- Peter Rowan -Andrew Caponas
- Wal Dover

9970 1273

NORTHERN BEACHES COUNCIL

BUILDING CERTIFICATE APPLICATION FORM

Made under the *Environmental Planning and Assesment Act 1979* - Section 149 A - F

Contact Us	
Email	council@northernbeaches.nsw.gov.au

If you need help lodging your form, call or drop into Customer Service

Manly Office: 1 Belgrave St, Manly NSW 2095 **tel:** 9976 1500

Dee Why Office: 725 Pittwater Rd, Dee Why. NSW 2099 **tel:** 9942 2111

Mona Vale Office: 1 Park St, Mona Vale NSW 2103 **tel:** 9970 1111

Avalon Office: 59A Old Barronjoey Rd, Avalon Beach NSW 2107 **tel:** 9970 1111

Office Use Only

B C 2017/0140

Application Fee

Privacy and Personal Information Protection Notice

Northern Beaches Council collects personal information to enhance our ability to provide services to our community. Your personal information is intended for use by Council staff only and will not be released to anyone other than you, unless your written authorisation has been obtained. If you choose not to supply your personal information, it may result in Council being unable to provide the services you seek. You have the opportunity to access and correct your personal information by submitting this form. If you require any additional information, please read Council's Privacy Statement on the website.

Part 1: Site Details

1.1 ADDRESS OF PROPERTY			
Unit / House Number	115		
Street	Prince alfred parade		
Suburb	NEWPORT	**Postcode**	2106
Lot + DP/SP Number			
Name of Building			
1.2 DETAILS OF THE BUILDING(S) OR STRUCTURE(S)			
Whole of Building(s)	○	**Part of the building(s)**	✓
List and describe the structures/buildings for which this building certificate is being applied for			
Studio			

NORTHERN BEACHES COUNCIL
18 DEC 2017
AVALON CUSTOMER SERVICE
RECEIVED
Signature .....

Part 2: Applicant Details

Title	Mr	**Given Names**	MICHAEL
Family Name	MITTON	**OR** Organisation Name	
ACN Number			
Address	115 Prince alfred parade		
Suburb	NEWPORT	**Postcode** 2106	
Private Phone		**Business Phone**	
Mobile Phone	0419488202	**Facsimile**	
Email	MITTONMICHAEL@GMAIL.COM.		
Contact Person	Michael Mitton	**Signature**	

Person who may be contacted to discuss the application during business hours.
It is important that we are able to contact you if we need more information. Please give us as much detail as possible. Council will deal only with the nominated applicant in the event of any query or communication regarding this application. Please note that information provided will be public information.

You can apply for a Building Certificate if you are (please tick appropriate box):	
I am the owner of the property	☑
I have the owners consent to lodge this application (see below)	☐
I am the owner or purchaser's solicitor or agent	☐
We are a public authority which has notified the owner of its intentions to apply for the certificate	☐

As the owner(s) of the above property, I/we give consent to this application & permit authorised Council personnel to inspect the property.			
Title	Mr		
Given Names	MICHAEL		
Family Name	MITTON		
Organisation Name			
Address	115 Prince alfred parade NEWPORT.		
ABN Number		**Home Number**	
Business Number		**Mobile Number**	0419488202
Email	MITTONMICHAEL@GMail.Com		
Signature			

Part 2: Applicant Details (continued)

○ **Company / Organisation**
If the owner is a company, owners consent is to be provided in one or more of the following ways:
Execution of owners Consent Form (or other documentation to the same effect) in accordance with section 127(1) of the *Corporation Act 2001*.
Common seal affixed to, and execution of owners consent form (or other document in the same effect) in accordance with section 127(2) of the *Corporation Act 2001*

Together with an up to date ASIC Company extract and other relevant supporting documents.

○ **Strata Title / Owner's Corporation**
If the property is a unit under strata title or a lot in a community title, then in addition to the owner(s) signature one of the following must be provided:
- The common seal of the owner's corporation must be stamped on this form over the signature of the owner(s) and signed by the chairman or secretary of the owner's corporation or the appointed managing agent.
- A letter of consent to lodge a Building Certificate on strata management letterhead.
- Minutes signed by the Owner's Corporation, clearly stating the words "Supported for lodgement of a Building Certificate Application".

○ **New owner(s)**
If the property has recently been sold, documentary evidence of the sale must be provided. Please provide one of the following:
- A copy of the Certificate of Title.
- A letter from your solicitor confirming settlement.
- Previous owner(s) to provide owner(s) consent.

○ **Signing on owner(s) behalf**
If you are signing on the owner(s) behalf as the owner(s) legal representative, you must state the nature of your legal authority and attach documentary evidence (e.g. Power of attorney, executor, trustee, company director, etc.).

○ **Joint wall / Fence**
When works affect a joint wall or fence, consent of all property owners is required (e.g. Semi-detached or terrace dwelling and boundary fences).

Part 3: Particulars Application

Why are you applying for a Building Certificate? (Property sale, property purchase, unauthorised building work, other) provide details	
Property Sale	○
Property Purchase	○
Unauthorised Work	✓
Other (please specify)	○

YOU MUST COMPLETE THIS SECTION FOR UNAUTHORISED WORK

Has any form of consent or approval been granted for the works undertaken?		Yes ✓	No ○	
If yes, provide Consent number/approval numbers	772/94	11-4-96		
Date consent was granted	11-4-94			
Were any part of the works carried out within the last 2 (two) years?	No			
Are either you or the person on whose behalf this application is made, the person/s who carried out the unauthorised work or who caused the unauthorised building work to occur?		Yes ○	No ✓	
What is the contract value of the work undertaken? Provide total cost estimate of labour and materials.		$7000—		
Has a modified consent been issued for the development?	No Not/A	**If yes, provide the date granted:**		
Classification of the Building - Building Code of Australia (BCA) (Class 1a: dwelling house. Class 2: apartment. Class 10a: awning, garage, carport. Class 10b, fence, freestanding wall, swimming pool. Class 5 & 6: Commercial building).				
Floor area (m^2) of whole building or part of the building where the Building Certificate is required (as applicable).				
48 m^2				

Part 4: Checklist – You must complete checklist A or B

Checklist	Checklist A (for sale of property or similar reason)	○
	Checklist B (unauthorised structures or works)	✓

NORTHERN BEACHES COUNCIL

BUILDING CERTIFICATE APPLICATION CHECKLIST

Checklist "A" - Applications for Sale of Property or Matters Not Involving Unauthorised Works

	Supplied		
	Yes	**No**	**Na**
1. Do you have owner(s) consent?	◯	◯	◯
2. Have you attached a cheque/payment?	◯	◯	◯
NOTE: Where the building certificate relates to unauthorised works (in part or whole) the Council levies additional fees under section 149 of the Environmental Planning and Assessment Act 1979. You will be advised of the fees applicable following review and assessment of this application and supporting documentation. Fees must be paid prior to processing or determination of the application.			
3. Have you attached a copy of the contract of sale? (if applicable)	◯	◯	◯
4. Survey Plan	◯	◯	◯
An **identification survey** plan by a registered surveyor is to be submitted with all applications Information should include: • Plan to show all existing structures • Location/position of all buildings/structures on the land (showing street number and street address), to the boundary. • Easements and rights of way including common or party walls Note: An assumed datum may sometimes be sufficient for very minor development (that does not alter building height). The assumed datum point must be shown on the site plan and relative levels (RLs) on section and elevation plans.			

Signature	
Date	

NORTHERN BEACHES COUNCIL

BUILDING CERTIFICATE APPLICATION CHECKLIST

Checklist "B" - Application For Unauthorised Development

Contact Council if you are unsure what details will be required for your Building Certificate application.

	Supplied	
	Yes	No
1. Preparing your application	✓	○
• One (1) copy of all documentation, including the application form are required. • Only one copy of the checklist is required. • Additional copies of documentation may be requested. • Highlight in colour all unauthorised works and building changes. • Provide a statement of works undertaken		
2. For all plans	✓	○
The following information should be included on all plans and documents: • Applicant(s) name(s) • Property address (block/house/shop/flat number) • Draftsman/architect name, date, plan name and number, plan version, and revision		
3. CD / Disc	○	○
• For any document containing 10 or more pages, an electronic copy of that document is also to be provided in PDF format on CD / disc. One file for each document or plan, file name to include: document name, plan type, description and number (including version) and date. e.g. Architectural, North Elevation, p1/9,15/12/06.		
4. A4 plans for notification purposes	✓	○
Notification plans are to be submitted with all applications (see exceptions below). • Provide five (5) copies of A4 reductions of site plan and elevations (preferably 1 page), to be double-sided. • Plans are to be legible, including dimensions and wording. • These plans need not include interior detail that may affect your rights to privacy. However if such plans are provided, then the signature on the Application Form acknowledges and accepts that all relevant A4 plans submitted will be used for public notification purposes.		
5. Survey plan	✓	○
An **identification survey** plan by a registered surveyor is to be submitted with all applications Information should include: • Plan to show all existing structures • Location/position of all buildings/structures on the land (showing street number and street address), to the boundary. • Easements and rights of way including common or party walls Note: An assumed datum may sometimes be sufficient for very minor development (that does not alter building height). The assumed datum point must be shown on the site plan and relative levels (RLs) on section and elevation plans.		
6. Building Code of Australia (BCA) report	✓	○
• A Building Code / Fire Safety analysis / report is required for all applications. The report is to detail the developments compliance with provisions of Sections C, D, E & F (Class 2-9) and parts 3.1 to 3.12 (Class1). Specific detail is to be provided as to how the development will be either be fire protected or upgraded to meet current Building Code and Australian Standard requirements.		
7. Structural Report	✓	○
A structural Report may be required to be submitted with applications that include structural works. The report it to be prepared by a suitably qualified professional Structural Engineer and shall detail the developments compliance with the relevant structural provisions. Specific detail is to be provided as to how the development will meet the current Building Code and Australian Standard requirements.		

