORKS



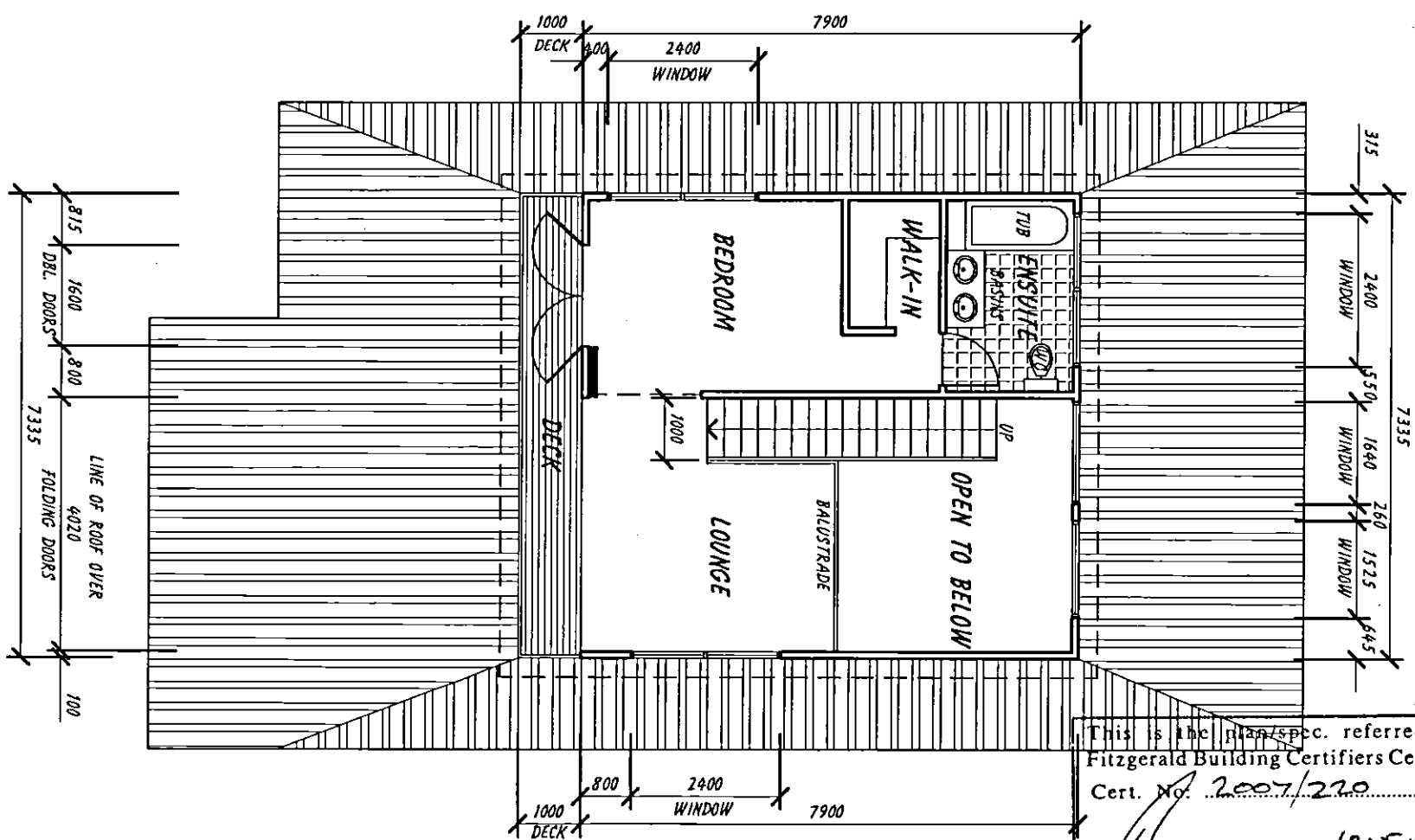
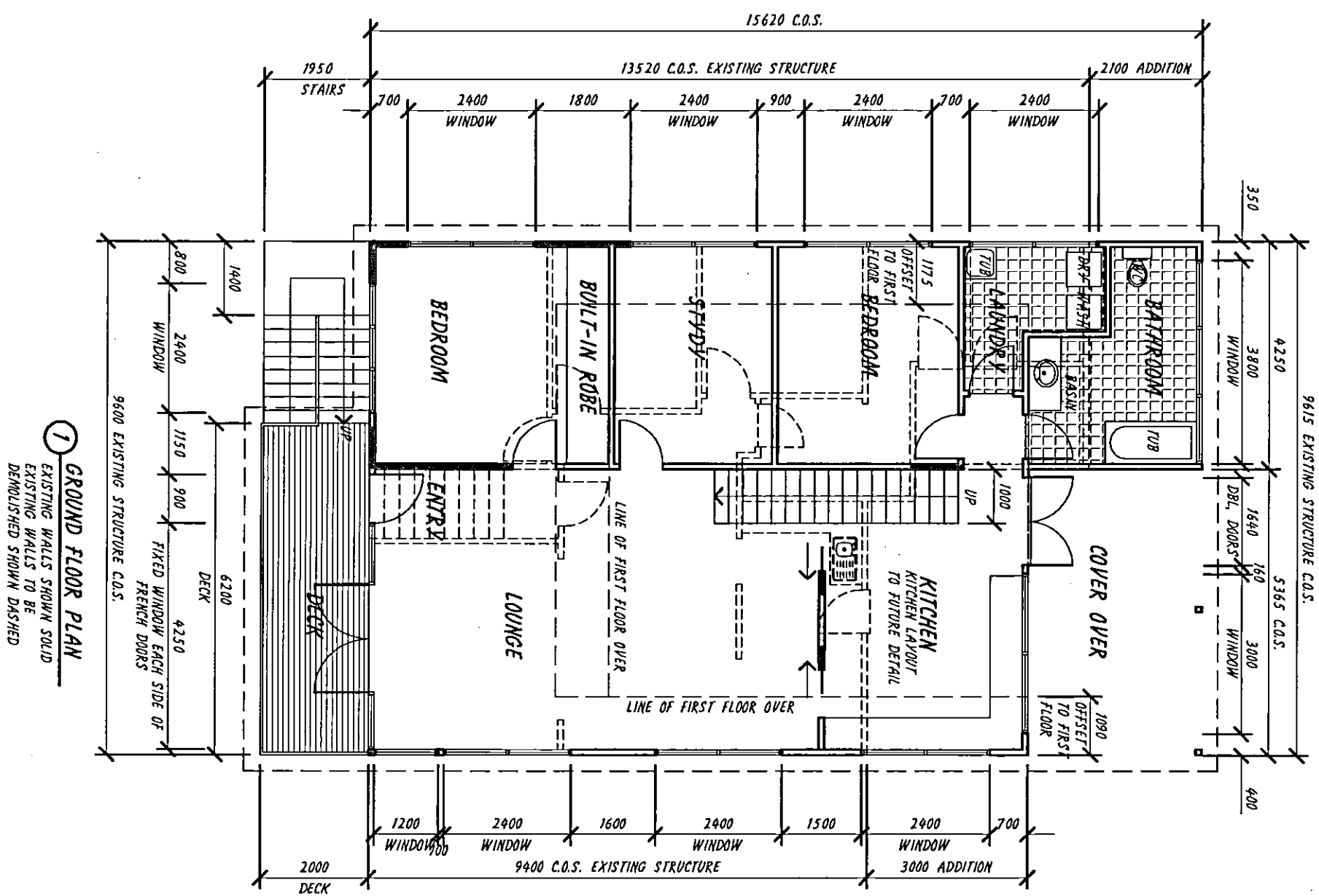
ABN 500 775 23481  
Suite 24, 470 Sydney Rd, Bondi Beach NSW 1533  
Tel: (02) 9440 8317 Fax: (02) 9007 5187

Sam and Sema  
67 Whale Beach Road  
Whale Beach NSW

Alterations and Additions  
67 Whale Beach Road  
Whale Beach NSW

LOWER GROUND  
FLOOR PLAN

Drawn	mtcl	Checked	Scale	1:100	AS
Date	Nov. 2005	Job No	Drawing No	DA-02	A

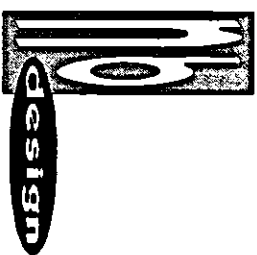


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No	Revision	Date
1	ISSUED FOR COUNCIL	20.01.06

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Tel: (02) 8848 8311 Fax: (02) 8807 8187

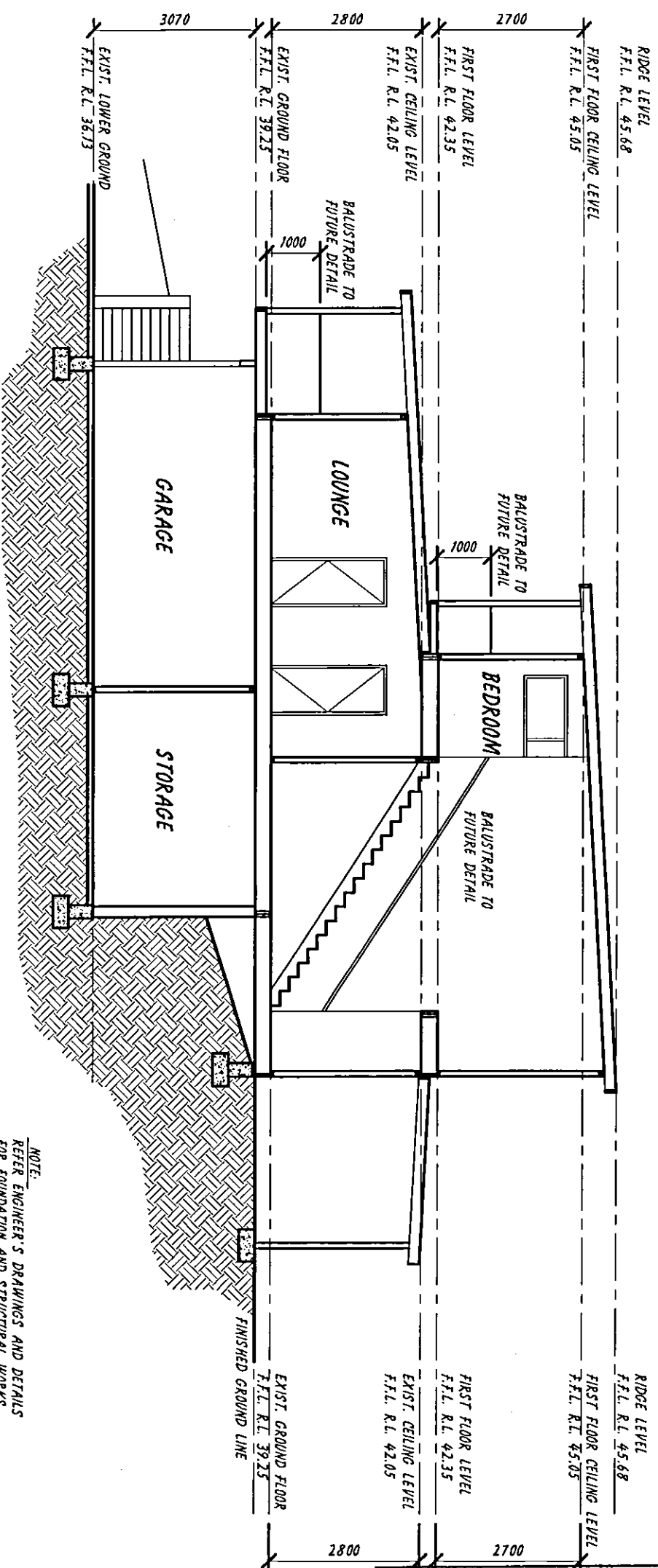
**Sam and Sema  
67 Whale Beach Road  
Whale Beach NSW**

