

Peter J Boyce & Associates

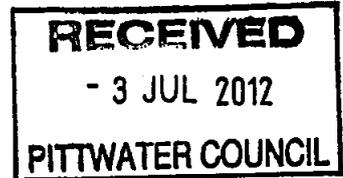
Level 2, 41 Rawson St Epping NSW 2121
Planning NSW Accreditation BPB 0043
Email: info@boycecorp.com.au

Ph: 9868 2855

Fax: 9868 2655

Your ref N0422/10

2 July 2012



The General Manager
Pittwater Council
PO Box 882
Mona Vale NSW 1660

Dear Sir/Madam

Copy of Construction Certificate - 296 Whale Beach Road, Palm Beach

Please find enclosed copy of Construction Certificate issued for the above property under N0422/10.

A cheque for \$36.00 for registration of the Construction Certificate is attached herewith.

Yours faithfully

A handwritten signature in black ink, appearing to read "Peter Boyce".

Peter Boyce

\$36 REC: 323946 3/7/12

Peter J Boyce & Associates

Level 2, 41 Rawson St Epping NSW 2121

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Ph: 9868 2855

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Fax: 9868 2655

2 July 2012

The General Manager
Pittwater Council
PO Box 882
Mona Vale NSW 1660

Dear Sir/Madam

Submission of Construction Certificate - 296 Whale Beach Road, Palm Beach

Please find enclosed:

1. Letter & cheque for registration of CC
2. Completed Application Form
3. Construction Certificate
4. Council / Long Service Levy Corp receipts etc as required by DA conditions
5. Statement from Applicant that the CC plans are generally in accordance with the DA.
6. Geotechnical Risk Management Policy
7. Waste Management Plan
8. Architectural plans
9. Structural Engineers plans

Should any of the above documents not be received please advise me immediately.

Many thanks.



Peter Boyce

Peter J Boyce & Associates

BPB Accredited Certifier No: BPB0043
 Level 2, 41 Rawson Street Epping NSW 2121
 Email: info@boycecorp.com.au

Ph: 9868 2855

Fax: 9868 2655

RECEIVED
 15 JUN 2012

Application for a Construction Certificate

Information for the applicant

- This form may be used to apply for a construction certificate to carry out building work under your development application from council.
- To minimise delay in receiving a decision about the application, please fill in all sections and ensure all relevant information and documents are provided.
- Once completed, this application form should be submitted to Peter J Boyce & Associates for determination.
- A construction certificate has no effect if it is issued after the building work to which it relates is physically commenced on the land to which the relevant development consent applies.

SECTION A Details of the applicant*

*An application for a construction certificate may only be made by a person who has the benefit of the development consent. An application may not be made by a person who will carry out the building work or subdivision work unless that person owns the land on which the work is to be carried out.

Mr <input type="checkbox"/>	Ms <input type="checkbox"/>	Mrs <input type="checkbox"/>	Dr <input type="checkbox"/>	Other: <input type="checkbox"/>	JAMCO INVESTMENTS	
First name			Family name			
Company (if applicable)			ABN (if applicable)			
JAMCO INVESTMENTS PTY LTD			001314165			
Unit/Street no.		Street Name				
296		WHALE BEACH ROAD				
Suburb or town			State		Postcode	
PALM BEACH			N.S.W		2108	
Daytime telephone		Fax		Mobile		
02 99745922		02 9312139				
Email						
p.schmidt@samtechnology.com.au						

SECTION B. Location and title details of the land where the building work or subdivision work is to be carried out

Unit/Street no.		Street Name				
296		Whale Beach Road				
Suburb or town			State		Postcode	
PALM BEACH			N.C.W		2108	
Lot no.		Section				
302						
DP / SP no.		Volume/folio				
16382						

SECTION C. Description of the building work or subdivision work to be carried out

Briefly describe the development. For example, if a dwelling is proposed, include information such as the type of building (house, townhouse, villa etc), the number of floors, the number of bedrooms, the major building material (brick, brick veneer, timber clad etc).

ALTERATIONS TO EXISTING BUILDING

• ADD FRED APN150C TO UPPER VERANDAH

• EXTEND EXISTING LAUNDRY

• EXTEND TWO BEDROOMS LOWER LEVEL

Class(s) of building(s) under the Building Code of Australia

1a

SECTION D. Estimated cost of the development

\$ 148053.00

The contract price, or if there is no contract a genuine and accurate estimate, for all labour and material costs associated with all demolition and construction required for the development, including the cost of construction of any building and the preparation of a building for the purpose for which it is to be used (such as the costs of installing plant, fittings, fixtures and equipment). GST is also to be included.

SECTION E. Development consent

Date of development consent (if already granted)

19/10/2011, 11/2/2012

Development consent no.

DA NO NO422/10

Name of consent authority (Council)

PITTWATER

Name of applicant for development consent

JAMCO INVESTMENTS PTY LTD

Provide:

A copy of the development consent, including

- approved plans endorsed by the consent authority
- conditions of development consent
- other documents referenced by the development consent that are relevant to this application.

SECTION F. Planning agreements

If the development or the land upon which the development is to be carried out is subject to a planning agreement as referred to in section 93F EP&A Act, provide a copy of the planning agreement.

SECTION G. Attachments relating to the proposed development

Applicants must provide the documents listed below that are relevant to the type of development that is proposed. Please place a cross in the appropriate box(s) to indicate the type of development involved. Confirm from the certifying authority how many copies are required prior to lodging this application. In addition to the items below all items requested on the fee proposal must be supplied.

1. Does the application relate ONLY to a FIRE LINK CONVERSION? Yes No

If Yes-provide:

A document that describes the design and construction and mode of operation of the new fire alarm communication link.

2. Does the development involve SUBDIVISION WORK? Yes No

(a) Please note to obtain you subdivision approval you must approach council. Subdivision certificates are generally required post construction certificate work.

3. BUILDINGS

3.1 Does the development involve building work (including work in relation to a dwelling house or building or structure ancillary to a dwelling house?) Yes No

If Yes-provide:

(1) A detailed description of the development by completing SECTION M.

(2) Appropriate building work plans and specifications, which include 4 copies of:

- (a) detailed plans, drawn to a suitable scale and consisting of a block plan and a general plan, that show:
 - (i) a plan of each floor section
 - (ii) a plan of each elevation of the building
 - (iii) the levels of the lowest floor and of any yard or unbuilt on area belonging to that floor and the levels of the adjacent ground
 - (iv) the height, design, construction and provision for fire safety and fire resistance (if any)
- (b) specifications for the development:
 - (i) that describe the construction and materials of which the building is to be built and the method of drainage, sewerage and water supply, and
 - (ii) that state whether the materials to be used are new or second-hand and (in the case of second-hand materials) give particulars of the materials to be used
- (c) a description of any accredited building product or system sought to be relied on for the purposes of section 79C(4) of the *Environmental Planning and Assessment Act 1979* (EP&A Act)*
- (d) copies of any compliance certificate to be relied on.
- (e) if the development involves building work to alter, expand or rebuild an existing building, a scaled plan of the existing building
- (f) if a BASIX certificate has been obtained for the development, such others matters as the BASIX certificate requires to be included in the plans and specifications.

* S.79C(4) EP&A Act provides that a consent authority must not refuse to grant consent to development on the ground that any building product or system relating to the development does not comply with a requirement of the Building Code of Australia if the building product or system is accredited in respect of that requirement in accordance with the EP&A regulation 2000.

3.2 Does the development involve building work (other than work in relation to a dwelling-house or a building or structure that is ancillary to a dwelling-house or work that relates only to fire link conversion)? Yes No

If Yes-provide:

- (a) A list of any existing fire safety measures provided in relation to the land or any existing building on the land.
- (b) A list of the proposed fire safety measures to be provided in relation to the land and any building on the land as a consequence of the building work.

3.3 Does the building work ^(see note below) involve an alternative solution under the Building Code of Australia ("BCA") in respect of a fire safety requirement? Yes No

If Yes: Our office cannot certify projects that have an alternative solution proposed; if this is the case you are instructed to either comply with the Deemed to Satisfy provisions of the Building Code of Australia or contact our office to transfer your application to an appropriate certifier.

3.4 Does the application relate to a residential flat development for which the development application was required under Clause 50(1A) of the EP&A Regulation to be accompanied by a design verification from a qualified designer?

Yes No

If Yes-provide:

A statement from a qualified designer which verifies that the plans and specifications achieve or improve the design quality of the development for which development consent was granted, having regard to the design quality principles set out in Part 2 of *State Environmental Planning Policy No. 65: Design Quality of Residential Flat Development* (SEPP 65)

Note: If the development application was also required to be accompanied by a BASIX certificate with respect to any building, the statement need not verify the design quality principles set out in SEPP 65 to the extent to which they aim to

- reduce consumption of mains-supplied potable water, or reduce emissions of greenhouse gases, in the building or in the use of the land that it is built on, or
- improve the thermal performance of the building.

3.5 Has the Fire Commissioner granted an exemption under clause 188 EP&A Regulation from compliance with any specified Category 3 fire safety provision?

Yes No

If Yes-provide:

A copy of the exemption together with any conditions imposed.

3.6 Is any long service payment levy payable under s.34 of the Building and Construction Industry Long Service Payments Act 1986? Yes No

If Yes-provide:

A copy of a receipt for any long service payment levy that has been made (or, where such a levy is payable by instalments, a receipt for the first instalment of the levy).

Note: Long service levy applies to all building works with a cost of works greater than \$25,000

3.6 Does the application involve a BASIX affected development or a BASIX optional development in respect of which the applicant has obtained a BASIX certificate?

