CERTGROUP
BUILDING CERTIFIERS

21 August 2014

Pittwater Council
PO Box 882
Mona Vale, NSW 1660

Dear Sir/Madam,

Re: Development Application No. N0208/12
Our Construction Certificate No. 104/2014
Premises: 22 Dendrobium Crescent, Elanora Heights

Please find attached a copy of the following:-

- Construction Certificate, stamped approved plans and relevant documentation.
- Notice to Commence Building Work.
- Appointment of a Principal Certifying Authority.

In accordance with the regulations we have enclosed a cheque for the sum of $36.00 for the submission of the Part 4A certificate.

Should you have any further enquiries please do not hesitate to contact us and we will be pleased to assist you.

NB: Please forward receipt for the above $36.00 fee to CERTGROUP Building Certifiers, PO Box 870 Narrabeen NSW 2101

RECEIVED MONA VALE
22 AUG 2014
CUSTOMER SERVICE

Yours faithfully,

Mark Wysman
CERTGROUP Building Certifiers

Rec 364944

CERTGROUP
BUILDING CERTIFIERS

CONSTRUCTION CERTIFICATE DETERMINATION

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

CONSTRUCTION CERTIFICATE NO: **104/2014**

DETERMINATION

Decision:	**Approved**
Date of Decision:	21 August 2014

SUBJECT LAND

Address:	22 Dendrobium Crescent, Elanora Heights
Lot No, DP:	Lot 28 DP 263422

DESCRIPTION OF DEVELOPMENT

Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

APPLICANT

Name:	Richard & Karla Heggie
Address:	22 Dendrobium Crescent, Elanora Heights
Contact Number: (tel)	tel 99708706 m. 0411556022 (Richard)

OWNER

Name:	Richard & Karla Heggie
Address:	22 Dendrobium Crescent, Elanora Heights
Contact Number: (tel)	tel 99708706 m. 0411556022 (Richard)

BUILDER

Contractor License No:	Mc Carry homes P/L Lic U36356

PLANS AND SPECIFICATIONS

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

DRAWING NUMBER	DATE
Architectural Plan No's:00-B,01-B, 02-B, 03-B, 04-B, 05-B, 06-A, 07-B, 08-B, 09-A, 10-A, prepared by: Peter Downes Designs	Rev A 7/11/13 Rev B 20/01/14

ATTACHMENTS

Construction Specification prepared by: Peter Downes Designs	
Structural Plan No's: S01, S02, S03, S04, S05- Rev C (11.2.14), S06- Rev B (11.2.14), S07 prepared by: Peninsula Consulting Engineers	January 2014
Certificate of existing structural adequacy prepared by: Peninsula Consulting Engineers	10/12/13
Stormwater Design Certificate prepared by Taylor Consulting	23/1/14
Stormwater Management Plan no. 20212 – 1B prepared by: Peter Downes Designs	Feb 2014
Landscape Planting Plan No's: Sht-1 Rev D , Sht -2 Rev D prepared by: Jamie King Landscape Architect	Rev D 28.1.14
From 2 & Form 2a - Council Geotechnical Risk Management prepared by: Bruce Lewis of Peninsula Consulting Engineers & Warwick Davies	10/12/13 & 12.2.14
Geotechnical Assessment prepared by: Daves Geotechnical Consulting Engineers	9/7/12
BAL 29 - Bushfire Planning & Design statement & report prepared by: FPA Australia	2/2/12
BAL 29 Construction details prepared by Peter Downes Designs	undated
Erosion & Sedimentation Control Plan prepared by: Rhett Drew	14/10/13
Sydney Water Quick Check Stamp, Property No. 3413107	14/10/13
Basix Certificate	5/7/12
Sydney Water Quick Check Stamp, Property No. 3413107	14/10/13
Long Service Levy Receipt	15/08/14
Construction Certificate Application Received	05/04/14

CERTIFICATE

I certify that work completed in accordance with documentation accompanying the application for this certificate (with such modifications as verified by the undersigned as may be shown on that documentation) will comply with the requirements of the Environmental Planning and Assessment Regulation, as are referred to in section 81A(5) of the Environmental Planning and Assessment Act, 1979"

SIGNATURE _____

DATE OF ENDORSEMENT **21 August 2014**

CERTIFICATE NO **104/2014**

CERTIFYING AUTHORITY

Name of Certifying Authority: CERTGROUP BUILDING CERTIFIERS
Name of Accredited Certifier: Mark Wysman
Registration No: BPB 0449 – NSW Building Professionals Board
Contact No: PH (02) 9944 8222, FAX (02) 9944 6330
Address: PO BOX 870 NARRABEEN NSW 2101

DEVELOPMENT CONSENT

Council: Pittwater
Development Consent No: N0208/12
Date of Determination: 17/1/13

BUILDING CODE OF AUSTRALIA CLASSIFICATION **1a & 10a**

CERTGROUP
BUILDING CERTIFIERS

RECORD OF SITE INSPECTION
Issued under clauses 143B & 143C EPAR 2000

☒ **SITE INSPECTION** ☒ **MEMORANDUM**

Project: Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)* **DA No: N0208/12**

Address: 22 Dendrobium Crescent, Elanora Heights **Date:** 5/4/14

Type of Inspection: Prior to issue of Construction Certificate

Result of Inspection

* The current fire safety measures in the existing building the subject of the inspection are satisfactory. ☐ Yes ☐ No ☑ N/a

Details: _____

* Whether or not the plans and specifications accompanying the application for the construction certificate adequately and accurately depict the condition of the existing building the subject of the inspection are satisfactory. ☑ Yes ☐ No ☐ N/a

Details: _____

* Whether or not any building work authorised by the relevant development consent has commenced on the site. ☐ Yes ☑ No ☐ N/a

Mark Wysman
Accredited Certifier: **NSW Building Professional Board 0449**

Home Warranty Insurance
Certificate of Insurance

Policy Number BNR023019BWI-4

NSW GOVERNMENT | Home Warranty Insurance Fund

QBE Insurance (Australia) Ltd
Level 3, 85 Harrington St
SYDNEY NSW 2000
Phone: 1300 790 723
Fax: 02 8275 9330
ABN: 78 003 191 035
AFS License No: 239545

QBE

RICHARD HEGGIE & KARLA HEGGIE
22 DENDROBIUM CRESCENT
ELANORA HEIGHTS 2101

Name of Intermediary
MBA INSURANCE SERVICES PTY LTD
PRIVATE BAG 9
BROADWAY NSW 2007

Account Number
BN0004023
Date Issued
11/08/2014

Policy Schedule Details

Certificate in Respect of Insurance

Residential Building Work by Contractors

A contract of insurance complying with sections 92 and 96 of the Home Building Act 1989 has been issued by QBE Insurance (Australia) Limited as agent for and on behalf of the NSW Self Insurance Corporation (SICorp) (ABN 97 369 689 650) who is responsible for management of the Home Warranty Insurance Fund.

In Respect of	ALTERATIONS AND ADDITIONS STRUCTURAL
At	22 DENDROBIUM CRESCENT ELANORA HEIGHTS NSW 2101
Carried Out By	BUILDER MC CARRY HOMES PTY LTD ABN: 56 002 821 150
Declared Contract Price	$306,370.00
Contract Date	25/07/2014
Builders Registration No.	U 36356
Building Owner / Beneficiary	RICHARD HEGGIE & KARLA HEGGIE

Subject to the Act and the Home Building Regulation 2004 and the conditions of the insurance contract, cover will be provided to the Building Owner/Beneficiary named in the domestic building contract and to the successors in title to the Building Owner/Beneficiary or the immediate successor in title to the contractor or developer who did the work and subsequent successors in title.

Signed for and on behalf of NSW Self Insurance Corporation (SICorp)

Jason Bourne
National Manager - Builders Warranty

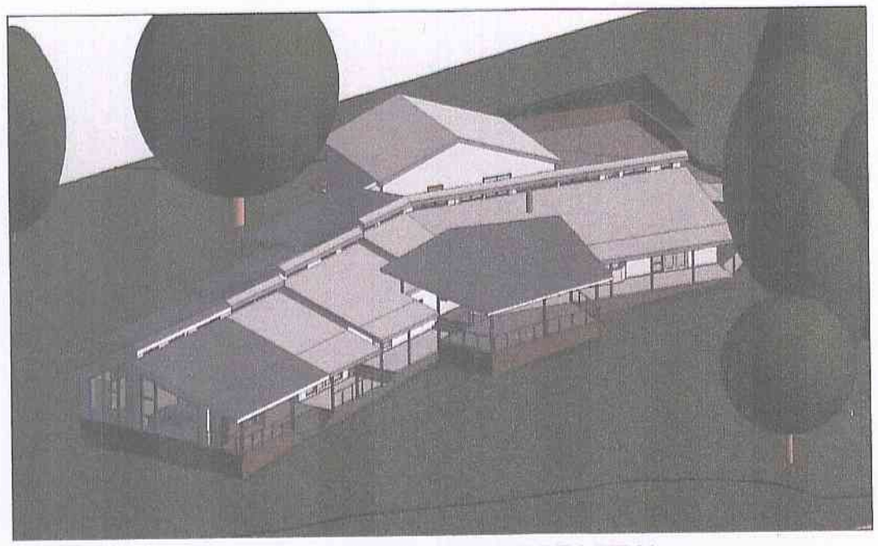
IMPORTANT NOTICE:
In addition to this certificate of insurance, a policy wording which outlines the terms and conditions of the cover provided is available from the HWIF website. To access that policy wording visit www.homewarranty.nsw.gov.au

QM1824-1207

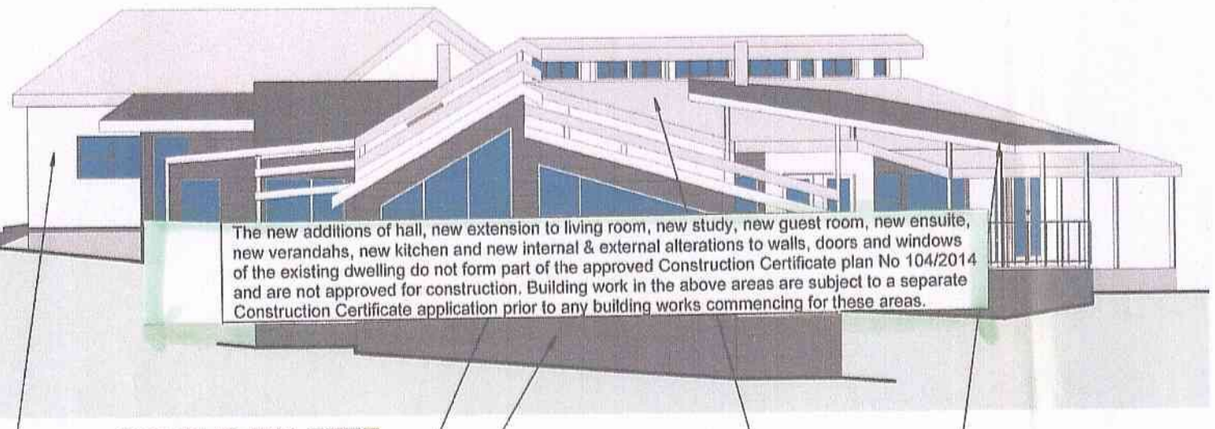
ALTERATIONS & ADDITIONS
TO
22 DENDROBIUM CRESCENT
ELANORA HEIGHTS, NSW

NEW CARPORT WILL BE OBSCURED FROM STREETSCAPE BY EXISTING SITE TREES

STREET PHOTO MONTAGE



EXTERIOR S/E CONCEPT VIEW
(REFER TO COLOUR PALETTE FOR ACTUAL COLOURS & FINISHES)



The new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling do not form part of the approved Construction Certificate plan No 104/2014 and are not approved for construction. Building work in the above areas are subject to a separate Construction Certificate application prior to any building works commencing for these areas.

The new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling do not form part of the approved Construction Certificate plan No 104/2014 and are not approved for construction. Building work in the above areas are subject to a separate Construction Certificate application prior to any building works commencing for these areas.

EXTERIOR S/W CONCEPT VIEW
(REFER TO COLOUR PALETTE FOR ACTUAL COLOURS & FINISHES)

COLOUR PALETTE

EXISTING MASONRY WALLS

NEW & EXISTING ROOFS
COLORBOND "WOODLAND GREY"

NEW CLAD & NEW MASONRY WALLS
DULUX MALLARD GREY

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.*)

HBD Sheet List 1in100	
Sheet No	Sheet Description
00 - B	Cover, Colours & Sheet List
01 - B	Site Plan
02 - B	Floor Plan
03 - B	Dwelling East Elevations
04 - B	Dwelling West Elevations
05 - B	Dwelling North & South Elevations
06 - A	Section Views
07 - B	Roof Plan, Schedules & Notes
08 - B	Carport Plan & Elevations
09 - A	Design Safety Notes
10 - A	BASIX

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

CONCEPT & DESIGN BY
peterdownes
multi-award winner designs

bda BUILDING DESIGNERS AUSTRALIA
PRINCIPAL MEMBER No 667-05

REV	DESCRIPTION	DATE
A	VIEWS & SHEET LIST TO CC REVISIONS	17/11/13
B	VIEWS & SHEET LIST TO CC REVISION B	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29 674 412 501
PO BOX 2088, NORTH PARRAMATTA NSW 1750
P 02 9736-1712 F 02 9736-1740 M 0404 780-559
REX.FARR@HOMESBYDESIGN.NET.AU

Project Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Cover, Colours & Sheet List

DRAWN	CHECKED
R. FARR	P.D.
Scale	Date :
A2 As indicated	20/01/14
Drawing Number :	00 - B
Job. No.	1103

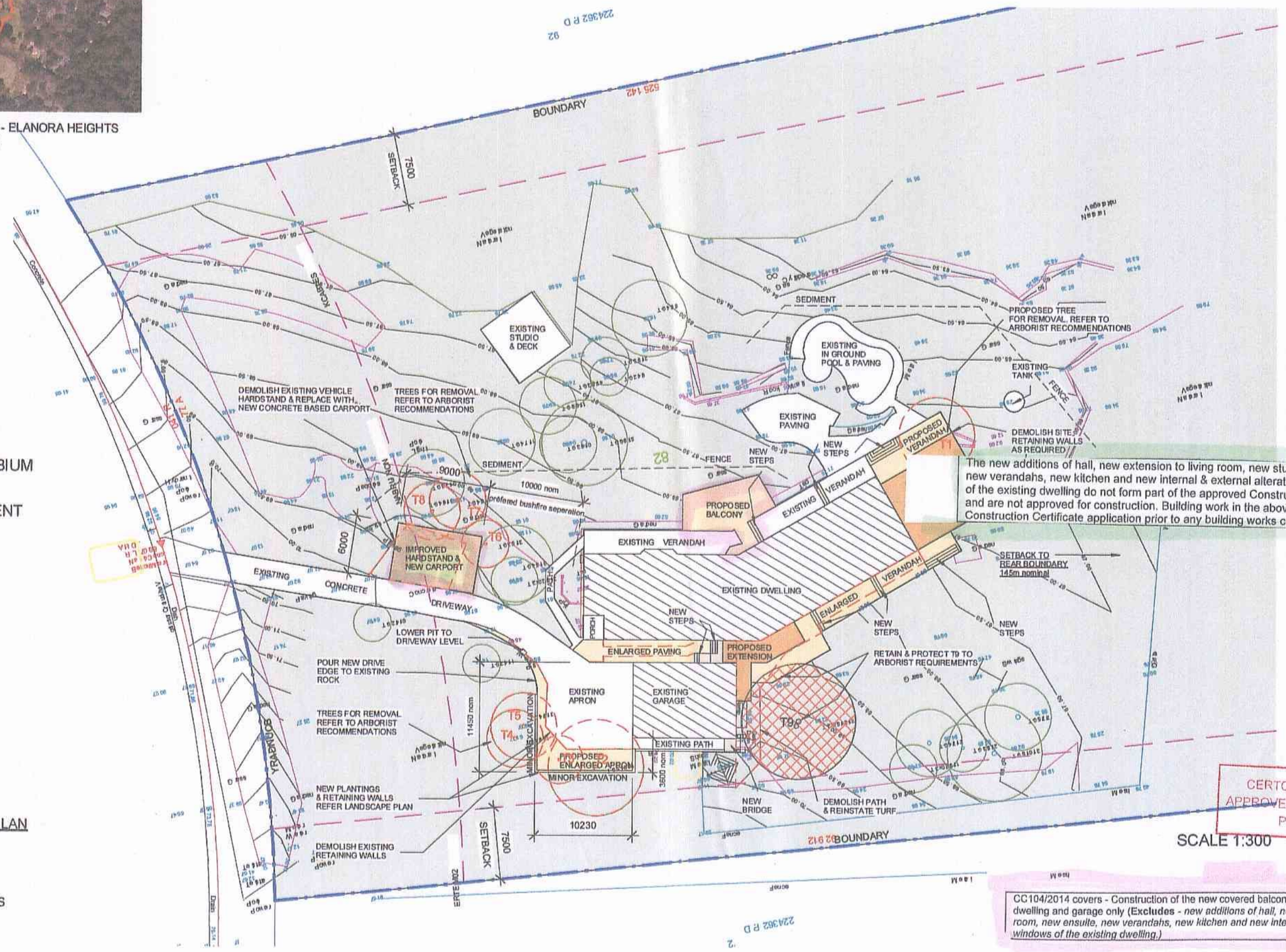
Homes by Design
Lifestyle solutions

22 DENDROBIUM CRESCENT - ELANORA HEIGHTS
(image courtesy of whereis.com)
N.T.S.

DENDROBIUM

CRESCENT

BUSHFIRE NOTE "BAL 19 & BAL 29"
ALL NEW STRUCTURES, INCLUDING DOORS, WINDOWS, SEALS, SCREENS & SERVICES, SHALL COMPLY WITH AS3959-2009 "CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS" & R.F.S. REQUIREMENTS. REFER TO PROJECT BUSHFIRE RISK ASSESSMENT & COMPLIANCE CERTIFICATE FOR ELEVATION SPECIFIC B.A.L. RATINGS



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CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

SCALE 1:300

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new gue room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

COLOUR LEGEND - SITE PLAN
- NEW FLOOR AREAS
- NEW POOL OR TANKS
- NEW PAVED AREAS
- SOFT LANDSCAPED AREAS
- EXISTING FEATURES

CONCEPT & DESIGN BY
peterdownes
multi-award winner designs

bda BUILDING DESIGNERS AUSTRALIA
PRINCIPAL MEMBER No 667-05

REV	DESCRIPTION	DATE
A	FIRE PIT, GARAGE EXT DELETED, DRIVE APRON & STH EXTENSION REVISED	17/11/13
B	STEPS, DRIVE APRON & LANDSCAPING REVISED. GARAGE DOOR BRIDGE ADDED	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29 614 412 501
PO BOX 2065, NORTH PARRAMATTA NSW 1750
P 02 9130-9772 F 02 9130-1740 M 0409 780 559

Project Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Site Plan

DRAWN	CHECKED
R.FARR	P.D.
Scale	Date :
A2 As Indicated	20/01/14
Drawing Number :	01 - B

Homes by Design
Lifestyle solutions

EXISTING FLOOR AREA
NEW FLOOR AREA
NEW WET AREA
RENOVATED AREA
NEW EXTERNAL TILE

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.*)

STORM WATER TANK BELOW TO ENGINEERS DETAILS

BUSHFIRE NOTE "BAL 19 & BAL 29"
ALL NEW STRUCTURES, INCLUDING DOORS, WINDOWS, SEALS, SCREENS & SERVICES, SHALL COMPLY WITH AS3959-2009 "CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS" & R.F.S. REQUIREMENTS. REFER TO PROJECT BUSHFIRE RISK ASSESSMENT & COMPLIANCE CERTIFICATE FOR ELEVATION SPECIFIC B.A.L. RATINGS

WALL DIMENSIONING NOTE:
NEW STUD WALLS
90mm STRUCTURAL THICKNESS
120mm NOM, TOTAL THICKNESS

KEY
NEW STUD WALL
EXISTING WALL
DEMOLISHED FEATURE
SMOKE ALARM

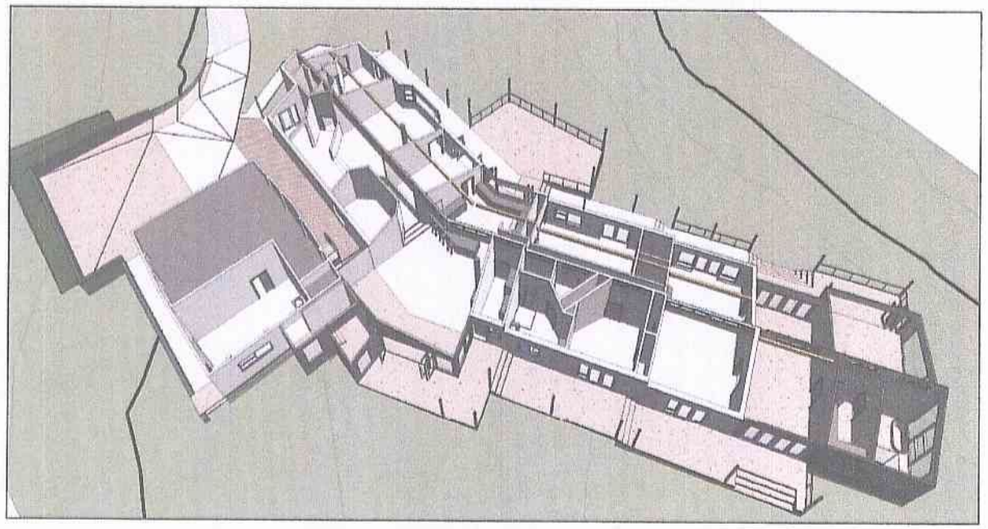
CERTGROUP BUILDING CERTIFIERS
CONSTRUCTION CERTIFICATE No. 104/2014
Consent No. N0208/12 Date 17.1.13
Plans or documentation associated with the issue of the Construction Certificate
Date 21.8.14
Mark Wysman Accreditation No BPB0449

The new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling do not form part of the approved Construction Certificate plan No 104/2014 and are not approved for construction. Building work in the above areas are subject to a separate Construction Certificate application prior to any building works commencing for these areas.

RAISE THIS AREA TO RL 69.31 TO MATCH PORCH (refer to landscaping plan)

NEW TIMBER BRIDGE

FLOOR PLAN



CONCEPT - INTERNAL VIEW

CONCEPT & DESIGN BY
peterdownes
multi-award winner designs

REV	DESCRIPTION	DATE
A	FIRE PIT, GARAGE EXTENSION INCL D01, D02, D03, ID06 & W25 DELETED. STUDY ENLARGED & D10 POSITION REV	17/11/13
B	W27 DELETED, D01, GARAGE LANDING WITH STEPS & BRIDGE ADDED. BALCONY POSTS REVISED	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29 674 412 501
PO BOX 2065, NORTH PARRAMATTA NSW 1750
P 02 9736-9712 F 02 9736-1740 M 0404 760-559

Project Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Floor Plan

DRAWN R. FARR | CHECKED P.D.
Scale A2 1:100 | Date: 20/01/14
Drawing Number 02 - B

Homes by Design
Lifestyle solutions

BUILDING DESIGNERS AUSTRALIA
NCIPAL MEMBER No 867-05

COLOUR LEGEND - ELEVATION

- NEW WALL AREAS
- EXISTING WALL AREAS
- NEW & REFURBISHED GLAZING
- NEW ROOF AREAS
- EXISTING BU[illegible]

PROPOSED EXTENSION

GUEST ROOF PITCH 16 & 30 deg nom TO MATCH EXISTING

NON-COMBUSTIBLE TILED BALCONIES WITH SELECTED TILE EDGE

PAINTED STEEL POSTS, TYPICAL

BALCONY ROOF PITCH 10 deg

ALL EAVES & EXTERIOR ROOF LININGS IN FC SHEET TO BUSHFIRE REQUIREMENTS

GARAGE ROOF PITCH 20.5 deg nom TO MATCH EXISTING

PROPOSED COVERED BALCONY

RE-CLAD EXISTING TILE ROOFS IN COLORBOND & INSULATE TO MATCH NEW WORKS

BUSHFIRE NOTE "BAL 19 & BAL 29"
ALL NEW STRUCTURES, INCLUDING DOORS, WINDOWS, SEALS, SCREENS & SERVICES, SHALL COMPLY WITH AS3959-2009 "CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS" & R.F.S. REQUIREMENTS. REFER TO PROJECT BUSHFIRE RISK ASSESSMENT & COMPLIANCE CERTIFICATE FOR ELEVATION SPECIFIC B.A.L. RATINGS

The new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling do not form part of the approved Construction Certificate plan No 104/2014 and are not approved for construction. Building work in the above areas are subject to a separate Construction Certificate application prior to any building works commencing for these areas.

SELECTED BUSHFIRE APPROVED CLADDIN

RL 73.20 nom

PAINTED TIMBER OR METAL FASCIAS WITH COLORBOND GUTTERS, TYPICAL

INSULATE ALL NEW CEILINGS & WALLS TO BASIX

REPLACE EXISTING FULL LENGTH WINDOW WITH NEW DOOR / WINDOW

Entry Level 69380

Living Level 68860

Bedroom Level 68340

Games & Guest Level 67820

EXISTING

GROUND

LINE

RAISE SILL & REPLACE EXISTING DOORS WITH NEW BAY WINDOWS

RENDERED MASONRY WALLS

SELECTED NON-COMBUSTIBLE HANDRAILS TO B.C.A. WHERE REQUIRED

NEW TILED ENTRY STEPS

REPLACE EXISTING FULL LENGTH WINDOWS WITH DOORS & RAISED SILL WINDOW AS SHOWN

EAST ELEVATION (northern end)

DEMOLISH EXISTING BAY WINDOWS & FIT NEW FOLDING WINDOWS WITH BUSHFIRE SHUTTERS OVER OR APPROVED ALTERNATIVE SOLUTION

REPLACE EXISTING FULL LENGTH WIDOWS WITH NEW MULT-FOLD DOORS

CARRY OUT MINOR LANDSCAPING OF EXISTING GROUND LINE AS REQUIRED, REFER LANDSCAPE CONCEPT PLAN

PROPOSED EXTENSION

ALL EAVES & EXTERIOR ROOF LININGS IN FC SHEET TO BUSHFIRE REQUIREMENTS

SELECTED BUSHFIRE APPROVED CLADDING

INSULATE ALL NEW CEILINGS & WALLS TO BASIX

BALCONY ROOF PITCH 10 deg

PAINTED STEEL POSTS, TYPICAL

PROPOSED COVERED BALCONY

RE-CLAD EXISTING TILE ROOFS IN COLORBOND & INSULATE TO MATCH NEW WORKS

CERTGROUP BUILDING CERTIFIERS APPROVED CONSTRUCTION CERTIFICATE PLAN / DOCUMENTATION

The new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling do not form part of the approved Construction Certificate plan No 104/2014 and are not approved for construction. Building work in the above areas are subject to a separate Construction Certificate application prior to any building works commencing for these areas.