**Alterations and Additions**  
67 Whale Beach Road  
Whale Beach NSW

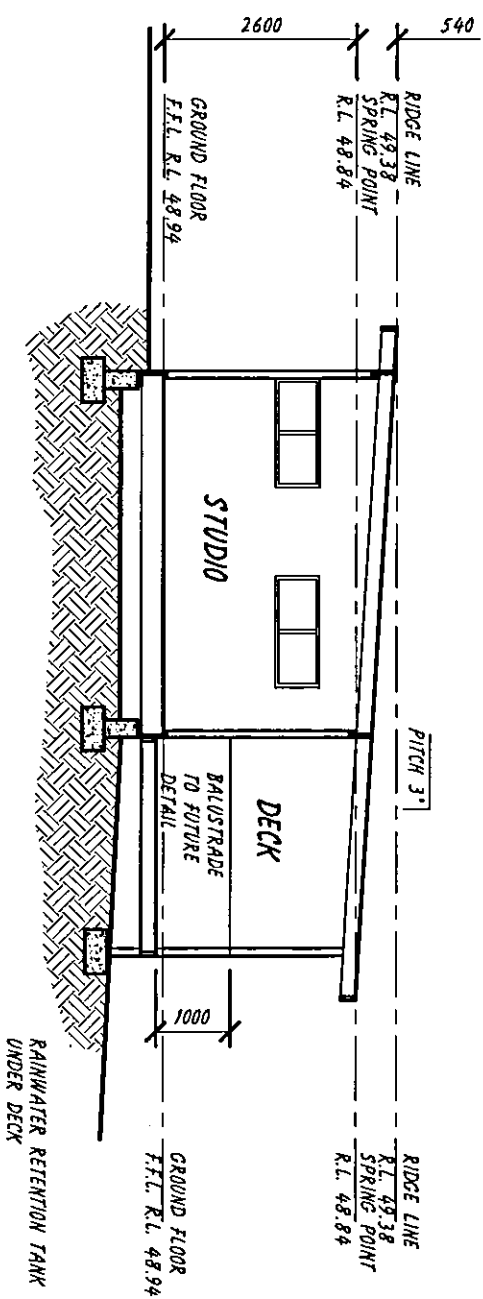
## GROUND AND FIRST FLOOR PLANS

Drawn mcl	Checked	Scale 1:100	AS
Date Nov. 2005	Job No	Drawing No DA-03	Amend A





NOTE:  
REFER ENGINEER'S DRAWINGS AND DETAILS  
FOR FOUNDATION AND STRUCTURAL WORKS.



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Cert. No. 2007/220

Cert. No. 2007/200

Cert. No. 2007/200

10.5.07

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No	Revision	Date
1	ISSUED FOR CONVE	22/01/06

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Construction

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 Suite 3A, 470 Sydney Rd., Balgownie NSW 2093  
 Tel: (02) 9949 5311 Fax: (02) 9907 6187

**ASN 500 775 23481**  
 Suite 3A, 470 Sydney Rd., Balgownie NSW 2093  
 Tel: (02) 9949 5311 Fax: (02) 9907 6187

**ASN 500 775 23481**  
 Suite 3A, 470 Sydney Rd., Balgownie NSW 2093  
 Tel: (02) 9949 5311 Fax: (02) 9907 6187

**Sam and Sema**  
67 Whale Beach Road  
Whale Beach NSW

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67 Whale Beach Road  
Whale Beach NSW

**Sam and Sema**  
67 Whale Beach Road  
Whale Beach NSW

**Sam and Sema**  
67 Whale Beach Road  
Whale Beach NSW

**New Studio**  
67 Whale Beach Road  
Whale Beach NSW

**New Studio**  
67 Whale Beach Road  
Whale Beach NSW

**New Studio**  
67 Whale Beach Road  
Whale Beach NSW

**New Studio**  
67 Whale Beach Road  
Whale Beach NSW

**DREAMLINE**

## STUDIO AND HOUSE

## SECTIONS

Drawn mcl	Checked	Scale 1:100	AS
Date Nov. 2005	Job No	Drawing No DA-05	Answer A









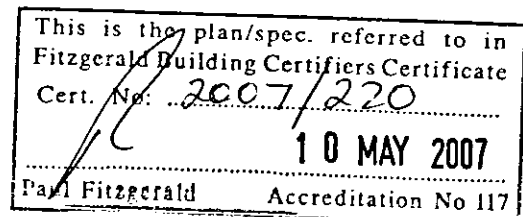
# Ecological Sustainability Plan

For

**Franz Gross**

67 Whale Beach Road AVALON

**Council  
Copy**



**ENVIRONMENTAL SUSTAINABILITY POLICY FOR PITTWATER**  
**FORM NO. 3A Requirements for Ecological Sustainability Plan**  
**To be attached to Map**

Development Application for FRANZ GROSS  
Name of Applicant  
Address of site 67 WHALE BEACH ROAD - AVALON

*Handwritten:* 4/5/07

**Declaration made by environmental consultant as part of the Ecological Sustainability Plan or Ecological Sustainability Concept Plan**

I, KOBI SIMMAT of SIMMAT + ASSOCIATES PTY LTD  
(Inser Name) (Trading or Company Name)

on this day, the 4 MAY 2007.  
(Date)

certify that I have completed the following as marked:

**Site Plan**

*The following check sheet is to be completed and attached to the Map for the Ecological Sustainability Plan or Ecological Sustainability Concept Plan*

<b>Annotated plan showing the following</b>	<b>Completed</b>
	(✓)
All areas of native vegetation	✓
Native trees include species, size, condition (e.g. SULE rating)	✓
Accurate survey and describe native trees within 5m of proposed works	✓
Trees to be retained and those to be modified/removed	✓
Areas with medium to high regeneration potential	✓
Areas of native vegetation to be retained	✓
Areas of vegetation proposed to be removed	✓
Areas of <del>Noxious</del> and Environmental Weeds	✓
Areas of habitat features, bushrock (over 2m), caves, termite mounds etc	—
Footprint of house and associated works (fuel reduced zones, waste-water etc)	✓
Areas for exclusion fencing—during development/establishment phase	✓
Areas appropriate for storage of materials during construction	✓
Recommended access ways during construction	—
Areas for bush-regeneration	—
Areas for planting trees (if appropriate)	✓
Areas for planting low and or mid strata	—
Areas for landscaping	✓
Fuel reduced zone	✓
Fuel free zone	—
Waste-water disposal zone	—
Recommended Environmental Protection Zone (EPZ) if appropriate	—
Areas for managing domestic animals (see requirements of Pittwater Council Control Documents <i>Pittwater 21</i> )	✓
Wildlife Corridors and Core/Fragmented Bushland (as per Pittwater Council Maps)	—

**ENVIRONMENTAL SUSTAINABILITY POLICY FOR PITTSWATER**  
**FORM NO. 3b Ecological Sustainability Plan (report)**  
**To be attached to inside front cover of ESP Report**

Development Application for FRANZ GROSS  
Name of Applicant

Address of site 67 WHALE BEACH ROAD - AVALON

**Declaration made by environmental consultant as part of the Ecological Sustainability Plan**

I, KOBI SIMMAT of SIMMAT + ASSOCIATES PTY LTD.  
(Insert Name) (Trading or Company Name)

on this day, the 4 MAY 2007 certify that I have completed the following as marked:

The following is to be completed and attached to the inside front cover of the Ecological Sustainability Plan.

*Document*  
*4/5/07*

Report covering	Completed
	(✓)
<b>Site Preparation</b> Description of: <ul style="list-style-type: none"> <li>Tree, vegetation and habitat protection,</li> <li>Sediment and erosion control for natural features,</li> <li>Weed control,</li> <li>Top soil/ litter layer treatment,</li> <li>Surface treatment and stabilisation (mulch etc),</li> <li>Site drainage with respect to natural features,</li> </ul>	✓✓✓✓✓
<b>Weed Removal and Regeneration</b> <ul style="list-style-type: none"> <li>List of <del>Noxious</del> and Environmental Weeds</li> </ul>	✓
<ul style="list-style-type: none"> <li>Timeline for removing Noxious Weeds and controlling/removing Environmental Weeds (for updated weeds list see Dept of Agriculture web page). Timeline to include the area / number of weed species acceptable as a background level. Cross reference location with Map.</li> </ul>	✓
<b>Description of Planting (if planting)</b> <ul style="list-style-type: none"> <li>Planting aims, e.g. supplementary planting in a regeneration area, or a native vegetation area or planting in a landscape area.</li> </ul>	✓
<ul style="list-style-type: none"> <li>Species list recommended for planting—as appropriate (if the ESP is replacing a Landscaping Plan give details of species to be planted and size range / species). Local native species to be used (for at least 70% of plantings, 80% in Endangered Ecol. Comm.). Identify source of local native, plant stock.</li> </ul>	✓ COUNCIL LIST
<ul style="list-style-type: none"> <li>Description of areas for bush regeneration, trees to be retained, trees to be planted (and what size), etc</li> </ul>	✓
<ul style="list-style-type: none"> <li>A schedule of materials—including elements such as weed matting, mulch, edging, walling, paving and fencing.</li> </ul>	✓
<ul style="list-style-type: none"> <li>Description of works meeting minimum requirements of Landscaping Policy (i.e. 50% of development screened in 3 yrs).</li> </ul>	—
<b>Long-term Management</b> <ul style="list-style-type: none"> <li>Management of habitat features, including protection during construction and for the life of development. Also include the provision of nesting boxes etc as appropriate. Maintenance period for 12 to 24 months after Issue of Occupation Certificate. NB maintenance can be by land occupier.</li> </ul>	✓
<ul style="list-style-type: none"> <li>Indicate areas that are to be maintained as 'bushland' for the life of the development</li> </ul>	✓
<ul style="list-style-type: none"> <li>Description of exclusion areas for domestic animals as relevant</li> </ul>	✓
<ul style="list-style-type: none"> <li>Reference to other documents if relevant (e.g. frequency and type of fuel reduction, care for on-site water disposal system)</li> </ul>	✓
<b>Check-sheets listing activities to be completed on an on-going basis.</b>	
<ul style="list-style-type: none"> <li>List of <del>Noxious Weeds</del> to be managed/removed (at all times).</li> </ul>	✓
<ul style="list-style-type: none"> <li>List of Environmental Weeds to be managed/removed (all times).</li> </ul>	✓
<ul style="list-style-type: none"> <li>Area of native vegetation and trees to be maintained/retained.</li> </ul>	✓
<ul style="list-style-type: none"> <li>Area from which domestic animals are not permitted.</li> </ul>	✓

## Ecological Sustainability Plan

Prepared for Franz Gross

by

Simmat and Associates Pty Ltd

P.O. Box 505

Harbord NSW 2096

Telephone (02) 9905 5531 Fax (02) 9939 5635

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## Plan Scope

The Plan is required to be read in conjunction with Appendix 1 – *Ecological Sustainability Site Plan Drawing Number #FG-S&A07*

Simmat and Associates Pty Ltd (S&A) were engaged by Franz Gross to prepare the attached Ecological Sustainability Plan (ESDP), for the approved alterations and additions to the existing residence at 67 Whale Beach Road Avalon.