Yes No

If Yes-provide:

The BASIX certificate(s) for the development (being either the BASIX certificate issued when the development consent was granted or some other BASIX certificate(s) that have been issued no earlier than three months before the date of the Application being made), and such other documents as the BASIX certificate(s) for the development requires to accompany the Application.

BASIX (the Building and Sustainability Index) ensures homes are built to be more energy and water efficient. BASIX uses an online program to assess a building's design and compares it against energy and water reduction targets. The design must meet these targets before a BASIX certificate can be printed. Any changes made to a building's design after a BASIX certificate has been issued requires another BASIX assessment and new BASIX certificate. "BASIX affected buildings" contain one or more dwellings (but do not include hotels or motels).

A BASIX certificate **MUST** be obtained for every "BASIX affected development", which are any of the following (other than development that is "BASIX excluded development"):

- (a) development that involves the erection (but not the relocation) of a BASIX affected building
- (b) development that involves a change of building use by which a building becomes a BASIX affected building
- (c) development that involves the alteration, enlargement or extension of a BASIX affected building, where the estimated construction cost of the development is \$50,000 or more
- (d) development for the purpose of a swimming pool or spa, or combination of swimming pools and spas, that services or service only one dwelling and that has a capacity, or combined capacity, of 40,000 litres or more

"BASIX excluded development" is

- (a) development for the purpose of a garage, storeroom, car port, gazebo, verandah or awning
- (b) alterations, enlargements or extensions to a building listed on the State Heritage Register under the Heritage Act 1977
- (c) alterations, enlargements or extensions that result in a space that cannot be fully enclosed (for example, a veranda that is open or enclosed by screens, mesh or other materials that permit the free and uncontrolled flow of air), other than a space can be fully enclosed but for a vent needed for the safe operation of a gas appliance
- (d) alterations, enlargements or extensions that the Director-General has declared, by order published in the Gazette, to be BASIX excluded development.

A BASIX Certificate **MAY** be obtained for certain developments by an Applicant even though there is no obligation to do so. This is called "BASIX optional development". "BASIX optional development" means any of the following development that is not BASIX excluded development:

- (a) development that involves the alteration, enlargement or extension of a BASIX affected building, where the estimate of the construction cost of the development is less than \$50,000
- (b) development for the purpose of a swimming pool or spa, or combination of swimming pools and spas, that services or service only one dwelling and that has a capacity, or combined capacity, of less than 40,000 litres.

If the proposed development involves the alteration, enlargement or extension of a BASIX affected building that contains more than one dwelling, a separate BASIX certificate is required for each dwelling concerned.

Further information about BASIX and to obtain a BASIX Certificate, go to <http://www.basix.nsw.gov.au>.

SECTION H. List of documents

Prepare and attach a list of all of the documents provided under the fee proposal and SECTION E, F and G.

SECTION I. Authority to enter and inspect land (Owner's Consent)

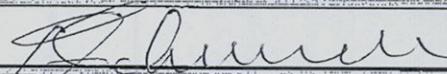
A certifying authority must not issue a construction certificate for development on a site which affects an existing building unless the certifying authority, or an accredited certifier, council or consent authority on behalf of the certifying authority, has carried out an inspection of the site of the development.

If the applicant is the owner of the land, by signing this application authority is given to the certifying authority, or an accredited certifier, council or consent authority, to enter the subject property at any reasonable time for the purpose of carrying out an inspection in connection with the assessment of this Application. The Applicant undertakes to take all necessary steps make access available to the property to enable the inspection to be carried out.

If the applicant is not the owner of the land, the owner(s) must sign the following statement.

As the owner(s) of the above property, I/we consent to the certifying authority, or an accredited certifier, council or consent authority, to enter the subject property at any reasonable time for the purpose of carrying out an inspection in connection with the assessment of this application. I/we undertake to take all necessary steps make access available to the property to enable the inspection to be carried out.

Owners Signature(s)



Name(s)

PHILIP SCHMIDT

Date

15/5/2012

SECTION J. Delivery of the application

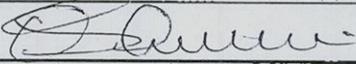
Applications for construction certificates must be delivered by hand or by post to the principal office of the certifying authority. Applications MAY NOT be sent by fax.

Ensure Applications and all required documents are sent to:

Peter J Boyce & Associates
Level 2, 41 Rawson Street
Epping NSW 2121

SECTION K. Signature of Applicant(s)

Signature of Applicant(s)



Name(s)

JAMCO INVESTMENTS PTY LTD

Date

15/5/2012

SECTION L. Date of Receipt of Application (office use)

To be completed by the certifying authority immediately after receiving this Application.

This Application was received on: 15/5/12 (insert date).

SECTION M. Description of the development

1. For each proposed new building, indicate:

The number of storeys (including underground storeys) in the building

1

The gross floor area of the building (in square metres)

—

The gross site area of the land on which the building is to be erected (in square metres)

—

2. For each proposed new residential building, indicate:

The number of existing dwellings on the land on which the new building is to be erected

1

The number of those existing dwellings that are to be demolished in connection with the erection of the new building

NIL

The number of dwellings to be included in the new building

—

Whether the new building is to be attached to any existing building

YES

Whether the new building is to be attached to any other new building

—

Whether the land contains a dual occupancy

NO

The materials to be used in the construction of the new building by completing the table below

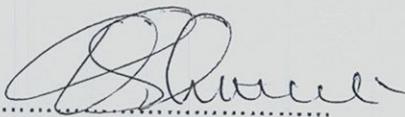
Place a cross in each appropriate box

Walls	Code	Roof	Code	Floor	Code	Frame	Code
<input type="checkbox"/> Brick (double)	11	<input type="checkbox"/> Tiles	10	<input type="checkbox"/> Concrete/slate	20	<input checked="" type="checkbox"/> Timber	40
<input type="checkbox"/> Brick (veneer)	12	<input type="checkbox"/> Concrete/slate	20	<input checked="" type="checkbox"/> Timber	40	<input type="checkbox"/> Steel	60
<input type="checkbox"/> Concrete/stone	20	<input type="checkbox"/> Fibre cement	30	<input type="checkbox"/> Other	80	<input type="checkbox"/> Aluminium	70
<input checked="" type="checkbox"/> Fibre cement	30	<input checked="" type="checkbox"/> Steel	60	<input type="checkbox"/> Not specified	90	<input type="checkbox"/> Other	80
<input checked="" type="checkbox"/> Timber	40	<input checked="" type="checkbox"/> Aluminium	70	<input type="checkbox"/> Not specified	90	<input type="checkbox"/> Not specified	90
<input type="checkbox"/> Curtain glass	50	<input type="checkbox"/> Other	80				
<input type="checkbox"/> Steel	60	<input type="checkbox"/> Not specified	90				
<input type="checkbox"/> Aluminium cladding	70						
<input type="checkbox"/> Timber/weatherboard	40						
<input type="checkbox"/> Other	80						
<input type="checkbox"/> Not specified	90						

TO WHOM IT MAY CONCERN

RE: 296 Whale Beach Road (property address)
PALM BEACH

I hereby certify that the Architectural Plans submitted with the Construction Certificate application are generally in accordance with the Development Approved N0422/10 (DA number) plans approved by PITTWATER (council name).



Signature

Name: PHILIP SCHMIDT

Address: 4/1-3 WANLY ROAD SLEAFORTH

Contact Number: 9949 2235 (H)
8811 5155 (B)
0414 715588 (M)

Peter J Boyce & Associates

BPB Accredited Certifier No: BPB0043
Level 2, 41 Rawson Street Epping NSW 2121
Email: info@boycecorp.com.au

Ph: 9868 2855

Fax: 9868 2655

Construction Certificate

Certificate No. BP12217

SECTION A. The Application

1. Details of the applicant

Mr Ms Mrs Dr Other:

First name

Family name

Jamco Investments Pty Ltd

Unit/Street no.

296

Street name

Whale Beach Road

Suburb or town

Palm Beach

State

NSW

Postcode

2108

2. Details of the property

Unit/Street no.

296

Street name

Whale Beach Road

Suburb or town

Palm Beach

Postcode

2108

Lot no.

302

Section

DP / SP no.

DP 16382

Volume/folio

2. Description of the proposed development

Alterations and additions to an existing dwelling.

4. Development consent

Date of development consent

11 February 2011

Development consent
reference no.

N0422/10

Name of Council

Pittwater Council

5. Date of the application for construction certificate

15 June 2012

Peter J Boyce & Associates

Level 2, 41 Rawson St Epping NSW 2121

Planning NSW Accreditation BPB 0043

Ph: 9868 2855

Email: info@boycecorp.com.au

Fax: 9868 2655

SECTION B. Certifying authority

Name

Accreditation no.

Peter Boyce

BPB0043

Address

PO Box 375

Strathfield NSW 2135

SECTION C. Class of building

Class of the proposed building under the Building Code of Australia.

Note: If parts of the building will have different classes, include all classes.

1a

SECTION E. Attachments (Tick as appropriate)

Fire safety schedule

Fire link conversion schedule

Conditions schedule

SECTION F. Date

Date of this certificate

2 JUL 2012

Certificate No.

BP12217

SECTION G. Certification (Description of Works & Approved Plans)

I certify that work completed in accordance with the documentation accompanying the application for this certificate (with such modifications, if any, verified by me may be shown on that documentation) will comply with the requirements of the *Environmental Planning & Assessment Regulation 2000* as are referred to in s.81A(5) of the *Environmental Planning & Assessment Act 1979*.

The plans listed below accompanied the application for this certificate.

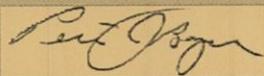
Note: The certificate is to be endorsed upon all relevant plans and specifications. Include the name of the certifying authority, the certificate No. and the date of the certificate

Description of Works: Alterations and additions to an existing dwelling.