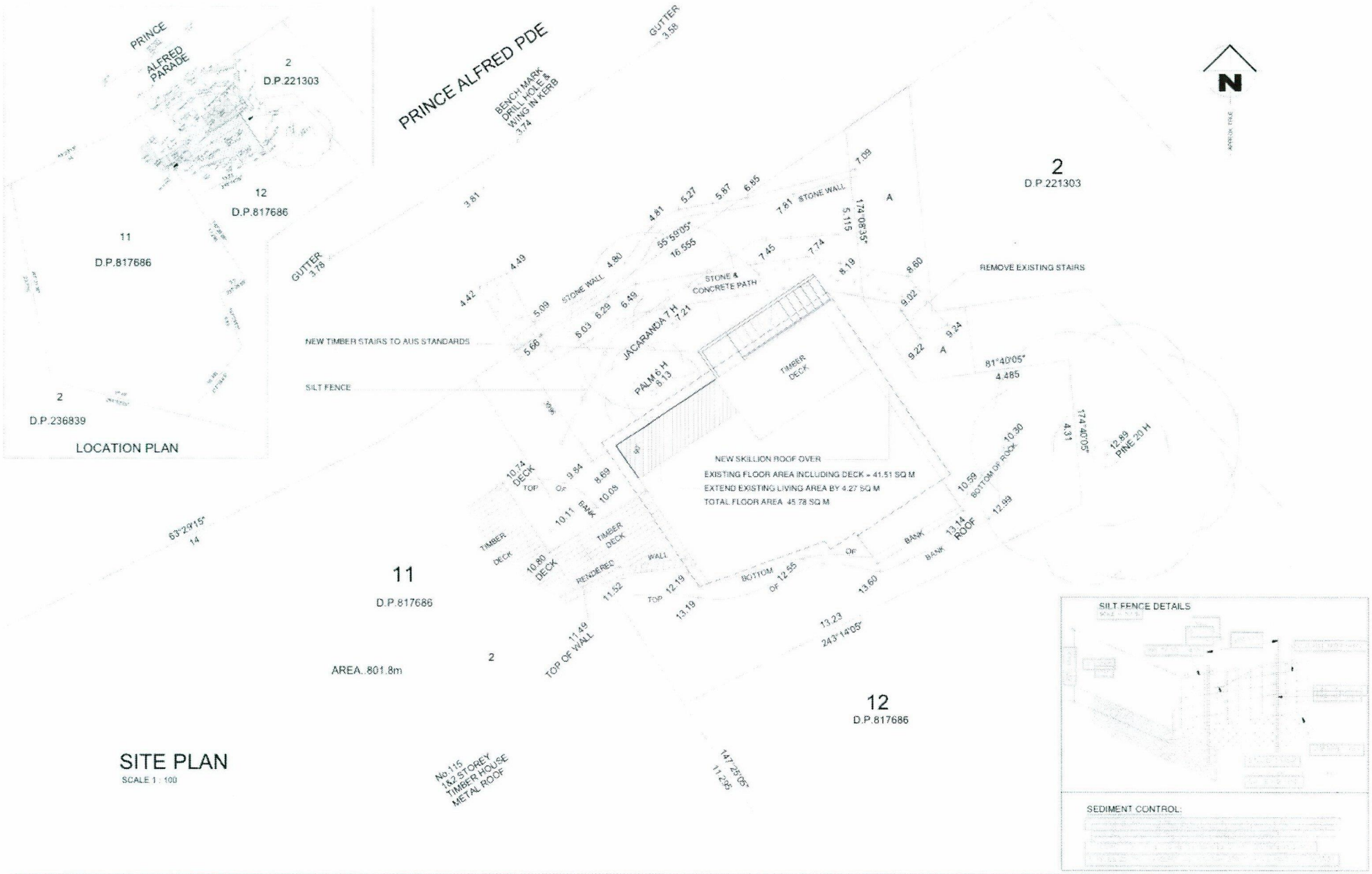
Required

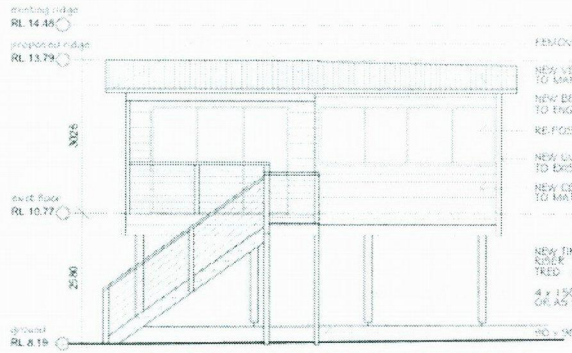
	Supplied	
	Yes	No
8. Works as executed floor plan/elevation and sections	☑	☐
These plans should include: • Plan to scale 1:100 or 1:200 • Coloured and to identify the unauthorised portions • Floor levels and steps in floor levels. (reduced levels) • Room names, areas and dimensions • Locations and sizes of windows and doors • Wall structure type and thickness • Location of plumbing fixtures (where possible) • Access and facilities for persons with a disability • Existing floor plan, room names and use (if relevant) • Works as executed stormwater drainage plan (where applicable)		
9. Landscape open space plan and calculations	☐	☐
Landscape Open Space plan and calculations may be supplied with all applications including works additional to the approved building footprint. Information should include: • Plan identifying proposed 'landscape open space' in accordance with the requirements. (If no change to existing landscape open space', calculations are still required). • Show associated area calculations and 'landscape open space' percentage.		
10. Swimming Pool (if applicable)	☐	☐
• Please show levels of the pool coping and surrounding ground surface to Australian Height Datum on Site Plan/Elevations/ Sections. Pool fencing, gate and filter box position must also be shown on the plans.		
11. Bushfire hazard assessment report	☑	☐
A Bushfire Hazard Assessment Report may be required to be submitted with all applications on Bushfire Prone Land. The report is to be prepared by a person with appropriate qualifications in Bushfire Protection (or equivalent) and shall address how the development and the site responds to the requirements of Planning for Bushfire Protection (most recent version) including requirements for construction. See www.rfs.nsw.gov.au or further details.		
12. Geotechnical Risk Management	☑	☐
Where the property is identified on the former Pittwater Councils Geotechnical Risk Management Map 2003 and/or Coastal Hazard map 97 - 003 as being Bluff Managament Areas, a Geotechnical Engineers Report prepared in accordance with Councils Interim Geotechnical Risk Managment Policy is to be provided, together with a completed Form 4 pursuant to that Policy.		

Signature	
Date	18-12-17

Application Fee
Fees for this application may be found on Councils website by typing the words 'fees and charges' into the search engine. Alternatively you may contact Council's Customer Services to obtain a quotation. **n.b.** It should be noted that unauthorised work will require additional fees to be paid. An urgency fee may also be paid for 'sale of property' applications. This fee is not applicable for unauthorised work.

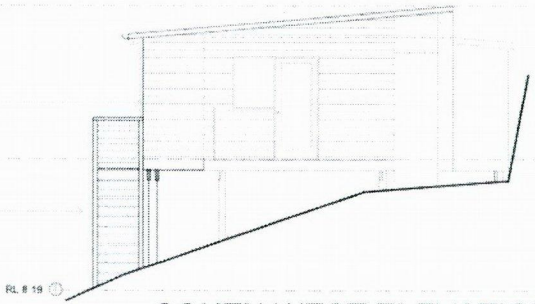
Lodgement Details	Phone	Fax	Mail
Dee Why, 725 Pittwater Rd	(02) 9942 2111	(02) 9971 4522	PO BOX 1336, Dee Why, NSW 2099
Mona Vale, 1 Park Street	(02) 9970 1111	(02) 9970 1200	PO BOX 882, Mona Vale NSW 1660
Avalon, 59a Old Barrenjoey Rd	(02) 9970 1200	(02) 9970 1200	PO BOX 882, Mona Vale NSW 1660
Manly, 1 Belgrave Street	(02) 9976 1500	(02) 9976 1400	PO BOX 82, Manly 1655


PRINCE ALFRED PDE
PRINCE ALFRED PARADE
2
D.P.221303
12
D.P.817686
11
D.P.817686
2
D.P.236839
LOCATION PLAN
BENCH MARK DRILL HOLE & WING IN KERB 3.74
GUTTER 3.58
GUTTER 3.78
STONE WALL
STONE & CONCRETE PATH
JACARANDA T H 7.21
PALM 6 H 8.13
NEW TIMBER STAIRS TO AUS STANDARDS
SILT FENCE
REMOVE EXISTING STAIRS
TIMBER DECK
NEW SKILLION ROOF OVER
EXISTING FLOOR AREA INCLUDING DECK = 41.51 SQ M
EXTEND EXISTING LIVING AREA BY 4.27 SQ M
TOTAL FLOOR AREA 45.78 SQ M
BOTTOM OF ROOF
PINE 20 H
RENDERED WALL
TOP OF WALL
AREA..801.8m
No 115
1&2 STOREY
TIMBER HOUSE
METAL ROOF
SITE PLAN
SCALE 1 : 100
SILT FENCE DETAILS
SEDIMENT CONTROL:
TITLE
ADDITIONS AND ALTERATIONS
FOR:
Michael Milton
SITE
115 PRINCE ALFRED PDE
JOB No. 74
SCALE 1:100
DWG No. 1
DRAWN JWT
ISSUE date
1 26 / 10 / 17
REVISION
GENERAL NOTES:
planatec
architectural drafting services
PHONE 9919 3915



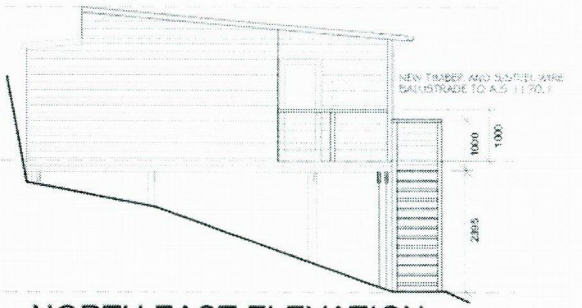
NORTH WEST ELEVATION

SCALE 1 : 100



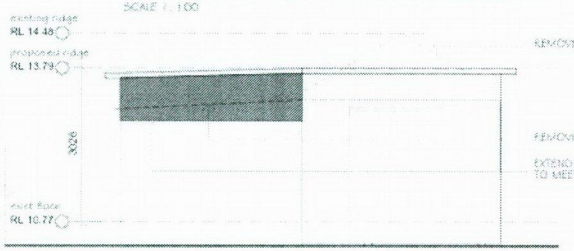
SOUTH WEST ELEVATION

SCALE 1 : 100



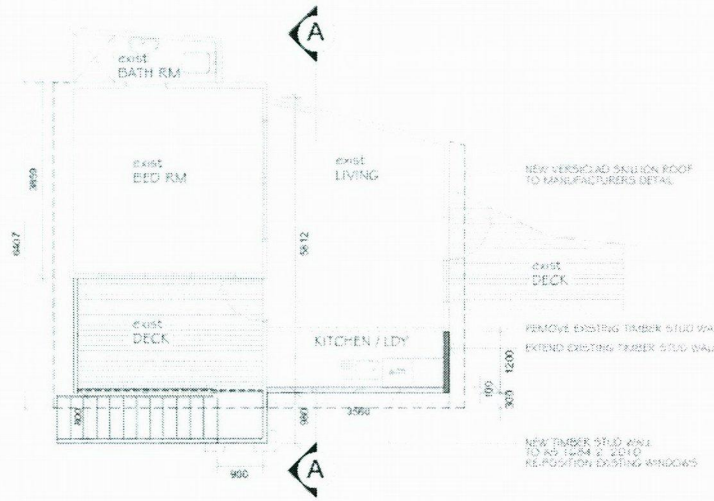
NORTH EAST ELEVATION

SCALE 1 : 100



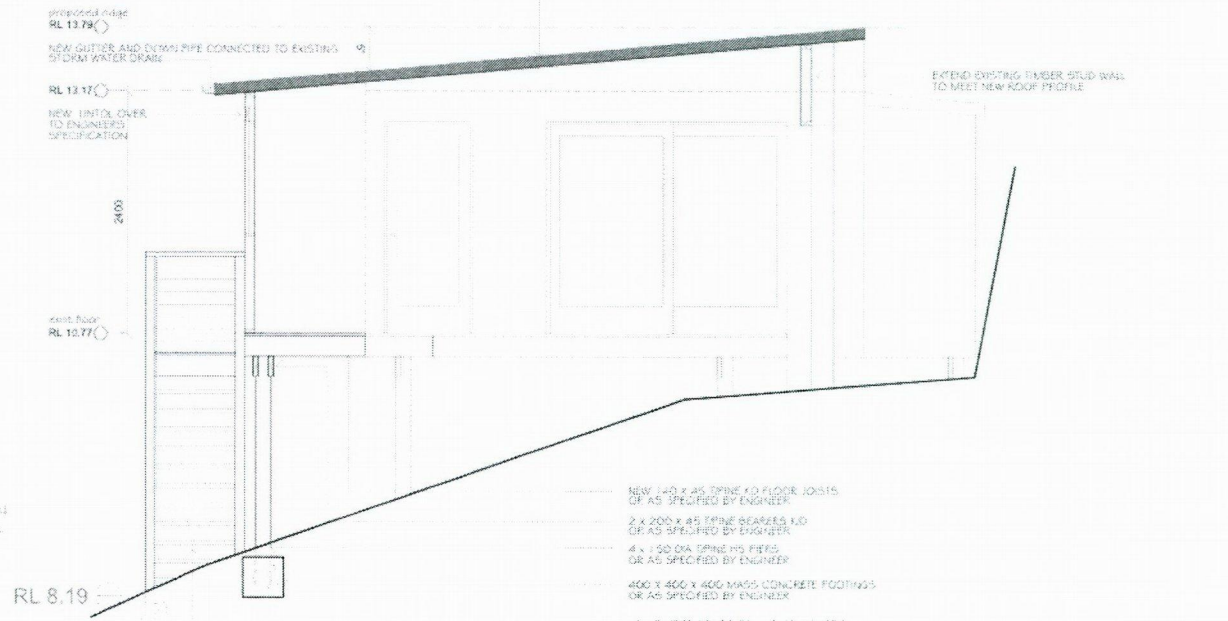
SOUTH EAST ELEVATION

SCALE 1 : 100



EXISTING FLOOR PLAN

SCALE 1 : 100



SECTION A

SCALE 1 : 100

NOTE:

1. DO NOT SCALE FROM THIS DRAWING, USE GIVEN DIMENTIONS
2. CONTRACTORS TO CHECK ALL DIMENTIONS ON SITE PRIOR TO COMMENCMENT OF CONSTRUCTION
3. ENGINEERS DRAWINGS TO TAKE PREFERENCE
4. BUILDING WORKS TO BE CARRIED OUT STRICTLY IN ACCORDANCE TO THESE DRAWINGS
5. WALL BRACING TO COMPLY WITH AS 1684 - 1999 & ALL WORK TO COMPLY WITH THE BCA
6. ALL WORK / MATERIALS TO COMPLY WITH (BAL 12.5) AS NOTED IN THE BUSH FIRE REPORT

TITLE: ADDITIONS AND ALTERATIONS

FOR: Michael Mitton

SITE: 115 PRINCE ALFRED PDE

JOB No: 741 | DWG No: 2

SCALE: 1:100 | DRAWN: JWT

issue | date | REVISION

1 | 26 / 10 / 17

GENERAL NOTES

planatec
architectural drafting services
planatec@yahoo.com.au
PHONE 9518 3915

Jack Hodgson Consultants Pty Limited
CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS
ABN: 94 053 405 011

Additionally any new foundations are to be taken to material of minimum design allowable bearing capacity of 300kPa being stiff clay or weathered rock and are to be inspected by the geotechnical engineer prior to placement of any concrete.

Provided the recommendations provided in Section 9 of our associated report are followed the property appears stable by inspection and accordingly the proposed development will have an Acceptable Risk Level in accordance with the 2009 Geotechnical Risk Management Policy for Northern Beaches Council - Pittwater subject to good engineering practice for the structural design and construction methods.

JACK HODGSON CONSULTANTS PTY. LIMITED.

Peter Thompson MIE Aust CPEng
Member No. 146800
Civil/Geotechnical Engineer

DIRECTOR: N. J. HODGSON
Unit 38D No 6 Jubilee Avenue, Warriewood NSW 2102
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Telephone: 9979 6733 Facsimile: 9979 6926
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GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER - 2009
FORM NO. 4 (As per Pittwater Council's Geotechnical Risk Management Policy) – To be submitted with Application for a Building Certificate/Response to an Order

Building Certificate Application
for _____
Name of Applicant

Address of Site 115 PRINCE ALFRED PARADE, NEWPORT

Order No. N/A

Declaration made by geotechnical engineer in relation to the submission of an application for a Building Certificate

I, PETER THOMPSON (Insert Name) on behalf of JACK HODGSON CONSULTANTS PTY LTD (Trading or Company Name)

on this the 6TH DECEMBER, 2017 (Date)

certify that I am a geotechnical engineer as defined by the Geotechnical Risk Management Policy for Pittwater 2009. 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 have inspected the site and the existing development and am satisfied that both the site and the development achieves at least the "Tolerable Risk Management" requirement of the Geotechnical Risk Management Policy for Pittwater - 2009. The attached report provides details of the assessment in accordance with the Geotechnical Risk Management Policy for Pittwater – 2009. The report also contains recommendations as to any reasonable and practical measures that can be undertaken to remove foreseeable risk. I am aware the Council will rely on this certification as the basis for ensuring that the geotechnical risk management aspects of the site and the development have been adequately addressed to achieve at least a "Tolerable Risk Management" level for the life of the structure taken as 100 years unless otherwise stated and justified in the Report.*

or

☒ I have inspected the site of the existing development. The attached report details the remedial actions required to be undertaken prior to me being prepared to certify that the site and the development achieves at least the "Tolerable Risk Management" criteria required in accordance with the Policy.