RL 73.20 nom

GUEST ROOF PITCH 16 & 30 deg nom TO MATCH EXISTING

Garage 69870

Entry Level 69380

Living Level 68860

Bedroom Level 68340

Games & Guest Level 67820

EXISTING

GROUND

LINE

RENDERED MASONRY WALLS

SELECTED NON-COMBUSTIBLE HANDRAILS TO B.C.A. WHERE REQUIRED

NEW TILED ENTRY STEPS

REPLACE EXISTING FULL LENGTH WINDOWS WITH DOORS & RAISED SILL WINDOW AS SHOWN

EAST ELEVATION (southern end)

DEMOLISH EXISTING BAY WINDOWS & FIT NEW FOLDING WINDOWS WITH BUSHFIRE SHUTTERS OVER OR APPROVED ALTERNATIVE SOLUTION

REPLACE EXISTING FULL LENGTH WIDOWS WITH NEW MULT-FOLD DOORS

RAISE SILL & REPLACE EXISTING DOORS WITH NEW BAY WINDOWS

NON-COMBUSTIBLE TILED BALCONY WITH SELECTED TILE EDGE

CARRY OUT MINOR LANDSCAPING OF EXISTING GROUND LINE AS REQUIRED, REFER LANDSCAPE CONCEPT PLAN

BUILDING DESIGNERS AUSTRALIA
PRINCIPAL MEMBER No 867-05

CONCEPT & DESIGN BY
peterdownes
multi-award winner designs

REV	DESCRIPTION	DATE
A	FIRE PIT, GARAGE EXTENSION DELETED, DRIVE APRON REVISED	17/11/13
B	BALCONY POSTS REVISED	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29614 412 501
PO BOX 2065, NORTH PARRAMATTA NSW 1750
P 02 9736-9772 F 02 9736-1740 M 0404 760-554
REX FARR@HOMESBYDESIGN.NET.AU

Project Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Dwelling East Elevations

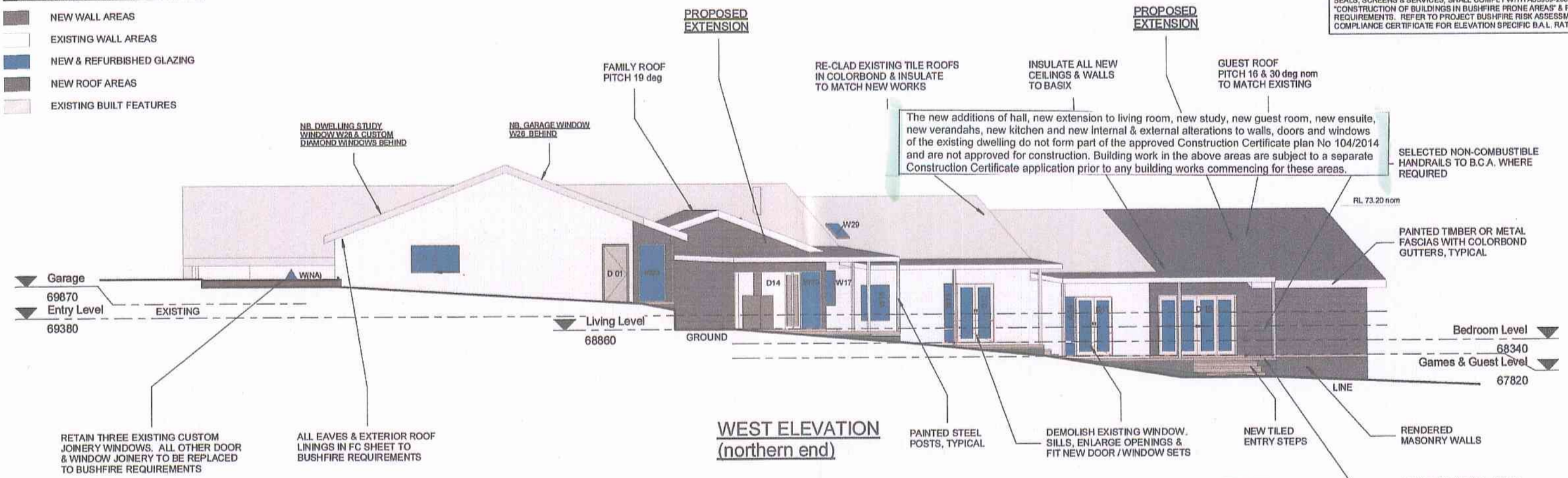
DRAWN	CHECKED
R. FARR	P.D.
Scale A2 1 : 100	Date : 20/01/14
Drawing Number	03 - B

Homes by Design
Lifestyle solutions

COLOUR LEGEND - ELEVATION

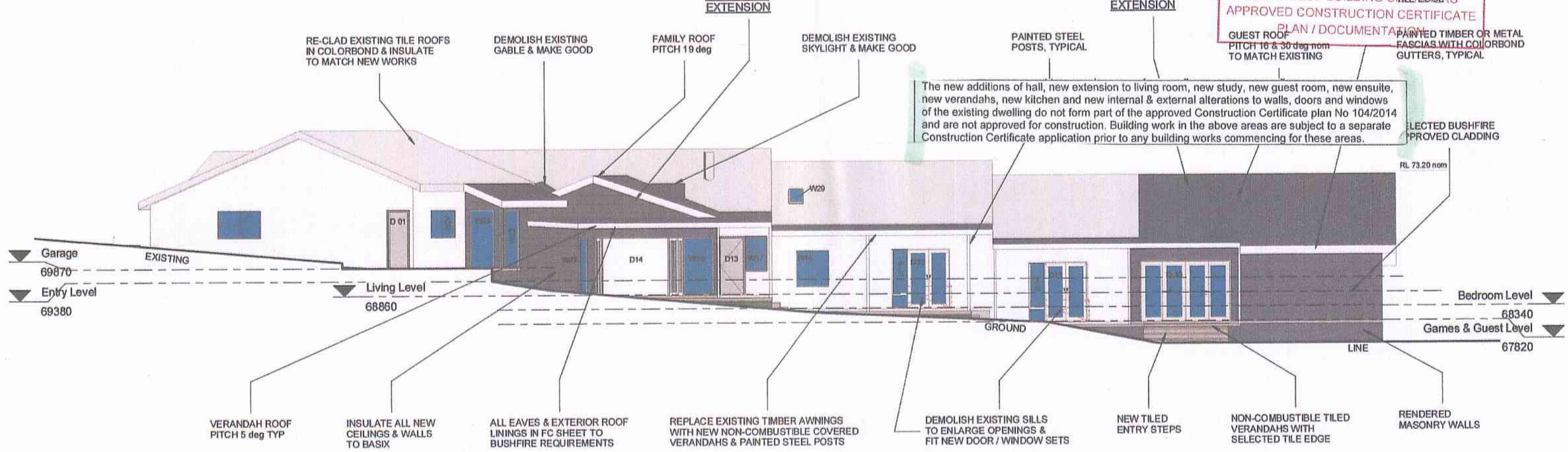
- NEW WALL AREAS
- EXISTING WALL AREAS
- NEW & REFURBISHED GLAZING
- NEW ROOF AREAS
- EXISTING BUILT FEATURES

BUSHFIRE NOTE "BAL 19 & BAL 29"
ALL NEW STRUCTURES, INCLUDING DOORS, WINDOWS, SEALS, SCREENS & SERVICES, SHALL COMPLY WITH AS3959-2009 "CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS" & R.F.S REQUIREMENTS. REFER TO PROJECT BUSHFIRE RISK ASSESSMENT & COMPLIANCE CERTIFICATE FOR ELEVATION SPECIFIC B.A.L. RATINGS



WEST ELEVATION
(northern end)

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION



WEST ELEVATION
(southern end)

CONCEPT & DESIGN BY
peterdownes
multi-award winner designs

BUILDING DESIGNERS AUSTRALIA NSW

REV	DESCRIPTION	DATE
A	GARAGE EXTENSION INCL D02 & W25 DELETED. STUDY & D10 POSITION REV	17/11/13
B	W27 DELETED, D01 ADDED	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29 674 412 501
PO BOX 2065, NORTH PARRAMATTA NSW 1750
P 02 9756-9712 F 02 9756-1740 M 0409 760-559
REV.FARR@HOMESBYDESIGN.NET.AU

Project: Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Dwelling West Elevations

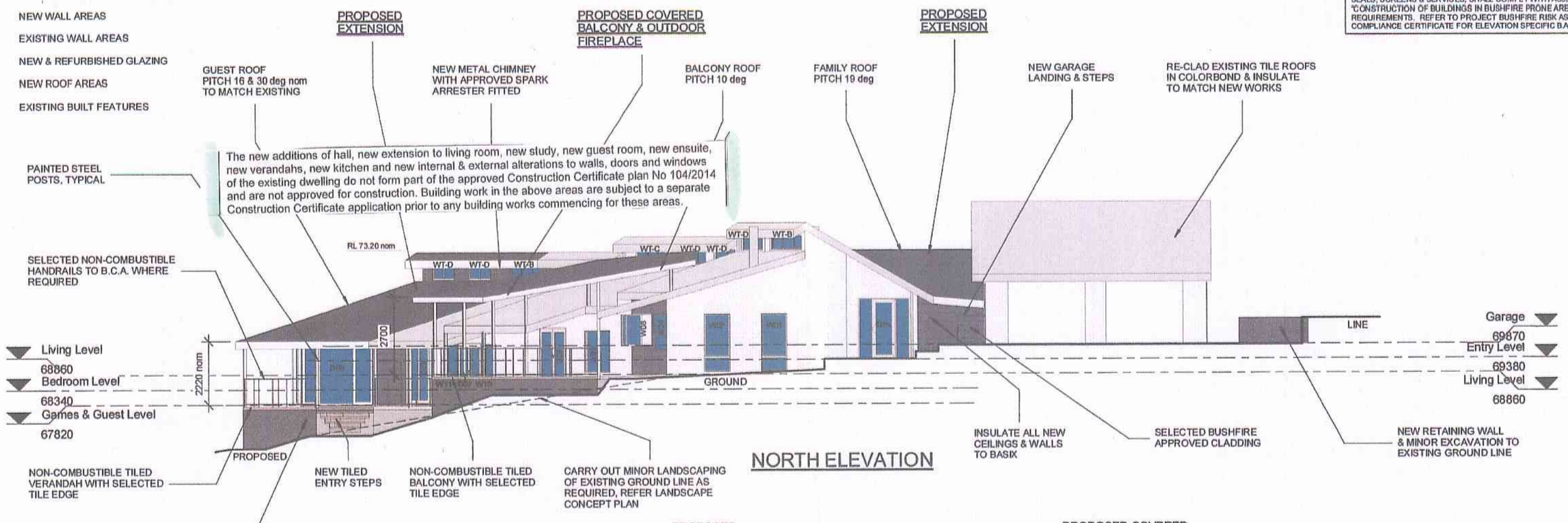
DRAWN	CHECKED
R. FARR	P.D.
Scale A2 1 : 100	Date : 20/01/14
Drawing Number :	04 - B
Job. No.	1103

Homes by Design
Lifestyle solutions

COLOUR LEGEND - ELEVATION

- NEW WALL AREAS
- EXISTING WALL AREAS
- NEW & REFURBISHED GLAZING
- NEW ROOF AREAS
- EXISTING BUILT FEATURES

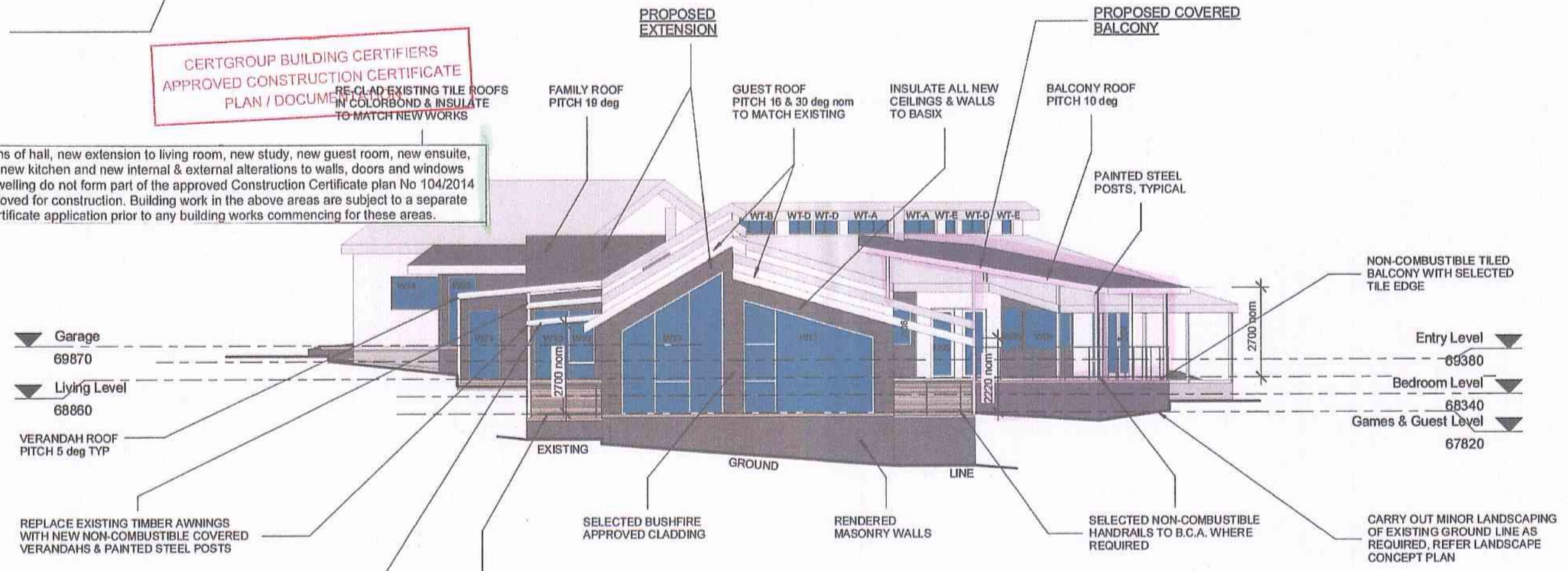
ALL NEW STRUCTURES, INCLUDING DOORS, WINDOWS, SEALS, SCREENS & SERVICES, SHALL COMPLY WITH AS3959-2009 "CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS" & R.F.S. REQUIREMENTS. REFER TO PROJECT BUSHFIRE RISK ASSESSMENT & COMPLIANCE CERTIFICATE FOR ELEVATION SPECIFIC B.A.L. RATINGS



NORTH ELEVATION

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENT ONLY

The new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling do not form part of the approved Construction Certificate plan No 104/2014 and are not approved for construction. Building work in the above areas are subject to a separate Construction Certificate application prior to any building works commencing for these areas.



SOUTH ELEVATION

CONCEPT & DESIGN BY
peterdownes multi-award winner designs

BUILDING DESIGNERS AUSTRALIA

REV	DESCRIPTION	DATE
A	FIRE PIT & GARAGE EXTENSION INCL D01 & D03 DELETED.	17/11/13
B	BALCONY POSTS REVISED, GARAGE LANDING & STEPS ADDED	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29 674 412 501
PO BOX 2055, NORTH PARRAMATTA NSW 1750
P 02 9756-1712 F 02 9756-1740 M 0409 780-594
REX.FARR@HOMESBYDESIGN.NET.AU

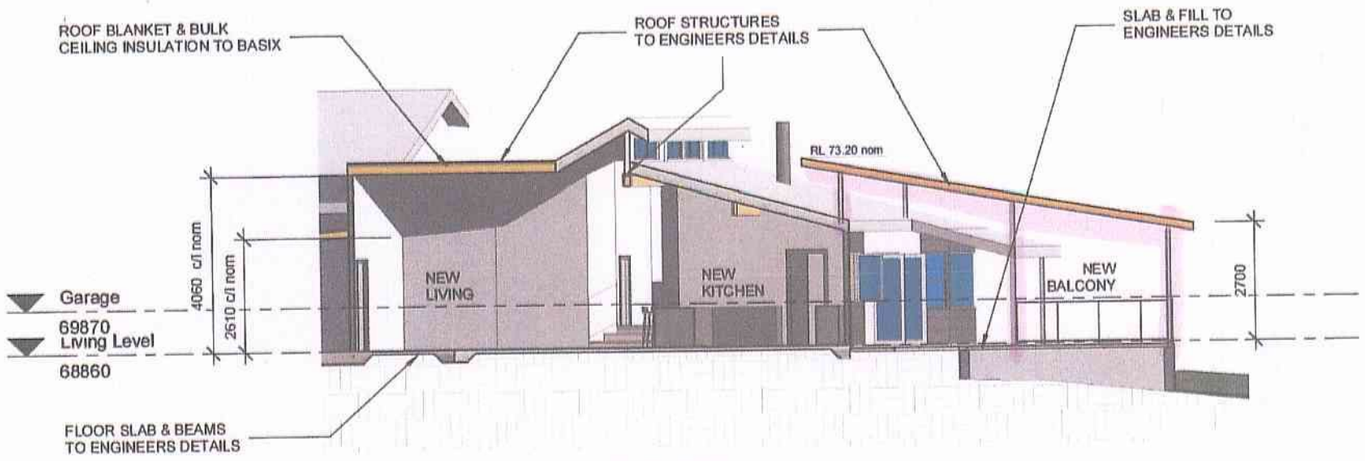
Project Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Dwelling North & South Elevations

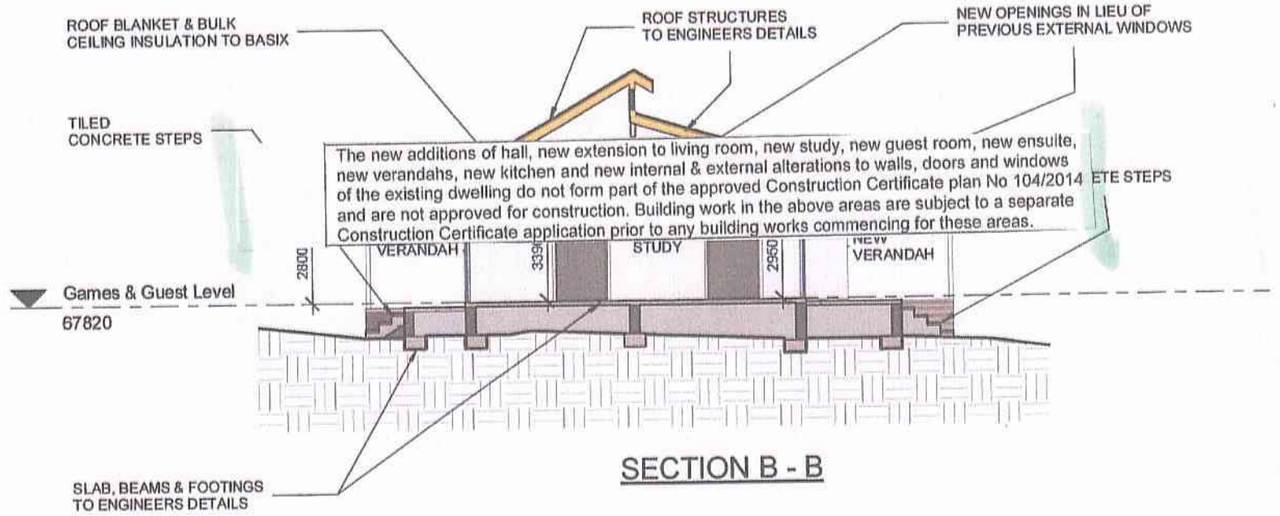
DRAWN	CHECKED
R. FARR	P.D.
Scale	Date :
A2 1 : 100	20/01/14
Drawing Number	05 - B
Job. No.	1103

Homes by Design
Lifestyle solutions

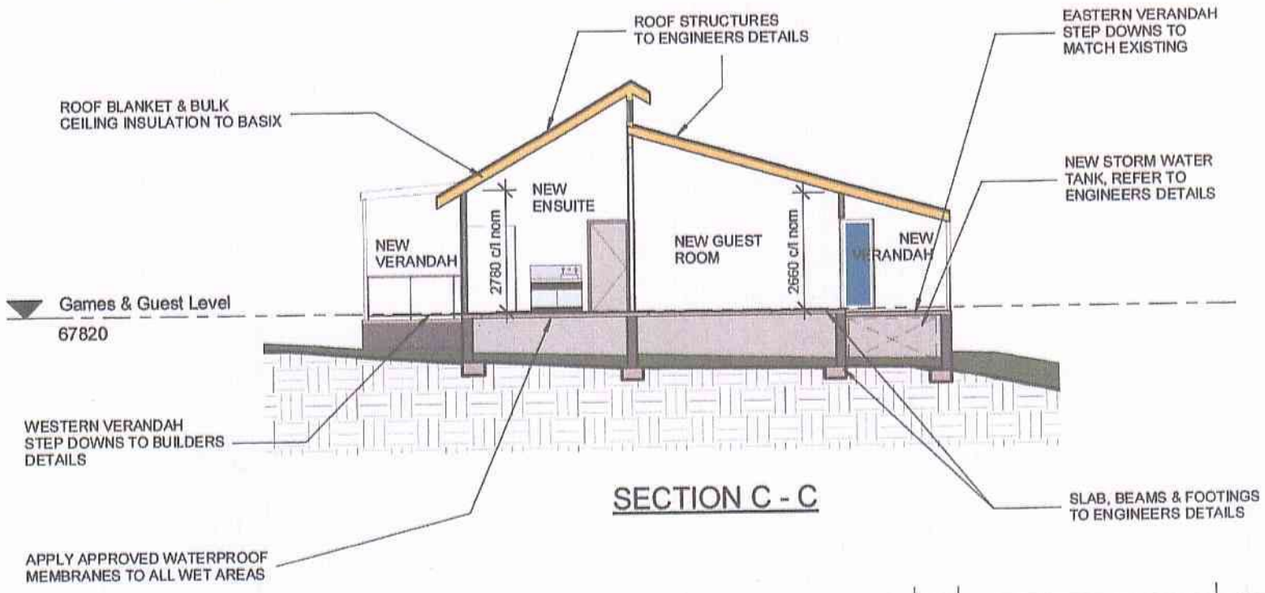
BUSHFIRE NOTE "BAL 19 & BAL 29"
ALL NEW STRUCTURES, INCLUDING DOORS, WINDOWS, SEALS, SCREENS & SERVICES, SHALL COMPLY WITH AS3959-2009 "CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS" & R.F.S. REQUIREMENTS. REFER TO PROJECT BUSHFIRE RISK ASSESSMENT & COMPLIANCE CERTIFICATE FOR ELEVATION SPECIFIC B.A.L. RATINGS



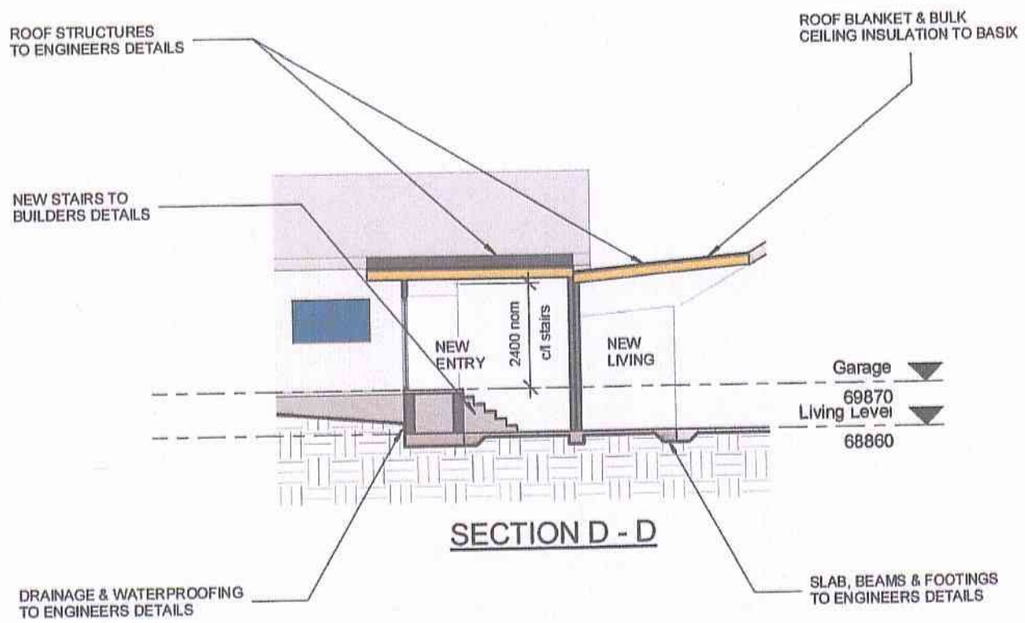
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

CONCEPT & DESIGN BY
peterdownes
multi-award winner designs

BUILDING DESIGNERS AUSTRALIA

REV	DESCRIPTION	DATE
A	FIRE PIT, GARAGE EXT & SECTION E-E DELETED. SECTION B-B STUDY REVISED	17/11/13

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
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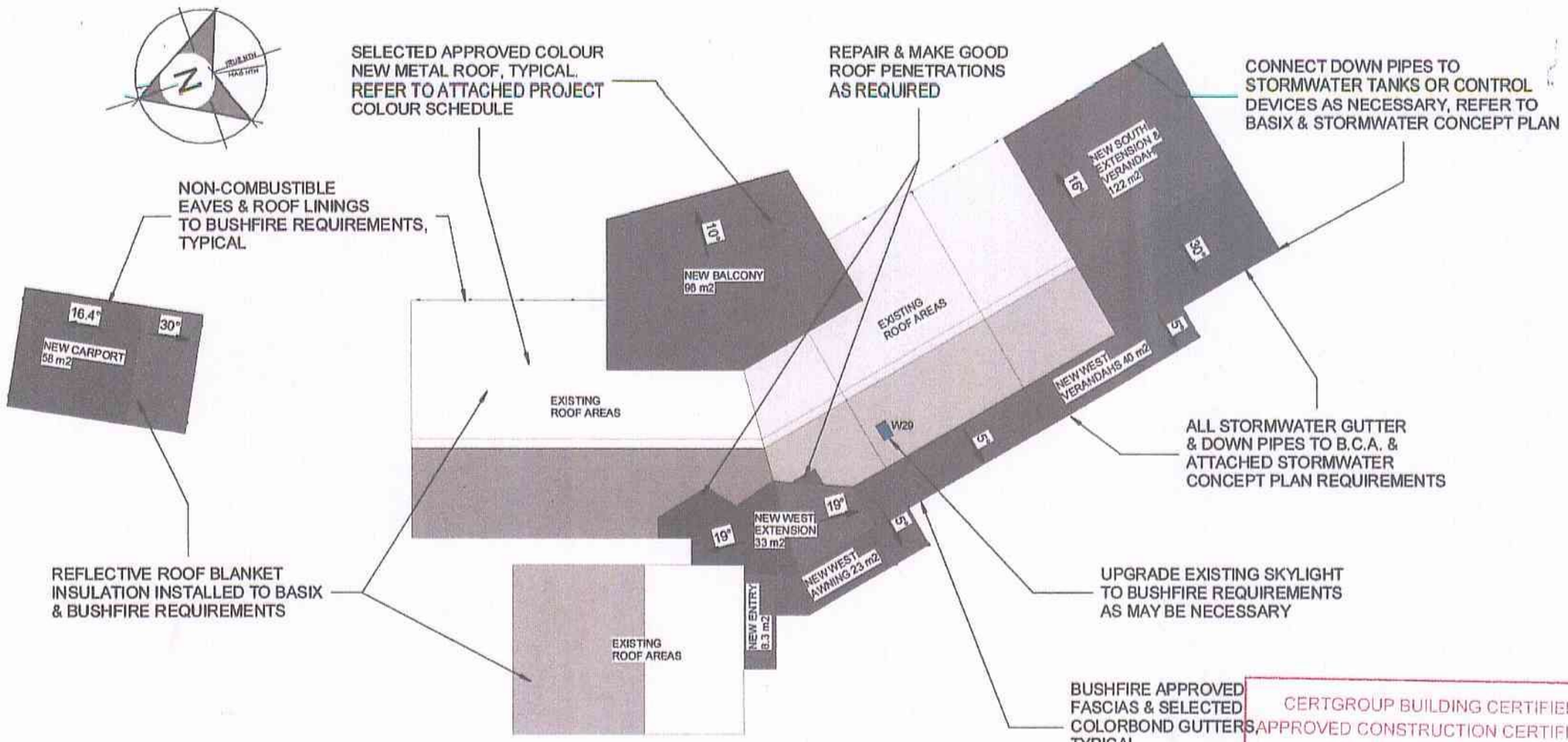
Project Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Section Views

DRAWN	CHECKED
R. FARR	P.D.
Scale A2 1 : 100	Date : 17/11/13
Drawing Number :	06 - A
Job. No.	1103

Homes by Design
Lifestyle solutions



ROOF PLAN

BUSHFIRE NOTE "BAL 19 & BAL 29"
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WINDOW SCHEDULE

ITEM	SIZE W X H	REMARKS	*AREA
W01	900 X 2100	1 DOUBLE HUNG, 1 FIXED	1.90
W02	900 X 2100	1 DOUBLE HUNG, 1 FIXED	1.90
W03	800 X 2100	1 DOUBLE HUNG, 1 FIXED	1.70
W04	600 X 1300	1 DOUBLE HUNG, (SILL 800)	0.80
W05	2850 X 1300	1 FIXED, (SILL 800)	3.70
W06	600 X 1300	1 DOUBLE HUNG, (SILL 800)	0.80
W07	1200 X 1100	MULTI-FOLD, 2 PANEL, (SILL 1000)	1.30
W08	2400 X 1100	MULTI-FOLD, 4 PANEL, (SILL 1000)	2.65
W09	1800 X 1450	1 DOUBLE HUNG, 1 FIXED, (SILL 600)	2.60
W10	1000 X 2100	1 DOUBLE HUNG, 1 FIXED	2.10
W11	1000 X 2100	1 DOUBLE HUNG, 1 FIXED	2.10
W12	4000 X 3430	3 FIXED, 1 AWNING, RAKED HEAD	11.40
W13	2800 X 4290	4 FIXED, 1 AWNING, RAKED HEAD	10.50
W14	600 X 2100	1 DOUBLE HUNG, 1 FIXED	1.25
W15	600 X 2100	1 DOUBLE HUNG, 1 FIXED	1.25
W16	1200 X 1300	1 DOUBLE HUNG, 1 FIXED, (SILL 800)	1.55
W17	700 X 1200	1 DOUBLE HUNG, (SILL 800)	0.85
W18	800 X 2100	1 DOUBLE HUNG, 1 FIXED	1.70
W19	1100 X 2100	1 FIXED	2.30
W20	1100 X 2100	1 FIXED	2.30
W21	1000 X 2100	1 FIXED	2.10
W22	1000 X 2100	1 FIXED	2.10
W23	1000 X 2100	1 FIXED	2.10
W24	1800 X 1000	1 DOUBLE HUNG, 1 FIXED, (SILL 1100)	1.80
W25	NOT USED	NOT USED	N.A.
W26	1800 X 1000	1 DOUBLE HUNG, 1 FIXED, (SILL 1100)	1.80
W27	NOT USED	NOT USED	N.A
W28	1400 X 1300	1 DOUBLE HUNG, 1 FIXED, (SILL 800)	1.80
W29	600 X 900	1 FIXED, SKYLIGHT	0.55

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE PLAN / DOCUMENTATION

CLERESTORY MULTIPLE WINDOW TYPES

WT-A	2600 X 500	1 LOUVRE, 2 FIXED, CLERESTORY	1.30 X 2 OFF
WT-B	2250 X 500	1 LOUVRE, 2 FIXED, CLERESTORY	1.15 X 5 OFF
WT-C	2050 X 500	1 LOUVRE, 2 FIXED, CLERESTORY	1.05 X 1 OFF
WT-D	1500 X 500	1 LOUVRE, 1 FIXED, CLERESTORY	0.75 X 8 OFF
WT-E	700 X 500	1 LOUVRE	0.35 X 2 OFF

(NB SILL HEIGHTS ZERO UNLESS NOMINATED OTHERWISE, HEADS PER EXISTING)

DOOR SCHEDULE

ITEM	SIZE W X H	REMARKS	*AREA
EXTERNAL DOORS			
D01	820 X 2100	SELECTED SOLID TIMBER	N.A.
D02	NOT USED	NOT USED	N.A.
D03	NOT USED	NOT USED	N.A.
D04	1500 X 2100	GLASS DOUBLE SWING	3.15
D05	2300 X 2100	GLASS MUTI-FOLD, 3 PANEL	4.85
D06	1800 X 2100	GLASS DOUBLE SWING	3.80
D07	1600 X 2100	GLASS DOUBLE SWING	3.40
D08	3200 X 2100	GLASS DOUBLE SLIDING	6.70
D09	4560 X 2100	GLASS MULTI-FOLD	9.60
D10	3200 X 2100	GLASS DOUBLE SLIDING	6.70
D11	1500 X 2100	GLASS DOUBLE SWING	3.15
D12	1500 X 2100	GLASS DOUBLE SWING	3.15
D13	820 X 2100	SELECTED SOLID TIMBER	N.A.
D14	3200 X 2100	GLASS MULTI-FOLD, 4 PANEL	6.70
D15	1800 X 2100	SELECTED SOLID TIMBER, GLASS S/PANELS	2.10
INTERNAL DOORS			
ID 01	820 X 2050	OWNER SELECTED, SWING	N.A.
ID 02	820 X 2050	OWNER SELECTED, SWING	N.A.
ID 03	820 X 2050	OWNER SELECTED, SWING	N.A.
ID 04	820 X 2050	OWNER SELECTED, SWING	N.A.
ID 05	820 X 2100	OWNER SELECTED, CAVITY SLIDING	N.A.
ID 06	NOT USED	NOT USED	N.A.

The new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling do not form part of the approved Construction Certificate plan No 104/2014 and are not approved for construction. Building work in the above areas are subject to a separate Construction Certificate application prior to any building works commencing for these areas.

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

GENERAL BUILDING NOTES

ALL WORK SHALL BE CARRIED OUT BY SUITABLY LICENSED & QUALIFIED TRADESMAN IN COMPLIANCE WITH ALL RELEVANT AUSTRALIAN BUILDING STANDARDS & CONSENT AUTHORITY REQUIREMENTS

THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS & INSPECTION CERTIFICATES

AN APPROVED SEDIMENTATION CONTROL SYSTEM IS TO BE INSTALLED & MAINTAINED TO COUNCIL'S SATISFACTION FOR THE DURATION OF THE BUILDING WORKS, ref E.S.C.P. (erosion & sediment control plan) & DRAWING NOTATIONS

SMOKE ALARMS ARE TO BE FITTED IN ACCORDANCE WITH BUILDING CODE OF AUSTRALIA REQUIREMENTS

TERMITE PROTECTION IS TO BE IN COMPLIANCE WITH AUSTRALIAN STANDARD REQUIREMENTS

ALL REFERENCE LEVELS, SETBACKS, SERVICE POSITIONS, DIMENSIONS, MATERIALS & FINISHES ARE TO BE CHECKED ON SITE BY THE BUILDER. DISCREPANCIES TO BE REPORTED IMMEDIATELY TO HOMES BY DESIGN

STRUCTURAL ELEMENTS SUCH AS CONCRETE, STEEL, RETAINING WALLS, SPECIALISED STEEL & TIMBER FRAMING SHALL BE SPECIFIED & CERTIFIED BY AN APPROPRIATELY QUALIFIED ENGINEER

STORMWATER DRAINAGE LINES & SEWER TO SYDNEY WATER, COUNCILS & RELEVANT ENGINEERS REQUIREMENTS

ALL GROUND LINES & INDICATED SERVICE POSITIONS ARE APPROXIMATE & SHALL BE CONFIRMED ON SITE BY THE BUILDER

SPECIALIST CONSULTANT DOCUMENTS SUCH AS ENGINEERING, LANDSCAPING, PLUMBING, ELECTRICAL, FIRE, DRAINAGE, ETC SHALL SUPERSEDE THESE DRAWINGS. DISCREPANCIES SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF HOMES BY DESIGN

TREE & LANDSCAPING NOTES

ALL EXISTING TREES OTHER THAN THOSE APPROVED FOR REMOVAL OR EXEMPT BY SPECIES, SIZE OR LOCATION SHALL BE MAINTAINED & PROTECTED THROUGHOUT & AFTER COMPLETION OF CONSTRUCTION WORKS IN ACCORDANCE WITH COUNCIL, ARBORIST & TREE PROTECTION ZONE (T.P.Z.) REQUIREMENTS

ADDITIONAL OR REPLACEMENT PLANTINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL &/OR LANDSCAPE PLAN REQUIREMENTS

REFER TO COUNCIL APPROVED PLANTINGS GUIDE OR SITE LANDSCAPE PLANS (IF APPLICABLE) FOR TREE, GENERAL PLANTINGS & SCREEN PLANTING REQUIREMENTS & RECOMMENDATIONS

IF REQUIRED BY COUNCIL LANDSCAPING SHALL BE INSPECTED & APPROVED AS COMPLETED IN ACCORDANCE WITH SITE SPECIFIC LANDSCAPE PLANS BY THE CERTIFIER PRIOR TO THE ISSUE OF AN OCCUPATION CERTIFICATE. LANDSCAPING SHALL BE MAINTAINED FOR THE LIFE OF THE DEVELOPMENT

BUSHFIRE NOTES

AT THE COMMENCEMENT OF BUILDING WORKS & IN PERPETUITY THE ENTIRE PROPERTY SHALL BE MANAGED AS AN INNER PROTECTION AREA (I.P.A.) AS OUTLINED WITHIN SECTION 4.1.3 & APPENDIX 5 OF PLANNING FOR BUSHFIRE PROTECTION 2006 OR MOST RECENT REVISIONS THEREOF & NSW RURAL FIRE SERVICE DOCUMENT STANDARDS FOR ASSET PROTECTION ZONES

NEW STRUCTURES INCLUSIVE OF BUT NOT RESTRICTED TO BUILDINGS, DECKING, DOORS, WINDOWS, SEALS & SCREENS SHALL COMPLY WITH AS 3959-2009 CONSTRUCTION OF BUILDINGS IN BUSH FIRE PRONE AREAS OR MOST RECENT REVISION THEREOF & R.F.S. REQUIREMENTS.