Plans

Jack Hodgson Consultants Drawing No. S1 - Shimdesign Drafting Drawing Nos. 0510 1/4

SECTION H. Signature*



* Must only be signed by the certifying authority

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1 - T to be submitted with Development Application

Development Application for K J C 4 / 1 / 0 T
 Name of Applicant
 Address of site 296 Whale Beach Road, Palm Beach
 Name of Applicant

Declaration made by geotechnical engineer or engineering geologist or coastal engineer (where applicable) as part of a geotechnical report

I, Ben White on behalf of Jack Hodgson Consultants Pty Ltd
 (Trading or Company Name)
 on this the 16th July, 2010 certify that I am a geotechnical engineer or engineering geologist or coastal engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009 and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least \$2million. I have:

Please mark appropriate box
 Prepared the detailed Geotechnical Report referenced below in accordance with the Australia Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009

I am willing to technically verify that the detailed Geotechnical Report referenced below has been prepared in accordance with the Australian Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009

Have examined the site and the proposed development in detail and have carried out a risk assessment in accordance with paragraph 6.0 of the Geotechnical Risk Management Policy for Pittwater - 2009. I confirm the results of the risk assessment for the proposed development are in compliance with the Geotechnical Risk Management Policy for Pittwater - 2009 and further detailed geotechnical reporting is not required for the subject site.

Have examined the site and the proposed development/alteration in detail and am of the opinion that the Development Application only involves Minor Development/Alterations that do not require a Detailed Geotechnical Risk Assessment and hence my report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements for Minor Development/Alterations.

Provided the coastal process and coastal forces analysis for inclusion in the Geotechnical Report

Geotechnical Report Details:
 Report Title: RISK ANALYSIS & MANAGEMENT FOR PROPOSED ADDITIONS AT 296 WHALE BEACH ROAD, PALM BEACH
 Report Date: 16th July, 2010
 Author: BEN WHITE
 Author's Company/Organisation: JACK HODGSON CONSULTANTS PTY LTD

Documentation which relate to or are relied upon in report preparation:

I am aware that the above Geotechnical Report, prepared for the above mentioned site is to be submitted in support of a Development Application for this site and will be relied on by Pittwater Council as the basis for ensuring that the Geotechnical Risk Management Policy for this site has 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 [Signature]
 Name Ben White
 Chartered Professional Status MScGEOLAUSIMM CP GEOL
 Membership No. 222757
 Company Jack Hodgson Consultants Pty Ltd

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1(a) - Checklist of Requirements for Geotechnical Risk Management Report for Development Application

Development Application for K J C 4 / 1 / 0 T
 Name of Applicant
 Address of site 296 Whale Beach Road, Palm Beach
 Name of Applicant

The following checklist covers the minimum requirements to be addressed in a Geotechnical Risk Management Geotechnical Report. This checklist is to accompany the Geotechnical Report and its certification (Form No. 1)

Geotechnical Report Details:
 Report Title: RISK ANALYSIS & MANAGEMENT FOR PROPOSED ADDITIONS AT 296 WHALE BEACH ROAD, PALM BEACH
 Report Date: 16th July, 2010
 Author: BEN WHITE
 Author's Company/Organisation: JACK HODGSON CONSULTANTS PTY LTD

Please mark appropriate box
 Comprehensive site mapping conducted 18th July, 2010 (date)
 Mapping details presented on contoured site plan with geomorphic mapping to a minimum scale of 1:200 (as appropriate)
 Surface investigation required
 No Justification:
 Yes Date conducted 18th July, 2010

Geotechnical model developed and reported as an inferred subsurface (type section)
 Geotechnical hazards identified
 Above the site
 Below the site
 Below the site

Geotechnical hazards described and reported
 Risk assessment conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
 Frequency analysis

Risk calculation
 Risk assessment for property conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
 Risk assessment for loss of life conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
 Assessed risks have been compared to "Acceptable Risk Management" criteria as defined in the Geotechnical Risk Management Policy for Pittwater - 2009
 Opinion has been provided that the design can achieve the "Acceptable Risk Management" criteria provided that the specified conditions are achieved.
 Design Life Adopted: 100 years
 Other:

Geotechnical Conditions to be applied to all four phases as described in the Geotechnical Risk Management Policy for Pittwater - 2009 have been specified
 Additional action to remove risk where reasonable and practical have been identified and included in the report.
 Risk Assessment within Bushfire Asset Protection Zone

I am aware that Pittwater Council will rely on the Geotechnical Report, to which this checklist applies, as the basis for ensuring that the geotechnical risk management aspects of the proposal 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 [Signature]
 Name Ben White
 Chartered Professional Status MScGEOLAUSIMM CP GEOL
 Membership No. 222757
 Company Jack Hodgson Consultants Pty Ltd



**RISK ANALYSIS & MANAGEMENT
FOR
PROPOSED ADDITIONS
AT
296 WHALE BEACH ROAD, PALM BEACH**

1. INTRODUCTION.

1.1 This assessment has been prepared to accompany an application for development approval. The requirements of the Geotechnical Risk Management Policy for Pitwater, 2009 have been met.

1.2 The definitions used in this Report are those used in the Geotechnical Risk Management Policy for Pitwater, 2009.

1.3 The methods used in this Assessment are based on those described in Landslide Risk Management March 2007, published by the Australian Geomechanics Society and as modified by the Geotechnical Risk Management Policy for Pitwater, 2009.

1.4 The experience of Jack Hodgson spans some 50 years in many areas of Australia and in the Pitwater area, particularly in the last 30 years as Principal of Jack Hodgson Consultants Pty Limited.

2. PROPOSED DEVELOPMENT.

2.1 Extend the south western side of the ground floor level.

2.2 Extend the laundry on the southern corner of the first floor level.

2.3 Extend the kitchen on the south east corner of the first floor level.

2.3 Details of the proposed development are shown on 4 drawings prepared by SHIMDESIGN numbered 0510 1 to 4 and dated May 2010.

3. DESCRIPTION OF SITE & SURROUNDING AREA.

3.1 The site was inspected on the 16th July, 2010 and previously in October 1983.



3.2 The property is on the high side of the road and has an easterly aspect. The site is halfway up the slope, on the northern side of the headland, on the northern end of Whale Beach. The slope rises across the property at angles of some 15 to 20 degrees. The land increases in grade above the site and extends 60 meters to the crest of the slope. The land below drops at a gentle gradient of 60 meters before dropping near vertically at a cliff face to sea level.

3.3 From the road frontage a concrete paved driveway/leads to a double garage that is part of the existing house (Photo 1). The driveway and garden beds are supported by stack rock walls which appear stable. Access to the rear of the property is via steps up the western side of the house (Photo 2). A cut has been made in the natural slope to fit the house. The cut batter is supported by a rendered brick retaining wall which is in good condition (Photo 3). The fill batter is supported by a sandstone boulder wall on the downhill side of the house. From the rear of the house a level lawn area extends before terraces step up to the rear boundary (Photo 4). Timber pole and stack rock retaining walls support the terraces and show no evidence of movement related to slope instability (Photo 5). Above the house the slope steepens in grade and outcropping sandstone was observed just beyond the rear boundary.

3.4 The three storey rendered brick dwelling is in excellent condition. We inspected the property in November 1983 and observed that the footings for the house had been taken to weathered rock of adequate bearing capacity and stability. Minor cracking was observed at the northern corner of the house, this is attributed to settlement (Photo 6).

4. GEOLOGY OF THE SITE.

4.1 The site is underlain by interbedded sandstones, siltstones and shales of the Upper Narrabeen Group which do not outcrop on the site. The Narrabeen Group Rocks are Late Permian to Middle Triassic in age with the early rocks not outcropping in the area under discussion. The materials from which the rocks were formed consist of gravels, coarse to fine sands, silts and clays. They were deposited in a riverine type environment with larger floods causing fans of finer materials. The direction of deposition changed during the period of formation. The lower beds are very variable with the variations decreasing as the junction with the Hawkesbury Sandstones is approached. This is marked by the highest of persistent shale beds over thicker sandstone beds which are similar in composition to the Hawkesbury Sandstones.

4.2 The slope materials are colluvial at the surface and residual at depth. They consist of fill material and sandy loam topsoil over sandy clays and clays. The sandy clays and clays merge into the weathered zone of the under lying rocks at depths expected to be in the range 0.4 to 0.8 metres.



5. SUBSURFACE INVESTIGATION.

Two DCP tests were put down in the location of proposed development. The locations are shown on the site plan and the results of these tests are as follows:

DEPTH (m)	NUMBER OF BLOWS - conducted with Pointed Tip	
	DCP1	DCP2
0.0 to 0.3	4	3
0.3 to 0.6	12	14
	Refusal on rock @ 0.5m	Refusal on rock @ 0.6m

Notes:

DCP 1: Dark brown / maroon clay on dry tip, DCP bouncing on solid rock.

DCP 2: Red clay on dry tip, DCP bouncing on solid rock.

6. DRAINAGE OF THE SITE.

6.1 ON THE SITE.

The site is well drained with no natural water courses

6.2 SURROUNDING AREA.

No evidence of overland water flows entering the site from the adjoining properties was observed. The site will receive normal overland flow from above

7. GEOTECHNICAL HAZARDS.

7.1 ABOVE THE SITE.

7.1.1 The area extending above the property is classed H1 on the council map due to the steeply graded slope extending across this region. This hazard is considered in conjunction with **HAZARD ONE** to follow.