Geotechnical Report Details:

Report Title: RISK ANALYSIS & MANAGEMENT FOR BUILDING CERTIFICATE FOR UNAUTHORISED WORKS AT 115 PRINCE ALFRED PARADE, NEWPORT REPORT DATE: 27/11/2017

Author : PETER THOMPSON

Signature Peter Thompson

Name PETER THOMPSON

Chartered Professional Status MIE Aust CPEng

Membership No. 146800

Company Jack Hodgson Consultants Pty Ltd

* Note: If life of structure taken as less than 100 years, please indicate 15 years

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CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS
ABN: 94 053 405 011

RISK ANALYSIS & MANAGEMENT FOR BUILDING CERTIFICATE AT 115 PRINCE ALFRED PARADE NEWPORT

1. INTRODUCTION.

1.1 This assessment has been prepared to accompany an application for a building certificate. The requirements of the Geotechnical Risk Management Policy for Northern Beaches Council – Pittwater 2009 have been met.

1.2 The definitions used in this Report are those used in the Geotechnical Risk Management Policy for Northern Beaches Council – Pittwater 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 Pittwater, 2009.

1.4 The experience of Jack Hodgson Consultants spans a time period over 40 years in the Pittwater area and Sydney.

2. EXISTING DEVELOPMENT.

2.1 Change status of the existing structure to Habitable Dwelling.

2.2 The works will comprise of the change of use of the existing structure to a habitable dwelling. Details of the existing structure are shown on the survey prepared by Adam Clerke Surveyors Pty Ltd, Ref 17290 and dated 22/09/2017.

3. DESCRIPTION OF SURROUNDING AREA.

3.1 The site was inspected on the 27th November, 2017.

3.2 The council map indicates that the surrounding properties are considered H1 hazard areas. Our observations indicate these hazards will not adversely affect the subject property from below or beside. The steep slope that rises across the site and extends above is a potential hazard on the site. This hazard is considered in section **8**.

3.2 Vehicle access to the proposed dwelling is not possible. Pedestrian access is via rock stairs that start from the road reserve on the Prince Alfred Parade frontage (Photo 1). To the north east of the stairs is a sandstone wall.

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3. DESCRIPTION OF SURROUNDING AREA. (Continued)

The wall has a wide crack towards the eastern end (Photo 2). The proposed dwelling is set on the south side of a cutting. The cutting has a loose rock wall that varies in height from 1.5 to less than 1.0 metres atop of the exposed weathered rock cut with vegetation covering the majority of the top of the wall (Photo 3) We are informed that the current owner has been there for 30 years and no significant movement of the cutting and retaining wall in that time. Some loose fragments are sitting in the void between the dwelling and the rock wall, which should be removed. The cutting has existed for a reasonable period of time and has not shown obvious signs of movement. Under the proposed dwelling is a void with some fill (Photo 4). The southern side of the dwelling is supported on piers in an area levelled and cut into the slope. The western side of the dwelling is connected to the main residence by a walk way that has a retaining wall to the northern side of the walkway (Photo 5). There is a cutting with loose soil and rock between the main residence and the eastern side of the dwelling below the walkway (Photo 6). Down the slope in front of the area between the dwelling and main residence is a rock wall (Photo 7). The main residence is in good condition for its age. The proposed dwelling was in fair to good condition.

4. GEOLOGY OF THE SITE.

4.1 The site is underlain by the variable inter-bedded sandstones, siltstones and shales of the Narrabeen Group. Sandstone floaters can be seen at the surface across the block. 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 in origin at the surface and become residual with depth. They consist of topsoil over sandy clays and clays that merge into the weathered rock at depths varying from 0.5 to 2.0 metres or deeper where filling has been carried out.

5. SUBSURFACE INVESTIGATION.

For purposes of this assessment, observation of the surface features, as described in this Report are considered to be sufficient information to prepare the building certificate; therefore no subsurface investigation was undertaken.

Jack Hodgson Consultants Pty Limited
CONSULTING CIVIL, GEOTECHNICAL AND STRUCTURAL ENGINEERS
ABN: 94 053 405 011

6. DRAINAGE OF THE SITE.

6.1 ON THE SITE.

No evidence of significant ground water was identified at the time of our inspection. The site appears to be well drained.

6.2 SURROUNDING AREA.

At the time of our inspection overland stormwater flow entering the site from the adjoining properties was not evident. Normal overland runoff could enter the site from the above slope during heavy or extended downpours.

GEOTECHNICAL HAZARDS.

7.1 ABOVE THE SITE.

No geotechnical hazards likely to adversely affect the subject property were observed above the site.

7.2 ON THE SITE.

7.2.1 The site is classified under Council's Policy to be in an H1 hazard zone. A failure of the slope that rises across the property is a potential hazard including the existing sandstone retaining wall **(HAZARD ONE)**.

7.2.2 The cutting and rock stacked retaining wall directly to the east of the proposed dwelling site is considered a potential hazard **(HAZARD TWO)**.

7.3 BELOW THE SITE.

No geotechnical hazards likely to adversely affect the subject property were observed below the site.

7.4 BESIDE THE SITE.

The areas beside the site are also classed slip affected hazard areas. These blocks have similar elevation and geomorphology to the subject property. No significant geotechnical hazards likely to adversely affect the subject property were observed beside the site at the time of our inspection.

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8. RISK ASSESSMENT.

8.1 ABOVE THE SITE.

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

8.2 ON THE SITE.

8.2.1 HAZARD ONE Qualitative Risk Assessment on Property

From the Alfred Parade road reserve the slope of the land rises toward the north-east at average angles of some 30 degrees. No significant evidence of slope instability was identified on site. There was evidence of settling and some areas of loose fill. The likelihood of the slope failing is assessed as 'Unlikely' (10^{-4}). The consequences to property of such a failure are assessed as 'Minor' (5%). The risk to property is 'Low' (5×10^{-6}).

8.2.2 HAZARD ONE Quantitative Risk Assessment on Life

For loss of life risk can be calculated as follows:
$\mathbf{R_{(LoI)} = P_{(H)} \times P_{(SH)} \times P_{(TS)} \times V_{(DT)}}$ (See Appendix for full explanation of terms)

8.2.2.1 Annual Probability
No evidence of significant slope instability was detected onsite
$\mathbf{P_{(H)}} = 0.0001$/annum

8.2.2.2 Probability of Spatial Impact
The proposed dwelling is situated toward the toe of the slope.
$\mathbf{P_{(SH)}} = 0.2$

8.2.2.3 Possibility of the Location Being Occupied During Failure
The average household of this size is taken to be occupied by 2 people. It is estimated that 1 person is in the house for 20 hours a day, 7 days a week. It is estimated 1 people are in the house 12 hours a day, 5 days a week.
For the person most at risk:

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

$\mathbf{P_{(TS)}} = 0.83$

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8.2.2 HAZARD ONE Quantitative Risk Assessment on Life (Continued)

8.2.2.4 Probability of Loss of Life on Impact of Failure

Based on the volume of land failing and its likely velocity when it hits the house, it is estimated that the vulnerability of a person to being killed when the slope fails is 0.01

$V_{(DT)} = 0.01$

8.2.2.5 Risk Estimation

$R_{(LoI)} = 0.0001 \times 0.2 \times 0.83 \times 0.01$

$= 0.00000016$

$R_{(LoI)} = 1.6 \times 10^{-7}$/annum **NOTE:** This level of risk is **'ACCEPTABLE'** **NOTE:** This level of risk is **'ACCEPTABLE'** provided the recommendations provided in **Section 9** are followed

8.2.3 HAZARD TWO Qualitative Risk Assessment on Property

The cutting and rock stacked retaining wall directly uphill and to the east of the proposed dwelling site is considered a potential hazard. Provided the advice in **Section 9** is followed the likelihood of the proposed dwelling being affected by a failure of the cutting and the rock stacked retaining is assessed as 'Unlikely' (10^{-4}). The consequences to property of such a failure are assessed as 'Minor' (5%). The risk to property is 'Low' (5×10^{-6}).

8.2.4 HAZARD TWO Quantitative Risk Assessment on Life

For loss of life risk can be calculated as follows:

$R_{(LoI)} = P_{(H)} \times P_{(SH)} \times P_{(TS)} \times V_{(DT)}$ (See Appendix for full explanation of terms)

8.2.4.1 Annual Probability

No evidence of significant movement or instability was observed onsite.

$P_{(H)} = 0.0001$/annum

8.2.4.2 Probability of Spatial Impact

The proposed dwelling is situated at the toe of the cutting and the rock stacked retaining wall.

$P_{(SH)} = 0.5$

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8.2.4 HAZARD TWO Quantitative Risk Assessment on Life (Continued)

8.2.4.3 Possibility of the Location Being Occupied During Failure

The average household of this size is taken to be occupied by 2 people. It is estimated that 1 person is in the house for 20 hours a day, 7 days a week. It is estimated 1 people are in the house 12 hours a day, 5 days a week.
For the person most at risk:

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

$\mathbf{P_{(TS)}} = 0.83$

8.2.4.4 Probability of Loss of Life on Impact of Failure

Based on the volume of land failing and its likely velocity when it hits the house, it is estimated that the vulnerability of a person to being killed when the slope fails is 0.05
$\mathbf{V_{(DT)}} = 0.05$

8.2.4.5 Risk Estimation

$\mathbf{R_{(Lol)}} = 0.0001 \times 0.5 \times 0.83 \times 0.05$
$= 0.000002075$
$\mathbf{R_{(Lol)}} = 2.75 \times 10^{-6}$/annum **NOTE:** This level of risk is **'ACCEPTABLE'** provided the recommendations given in **Section 9** are undertaken.

8.3 BELOW THE SITE.

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.

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

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9. REMEDIAL WORKS & RECOMMENDATIONS.

9.1 It is recommended that the cracked sandstone wall on the north-eastern side of the rock access stairway be monitored and if significant movement is observed then appropriate action is taken at that time.

9.2 The cutting and rock stacked retaining wall directly uphill and to the east of the proposed dwelling is to be regularly monitored for any movement. Any areas of the cutting or retaining wall where there is unsecured loose rock that cannot be removed then we recommend that suitable galvanised mesh be attached to these areas so that this minimises the likely hood of a rock impacting the structure. We recommend that the area is to be inspected by the Geotechnical Engineer in 6 months and then annually and biannually after that. Additionally, after significant rain events the cutting and rock stacked retaining wall is to be inspected by the owner and if significant movement is observed then appropriate action is taken at that time.

9.3 Any areas of loose soil and rock are to be appropriately landscaped and if required a properly designed and engineered retaining wall designed and constructed.

10. RISK ASSESSMENT SUMMARY.

HAZARDS	Hazard One	Hazard Two
TYPE	The slope on or above the site failing and impacting on the subject property.	A failure of the cutting and the rock stacked retaining wall directly uphill and to the east of the proposed dwelling site
LIKELIHOOD	'Unlikely' (10^{-4})	'Unlikely' (10^{-4})
CONSEQUENCES TO PROPERTY	'Minor' (5%)	'Minor' (5%)
RISK TO PROPERTY	'Low'(2×10^{-6})	'Low'(2×10^{-6})
RISK TO LIFE	1.6×10^{-7}/annum	2.75×10^{-6}/annum
COMMENTS	'**Acceptable**' level of risk. **NOTE:** This level of risk is '**ACCEPTABLE**' provided the recommendations provided in **Section 9** are followed	'**Acceptable**' level of risk. **NOTE:** This level of risk is '**ACCEPTABLE**' provided the recommendations provided in **Section 9** are followed

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11. CONCLUSION.

The proposed dwelling has an 'Acceptable Risk Level' in accordance with the 2009 Geotechnical Risk Management Policy for Pittwater provided the recommendations provided in **Section 9** are followed.

JACK HODGSON CONSULTANTS PTY. LIMITED.