In response to the requirements outlined below Simmat and Associates Pty Ltd have conducted both a desk top and site based investigation to assess the significance of construction and ongoing maintenance related environmental aspects of the works to be undertaken and the subsequent significant environmental impacts. Where environmental impacts have been deemed to be significant or where required by Pittwater council or consultants advising on the development application, that has subsequently been approved, environmental management controls have been defined and instructed in the attached report.

This report has been compiled to address the following requirements;

- *Pittwater Council Form 3a*
- *Pittwater Council Form 3b*
- *Statement of Environmental Effects prepared by NB Design 23 January 2007*
- *Planning for Erosion and Sediment Control on Single Residential Allotments - 1st Edition, Landcom NSW (Blue Book)*

## Introduction

The following plan outlines the essential environmental controls and activities required for the duration of excavation, construction, ongoing maintenance and re-stabilisation works associated with the approved alterations and additions to the existing residence, and construction of detached studio at 67 Whale Beach Rd Avalon NSW.

In order to ensure that adequate provision has been made to the implementation of action items and ongoing maintenance and management of environmental controls with respect to the construction and ongoing management and maintenance of the premises and the site. Each element of the report has tabled required works, completion dates and owner-builder self certification that the works have been undertaken and implemented is required to be completed by Franz Gross.



## Site Preparation

### Tree Vegetation and Habitat protection

As defined by "*Growing my Way*" tree management recommendations December 2006, 5 tree specimens have been identified to be potentially impacted upon on the rear of the site.

1) *Glochidion Ferdinandi* – Cheese Tree

Stairs to the proposed studio are to be suspended over the 2m Critical Root Zone (CRZ). A tree guard shall be installed in accordance with the "*Growing my way*" generic tree guard diagram" and placement of mulching in the localised area.

2) *Corymbia gummifera* – Red bloodwood

Potentially impacted upon with excavation for water tanks under the studio. The clients intention is to retain this tree. Recommendations by "*Growing My Way*" are for removal, or if retained the installation of a tree guard and placement of localised mulching.

3) *Allocasuarina littoralis* – Black Sheoak

Potentially minor impacts, to be managed with minor pruning (10%), installation of Tree Guarding, and mulching of the root zone.

4) *Corymbia gummifera* – Red Bloodwood

Is within the foot print of the studio construction as is to be removed. The owners have elected to replace three #4 with an established seedling of the same species.

5) *Pittosporum undulatum* – Native Daphne tree (or Victorian Box)

Is within the footprint of the proposed studio. Should it be able to be retained during the set-out of the studio it will require guarding and mulching of the CRZ. In lieu of being retained the client has nominated it is to be replaced with an established juvenile seedling of species variety *Eucalyptus haemastoma* during the landscaping phase of the project after the construction phase has finished.

### Sediment and Erosion control for natural features

The following construction has been approved by Pittwater council for the site,

- Alterations and additions to the existing dwelling
- Construction of a studio to the rear of the property

The proposed alterations and additions will include site disturbance for the excavation of footings. With the limited site disturbance caused by detailed hand excavation of pier holes the potential risk of sedimentation in a heavy rain event is the likelihood of erosion is considered to be low. In addition

there will be no stockpiling of civil construction materials so the risk of wind erosion and dust pollution in a significant wind event is also considered to be low.

The soils recorded on site from our previous experience in the area are typically sandy-loam underlain by a clay-loam or major obstruction of sandstone rock. This has been confirmed for the site

The soils in the area are categorized as Level 1 – Soil Dispensability, where well maintained and appropriately installed stormwater diversions and sediment fences will provide protection from sediment laden water discharges from the site.

When kept damp these soils retain a low risk for dust emissions from the site in the event of a significant wind event.

The proposal does not include any change to existing cut and filling on site. Detailed excavation for the extensions to the dwelling and construction of the studio are proposed to be returned to natural ground levels

### **Weed Control**

No significant intrusions of weeds identified in the Pittwater Council A-Z list of weeds have been identified. During the construction and subsequent landscaping and site maintenance processes weed management is proposed to include the methodology as defined by Pittwater council @ [http://www.pittwater.nsw.gov.au/environment/plants\\_and\\_animals/noxious\\_weeds/control\\_techniques](http://www.pittwater.nsw.gov.au/environment/plants_and_animals/noxious_weeds/control_techniques)

“The plant should be small enough to ensure the entire root will be removed, or the plant should not be able to re-sprout from any remaining root system.

#### *Tools and Equipment*

Gloves, knife, hand trowel or similar.

#### *Procedure*

Rake back ground mulch

Insert knife or similar tool and loosen the soil around the plant roots. Keep soil disturbance to a minimum

Grasp the stems or leaves of the plant at ground level and pull while freeing the roots with the knife

Remove the plant and shake off excess soil

Replace disturbed soil and any ground mulch

### **Top / Soil little layer treatment**

The detailed excavation for the additional footings will not generate a requirement for material stockpiling. Materials excavated by hand from footings will be stored adjacent to excavation areas and be returned to the excavated pits on completion for re-stabilisation of the site. Where surplus materials exist after the completion of the construction works, they will be removed from site with the construction waste.

The proposal does not include filling activities with surplus material.

#### **Surface treatment and stabilisation**

It is proposed that erosion and sediment will be controlled with the following measures

##### *For Water Borne Erosion and Sedimentation*

- Installation of an upslope swale, covered with Geo Fabric or mulch as applicable.
- Installation of sediment control fences around detailed excavation areas or the erection of a single sediment fence on the down slope of the detailed excavation area and upslope of the vegetation buffer.
- Upon completion of excavation the immediate stabilisation of the site with applicable surface treatments including mulching, replanting, or paved surfaces with drainage controls.

##### *For Air Borne Erosion*

- In periods of dry weather and high winds, the application of a light water spray to the detailed excavation areas and any other area of soil disturbance

See attachment 1 – Ecological Sustainability Plan for the location of proposed erosion and sediment control measures. Drawing Number #FG-S&A07

The site is currently landscaped, and accommodates a valuable diversity of un-disturbed vegetation to the rear. The detailed excavation and additions to the existing residence, seeks to protect and enhance where possible this valuable asset to the site. The detailed excavation is to be done by hand to ensure minimal disturbance to these areas. No intrusions are proposed for the undisturbed rear of the site.

On the completion of the construction works it is proposed that the areas of disturbance will be returned to their pre-construction state with landscaping works being implemented by the site owners

#### **Site Drainage with respect to natural features**

Existing overland stormwater flow paths have not been defined. It is proposed that overland flow paths after the completion of the proposed construction works will include drainage control on the upslope of the studio by way of collection troughs or pits and laid stormwater lines down the southern boundary to the western boundary of the property. All stormwater collected on paved surfaces will be controlled and directed to collection pits where required

All rain water collected from the roof is stored in the onsite water tanks for domestic reuse purposes. The proposed additions to the roof of the dwelling will add to the water collection capacity of the premises and thus reduce the runoff potential.

	Site Prep - Required Works	Completion Date	Name / Sign off
1.	Tree #1 - Install tree guard protection and mulching		
2.	Construct suspended staircase over CRZ for Tree #1		
3.	Minor pruning to tree #1 (10%)		
4.	Tree #2 - Install tree guard protection and mulching if not removed		
5.	Tree #3 - Install tree guard protection and mulching		
6.	Tree #4 - Remove		
7.	Replace Tree #4 with established seedling <i>Corymbia gummifera</i> - <i>Red Bloodwood</i> on completion of construction		
8.	Tree #5 - Remove		
9.	Replace Tree #5 with <i>Eucalyptus haemastoma</i> (Scribbly Bark)		
10.	Notify PCA of Intention to commence building works		
11.	Install sediment fence(s) along the down slope of detailed excavation areas. Cover excavated materials with geo-fabric or similar material for longer periods of storage prior to relocation on or off the site		
12.	Divert up-slope water around the work site and appropriately stabilise any drainage channels, with swale and mulch		
13.	Notify Pittwater Council or PCA that sediment controls have been installed		
14.	Clear only those areas necessary for building work to occur.		
15.	Stockpile excavated materials only within the sediment-controlled zone.		
16.	Stabilise exposed earth banks eg. With vegetation, erosion control blankets, geo fabric.		
17.	Install on-site waste receptacles eg. bins, or cages. These should be covered to prevent waste being moved by wind.		
18.	Commence building activities.		
19.	Install roof downpipes and stormwater collection pits and drains as soon as practicable after hard surfaces including the roof are laid.		
20.	Maintain all control measures in good working order, on a daily basis and after significant events of rain and wind		
21.	Revegetate or otherwise stabilise the site as soon as possible during or after the completion of the construction works		

## Weed Removal and Regeneration

### List of Noxious and Environmental weeds

No Noxious weeds have been identified on the site

With regard to environmental weeds the following have been identified on the site;

*Agapanthus orientalis* – Agapanthus

*Nephrolepis cordifolia* – Fishbone fern

It is proposed the while these examples of environmental weeds are located well below the proposed construction zone of the studio and the undisturbed native bushland areas of the site, they are to be controlled and removed where possible with the following methodologies as prescribed by Pittwater Council;

Agapanthus - [http://www.pittwater.nsw.gov.au/environment/plants\\_and\\_animals/noxious\\_weeds/herbs/agapanthus](http://www.pittwater.nsw.gov.au/environment/plants_and_animals/noxious_weeds/herbs/agapanthus)

Fishbone fern - [http://www.pittwater.nsw.gov.au/environment/plants\\_and\\_animals/noxious\\_weeds/herbs/fishbone\\_fern](http://www.pittwater.nsw.gov.au/environment/plants_and_animals/noxious_weeds/herbs/fishbone_fern)

### Timeline for weed management

The timeline for weed management is ongoing for the prescribed life of the construction phase of the project and during the initial landscaping phase of the project. On completion of the landscaping and during the establishment and maintenance of the garden on the property, environmental weed control will be at the digression of the property owner at the time or as directed by the appropriate regulatory authority, under the *Noxious Weeds Act 1993*

	Weed Removal - Required Works	Completion Date	Name / Sign off
22.	Agapanthus to the rear of the property identified and removed as required		
23.	Asparagus Fern controlled to avoid infestation of the native bushland areas of the property		
24.	Asparagus Fern removed where possible from ongoing landscaping works on the property		

## Description of Planting

### Planting Aims

The aim of the landscaping and Ecological Sustainability Plan for the site is consistent with the Pittwater Policy on native planting and biodiversity -;

*"Maintaining the genetic integrity of bushland on public and private land can be achieved by:*

- ☐ *promoting natural regeneration*
- ☐ *using plant material that has been sourced from within Pittwater*
- ☐ *removal of 'native' species which are non-indigenous to the Pittwater area"*

### Species list recommended for planting

Species recommended for planting within the site and as identified in the Ecological Sustainability plan are identified in the appendices of this report and specifically referenced from:- *Pittwater Council fact sheet – Native Planting for 1. Sandstone Crests*

### Description of areas for bush regeneration

No areas on the site have been identified for bush regeneration. The rear of the site has been identified for access control and maintenance as an undisturbed native sandstone Crest vegetation area.