7.2 ON THE SITE.

7.2.1 The steep slope that rises across the property and extends above is a potential hazard (**HAZARD ONE**).

7.3 BELOW THE SITE.

7.3.1 The areas below the site are classed H1 on the council map due to the steeply graded slopes extending across these regions. The land below the site cases in grade and extends at gentle angles for 60 meters before reaching a cliff face and dropping near vertically to sea level. No geotechnical hazards likely to adversely impact upon the site were observed below the property.

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



7.4 BESIDE THE SITE.

7.4.1 The areas beside the site are classed H1 on the council map due to the moderate to steeply graded slope extending across these regions. These sites have similar elevation and geomorphology to the subject property. No geotechnical hazards likely to adversely impact upon the site were observed beside the property.

8. RISK ASSESSMENT.

8.1 ABOVE THE SITE.

8.1.1 See **HAZARD ONE** to follow

8.2 ON THE SITE.

8.2.1 HAZARD ONE Qualitative Risk Assessment on Property

The slope of the land surface rises across the property at angles of some 15 to 20 degrees and steepens in grade above the site. A cut has been made in the natural slope to fit the house. The cut batter is supported by a retaining wall which is in good condition. All retaining walls across the property appear stable. No evidence of tension cracking, slumping or any other signs of movement were observed on the site. The adjoining property above was under construction at the time of this report. Outcropping sandstone bedrock was observed above the site. This outcropping rock and the shallow DCP results suggest that the amount of unconsolidated material across the slope is likely to be limited by the underlying bedrock. The likelihood of the slope failing and impacting on the house is assessed as 'Rare' (10^{-3}). The consequences to property of such a failure are assessed as 'Medium' (20%). The risk to property is 'Low' (2×10^{-6}).

8.2.2 HAZARD ONE Quantitative Risk Assessment on Life

For loss of life risk can be calculated as follows:

$$R_{(a)} = P_{(a)} \times P_{(s)} \times P_{(r)} \times V_{(o)}$$
 (See Appendix for full explanation of terms)

8.2.2.1 Annual Probability

No evidence of movement was observed on the site.

$$P_{(a)} = 0.00001/\text{annum}$$

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8.2.2.2. Probability of Spatial Impact

The house is located on a slope approximately half way up the slope.
 $P_{\text{spn}} = 0.4$

8.2.2.3 Possibility of the Location Being Occupied During Failure

The average household is taken to be occupied by 4 people. It is estimated that 1 person is in the house for 20 hours a day, 7 days a week. It is estimated that 3 people are in the house 12 hours a day, 5 days a week.
For the person most at risk:

$$\frac{20}{24} \times \frac{7}{7} = 0.83$$

$$P_{\text{trs}} = 0.83$$

8.2.2.4 Probability of Loss of Life on Impact of Failure

Based on the volume of land sliding and its likely velocity when it hits the house, it is estimated that the vulnerability of a person to being killed in the house when a landslide hits is 0.3

$$V_{\text{vul}} = 0.3$$

8.2.2.5 Risk Estimation

$$R_{\text{d,all}} = 0.00001 \times 0.4 \times 0.83 \times 0.3$$
$$= 0.000000996$$

$R_{\text{d,all}} = 9.96 \times 10^{-7}$ annum NOTE: This level of risk is 'ACCEPTABLE'.

8.3. BELOW THE SITE.

8.3.1 As no geotechnical hazards likely to adversely impact upon the subject site were observed below the site, no risk analysis is required.

8.4. BESIDE THE SITE.

8.4.1 As no geotechnical hazards likely to adversely impact upon the subject site were observed beside the site, no risk analysis is required.

9. SUITABILITY OF DEVELOPMENT FOR SITE.

9.1. GENERAL COMMENTS.

The proposed development is suitable for the site.



9.2. GEOTECHNICAL COMMENTS.

No geotechnical hazards will be created by the completion of the proposed development in accordance with the requirements of this Report and good engineering and building practice.

9.3. CONCLUSIONS.

The site and the proposed development can achieve the Acceptable Risk Management criteria outlined in the Pitwater Geotechnical Risk Policy provided the recommendations given in Section 10 are undertaken.

10. RISK MANAGEMENT.

10.1. TYPE OF STRUCTURE.

The types of structure are suitable for the site.

10.2. EXCAVATIONS.

10.2.1 No excavations, other than for footings, are included in the proposed development.

10.3. FILLS.

10.3.1 The plans show that no fills are required

10.4. FOUNDATION MATERIALS AND FOOTINGS.

10.4.1 It is recommended that all footings for the developments be supported on the underlying rock using piers as necessary. The design ultimate bearing pressures are 1.2 Mpa for spread footings or shallow piers.

10.5. STORM WATER DRAINAGE.

All storm water runoff from the development is to be connected to the existing storm water system for the house through any tanks or onsite detention systems that may be required by the regulating authorities.

10.6. SUBSURFACE DRAINAGE.

Subsurface drainage conditions will not be changed as a result of the proposed development

10.7. INSPECTIONS.

10.7.1 It is recommended that the foundation materials of all footing excavations be inspected and approved before concrete is placed.



11. GEOTECHNICAL CONDITIONS FOR ISSUE OF CONSTRUCTION CERTIFICATE.

It is recommended that the following geotechnical conditions be applied to the Development Approval:-

The work is to be carried out in accordance with the Risk Management Report MV 27071 dated 8th June, 2010.

The Geotechnical Engineer is to inspect and approve the foundation materials of all footing excavations before concrete is placed.

12. GEOTECHNICAL CONDITIONS FOR ISSUE OF OCCUPATION CERTIFICATE.

The Geotechnical Engineer is to certify the following geotechnical aspects of the development:-

The work has been carried out in accordance with the requirements of the Risk Management Report MV 27071 dated 8th June, 2010.

The Geotechnical Engineer inspected and approved the foundation material of all footing excavations.

13. RISK ANALYSIS SUMMARY.

HAZARDS	Hazard One
TYPE	The slope on or above the site failing and impacting on the subject property.
LIKELIHOOD	'Rare' (10^{-6})
CONSEQUENCES TO PROPERTY	'Medium' (20%)
RISK TO PROPERTY	'Low' (2×10^{-6})
RISK TO LIFE	9.96×10^{-7} /annum
COMMENTS	'Acceptable' level of risk.

JACK HODGSON CONSULTANTS PTY. LIMITED.

Ben White M.Sc. Geol.,
 AusIMM, CP GEOL.
 No. 222757
 Engineering Geologist

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

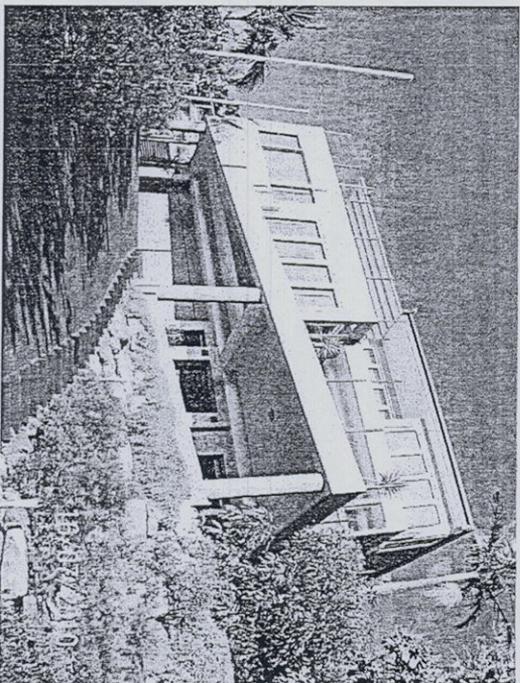


Photo 1

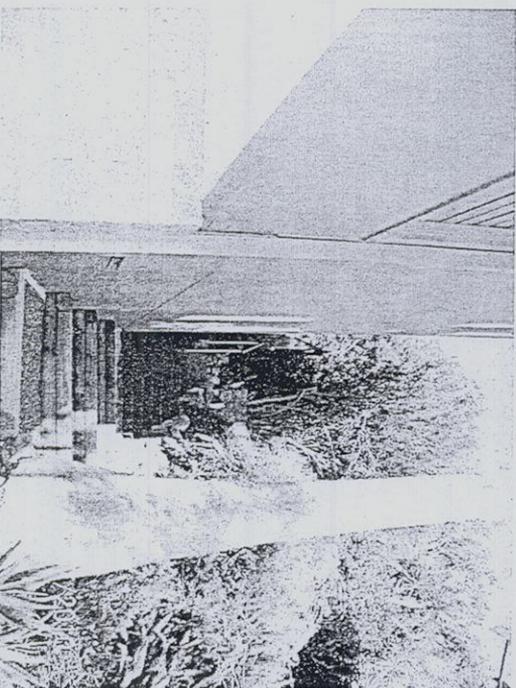


Photo 2

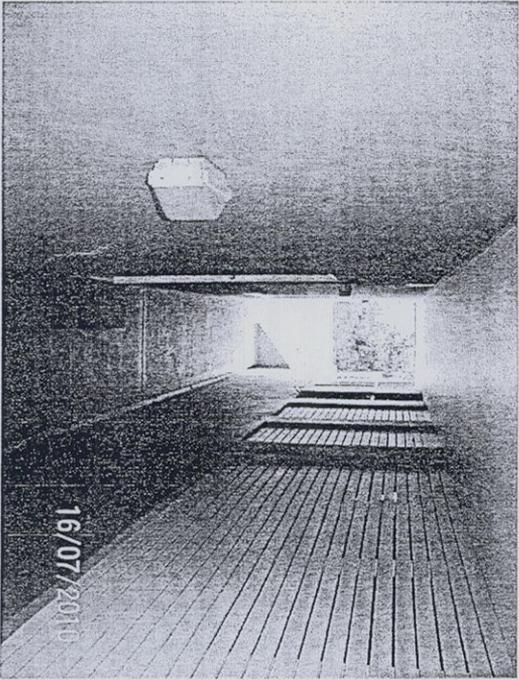


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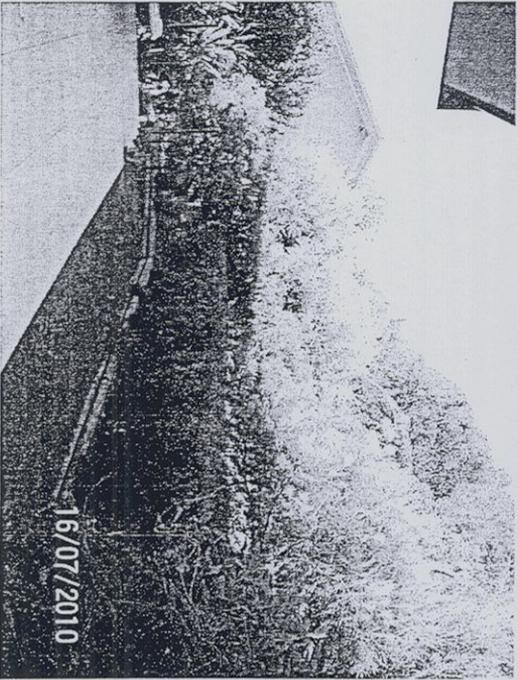