Peter Thompson MIE Aust CPEng
Member No. 146800
Civil/Geotechnical Engineer

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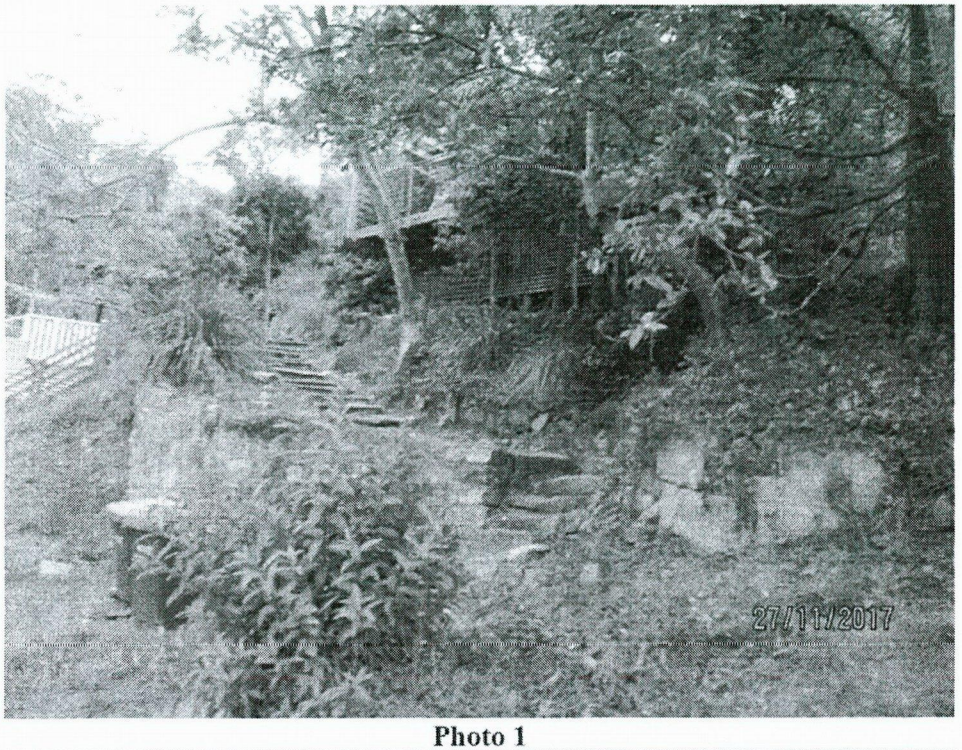
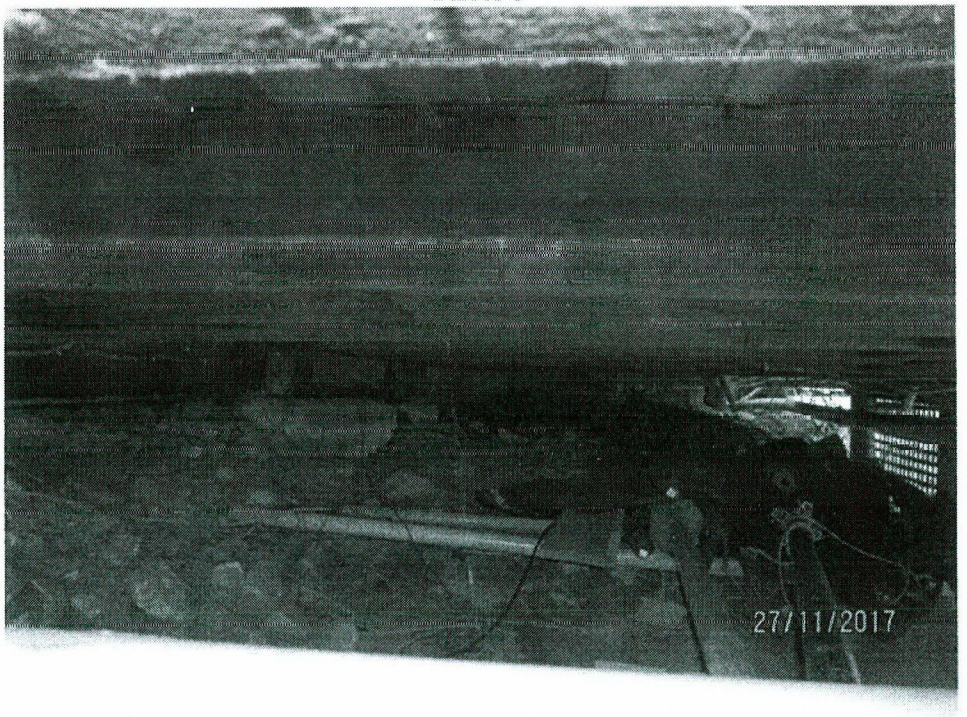


Photo 1

Photo 2

Photo 3



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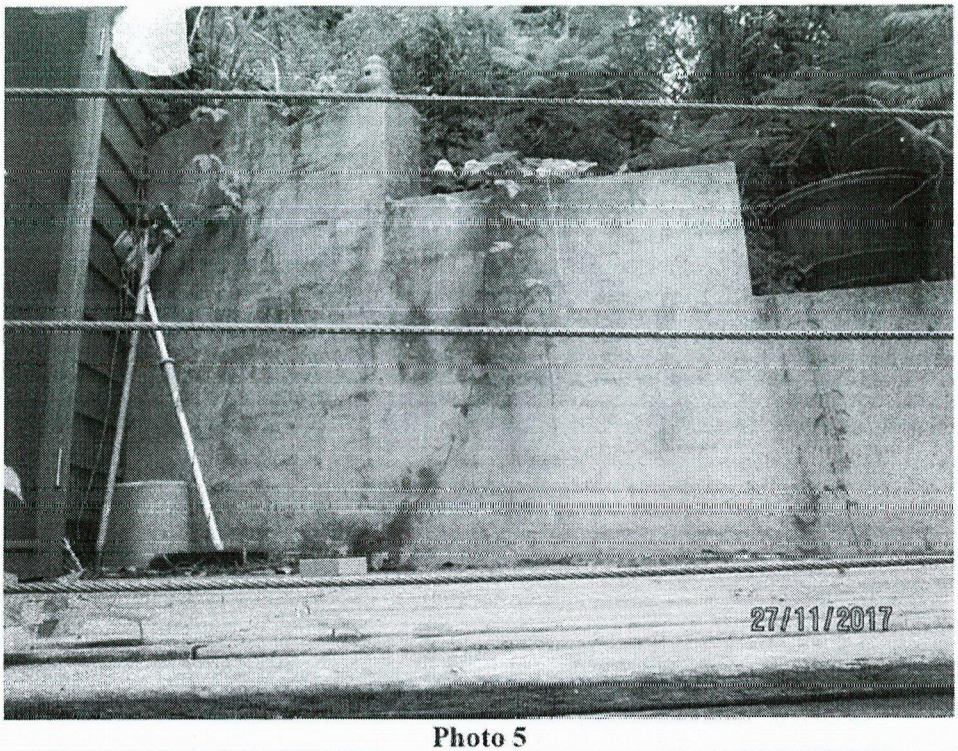

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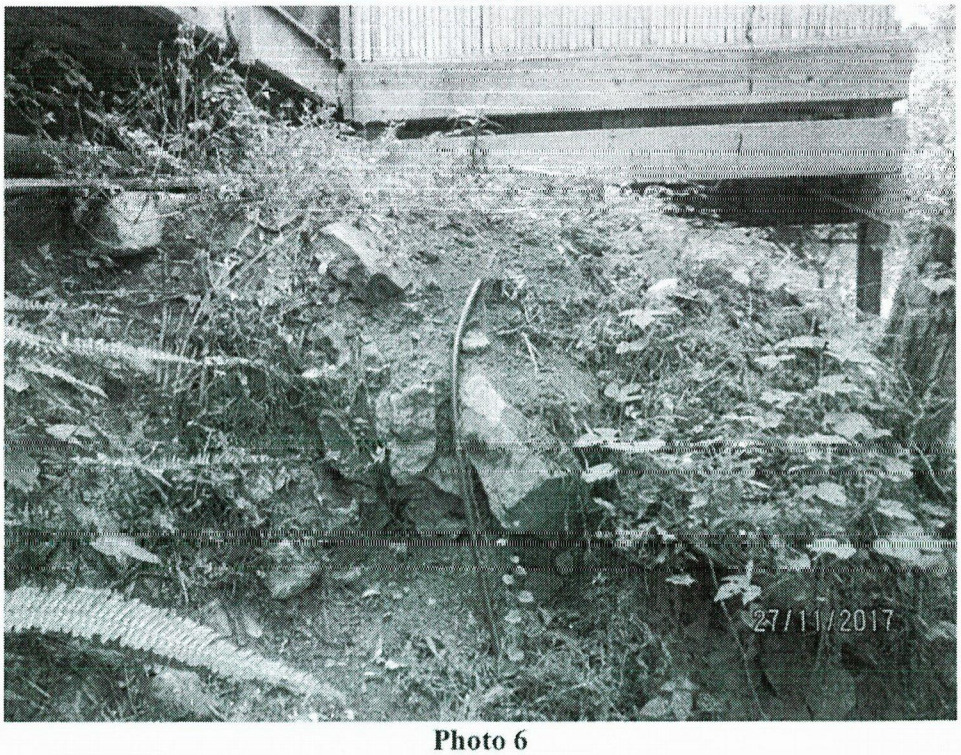

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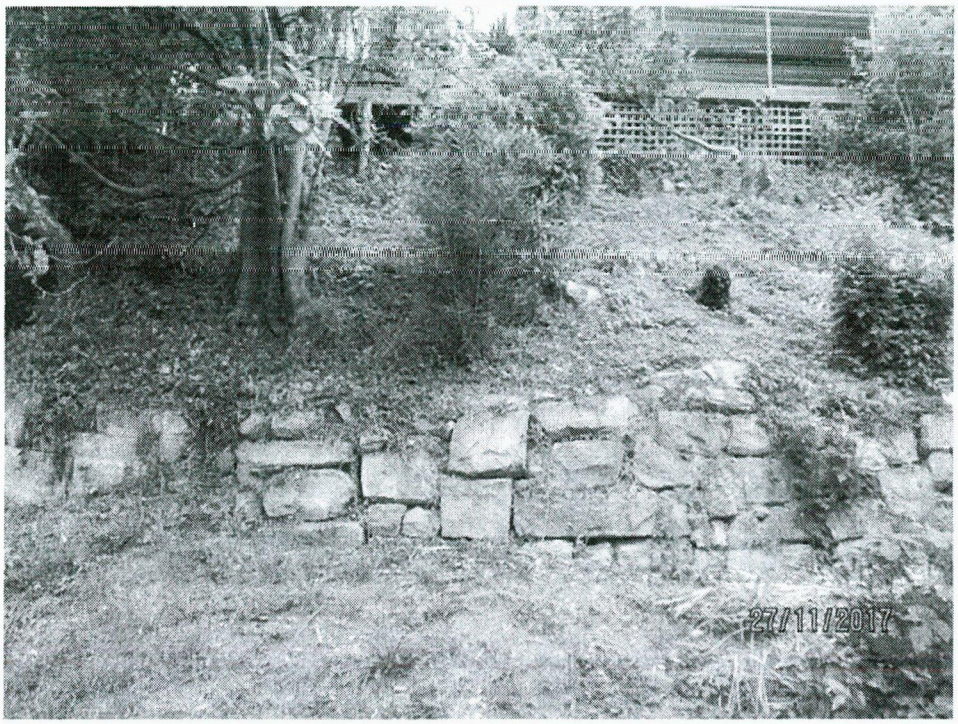

Photo 7

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MS 31349A
7th December, 2017

The General Manager
Northern Beaches Council - Pittwater
PO Box 882
MONA VALE NSW 1660

Dear Sir,

115 PRINCE ALFRED PARADE NEWPORT
Geotechnical Report for Proposed Minor Works

A Geotechnical Site Inspection was carried out at the above address on the 27th November, 2017. No subsurface investigation was undertaken.

The works will comprise of the change of use of the existing structure to a habitable dwelling. No structural work is proposed. Details of the proposed works are shown on a series of architectural drawings prepared by Planatec Architectural Drafting Services, Job No. 741, Drawings: 1 & 2, dated 26th October, 2017.

The proposed development is considered minor works and requires no detailed geotechnical assessment as minimal new foundations are proposed.

We have previously written a Geotechnical Risk Assessment report for a building certificate for the same structure Report ref MS 31349 and dated 6th December, 2017. This report outline some recommendations for the subject structure. A copy of Section 9 of this report is below:-

> *"9. **REMEDIAL WORKS & RECOMMENDATIONS.***
>
> ***9.1** It is recommended that the cracked sandstone wall on the north-eastern side of the rock access stairway be monitored and if significant movement is observed then appropriate action is taken at that time.*
>
> ***9.2** The cutting and rock stacked retaining wall directly uphill and to the east of the proposed dwelling is to be regularly monitored for any movement. Any areas of the cutting or retaining wall where there is unsecured loose rock that cannot be removed then we recommend that suitable galvanised mesh be attached to these areas so that this minimises the likely hood of a rock impacting the structure. We recommend that the area is to be inspected by the Geotechnical Engineer in 6 months and then annually and biannually after that. Additionally, after significant rain events the cutting and rock stacked retaining wall is to be inspected by the owner and if significant movement is observed then appropriate action is taken at that time.*
>
> ***9.3** Any areas of loose soil and rock are to be appropriately landscaped and if required a properly designed and engineered retaining wall designed and constructed."*

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SECTION 3: CONSTRUCTION GENERAL

3.3 EXTERNAL MOULDINGS

Unless otherwise required in Sections 4 to 9, combustible external mouldings, jointing strips, trims and sealants may be used for decorative purposes or to cover joints between sheeting material.

3.6 VENTS, WEEPHOLES AND GAPS

Where a circular probe of 3 mm diameter is capable of being passed through external vents, weepholes or gaps, the vents, weepholes and gaps shall be screened as specified in Sections 3, 5, 6, 7, 8 and 9, except for weepholes from the frames of windows and glazed doors.

To determine the maximum aperture size of screening material, it shall not be possible to pass a circular probe of 2 mm diameter through the aperture.

Gaps between doors and the door jambs, heads or sills (thresholds) shall be as shown in Figure 3.2. Alternatively, gaps shall be protected by draught excluders.

C3.6 Weepholes from the frames of windows and glazed doors and those gaps between doors and door jambs, heads or sills (thresholds) that may exceed 3 mm (see Figure 3.2) are exempt from screening because they do not provide a direct passage for embers to the interior of the building or building cavity.