### Schedule of materials

With regard to a schedule for materials the following is be required for installation of environmental controls;

- A) Tree guard materials as defined by *"Growing My Way" – "Generic Tree Guard Detail"*
- B) Sediment control fencing material for the down slope of the soil disturbance areas
- C) Sediment control untreated timber stakes
- D) Geo-fabric and / or slope stabilisation material for areas of sloped soil disturbance
- E) Mulch in the volumes required for 50 – 100mm cover. Mulch should be locally sourced and verified to ensure only native trees and shrubs were used as raw materials in the chipping or commercial composting of the product.

### Landscape Policy requirements

50% Screening requirements for the development are not applicable as the approved alterations and additions are not visible as a component of the streetscape for Whale Beach Road.

In support of screening of the property in general the owners of the premises are proposing mature tree plantings in the front yard of the property utilising species from the list of *Sandstone Crests* in the appendices.

	Planting - Required Works	Completion Date	Name / Sign off
25.	Landscaping includes species listed on the prescribed list for Sandstone Crests		
26.	Mulch is of native species origin and is not contaminated with exotic species.		

## Long term Management

### Management of Habitat features

With regard to the management of habit features, these will be affected in part by the requirements for maintaining of a Bushfire control inner protection area requirements.

### Indicated areas of Bushland

Undisturbed natural bushland areas on the site have been identified on the attached Ecological Sustainability Plan drawing number #FG-S&A07 included in the appendices of this report.

### Domestic Animals exclusion areas

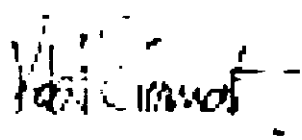
There are currently no domestic animals residing on the property, while potential habitats of Pittwater LGA identified threatened species may exist on the site the areas of natural bushland and the need for exclusion areas on the site is considered to be a minor requirement. As such the requirement of the owners of the property to maintain controls of domestic pets visiting the site will be their responsibility and should the need for permanent controls be required it would be recommended to install an appropriate fence on the upslope of the proposed studio for the containment of dogs. With regard to cats it is recommended that they do not reside within the property, the location of this fence has been determined on drawing number #FG-S&A07

### Fuel Reduction Program

*Fire Based Consulting Pty Ltd*, have made recommendations for fire risk reduction controls during construction, and in the ongoing management and maintenance of the property. Specifically *Fire Based Consulting Pty Ltd* has nominated the need for an IPZ.

	Long Term Management -Required Works	Completion Date	Name / Sign off
27.	Domestic Animal exclusion – minimisation of domestic cats on the site where possible		
28.	Prevent access of domestic animal to the upslope natural bushland areas of the property		
29.	Maintain natural bushland within 10m to the east of the studio in a fuel reduced condition, annual maintenance should be completed annually before each fire season.		
30.	Ensure construction standards prescribed by AS 3959 are met as applicable in the construction of the studio and alterations and additions to the dwelling.		
31.	External Timbers installed are fire retardant or designated species		
32.	New fencing is non-combustible		
33.	Gutter guards have been installed (AS3959)		
34.	Unobstructed access path has been defined and is clear		

**Authorised by**  
**Kobi Simmat**  
**Managing Director**  
**Simmat and Associates Pty Ltd**  
**Freshwater – Australia**



*End of Planning Document.*



## **Check sheets to be completed**

**Appendix 1 – Drawing Number FG-S&A07 – Ecological Sustainability Plan**

**Appendix 2 - Ecological Sustainability Checklist**

**Appendix 3 - Erosion and Sediment Control inspections**

## Appendices

### Appendix 1 – Drawing Number FG-S&A07 – Ecological Sustainability Plan



## Appendices

### Appendix 2 - Ecological Sustainability Checklist – page 1

	Site Prep - Required Works	Completion Date	Name / Sign off
35.	Tree #1 - Install tree guard protection and mulching		
36.	Construct suspended staircase over CRZ for Tree #1		
37.	Minor pruning to tree #1 (10%)		
38.	Tree #2 - Install tree guard protection and mulching if not removed		
39.	Tree #3 - Install tree guard protection and mulching		
40.	Tree #4 – Remove		
41.	Replace Tree #4 with established seedling <i>Corymbia gummifera</i> – <i>Red Bloodwood</i> on completion of construction		
42.	Tree #5 – Remove		
43.	Replace Tree #5 with <i>Eucalyptus haemastoma</i> (Scribly Bark)		
44.	Notify PCA of Intention to commence building works		
45.	Install sediment fence(s) along the down slope of detailed excavation areas. Cover excavated materials with geo-fabric or similar material for longer periods of storage prior to relocation on or off the site		
46.	Divert up-slope water around the work site and appropriately stabilise any drainage channels, with swale and mulch		
47.	Notify Pittwater Council or PCA that sediment controls have been installed		
48.	Clear only those areas necessary for building work to occur.		
49.	Stockpile excavated materials only within the sediment-controlled zone.		
50.	Stabilise exposed earth banks eg. With vegetation, erosion control blankets, geo fabric.		
51.	Install on-site waste receptacles eg. bins, or cages. These should be covered to prevent waste being moved by wind.		
52.	Commence building activities.		
53.	Install roof downpipes and stormwater collection pits and drains as soon as practicable after hard surfaces including the roof are laid.		
54.	Maintain all control measures in good working order, on a daily basis and after significant events of rain and wind		
55.	Revegetate or otherwise stabilise the site as soon as possible during or after the completion of the construction works		

# Appendices

## Appendix 2 - Ecological Sustainability Checklist – page 2

	Weed Removal - Required Works	Completion Date	Name / Sign off
56.	Agapanthus to the rear of the property identified and removed as required		
57.	Asparagus Fern controlled to avoid infestation of the native bushland areas of the property		
58.	Asparagus Fern removed where possible from ongoing landscaping works on the property		
	Planting - Required Works	Completion Date	Name / Sign off
59.	Landscaping includes species listed on the prescribed list for Sandstone Crests		
60.	Mulch is of native species origin and is not contaminated with exotic species.		
	Long Term Management -Required Works	Completion Date	Name / Sign off
61.	Domestic Animal exclusion – minimisation of domestic cats on the site where possible		
62.	Prevent access of domestic animal to the upslope natural bushland areas of the property		
63.	Maintain natural bushland within 10m to the east of the studio in a fuel reduced condition, annual maintenance should be completed annually before each fire season.		
64.	Ensure construction standards prescribed by AS 3959 are met as applicable in the construction of the studio and alterations and additions to the dwelling.		
65.	External Timbers installed are fire retardant or designated species		
66.	New fencing is non-combustible		
67.	Gutter guards have been installed (AS3959)		
68.	Unobstructed access path has been defined and is clear		

## **Appendices**

### **Appendix 3 - Erosion and Sediment Control inspections**



# EROSION AND SEDIMENT CONTROL DAILY SITE CHECK LIST

Best Practice guidelines for the *Control of Stormwater Pollution from Building Sites*

Location of site \_\_\_\_\_

Site Supervisor \_\_\_\_\_

It is suggested that the site supervisor completes the following checklist daily while site work occurs.

ITEM AND/OR LOCATION TO CHECK	TIMING			
	Start of works	Each day – throughout the duration of works	Roof laid	Completion
<b>If required, has an Erosion and Sediment control management plan been prepared and approved?</b> <ul style="list-style-type: none"><li>Are all contractors and subcontractors aware of the contents of this plan?</li></ul>				
<b>Is the builder's sign displayed?</b>				
<b>Are the sediment fences erected adequately/correctly?</b> NOTE: <ul style="list-style-type: none"><li>Geotextile sediment fence buried at least 200 mm below ground.</li><li>Built up sediment should not exceed 1/3 of the height of the sediment fence</li><li>No tears or rips.</li><li>Not laying down or covered over by materials.</li></ul>				
<b>Is there an advisory/attention sign on the sediment fence?</b>				
<b>Is the entry/exit pad (rumble pad) in the correct location?</b> NOTE: <ul style="list-style-type: none"><li>Are the tradespeople/suppliers using this entry point?</li></ul>				
<b>Does the entry/exit point (rumble pad) require maintenance?</b> NOTE: <ul style="list-style-type: none"><li>Has the entry/exit pad got excessive sediment in it?</li><li>Turn over with a machine to expose the coarse aggregate again.</li><li>Aggregate must be 40 mm or greater.</li><li>Is there a bunding/diversion drain above the rumble pad to divert sediment behind the sediment fence?</li><li>Are the tradespeople using an adjacent lot to gain entry to the site? If so, are there control measures in place to prevent the movement of sediment off the lot and into the gutter?</li></ul>				
<b>Is the road clean of sand, silt and mud?</b> NOTE: <ul style="list-style-type: none"><li>Do the tradespeople have the capacity to clean-up the sediment before they leave the site?</li></ul>				

Best Practice guidelines for the *Control of Stormwater Pollution from Building Sites*