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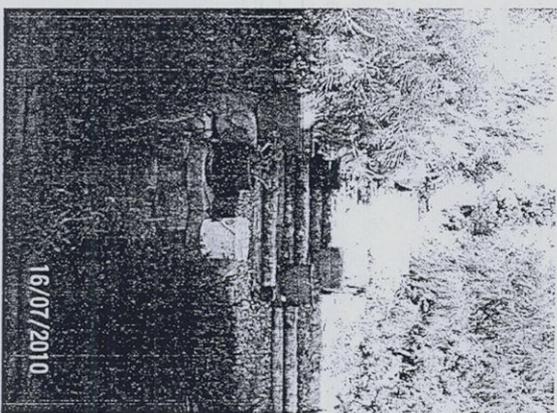


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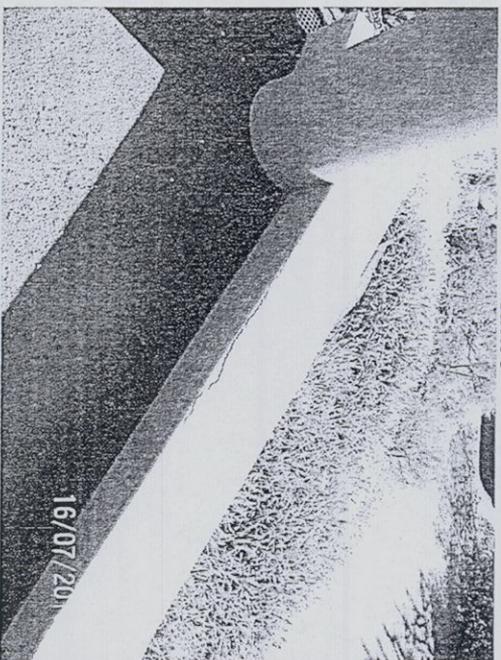
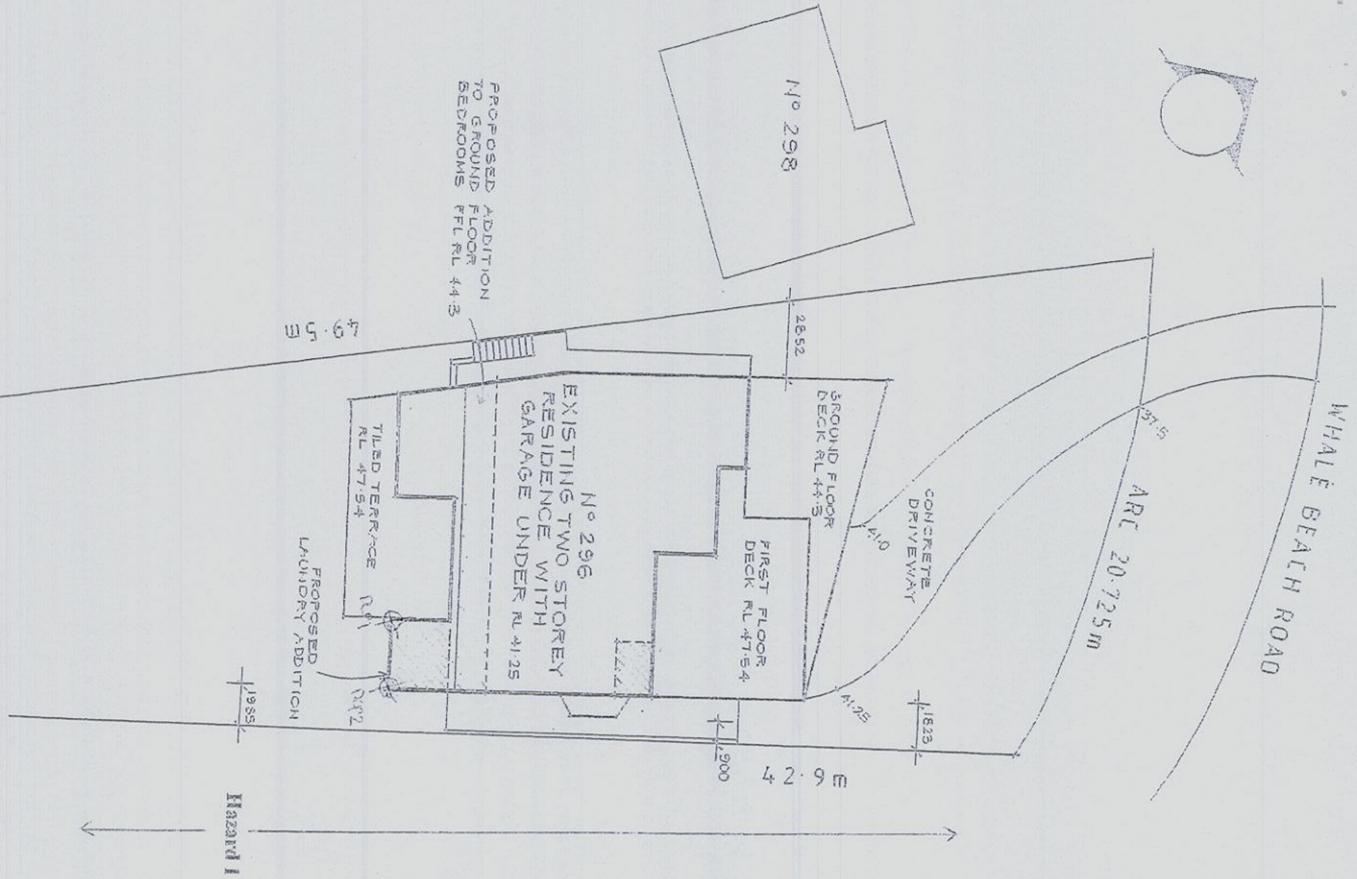


Photo 6



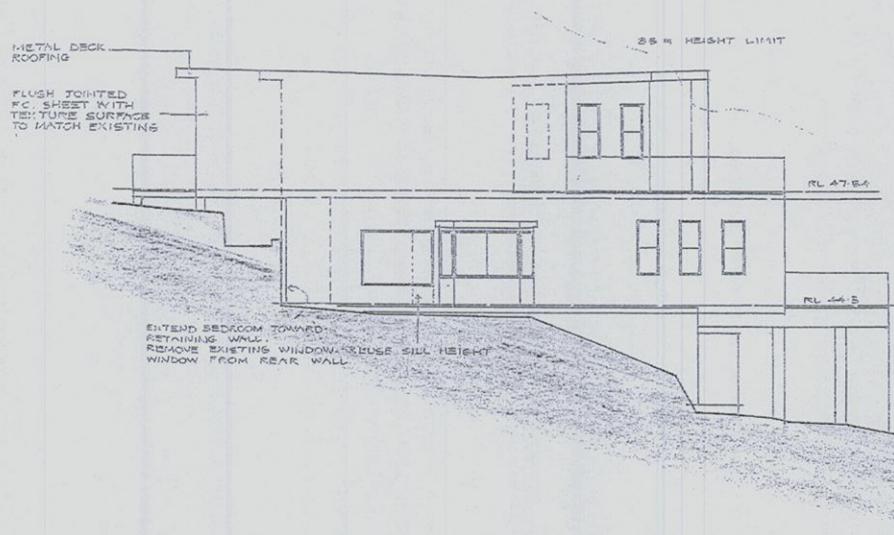
HAZARDS
 1. The slope that rises across and the site and extends above.

Site Plan
 296 Whale Beach Road, Palm Beach
 MV 27090
 Scale 1: 200



SECTION LOOKING WEST

- Fill
- Sandy Topsoil
- Sandy Clay
- Narrabeen Group Rocks



Type Section
 296 Whale Beach Road, Palm Beach
 MV 27090
 Scale 1: 100

7 RISK ESTIMATION

7.1 QUANTITATIVE RISK ESTIMATION
 Quantitative risk estimation involves integration of the frequency analysis and the consequences.
 For property, the risk can be calculated from:

$$R_{(prop)} = P_{(a)} \times P_{(s|h)} \times P_{(r,s)} \times V_{(p,r,s)} \times E \quad (1)$$

Where

$R_{(prop)}$ is the risk (annual loss of property value).

$P_{(a)}$ is the annual probability of the landslide.

$P_{(s|h)}$ is the probability of spatial impact by the landslide on the property, taking into account the travel distance and travel direction.