3.7 BUSHFIRE SHUTTERS

Bushfire shutters shall—

(a) be fixed to the building and be non-removable;

(b) when in the closed position, have no gap greater than 3 mm between the shutter and the wall, the sill or the head;

(c) be readily manually operable from either inside or outside;

(d) protect the entire window assembly or door assembly;

(e) consist of materials specified in Clauses 5.5.1, 6.5.1, 7.5.1, 8.5.1 and 9.5.1 for the relevant BAL; and

(f) where perforated, have—
  (i) uniformly distributed perforations with a maximum aperture of 3 mm when the shutter is providing radiant heat protection or 2 mm when the shutter is also providing ember protection (such as where the openable portion of the window is not screened in accordance with the requirements of the respective BAL); and
  (ii) a perforated area no greater than 20% of the shutter.

If bushfire shutters are fitted to all external doors then at least one of those shutters shall be operable from the inside to facilitate safe egress from the building.

SECTION 5: CONSTRUCTION FOR BUSHFIRE ATTACK LEVEL 12.5 (BAL — 12.5)

5.1 GENERAL

A building assessed in Section 2 as being BAL—12.5 shall comply with Section 3 and Clauses 5.2 to 5.8. There are a number of Standards that specify requirements for construction; however, where this Standard does not provide construction requirements for a particular element, the other Standards apply.

Any element of construction or system that satisfies the test criteria of AS 1530.8.1 may be used in lieu of the applicable requirements contained in Clauses 5.2 to 5.8 (see Clause 3.8).

NOTE: BAL—12.5 is primarily concerned with protection from ember attack and radiant heat up to and including 12.5 kW/m2 where the site is less than 100 m from the source of bushfire attack.

5.2 SUBFLOOR SUPPORTS

NSW RURAL FIRE SERVICE VARIATION

This Standard does not provide construction requirements for subfloor supports where the subfloor space is enclosed with—

(a) wall that complies with **(Clause 5.4 as appropriate)**; or
(b) a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion resistant steel, bronze or aluminium; or
(c) a combination of Items (a) and (b) above.

Where the subfloor space is unenclosed, the support posts, columns, stumps, piers and poles shall be—

(i) of non-combustible material; or
(ii) of bushfire-resisting timber (see Appendix (ii) F); or
(iii) a combination of Items (i) and (ii) above. (iii)

NOTE: This requirement applies to the principal building only and not to verandas, decks, steps, ramps and landings.

5.3 FLOORS

5.3.1 Concrete slabs on ground

This Standard does not provide construction requirements for concrete slabs on the ground.

5.3.2 Elevated floors

This Standard does not provide construction requirements for elevated floors, including bearers, joists and flooring.

See NSW Variation Following Page

(A) Bushfire-resisting timber (see Appendix F).*or*

(B) A timber species as specified in Paragraph E2, Appendix E.*or*
(C) Metal. *Or*
(D) Metal-reinforced PVC-U. The reinforcing members shall be made from aluminium, stainless steel, or corrosion-resistant steel and the frame and sash shall satisfy the design load, performance and structural strength of the member.

(ii) Externally fitted hardware that supports the sash in its functions of opening and closing shall be metal.
(iii) Where glazing is less than 400 mm from the ground or less than 400 mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the window frame (see Figure D3, Appendix D), the glazing shall be Grade A safety glass minimum 4 mm thickness, or glass blocks with no restriction on glazing methods.

NOTE: Where double glazed units are used the above requirements apply to the external face of the window assembly only.

(iv) Where glazing is other than that specified in Item (iii) above, annealed glass may be used.
(v) The openable portions of windows shall be screened internally or externally with screens that comply with Clause 5.5.1A.

5.5.3 Doors—Side-hung external doors (including French doors, panel fold and bi-fold doors)

Side-hung external doors, including French doors, panel fold and bi-fold doors, shall comply with one of the following:

(a) Doors and door frames shall be protected by bushfire shutters that comply with Clause 5.5.1.
or
(b) Doors and door frames shall be protected externally by screens that comply with Clause 5.5.1A.
or
(c) Doors and door frames shall comply with the following:
(i) Doors shall be—
(A) non-combustible; or
(B) a solid timber, laminated timber or reconstituted timber door, having a minimum thickness of 35 mm for the first 400 mm above the threshold; or
(C) a door, including a hollow core door, with a non-combustible kickplate on the outside for the first 400 mm above the threshold; or
(D) a door, including a hollow core door, protected externally by a screen that complies with Clause 5.5.1A; or
(E) a fully framed glazed door, where the framing is made from materials specified for bushfire shutters (see Clause 5.5.1), or from a timber species as specified in Paragraph E2, Appendix E.

(ii) Where doors incorporate glazing, the glazing shall comply with the glazing requirements for windows.
(iii) Doors shall be tight-fitting to the door frame and to an abutting door, if applicable.
(iv) Where any part of the door frame is less than 400 mm from the ground or less than 400 mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the door (see Figure D3, Appendix D), that part of the door frame shall be made from:

(A) Bushfire-resisting timber (see Appendix F). *or*
(B) A timber species as specified in Paragraph E2, Appendix E. *or*
(C) Metal. *Or*

NSW RURAL FIRE SERVICE VARIATION

Enclosed Subfloor Space

This Standard does not provide construction requirements for elevated floors, including bearers, joists and flooring, where the subfloor space is enclosed with—

(a) a wall that complies with **(Clause 5.4 appropriate)**; *or*

(b) a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion resistant steel, bronze or aluminium; *or*

(c) a combination of Items (a) and (b) above.

Unenclosed subfloor space

Where the subfloor space is unenclosed, the bearers, joists and flooring, less than 400 mm above finished ground level, shall be one of the following:

(a) Materials that comply with the following:

(i) Bearers and joists shall be—

A. non-combustible; *or*

B. bushfire-resisting timber (see Appendix F); *or*

C. a combination of Items (A) and (B) above

(ii) Flooring shall be—

A. non-combustible; *or*

B. bushfire-resisting timber (see Appendix F); *or*

C. timber (other than bushfire-resisting timber), particleboard or plywood flooring where the underside is lined with sarking-type material or mineral wool insulation; *or*

D. a combination of any of Items (A), (B) or (C) above *or*

(b) A system complying with AS 1530.8.1

This Standard does not provide construction requirements for elements of elevated floors, including bearers, joists and flooring, if the underside of the element is 400 mm or more above finished ground level.

5.4 EXTERNAL WALLS

5.4.1 Walls

The exposed components of an external wall that are less than 400 mm from the ground or less than 400 mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the wall (see Figure D3, Appendix D) shall be:

(a) Non-combustible material.
NOTE: Examples include, but are not limited to, the following (with a minimum of 90 mm in thickness):
(a) Full masonry or masonry veneer walls with an outer leaf of clay, concrete, calcium silicate or natural stone.
(b) Precast or in situ walls of concrete or aerated concrete.
(c) Earth wall including mud brick.

or

(b) Timber logs of a species with a density of 680 kg/m3 or greater at a 12 percent moisture content; of a minimum nominal overall thickness of 90 mm and a minimum thickness of 70 mm (see Clause 3.11); and gauge planed.

or

(c) Cladding that is fixed externally to a timber-framed or a steel-framed wall and is—
  (i) non-combustible material; or
  (ii) fibre-cement a minimum of 6 mm in thickness; or
  (iii) bushfire-resisting timber (see Appendix F); or
  (iv) a timber species as specified in Paragraph E1, Appendix E; or
  (v) a combination of any of Items (i), (ii), (iii) or (iv) above.

or

(d) A combination of any of Items (a), (b) or (c) above.

This Standard does not provide construction requirements for the exposed components of an external wall that are 400 mm or more from the ground or 400 mm or more above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the wall (see Figure D3, Appendix D).'

5.4.2 Joints

All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed to prevent gaps greater than 3 mm.

5.4.3 Vents and weepholes

Vents and weepholes in external walls shall be screened with a mesh with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium, except where the vents and weepholes have an aperture less than 3 mm (see Clause 3.6), or are located in an external wall of a subfloor space.

5.5 EXTERNAL GLAZED ELEMENTS AND ASSEMBLIES AND EXTERNAL DOORS

5.5.1 Bushfire shutters

Where fitted, bushfire shutters shall comply with Clause 3.7 and be made from—
(a) non-combustible material; *or*
(b) a timber species as specified in Paragraph E1, Appendix E; *or*
(b) bushfire-resisting timber (see Appendix F); *or*
(d) a combination of any of Items (a), (b) or (c) above.

5.5.1A Screens for windows and doors

Where fitted, screens for windows and doors shall have a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium. Gaps between the perimeter of the screen assembly and the building element to which it is fitted shall not exceed 3 mm.

The frame supporting the mesh or perforated sheet shall be made from—
(a) metal; *or*
(b) bushfire-resisting timber (see Appendix F); *or*
(c) a timber species as specified in Paragraph E2, Appendix E.

5.5.2 Windows

Window assemblies shall comply with one of the following:
(a) They shall be completely protected by a bushfire shutter that complies with Clause 5.5.1.
  or
(b) They shall be completely protected externally by screens that comply with Clause 5.5.1A.
  or
(c) They shall comply with the following:
  (i) For window assemblies less than 400 mm from the ground or less than 400 mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the window frame (see Figure D3, Appendix D), window frames and window joinery shall be made from:

(D) Metal-reinforced PVC-U. The reinforcing members shall be made from aluminium, stainless steel, or corrosion-resistant steel and the door assembly shall satisfy the design load, performance and structural strength of the member.

(v) Weather strips, draught excluders or draught seals shall be installed at the base of side-hung external doors.

5.5.4 Doors—Sliding doors

Sliding doors shall comply with one of the following:

(a) They shall be completely protected by a bushfire shutter that complies with Clause 5.5.1.
or
(b) They shall be completely protected externally by screens that comply with Clause 5.5.1A.
or
(c) They shall comply with the following:
  (i) Any glazing incorporated in sliding doors shall be Grade A safety glass complying with AS 1288.
  (ii) Both the door frame supporting the sliding door and the framing surrounding any glazing shall be made from:
    (A) Bushfire-resisting timber (see Appendix F). *or*
    (B) A timber species as specified in Paragraph E2, Appendix E. *or*
    (C) Metal. *or*
    (D) Metal-reinforced PVC-U. The reinforcing members shall be made from aluminium, stainless steel, or corrosion-resistant steel and the frame and the sash shall satisfy the design load, performance and structural strength of the member.

  (iii) There is no requirement to screen the openable part of the sliding door. However, if screened, the screens shall comply with Clause 5.5.1A.

NOTE: The construction of manufactured sliding doors should prevent the entry of embers when the door is closed. There is no requirement to provide screens to the openable part of these doors as it is assumed that a sliding door will be closed if occupants are not present during a bushfire event. Screens of materials other than those specified may not resist ember attack.

  (iv) Sliding doors shall be tight-fitting in the frames.

5.5.5 Doors—Vehicle access doors (garage doors)

The following apply to vehicle access doors:
(a) The lower portion of a vehicle access door that is within 400 mm of the ground when the door is closed (see Figure D4, Appendix D) shall be made from—
  (i) non-combustible material; *or*
  (ii) bushfire-resisting timber (see Appendix F); *or*
  (iii) fibre-cement sheet, a minimum of 6 mm in thickness; *or*
  (iv) a timber species as specified in Paragraph E1, Appendix E; *or*
  (v) a combination of any of Items (i), (ii), (iii) or (iv) above.
(b) Panel lift, tilt doors or side-hung doors shall be fitted with suitable weather strips, draught excluders, draught seals or guide tracks, as appropriate to the door type, with a maximum gap no greater than 3 mm.
(c) Roller doors shall have guide tracks with a maximum gap no greater than 3 mm and shall be fitted with a nylon brush that is in contact with the door (see Figure D4, Appendix D).
(d) Vehicle access doors shall not include ventilation slots.

5.6 ROOFS (INCLUDING VERANDA AND ATTACHED CARPORT ROOFS, PENETRATIONS, EAVES, FASCIAS, GABLES, GUTTERS AND DOWNPIPES)

5.6.1 General

The following apply to all types of roofs and roofing systems:

(a) Roof tiles, roof sheets and roof-covering accessories shall be non-combustible.

(b) The roof/wall junction shall be sealed, to prevent openings greater than 3 mm, either by the use of fascia and eaves linings or by sealing between the top of the wall and the underside of the roof and between the rafters at the line of the wall.

(c) Roof ventilation openings, such as gable and roof vents, shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.

NSW RURAL FIRE SERVICE VARIATION

Any sarking used shall be:

(a) Non-combustible; or

(b) Breather-type sarking complying with AS/NZS 4200.1 and with a flammability index of not more than 5 (see AS1530.2) and sarked on the outside of the frame; or

(c) An insulation material conforming to the appropriate Australian Standard for that material.

5.6.2 Tiled roofs

Tiled roofs shall be fully sarked. The sarking shall—

(a) be located on top of the roof framing, except that the roof battens may be fixed above the sarking;

(b) cover the entire roof area including ridges and hips; and

(c) extend into gutters and valleys.

5.6.3 Sheet roofs

Sheet roofs shall—

(a) be fully sarked in accordance with Clause 5.6.2, except that foil-backed insulation blankets may be installed over the battens; and

(b) have any gaps greater than 3 mm (such as under corrugations or ribs of sheet roofing and between roof components) sealed at the fascia or wall line and at valleys, hips and ridges by—

  (i) a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium; or

  (ii) mineral wool; or

  (iii) other non-combustible material; or

  (iv) a combination of any of Items (i), (ii) or (iii) above.