ITEM AND/OR LOCATION TO CHECK	TIMING			
	Start of works	Each day - throughout the duration of works	Roof laid	Completion
<p><b>Is there a contained area for building waste on site?</b></p> <p>NOTE:</p> <ul style="list-style-type: none"> <li>• Use a skip bin and/or mesh trap.</li> <li>• Cover the waste cage/bin at the end of each work day.</li> <li>• Place food packaging into waste cage/bin after each meal break.</li> <li>• Skip or waste cage should not be allowed to overflow.</li> <li>• Cover loads of waste when delivering to waste facility.</li> </ul>				
<p><b>Have the tradespeople and suppliers been made aware of the requirements for erosion and sediment control, and the consequences involved if there is a breach?</b></p>				
<p><b>Are filter socks/sand bags in place?</b></p>				
<p><b>Are the stormwater gully traps in front of the site protected from sediment run-off and maintained?</b></p>				
<p><b>Are the 'wet trades' setting/washing up behind a sediment fence and on grassed areas that will hold the volume of waste?</b></p>				
<p><b>Is my maintenance program diary for this site up-to-date?</b></p>				
<p><b>Are the stockpiles/sand/soil adequately protected?</b></p> <p>NOTE:</p> <ul style="list-style-type: none"> <li>• Covered by a plastic sheet.</li> <li>• Located behind a sediment fence.</li> <li>• Sand bags around base.</li> </ul>				
<p><b>At the end of each working day do the temporary stockpiles on hard surfaces have:</b></p> <ul style="list-style-type: none"> <li>• a bund wall of sandbags, fibre or geofabric sausage on the downside of the stockpile?</li> <li>• a waterproof / windproof covering?</li> <li>• an up-slope diversion of sandbags, fibre or geofabric sausage for on-site stockpiles?</li> <li>• sandbags or geotextile bags filled with gravel surrounding the stockpile (if on road reserves)?</li> </ul>				
<p><b>Is the turf strip on the footpath cleared of sediment, sand and mud?</b></p>				
<p><b>Are the service trenches backfilled?</b></p>				
<p><b>Are the temporary downpipes correctly connected?</b></p>				
<p><b>Is there an exposed aggregate driveway? If so, does the concreter know/practice the correct control measures?</b></p>				
<p><b>Has the client been advised about erosion and sediment control requirements?</b></p> <p>NOTE:</p> <ul style="list-style-type: none"> <li>• The site must have adequate control measures on-site at all times, even after hand over.</li> </ul>				

For further information about the Healthy Waterways Campaign and The Partnership telephone (07) 3403 4206 or visit the Healthy Waterways website at [www.healthywaterways.org](http://www.healthywaterways.org)

SUPPORTED BY





## References

**Pittwater Council website – Ecological Sustainability Plan Guidelines**

**Pittwater Council or PCA – B5 Water management Development Control Plan,**

**Pittwater Council or PCA – B4 Controls relating to the natural Environment**

**Lancom NSW - Planning for Erosion and Sediment Control on Single Residential Allotments - 1st Edition and 4<sup>th</sup> Edition,**

**Catchments and Creeks Pty Ltd – Erosion and sediment control detailed specifications**

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# 1. SANDSTONE CREST (SC)

These areas are the plateaus and upper slopes with generally shallow soils developed on Hawkesbury sandstone. Their soils fall into the Hawkesbury, Gynea, Somersby and Oxford Falls soil landscapes.

## A. Open Forest

### Trees:

COMMON NAME	SCIENTIFIC NAME	CHARACTERISTICS
Parramatta Green Wattle	Acacia parramattensis	Pale yellow flowers and fine fern-like leaves.
Black She Oak	Allocasuarina littoralis	Deep fissured bark. Cones cylindrical shape with a flat apex
Smooth-barked Apple	Angophora costata	Orange to salmon coloured bark. Branches that contort and twist.
Saw toothed/ Old Man Banksia	Banksia serrata	Knobbly grey bark and thick serrated leaves. Nectar for birds and marsupials.
NSW Christmas Bush	Ceratopetalum gummiferum	Flowers are small and white. Fruits that swell to an attractive bright red in summer.
Red Bloodwood	Eucalyptus gummifera	Tesselated dark grey-brown bark. Flowers with heavily scented blossoms.
Scribbly Gum	Eucalyptus haemastoma	Smooth-bark is pale with scribbles. Important Koala food tree.
Sandstone Stringybark	Eucalyptus oblonga	A small tree, with stringy bark extending to the smallest branches.
Sydney peppermint	Eucalyptus piperita	Grey rough barked trunk, with white upper limbs and scented peppermint leaves
Grey Gum	Eucalyptus punctata	Bark is grey with large cream patches. Significant Koala food tree.
Silver top Ash	Eucalyptus sieberi	The trunk has dark flaky bark, with smooth creamy upper branches.

### Shrubs:

Sweet-scented Wattle	Acacia suaveolens	Pale yellow, perfumed flower balls.
Paper bark Tea-tree	Leptospermum trinervium (formerly L .attenuatum)	Flowers white. Stout trunk with papery-flaky bark
Blackthorn	Bursaria spinosa	Flowers in late Summer - white.
Prickly Moses	Acacia ulicifolia	Flowers in late Winter with pale lemon wattle flowers.
Wedding Bush	Ricinocarpus pinifolius	Soft erect shrub, with white flowers.
Hair-pin Banksia	Banksia spinulosa var. spinulosa	Flowers in Autumn/ Winter. A major food source for birds and possums.
Common Hop Bush	Dodonaea triquetra	Soft leafy shrub with thin -textured leaves
Native Fuschia	Epacris longiflora	Brilliant Winter flowers with small heart-shaped leaves
Broad-leafed Wedge Pea	Gompholobium latifolium	Large lemon yellow pea flower with broad, flat leaves.
Grey Spider flower	Grevillea buxifolia	Rusty-brown to grey flowers with whitish hairs.
White spider flower	Grevillea linearifolia	White flowers in Spring.
Pink spider flower	Grevillea sericea	Pink-purple flower in Spring ; tolerates dry, open areas.
Red spider flower	Grevillea speciosa	Crimson/red Winter flowers.
Hakea	Hakea gibbosa	Prickly shrub with dense foliage and creamy flowers.
Mountain Devil	Lambertia formosa	Large orange/red tubular flowers.
Rice flower	Pimelia linifolia	White clustered flowers in Spring
Native Parsnip	Platysace lanceolata	White compact flowers in Summer.

Fine-leaf Bush-pea	<i>Pultenaea stipularis</i>	Summer flowers are yellow with faint -red markings.
Grass Tree	<i>Xanthorrhoea</i> spp.	Long grass-like leaves with tall flower spike. The rich nectar is food for birds and insects.

**Herbs, Climbers and Low Shrubs:**

Flannel Flower	<i>Actinotus helianthi</i>	Attractive soft, white daisy -like flower heads.
Variable Bossiaea	<i>Bossiaea heterophylla</i>	Narrow leaves, with red, orange and yellow patterned flowers.
Wombat Berry	<i>Eustrephus latifolius</i>	Flowers in pale pink clusters.
Blue Flax Lily	<i>Dianella caerulea</i>	Tufted herb, with rich blue flowers and yellow anthers.
Apple Berry	<i>Billardiera scandens</i>	Slender climber, with cream drooping flowers and edible fruits.
Love Creeper	<i>Glycine clandestina</i>	Slender creeper with mauve flowers.
Dusky Coral Pea	<i>Kennedia rubicunda</i>	Robust twiner, which has large red pea flowers with black markings.
False Sarsaparilla	<i>Hardenbergia violacea</i>	Attractive twiner with rich purple pea flowers.
Spiny-headed Mat-rush	<i>Lomondra longifolia</i>	Perfumed-yellow flower clusters on small stalks.
Silky Purple Flag	<i>Patersonia sericea</i>	Tufted herb with large purple iris flowers and grass-like leaves.
Snake flower/ Purple Fanflower	<i>Scaevola ramosissima</i>	Scrambling herb with purple fan-shaped flowers.
Kangaroo grass	<i>Themeda australis</i>	Native grass with purple sheen, which flowers late Spring.

**B. HEATHS AND ROCKY HEATHS (SANDSTONE CRESTS)**

**Trees:**

COMMON NAME	SCIENTIFIC NAME	CHARACTERISTIC
Saw toothed/ Old Man Banksia	<i>Banksia serrata</i>	Knobbly grey bark and thick serrated leaves.Nectar for birds and marsupials.
Red Bloodwood	<i>Eucalyptus gummifera</i>	Tesselated dark grey-brown bark. Flowers with heavily scented blossoms.
Grey Gum	<i>Eucalyptus punctata</i>	Bark is grey with large cream patches. Significant Koala food tree.

**Shrubs:**

Sweet-scented wattle	<i>Acacia suaveolens</i>	Pale yellow perfumed balls of flowers with blue-green leaves.
Scrub She-Oak	<i>Allocasuarina distyla</i>	Glossy foliage with grey fruiting nuts.
Dwarf Apple	<i>Angophora hispida</i>	Twisted trunk with young branches bearing red hairs.
Heath-leaved Banksia/ Lantern Banksia	<i>Banksia ericifolia</i>	Flowers in a cylindrical spike. Nectar source for birds.
Darwinia	<i>Darwinia fascicularis</i> var. <i>fascicularis</i>	Clusters of tiny pine-like leaves. Flowers changing from white to red.
Dogwood	<i>Jacksonia scoparia</i>	Orange-yellow pea flowers,with little leaf coverage on plant.

Sticky sword sedge	Leptospermum squarrosum	Enjoys moist position with pinky white flowers.
Fringe-myrtle	Calytrix tetragona	Star-shaped white flowers.
Crowea	Crowea saligna	Thin leaves with bright pink flowers.
Native Fuschia	Epacris longiflora	Bell-shaped red to white flowers.
Grey Spider -flower	Grevillea buxifolia	Grey flowers with fine hairs covering.
Dagger Hakea	Hakea teretifolia	Spiky leaves and white to cream flowers.
Pink Capitata	Kunzea capitata	Bright purple to violet flowers in button-like heads.
Honey Flower/Mountain Devil	Lambertia formosa	Large orange to red tubular flowers.
Grass Tree	Xanthorrhoea spp	Long grass-like leaves with a tall flower spike. The rich nectar is food for birds and insects.

**Groundcover and Low Shrub:**

Christmas Bells	Blandfordia nobilis	Erect tufted herb with red to yellow bell-shaped flowers.
River Rose	Bauera rubioides	Bell-shaped pink to purple flowers.
Variable Bossiaea	Bossiaea heterophylla	Erect shrub with flattened leaves and red flowers.
Calyptrix	Calyptrix tetragona	Erect shrub with small white flowers each with long sinuous feelers.

**C. HANGING SWAMPS (SANDSTONE CRESTS):**

**Shrubs:**

Heathleaved/ Latern banksia	Banksia ericifolia	Cylindrical flowers in a spike. Nectar source for birds.
River Rose	Bauera rubioides	Forms dense entwined masses with pink flowers.
Christmas Bells	Blandfordia nobilis	Erect tufted herb with red to yellow bell-shape flowers.
Darwinia	Dawinia fascicularis var. fascicularis	Clusters of tiny pine-like leaves. Flowers white changing to red.
Red-fruited Sword Sedge	Gahnia sieberana	Tall leafy sedge, dense thickets blue-green leaf underside.
Crimson Bottlebrush	Callistemon citrinus	Crushed leaves have a lemon scent. Flowers have bright red filaments.
Heathy Parrot Pea	Dillwynia retorta	Small spreading shrub with masses of flowers with yellow and red markings.
Pink Tea-Tree	Leptospermum squarrosum	Small dense shrub, with masses of pink flowers and dark prickly foliage.
Fine-leaf Bush-pea	Pultenaea stipularis	Long slender leaves and yellow flowers.