$P_{(r,s)}$ is the temporal spatial probability. For houses and other buildings $P_{(r,s)} = 1.0$. For Vehicles and other moving elements at risk $0 < P_{(r,s)} < 1.0$.

$V_{(p,r,s)}$ is the vulnerability of the property to the spatial impact (proportion of property value lost).

E is the element at risk (e.g. the value or net present value of the property).

For loss of life, the individual risk can be calculated from:

$$R_{(d,e,l)} = P_{(a)} \times P_{(s|h)} \times P_{(r,s)} \times V_{(d,e,l)} \quad (2)$$

Where

$R_{(d,e,l)}$ is the risk (annual probability of loss of life (death) of an individual).

$P_{(a)}$ is the annual probability of the landslide.

$P_{(s|h)}$ is the probability of spatial impact of the landslide impacting a building (location) taking into account the travel distance and travel direction given the event.

$P_{(r,s)}$ is the temporal spatial probability (e.g. of the building or location being occupied by the individual) given the spatial impact and allowing for the possibility of evacuation given there is warning of the landslide occurrence.

$V_{(d,e,l)}$ is the vulnerability of the individual (probability of loss of life of the individual given the impact).

A full risk analysis involves consideration of all landslide hazards for the site (e.g. large, deep seated landsliding, smaller slides, boulder falls, debris flows) and all the elements at risk.

WASTE MANAGEMENT PLAN

Re: 296 Whale Beach Road Palm Beach

Building & other structures currently on the site:

Three storey dwelling

Description of the proposal:

Alterations and additions including awning and laundry

Location on site of building materials storage:

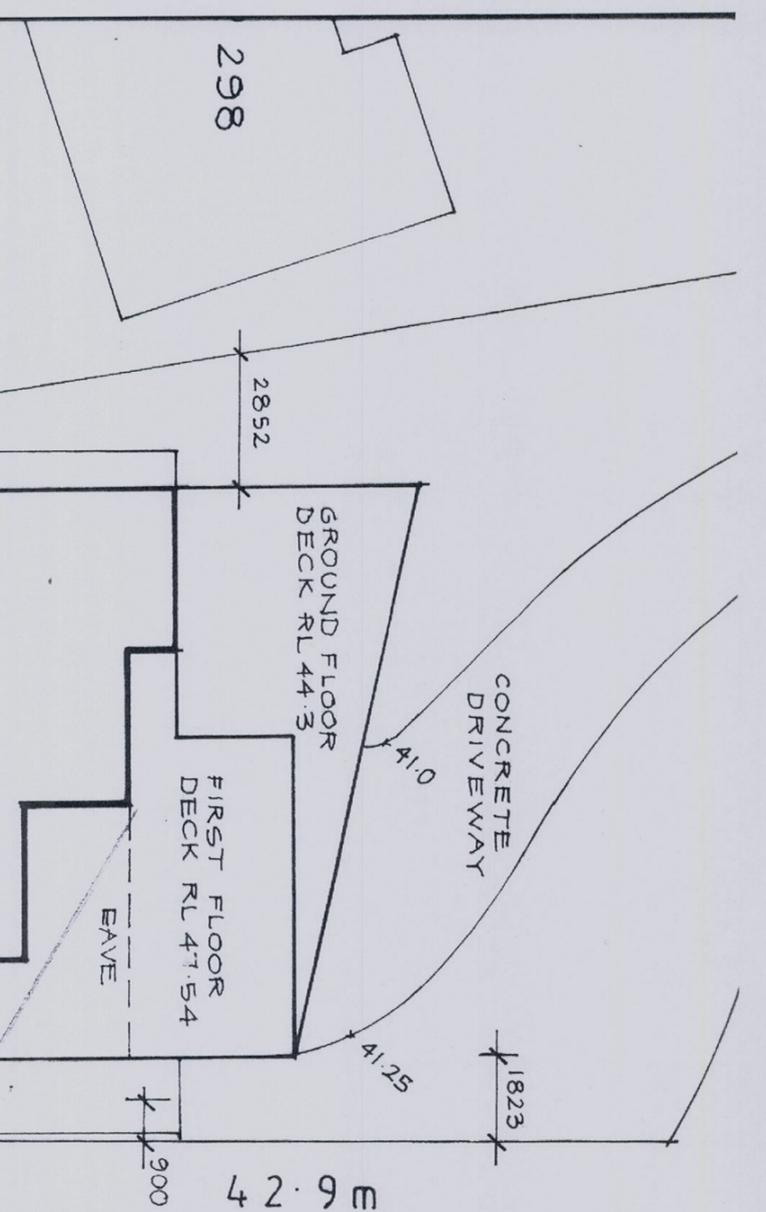
Building materials will be delivered to the site from Whale Beach Road and stored in the driveway area.

Waste & Recycle Management

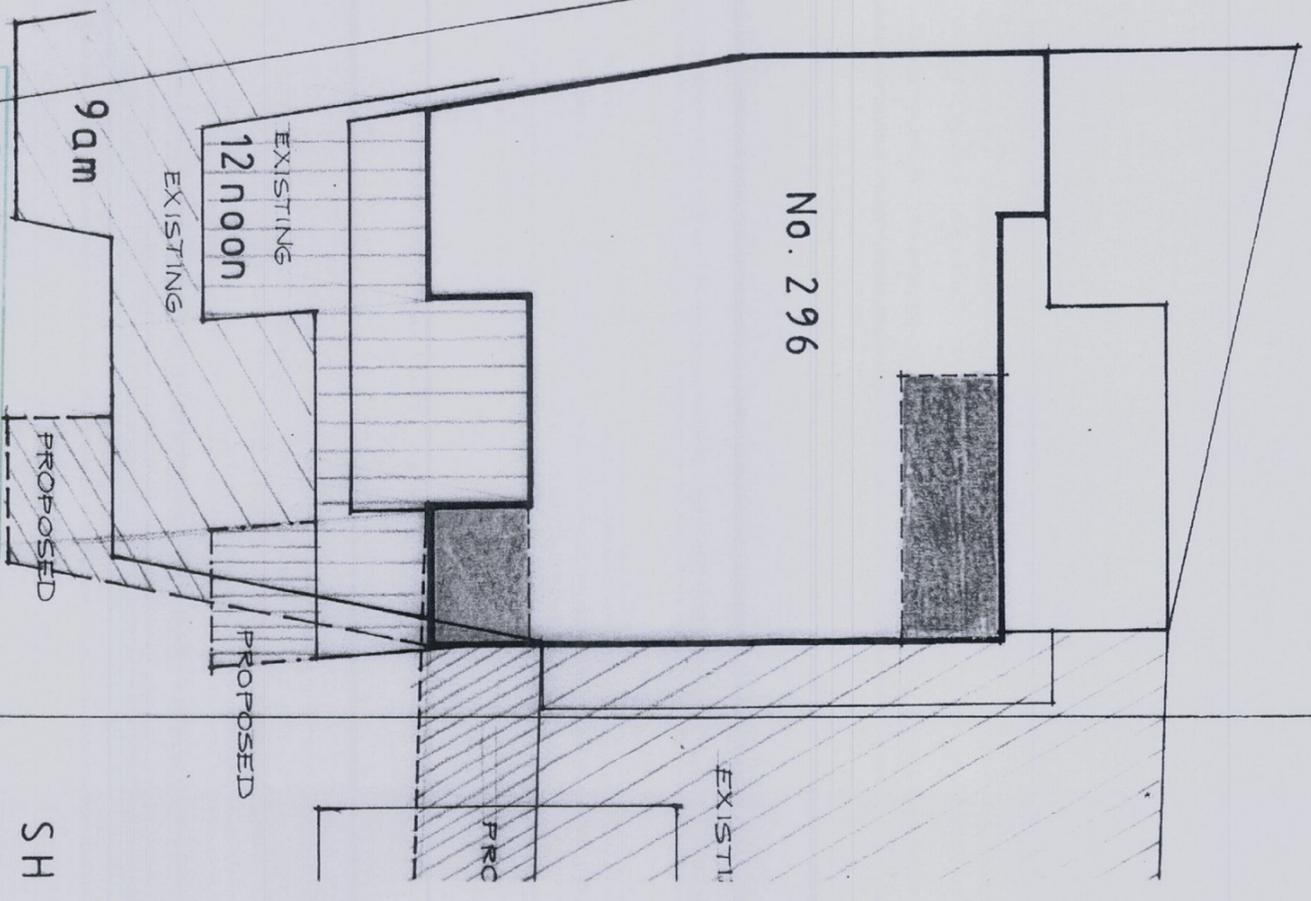
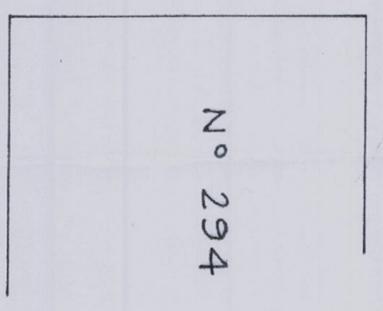
Will be loaded in waste disposal trucks as required or re used on the site.

The details provided on this form are the intentions for managing waste relating to this project.