5.6.4 Veranda, carport and awning roofs

The following apply to veranda, carport and awning roofs:

(a) A veranda, carport or awning roof forming part of the main roof space [see Figure D1(a), Appendix D] shall meet all the requirements for the main roof, as specified in Clauses 5.6.1, 5.6.2, 5.6.3, 5.6.5 and 5.6.6.

(b) A veranda, carport or awning roof separated from the main roof space by an external wall [see Figures D1(b) and D1(c), Appendix D] complying with Clause 5.4 shall have a non-combustible roof covering.

NOTE: There is no requirement to line the underside of a veranda, carport or awning roof that is separated from the main roof space.

5.6.5 Roof penetrations

The following apply to roof penetrations:

(a) Roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar collectors, shall be adequately sealed at the roof to prevent gaps greater than 3 mm. The material used to seal the penetration shall be non-combustible.

(b) Openings in vented roof lights, roof ventilators or vent pipes shall be fitted with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium. This requirement does not apply to the exhaust flues of heating or cooking devices with closed combustion chambers. In the case of gas appliance flues, ember guards shall not be fitted.

NOTE: Gasfitters are required to provide a metal flue pipe above the roof and terminate with a certified gas flue cowl complying with AS 4566. Advice may be obtained from State gas technical regulators.

(c) All overhead glazing shall be Grade A safety glass complying with AS 1288.

(d) Glazed elements in roof lights and skylights may be of polymer provided a Grade A safety glass diffuser, complying with AS 1288, is installed under the glazing. Where glazing is an insulating glazing unit (IGU), Grade A toughened safety glass minimum 4 mm thickness, shall be used in the outer pane of the IGU.

(e) Flashing elements of tubular skylights may be of a fire-retardant material, provided the roof integrity is maintained by an under-flashing of a material having a flammability index no greater than 5.

(f) Evaporative cooling units shall be fitted with non-combustible butterfly closers as close as practicable to the roof level or the unit shall be fitted with non-combustible covers with a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.

(g) Vent pipes made from PVC are permitted.

5.6.6 Eaves linings, fascias and gables

The following apply to eaves linings, fascias and gables:

(a) Gables shall comply with Clause 5.4.

(b) Eaves penetrations shall be protected the same as for roof penetrations, as specified in Clause 5.6.5.

(c) Eaves ventilation openings greater than 3 mm shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.

Joints in eaves linings, fascias and gables may be sealed with plastic joining strips or timber storm moulds.

This Standard does not provide construction requirements for fascias, bargeboards and eaves linings.

5.6.7 Gutters and downpipes

This Standard does not provide requirements for—

(a) gutters, with the exception of box gutters; and

(b) downpipes.

If installed, gutter and valley leaf guards shall be non-combustible. Box gutters shall be non-combustible and flashed at the junction with the roof with non-combustible material.

5.7 VERANDAS, DECKS, STEPS, RAMPS AND LANDINGS

5.7.1 General

Decking may be spaced.

There is no requirement to enclose the subfloor spaces of verandas, decks, steps, ramps or landings.

C5.7.1 Spaced decking is nominally spaced at 3 mm (in accordance with standard industry practice); however, due to the nature of timber decking with seasonal changes in moisture content, that spacing may range from 0–5 mm during service. The preferred dimension for gaps is 3 mm (which is in line with other 'permissible gaps') in other parts of this Standard.
It should be noted that recent research studies have shown that gaps at 5 mm spacing afford opportunity for embers to become lodged in between timbers, which may contribute to a fire. Larger gap spacings of 10 mm may preclude this from happening but such a spacing regime may not be practical for a timber deck.

5.7.2 Enclosed subfloor spaces of verandas, decks, steps, ramps and landings

5.7.2.1 Materials to enclose a subfloor space

NSW RURAL FIRE SERVICE VARIATION

The subfloor spaces of verandas, decks, steps, ramps and landings are considered to be 'enclosed' when —

(a) the material used to enclose the subfloor space complies with **(Clause 5.4 as appropriate)**; and

(b) all openings greater than 3 mm are screened with a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.

5.7.2.2 Supports

This Standard does not provide construction requirements for support posts, columns, stumps, stringers, piers and poles.

5.7.2.3 Framing

This Standard does not provide construction requirements for the framing of verandas, decks, ramps or landings (i.e., bearers and joists).

5.7.2.4 Decking, stair treads and the trafficable surfaces of ramps and landings

NSW RURAL FIRE SERVICE VARIATION

Decking, stair treads and the trafficable surfaces of ramps and landings shall be—

(a) of non-combustible material; *or*

(b) of bushfire-resisting timber (see Appendix F); *or*

(c) a combination of Items (a) and (b) above.

5.7.3 Unenclosed subfloor spaces of verandas, decks, steps, ramps and landings

5.7.3.1 Supports

NSW RURAL FIRE SERVICE VARIATION

Support posts, columns, stumps, stringers, piers and poles shall be—
(a) of non-combustible material; *or*
(b) of bushfire-resisting timber (see Appendix F); *or*
(c) a combination of Items (a) and (b) above.

5.7.3.2 Framing

NSW RURAL FIRE SERVICE VARIATION

Framing of verandas, decks, ramps or landings (i.e., bearers and joists) shall be—
(a) of non-combustible material; *or*
(b) of bushfire-resisting timber (see Appendix F); *or*
(c) a combination of Items (a) and (b) above.

5.7.3.3 Decking, stair treads and the trafficable surfaces of ramps and landings

NSW RURAL FIRE SERVICE VARIATION

Decking, stair treads and the trafficable surfaces of ramps and landings shall be—
(a) of non-combustible material; *or*
(b) of bushfire-resisting timber (see Appendix F); *or*
(c) a combination of Items (a) and (b) above.

5.7.4 Balustrades, handrails or other barriers

NSW RURAL FIRE SERVICE VARIATION

Those parts of the handrails and balustrades less than 125 mm from any glazing or any combustible wall shall be—
(a) of non-combustible material; *or*
(b) bushfire-resisting timber (see Appendix F); *or*
(c) a combination of Items (i) and (ii) above.

Those parts of the handrails and balustrades that are 125 mm or more from the building have no requirements.

5.8 WATER AND GAS SUPPLY PIPES

Above-ground, exposed water and gas supply pipes shall be metal.

Building Code & Bushfire Hazard Solutions
(Pty. Limited) ABN 19 057 337 774
PO Box 124, Berowra NSW 2081
Telephone: (02) 9457 6530 Facsimile: (02) 9457 6532
www.bushfirehazardsolutions.com.au

SILVER MEMBER
FPA AUSTRALIA Fire Protection Association Australia

Michael Mitton
PO Box 1123
NEWPORT NSW 2106

29th November 2017
Our Ref. 180420

Re: CONVERSION of STUDIO to GRANNY FLAT
115 PRINCE ALFRED PARADE, NEWPORT
BUSHFIRE ASSESSMENT STATEMENT

Dear Michael,

We thank you for the opportunity of undertaking this assessment for you.

This assessment relates to a building certificate application for the conversion of the existing structure onsite to a studio / granny flat. The development is located within an existing residential allotment at 115 Prince Alfred Parade, Newport. The subject site has street frontage to Prince Alfred Parade to the northwest and existing residential allotments to the remaining aspects.

The building certificate application relates to continued use of the studio as a granny flat within an existing residential allotment and therefore is considered infill development which is usually assessed under section 79BA of Environmental Planning and Assessment Act 1979.

Properties considered to be affected by possible bushfire impact are determined from local Bushfire Prone Land Map's as prepared by Council and or the Rural Fire Service. The most appropriate method of determining the site bushfire hazard under the terms of PBP is to consider the site in a singular form.

Bushfire prone areas are defined as those areas;

- *containing or within 100m of Category 1 Vegetation; or*
- *containing or within 30m of Category 2 Vegetation.*

The subject property is identified on Northern Beaches Council's Bushfire Prone Land Map as being within the 100 metre buffer zone from designated Category 1 Vegetation. As the subject property is identified as being bushfire prone land a merit based assessment against compliance with *Planning for Bush Fire Protection* 2006 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2009 must be undertaken.

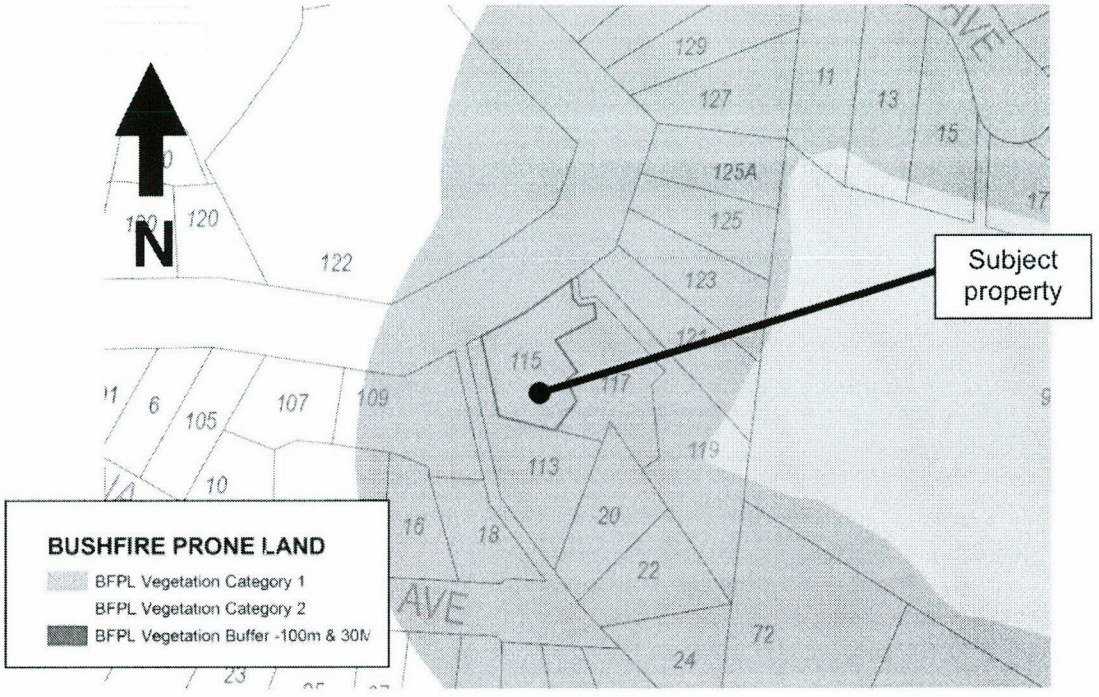


Image 01: Extract from Northern Beaches Council's Bushfire Prone Land Map

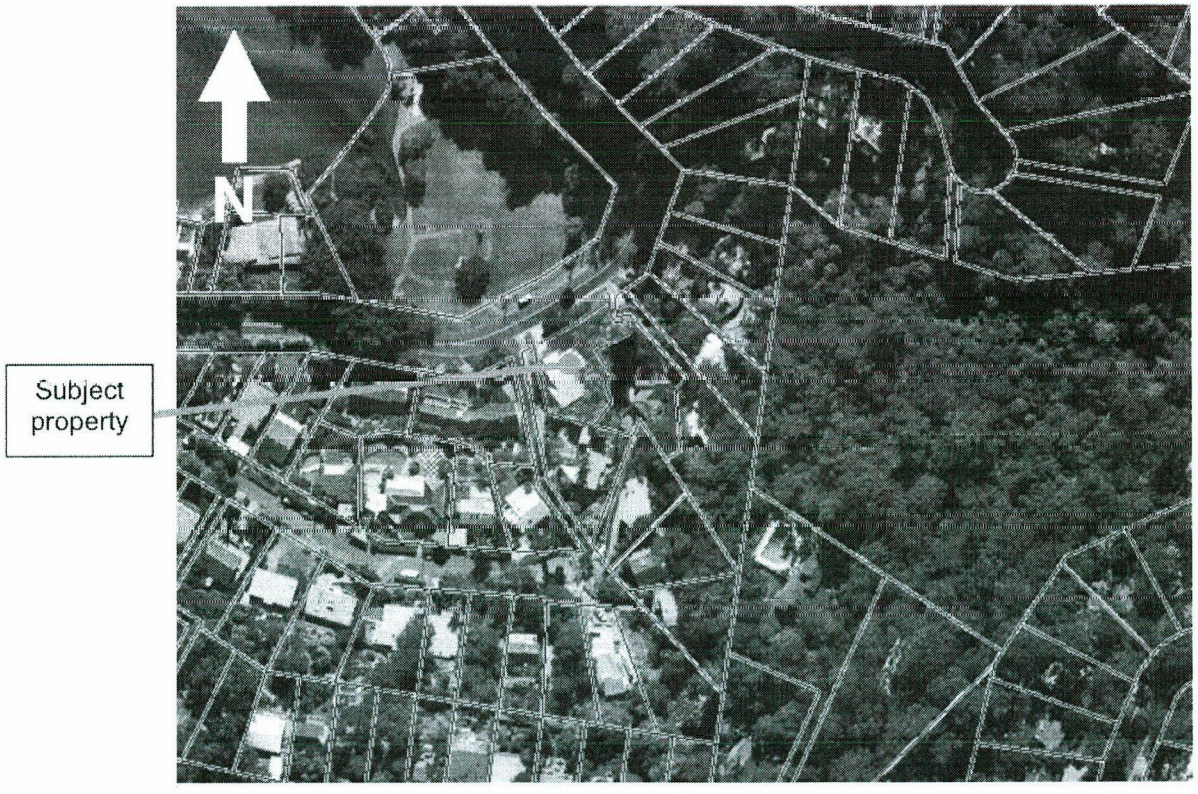


Image 02: Aerial view of the subject area from Dept Lands SIXMaps © 2017

Vegetation Identification:

The predominant vegetation found within the subject property and most neighbouring private residential allotments was found to consist of maintained lawns and gardens. The vegetation identified as being the hazard is within neighbouring private allotments and Algona Reserve to the east of the subject building.