REFER TO SITE BUSHFIRE RISK ASSESSMENT FOR B.A.L (BUSHFIRE ATTACK LEVEL) CONSTRUCTION REQUIREMENTS

MANDATORY BASIX NOTES

FLOOR, WALL & CEILING INSULATION TO SATISFY OR EXCEED BASIX STATED MINIMUM REQUIREMENTS. REFER BASIX CERTIFICATE ATTACHED

LOW ENERGY LIGHTING & WATER SAVING FIXTURES TO SATISFY OR EXCEED BASIX STATED MINIMUM REQUIREMENTS. REFER BASIX CERTIFICATE ATTACHED

GLAZING, SHADING DEVICES INCLUSIVE OF EAVES & SITE OVERSHADOWING CONDITIONS TO SATISFY OR EXCEED BASIX STATED MINIMUM REQUIREMENTS. REFER BASIX CERTIFICATE ATTACHED

SHADING DEVICE LEADING EDGES SUCH AS EAVE, PERGOLA, VERANDAH, BALCONY OR AWNING PROJECTIONS MUST BE NO MORE THAN 500mm ABOVE THE HEAD OF THE WINDOW OR GLAZED DOOR & NO MORE THAN 2400m ABOVE THE SILL. REFER BASIX CERTIFICATE ATTACHED

HOT WATER, STORMWATER & PHOTOVOLTAIC SYSTEMS AS MAY BE REQUIRED TO SATISFY OR EXCEED BASIX STATED MINIMUM REQUIREMENTS. REFER BASIX CERTIFICATE ATTACHED

DOOR & WINDOW NOTES

ALL DOORS & WINDOWS TO BE POWDER COATED ALUMINIUM, FITTED WITH SEALS & COMPLY WITH AS 1530.8.2

OPEN-ABLE WINDOWS SHALL BE SCREENED IN ACCORDANCE WITH AS3959 & R.F.S. CONSTRUCTION REQUIREMENTS

ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER PRIOR TO ORDER & MANUFACTURE

DOORS, WINDOWS, GLAZING, FRAMES, SEALS & SCREENS TO COMPLY WITH R.F.S. SITE FIRE CLASSIFICATIONS & AS3959 CONSTRUCTION STANDARDS

GLASS DOORS TO BE GLAZED WITH GRADE A SAFETY GLASS IN ACCORDANCE WITH AS 1288

*NOMINATED GLAZED AREAS INCLUSIVE OF FRAMES ARE "NOMINAL" & INTENDED FOR BASIX CALCULATIONS ONLY

N.B ALL GLAZING TO COMPLY WITH PART 3.9.2.5 OF THE NATIONAL CONSTRUCTION CODE

BUILDING DESIGNERS AUSTRALIA

PRINCIPAL MEMBER No 867-05

CONCEPT & DESIGN BY
peterdownes multi-award winner designs

REV	DESCRIPTION	DATE
A	GARAGE EXTENSION ROOF DELETED. D01, D02, D03, ID06 & W25 DELETED	17/11/13
B	W27 DELETED, D01 ADDED	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 24 614 412 501
PO BOX 2069, NORTH PARRAMATTA NSW 1750
P 02 9756-1712 F 02 9756-1740 M 0404 760-591
REX.FARR@HOMESBYDESIGN.NET.AU

Project	Richard & Karla Heggie PROPOSED ALTERATIONS & ADDITIONS AT 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS FOR - RICHARD & KARLA HEGGIE	DRAWN R. FARR	CHECKED P.D.
		Scale A2 As indicated	Date : 20/01/14
DRAWING	Roof Plan, Schedules & Notes	Drawing Number : Job No	07 - B 1103

Homes by Design
Lifestyle solutions

BUSHFIRE NOTE "BAL 19 & BAL 29"
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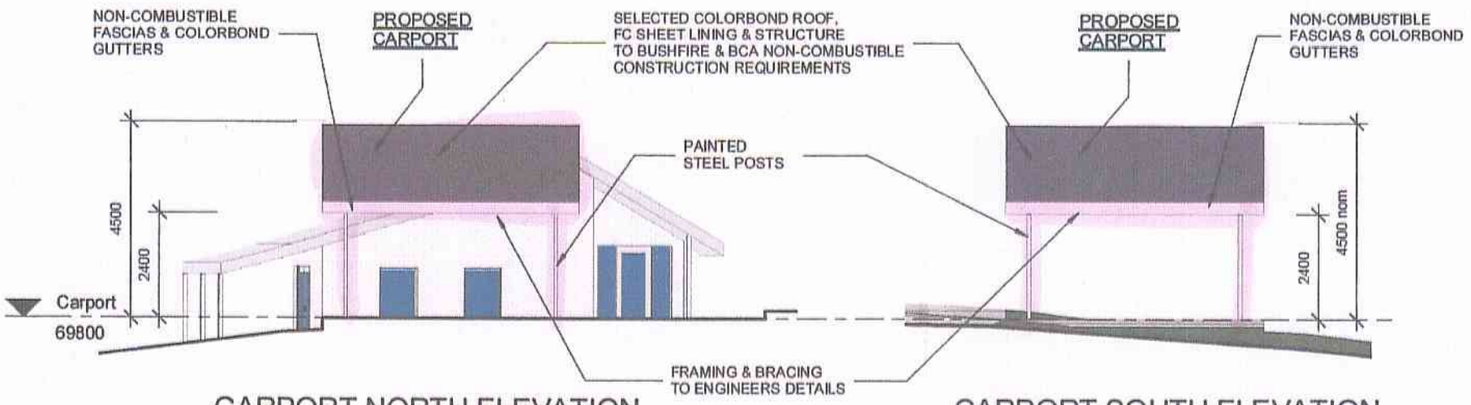
COLOUR LEGEND - ELEVATION

- NEW WALL AREAS
- EXISTING WALL AREAS
- NEW & REFURBISHED GLAZING
- NEW ROOF AREAS
- EXISTING BUILT FEATURES



CARPORT NORTH ELEVATION
SCALE 1: 100

CARPORT SOUTH ELEVATION
SCALE 1: 100

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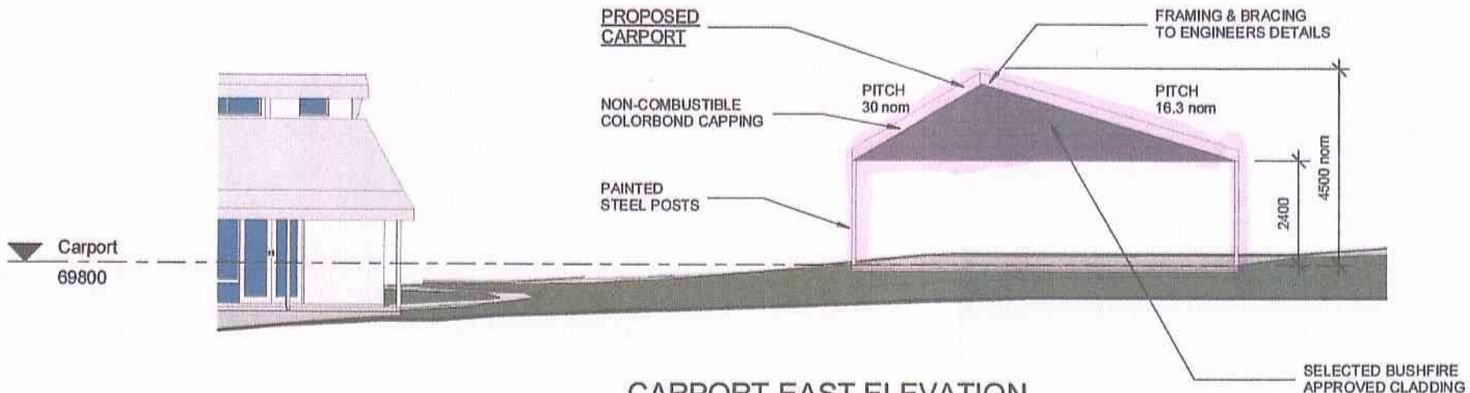
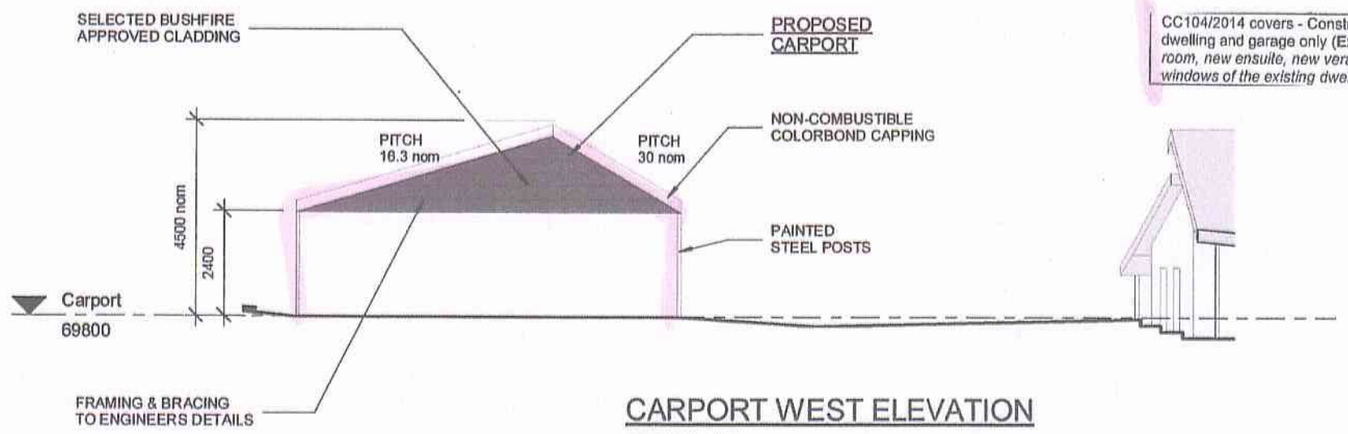


CARPORT EAST ELEVATION
SCALE 1: 100



CARPORT WEST ELEVATION
SCALE 1: 100

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CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

BUILDING DESIGNERS AUSTRALIA
PRINCIPAL MEMBER No 667-05

CONCEPT & DESIGN BY
peterdownes
multi-award winner designs

REV	DESCRIPTION	DATE
A	GARAGE EXTENSION DELETED. GARAGE APRON REVISED	17/11/13
B	DRIVE APRON PLAN DELETED	20/01/14

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
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Project: Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING: Carport Plan & Elevations

DRAWN	CHECKED
R. FARR	P.D.
Scale	Date :
A2 1 : 100	20/01/14
Drawing Number	08 - B
Job No	1103

Homes by Design
Lifestyle solutions

1. FALLS, SLIPS, TRIPS

a) WORKING AT HEIGHTS

DURING CONSTRUCTION
Wherever possible, components for this building should be prefabricated off-site or at ground level to minimise the risk of workers falling more than two metres. However, construction of this building will require workers to be working at heights where a fall in excess of two metres is possible and injury is likely to result from such a fall. The builder should provide a suitable barrier wherever a person is required to work in a situation where falling more than two metres is a possibility.

DURING OPERATION OR MAINTENANCE
For houses or other low-rise buildings where scaffolding is appropriate:
Cleaning and maintenance of windows, walls, roof or other components of this building will require persons to be situated where a fall from a height in excess of two metres is possible. Where this type of activity is required, scaffolding, ladders or trestles should be used in accordance with relevant codes of practice, regulations or legislation.
For buildings where scaffold, ladders, trestles are not appropriate:
Cleaning and maintenance of windows, walls, roof or other components of this building will require persons to be situated where a fall from a height in excess of two metres is possible. Where this type of activity is required, scaffolding, fall barriers or Personal Protective Equipment (PPE) should be used in accordance with relevant codes of practice, regulations or legislation.

ANCHORAGE POINTS
Anchorage points for portable scaffold or fall arrest devices will be installed and maintained by the builder during construction. Anchors shall remain upon completion for use during post construction and maintenance works. Persons engaged to work on the building post completion of construction works should be informed about the anchorage points.

b) SLIPPERY OR UNEVEN SURFACES

FLOOR FINISHES Specified
If finishes have been specified by designer, these have been selected to minimise the risk of floors and paved areas becoming slippery when wet or when walked on with wet shoes/feet. Any changes to the specified finish should be made in consultation with the designer or, if this is not practical, surfaces with an equivalent or better slip resistance should be chosen.
FLOOR FINISHES By Owner
If designer has not not been involved in the selection of surface finishes, the owner is responsible for the selection of surface finishes in the pedestrian trafficable areas of this building. Surfaces should be selected in accordance with AS HB 197:1999 and AS/NZ 4586:2004.
STEPS, LOOSE OBJECTS AND UNEVEN SURFACES
Due to design restrictions for this building, steps and/or ramps are included in the building which may be a hazard to workers carrying objects or otherwise occupied. Steps should be clearly marked with both visual and tactile warning during construction, maintenance, demolition and at all times when the building operates as a workplace.
Building owners and occupiers should monitor the pedestrian access ways and in particular access to areas where maintenance is routinely carried out to ensure that surfaces have not moved or cracked so that they become uneven and present a trip hazard. Spills, loose material, stray objects or any other matter that may cause a slip or trip hazard should be cleaned or removed from access ways.
Contractors should be required to maintain a tidy work site during construction, maintenance or demolition to reduce the risk of trips and falls in the workplace. Materials for construction or maintenance should be stored in designated areas away from access ways and work areas.

2. FALLING OBJECTS

LOOSE MATERIALS OR SMALL OBJECTS

Construction, maintenance or demolition work on or around this building is likely to involve persons working above ground level or above floor levels. Where this occurs one or more of the following measures should be taken to avoid objects falling from the area where the work is being carried out onto persons below.
1. Prevent or restrict access to areas below where the work is being carried out.
2. Provide toeboards to scaffolding or work platforms.
3. Provide protective structure below the work area.
4. Ensure that all persons below the work area have Personal Protective Equipment (PPE).

BUILDING COMPONENTS

During construction, renovation or demolition of this building, parts of the structure including fabricated steelwork, heavy panels and many other components will remain standing prior to or after supporting parts are in place. Contractors should ensure that temporary bracing or other required support is in place at all times when collapse which may injure persons in the area is a possibility.

Mechanical lifting of materials and components during construction, maintenance or demolition presents a risk of falling objects. Contractors should ensure that appropriate lifting devices are used, that loads are properly secured and that access to areas below the load is prevented or restricted.

3. TRAFFIC MANAGEMENT

For building on a major road, narrow road or steeply sloping road:
Parking of vehicles or loading/unloading of vehicles on this roadway may cause a traffic hazard. During construction, maintenance or demolition of this building designated parking for workers and loading areas should be provided. Trained traffic management personnel should be responsible for the supervision of these areas.
For building where on-site loading/unloading is restricted:
Construction of this building will require loading and unloading of materials on the roadway. Deliveries should be well planned to avoid congestion of loading areas and trained traffic management personnel should be used to supervise loading/unloading areas.
For all buildings:
Busy construction and demolition sites present a risk of collision where deliveries and other traffic are moving within the site. A traffic management plan supervised by trained traffic management personnel should be adopted for the work site.

4. SERVICES

GENERAL
Rupture of services during excavation or other activity creates a variety of risks including release of hazardous material. Existing services are located on or around this site. Where known, these are identified on the plans but the exact location and extent of services may vary from that indicated. Services should be located using an appropriate service (such as Dial Before You Dig), appropriate excavation practice should be used and, where necessary, specialist contractors should be used.
Locations with underground power:
Underground power lines MAY be located in or around this site. All underground power lines must be disconnected or carefully located and adequate warning signs used prior to any construction, maintenance or demolition commencing.
Locations with overhead power lines:
Overhead power lines MAY be near or on this site. These pose a risk of electrocution if struck or approached by lifting devices or other plant and persons working above ground level. Where there is a danger of this occurring, power lines should be, where practical, disconnected or relocated. Where this is not practical adequate warning in the form of bright coloured tape or signage should be used or a protective barrier provided.

5. MANUAL TASKS

Components within this design with a mass in excess of 25kg should be lifted by two or more workers or by mechanical lifting device. Where this is not practical, suppliers or fabricators should be required to limit the component mass.
All material packaging, building and maintenance components should clearly show the total mass of packages and where practical all items should be stored on site in a way which minimises bending before lifting. Advice should be provided on safe lifting methods in all areas where lifting may occur.
Construction, maintenance and demolition of this building will require the use of portable tools and equipment. These should be fully maintained in accordance with manufacturer's specifications and not used where faulty or (in the case of electrical equipment) not carrying a current electrical safety tag. All safety guards or devices should be regularly checked and Personal Protective Equipment should be used in accordance with manufacturer's specification.

6. HAZARDOUS SUBSTANCES

ASBESTOS

For alterations to a building constructed prior to 1990:
If this existing building was constructed prior to:
1990 - it therefore may contain asbestos
1986 - it therefore is likely to contain asbestos
either in cladding material or in fire retardant insulation material. In either case, the builder should check and, if necessary, take appropriate action before demolishing, cutting, sanding, drilling or otherwise disturbing the existing structure.

POWDERED MATERIALS

Many materials used in the construction of this building can cause harm if inhaled in powdered form. Persons working on or in the building during construction, operational maintenance or demolition should ensure good ventilation and wear Personal Protective Equipment including protection against inhalation while using powdered material or when sanding, drilling, cutting or otherwise disturbing or creating powdered material.

TREATED TIMBER

The design of this building may include provision for the inclusion of treated timber within the structure. Dust or fumes from this material can be harmful. Persons working on or in the building during construction, operational maintenance or demolition should ensure good ventilation and wear Personal Protective Equipment including protection against inhalation of harmful material when sanding, drilling, cutting or using treated timber in any way that may cause harmful material to be released. Do not burn treated timber.

VOLATILE ORGANIC COMPOUNDS

Many types of glue, solvents, spray packs, paints, varnishes and some cleaning materials and disinfectants have dangerous emissions. Areas where these are used should be kept well ventilated while the material is being used and for a period after installation. Personal Protective Equipment may also be required. The manufacturer's recommendations for use must be carefully considered at all times.

SYNTHETIC MINERAL FIBRE

Fibreglass, rockwool, ceramic and other material used for thermal or sound insulation may contain synthetic mineral fibre which may be harmful if inhaled or if it comes in contact with the skin, eyes or other sensitive parts or the body. Personal Protective Equipment including protection against inhalation of harmful material should be used when installing, removing or working near bulk insulation material.

TIMBER FLOORS

This building may contain timber floors which have an applied finish. Areas where finishes are applied should be kept well ventilated during sanding and application and for a period after installation. Personal Protective Equipment may also be required. The manufacturer's recommendations for use must be carefully considered at all times.

7. CONFINED SPACES

EXCAVATION

Construction of this building and some maintenance on the building will require excavation and installation of items within excavations. Where practical, installation should be carried out using methods which do not require workers to enter the excavation. Where this is not practical, adequate support for the excavated area should be provided to prevent collapse. Warning signs and barriers to prevent accidental or unauthorised access to all excavations should be provided.

ENCLOSED SPACES

For buildings with enclosed spaces where maintenance or other access may be required:
Enclosed spaces within this building may present a risk to persons entering for construction, maintenance or any other purpose. The design documentation calls for warning signs and barriers to unauthorised access. These should be maintained throughout the life of the building. Where workers are required to enter enclosed spaces, air testing equipment and Personal Protective Equipment should be provided.

SMALL SPACES

For buildings with small spaces where maintenance or other access may be required:
Some small spaces within this building will require access by construction or maintenance workers. The design documentation calls for warning signs and barriers to unauthorised access. These should be maintained throughout the life of the building. Where workers are required to enter small spaces they should be scheduled so that access is for short periods. Manual lifting and other manual activity should be restricted in small spaces.

8. PUBLIC ACCESS

Public access to construction and demolition sites and to areas under maintenance causes risk to workers and public. Warning signs and secure barriers to unauthorised access should be provided. Where electrical installations, excavations, plant or loose materials are present they should be secured when not fully supervised.

9. OPERATIONAL USE OF BUILDING

RESIDENTIAL BUILDINGS

This building has been designed as a residential building. If it, at a later date, it is used or intended to be used as a workplace, the provisions of the Work Health and Safety Act 2011 or subsequent replacement Act should be applied to the new use.

NON-RESIDENTIAL BUILDINGS

NA

10.OTHER HIGH RISK ACTIVITY

All electrical work should be carried out in accordance with Code of Practice: Managing Electrical Risks at the Workplace, AS/NZ and all licensing requirements.
All work using Plant should be carried out in accordance with Code of Practice: Managing Risks of Plant at the Workplace.
All work should be carried out in accordance with Code of Practice: Managing Noise and Preventing Hearing Loss at Work.
Due to the history of serious incidents it is recommended that particular care be exercised when undertaking work involving steel construction and concrete placement. All the above applies.

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

THESE NOTES MUST BE READ AND UNDERSTOOD BY ALL INVOLVED IN THE PROJECT.
THIS INCLUDES (but is not excluded to): OWNER, BUILDER, SUB-CONTRACTORS, CONSULTANTS, RENOVATORS, OPERATORS, MAINTAINERS, DEMOLISHERS.

REV	DESCRIPTION	DATE
A	CC RELEASE	17/11/13

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29 674 412 501
PO BOX 2065, NORTH PARRAMATTA NSW 1750
P 02 9756-1772 F 02 9756-1740 M 0409 780-594
REX.FARR@HOMESBYDESIGN.NET.AU

Project Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING Design Safety Notes

DRAWN	CHECKED
R. FARR	P.D.
Scale	Date :
A2 As indicated	17/11/13
Drawing Number :	09 - A
Job No.	1103

Homes by Design
Lifestyle solutions

BASIX® Certificate

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

Alterations and Additions

Certificate number: A141700

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Alterations and Additions Definitions" dated 29/9/2008 published by Department of Planning. This document is available at www.basix.nsw.gov.au

Director-General
Date of issue: Thursday, 05, July 2012
To be valid, this certificate must be lodged within 3 months of the date of issue.

NSW Planning & Infrastructure

Description of project

Project address	
Project name	HEGGIE-1131-ELANORA HEIGHTS
Street address	22 DENDROBIUM Crescent ELANORA HEIGHTS 2101
Local Government Area	Pittwater Council
Plan type and number	Deposited Plan 263422
Lot number	25
Section number	0
Project type	
Dwelling type	Separate dwelling house
Type of alteration and addition	My renovation work is valued at $50,000 or more, and does not include a pool (and/or spa)

Certificate Prepared by (please complete before submitting to Council or PCA)

Name / Company Name: B.L. Roles & Associates

ABN (if applicable): 43 467 257 072

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

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

Construction	Additional insulation required (R-value)	Other specifications
concrete slab on ground floor.	nil	
suspended floor with enclosed subfloor: concrete (R0.6)	R0.70 (down) (or R1.30 including construction)	
external wall: framed (weatherboard, fibro, metal clad)	R1.30 (or R1.70 including construction)	
internal wall shared with garage: plasterboard (R0.36)	nil	
raked ceiling, pitched/skillion roof: framed	ceiling: R3.00 (up), roof: foil/sarking	dark (solar absorptance > 0.70)

BUILDING DESIGNERS AUSTRALIA

PRINCIPAL MEMBER No 667-05

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

Windows and glazed doors glazing requirements

Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing: Height (m)	Overshadowing: Distance (m)	Shading device	Frame and glass type
W4	E	0.8	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W5	E	3.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W6	SE	0.8	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W7	E	1.3	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)

Glazing requirements	Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check

Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing: Height (m)	Overshadowing: Distance (m)	Shading device	Frame and glass type
W8	E	2.65	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W9	E	2.6	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W12	S	11.4	0	0	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W13	S	10.5	0	0	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W14	W	1.25	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W15	W	1.25	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W16	S	1.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W19	S	2.3	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W20	W	2.3	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W21	S	2.1	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W22	S	2.1	0	0	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W23	W	2.1	0	0	eave/verandah/pergola/balcony >=750 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W25	W	1.8	0	0	eave/verandah/pergola/balcony >=750 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)

REV	DESCRIPTION	DATE
A	CC RELEASE	17/11/13

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 29 674 412 801
PO BOX 2065, NORTH PARRAMATTA NSW 1750
P 02 9736-9772 F 02 9736-1740 M 0409 760-559

Project: Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
FOR - RICHARD & KARLA HEGGIE

DRAWING BASIX

DRAWN	CHECKED
R. FARR	P.D.
Scale: A2	Date: 17/11/13
Drawing Number:	10 - A

Glazing requirements	Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check

Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing: Height (m)	Overshadowing: Distance (m)	Shading device	Frame and glass type
W27	E	1.7	3	2.4	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
D2	W	3.6	0	0	eave/verandah/pergola/balcony >=750 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
D5	E	6.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
D9	E	6.6	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
D10	W	6.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
D11	W	3.15	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
D12	W	3.15	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
D14	W	6.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)

Legend
In these commitments, "applicant" means the person carrying out the development.
Commitments identified with a "✓" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
Commitments identified with a "✓" in the "Show on CC/CDC plans & specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate for the development may be issued.

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

Homes by Design
Lifestyle solutions

GENERAL NOTES:

GENERAL

G1. The drawings are to be read together with all Architects drawings and specifications.

G2. Engineer's drawings shall not be used for dimensions. All setting out dimensions shall be verified and discrepancies shall be referred to the Engineer prior to commencement of work.

G3. During construction the structure shall be maintained in a stable condition and no part shal be overstressed. Temporary bracing shall be provided by the builder to keep the works and excavations stable at all times.

G4. Design, materials and workmanship are to be in accordance with current S.A.A standards and statutory authority regulations except where varied by these documents.

G5. Design live loads are in accordance with AS 1170.1

FOOTINGS

F1. FOUNDATION STRATA IS ASSUMED FOR DESIGN PURPOSES IN ACCORDANCE WITH AS 2870-1996 "RESIDENTIAL SLAB AND FOOTINGS-CONSTRUCTION". SEE FOOTNOTE. CLASSIFICATION TO BE VERIFIED BY A GEOTECHNICAL ENGINEER COMMISSIONED BY THE CLIENT FOR CERTIFICATION OF FOUNDATIONS.

F2. Footings to be constructed and back filled as soon as possible following excavation to avoid softening by rain or drying out by exposure.

F3. Footings must bear into undisturbed natural ground clear of organic material. Refer to details.

F4. If rock or variable bearing strata is encountered during excavation of the footings all footings/piers are to be excavated to similar material of greater bearing capacity.
The Engineer is to be contacted at that time for approval or review.

F5. Footings to be cast in approved material having an allowable capacity as follows:

Sand Foundations:

SA1. Required minimum bearing capacity 100 kPa.
SA2. Trenches must be cleaned of all debris and hand compacted prior to placement of reinforcement.

Clay Foundations:

CL1. Required minimum bearing capacity 150 kPa.
CL2. Trenches must be cleaned of all debris. Soft spots must be cut out and filled as per compacted fill notes, prior to placement of reinforcement.

Shale Foundations:

SH1. Required minimum bearing capacity 400 kPa.
SH2. Excavation for footings into shale must be cast or capped with plain concrete on the same day as excavation.

Sandstone Foundations:

SS1. Required minimum bearing capacity 600 kPa.
SS2. Scrape weathered surface to remove cleaved sandstone under footings.

Refer adjacent for assumed Design bearing strata.

F6. Future development of neighboring properties may effect ground water conditions on this site. Consequently, reactivity in subgrade beneath footings may be locally altered therefore putting footing at risk of differential settlement. We recommend that, particularly in clay subgrades, agricultural drainage is installed to the upstream perimeter of the building at a distance from the building which is outside the zone of influence of the footings. The agricultural drain must be installed below the fluctuating seasonal zone which should be identified by geotechnical investigation.

CONCRETE

C1. All workmanship and materials shall be in accordance with AS 3600-2001.

C2. Concrete quality shall be as follows and shall be verified by tests.

C3. All concrete unless otherwise noted shall have a slump of 80mm at point of placement, a max. aggregate size of 20 mm.
No water shall be added to the mix prior to or during placement of concrete. Strength as specified on plans.

C4. Clear concrete cover to reinforcement shall be as follows unless otherwise shown-

ELEMENT	INTERIOR	EXTERIOR	EXTERIOR CAST AGAINST GROUND
FOOTINGS	-	-	50
COLUMNS/PEDESTALS	30 UNO	REFER TO PLAN	-
SLABS/WALLS	25	REFER TO PLAN	40 ON MEMBRANE
BEAMS	25 UNO	REFER TO PLAN	50
BLOCKWORK	55 FROM APPROPRIATE FACE		

C5. Sizes of concrete elements do not include thickness of applied finishes.

C6. All Construction Joints locations shall be approved by the Structural Engineer.

C7. Beam depths are written first and include slab thickness, if any.

C8. No holes or chases other than those shown on the structural drawings shall be made in concrete elements without the prior approval of the engineer.

C9. Shrinkage reducing admixtures such as 'Eclipse' or approved equivalent, if specified, must be added to mix prior to pour.

C10. Water reducing agents, if specified, must be added to mix prior to pour. No extra water is to be added to increase slump.

C11. Where vertical slab/beam surfaces are formed against a masonry (or other) wall, provide 10 mm styrene separation material.

C12. Water must not be added to concrete mix prior to placement of concrete.

C13. Above covers may have to be adjusted if fire rating is a requirement.

REINFORCEMENT

R1. All reinforcement specified is Grade D500 unless noted otherwise.

R2. Reinforcement is represented diagrammatically it is not necessarily shown in true projection.

R3. Top reinforcement is to be continuous over supports.
Bottom reinforcement to be lapped at supports.

R4. Welding of reinforcement shall not be permitted unless shown on the structural drawings.

R5. Pipes or conduits shall not be placed within the zone of concrete cover to the reinforcement without the approval of the engineer.

R6. All reinforcing bars and fabric shall comply with AS 4671-2001.