**D. COASTAL  
HEATHS  
(SANDSTONE CRESTS):**

**Trees:**

COMMON NAME	SCIENTIFIC NAME	CHARACTERISTIC
Lillypilly	Acmena smithii	Dense dark glossy foliage with fruit succulent and edible.
Saw toothed/ Old Man Banksia	Banksia serrata	Knobbly grey bark and thick serrated leaves. Nectar for birds and marsupials.
Coastal Banksia	Banksia integrifolia	Leaves are stiff and leathery, dark-green above with white hairs below.
Scribbly Gum	Eucalyptus haemastoma	Smooth-bark is pale with scribbles. Important Koala food tree.
Bastard/ Broad-leaved White Mahogany	Eucalyptus umbra	Thick tough leaves and fibrous bark.
Ball Honeymyrtle	Melaleuca nodosa	Leaves are linear and sharply pointed. Flowers filaments cream to yellow.

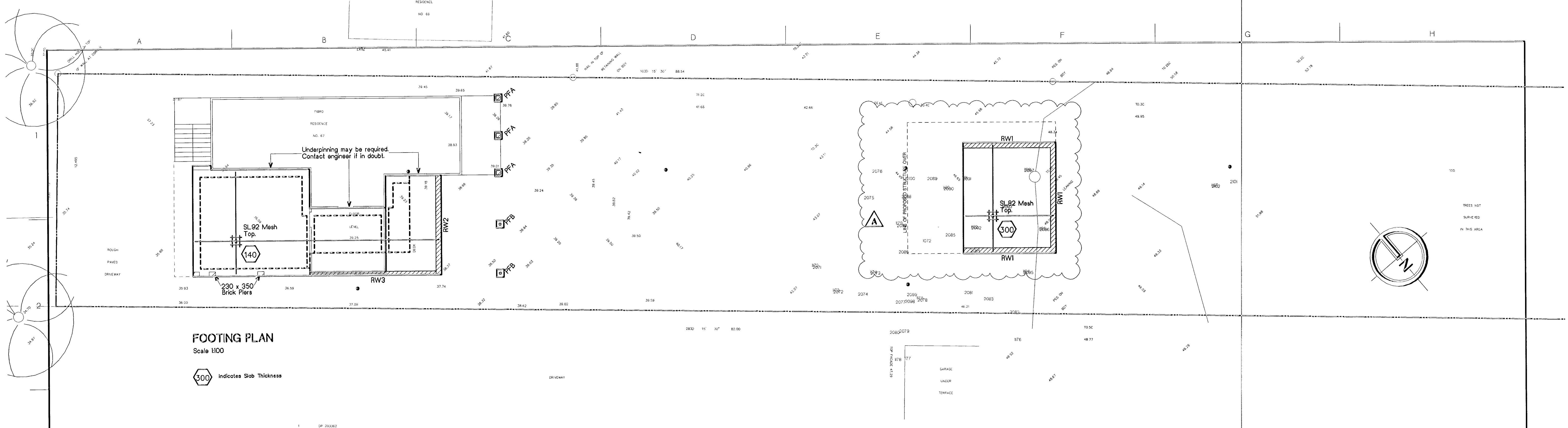
**Shrubs:**

Golden Wattle	Acacia longifolia var. sophorae	Robust sprawling shrub with flower heads a golden-yellow.
Myrtle Wattle	Acacia myrtifolia	Attractive red-tinged foliage and flower heads a pale yellow.
Scrub She-oak	Allocasuarina distyla	Dense brushy shrub. Male plant a rusty-red when in flower.
Sweet-scented Wattle	Acacia suaveolens	Pale yellow perfumed balls of flowers and blue-green leaves.
Baeckea	Baeckea imbricata	Leaves are broad and flat with flowers white to pinkish.
Heath-leaved Banksia/ Lantern Banksia	Banksia ericifolia	Cylindrical flower spike. Nectar source for birds.
Silver Banksia	Banksia marginata	Rounded shrub with leaves small and white below. Flower spikes yellow in colour.
Breynia	Breynia oblongifolia	Flowers tiny and reddish with leaves an olive green.
Common Correa	Correa reflexa	Leaves papery and heart shaped with flowers a red-white-green combination.
Box-leaf Wax Flower	Eriostemon buxifolius	Leaves are short and broad and flowers pink.
Hop-Goodenia	Goodenia ovata	Leaves are broad and glossy and flowers yellow.
Broad-leafed Drumsticks	Isopogon anemonifolius	Leaves are narrow and flat with flowers yellow.
Butterfly Bush	Kunzea ambigua	Leaves are tiny and clustered with flowers white.
Rusty Petals	Lasiopetalum ferrugineum	Flowers are a rusty colour and appear permanently withered.
Coastal Tea Tree	Leptospermum laevigatum	Tall coastal shrub with white flowers.
Sticky Sword-Sedge	Leptospermum squarrosum	Flowers pink to white.
Dagger Hakea	Hakea teretifolia	Stiff prickly shrub with leaves needle sharp. Fruit narrow and dagger-like.
Hakea	Hakea gibbosa	Very prickly shrub with leaves covered in fine white hairs.
Spiky Mirbelia	Mirbelia rubiifolia	Flowers are a large rich rose-purple colour with pale purple markings.
Carrot Tops	Platysace linearifolia	Flowers are white in dense clusters with soft thread-like foliage.
Large-leafed Bush-pea	Pultenaea daphnoides	Slender attractive shrub with flowers yellow bearing red markings.

Elliptical Bush-pea	<i>Pultenaea elliptica</i>	Small erect shrub with flowers a rich yellow with dark red markings.
Mutton Wood	<i>Rapanea variabilis</i>	Flowers are pale yellow, tiny and clustered on the old wood.
Coast Westringia	<i>Westringia fruticosa</i>	Dense spreading shrub. Flowers are white with a long narrow throat.
Boobialla	<i>Myoporum insulare</i>	Leaves are thick and fleshy with flowers white with purple spots.
Grass Tree	<i>Xanthorrhoea</i> spp.	Long grass-like leaves with a tall flower spike. The rich nectar is food for birds and insects.

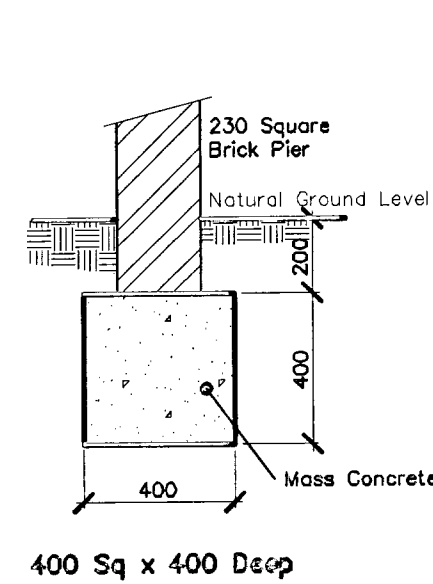
**Herbs, Climbers  
and Low Shrubs:**

Apple Berry Dumplings	<i>Billardiera scandens</i>	Slender climber or scrambler with purple fruits which are edible.
Blue Flax Lily	<i>Dianella caerulea</i>	Tufted herb with flowers a rich blue.
Knobby Club Rush	<i>Isolepis nodosa</i>	A clump-forming sedge with spiklets in a dense globular cluster.
Dusky Coral Pea	<i>Kennedia rubicunda</i>	Robust twiner with large red pea-flowers bearing black markings.
Spiny Mat Rush	<i>Lomondra longifolia</i>	Large tufted herb with tough strap-like leaves. Flowers edible and scented.
Crinkle Bush	<i>Lomatia silaifolia</i>	Low shrub with rigid, highly divided leaves. Tufted on ground.
Snake Flower	<i>Scaevola ramosissima</i>	Herbaceous scrambler, with large bluish-mauve flowers.
Kangaroo Grass	<i>Themeda australis</i>	Tufted grass with brownny purplish spiklet clusters and a long, wiry flowering stem.

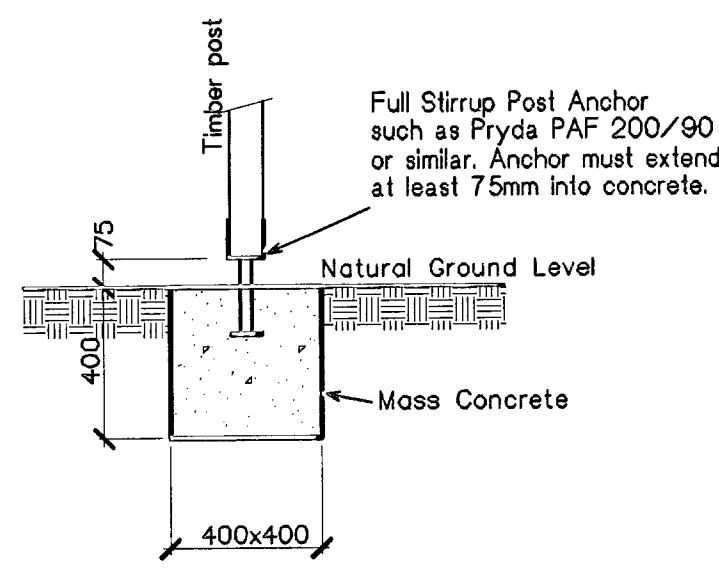


FOOTING PLAN  
Scale 1:100

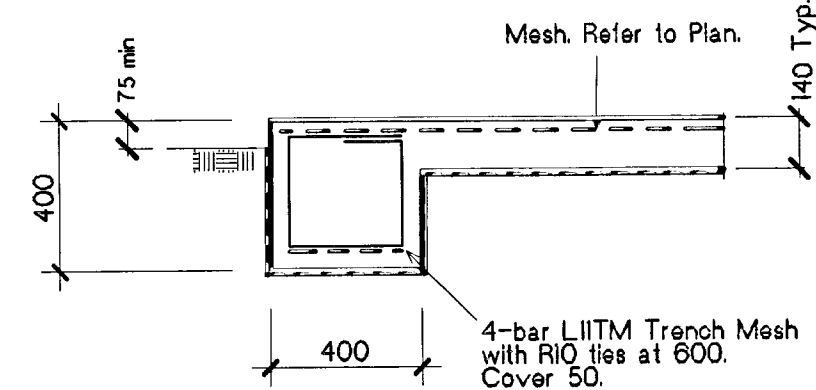
Indicates Slab Thickness



PAD FOOTING DETAIL - PFA  
SCALE 1:20



PAD FOOTING DETAIL 'PFB'  
SCALE 1:20



TYPICAL SLAB EDGE DETAIL

CONCRETE & BLOCK NOTES

1. All concrete work to be in accordance with AS 3600.
2. Fc Refer to table.
3. Maximum aggregate size = 20 for footings, slabs & beams.  
= 10 for block filling.
4. Slump = 80.
5. All concrete, including block filling, to be vibrated.
6. Slabs to be kept damp for at least 14 days after placing.
7. All blockwork to be in accordance with SAA Masonry Code AS 3700.
8. All cavities of block work to be thoroughly cleaned out, using knock out blocks or other suitable means, before filling with grout or concrete.
9. 200 & 300 blocks to be hollow retaining wall blocks with a characteristic strength of 20 MPa.
10. Blocks may be filled with a C 14.0 0.5 : 4.5 mortar as the block laying proceeds.
11. Reinforcing Steel to comply with AS/NZS 4671:2001, and to be 500N unless noted otherwise. (where 500 = strength grade in megapascals & N = Normal ductility class).
12. Steel Reinforcement to be cut & bent in accordance with AS 3600.
13. Bar Chairs to be no more than 800mm centre to centre spacings.
14. Reinforcement to be tied at every other intersection minimum.
15. Metal roofing being used as formwork (not Bondex or similar).
16. Depth of Slab must be taken from the Top of the Roof Rib.
17. Specified bottom cover must be taken from the Top of the Roof Rib or be protected by an approved curing membrane.
18. Moisture Vapour Membrane to be 200 Microns thick, UV, Resistant and to be in accordance with AS 2870-1998.
19. Acceptable manufacturers and processors of steel reinforcement must hold a valid certificate of approval, issued by the Australian Certification Authority for Reinforcing Steel Ltd (ACRS), or to an equivalent certification system as may be approved in writing by the specifier. Evidence of compliance with this clause must be obtained when the contract bids are received.