SUB TOTAL LANDSCAPING TOTAL 449.37 M² OR 56.46%
 PLUS 6% ALLOWABLE DECKING 47.74 M²
 TOTAL



PLAN 1:200
 302 DP 16362
 A 795.8m²



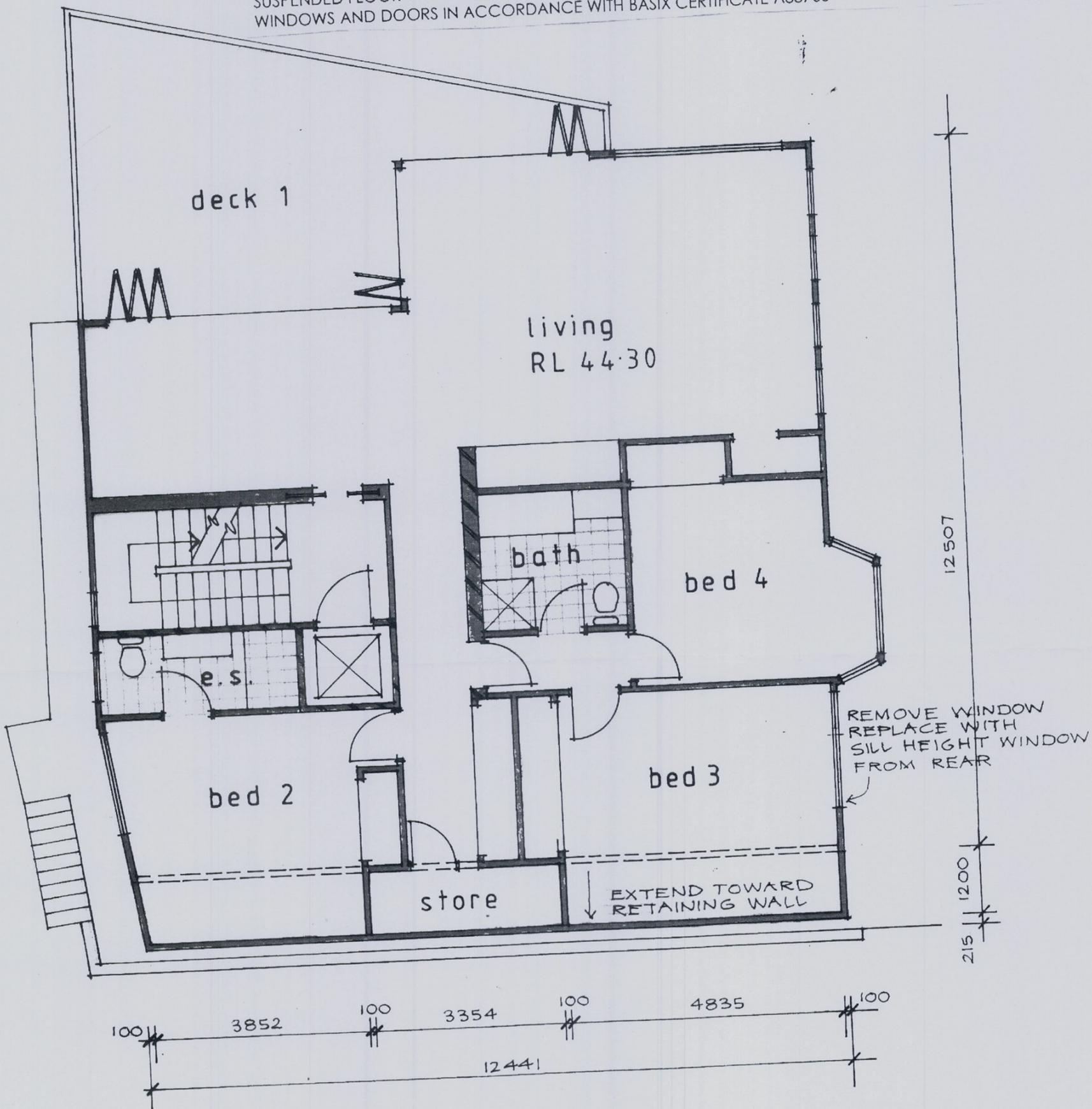
Peter J Boyce & Associates
 Ph: 0412 928 512
 This PLAN/DOCUMENT forms part of the approval granted under Construction Cert No. BP 12217
 All work must be carried out in accordance with the Building Code of Australia 2007 and subsequent amendments
 Accredited Building Surveyor BSB 0043

PROPOSED

SH
 6 9 11

BASIX NOTES

40% OF NEW OR ALTERED LIGHT FITTINGS TO BE FLUORESCENT, COMPACT FLUORESCENT OR LIGHT EMITTING DIODE (LED) LAMPS
 DARK PITCHED/SKILLION ROOF (SOLAR ABSORPTANCE > 0.70)
 NEW CEILING TO HAVE MINIMUM R1.74 INSULATION PLUS 75MM FOIL BACKED BLANKET TO ROOF
 EXTERNAL FRAMED/CLAD WALLS TO HAVE INSULATION R1.3 (R1.7 INC. CONSTRUCTION)
 SUSPENDED FLOOR WITH OPEN SUBFLOOR TO HAVE R0.8 INSULATION (R1.5 INC. CONSTRUCTION)
 SUSPENDED FLOOR WITH ENCLOSED SUBFLOOR TO HAVE R0.6 INSULATION (R1.3 INC. CONSTRUCTION)
 WINDOWS AND DOORS IN ACCORDANCE WITH BASIX CERTIFICATE A83768



GROUND FLOOR PLAN

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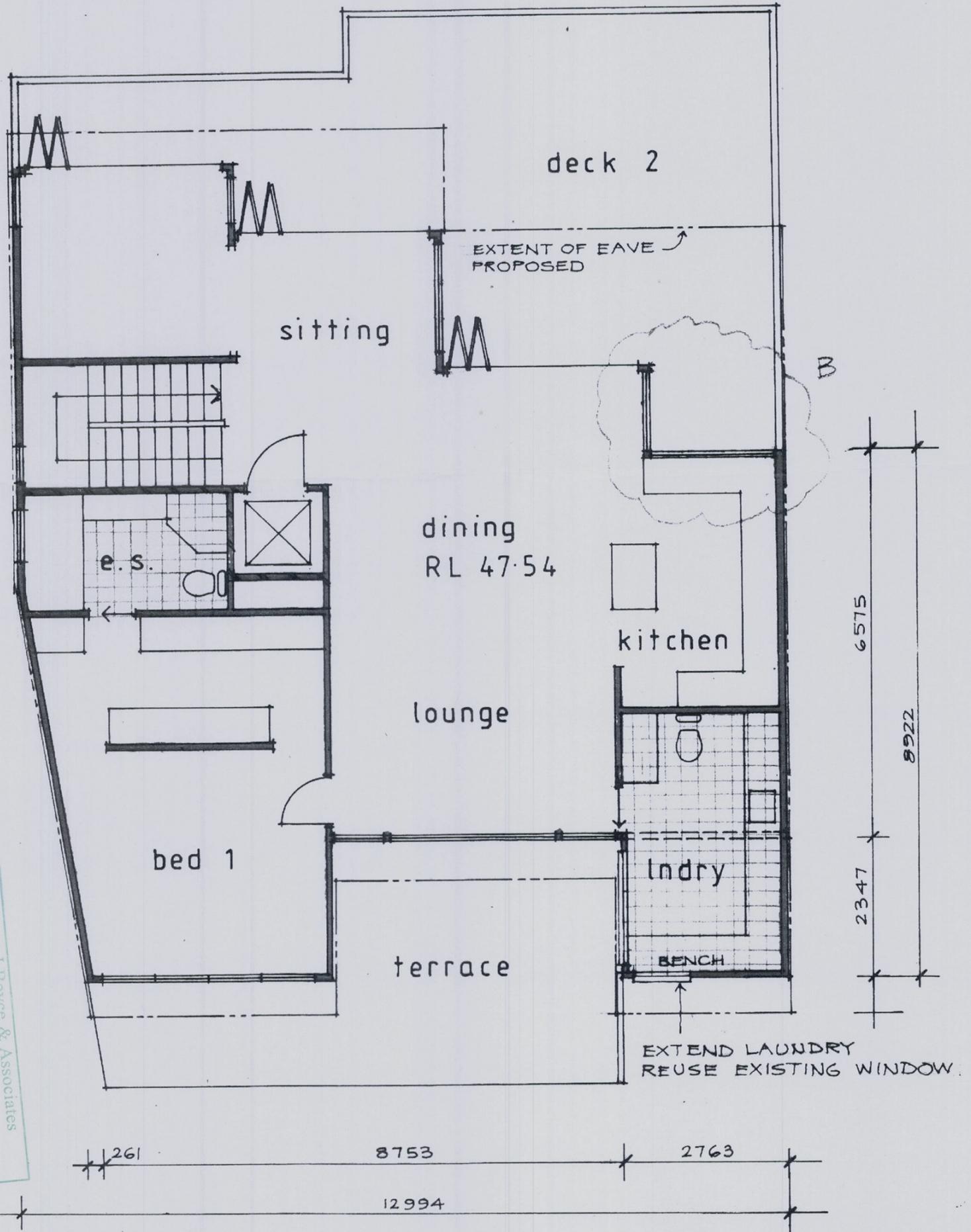
6.9.11 DELETE KITCHEN ADDITION B
 14.2.11 FINAL NOTES / AMEND KITCHEN

PROPOSED ALTERATIONS AND ADDITIONS
SCHMIDT RESIDENCE 296 WHALE BEACH ROAD PALM BEACH
 SHIMDESIGN architectural design and drafting
 kshimeld@bigpond.net.au phone 0400 898 744
 may 2010 dwg 0510 2/4
 B



NOTES

ALL DIMENSIONS SHOULD BE VERIFIED BY ON SITE BY THE BUILDER WHO WILL BE RESPONSIBLE FOR THE ACCURATE SETTING OUT OF THE JOB.
CONSTRUCTION IS TO COMPLY WITH THE RELEVANT BUILDING CODES AND LOCAL COUNCIL REQUIREMENTS. DIMENSIONS RELATING TO SITE BOUNDARIES AND EASEMENTS ARE SUBJECT TO VERIFICATION BY A SITE SURVEY.
ROOF WATER AND SUB SOIL DRAINAGE TO BE DISPOSED OF IN THE APPROVED MANNER OR AS DIRECTED.
DOWN PIPE LOCATION TO BE DETERMINED BY THE ROOF PLUMBER.
ELECTRICAL, POWER AND LIGHT OUTLETS TO BE DETERMINED BY THE OWNER.
STRUCTURAL DETAIL AND DESIGN TO BE PROVIDED BY A STRUCTURAL ENGINEER
ANY ADDITIONAL DETAILING SHALL BE RESOLVED BETWEEN THE OWNER AND BUILDER.
ALL LEVELS TO AUSTRALIAN HEIGHT DATUM.