R7. Reinforcement symbols:
N - Grade 500N deformed bar (D500) Normal Ductility
R - Grade 250N plain round bar (R250) Normal Ductility.
SL - Grade 500L welded deformed ribbed mesh (D500) Square Low Ductility.
RL - Grade 500L welded deformed ribbed mesh (D500) Rectangular Low Ductility.
The number immediately following these symbols is the number of millimeters in the bar diameter.
Example : 8 N12-250
Denotes 8, Grade 500N deformed bars, 12 mm diameter at 250 cts.

R8. Fabric reinforcement to be lapped 1 complete square + 25 mm unless noted otherwise.

R9 All reinforcement shall be firmly supported on bar chairs spaced at a maximum of 750 centres both ways under rod and fabric reinforcement. Reinforcement shall be tied at alternate intersections.

FORMWORK

FW1. Formwork must be cleaned of all debris prior to casting of concrete.

FW2. Minimum stripping times for form work shall be as recommended in AS 3610 - 1995 or as directed by the engineer.

FW3. The finished concrete shall be a dense homogeneous mass, completely filling the form work, thoroughly embedding the reinforcement and free of stone pockets. All concrete elements including slabs on ground and footings shall be compacted with mechanical vibrators.

FW4. Curing of all concrete is to be achieved by keeping surfaces continuously wet for a period of 3 days, followed by prevention of loss of moisture for seven days followed by a gradual drying out . Approved sprayed on curing compounds may be used where no floor finishes are proposed. Polythene sheeting or wet hessian may be used if protected from wind and traffic.

BRICKWORK

BR1. Brickwork is to be constructed to AS 3700-2001.

BR2. Two layers of approved greased metal based slip material shall be used over all load bearing walls that support concrete slabs and placed on smooth brickwork or trowelled mortar finish. Non load-bearing walls shall have 10 mm compressible material and ties to the slab soffit.

BR3. No brickwork shall be constructed on suspended slabs until all propping has been removed from the underside of the slab and the concrete has the specified 28 day cylinder strength verified by tests.

BR4. Control joints to be placed at a maximum of 8m centres or in accordance with AS 3700-2001.

BR5. Exposure grade bricks to be used below damp proof course.

BR6. Vertical control joint material where specified on plan between slabs and brick walls shall be: 10 mm Spandex External UNO.
Bitumastic fibreboard internal UNO.

BR7. Provide stainless steel wall ties below DPC to AS 3700-2001. Provide galvanized wall ties above DPC to AS 3700 & Local Council Specifications. Stainless steel ties to be used within 1 km of coast & east of Harbour Bridge.

BLOCKWORK

BL1. Concrete blocks shall have a minimum compressive strength of 15 MPa and conform to AS 3700-2001.

BL2. Where cores of hollow blocks are to be filled, properly compacted 20MPa concrete with 10 mm aggregate and 230 mm slump shall be used. Clean out openings must be utilized for all cores.

BL3. Location of actual starters is critical to suit block cores, allow 55 mm cover from the outside face of blockwork. All reinforcement lap lengths to conform to AS 3600-2001.

BL4. Control joints to be placed at a maximum of 8 m centres or in accordance with AS 3700-2001.

BL5. Vertical control joint material where specified on plan between slabs and brick walls shall be: 10 mm Spandex External UNO.
Bitumastic fibreboard internal UNO.

BL6. Retaining walls or any reinforced and concrete core filled block walls to be of Double 'U' Block Construction.

BL7. No blockwork shall be constructed on suspended slabs until all propping has been removed from the underside of the slab and the concrete has the specified 28 day cylinder strength verified by tests. unless approved by the Structural Engineer.

BL8. Max. pour height for unrestrained blockwork is 1000 mm.

STEEL

S1. All Structural steelwork to be Grade 300 or greater.
Design, fabrication and erection to be in accordance with AS 4100-1998.

S2. Materials and workmanship shall comply with AS 1250 - 1981, SAA Steel Structures Code and the specification for Structural Steel.

S3. Rolled steel sections including steel plates shall comply with AS 3678 - 1996.

S4. Cold formed steel sections shall be Grade 450 Zinc coated in accordance with AS 4600-2005.

S5. Welded and seamless steel hollow sections shall comply with AS 1163. Grade 350.

S6. Bolt Designation:
4.6S - Commercial bolts Grade 4.6, snug tightened.
8.8S - High Strength structural bolts Grade 8.8, snug tightened.
8.8TB - High Strength structural bolts Grade 8.8, fully tightened to AS 1511 and acting as a Bearing Joint.
8.8TF - High Strength structural bolts Grade 8.8, fully tensioned to AS 1511 and acting as a Bearing Joint.
Unless noted otherwise, all bolts will be 8.8S.

S7. Unless shown otherwise, minimum connection shall be 2M16 bolts, 10 thick gusset plates, 6mm continuous fillet welds.

S8. Load indicating washers shall be used in all fully tensioned joints. (8.8TF & 8.8TB).

S9. All welding shall be carried out in accordance with AS 1554-2007 SAA Structural Steel Welding Code.

S10. Unless noted otherwise all welds shall be category SP using E41xx Electrodes. All butt welds shall be complete penetration butt welds category SP.

S11. Grouting of anchor bolt sleeves and base plates shall be completed by the contractor using High Strength, Non-Shrink grout.

S12. Fabrication and erection tolerances for Structural Steelwork shall be in accordance with AS 4100-1998.

S13. Purlin bolts shall be M12 - 4.6S galvanised.

S14. Steel work shall have one of the following grades of corrosion protection:-

INTERNAL

a. Thoroughly cleaned wire brushing, followed by two coats of zinc phosphate primer equivalent to Dulux Luxaprime applied by hand using brushes to achieve a total dry film thickness of 70 microns.

EXTERNAL ELEMENTS, & ELEMENTS WITHIN EITHER SKIN OF EXTERNAL CAVITY WALLS

b. Preparation Blast clean to a minimum standard Class 2.5 in accordance with AS 1627-1997 Part 4.
Primer 2-pack epoxy phosphate at dft 75 microns (e.g. Dulux Durepon P14).
Barrier Coat 2-pack epoxy micaceous iron oxide, dft 100 microns (e.g. Ferreko No 3)
Finish Coat 2-pack epoxy high gloss acrylic to dft 75 microns (e.g. Dulux Acrathane 1 F) in an approved colour.

c. Hot dipped galvanized to AS 4680-2006. (Only to be used where more than 5 km from salt water)
Where the galvanic (Hot Dip Galvanized) coating is compromised by welding, bolting or damage, inorganic zinc-rich paint (minimum 95% zinc content) is to be applied after wire brushing affected area (use 3 coats minimum). or Hot Metal Spray in accordance with AS 4680-2006.

S15. Workshop drawings shall be prepared and two copies submitted to the engineer for review prior to fabrication commencement.

TIMBER

T1. All workmanship and materials to be in accordance with AS 1684 -2006, AS 1720-1997 and as 3959-1999. All soft wood to be grade F7 unless noted otherwise. All hardwood to be minimum grade F14 unless otherwise noted. Exposed timber to be CCA treated (to AS 1604-2005) redried after full impregnation, or durability class 1, 2 or 3. We recommend that all softwood timber framing have a minimum treatment protection of H2 or T2 treatment for termite protection unless noted otherwise.

T2. All joists deeper than 150 to have blocking over support bearers and at a maximum 3000 mm centres.

T3. Roof trusses to be designed by the manufacturer to the relevant standards. Pre camber to be an amount equal to dead load deflection u.n.o.

T4. All holes for bolts to be exact size. Washers to be used under all heads and nuts and to be at least 2.5 times the bolt diameter. Bolts to be M16 grade 4.6 unless noted otherwise.

T5. Treat all exposed cut ends with Reseal by Protim to manufacturers specification to achieve required Hazard Level Exposure Classification.

T6. Battens for T & G to be Kiln Dried to 12 %.
38mm minimum deep treated pine or as recommended by supplier. Flooring to be installed no sooner than 28 days after slab pour.

T7. Hot dip galvanized nails/clouts/screws to be used with all timber connections.

T8. Continuous nailing must not be used for any timber connections.

T9. All exposed CCA treated pine to have an application of penetrating sealer to reduce warping and twist of the timber due to varying. moisture content in service.

COMPACTED FILL

CF1. Compacted fill only to be used with approval of the Engineer and to be certified by a Geotechnical Engineer.

CF2. Remove all organic material and topsoil under proposed slabs & footings.

CF3. Filling shall be granular material compacted in not more 200 mm layers to a minimum dry density ratio (AS 1289-2002) of 98 percent.

CF4. During clearing and excavation for slabs and footings cut out soft spots and fill as above.

INSPECTIONS BY ENGINEER

48 HOURS NOTICE IS REQUIRED BEFORE ANY SITE INSPECTION

1. Bearing strata of all footings to be inspected by the Geotechnical Engineer prior to concrete pour.
2. Any reinforcement prior to concrete pour.
3. Timber and Steel framing prior to cladding or lining.
4. Steel lintels after installation.
5. Contact your PCA (Principal Certifying Authority) as to requirements for 'mandatory critical stage' inspections.

DRAWING SCHEDULE:

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.*)

A1

ASSUMED FOUNDATION CLASSIFICATION FOR DESIGN PURPOSES - 'A'

ASSUMED BEARING STRATA FOR DESIGN PURPOSES - ROCK 600 kPa.

REFER TO REPORT BY DAVIES GEOTECHNICAL, REF. 12-030.A DATED JULY 2012.

DOCUMENT CERTIFICATION

Date : JAN. '14

Bruce Lewis .....

I am a qualified Structural/Civil Engineer.
I hold the following qualifications:
BE(Civil),CPEng,MIEAust.,NPER.
Institute of Engineers Membership No. 879131
I hereby state that this drawing is in compliance with the provisions of the Building Code of Australia and/or relevant Australian/Industry

-	-	-

Project:

PROPOSED WORKS
at: 22 DENDROBIUM CRES., ELANORA HEIGHTS
for: RICHARD & KARLA HEGGIE

Drawing Title:

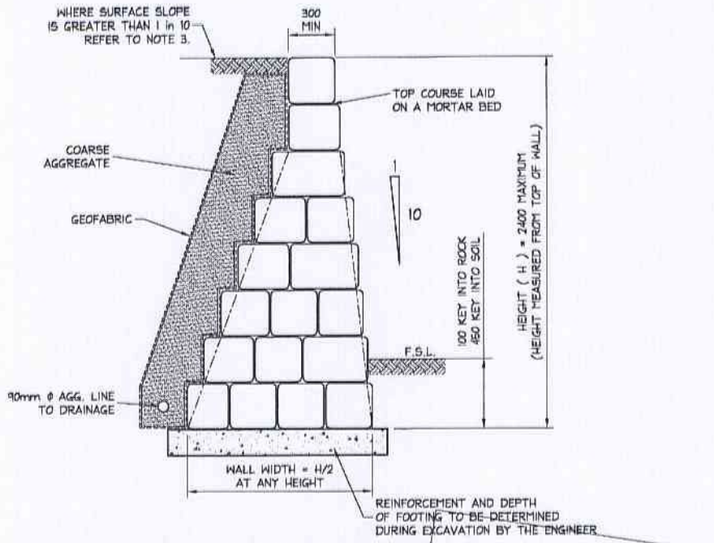
GENERAL NOTES & DRAWING SCHEDULE

Job No:	Drawing No:	Rev:
13-1103	S01	-

Peninsula Consulting Engineers
PO Box 841, Brookvale, NSW, 2100
Ph: 0424 253 816 Fax: (02) 9982 4722
E : bruce@peninsulaconsulting.com.au

GRAVITY STONE RETAINING WALL NOTES:

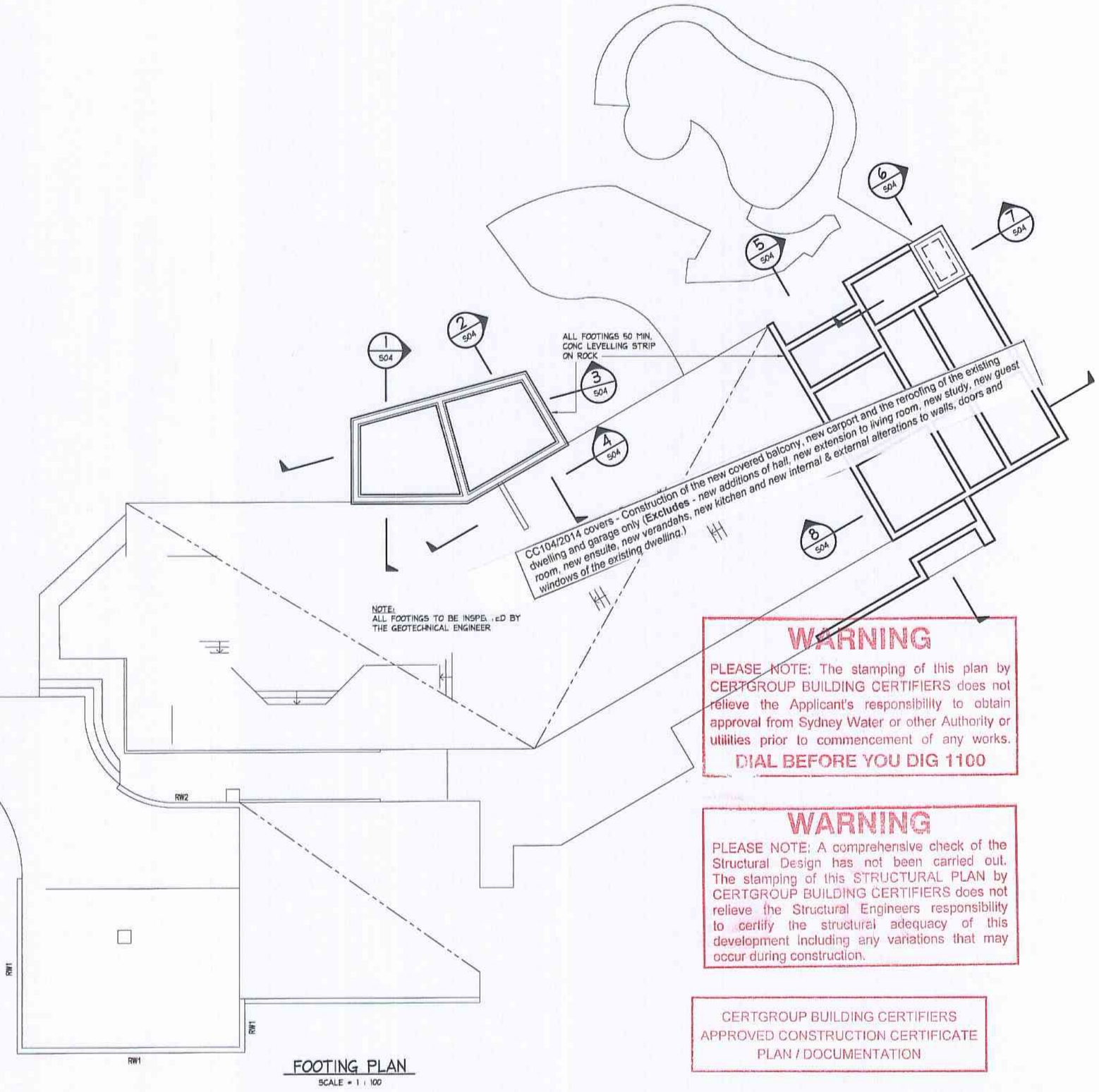
1. BACKFILL IS TO BE GRANULAR, FREE DRAINING AND COMPACTED.
2. FOUNDATION TO BE APPROVED FOR A SAFE BEARING CAPACITY OF 200 KPa PRIOR TO CONSTRUCTION.
3. THE RETAINING WALL HAS BEEN DESIGNED FOR 5 kPa SURCHARGE OR 1 in 4 SLOPE OF RETAINED MATERIAL.
4. ROCK IS TO BE SOUND DURABLE SANDSTONE OR OTHER APPROVED MATERIAL. MINIMUM SIZE 200 DEEP x 300 WIDE x 400 LONG.
5. A CONTINUOUS 90mm DIA. SUBSOIL DRAIN IS TO BE INSTALLED AT THE REAR OF THE WALL.
6. ROCKS SHALL BE PLACED IN SUCH A MANNER THAT THEY ARE STABLE AND INTERLOCKING AND LAID ROUGHLY COARSED AND BEDDED ON THEIR BROADEST BASE.



SELECT WALL THICKNESS FOR HEIGHT REQUIRED
MAXIMUM HEIGHT OF WALL = 2400 mm

TYPICAL GRAVITY STONE 'RWI' RETAINING WALL DETAIL

SCALE = 1 : 20



FOOTING PLAN

SCALE = 1 : 100

WARNING

PLEASE NOTE: The stamping of this plan by CERTGROUP BUILDING CERTIFIERS does not relieve the Applicant's responsibility to obtain approval from Sydney Water or other Authority or utilities prior to commencement of any works.

DIAL BEFORE YOU DIG 1100

WARNING

PLEASE NOTE: A comprehensive check of the Structural Design has not been carried out. The stamping of this STRUCTURAL PLAN by CERTGROUP BUILDING CERTIFIERS does not relieve the Structural Engineers responsibility to certify the structural adequacy of this development including any variations that may occur during construction.

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

A1

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES AND DRAWING SCHEDULE REFER TO DRAWING NUMBER S01

MEMBER

DOCUMENT CERTIFICATION

Date : JAN. '14

Bruce Lewis .....

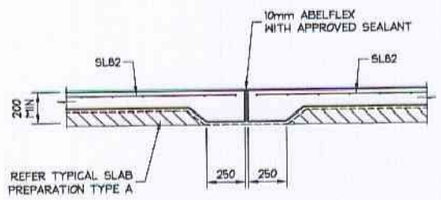
(Principal : Peninsula Consulting Engineers)

Peninsula Consulting Engineers
PO Box 841,
Brookvale, NSW, 2100
Ph: 0424 253 618 Fax: (02) 9982 4722
E : bruce@peninsulaconsulting.com.au

Project:
PROPOSED WORKS
at: 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
for: RICHARD & KARLA HEGGIE

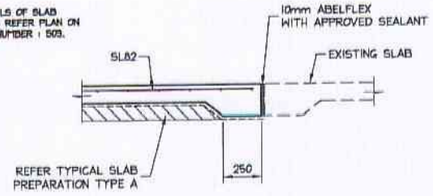
Drawing Title:
FOOTING PLAN & DETAILS

Job No:	Drawing No:	Rev:
13-1103	S02	

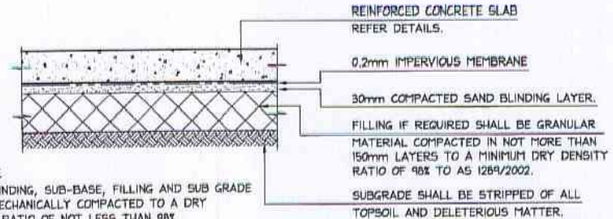


EXPANSION JOINT DETAIL
DENOTED E.J. ON PLAN
SCALE = 1 : 20

FOR DETAILS OF SLAB THICKNESS REFER PLAN ON DRAWING NUMBER : 503.

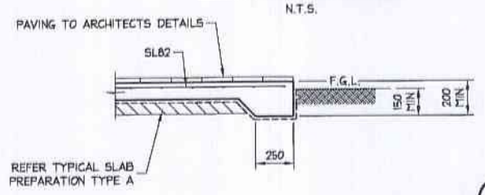


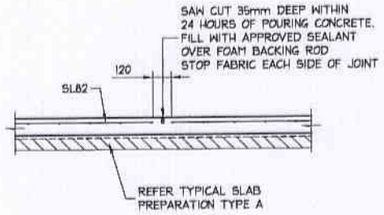
EXPANSION JOINT DETAIL
DENOTED E.J. ON PLAN
SCALE = 1 : 20



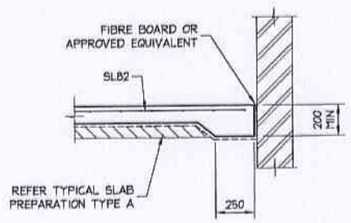
NOTE :
SAND BLINDING, SUB-BASE, FILLING AND SUB GRADE TO BE MECHANICALLY COMPACTED TO A DRY DENSITY RATIO OF NOT LESS THAN 98% MAXIMUM DRY DENSITY TO A.S. 1289/2002. ALL AREAS TO BE TESTED BY GEOTECHNICAL ENGINEER AND RESULTS FORWARDED TO STRUCTURAL ENGINEER PRIOR TO POURING CONCRETE.

TYPICAL SLAB PREPARATION TYPE A
SLAB ON GRADE
N.T.S.



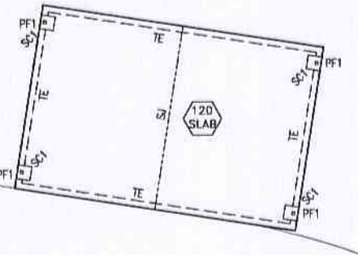


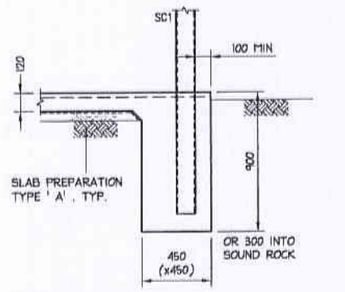
SAW CUT JOINT DETAIL
DENOTED S.J. ON PLAN
SCALE = 1 : 20



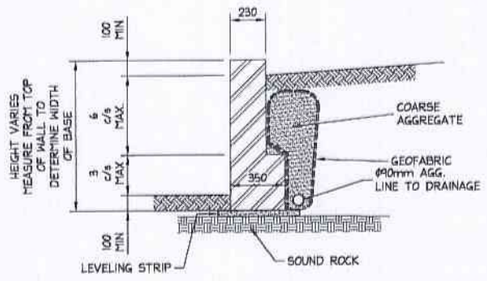
ISOLATION JOINT DETAIL
DENOTED I.J. ON PLAN
SCALE = 1 : 20

THICKENED EDGE DETAIL
DENOTED T.E. ON PLAN
SCALE = 1 : 20

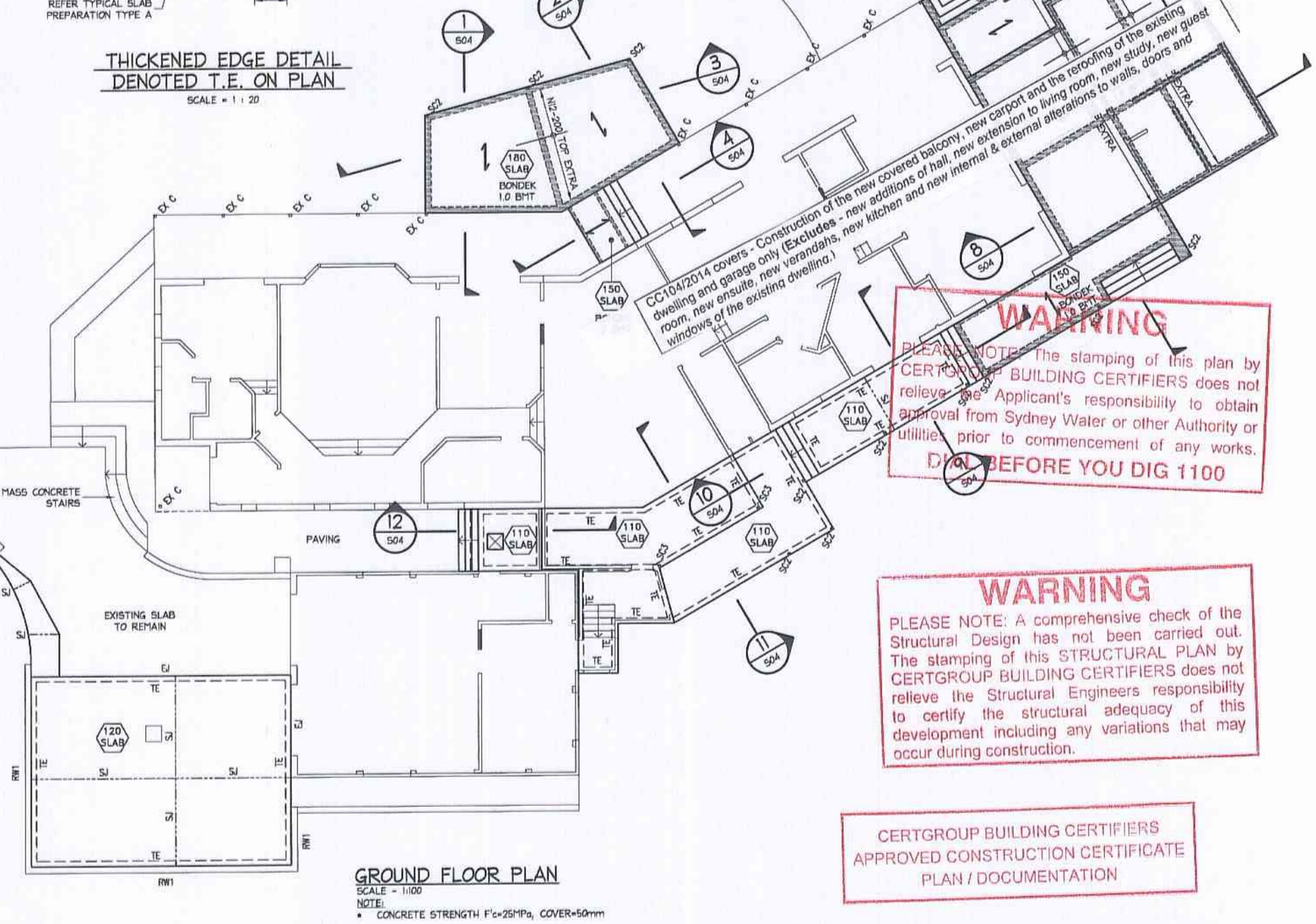




POST FOOTING (PF1) DETAIL
SCALE = 1 : 20



TYPICAL BRICK 'RW2' RETAINING WALL
SCALE = 1 : 20



GROUND FLOOR PLAN
SCALE - 1:100
NOTE:
- CONCRETE STRENGTH F'c=25MPa, COVER=50mm

A1

NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES AND DRAWING SCHEDULE REFER

MEMBER

DOCUMENT CERTIFICATION
Date : JAN. '14
Bruce Lewis
(Principal : Peninsula Consulting Engineers)

Peninsula Consulting Engineers
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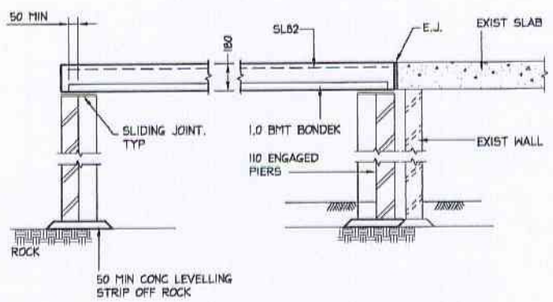
Brookvale, NSW, 2100
Ph: 0424 253 818 Fax: (02) 9982 4722
E : bruce@peninsulaconsulting.com.au

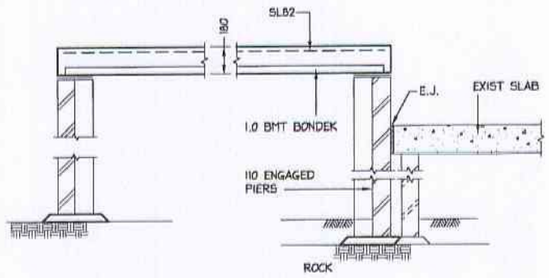
Project:
PROPOSED WORKS
at: 22 DENDROBIUM CRESCENT,
ELANORA HEIGHTS

Drawing Title:
GROUND FLOOR PLAN
& DETAILS

Job No:	Drawing No:	Rev:
13-1103	S03	-



SECTION 1 — SCALE = 1:20 — S03



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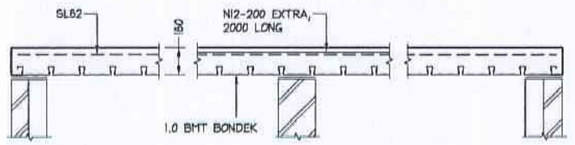

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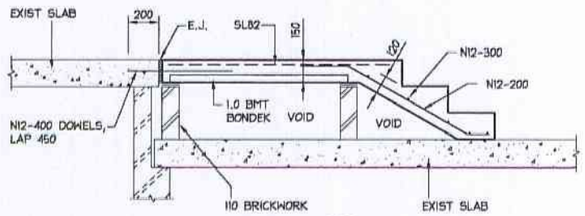

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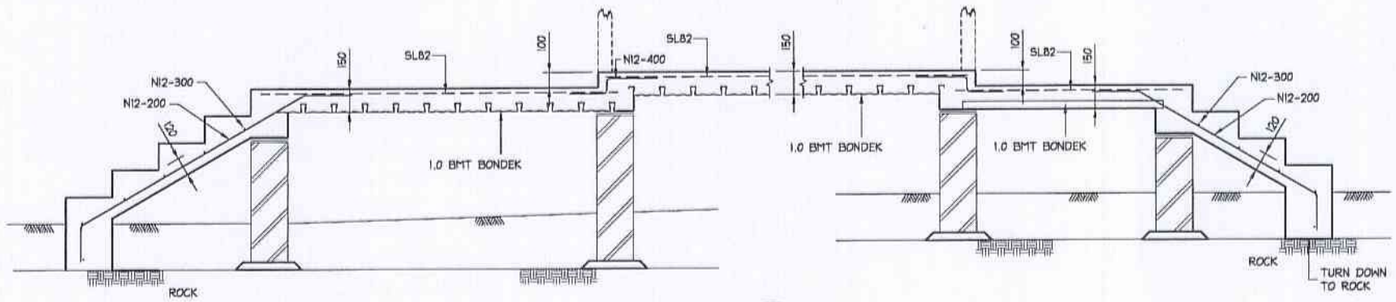

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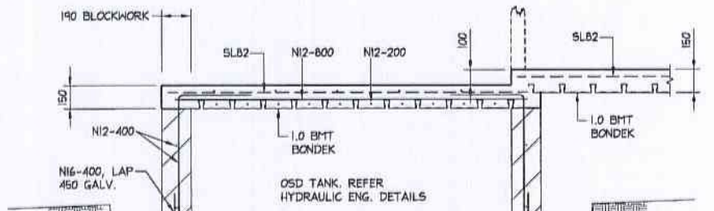

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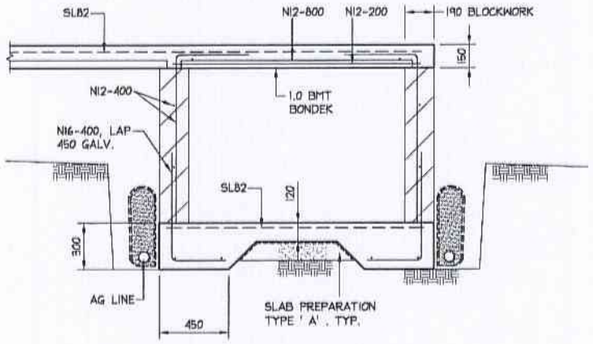

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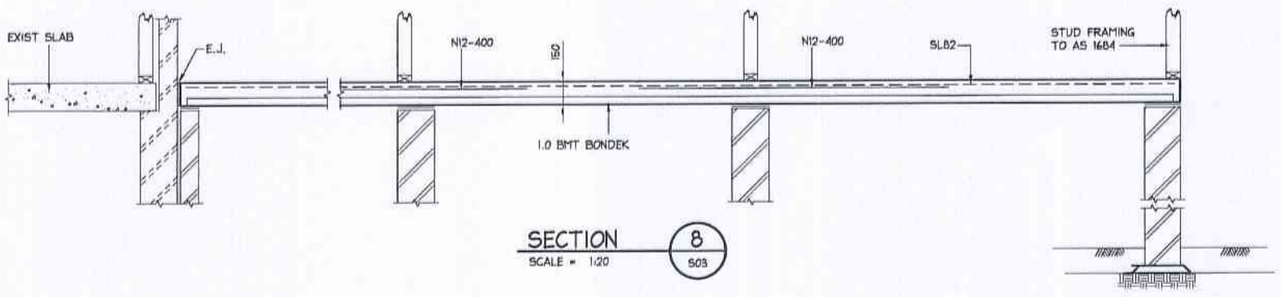