STEELWORK NOTES

1. Fabricate and erect all structural steelwork in accordance with AS 3600, AS 4100, AS 1554 and the Specification.
2. Do not obtain dimensions by scaling the structural elements.
3. Chip all welds free of slag.
4. All steelwork to be Hot Dipped Galvanised. Unless Otherwise Noted.
5. Unless otherwise noted use:  
a) 6mm continuous fillet weld  
b) 10mm thick gusset, fin and end plates, weld all round.  
c) 18mm dia. 4.5/4 bolts
6. Minimum end bearing 150mm.

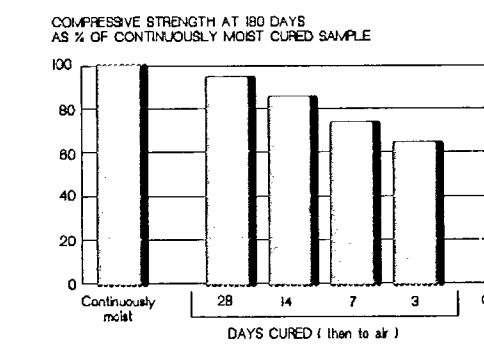
TIMBER NOTES :

1. All work (including bracing, wind bracing & tie down) shall be carried out in accordance with AS 3600, AS 1684.2, AS 1720, and the specification.
2. Refer to the Architects Drawings and the specification for all timber sizes not shown on these drawings.
3. All timber shall be free of Gum veins, pockets, knots holes or splits within 255mm of any connection.
4. Refer to specification for preservatives and finishes to timbers.
5. All bolts, nuts, washers and timber connectors shall be hot dip galvanised unless noted otherwise.
6. All F7 timber shown are nominal sizes only.

Element	Cover (mm)		Fc at 28 days	
	Protected	Exposed	Protected	Exposed
Piers	65	25	25 MPa	25 MPa
Footings	50	25	25 MPa	25 MPa
Block Filling	refer to detail			
Slab on Ground			32 MPa	32 MPa
Top	30	45		
Bottom				
Beams	50	50	40 MPa	40 MPa
Columns	30	45	40 MPa	40 MPa
Slabs	30	45	40 MPa	40 MPa
Walls	30	45	40 MPa	40 MPa

The minimum clear cover is to reinforcement ties and stirrups.

EFFECT OF CURING CONCRETE





A

B

C

D

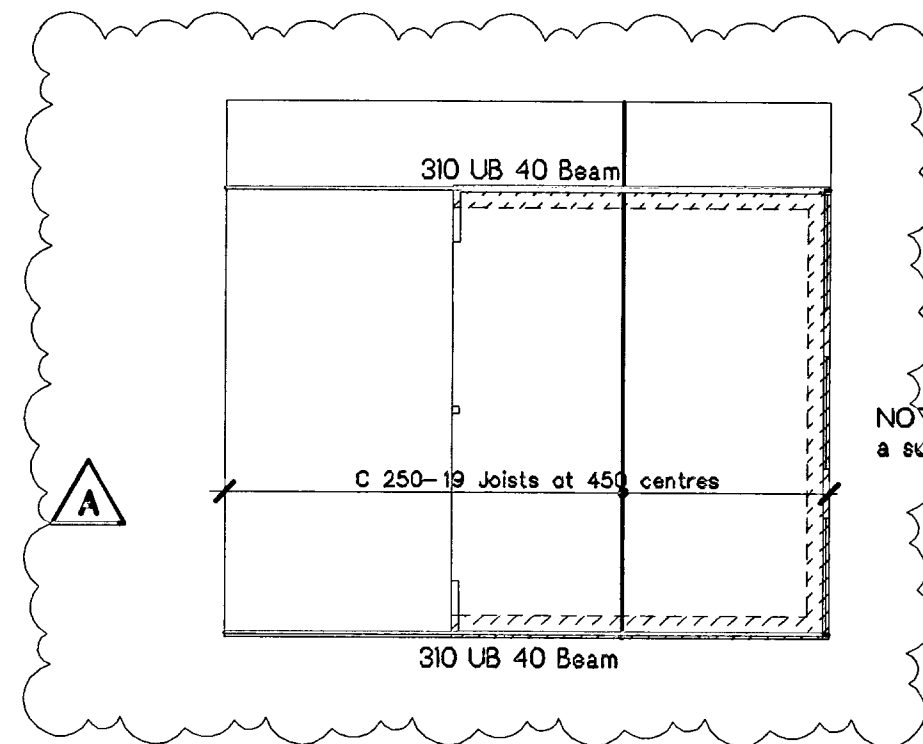
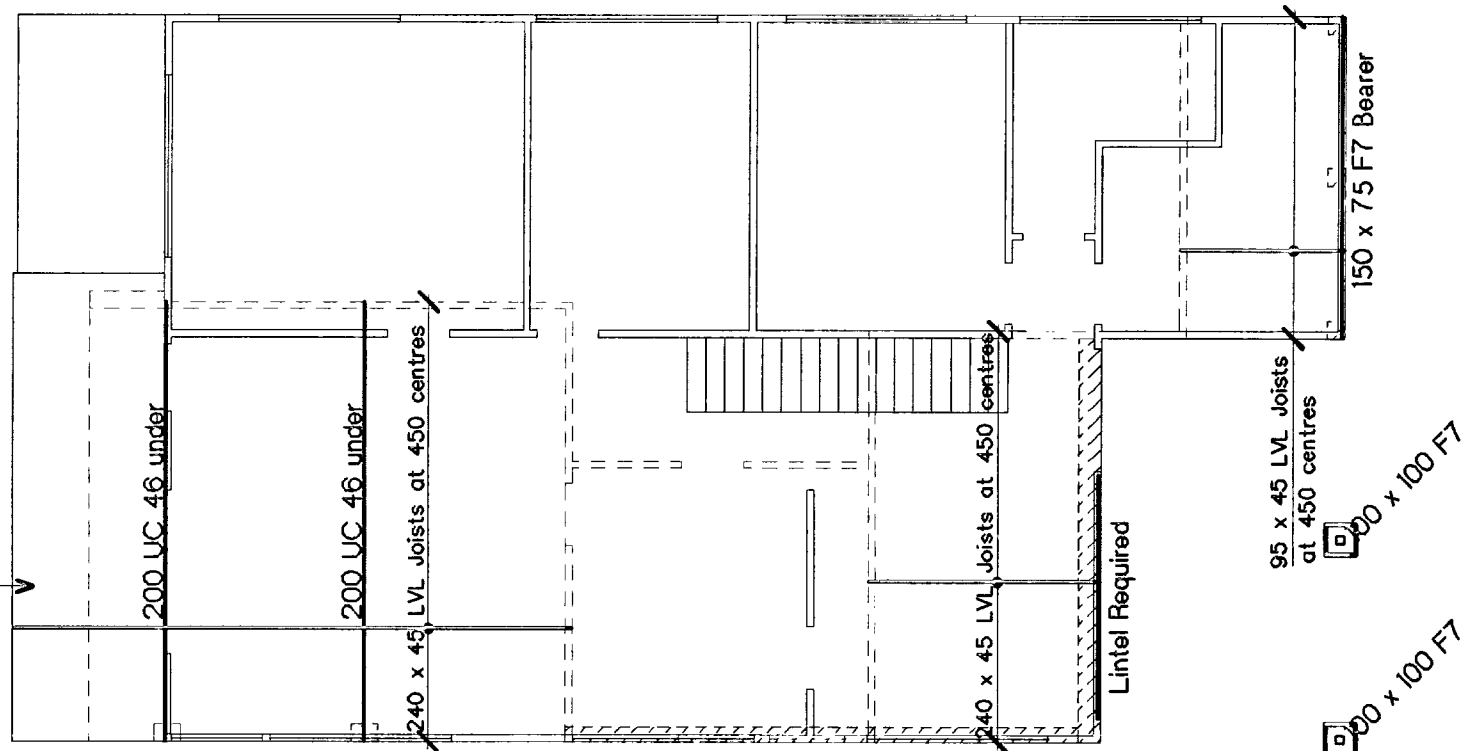
E