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FIRST FLOOR PLAN 1:100

EXTEND EAVE OVER
N-E DOORS & WINDOW

8.5 M HEIGHT LIMIT

RL 50.32

RL 47.54

RL 44.3

RL 41.25

RL 41.0
GARAGE

NORTHEAST ELEVATION 1 1:100

METAL DECK
ROOFING

FLUSH JOINTED
F.C. SHEET WITH
TEXTURE SURFACE
TO MATCH EXISTING

POWDER COATED ALUMINIUM
WINDOW (REUSE EXISTING)

EXISTING WINDOW
SHOWN DOTTED

RL 47.54

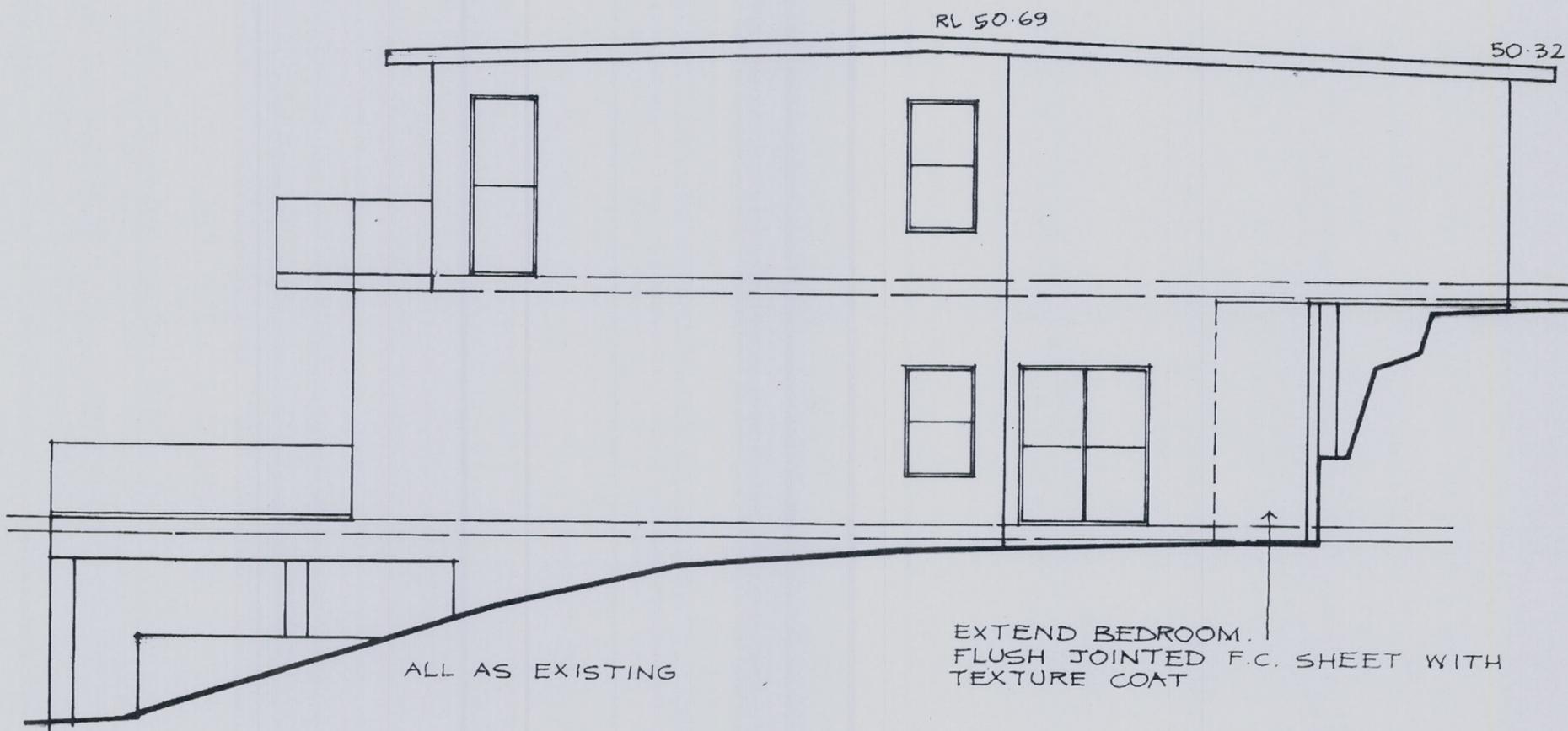
RL 44.30

EXTEND
RETAIN
REMOVE
WINDOW

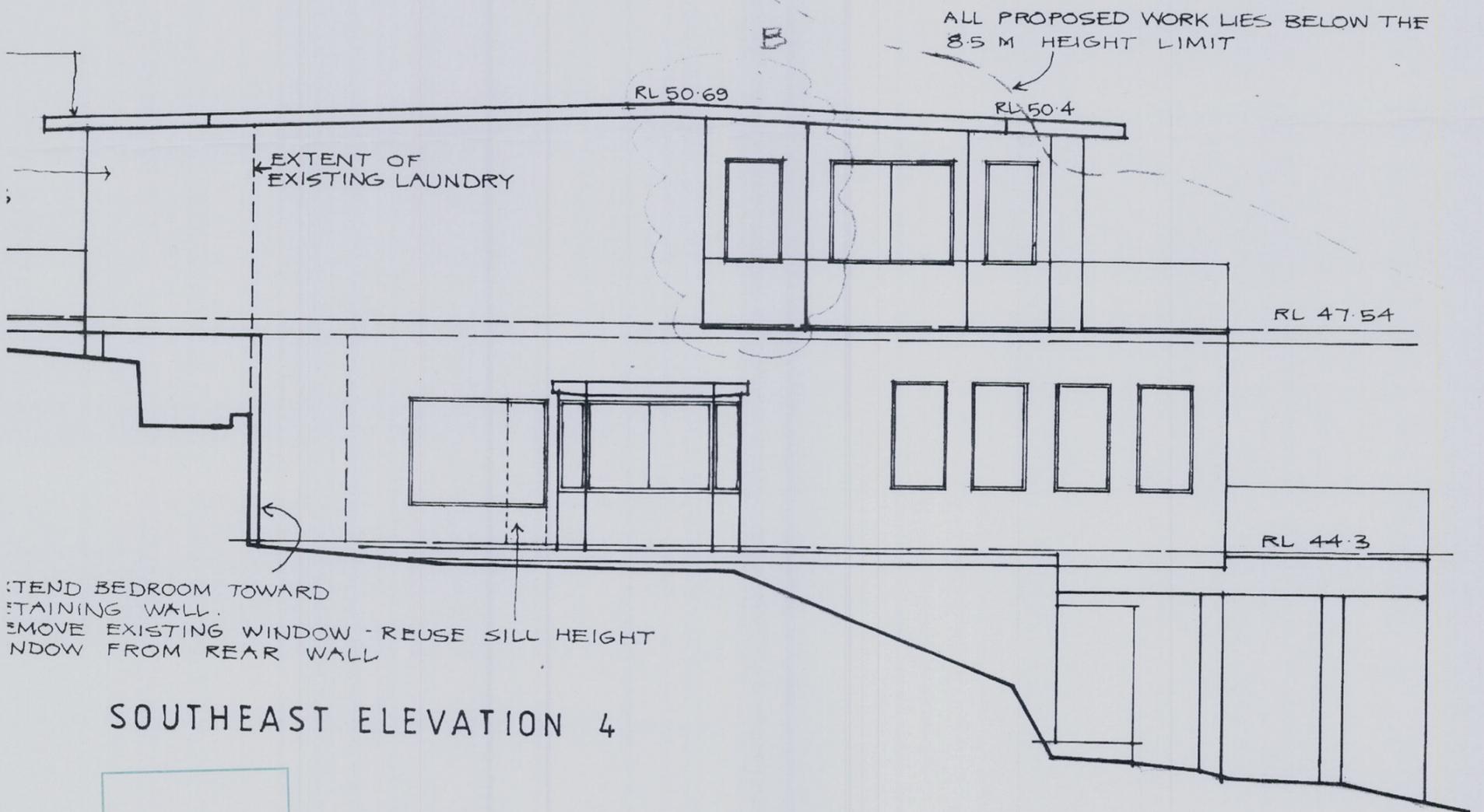
NEW FRAMED WALL TO REAR OF BEDROOMS.
REMOVE WINDOW.

SOUTHWEST ELEVATION 3

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NORTHWEST ELEVATION 2



SOUTHEAST ELEVATION 4

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 of the approval granted under
 Construction Cert No. 812217
 And all work must be carried out in
 accordance with the Building Code of
 Australia 2007 and subsequent amendments
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6-9-11 DELETE KITCHEN ADDITION B
 14-2-11 FINAL NOTES / AMEND KITCHEN

PROPOSED ALTERATIONS AND ADDITIONS
SCHMIDT RESIDENCE 296 WHALE BEACH ROAD PALM BEACH
 SHIMDESIGN architectural design and drafting
 kshimeld@bigpond.net.au phone 0400 898 744
 may 2010 dwg 0510 3/4

B