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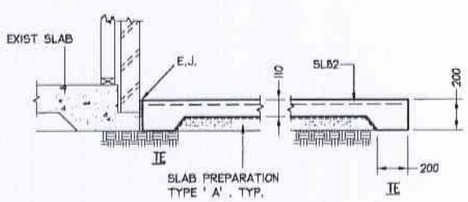

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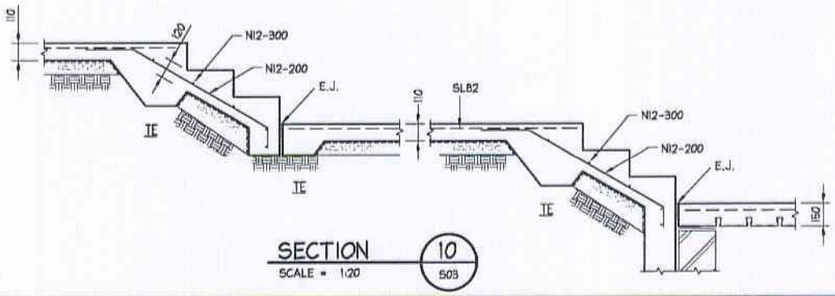
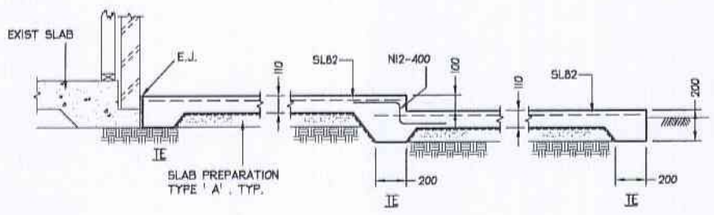


SECTION 10 — SCALE = 1:20 — S03



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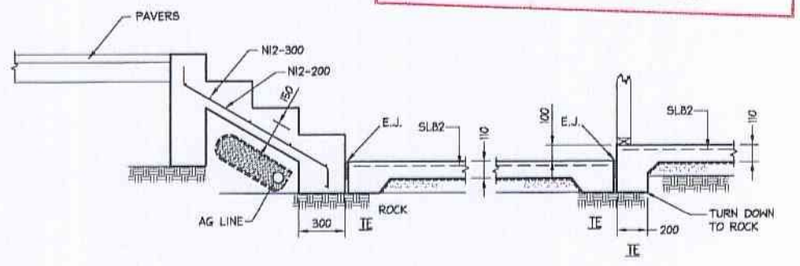


SECTION 12 — SCALE = 1:20 — S03

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

A1

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES AND DRAWING SCHEDULE REFER TO DRAWING NUMBER S01

MEMBER

DOCUMENT CERTIFICATION

Date : JAN. '14

Bruce Lewis

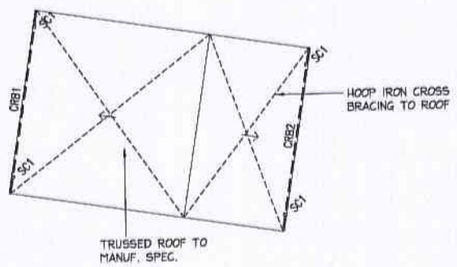
(Principal : Peninsula Consulting Engineers)

Peninsula Consulting Engineers
PO Box 641,
Brookvale, NSW, 2100
Ph: 0424 253 818 Fax: (02) 9982 4722
E : bruce@peninsulaconsulting.com.au

Project:
PROPOSED WORKS
at: 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
for: RICHARD & KARLA HESSIE

Drawing Title:
GROUND FLOOR DETAILS

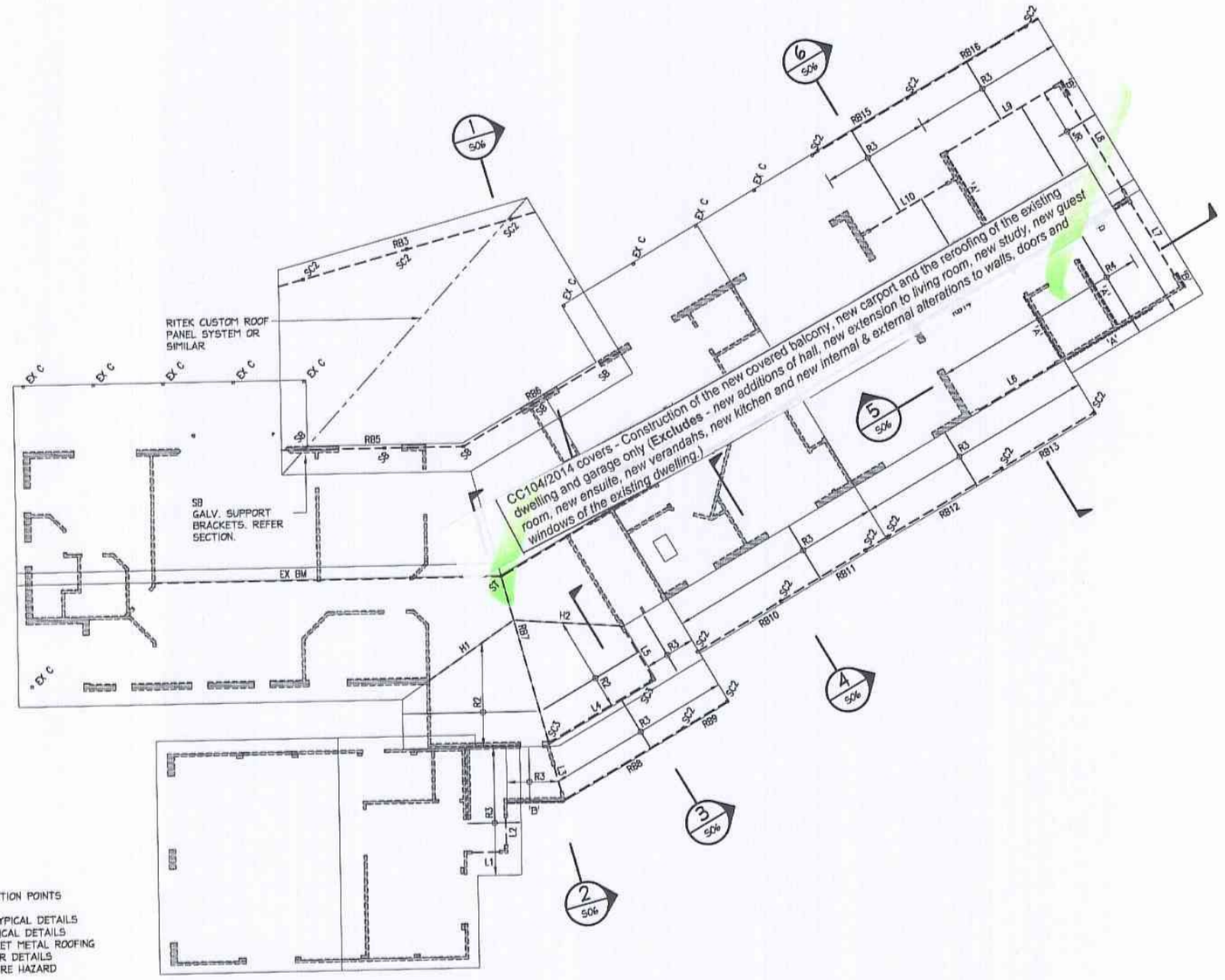
Job No:	Drawing No:	Rev:
13-1103	S04	



MEMBER SCHEDULE:
SC1 - 125 x 125 x 5 SHS HD GALV. COLUMN
SC2 - 90 x 90 x 5 SHS HD GALV. COLUMN
SC3 - 90 x 90 x 5 SHS COLUMN
SB - 75 x 75 x 4 SHS STUB COLUMN
CRB1,2 - 200 PFC HD GALV. ROOF BEAM
RB1 - NOT USED
RB2,4 - NOT USED
RB3 - 180 PFC HD GALV. ROOF BEAM
RB5,6 - 180 PFC HD GALV. ROOF BEAM
RB7 - 250UB37 CRANKED ROOF BEAM
RB8,9 - 150 PFC CONT. ROOF BEAM
RB10,11 - 190 x 45 F17 HWD ROOF BEAM
RB12,13 - 150 PFC HD GALV OR 240 x 45 F17 HWD ROOF BEAM
RB14,15,16 - 300 x 63 LVL ROOF BEAM
RB14A - 200 x 45 LVL ROOF BEAM
L1,2,3 - 150 x 45 LVL LINTEL
L4 - 250 PFC LINTEL (BIFOLD DOOR)
L5 - 200 x 45 LVL LINTEL
L6,7,8,10 - 240 x 63 LVL LINTEL
L9 - 2/300 x 45 LVL LINTEL
H1,2 - 240 x 45 LVL HIP RAFTERS
R1 - NOT USED
R2,4 - 200 x 45 LVL AT 600 CTS RAFTERS
R3 - 140 x 45 MGP10 AT 600 CTS RAFTERS
JR - JACK RAFTERS TO MATCH ADJACENT
H1,2 - 200 x 45 LVL HIP RAFTERS

ROOF FRAMING PLAN
SCALE - 1:100

NOTE:
- PROVIDE DOUBLE STUDS UNDER ALL LOAD CONCENTRATION POINTS
- PROVIDE ROOF BRACING TO AS1684
- 'A' - ANGLE BRACING TO WALLS, TO AS1684, REFER TYPICAL DETAILS
- 'B' - PLY BRACING TO WALLS, TO AS1684, REFER TYPICAL DETAILS
- EXISTING ROOF TILES REMOVED & REPLACED WITH SHEET METAL ROOFING
- ALL EXISTING ROOF FRAMING TO BE TIED DOWN, REFER DETAILS
- ALL EAVES & CEILINGS TO BE LINED TO MEET BUSH FIRE HAZARD REQUIREMENTS



CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

A1

NOTES:
1. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WITH WORK.

MEMBER

DOCUMENT CERTIFICATION
Date : JAN. '14
Bruce Lewis .....

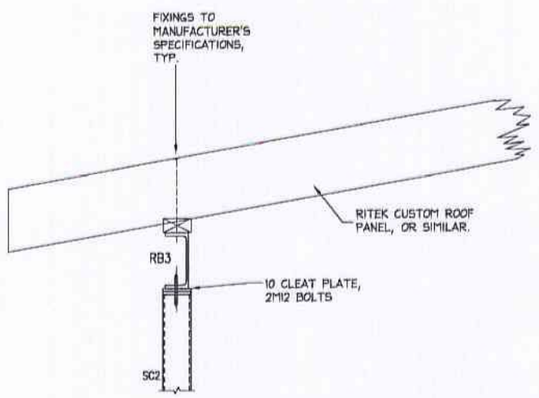
11-02-2014	C	REMOVE NOTES
11-02-2014	B	MODIFY VERANDA BEAMS
7-02-2014	A	MODIFY VERANDA BEAM

Peninsula Consulting Engineers
PO Box 841
Brookvale, NSW, 2100
Ph: 0424 253 816 Fax: (02) 9982 4722
E : bruce@peninsulaconsulting.com.au

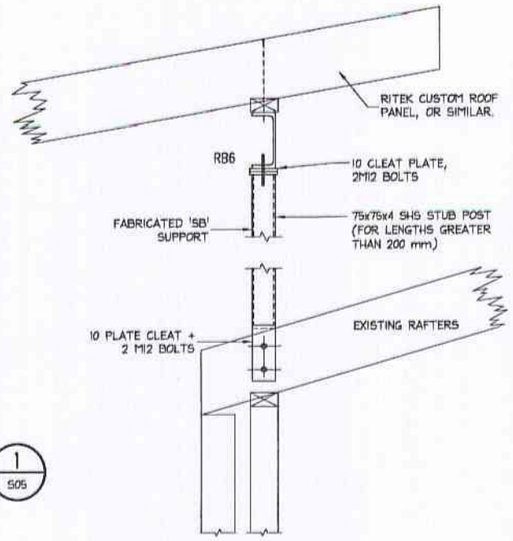
Project:
PROPOSED WORKS
at: 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
for: RICHARD & KARLA HEGGIE

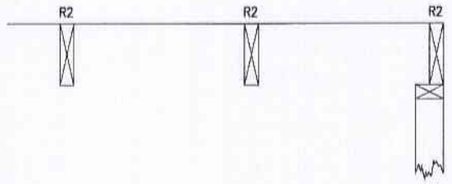
Drawing Title:
ROOF FRAMING PLAN
-

Job No:	Drawing No:	Rev:
13-1103	S05	C



SECTION 1
SCALE = 1:10 S05





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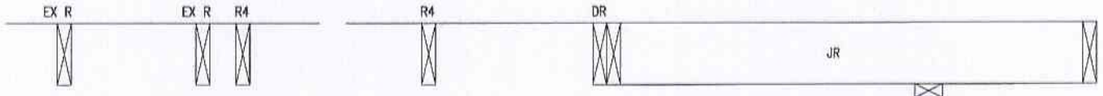
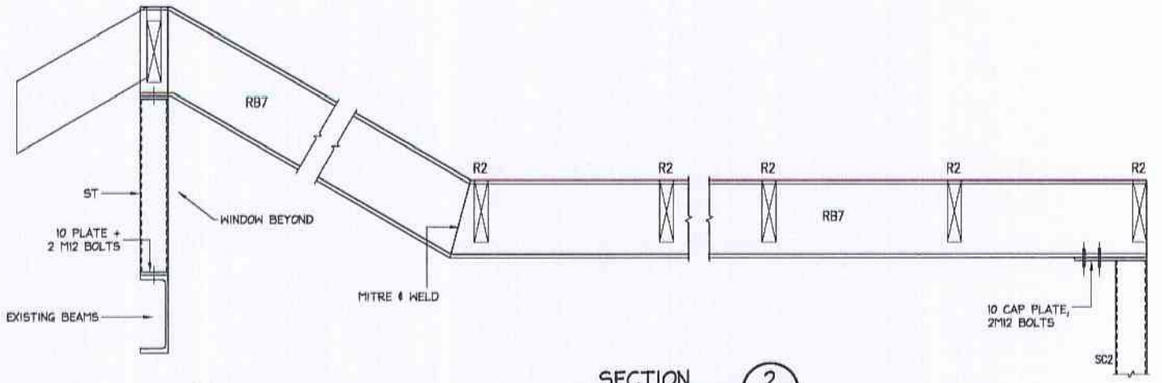
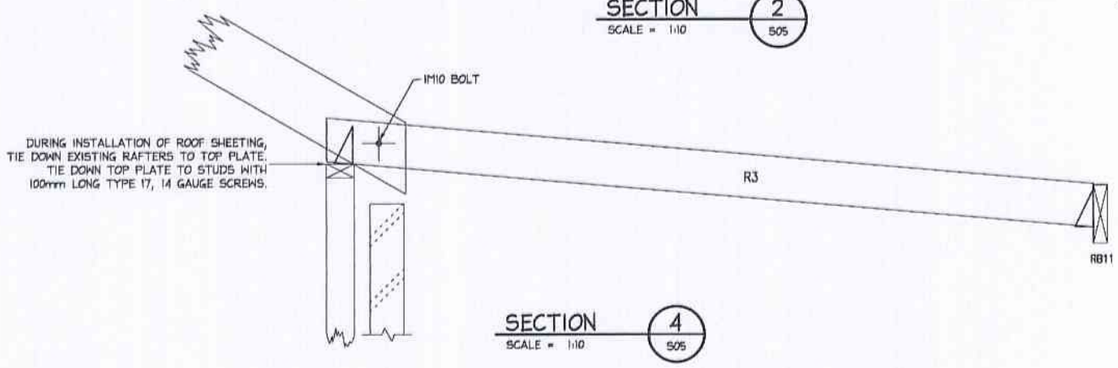


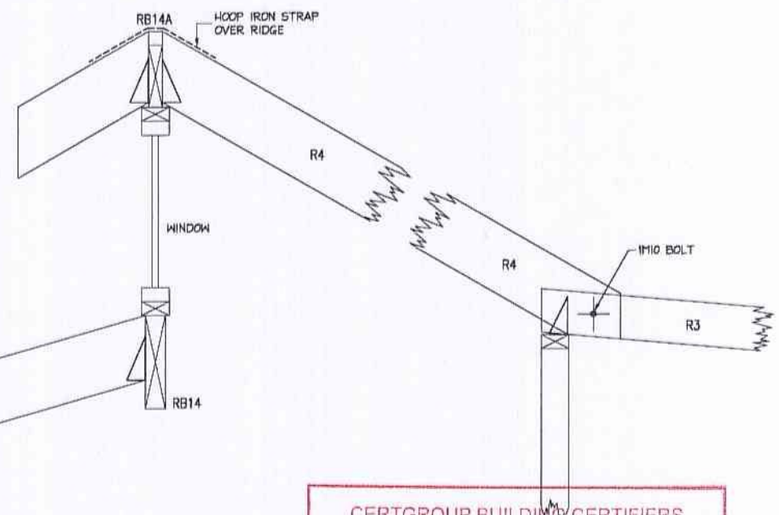
SECTION 5
SCALE = 1:10 S05



SECTION 2
SCALE = 1:10 S05



SECTION 4
SCALE = 1:10 S05



SECTION 6
SCALE = 1:10 S05

A1

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES AND DRAWING SCHEDULE REFER TO DRAWING NUMBER: 601

MEMBER

DOCUMENT CERTIFICATION

Date : JAN. '14

Bruce Lewis .....

(Principal : Peninsula Consulting Engineers)

11-02-2014	B	MODIFY BEAMS AND SECTION
7-02-2014	A	MODIFY BEAM AND SECTION

Peninsula Consulting Engineers
PO Box 841,
Brookvale, NSW, 2100
Ph: 0424 253 818 Fax: (02) 9982 4722
E : bruce@peninsulaconsulting.com.au

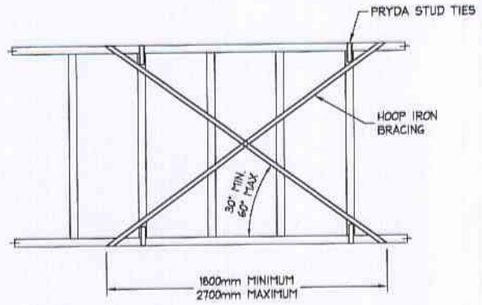
Project:
PROPOSED WORKS
at: 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
for: RICHARD & KARLA HEGGIE

Drawing Title:
ROOF DETAILS
-

Job No:	Drawing No:	Rev:
13-1103	606	B

METAL TENSION STRAP BRACING:

30 x 0.8 mm TENSIONED HOOP IRON STRAP BRACING FIXED WITH ONE GALVANISED FLATHEAD NAILS 30 mm x 2.8mm ϕ TO EACH STUD, AND THE FACE OF THE TOP AND BOTTOM PLATE.
PROVIDE FOUR GALVANISED FLATHEAD NAILS 30mm x 2.8mm ϕ TO THE STRAP RETURN OVER THE TOP PLATE AND UNDER THE BOTTOM PLATE.



NOTES:

1. FOR POWER DRIVEN NAILS REFER ABOVE.
2. NOGGINGS HAVE BEEN OMITTED FOR CLARITY.
3. BASED ON WALL HEIGHT OF 2.7 m. AT 4.0 m HIGH, CAPACITY OF WALL BRACING IS DECREASED BY ALMOST 10%.

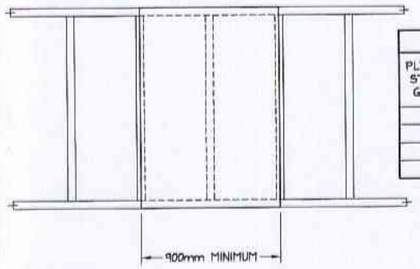
TYPE A - WALL BRACING UNIT

SCALE = 1 : 20

CAPACITY TO AS1684 - 3.0 KN

PLYWOOD BRACING:

FIX PLYWOOD PANELS WITH GALVANISED FLATHEAD NAILS 30 mm x 2.8 ϕ LONG MINIMUM OR EQUIVALENT AT 50mm CENTRES ALONG TOP AND BOTTOM PLATES, 150mm CENTRES ALONG VERTICAL EDGES AND 300mm CENTRES ALONG INTERMEDIATE STUDS. TO PROVIDE TOP & BOTTOM SPACING OF 150 mm, PROVIDE M12 ROD TO EACH END OF BRACING FRAME. M12 ROD SHOULD BE CONNECTED TO TOP & BOTTOM PLATE. NAILS SHALL BE LOCATED A MINIMUM OF 7mm FROM PANEL EDGES. POWER DRIVEN GALVANISED NAILS OR COATED STAPLES MAY BE USED WHERE THEY PROVIDE AT LEAST THE EQUIVALENT STRENGTH TO HAND DRIVES 30 mm x 2.8 ϕ LONG GALVANISED CLOUTS OR FLATHEAD NAILS.



PLYWOOD THICKNESS

PLYWOOD STRESS GRADE	PLYWOOD THICKNESS	
	MAXIMUM STUD SPACING	
	450mm	600mm
F8	7.0mm	9.0mm
F11	6.0mm	7.0mm
F14	4.0mm	6.0mm
F27	4.0mm	4.5mm

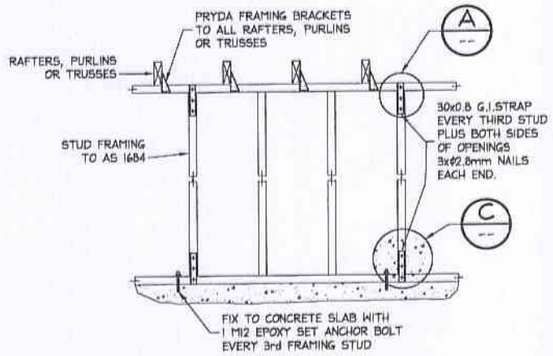
NOTES:

1. FOR PLYWOOD THICKNESS REFER TO TABLE.
2. FOR POWER DRIVEN NAILS REFER ABOVE.
3. PANEL EDGES SHALL BE SUPPORTED BY STUDS.
4. NOGGINGS HAVE BEEN OMITTED FOR CLARITY.

TYPE B - WALL BRACING UNIT

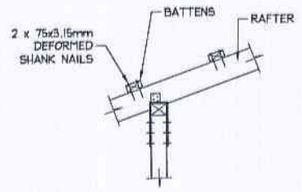
SCALE = 1 : 20

CAPACITY TO AS1684 - 6.0 KN



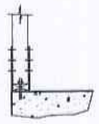
TYPICAL TIE DOWN DETAIL

SCALE = 1 : 20



DETAIL A

SCALE =1:20



DETAIL C

SCALE =1:20

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

A1

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES AND DRAWING SCHEDULE REFER

MEMBER

DOCUMENT CERTIFICATION

Date : JAN. '14

Bruce Lewis .....

(Principal : Peninsula Consulting Engineers)

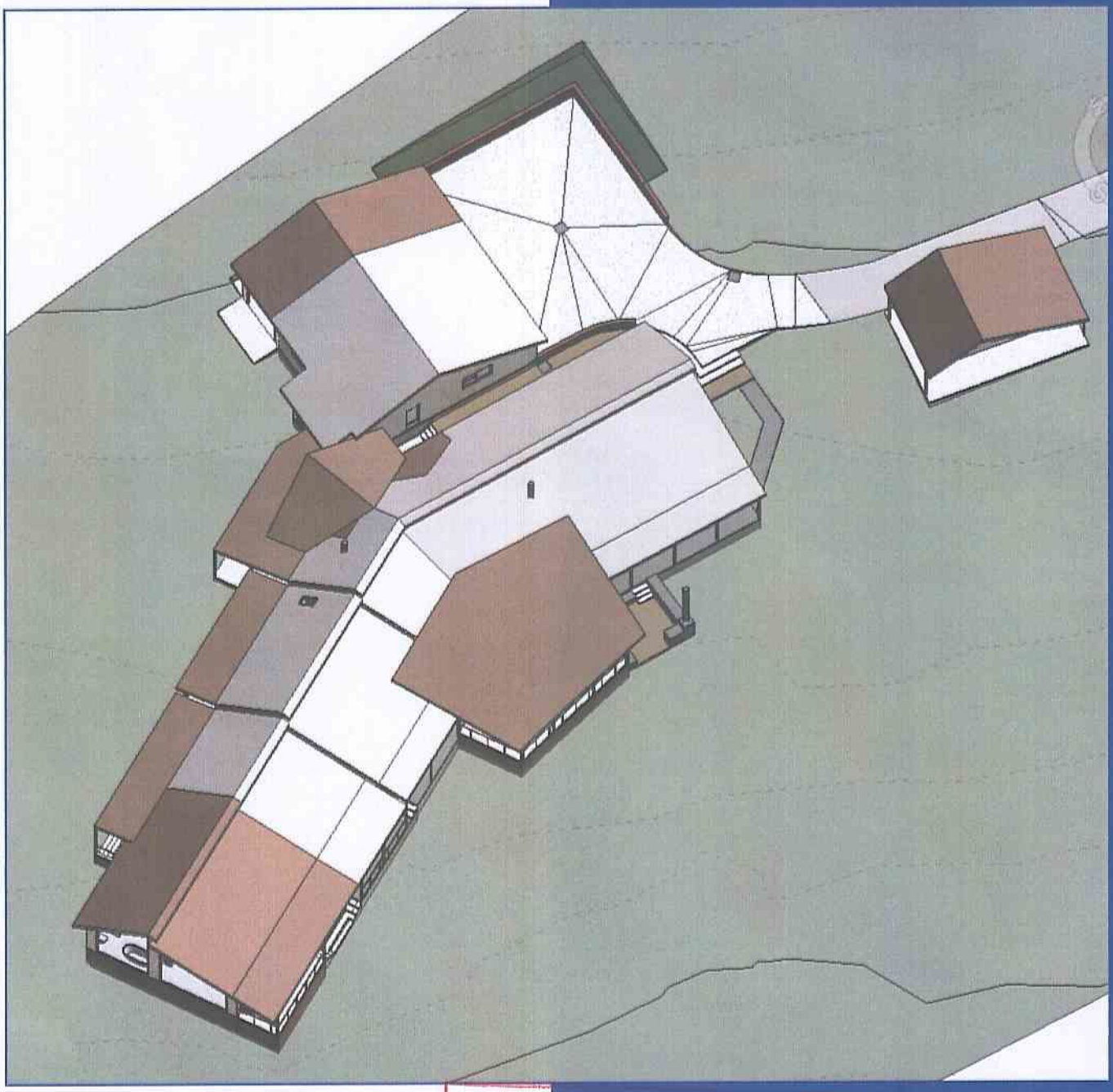
Peninsula Consulting Engineers
PO Box 841,
Brookvale, NSW, 2100
Ph: 0424 253 818 Fax: (02) 9982 4722
E : bruce@peninsuleconsulting.com.au

Project:
PROPOSED WORKS
at: 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS
for: RICHARD & KARLA HEGGIE

Drawing Title:
WALL BRACING & TIE DOWN DETAILS

Job No:	Drawing No:	Rev:
13-1103	S07	-

peterdownes
multi-award winner designs



CERTC
APPROVE
P

22 Dendrobium Cr.
Elanora Hts, NSW, 2102

Construction Specifications

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

SUMMARY OF BEST PRACTICE

The path of Best Practice in satisfactorily procuring a built project will typically include the following ten points:

1. From the project outset formal written agreements between the Client and the Consultants detailing the obligations and extent of responsibilities of each to the other.
2. Detailed and ongoing communications (preferably systemised) between all parties relevant to each stage of the process – so that everyone is always aware of each other's expectations.
3. There is a mandatory obligation on the parties to cooperate adequately and promptly for this to be constructively achieved.
4. Documentation needs to follow current international drawing practice and unambiguous specifications to refer to Australian and other relevant Standards so that building professionals can accurately and efficiently interpret the building required.
5. Building contracts that are vaguely completed (unresolved or inadequate Prime Cost and Provisional Sums) or favour any one signatory party over the other should not be used.
6. Professional neutrality in the administration of the building contract is essential.
7. Clear and adequate documentation (drawings and specification) is required to enable progress to be achieved without confusion arising on the building site.
8. Timely and well documented responses to any questions or needed clarifications should they arise to ensure no one is subject to loss or inconvenience.
9. Clean, tidy and well organised site management to engender a good feeling in all participants of the project is of incalculable value in producing a quality product.
10. A thorough and properly administered Project Schedule giving all parties a clear understanding of where they fit in to the process and when they will be expected to perform their role and who they will be affecting if they don't, cannot be understated.

CONTENTS

1. DEMOLITION

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Pay fees in connection with this trade to authorities having jurisdiction.
Demolish in accordance with demolition drawings
Identify material containing asbestos and take responsibility for safe, authorised removal and disposal, according to relevant authorities having jurisdiction.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.
Clean site thoroughly on completion.

GENERAL
Co-operate with Excavation & Fill to resolve possible problems before starting work:
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 2436 2010 Guide to noise and vibration control on construction, demolition and maintenance sites.
AS 2601 2001 Demolition of structures.
National Code Practice for the Safe removal of Asbestos 2nd Edition [NOHSC: 2002 (2005)] Comply throughout with the current edition of the NCC - National Construction Code (BCA).
Explosives: no blasting for demolition purposes is permitted.
Restoration: make good to original condition, any damage to retained structures and adjacent property resulting from demolition operations, or damage caused from failure to provide adequate protection. Photograph damage before and after to submit to architect, and perform restoration work without expense to the proprietor.
Noise: ensure noise is kept to a minimum and be considerate of neighbouring occupants.

MATERIALS
Supply sufficient equipment and labour to complete the work to meet the contract completion date.
Provide Code compliant containers for disposal required. Provide for safe removal of any identified toxic substances (eg asbestos – see notes in 00800 Supplementary Conditions of Contract in the Preliminaries)
Material required to be demolished becomes the property of the contractor. Remove it from the site.

ON-SITE ACTIONS
Inspection: inspect conditions at site before starting work. Report any unsatisfactory situation to the architect. Start of work means total acceptance of conditions.
Existing services: ensure unwanted existing utilities, such as gas reticulation and electrical wiring, are legally disconnected and out of service to a point nominated beyond the work site so that remaining reticulation can be removed without danger.
Protection: provide measures required by laws and regulations for the protection of the public, occupants, workmen, surrounding property, footpaths, streets and kerbs during demolition operations. Comply by means of barricades fences, warning lights, signs, rubbish chutes, etc. Protect and indicate vegetation which is to be preserved (Refer to Planning Conditions).
Execution: exercise due care in executing this work.
No debris to be burnt on the site.
Provide shoring as necessary in accordance with structural engineer's instructions. Alter, adapt, and maintain temporary works as necessary, and strike or withdraw them progressively as the work proceeds.

2. EXCAVATION & FILL

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Prepare site, excavate for foundations, slabs, paving, drains, pits and roads. Remove trees and other vegetation authorised for removal, including any roots where they prevent building work, paving, trenches etc. Remove topsoil from building footprint and stockpile on site for later re-spreading as directed.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operate with these trades to resolve possible problems before starting work: water distribution, sanitary sewerage, storm drainage, pavements, concrete.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 3798 2007 Guidelines on earthworks for commercial and residential developments.
AS/NZS 4200.2 1994 Pliable building membranes and underlays - Installation requirements.
AS 4678 2002 Earth-retaining structures.
Comply with particular specifications in Building Regulations and/or Local Council publications.

Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).
Explosives: no blasting for excavation purposes is permitted.
Restoration: make good to original condition, any damage to retained structures and adjacent property resulting from excavation operations, or damage caused from failure to provide adequate protection. Photograph (date-stamped) pre-existing damage before commencing work and submit to architect, and perform restoration work of all subsequent damage to approval of the architect without expense to the proprietor.
Noise: ensure noise is kept to a minimum and considerate of neighbouring occupants.
Provide equipment needed to affect a termite treatment which complies with the applicable Australian Standards.

ON-SITE ACTIONS
Inspection: inspect conditions at site before starting work. Start of work means total acceptance of conditions.
Site drainage: on all sloping sites or where clay is present, arrange for a Geotechnical Report from a qualified professional.
Protection: prepare to protect excavations from damage and ensure protection of existing structures or new work.
Clear site under building and paving of plants, trees, rocks shown on plan. Leave surface free of any ponding depressions.
Execution: install surface and sub soil drainage to the satisfaction of the authorities and the structural engineer. Excavate for strip footings and edge beams, paving, water and piped supply and drains, pits. Provide fill and compact in 150 mm layers, to 95% of maximum density, by vibrating or watering – refer method to Structural Engineer. Maintain excavations free of water. Install waterproof membrane over sand. Seal laps. Underlay to extend to top of slab level and under base of wall flashing and protect from damage. Seal service pipe penetrations. Inspect and repair membrane/taping damage before concrete pour.
Below footings and slabs on ground, install hardcore, beams and other structural elements, concrete to be of strength equal to the structural element, minimum 15MPa.
In service trenches: 1:2:4 concrete or approved compacted pipe bedding material.

3. PLUMBING (Water, Gas & SOLAR), DRAINAGE (Sewer & Stormwater) & WATER STORAGE

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and install or lay:
- pipes to distribute water from water main supply to each required outlet.
- pipes from hot water heater to each required outlet.
- reticulate a complete system as required to connect scheduled appliances to gas supply mains.
- a complete system of sewer drains to discharge sewage waste to the authority's sewer main, or to on-site septic tank.
- a complete system of site storm water drainage including agricultural drains, drains below slabs and pavements, retaining wall drains, culverts, pits, frames, manhole covers
- water storage materials and equipment for storage of rain and other potable water, including tanks, stands, filters, reticulation
- Roof plumbing.

Apply for permits and pay required fees and charges to authorities having jurisdiction. Provide permits and approval certificates to contractor.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.
Preparation: by Excavation & Fill contractor.
Design: provide a design to the architect for installation of sanitary sewerage prior to construction.

GENERAL
Co-operation: to resolve possible problems before starting work co-operate and co-ordinate with each trade involved in the construction of the building including: concrete, carpentry, plasterer, tiler.
Standards: comply with the applicable clauses of current editions of these building Standards:

AS/NZS 1260 2009	PVC-U pipes and fittings for drain, waste and vent application.
AS 1432 2004	Copper tubes for plumbing, gasfitting and drainage applications.
AS/NZS 2032 2006	Installation of PVC pipe systems.
AS/NZS 2712 2007	Solar and heat pump water heaters.
AS/NZS 3500 2003	Plumbing and drainage.

3500.2 2003 Sanitary plumbing and drainage.
3500.5 2012 Housing installations.
AS 3688 2005 Water supply - Metallic fittings and end connectors.
AS 4809 2003 Copper pipe and fittings – Installation and commissioning.
AS/NZS 5065 2005 Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications.
HB 230 2008 Rainwater Tank Design and Installation Handbook.
HB 328 2008 Urban Greywater Installation Handbook for Single Households

Comply with particular specifications in Building Regulations and/or Local Council publications.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing conditions to the drawings before delivery of materials to site. Start of work means total acceptance of conditions. Report any situations requiring preparatory work to the architect.
Execution: form straight and true trenches 600mm clear of walls, maintain sides, and keep free from water. Form trenches and bedding to provide constant falls as approved by the local authorities.
Prepare trenches and paths of pipes through structure.
Contractor to form cutouts of minimum size to take pipes. Not to be done by plumber. Penetrations to the fabric of the building to be sealed for air/moisture leakage.
Ensure correct pipe sizes. Provide upstands and connect (vermin proof) to bottom of downpipes. Provide inspection openings where authority requires (maximum 6 metre intervals), bends and junctions. Provide complete seals at junctions and ends in accordance with manufacturer's written instructions.
Arrange for inspection by local authority. When issued, back fill with material approved by local council and architect. Remove debris and clean areas beside excavation for drains.
Connect sanitary fittings to sewer pipes with permanently secure joints.
Jointing of pipes: on manufacturer's advice, select from: capillary, brazed, compression, pushfit, solvent-welded. Chrome plate all exposed pipes.
Gas reticulation: To comply with supply authority regulations and relevant standards.
Roof plumbing: provide gradients, flashings, sealing and related work to ensure that no water penetrates to the inner part of the building.
Installation of Water Tank(s): ensure that each part of the site or building to which equipment will be connected is secure and will permanently support components. Connect a minimum of 50 square metres of roof catchment to the rainwater tank.
Ensure that falls will promote water flows.
Arrange installed components in logical sequence. Form secure connections without causing damage to existing building or structures. Connect other services (mains supply/ electrical power) as required by specified equipment to ensure operability to manufacturer's recommendations. House electrical equipment (pressure pump, switching system) in weatherproof accessory covers.
Install reticulation pipes to match where possible the materials described in this trade section

Provide "as built" drawings to architect showing actual dimensions and locations of pipes. Cover no pipes until local authority has issued certificate. Protect installation until completion of project.
See Schedule of Sanitary & Equipment Items.

4. CONCRETE & CONCRETE SCREEDS

kwinana.wa.gov.au/images/termite-treatment-information-sheet.px
SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Discuss with council whether Part A or Part B termite control is to be used on site.
Supply and install:
material required for termite control, concrete, reinforcing steel, formwork, for strip footings, floor slabs, paving, pits.
concrete screeds on a prepared base, with coves, risers, kerbs, margins, pit covers etc.
waterproofing materials, curing and protection.
Avoid spraying of building footprint or impregnation with any product labelled as a poison.
Pay all fees relating to this trade to relevant authority having jurisdiction.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.
See Schedule of Finishes.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: excavation & fill, storm drainage, sanitary sewerage, pavements, concrete screeds.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1379 2007 Specification and supply of concrete.
AS 2870 2011 Residential slabs and footings - Construction.
AS 2876 2000 Concrete kerbs and channels (gutters) - Manually or machine placed.
AS 3610.1 2010 Formwork for concrete – Documentation and surface finish.
AS 3660 Termite management.
AS 3727 1993 Guide to residential pavements.
AS 3972 2010 General purpose and blended cements.
AS 3740 2010 Waterproofing of wet areas within residential buildings.
AS 4349.3 2010 Inspection of buildings – Timber pest inspections
AS/NZS 4586 2004 Slip resistance classification of new pedestrian surface materials.
AS/NZS 4671 2001 Steel re-inforcing materials
HB 155 2002 Guide to the use of recycled concrete and masonry materials.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).
Note: Do not pour concrete when temperature exceeds 30 degrees.

ON SITE ACTIONS -CONCRETE:
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: Co-ordinate with and ensure preparatory work by other trades is done prior to commencement of work and arrange for provision and fixing grounds.
Termite treatment: under slab foams should be encapsulated and have boron-based additives or alternatives that are non toxic to occupants. Ensure that vertical face of slab edge is smooth off-form and does not contain areas of honeycombing, folds or rough surface. Rectify any discrepancy or unsuitability of substrata if needed to comply with AS 3660 and arrange for ongoing co-operation of other trades to ensure effective pest control. Take care of materials. Prevent damage before and during installation. Protect personnel and surrounding work, including other finishes, equipment and components during installation. Provide protective covering where necessary. Install barriers per council preference Part A or Part B in accordance with AS 3660. Comply in all respects with manufacturer's recommendations contained in technical bulletins. Call for technical advice where necessary. Remove surplus material. Protect finished work.
Concreting: NOTE: relevant building inspector to inspect all preparatory work, including reinforcing before beginning concrete pour for any footings pads and slabs. Prepare surfaces to receive concrete smooth, clean and stable under concrete load. 50mm packing sand below slabs. Comply with structural engineer's requirements for concrete/brick stumps, joints, splices etc. of reinforcement.
Arrange for installation of pipes, cables, conduits etc. Over prepared surface, install waterproofing materials. Place reinforcement and secure in place to prevent movement during pour. Maintain required concrete cover.
Finish exposed floor surfaces.. Provide set downs for concrete screeds. Provide uniform 1:60 maximum fall to outlets:
Cure finished slabs for 5 days with plastic film secured in place. Use packing sand for curing concrete paving. Keep damp for 5 days.
Strip formwork in accordance with Table in AS 3610 Minimum stripping times.
Paving: 75mm thick, 20Mpa. Grade paving away from external walls of building. All paving to be located at minimum 10mm below vents and weepholes.
Exposed concrete edges to be free from all imperfections, membrane ripples, air pockets, honeycombing etc.
Clean the site where work of this trade is performed.

5. MASONRY

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply labour and install materials. Build in miscellaneous materials (flashing, wall ties, damp proof course, anchors etc.)
Include staging, scaffolding and cleaning.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: concrete, structural steel, wall framing, doors and windows.

Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1316 2003 Masonry cement.
AS/NZS 1576.1 2010 Scaffolding – General requirements.
AS/NZS 2904 1995 Damp-proof courses and flashings.
AS 3700 2011 Masonry structures.
AS 3959 2009 Construction of buildings in bush-fire prone areas
AS 4773.2 2010 Masonry in small buildings – Construction.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: review work with other trades, piping, ducts etc. Clean base before laying masonry. Set doors and windows plumb and brace. Construct a sample wall of 3 square metres. Stop. When approved by architect, continue.
Machine mix. Mortar life: 2 Hours.
Joints: . Weep holes at 1200mm centres
Check Bushfire Attack Level for weephole ember proofing insert requirements.
Bonding: Stretcher bond, Bed joints: 10mm. Install DPC, wall ties, reinforcement, flashing to AS 3700.
Install ties to anchor masonry to structure, doors, windows etc. Remove mortar from wall ties in cavity walls at the end of each day. Construction joints @ max 6000mm centre. Clean with 5% hydrochloric acid to face work. Bagged finish on completion same material as for mortar. Chase walls no more than 1/3 thickness for conduits.

LINTELS in Masonry walls

External Openings			Internal Openings	
SPAN	**SIZE**	**END BEARINGS**	**SPAN**	**SIZE**
up to 950mm	74 x 10 flat	150mm	up to 950mm	74 x 10 flat
950 to 1200	76x76x10L	200mm	950 to 1200	75x12 flat
1200 to 1650	102x76x10L	230mm	1200 to 1650	102x76x10L
1650 to 2400	127x76x10L	230mm	1650 to 2400	127x76x10L
2400 to 3000	152x89x10L	230mm	2400 to 3000	152x89x10L

Hot dip galvanise lintels to external openings.

6. STEEL FRAMING

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply, fabricate, apply surface treatment, anchor bolts and other attachments, field welding, permanent grouting and cold-formed steel framing.
Submit shop drawings to architect.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: concrete, wall construction, roof construction, painting.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS/NZS 1554 2011 Structural steel welding.
AS 1627.0 1997 Metal Finishing - Preparation and pretreatment of surfaces – Method selection guide.
AS 4100 1998 Steel structures.
AS/NZS 4680 2006 Hot-dip galvanised (zinc) coatings on fabricated ferrous articles.

Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

Advise architect when fabrications may be inspected before delivery. Steel components bent or buckled before erection may be rejected.

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: use bolt connections in preference to welded connections. Minimum on site welding –refer to architect before executing. Provide holding down bolts to concreter for building in. Comply with instructions. Erect plumb and secure in place. Erect so that components can be fixed without distortion. Provide temporary bracing against wind and other stresses. Weld in accordance with AS/NZS 1554. Advise architect when erected steel is ready for inspection. Adjust as required. Grout under base plates in high strength mortar. Touch up steel with zinc-rich paint after installation.

7. CARPENTRY, TIMBER FLOORING & FIBRE CEMENT PRODUCTS

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and erect framing both structural and substructural. Include floor panels, wall cladding, roof framings, verge, fascia, eave, barge, decking, balustrades, steps and stairs, incidental framing.
Supply, install and finish wood strip flooring on floor framing members.
Supply and install fibre cement and associated equipment and fixing to:
Wall linings internal, ceiling linings internal, fire-rated walls, external cladding, wet area wall lining, eaves lining, fascias, partitions, wet area flooring, underlays, external decks, lattice, bracing panels, ceramic faced panels, fibre cement pipe columns. Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: concrete, masonry, wall lining, plumbing, electrical, insulation, painting, fibre cement products.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1684.3 2010 Residential timber-framed construction – Cyclonic areas
AS 1684.4 2010 Residential timber-framed construction – Simplified non-cyclonic areas (Special reprint with Amendment 1 [June 2012] included)
AS 2796.2 2006 Timber - Hardwood - Sawn and milled products - Grade description
AS/NZS 2908.2 2000 Cellulose cement products - Flat sheet.
AS 3959 2009 Construction of buildings in bush-fire prone areas
AS 4786.2 2005 Timber flooring - Sanding and finishing.
Comply with recommendations of the National Assoc. of Forest Industries Technical bulletins.
Comply with relevant Technical Bulletins and published instructions produced by manufacturer.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).
Storing timber: store on site neatly stacked above ground to allow for water run-off. Protect from rain, damage and other material.

MATERIALS TO BE USED: GENERAL
Any wood panel products are to be certified formaldehyde emission level of E1 or E0

MATERIALS TO BE USED: FIBRE CEMENT

JAMES HARDIE PRODUCTS		CSR BUILDING MATERIALS EQUIVALENT (Cemintel)	
HardieFlex	Thickness: 4.5,6.0	Cladding sheet	4.5, 6.0
Villaboard	Thickness: 6.0. 9.0, 12.0	Wallboard FC	6.0, 9.0, 12.0
Versilux	Thickness: 6.0	sq. edge	6.0
HardiePlank Smooth	230, 300 wide, 7.5	cladding plank, smooth	230, 300
HardiePlank Woodgrain	230, 300 wide, 7.5	" " woodgrain	230, 300

HardiePlank Rusticated weatherboard	205 wide	Ceminseal Soffit	6,9
HardiePlank Old style weatherboard	205 wide	Ceminseal Wallboard	6, 9, 12
Eaves - HardieFlex	4.5mm	Eaves lining	4.5
HardiePanel Compressed sheet	6.0, 9.0, 12.0, 15.0, 18.0, 24.0	Compressed sheet decking	6.0, 9.0, 12.0, 15.0, 18.0, 24.0
Pineridge (impact resistant)		X	
Underlay for ceramic tile		CT Underlay	6
Underlay for vinyl and cork		X	
Hardietex (external sheet)	7.5	X	
Hardiebrace	5.0	X	
Partitions toilet and shower		X	

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions
Execution: review drawings when erecting framing and provide additional framing at every location where extra loads will be applied to finished walls.
Timber Flooring Execution: open packages and spread across joists for 7 days before fixing. Check moisture content of timber; coastal areas maximum 13 % moisture, dry areas and air conditioned spaces 9%.
Install flooring in the smallest room of the building. Stop. When approved by architect, continue.
Form junctions of different materials (eg. tiles to carpet) so that they occur under the centre line of doors.

Face Nailed Flooring
Provide expansion gaps of 10-15mm around the edges of each floor area. Place straight waste wood before each board to be cramped. Nail at minimum 20mm from edge of the board. Two nails for wide boards. Pre-drill nail holes in dense boards. Nails to be no less than 2.5 times the thickness of the board. Punch nails a minimum of 3mm below the surface.

Secret Nailed Flooring
Fix boards up to 80mm wide with secret nailing gun and apply polyurethane adhesive to top of floor joist before nailing.

Floor Finishing
Fill nail holes with fast drying nail filler. Rough and fine sand. Comply with AS 4786.2.
Finish treatment to: polyurethanes, water-based/acrylic coatings, and oils.
Comply throughout with the written instructions of the manufacturer of a selected material.
Eaves, fascias and barges: secure each of these boards to the framing. Line soffit with fibre cement 4.5mm thick fixed to framing members and finish with moulds, jointing strips or straps.
Box or concealed gutters: provide timber framing for support of box or concealed gutters. Provide constant fall to the top of the downpipe in each gutter.
Timber decking: fix with galvanised nails and screws.

External Cladding
Timber cladding: unless otherwise specified, all timber to be primed and treated with a penetrating wood preservative to all exposed faces and edges before fixing. Fix with galvanised nails.
Weatherboards: select quality timber in long lengths, lapped vertically not less than 25mm. Butt joints at studs or corners over galvanised steel angles.
Fibre cement sheeting: or other external cladding to be fixed in accordance with manufacturers' instructions. Provide and fix all necessary flashings and other materials required to ensure weathertight joints.

8. THERMAL INSULATION

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and installation of thermal insulation to walls, ceilings, roofs . Installation is to be certified to provide required Energy Rating.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: wall and roof framing, roofing, wall lining, masonry.
Standards: comply with the applicable clauses of current editions of these building Standards:

AS 3999 1992 Thermal insulation of dwellings - Bulk insulation - Installation requirements.
AS/NZS 4200.1 Pliable building membranes and underlays – Materials.
HB 63 1994 Home insulation in Australia.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: prepare surfaces and or framing material and ensure that no obstructions will prevent rapid and effective installation. Install insulation to all new floors, walls, ceilings and roofs forming the building envelope, so as to prevent moisture contact. Install snugly between framing members, forming a continuous barrier without affecting safe effective operation of services or fittings.
Reflective insulation: Install with necessary airspace between reflective side and building lining or cladding. To be closely fitted, taped or sealed to any penetration, door or window opening and adequately supported. Comply with manufacturer's current written instruction.
Roll membrane: each sheet to be lapped not less than 150mm and/or taped at joints.
Bulk insulation: installed so as to maintain position and thickness, except where crossing roof battens, pipes, cables.
Protect any down-lights with insulated covers to allow close fitting of insulation.
Where required, comply with AS3959-2009 bushfire code.
Provide certification that the installation is installed according to NCC standards.

9. ROOFING

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Provide complete roof installation with associated gutters and down pipes, sarking, safety mesh and skylights.
Metal roofing and sarking, downpipes, gutters, translucent roofing.
Comply with Bushfire Attack Level (BAL level and AS3959-2009 Section 3 requirements) site assessment requirements for roof installation.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: carpentry, steel house frames, drainage.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1273 1991 Unplasticized PVC (UPVC) downpipe and fittings for rainwater.
AS 3959 2009 Construction of buildings in bush-fire prone areas
AS 1562 Design and installation of sheet roof and wall cladding. (Amendment 3, October 2012)
AS 2049 2002 Roof tiles.
AS 2050 2002 Installation of roof tiles.
AS/NZS 2179.1 1994 Metal shape or sheet rainwater goods, and metal accessories and fasteners.
AS 3999 1992 Thermal insulation of dwellings – Bulk insulation – Installation requirements (redline set)
AS 4285 2007 Skylights.
AS/NZS 4389 1996 Safety mesh.
HB 39 1997 Installation code for metal roof and wall cladding.
Comply with state requirements and codes of practice in relation to work on roofs.
Safework Australia see Construction Work Code of Practice manual (includes SWM template)- comply in full. See at www.safeworkaustralia.gov.au
Comply throughout with the current edition of the NCC - National Construction Code (BCA).
Roof shall be designed and installed to comply with site Terrain Category

MATERIALS TO BE USED – ROOF TILES

ON-SITE ACTIONS – ROOF TILES
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: ensure roof framing, fascias, barges etc. are complete.
Install sarking, battens and tiles in accordance with manufacturer's instruction.

Install seals to penetrations, skylights etc. to manufacturer's instructions.
Point up at barges, valleys and ridge tiles with colour-matched flexible cement mortar. No dry joints.
Bed barge pointing on fibre cement strips.
Test roof on completion. Remove debris from gutters and downpipes.
Ensure entire gutter system drains uniformly to downpipe outlets with no ponding.

ON-SITE ACTIONS – METAL ROOFING
Ensure safety equipment is in place. Install safety mesh in accordance with AS/NZS 4389 Safety mesh.
Install each item in accordance with manufacturer's current written instructions. Form penetration flashings neatly with material matching roofing material or install EPDM collars. Provide flashings at all upstands lapped 150mm at junctions. Step flashings evenly. Finish top corners to a line parallel to the roof slope.
Close and seal ends of cut ribs. Form back gutters not less than 100mm wide with falls towards the sides of the penetration collars. Seal joints with compatible sealant. Secure downpipes through cladding to structure.
Seal at stormwater pipe upstands. Remove debris from gutters and downpipes. Ensure entire gutter system drains uniformly to downpipe outlets with no ponding.
Test on completion.

10. METALWORK

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and install metalwork items shown on drawings and Metalwork Schedule.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: electrical installation, gas installation, building finishes.
Co-ordinate with other trades as to the proper fastening systems suitable for the substrates to which the item is to be secured. Refer to architect if in doubt.
Fastenings: fasten galvanised items with galvanised fasteners.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS/NZS 1554 2011 Structural steel welding.
AS 1627.0 1997 Metal finishing – Preparation and pretreatment of surfaces – Method selection guide.
AS/NZS 1664 1997 Aluminium structures.
AS/NZS 1665 2004 Welding of aluminium structures.
AS/NZS 1841.1 2007 Portable fire extinguishers – General requirements.
AS/NZS 4680 2006 Hot-dip galvanised (zinc) coatings on fabricated ferrous articles.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).
Drill or punch and ream in the workshop and not on site.
Design necessary lugs, brackets and similar items so that work can be assembled and installed in a neat, substantial manner.

MATERIALS TO BE USED
Fasteners : Provide required bolts, screws, inserts, fasteners, templates and other accessories required for a complete installation.
Refer Metalwork Schedule.

ON-SITE ACTIONS
Inspection: visit site and inspect fabrication and conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Do not repair fabrication or cut metal on site.
Execution: do not delay job progress for field measurements. Allow for adjustments and fitting of the work in the field where taking of measurements might cause delay.
Provide holes and connections as required to accommodate the work of other trades and for site assembly of metalwork.
Smooth finishes to exposed surfaces with sharp well-defined lines and arrises. Mill machined joints to a close fit.
Each item to be installed by bolting or screwing to structural elements of building. Locate anchorages accurately and ensure secure installation.
Whitegoods and similar items to be installed in accordance with manufacturer's instructions.
Remove weld spatter and touch up with zinc-rich paint immediately.
Protect work until project completion.
Replace damaged items.

11. DOORS & DOOR FRAMES

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Refer to Door Schedule.
Supply and install:
door frames and doors for external and internal door openings.
timber frames, metal frames, doors, glazed, solid core, waterproof, louvre doors, flyscreen, security, acoustic, flush panel - hollow core, expressed framed doors.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: carpentry, door hardware, wall construction, glass, painting.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1288 2006 Glass in buildings - Selection and installation.
AS 3959 2009 Construction of buildings in bush-fire prone areas
AS 4145 Locksets and hardware for doors and windows
AS 4145.2 2008 Mechanical locksets for doors and windows in buildings.
AS 5007 2007 Powered doors for pedestrian access and egress.
AS 5039 2008 Security screen doors and security window grilles.
AS 5040 2003 Installation of security screen doors and window grilles.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).
Comply with Bushfire Attack Level site assessment requirements for glazed doors.

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: Check all deliveries on arrival. Lock away until needed and assume responsibility for hardware. Prepare openings in walls. Install fixing grounds to secure frames. Erect a sample frame and door of each type complete. Install samples of each door hardware type in accordance with AS 4145 and written instructions of each manufacturer. Stop. When approved by architect, continue.
Erect frames plumb and true. At head and jambs allow 3mm clearance. At floor allow 10 mm over floor covering.
Fit accurately at correct heights and protect until completion of project.
External doors: install weatherstripping.
Lubricate hinges and locks and provide two keys to each lock.
Check and clean on completion.

12. WINDOWS & GLAZING

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and install metal window frames and glass, glazed door, flyscreens, hardware, flashing, sun control material.
Comply with Bushfire Attack Level site assessment requirements for windows.
Refer to Window Schedule. Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: carpentry, frames, masonry, wall framing.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1288 2006 Glass in buildings – Selection and installation.
AS 2047 1999 Windows in buildings – Selection and installation.
AS 3715 2002 Metal finishing - Thermoset powder coating for architectural applications...
AS 3959 2009 Construction of buildings in bush-fire prone areas
AS 4145.2 2008 Mechanical locksets for doors and windows in buildings.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions
Execution: prepare for installation of window frames. Isolate aluminium from steel wall frames and any dissimilar metals.
Provide necessary anchors for building into masonry openings. Ensure wall sarking is undamaged and tape sealed to window frames following installation. Ensure frame anchors are already built in. Install glass to manufacturer's instructions with correct sealant and weather seals. Weather seal frames/reveals. Install flyscreens fixed, hinged, or removable, where directed. Install window winders catches locks etc.

13. PLASTERBOARD

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and install plasterboard, fire-rated plasterboard, impact resistant plasterboard, acoustic plasterboard, water-resistant plasterboard, flexible plasterboard, lining of masonry walls, ceilings, dropwalls, bulkheads. Fire-rated wall systems.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.
Refer to Finishes Schedule and contract drawings for product requirements and locations.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: wall, frames, carpentry, masonry, suspended ceiling, electrical.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS/NZS 2589 2007 Gypsum linings in light residential and.... – Application and finishing.
AS 3740 2010 Waterproofing of domestic wet areas.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).
Comply with manufacturer's technical bulletins:

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Start of work means total acceptance of conditions. Report any situations requiring preparatory work to the architect.
Execution: ensure framing is complete and electrical and other wiring is in place.
Install a sample, width of one wall (about 3 metres). Stop. When approved by architect, continue.
Comply with plasterboard manufacturer's current written instructions. Form dropwalls, recesses, manholes as required.
In wet areas ensure compliance with AS 3740. Install cornices.

14. CERAMIC TILE

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Prepare surfaces to be tiled. Supply and install bedding as required.
Install compliant Waterproof Membrane to wet area walls and floor and adjacent to plumbing fixtures as required Table 3.8.1.1 of NCC (the Building Code).
Wall tile, floor tiles, external paving tiles. Cleaning of finished work.
Refer to Finishes Schedule for material details and locations.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: concrete, carpentry, plasterboard.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 2358 1990 Adhesives - For fixing ceramic tiles.
AS/NZS 3661.2 1994 Slip resistance of pedestrian surfaces – Guide to the reduction of slip hazards.
AS 3740 2010 Waterproofing of domestic wet areas.
AS 3958.1 2007 Ceramic tiles - Guide to the installation of ceramic tiles.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

Comply with material manufacturer's current written instructions.

Screed for walls and floors: 1 part cement 4 parts sand. Adhesives: to be supplied by: ABA, Laticrete.
Expansion joints, walls: 5mm. Floors: 8mm. Fill both with matching colour silicone rubber.
Grout for wall: Epoxy based mildew resistant. Grout for floors: prepared grout acid resistant.
Over floor screed apply waterproof membrane (ABA or similar).

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: ensure surfaces are clean and dry and no variation on walls greater than 5mm under a 2000 long straight edge.
Apply waterproofing membrane to floor and walls in compliance with the NCC requirements. Arrange inspection.
Tile a sample panel of each type, 3 square metres. Stop.
When approved by architect, continue.
Install floor backing boards as required for floor tile on timber. Form expansion joints no more than 2500mm apart. Comply with adhesive manufacturer's instructions. Install wall tiles with expansions joints not more than 2500mm apart and at floor level and at corners of walls, and at change of background material.
Alternatively, apply cement render to masonry wall to smooth even surface for wall tiling. Install grout of selected colour to manufacturer's instructions. Clean each surface on completion.
Form junctions of different materials (eg. tiles to carpet) so that they occur under the centre line of doors.

15. FLOORING

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and install vinyl, linoleum, cork or other sheet, laminated or floating floor or tile materials and skirtings.
Refer to Finishes Schedule for material details and locations.
Install compliant Waterproof Membrane to wet area walls and floor and adjacent to plumbing fixtures as required Table 3.8.1.1 of the Building Code.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: concrete, carpentry, floor and wall construction.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1884 2012 Floor coverings – Resilient sheet and tiles – Installation practice.
AS/NZS 3661.2 1994Slip resistance of pedestrian surfaces – Guide to the reduction of slip hazards.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code)

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: Prepare concrete floor; fill cracks with a self-levelling type compound eg. Ardit. Remove lumps. Produce dead flat and level surface. Test for moisture content, which is required to be 5.5% or less. Refer to AS 1884 Appendix A.
Install a sample of 3 square metres. Stop. When approved by architect, continue.
Apply waterproofing membrane to floor and walls in compliance with the NCC requirements. Arrange inspection
Prepare Timber Floor: Ensure moisture content is stabilised. Rough sand the floor to achieve level and flat plane. Install underlay to manufacturer's recommendations. Apply waterproofing membrane to floor and walls in compliance with the NCC requirements. Arrange inspection.
Install a sample of 3 square metres. Stop. When approved by architect, continue to approved standard.
Install to manufacturer's instructions. Weld joints in sheet vinyl. Clean thoroughly, allow to dry. Cover completed floors until completion of project.
Form junctions of different materials (eg. tiles to carpet) so that they occur under the centre line of doors.
Install trims as selected and/or scheduled in Finishes Schedule.

16. CABINETRY

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and installation of cabinetry items, including but not limited to:
Kitchen cabinets and cupboards, shelving, display units, bathroom cabinets, laundry cabinets, counters, wardrobes.
Refer to Finishes Schedule for material and colour selections.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: carpentry, wall finishes, floor finishes, ceiling finishes, water distribution, sanitary plumbing, electrical installation.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS/NZS 1859.1 2004Reconstituted wood-based panels – Specifications – Particleboard.
AS 2754.2 1991 Adhesives for timber and timber products – Polymer emulsion adhesives.
AS/NZS 2924 1998 High pressure decorative laminates - Sheets made from thermosetting resins.
AS/NZS 4386 1996 Domestic kitchen assemblies.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: construct by screwing and gluing or other approved method. A dry stapled assembly will not be approved. Fabricate bench tops as recommended by the materials' manufacturer. Locate openings accurately using templates or roughing-in diagrams for proper size and shape. Where located in bench tops, seal edges of cut-outs with a water resistant coating. Back prime concealed solid timber surfaces prior to installation. Install fasteners hinges etc. in accordance with manufacturer's instructions.
Use concealed shims as required to install the work plumb, level, straight and distortion free within the following tolerances: 1mm in 800mm for plumb and level (including bench tops), 0.5mm maximum offsets in flush adjoining surfaces, 2mm maximum offsets in revealed adjoining surfaces. Scribe and cut to fit adjoining work; refinish cut surfaces or repair damaged finishes at cuts. Secure joinery with anchors to substrates, or secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing. Install casework without distortion so that doors will fit openings properly and be accurately aligned. Install door and joinery hardware as scheduled.
Adjust joinery to achieve a uniform appearance. Lubricate and clean hardware making final adjustments needed for proper operation. Remove handling marks from visible joinery surfaces.

17. PAINTING

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and apply paints and other finish coatings. Refer Schedule of Finishes.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: each trade as listed to be painted. Refer Painting Schedule.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS/NZS 2311 2009 Guide to the painting of buildings.
AS/NZS 2312 2002 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings.
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).