The vegetation posing a hazard was found to consist of trees 10 - 30 metres in height with a canopy cover of 30 – 50% with an understory of shrubs, exotics and weeds.

For the purpose of assessment under Planning for Bush Fire Protection 2006 the vegetation posing a hazard to the east was determined to be Forest.

Slope Analysis:

The slope that would most significantly affect bushfire behaviour must be assessed for at least 100 metres from the subject dwelling.

The most significant bushfire impact from the east is expected to be a bushfire burning down slope towards the subject site.

The slope that would **most significantly** influence bushfire impact was determined onsite using an inclinometer and verified from topographic imagery to be:

- >0 degrees upslope within the hazard to the east

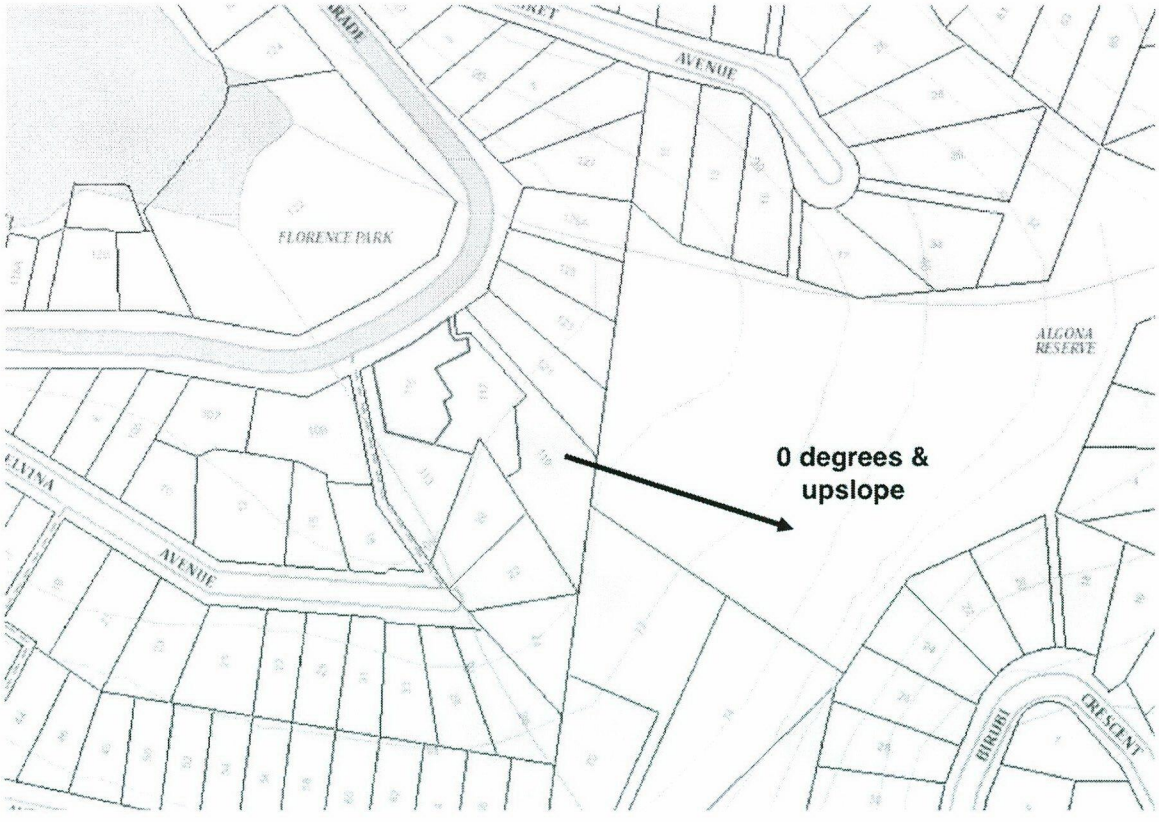


Image 03: Topographic image of the subject area from Dept. Lands SIXMaps © 2017

Asset Protection Zones:

The subject property is a residential allotment located in an area of similar properties. The hazard interface is located to the east of the subject property. The available Asset Protection Zone (APZ) was measured onsite and from aerial photographs to be >48 metres from the studio / granny flat, consisting of maintained grounds within the subject property and land 'equivalent to an APZ' being maintained land within neighbouring allotments.

Recommendations on the continued maintenance of the APZs within the subject property will be included within the recommendations of this statement.

Fire Fighting Water Supply:

Existing in ground hydrants are available along Prince Alfred Parade and surrounding streets for the replenishment of attending fire services. The most distant external point of the subject building is located within 70 metres of a public road the supports the operational use of fire fighting vehicles and therefore a static water supply is not required.

The existing water supply is considered satisfactory.

Property Access:

Persons seeking to egress from the subject dwelling can do so freely along the existing road infrastructure. Fire services have free access to the property and around the subject dwelling. Attending fire services can access the hazard via neighbouring properties and surrounding streets for hazard reduction or fire suppression activities without the need to enter the subject property.

The most distant external point of the subject dwelling is located within 70 metres of a public road that supports the operational use of fire fighting vehicles and therefore property access requirements under PBP 2006 are not required.

Access to the subject dwelling and hazard interface is considered satisfactory.

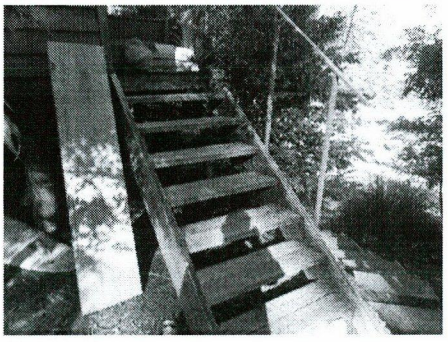
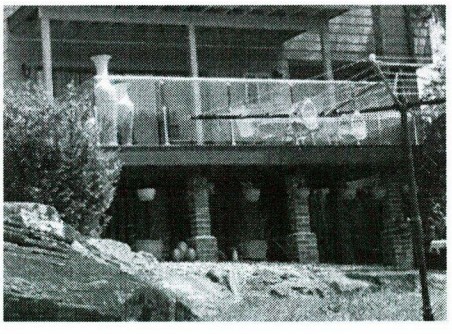
Summary:

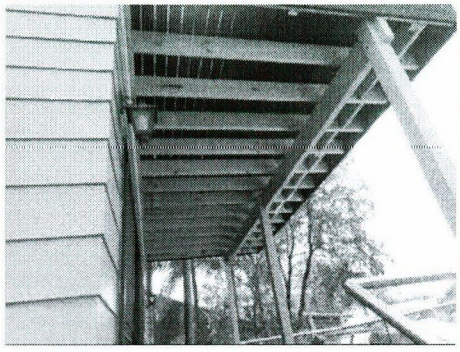
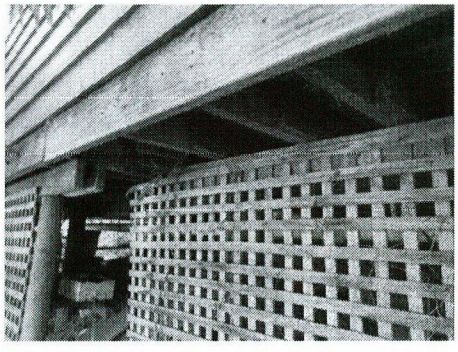
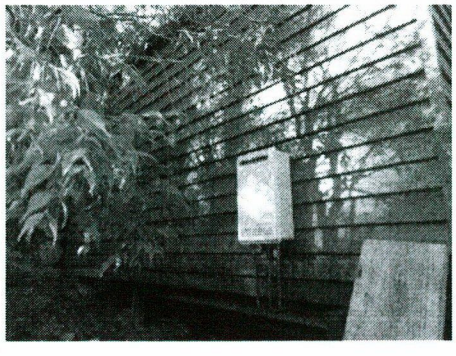
	East
Vegetation Structure	Forest
Slope	0 degrees and upslope
Asset Protection Zone	>48 metres
Significant environmental features	Neighbouring allotments
Threatened species	APZ Existing
Aboriginal Relics	APZ Existing
Bushfire Attack Level	BAL 12.5

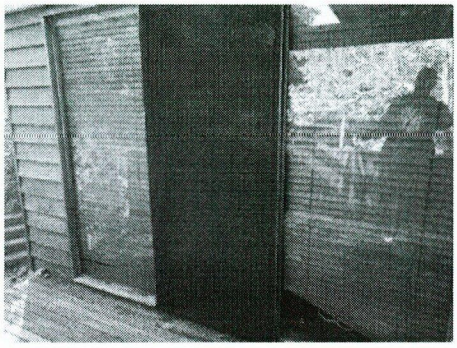
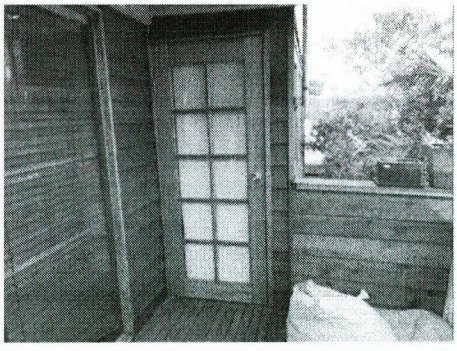
Viable Construction Method:

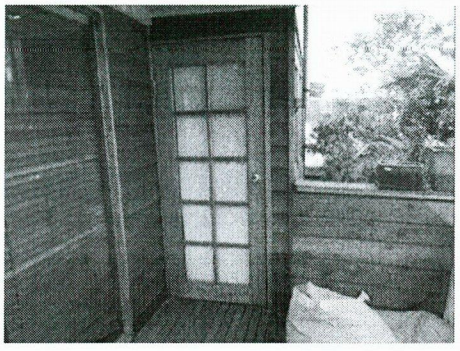
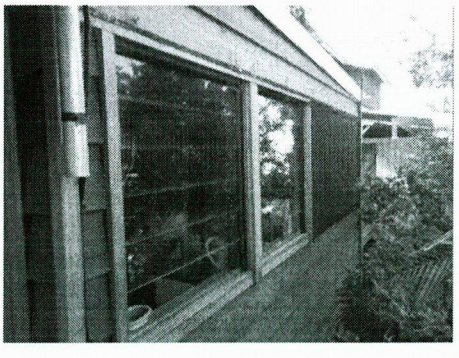
The aim of Planning for Bush Fire Protection – 2006 is to use the NSW development assessment system to provide for protection of human life (including firefighters) and to minimise impacts on property from the threat of bushfire.

The summary table concludes the highest bushfire attack is BAL 12.5. Some retrofitting recommendations are necessary to ensure that the built structure complies with these requirements inclusive of those implied by the Addendum Appendix A3 of PBP 2006 which is normally applied at the 79BA assessment stage for infill development. These are listed in detail below:

AS3959	Comment	Photographic Evidence
1. Stairs.	Softwood stairs (stringers and treads) are not compliant. 1) Replace with hardwood species compliant with Appendix F of AS3959 – 2009 or a non-combustible material. 2) Stringers may be painted with a fire retardant treatment compliant with Appendix F of AS3959 – 2009 (e.g. Exfire) however painting of the treads (trafficable surface) is not acceptable.	
2. Decking material	Evidence required that decking is an Appendix F timber. If not, decks are required to be an Appendix F timber, system tested to BAL 12.5 or above under AS1530.8.1 or non-combustible.	
3. Deck support structure.	Softwood joists and barge board. Options for compliance are; 1) Sheet underside of deck and bargeboard with a non-combustible material (e.g. FC sheeting or colourbond steel type product) so that there remains no exposed softwood or, 2) Paint all exposed softwood with a fire retardant treatment compliant with Appendix F of AS3959 – 2009 (e.g. Exfire) or, 3) Replace with hardwoods compliant with Appendix F of AS3959 – 2009 or, 4) Any combination of 1 – 3 above.	

4. Walls, applies to areas **less than 400mm** from ground level or similar flat areas such as decks	Softwood cladding. Options for compliance are: 1) Re-clad with a non-combustible material (e.g. FC sheeting or colourbond steel type product) so that there remains no exposed softwood less than 400mm from finished ground level and decking or, 2) Paint all exposed softwood less than 400mm from finished ground level and decking with a fire retardant treatment compliant with Appendix F of AS3959 – 2009 (e.g. Exfire) or, 3) Replace with hardwoods compliant with Appendix F of AS3959 – 2009 or, 4) Any combination of 1 – 3 above.	
5. Subfloor	Treated pine support posts. Options for compliance are: **Enclosed** 1) Enclose with a wall compliant with section 5.4.1 of AS3959 – 2009 (see item 4 above), *or* 2) Enclose with a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion resistant steel, bronze or aluminium; *or* 3) *a* combination of Items (a) and (b) above. **Unenclosed** Flooring **within 400 mm of finished ground level** shall be— 4) replace or cover with non-combustible material or lined with sarking-type material or mineral wool insulation *or* 5) replace or cover with bushfire-resisting timber (see Appendix F); *or* 6) Paint areas less than 400mm from finished ground level with a fire retardant treatment compliant with Appendix F of AS3959 – 2009 (e.g. Exfire) or, 7) Modify soil so that flooring is greater than 400 mm from finished ground level, or 8) a combination of any of Items (4), (5) (6) or (7) above.	 