F

G

H

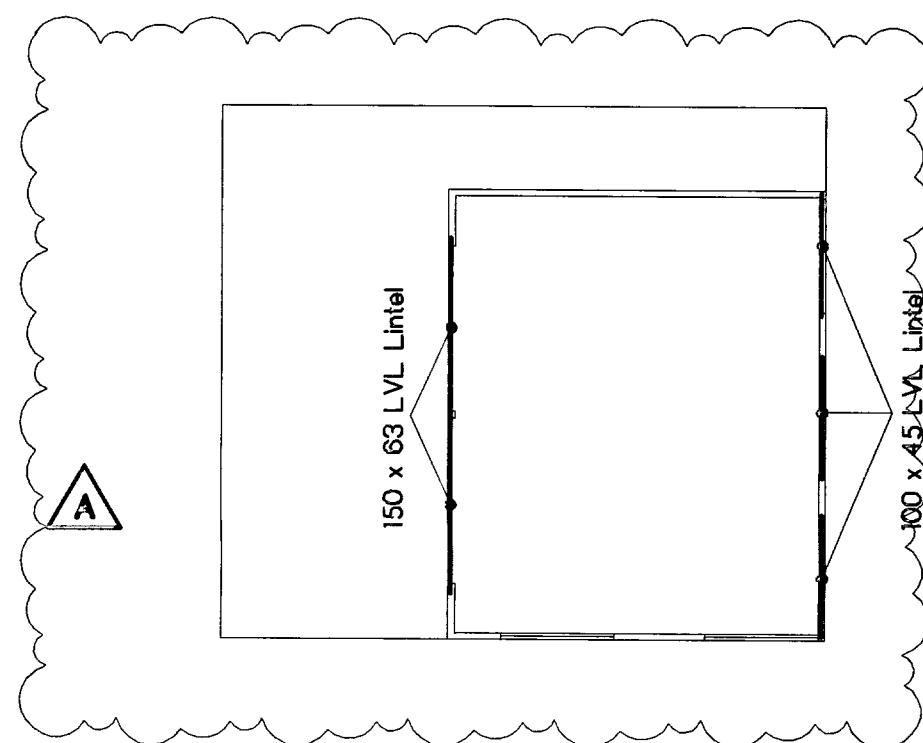
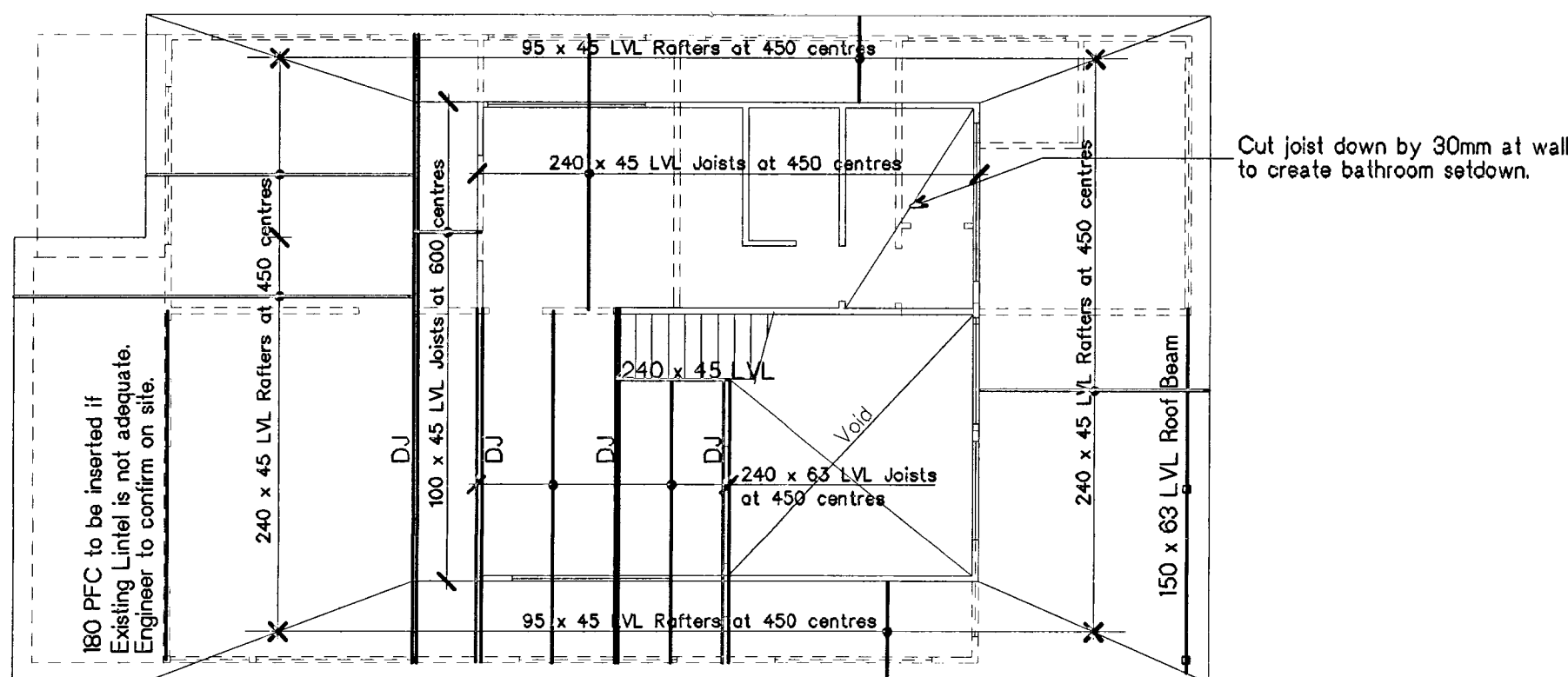
Cut joists down 80mm  
for deck stepdown.



NOTE: Joists to be painted before erection with  
a suitable paint system for galvanised surfaces.

### GROUND FLOOR MARKING AND STUDIO MARKING PLAN

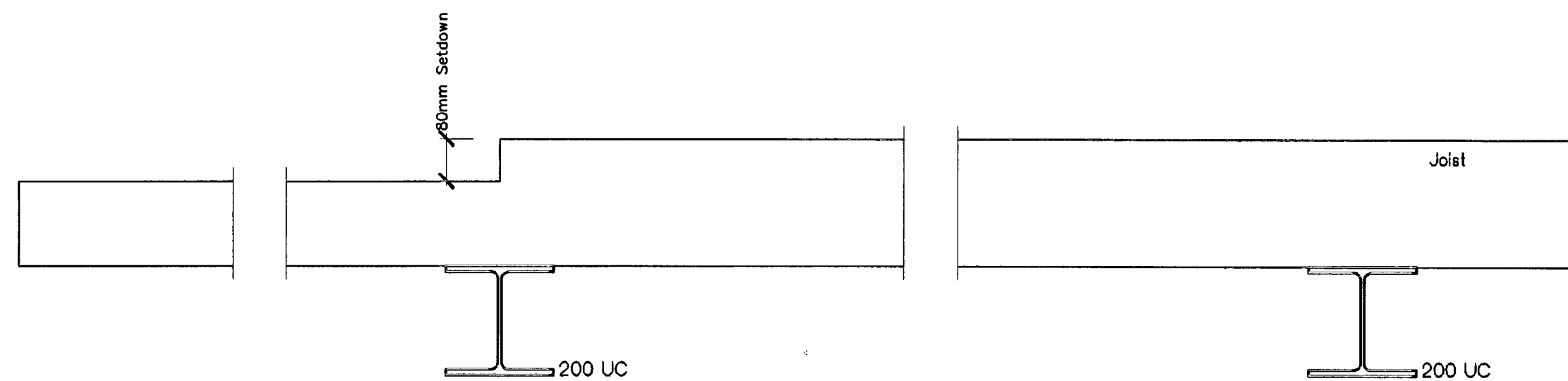
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### FIRST FLOOR MARKING AND LOWER ROOF MARKING PLAN AND STUDIO LINTEL PLAN

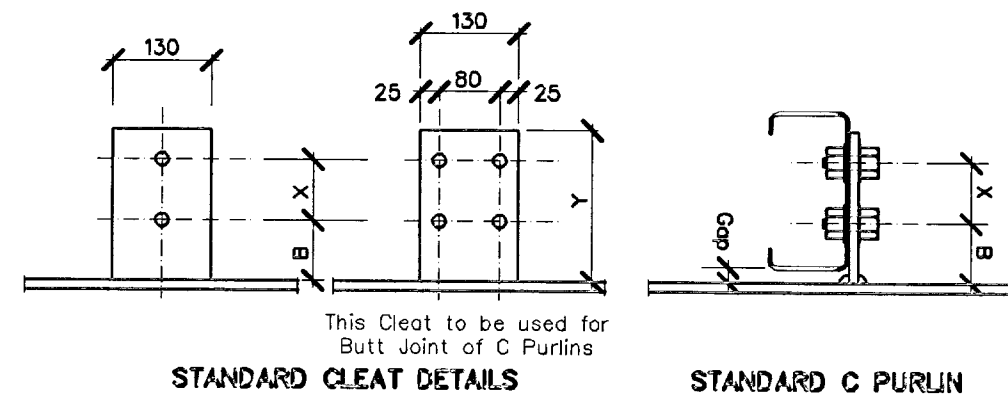
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All beams to bear on adequate structural supports.  
To be Confirmed on Site.  
All posts to bear on adequate structural supports.  
To be confirmed on site.  
DJ Indicates Double Joists



### SECTION 1

Scale 1:10

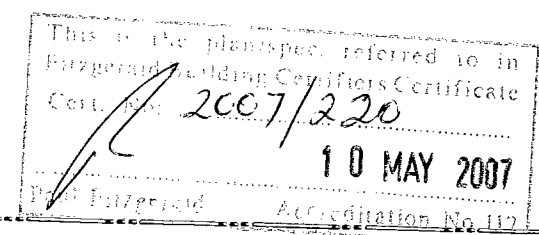


### NOMINAL CLEAT DIMENSIONS (mm)

Nom. Section Size	X	B	Y	Gap	Dia.	Bolt
200	110	55	195	10	18	M12 grade 4.6
250	160	55	245	10	18	M12 grade 4.6

REFER TO CLEAT DETAIL, WHERE PURLINS ARE IN SAME PLANE AS SUPPORT

Council  
Copy



REFER TO DRAWING 1 FOR NOTES AND THE  
'IMPORTANCE OF CURING CONCRETE' GRAPH.

A	Studio relocated by request from client	LS	7.05.07
No.	Amendment	Drawn	Date

### PLAN OR DOCUMENT CERTIFICATION

I am a qualified.....CIVIL, GEOTECHNICAL & STRUCTURAL ENGINEER.....  
I hold the following qualifications or licence No.....MEngSc.....  
.....F.I.E.Aust.....Nper3.....Struct.Civil.No.149788.....

Further I am appropriately qualified to certify this component of the project.  
I hereby state that these plans or details comply with the conditions of  
development consent, the provisions of the Building Code of Australia.  
A.S.1170, A.S.1170.1, A.S.1170.2, A.S.1684, A.S.2870.1, A.S.3500, A.S.3600,  
A.S. 3700, A.S.4100 & A.S.1163

Jack D. Hodgson 8/5/07 J.D. Hodgson  
Name Date Signature

### GROUND FLOOR MARKING, STUDIO MARKING, FIRST FLOOR MARKING & STUDIO LINTEL PLANS AND DETAILS

### PROPOSED ALTERATIONS AND ADDITIONS 87 WHALE BEACH ROAD WHALE BEACH

Our design and drawings are based upon and derived from information  
(including levels, surveys, etc) provided by the owner/architect/designer/  
builder, no design Dwg no DA 01-03 Date NOV 2005  
Should the information provided to us be found to be deficient, unreliable,  
incorrect or inaccurate then our design/drawings may require modification.  
We take no responsibility for verifying the accuracy of the information  
that forms the basis of our brief and it is your obligation to verify it prior  
to the commencement of building operations.

The Structural Details shown on this Drawing are NOT to change under  
any circumstance.  
NO Certificate will be issued for work NOT in accordance with the Drawing

JACK HODGSON CONSULTANTS PTY. LIMITED.  
Consulting Civil, Geotechnical, and Structural Engineers.  
87 Darley Street, MONA VALE 2103, P.O. Box 388, Post Code 1680.  
Telephone (02) 9979 6733, Facsimile (02) 9979 6926.  
Email: jdh@jackhodgson.com.au web: www.jackhodgson.com.au A/CN 053 405 011

Designed	JDH	LS	Job No.	24367-S2
Design Check	JDH	SG	Drawing No.	/A
Date	1 MAY 2007			