Delivery storage and handling:
A. Bring materials to the building and store in manufacturer's original sealed containers, bearing the manufacturer's standard label, indicating type and colour. Deliver materials in sufficient quantities in order that work will not be delayed.
B. Store materials in designated spaces in a manner which meets the requirements of applicable codes and fire regulations. Provide each space with a fire extinguisher of carbon dioxide or dry chemical type bearing a tag of recent inspection.

[Ensure contractor leaves adequate left over paint (min 0.5 litre of each colour or type in air tight & labelled container) for touching up and maintenance.

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution:
Prepare each surface to be painted in accordance with manufacturer's instructions.
Prepare a sample panel of 2 square metres of each paint type. Stop. When approved by architect, continue. Architect will check each prepared surface. Do not proceed with painting until check completed. Apply scheduled coats and paint types to manufacturer's instructions, and AS/NZS 2311.

18. FLOOR HEATING

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Preparation of floor surface and installation of electric floor heating.
Buried in concrete.
Between carpet and underlay.
Below ceramic tile, terracotta or stone,
On granolithic.
Carpeting with adhesive.
Vinyl or stickdown timber
Floating flooring.
Complete installation with electric controls and outlets.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: floor construction, concrete, timber etc., screeds, wet area membrane, granolithic floor surfacing trades, electrical, carpet.
Comply throughout with the requirements of statutory authority having jurisdiction.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS/NZS 3000 2007 Electrical installations (Australian/New Zealand Wiring Rules).
Comply throughout with the current edition of the NCC - National Construction Code (formerly the Building Code).
Installers: suppliers will provide names of franchise holders trained in the technology. Engage only franchise holders.

MATERIALS TO BE USED
Supply only products which bear the required indication of approval of the statutory authority having jurisdiction.

Item	Description	Manufacturer

ON-SITE ACTIONS
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: comply throughout with the written instructions issued by the supplier and/or manufacturer.
Install equipment strictly in accordance with the current manufacturers' written instructions. Provide monitoring to check on fully satisfactory installation.

19. ELECTRICAL DISTRIBUTION

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
See Electrical Schedule.

Design, supply and installation of electrical transmission and reticulation materials from mains supply to required electrical power and light outlets, telephone, internal communication system, smoke alarms, fans and television antenna.
Meter box located as shown on drawings.
The maximum total wattage for Class 1 building is not to be exceeded.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: floor construction, wall construction, ceiling construction, carpentry, joinery.
Licensed electrical technicians only may perform work, experienced in the requirements of the project.
Licences are those issued by the state authority having direct control or interest in the work.
Perform the entire installation in accordance with the requirements of the statutory authority having jurisdiction.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1680 Interior lighting.
AS/NZS 2293 Emergency escape lighting and exit signs for buildings.
AS/NZS 3012 2010 Electrical installations – Construction and demolition sites.
AS 3786 1993 Smoke alarms.
Comply throughout with the current edition of the NCC - National Construction Code (BCA).

ON-SITE ACTIONS
The following preparatory actions are to be performed by the contractor for the electrician:
A. Slab penetrations for floor-mounted GPO's, telephone outlets etc.
B. Chasing and making good for conduit access for skirting
C. Chasing and wiring duct, GPO's switches etc.
D. Supply and installation for access opening(s) where required.
Inspection: visit site and inspect conditions, comparing to drawings before delivery of materials to site. Report any situations requiring preparatory work to the architect. Start of work means total acceptance of conditions.
Execution: provide necessary safety or security controls where required to ensure safe practices and installations.
Comply with Standards throughout and requirements of supply authority. Install light fittings, switchboard and distribution board, metre board and box. Arrange for inspection by supply authority inspector. Obtain compliance certificate. Connect to main supply.

20. FENCES & GATES

SCOPE OF WORK *Perform work described here and shown on drawings including but not limited to:*
Supply and installation of boundary, site and swimming pool fences and gates all of timber or metal.
Complete all contract works in accordance with instructions. Execute written variation orders for changes to existing documentation or new work.

GENERAL
Co-operation: to resolve possible problems before starting work, co-operate and co-ordinate with other trades, in particular: Carpentry, metalwork, concrete, painting.
Standards: comply with the applicable clauses of current editions of these building Standards:
AS 1725.1 2010 Chain-link fabric fencing - Security fencing and gates – General requirements.
AS 1926 Swimming pool safety.
1926.1 2012 Safety barriers for swimming pools.
1926.2 2007 Location of safety barriers for swimming pools.
AS 2820 1993 Gate units for private swimming pools.
Comply throughout with the current edition of the NCC - National Construction Code (BCA).

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13-1103

10 December 2013

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22 Dendrobium Crescent,
ELANORA HEIGHTS, NSW, 2101

CERTIFICATE OF EXISTING STRUCTURAL ADEQUACY
At: 22 Dendrobium Crescent, Elanora Heights

Bruce Lewis of Peninsula Consulting Engineers carried out a site inspection at the above residential premises in November 2013. The purpose of the visit was to inspect and comment on the capacity of the existing structure to support the proposed additions and alterations as per approved Architectural plans. The plans generally detail a ground floor addition to be located adjacent to the existing structure.
The assessment consisted of a walk over style inspection of the building. The existing residence is a brick veneer, concrete floored structure with a conventionally framed raked ceiling roof.

In summary, the dwelling is considered sound and provides an adequate structure for the proposed works, provided that engineering plans are complied with and that all structural works are certified during construction. All demolition shall conform to Work Cover requirements and the relevant Australian Standards. All construction works shall conform to the relevant Australian Standards. The structure and footings shall be maintained and repaired as required for a building of its age.

However, some minor brickwork cracking may occur as the building adjusts to the new load distribution. This is not expected to adversely affect the buildings overall structural integrity.

Note: This certification does not cover any defects to the structure that were not accessible at the time of inspection. If in the event that defects are uncovered during construction or become apparent after construction is complete, then the engineer should inspect the areas of concern and prepare a specification for remedial works. (These works will be carried out at hourly rates.)

We trust that this certificate meets with your requirements. Please contact the author if further clarification is required.

Yours Faithfully,

Bruce

Bruce Lewis
Principal BE(Civil) Cpeng NPER
Peninsula Consulting Engineers

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

Z:\ENG\2013\13-1103\13-1103-L001-cert of adeq.docx

TAYLOR
CONSULTING
CIVIL & STRUCTURAL ENGINEERS

23 January 2014
Our Ref: DMS:avw 20212

General Manager
Pittwater Council
PO Box 882
MONA VALE NSW 1660

Dear Sir

Re: Stormwater Drainage Details – 22 Dendrobium Crescent, Elanora Heights

With reference to the development application for the above property, please find enclosed four copies of the site Stormwater Management Plan, drawing No. 20212-1/A your perusal. A computer disc containing the ILSAX data files used for the design of the detention system has been attached for your perusal

The plan shows the majority of the roof area of the site draining to a stormwater detention tank located beneath the proposed verandah at the eastern end of the dwelling. Outflows from the detention tank are directed to the existing watercourse at the rear of the site.

This is to certify that the Stormwater Management Plan layout as shown on Plan No. 20212-1/A by Taylor Consulting Civil & Structural Engineers has been designed in accordance with section 3.1.2, 'Drainage', of the Building Code of Australia Housing Provision, AS/NZS 3500.3.2 – Stormwater Drainage and Pittwater Council's D.C.P. 21.

Should you require any further information please contact the undersigned.

Yours faithfully
TAYLOR CONSULTING

D M SCHAEFER - Director
BE (Civil) MIEAust

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C12/20212 Stormwater Management

ACSE
Proud Member of CONSULT AUSTRALIA

"Seascape" Suite 7 22-26 Fisher Rd Dee Why NSW 2099 | T 02 9982 7092 | F 02 9982 5898 | enquire@taylorconsulting.net.au | www.taylorconsulting.net.au

DENDROBIUM CRESCENT

EXISTING CATCH DRAIN

NEW 300 SQ. BY 300 DEEP (APPROX) INLET PITS IN CENTRAL WALKWAY. (TYPICAL)

PROVIDE LANDSCAPED 300 WIDE BY 100 DEEP CATCH DRAIN AT 1% MIN. (OR EQUIVALENT)

NEW CONCRETE DRIVE HATCHED AS SHOWN.

450 SQ INLET PIT GRATE = 69.55 INVERT = 69.25

NOTE: CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.

EXISTING HEADWALL OUTLET

ø100 DOWNPIPE (TYP)

ø100 WIDE GRATED DRAIN

NOTE: PLUMBER TO INSPECT AND CHECK STATE OF REPAIR OF EXISTING DRAINAGE LINES TO BE RETAINED. PLUMBER TO REPAIR DAMAGED SECTIONS OF EXISTING PIPE (INCLUDING DOWNPIPES) AS NECESSARY.

WHERE POSSIBLE, DRAINAGE LINES SHALL BE LAID IN AREAS PREVIOUSLY DISTURBED BY OTHER SITE WORKS AND FOLLOW TOPOGRAPHICAL FEATURES TO REDUCE IMPACT AND AVOID TREE ROOTS.

NOTE: GENERAL SUB-SOIL DRAINAGE BEHIND RETAINING WALLS ETC NOT SHOWN BUT SHOULD BE PROVIDED IN ACCORDANCE WITH THE STRUCTURAL ENGINEER'S DETAILS & CONNECTED TO THE SITE STORMWATER DRAINAGE SYSTEM AS NECESSARY.

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling).

50 WIDE GRATED IN DRIVE LOW SPOT.

450 SQ. PIT GRATE = 69.40 INVERT = 69.10

ø100 SUBSOIL LINE 3000 LONG MIN.

STORMWATER DETENTION TANK
STORAGE VOLUME = 4.300 LITRES
STORAGE LENGTH = 2200mm
STORAGE WIDTH = 1400mm
TANK DEPTH = 1400mm
TANK FLOOR R.L. = 66.21
PROVIDE ø225 LOW LEVEL CONNECTION TO EXISTING HEADWALL OUTLET

ø150 P.V.C. OUTLET TO EXISTING HEADWALL

EXISTING HEADWALL

600 SQ. ACCESS GRATE

EXISTING POOL

450 SQ. BY 450 DEEP INLET PIT (TYP)

NOTE: PLAN TO BE READ IN CONJUNCTION WITH APPROVED LANDSCAPED PLAN.

Bench Mark Nail in Conc R.L. 70.00 A.H.D

Grass

EXISTING WATERCOURSE

SITE DRAINAGE PLAN

SCALE 1:200
SHOWING DISCHARGE OF COLLECTED SITE FLOWS TO THE NATURAL WATERCOURSE SITUATED AT REAR OF THE PROPERTY

ø150 HIGH LEVEL 'SNORKEL' OVERFLOW OUTLET WITH INTAKE LEVEL AT R.L. 67.51 & CONNECT AS NECESSARY TO THE LOW LEVEL TANK OUTLET

600 SQ. ACCESS GRATE R.L. 67.76

STEP IRONS AT 300 c/c

R.L. 67.51

STAINLESS STEEL ORIFICE PLATE ORIFICE ø130mm

DETENTION STORAGE

1400 TANK DEPTH

ø150 P.V.C. LOW LEVEL TANK OUTLET INVERT R.L. 66.16

FLOOR R.L. 66.21 APPROX.

ø225 OUTLET STUB 300 LONG

RECESS FLOOR FOR PLATE FIXING + MORTAR FILLING

3-SIDED TRASH SCREEN FROM LYSAGHT'S RH3838 MAXI MESH H.D. GALV.I WITH LIFTING HANDLE.

75 WIDE x 50 DEEP RECESS FOR TRASH SCREEN SEAT

DETAIL A

SCALE 1:20
SHOWING SCHEMATIC LAYOUT OF DETENTION SYSTEM

350

350

ø725 PIPE BEYOND

ø135 ORIFICE OUTLET

STAINLESS STEEL 3mm PLATE. FIX TO WALL WITH 8mm DIAM MASONRY ANCHORS. ORIFICE TO BE CENTRAL OVER OUTLET PIPE.

HOLE IN ORIFICE PLATE TO BE PRECISION CUT WITH SHARP EDGES TO THE SPECIFIED DIAM.

MORTAR OR SILICON SEAL FOR WATERTIGHT JOINT

DETAIL B

SCALE 1:10

NOTES

1. FALL STORMWATER PIPES AT 1% MIN. UNLESS OTHERWISE NOTED.
2. SURFACE GRATES 200 SQ. UNLESS OTHERWISE NOTED.
3. ALL STORMWATER PIPES TO HAVE SOLVENT CEMENT WATERTIGHT JOINTS.
4. CHECK & LOCATE DEPTH OF EXISTING MAINS & SERVICES PRIOR TO CONSTRUCTION OF STORMWATER SYSTEM AS VARIATIONS IN POSITION OF MAINS COULD AFFECT DRAINAGE CONSTRUCTION DETAILS.
5. INSPECTIONS MUST BE UNDERTAKEN BY THIS OFFICE (BY PRIOR ARRANGEMENT WITH ENGINEER) DURING CONSTRUCTION TO ENABLE FULL CERTIFICATION UPON COMPLETION OF WORKS.
6. ALL CONSTRUCTION OF COUNCIL DRAINAGE WORKS TO COMPLY WITH COUNCIL STANDARD.
7. REMOVE REDUNDANT DRAINAGE PITS AND SEAL PIPES.
8. PIT BENCHING TO BE HALF THE OUTGOING PIPE DIAMETER. CONCRETE FOR BENCHING TO BE 20 MPa MASS CONCRETE.
9. APPROVED PRE-CAST PITS MAY BE USED.
10. CONTRACTOR SHALL ENSURE THAT SERVICES TO BUILDING NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS WHERE REQUIRED. ONCE WORKS ARE COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SERVICES AND MAKE GOOD ALL DISTURBED AREAS.
11. ALL PIPES TO BE LAID ON COMPACTED FINE CRUSHED ROCK OR SAND BEDDING 75mm THICK & PIPES BACKFILLED WITH COMPACTED SAND TO 300mm ABOVE TOP OF PIPE, OR OTHERWISE SECURE TO UNDERSIDE OF FLOOR STRUCTURE AS NECESSARY.
12. UNDERPIN EXISTING STRUCTURES AS NECESSARY TO FUTURE DETAIL, PRIOR TO CONSTRUCTION OF PROPOSED DRAINAGE LINE. TRENCH SHORING TO BE PROVIDED AS NECESSARY DURING CONSTRUCTION OF DRAINAGE LINE.
13. PIPE ROUTES SHOWN ARE INDICATIVE ONLY AND SHOULD BE AS NECESSARY ACCORDING TO SITE CONDITIONS, TREE POSITIONS ETC. CONFIRM SIGNIFICANT CHANGES IN PIPES SYSTEM DETAILS WITH SUPERVISING ENGINEER PRIOR TO COMMENCEMENT OF DRAINAGE CONSTRUCTION WORKS.
14. PLUMBING AND DRAINAGE WORKS TO COMPLY WITH AS-3500, THE NATIONAL DRAINAGE & PLUMBING CODE.
15. LEVELS ARE TO A.H.D.
16. LAY PIPELINES WITH SPIGOT ENDS IN THE DIRECTION OF FLOW.
17. THIS STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED FOR D.A. SUBMISSION TO COUNCIL AND DOES NOT NECESSARILY CONTAIN ALL APPROPRIATE INFORMATION TO ENABLE FOR ISSUE TO PLUMBER/BUILDER FOR CONSTRUCTION. CONTACT TAYLOR CONSULTING FOR MORE INFORMATION.

DSD SYSTEM DESIGN DATA

NOTE: DETENTION VOLUME CALCULATED USING A PARTIAL SITE ANALYSIS.

SITE AREA = 2 HECTARE
MODELLED SITE AREA = 1114 sqm
EXISTING IMPERVIOUS AREA = 838 sqm
EXISTING GRASS FLOW LENGTH = 18m.
EXISTING GRASS SLOPE = 5%.

EXISTING SITE FLOWS
5 YR ARI = 48 l/s
100 YR ARI = 75 l/s

DEVELOPED SITE FLOWS
5 YR ARI = 48 l/s
100 YR ARI = 75 l/s

DETENTION SYSTEM DATA
DEVELOPED IMPERVIOUS AREA = 1174 sqm
AREA DRAINING TO THE TANK = 768 sqm
ORIFICE DIAMETER = 135mm
SSR = 4 sqms

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PLAN / DOCUMENTATION

WARNING

PLEASE NOTE: The stamping of this plan by CERTGROUP BUILDING CERTIFIERS does not relieve the Applicant's responsibility to obtain approval from Sydney Water or other Authority or utilities prior to commencement of any works.

DIAL BEFORE YOU DIG 1100

WARNING

PLEASE NOTE: A comprehensive check of the Structural Design has not been carried out. The stamping of this STRUCTURAL PLAN by CERTGROUP BUILDING CERTIFIERS does not relieve the Structural Engineers responsibility to certify the structural adequacy of this development including any variations that may occur during construction.

ISSUE DATE	REVISION
JAN 2014	TO SUIT ARCHITECTUAL CHANGES
FEB 2014	TO SUIT REVISED STRUCTURALS

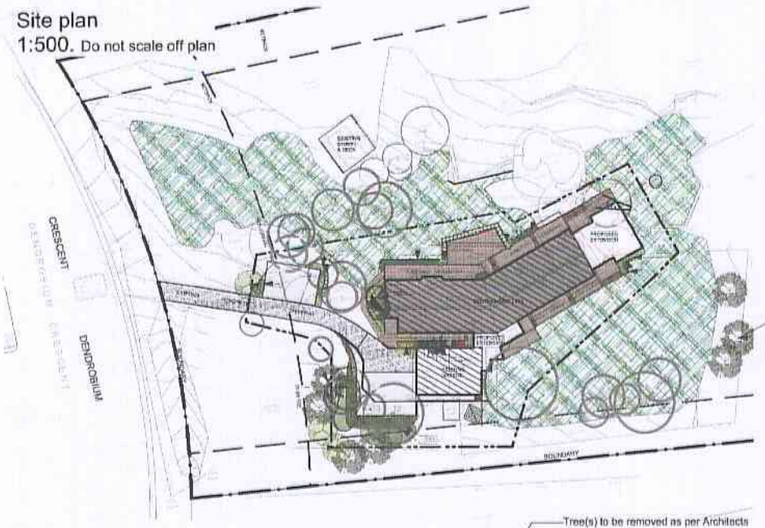
TITLE
STORMWATER MANAGEMENT PLAN
22 DENDROBIUM CRESCENT, ELANORA HEIGHTS

DRAWN	DATE	CHECKED	SCALE	
D.K.	15 JUNE 2012	BE Civil (Hons) MIE Aust.	1:200	
			1:20	1:10

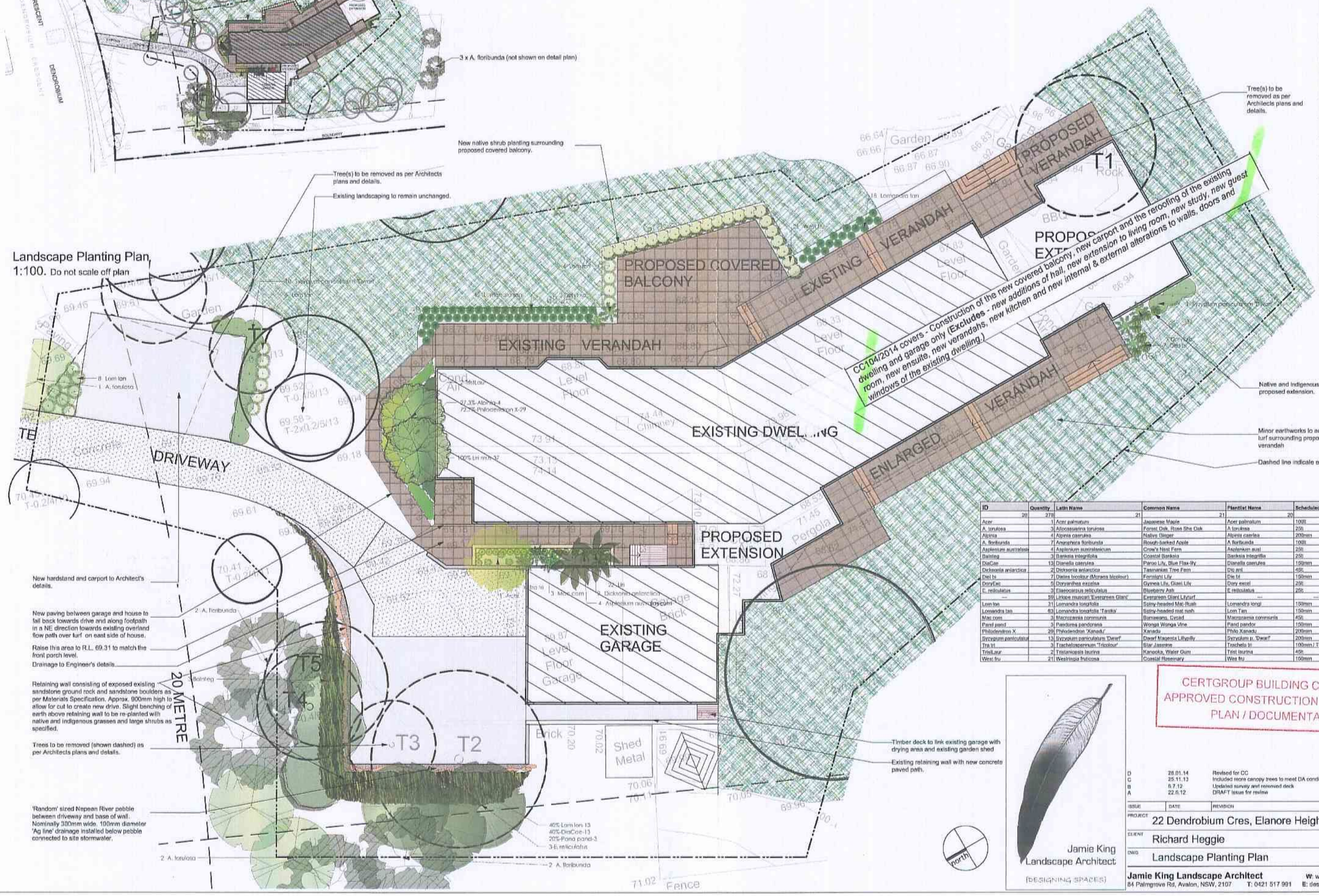
TAYLOR CONSULTING

DRAWING NO. 20212-1B

Site plan
1:500. Do not scale off plan



Landscape Planting Plan
1:100. Do not scale off plan



LEGEND

- TURF AREA
- TIMBER DECKING
- CONCRETE PAVING
- PAVING
- PAVING
- PEBBLE MULCH
- TIMBER AREA
- WATER
- CONCRETE RETAINING WALL
- STONE RETAINING WALL
- TIMBER RETAINING WALL
- SITE OR WORKS BOUNDARY
- x 88.88 PROPOSED LEVEL
- xTW 88.88 TOP OF WALL LEVEL
- Paving 1 MATERIAL NAME
- Fall SURFACE FALL DIRECTION
- x 8.88 88 EXISTING LEVEL
- STRIP DRAIN
- SURVEY (50% GREY LINES)
- EXISTING TREE TO RETAIN
- EXISTING TREE TO RETAIN
- EXISTING ROCK OUTCROP

ID	Quantity	Latin Name	Common Name	Plantlist Name	Scheduled Size	Mature Height	Mature Spread
20	278	21	21	20	20	21	21
Acer	1	Acer palmatum	Japanese Maple	Acer palmatum	100lt	5 - 10m	2.0 - 3.5m
A. torulosa	3	Allocasuarina torulosa	Forest Oak, Rose She Oak	A torulosa	25lt	5 - 10m	3.5 - 6m
Alpinia	4	Alpinia caerulea	Native Ginger	Alpinia caerlea	200mm	0.9 - 1.5m	0.9 - 1.2m
A. floribunda	7	Angophora floribunda	Rough-barked Apple	A floribunda	100lt	10 - 15m	6 - 10m
Asplenium australasic	4	Asplenium australasicium	Crow's Nest Fern	Asplenium aust	25lt	0.9 - 1.5m	2.0 - 3.5m
Bainteg	3	Banksia integrifolia	Coastal Banksia	Banksia integrifla	25lt	8 - 12m	3.5 - 6m
DiaCae	13	Dianella caerulea	Paroo Lily, Blue Flax-lily	Dianella caerulea	150mm	0.45 - 0.6m	0.3 - 0.6m
Dicksonia antarctica	2	Dicksonia antarctica	Tasmanian Tree Fern	Dic ant	45lt	3 - 5m	3.5 - 5m
Dietri	7	Dietes bicolour (Moraea bicolour)	Fortnight Lily	Die bi	150mm	0.75 - 0.9m	variable
DoryExc	5	Doryanthes excelsa	Gymea Lily, Giant Lily	Dory excel	25lt	1.5 - 3m	1.2 - 2.5m
E. reticulatus	3	Elaeocarpus reticulatus	Blueberry Ash	E reticulatus	25lt	5 - 10m	3.5 - 6m
---	50	Liriope muscari 'Evergreen Giant'	Evergreen Giant Lilyturf	---	---	0.45 - 0.6m	0.3 - 0.6m
Lom lon	31	Lomandra longifolia	Spiny-headed Mat-Rush	Lomandra longi	150mm	0.75 - 0.9m	0.9 - 1.2m
Lomandra lan	63	Lomandra longifolia 'Tanika'	Spiny-headed mat rush	Lom Tan	150mm	0.45 - 0.6m	0.6 - 0.9m
Mac com	3	Macrozamia communis	Burrawang, Cycad	Macrozamia communis	45lt	1.5 - 3m	2.0 - 3.5m
Pand pand	5	Pandorea pandorana	Wonga Wonga Vine	Pand pandor	150mm	3 - 5m	0.6 - 0.9m
Philodendron X	29	Philodendron 'Xanadu'	Xanadu	Philo Xanadu	200mm	0.6m	1 - 1.2m
Syzygium paniculatur	13	Syzygium paniculatum 'Dwarf'	Dwarf Magenta Lillypilly	Syzygium p. 'Dwarf'	200mm	2 - 3m	1.5 - 2m
Tra tri	3	Trachelospermum 'Tricolour'	Star Jasmine	Trachela tri	100mm / Tube	3 - 5m	3.5 - 6m
TrisLaur	2	Tristaniopsis laurina	Kanooka, Water Gum	Tris laurina	45lt	5 - 10m	3.5 - 6m
Wes fru	21	Westringia fruticosa	Coastal Rosemary	Wes fru	150mm	0.9 - 1.5m	0.9 - 1.2m

Jamie King
Landscape Architect
(DESIGNING SPACES)

CERTGROUP BUILDING CERTIFIERS
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Notes:
- Do not scale off plan.
- Contractors to check all measurements onsite before quoting or commencing work.
- If abnormalities arise, contact the Landscape Architect.
- This design is copyright and is not to be reproduced in anyway without written consent of Jamie King Landscape Architect

ISSUE	DATE	REVISION
D	28.01.14	Revised for CC
C	25.11.13	Included more canopy trees to meet DA conditions.
B	6.7.12	Updated survey and removed deck
A	22.6.12	DRAFT issue for review

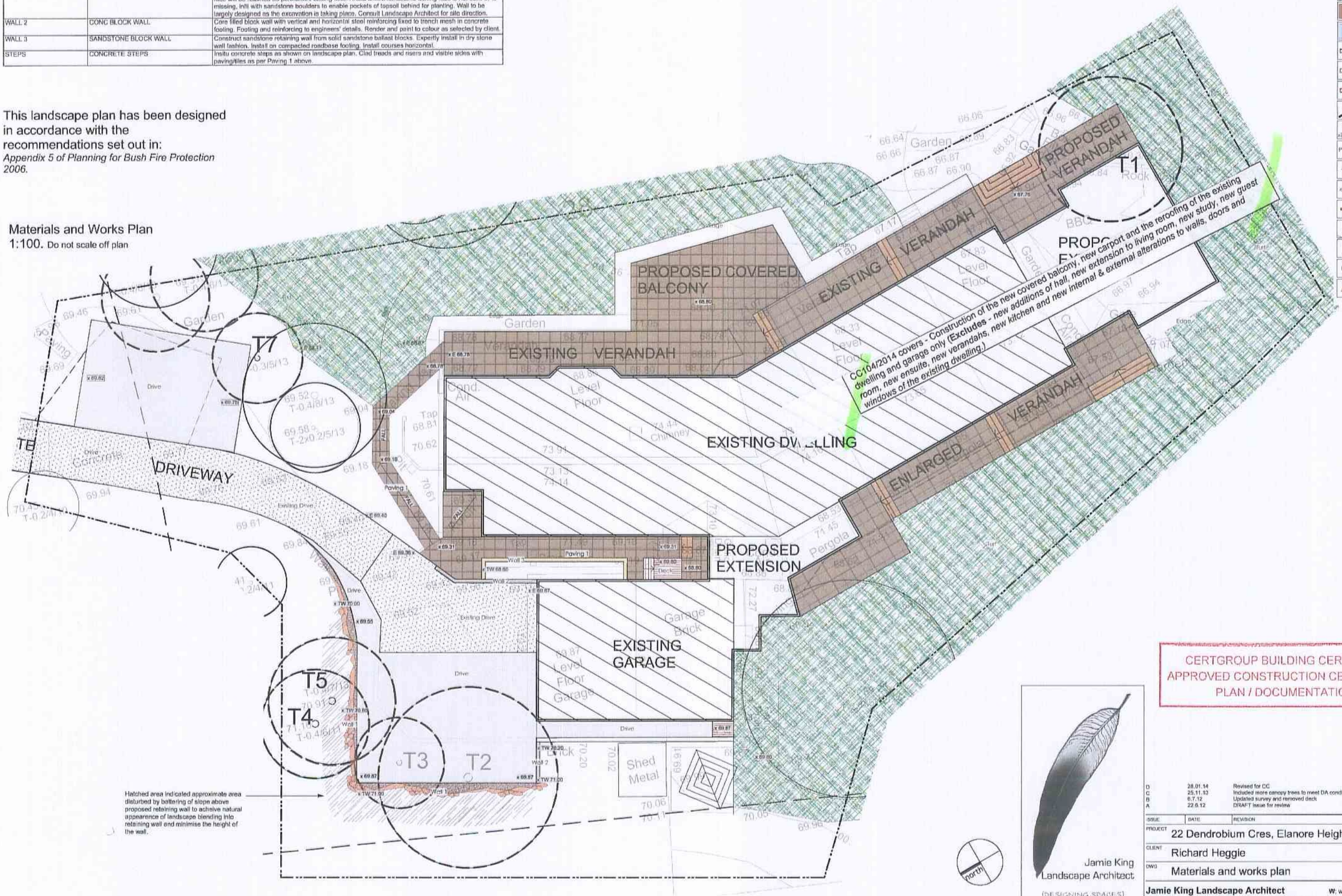
PROJECT	22 Dendrobium Cres, Elanore Heights		PROJECT # 1215
CLIENT	Richard Heggie	DATE # 22/6/12	DWG # Sht-1
		SCALE @ A1 1:100	
DWG	Landscape Planting Plan	DRAWN JK	
		CHKD JK	REVISION

Jamie King Landscape Architect
84 Palmgrove Rd, Avalon, NSW, 2107 T: 0421 517 901 W: www.jamieking.com.au E: designer@jamieking.com.au

MATERIALS SCHEDULE		
MATERIAL SYMBOL	MATERIAL NAME	MATERIAL SPECIFICATION
TURF	TURF	All turf to be 'Sir Walter Soft Leaf Buffalo' lay within 48 hours of cutting. Lay turf over 100mm thick 'Turf underlay' soil
GARDEN	PLANTED AREAS	Soil in Garden bed to be improved by adding 75mm depth of 'green life compost' as supplied by ANL and working into top 200mm of existing topsoil. Work in by hand under existing trees. Top soil with 75mm of organic mulch ('forest fines' or equivalent).
MULCH	ORGANIC MULCH	Top existing site soil with 75mm of organic mulch ('forest fines' or equivalent).
EDGE 1	TIMBER EDGE	Hardwood timber edge between natural turf and garden areas. Hardwood pegs at 900mm cts. Edge timber to be 100 x 19mm in section. Fix with galvanised fixings.
PAVING 1	STONE UNIT PAVER	Paver to match tiles specified for verandah *or as selected by client*. Paving to be installed over concrete slab. Concrete to be minimum 125mm thickness 25Mpa concrete with SL 72 Reinforcing Slab Mesh to all areas. Mitre all joints on edges.
DRIVE	CONCRETE DRIVEWAY	Plain concrete drive as specified by Engineer.
WALL 1	SNADSTONE CUTTING AND BOULDERS	Excavate to approximately 400mm beyond edge of proposed driveway. Excavated sandstone cutting face will be retained as permanent cutting face. Areas where sandstone cutting face is not solid or is missing, infil with sandstone boulders to enable pockets of topsoil behind for planting. Wall to be largely designed as the excavation is taking place. Consult Landscape Architect for site direction.
WALL 2	CONC BLOCK WALL	Core filled block wall with vertical and horizontal steel reinforcing fixed to trench mesh in concrete footing. Footing and reinforcing to engineers' details. Render and paint to colour as selected by client.
WALL 3	SANDSTONE BLOCK WALL	Construct sandstone retaining wall from solid sandstone ballast blocks. Expertly install in dry stone wall fashion. Install on compacted roadbase footing. Install courses horizontal.
STEPS	CONCRETE STEPS	Insitu concrete steps as shown on landscape plan. Clad treads and risers and visible sides with paving/tiles as per Paving 1 above.