6. Glazing / **windows and doors**.	Unknown glazing. Options for compliance are: 1) Evidence that any glazing within 400mm of finished ground level or decks is grade A safety glass minimum 4mm thickness or replace with same or 2) They shall be completely protected *externally* with; - screens that have a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium or - Shutters made from non-combustible material or timber compliant with Appendix E1 or F of AS3959 – 2009.	
7. Window frames.	Softwood less than 400mm from finished ground level and decks. Options for compliance are: 1) Replace with metal or, 2) Paint all exposed softwood less than 400mm from finished ground level and decking with a fire retardant treatment compliant with Appendix F of AS3959 – 2009 (e.g. Exfire) or, 3) Replace with hardwoods compliant with Appendix F of AS3959 – 2009 or, 4) They shall be completely protected *externally* with; - screens that have a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium or - Shutters made from non-combustible material or timber compliant with Appendix E1 or F of AS3959 – 2009. 5) Any combination of the above.	

7. Door frames.	Softwood less than 400mm from finished ground level and decks. Options for compliance are: Frames: 1) Replace with non-combustible or, 2) Paint all exposed softwood less than 400mm from finished ground level and decking with a fire retardant treatment compliant with Appendix F of AS3959 – 2009 (e.g. Exfire) or, 3) Replace with hardwoods compliant with Appendix F of AS3959 – 2009 or, 3) They shall be completely protected *externally* with; - screens that have a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium or - Shutters made from non-combustible material or timber compliant with Appendix E1 or F of AS3959 – 2009. 4) Any combination of the above.	
7. Window openings	Screens are not present. Options for compliance are: 6) Openable portions of windows shall be protected internally or externally by screens that have a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium. Gaps between the perimeter of the screen assembly and the building element to which it is fitted shall not exceed 3 mm. or 7) The frame supporting the mesh shall be metal or Appendix E1, E2 or F timber. 8) Louvered windows with plastic blade holders shall be completely protected *externally* with; - screens that have a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium	

	or - Shutters made from non-combustible material or timber compliant with Appendix E1 or F of AS3959 – 2009.	
8. Roofing – it is understood that the roof will be replaced.	The following apply to all types of roofs and roofing systems: (a) Roof tiles, roof sheets and roof-covering accessories shall be non-combustible. (b) The roof/wall junction shall be sealed, to prevent openings greater than 3 mm, either by the use of fascia and eaves linings or by sealing between the top of the wall and the underside of the roof and between the rafters at the line of the wall. (c) Roof ventilation openings, such as gable and roof vents, shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium. Sheet roofs shall— (a) be fully sarked. The sarking shall be located on top of the roof framing, except that the roof battens may be fixed above the sarking; cover the entire roof area including ridges and hips; and extend into gutters and valleys and foil-backed insulation blankets may be installed over the battens; and (b) have any gaps greater than 3 mm (such as under corrugations or ribs of sheet roofing and between roof components) sealed at the fascia or wall line and at valleys, hips and ridges by— (i) a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium; or (ii) mineral wool; or (iii) other non-combustible material; or (iv) a combination of any of Items (i), (ii) or (iii) above.	

Conclusion:

Given that the property is deemed bushfire prone under Northern Beaches Councils Bushfire Prone Land Map any development would need to meet the requirements or the intent of 'Planning for Bush Fire Protection' – 2006 and of the construction requirements of Australian Standard 3959 'Construction of buildings in bushfire-prone areas' – 2009. The subject property is residential allotment within an area of similar properties. The subject property and neighbouring properties were found to consist of maintained lawns and gardens surrounding built upon and hard surfaced areas.

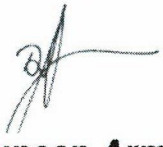
The vegetation that is posing a threat to the subject property is located to the east within neighbouring properties and Algona Reserve. For the purpose of this assessment the hazard to the east was assessed as a Forest hazard on 0 degrees and upslope. The highest bushfire attack to the subject building was determined to be BAL 12.5. Retrofitting recommendations are necessary to ensure that the built structure complies with these requirements and those implied by the Addendum Appendix A3 of PBP 2006 which is normally applied at the 79BA assessment stage for infill development. These requirements are listed in detail herein.

The existing access provisions and water supply are considered adequate.

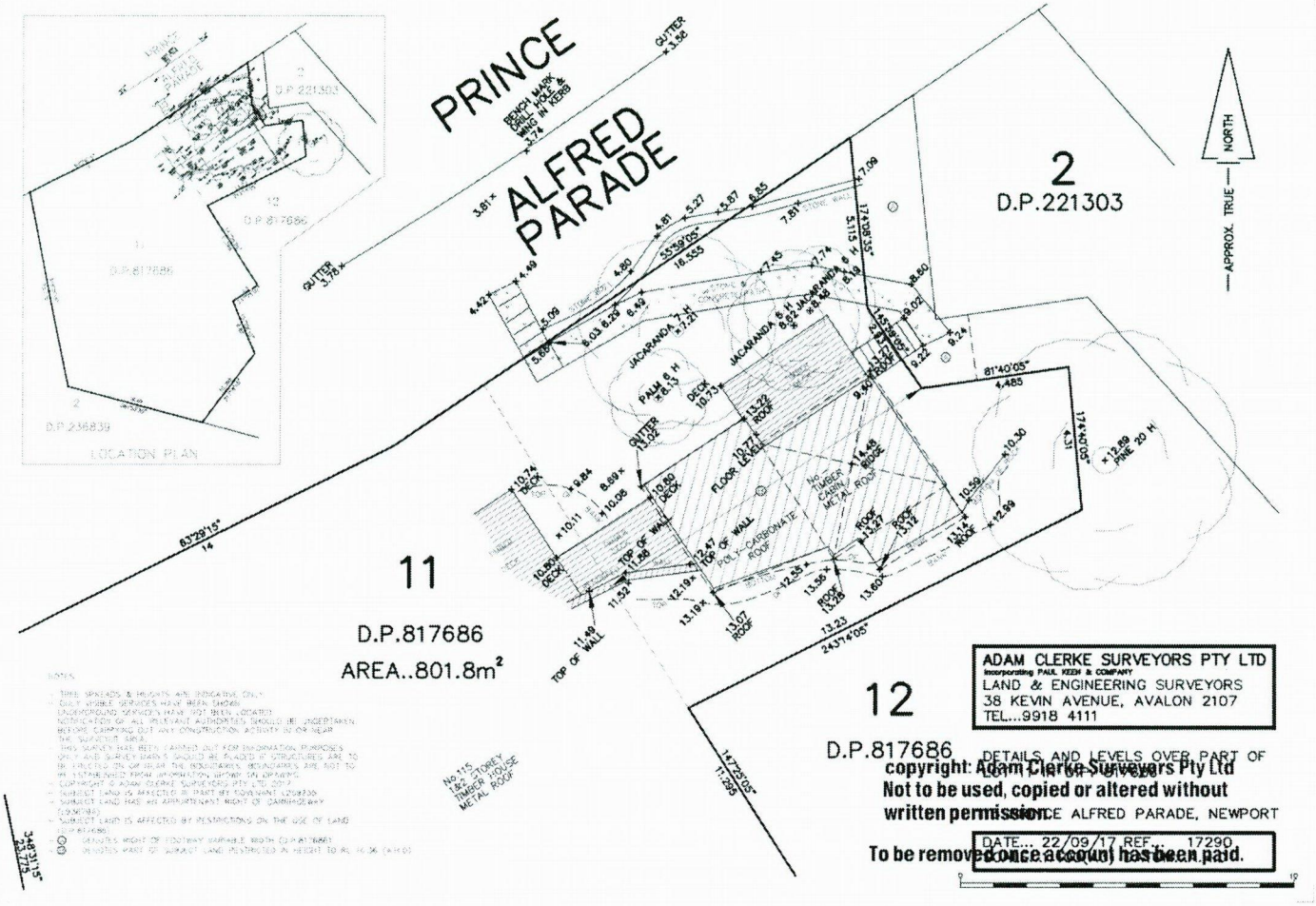
In accordance with the recommendations contained in this statement, and in consideration of the site specific bushfire risk assessment it is my opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development and also satisfy both AS3959 – 2009 Construction of Buildings in Bushfire Prone Areas and Planning for Bush Fire Protection 2006.

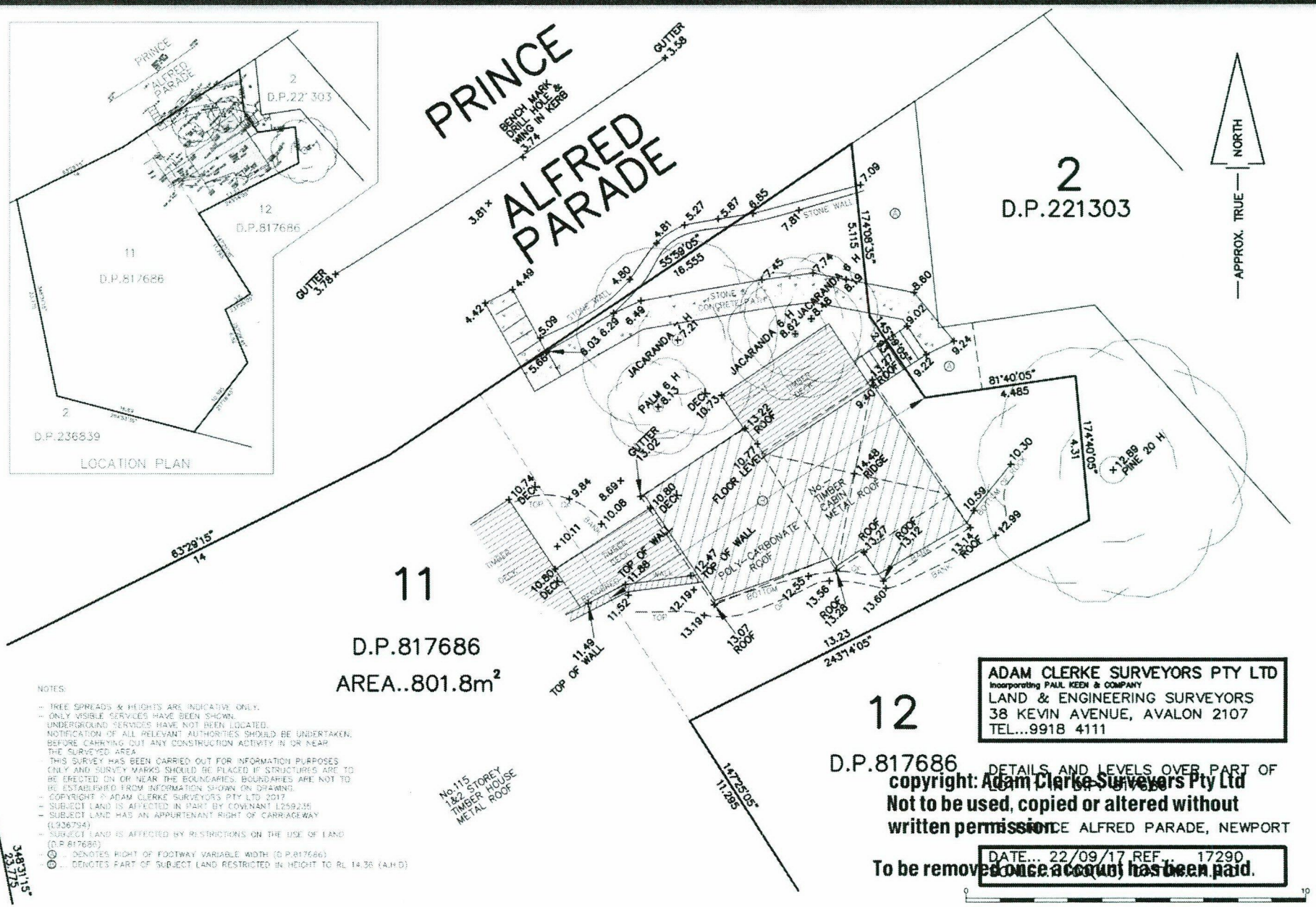
Should you have any enquiries regarding this project please contact me at our office.

Prepared by
Building Code & Bushfire Hazard Solutions



Duncan Armour





NOTES:

- TREE SPREADS & HEIGHTS ARE INDICATIVE ONLY.
- ONLY VISIBLE SERVICES HAVE BEEN SHOWN. UNDERGROUND SERVICES HAVE NOT BEEN LOCATED. NOTIFICATION OF ALL RELEVANT AUTHORITIES SHOULD BE UNDERTAKEN, BEFORE CARRYING OUT ANY CONSTRUCTION ACTIVITY IN OR NEAR THE SURVEYED AREA.
- THIS SURVEY HAS BEEN CARRIED OUT FOR INFORMATION PURPOSES ONLY AND SURVEY MARKS SHOULD BE PLACED IF STRUCTURES ARE TO BE ERECTED ON OR NEAR THE BOUNDARIES. BOUNDARIES ARE NOT TO BE ESTABLISHED FROM INFORMATION SHOWN ON DRAWING.
- COPYRIGHT © ADAM CLERKE SURVEYORS PTY LTD 2017.
- SUBJECT LAND IS AFFECTED IN PART BY COVENANT L259235
- SUBJECT LAND HAS AN APPURTENANT RIGHT OF CARRIAGEWAY (L936794)
- SUBJECT LAND IS AFFECTED BY RESTRICTIONS ON THE USE OF LAND (D.P.817686)
- (A) .. DENOTES RIGHT OF FOOTWAY VARIABLE WIDTH (D.P.817686)
- (B) .. DENOTES PART OF SUBJECT LAND RESTRICTED IN HEIGHT TO RL 14.36 (A.H.D)