This landscape plan has been designed in accordance with the recommendations set out in:
Appendix 5 of Planning for Bush Fire Protection 2006.

Materials and Works Plan
1:100. Do not scale off plan



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PROJECT	22 Dendrobium Cres, Elanore Heights		PROJECT # 1215
CLIENT	Richard Heggie	DATE # 22.6.12	DWG # Sht-2
		SCALE @ A1 1:100	
DWG	Materials and works plan	DRAWN JK	
		CHKD JK	REVISION

Jamie King Landscape Architect
84 Palmgrove Rd, Avalon, NSW, 2107 T: 0421 517 901 W: www.jamieking.com.au E: designer@jamieking.com.au

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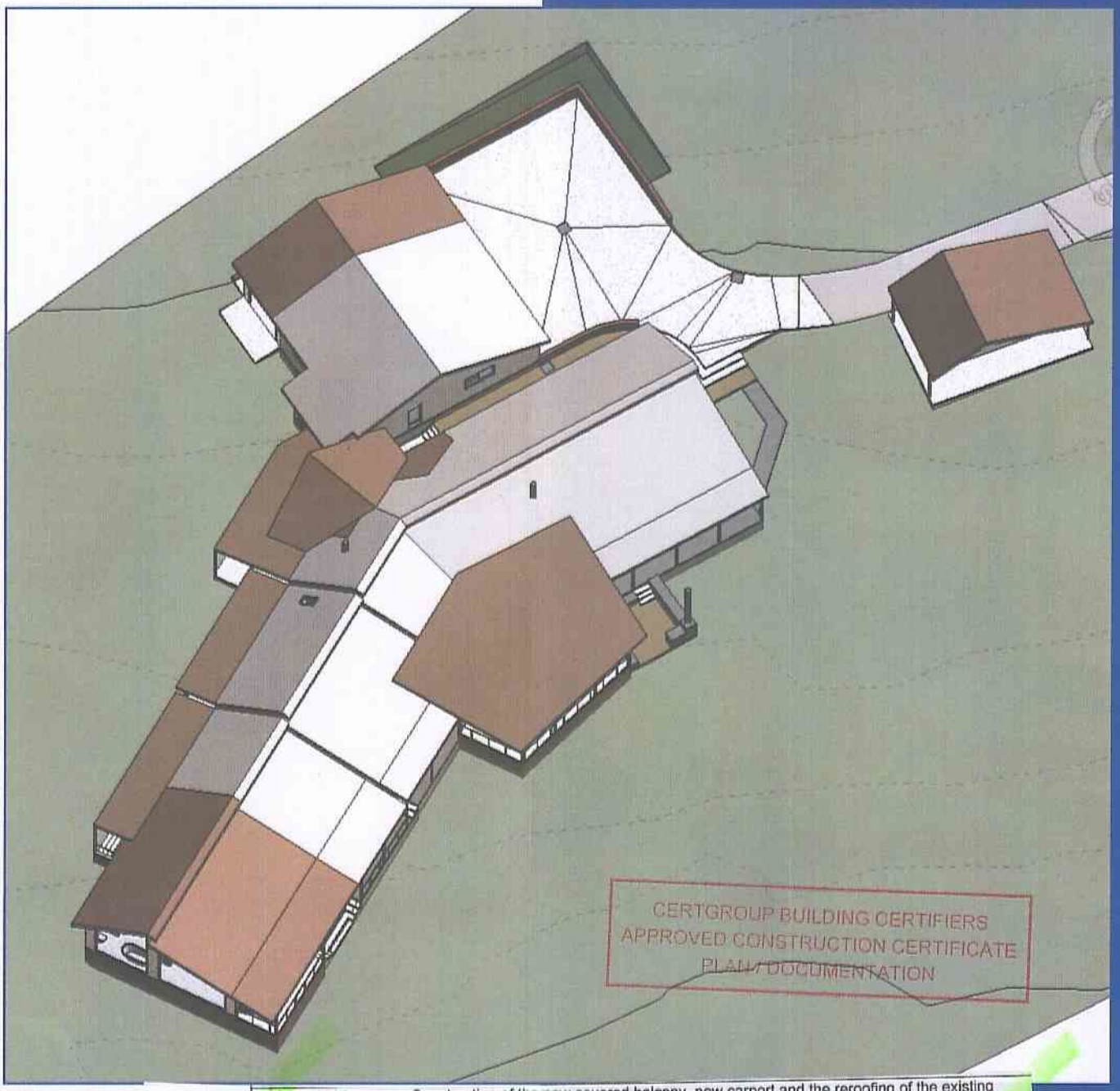
multi-award winner designs



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22 Dendrobium Cr.
Elanora Hts, NSW, 2102

Erosion & Sedimentation Control Plan

1. Erosion & Sedimentation CONTROL Plan

Prepared for a proposed new dwelling ref Development Application No ***N0143/13***

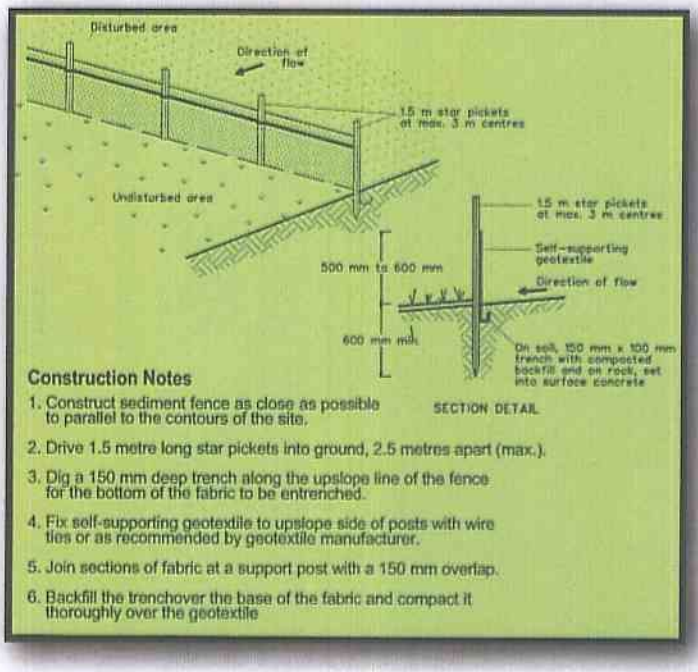
Builder should ensure that:

1. All excavations and backfilling associated with the erection or demolition of a building must be executed safely and in accordance with appropriate professional standards.
2. All excavations associated with the erection or demolition of a building must be properly guarded and protected to prevent them from being dangerous to life or property.
3. Where excavations extend below the level of the base of the footings of a building on an adjoining allotment of land, the person causing the excavation must preserve and protect the building from damage and, if necessary, underpin and support the adjoining building in an approved manner.
4. Temporary sedimentation and erosion controls are to be constructed prior to commencement of any work to eliminate the discharge of sediment from the site.
5. Adequate measures shall be undertaken to remove clay from vehicles leaving the site so as to maintain public roads in a clean condition.

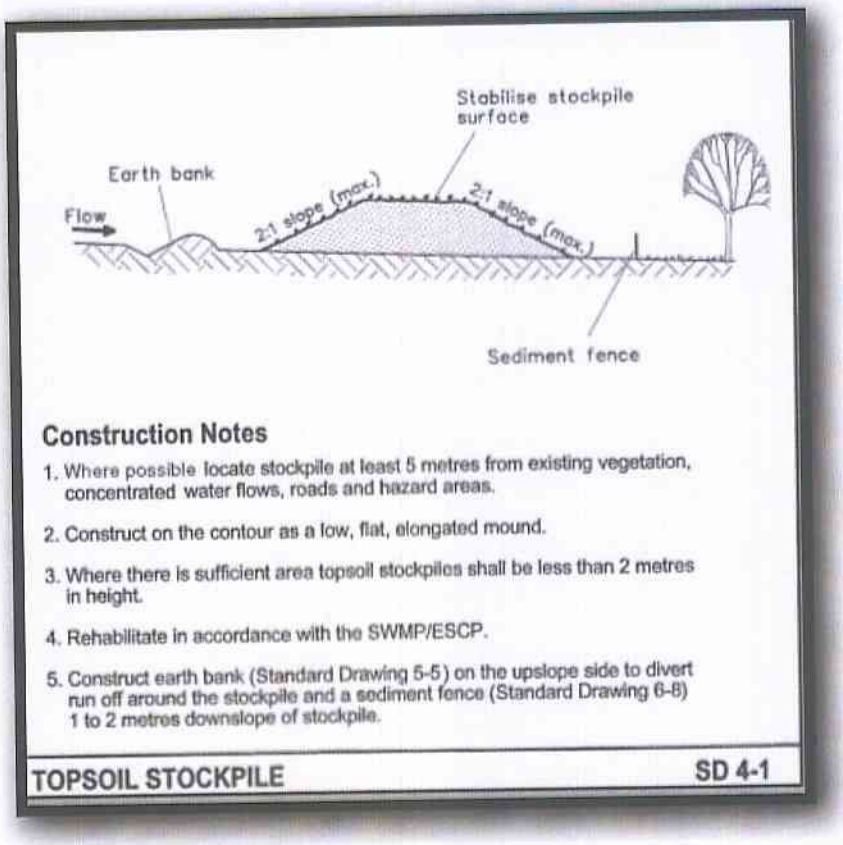
1. THE PLAN

The Builder where practicable will:-

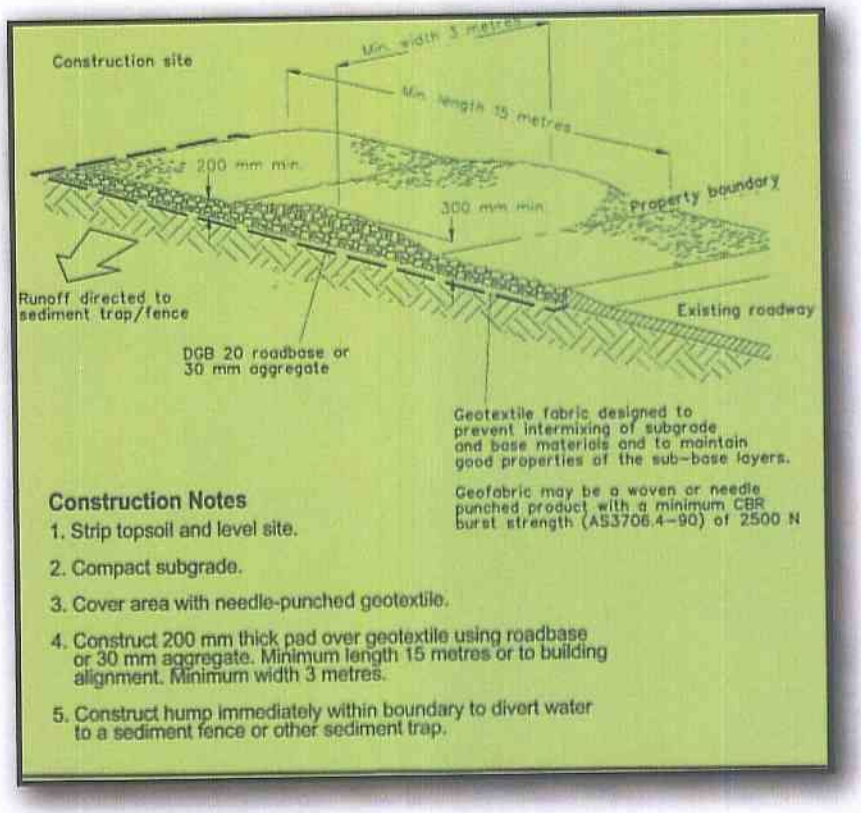
- Instal sediment fences at appropriate location in order to trap erosion which is mobilising off site. (see Site Plan for Sediment Fence locations)
- Install sediment fences below site as shown on below.



STOCKPILES

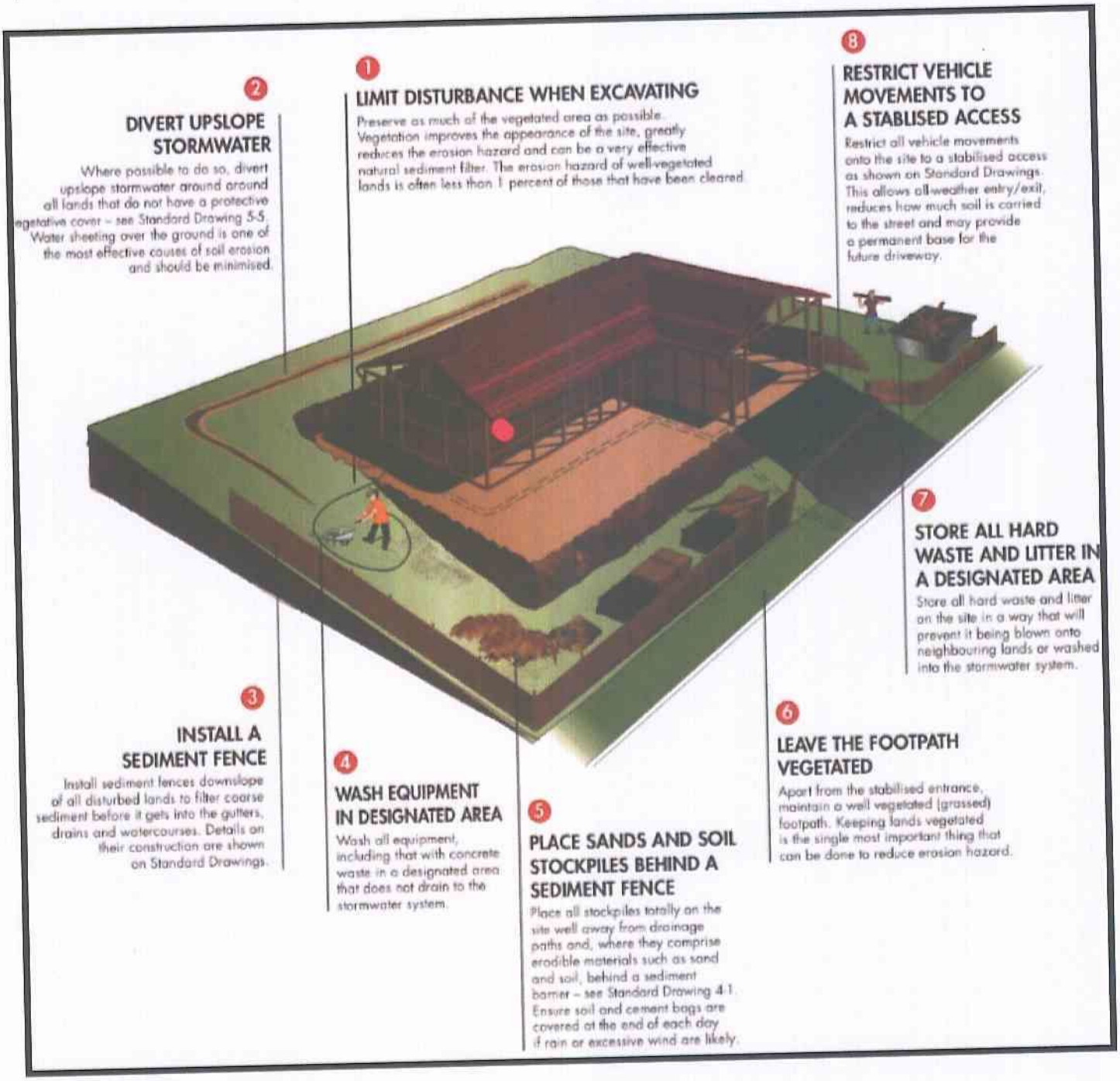


- Stockpile topsoil onsite within the sedimentation barrier.



SITE PLANNING

- Limit entry/exit to one point.
- Create a vehicle wash down area on the existing driveway, within the sedimentation barrier for the purposes of washing down all vehicles before they leave the site in order to minimise soil being deposited on the road.

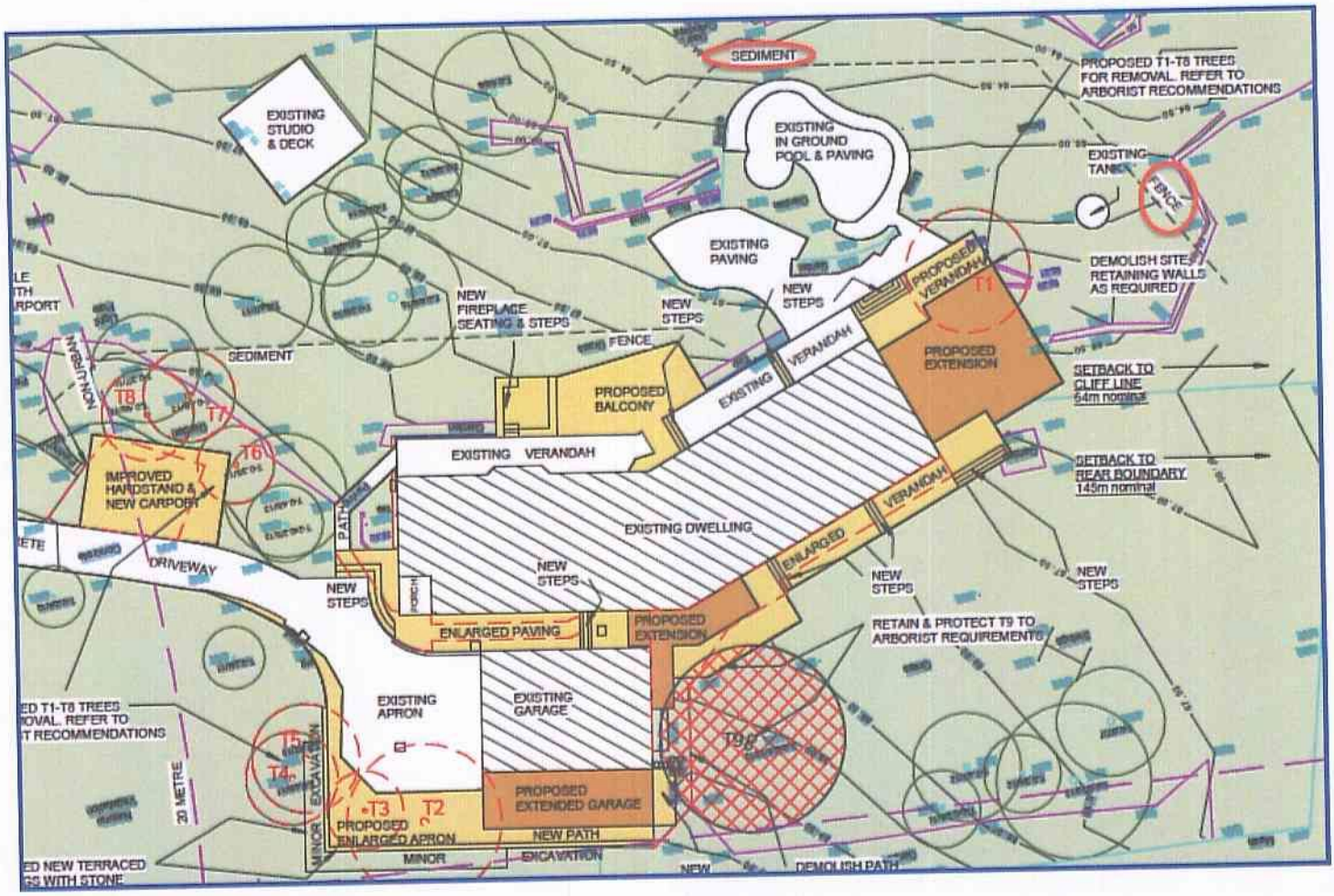


- Excavate house site, stockpiling within the sedimentation barrier.
- Store all building materials within the sedimentation barrier envelope.
- Connect guttering to storm water immediately roof is finished.
- Re-spread topsoil and re-vegetate all bare areas.
- Check controls after rain and maintain in working order.
- Immediately contact Council personnel should any problems occur.

2. THE SITE PLAN

The Site plan attached provides detail & guidance for the builder how to implement this Erosion &Sediment Control Plan, namely:

- The locality, Existing drainage
- The contours (initial and final)
- Existing vegetation, buildings, retaining walls, driveways
- Proposed Erosion & Sediment control , namely an approved sedimentation fence
- Limit of clearing, grading and filling
- Land slope gradients
- Location of topsoil stockpiles to be decided by the Builder on site but to be located within the sedimentation barrier.
- Catchment area boundaries to be decided Builder and to be located with property boundaries and the sedimentation barrier



CERTIFICATION

This Erosion and Sediment Control Plan (ESCP) was prepared for the applicant by Rhett J Drew , BSc (Geology, Honours) QMC, LONDON University

Signed Rhett Drew.

date.....14 Oct 2013

The design of appropriate measures outlined has been done after consulting Urban Erosion And Sediment Control Field Guide produced by NSW Department of Land and Water Conservation

DAVIES GEOTECHNICAL

CONSULTING ENGINEERS

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

9 July 2012

Mr & Mrs R & K Heggie
22 Dendrobium Crescent
ELANORA HEIGHTS NSW 2101

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

Dear Richard & Karla,

re: **GEOTECHNICAL ASSESSMENT**
PROPOSED RESIDENTIAL ADDITIONS AND ALTERATIONS
NO.22 DENDROBIUM CRESCENT ELANORA HEIGHTS NSW

In response to your request, Davies Geotechnical Pty Ltd has undertaken a geotechnical assessment of the above site for a DA stage submission to Pittwater Council in regard to proposed additions and alterations to the existing development.

The following report addresses requirements of the Pittwater Council's Geotechnical Risk Management Policy. Recommendations are provided on geotechnical issues for guidance of the engineering design and construction.

The assessment was undertaken in accordance with the agreed scope of work advised by email, involving the following activities:-

- verification of slope instability hazard mapping for the site;
- site inspection by our Senior Geotechnical Engineer on 28 June 2012;
- review of information provided, as referenced herein and assessment of geotechnical issues;
- reference to published geology and soils mapping and information in our files; and
- preparation of this report based on the information provided.

Background

As the site lies within an area mapped as having risks associated with slope instability, Pittwater Council require a geotechnical assessment of the potential impact of slope instability risk for the proposed development.

Our assessment has determined that the proposed development is "*separate from and is not affected by a Geotechnical Hazard*" (6.2 of the PWC Policy). Accordingly, it is determined that a detailed Geotechnical Report is not required. The justification and opinions on which this conclusion is based are discussed in the following report and is certified on Form 1. Consequently, the following report does not constitute a complete landslide risk assessment under current AGS 2007 .guidelines

Method of Assessment

A walk-over viewing of the upper elevations of the property and neighbouring land was undertaken by a Senior Geotechnical Engineer from Davies Geotechnical on 28 June 2012.

The geotechnical assessment and recommendations for the proposed additions and alterations are based on our observations of the existing development and the features of the surrounding land.

Subsurface exploration is not considered necessary for the DA stage of the development, and has not been undertaken as part of this study.

Site Description

The site comprises an approximately rectangular parcel of land some 80 m wide by 240 m long on the southern side of Dendrobium Crescent. The northern half of the land is developed with a residence. From the mid area of the site to the southern boundary the land is undeveloped and comprises native bushland. Access to the site is via a concrete driveway off Dendrobium Crescent.

The existing residence sits within an expanse of mown lawn. A small studio is present separate from the residence and an in-ground swimming pool is located next to the southeasten corner of the residence.

A metre deep earth drain is present along the western side of the property. The drain extends over most of the developed portion of the site.

Our site visit included limited viewing of the bushland immediately to the south of the lawn. This area comprises the uppermost portion of a south-facing hillside that extends down to the local drainage corridor, Deep Creek. Mr Heggie has advised us that the southern boundary of No.22 coincides approximately with the creek feature. His further advice is that the steep gully side on the southern end of the property is virtually inaccessible, noting that both he and the previous owners (of 15 years) had not walked into this area. He is not aware of any walking tracks accessed by the public on No.22.

The site survey plan provided shows that the developed portion of the site falls in a south-easterly direction from RL75m to about RL64m, an overall grade of approximately 6°.

The observed geotechnical condition of the site is of shallow sandy soils overlying sandstone bedrock. The site is within the mapped Hawkesbury Sandstone (reference 2). Outcrops of sandstone are present across the site in the vicinity of the driveway, downslope from the swimming pool and along the crest of the gully. The crest of the gully contained extensive areas of exposed sandstone.

Our site visit was after a period of steady rainfall. Areas of the lawn were sodden and seepage water was flowing over the sandstone outcrop near the swimming pool. A paved area next to the front door of the residence had ponded water on it.

The site features are illustrated in the photographs taken at the time of our site visit, presented as Plates1 – 6 below.

Plate 1 – (0942) top of gully.

Plate 2 – (0946) rear lawn looking towards drainage swale

Plate 3 – (0950) sst outcropping downhill from swimming pool - seepage over rock

Plate 4 – (0952) rear of residence.

Plate 5 – (0953) driveway apron.

Plate 6 – (0955) wet pavement adjacent front of residence.

The existing development and site features are shown on the survey plan prepared by Richards & Loftus, as referenced above.

Proposed Additions

We were supplied with architectural drawings, a stormwater management plan and a site survey plan as listed below.

Dwg. No.	Sheet	Date
Homes by Design, for Peter Downes Designs		
1103	00 through to 09	4 July 2012
Richards & Loftus Surveying Services, Issue A dated 2 July 2012		
Ref.1171 Sheet 1 of 1	Issue A	2 July 2012
Taylor Consulting – Stormwater Management Plan		
20212-1	--	15 June 2012

The drawings illustrate the proposed alterations to comprise:

- replacement of a vehicular hardstand with a new car port,
- modifications to the driveway apron,
- extension of the existing garage,

- excavation to 1m maximum depth to form the new driveway and garage extension with retaining wall support of the cut,
- two areas of proposed extension to the existing residence,
- various external landscaping and veranda additions.

Floors for the additions are nominated as concrete slabs and are located either at ground level or are shown to be supported on fill to engineers details.

Slope Instability Risk Issues

The following summary is provided from a review of the hazard mapping covering this site. Extracts from the GHD mapping (reference 3) are provided in the attached Figure 2.

- the development on No.22 is wholly within the H3 hazard zone (no report required under the current PWC Policy), and
- there is no influence upon the existing development or proposed works from the H1-S (slope) and H1-R (cliffline/rockfall) zones further south down the block. The H1-R zone has a run-out influence zone below the escarpment/rock ledge, but that area is not developed and not accessed by the occupiers of the property or other persons (eg, hikers or the general public).

Accordingly, assessment of risk to persons in the rear half of the property is not warranted, and a limited geotechnical report as presented herein is appropriate in accordance with 6.2 of the PWC Policy (see extracts in Attachment A).

Sections 5.2, 3.2(b)(iv), and 6.7 of the Policy are relevant to the proposed excavation. Details as required can be determined for the Construction Certificate stage.

The following features of the slope and the development on No.22 were recorded from observations at the time of our site visit, relevant to geotechnical of the site:-

- there were no signs indicative of large-scale natural slope movements or recent instability affecting the developed area of the property (ie, the subject area of the proposed development);
- the physical developments on No.22 (as far as can be seen from casual observation) are in good order and do not indicate evidence of having been affected by slope movements;
- there is no influence in terms of slope instability risk for the development area from the steeper slope area at the rear of the property.

Pittwater Council's Hazard Map (refer Figure 2) identifies the gently graded front half of the property to be Geotechnical Hazard Zone H3, whilst the steeper rear half of the land is mapped as Geotechnical Hazard Zone H1 (for slope instability and rock fall hazards).

We note that there is no development on the steep hillside of No.22 that could be affected by any instability or rockfall from this area. The virtually inaccessible condition of the bushland and absence of any known walking track, as advised by Mr Heggie, indicates that risk to human life from a rockfall event is not a significant consideration.

We did not observe features within the developed area of the property that would indicate large-scale slope movements or instability have occurred (last 100 years or so, or at least since development of the area).

In our opinion, there are no requirements for any special measures to be incorporated in the proposed additions in regard to slope instability risk, other than good practice for construction relating to footings, excavations and drainage for the proposed development, as discussed further below.

Recommendations

For No.22, the following recommendations are provide, to be incorporated in the works, to reflect normal requirements and expectations of the design for the site slope conditions.

1. Footings for the various structural elements of the alterations should be formed on the underlying bedrock. Pad or strip type footings would be suitable. We recommend that the footings be proportioned for a serviceability bearing pressure of 800kPa.
2. The footing excavations should be viewed by an experienced geotechnical engineer to confirm that they are formed on sandstone bedrock.
3. Bulk excavation is required for the driveway modification and the garage extension. As noted above, the excavation is limited to about 1m depth. We anticipate sandy soil overburden above sandstone bedrock will be encountered in the bulk excavation. For the depth of excavation involved, no special requirements are nominated for temporary batters. The excavation is to be supported/faced with a retaining wall, subject to engineering details (to be prepared for construction).
4. The distance from the proposed bulk excavation to adjoining development is estimated to be 30m. Consequently, there is minimal likelihood that vibrations from rock excavation would exceed a threshold value of 10mm/sec, providing care is taken by the excavation contractor in the selection and operation of rock hammer equipment or other rock excavation methods. Notwithstanding, we recommend a small size of rock hammer (eg, equivalent to a Krupp 350kg) should be used to limit further the potential for generation of ground vibrations.
5. Any fill material to be used under floor slabs should comprise sandy soils free of organic or other deleterious inclusions. Local sandy soils (excluding topsoils) won from onsite excavations are likely to provide suitable fill. Such fill may be placed in areas to be covered by floor slabs without requiring engineered compaction provided that the slabs are designed as suspended structural elements. All drainage pipes under slabs, such as for the guest's bathroom should be isolated from the fill so as not to be affected by any settlement with the fill.
6. Sites developed on shallow soils underlain by bedrock, such as at this site, typically present drainage problems. Effective surface water catchment systems, as detailed on the Stormwater Management Plan, are necessary to divert surface runoff, and should be installed.
7. At locations where the floor slabs are close to the level of the outside ground surface, additional subsurface drains are expected to be required, to intercept ground water flowing over the bedrock surface. In this regard, we recommend inclusion of a subsurface drain (indicated on Figure 1) to be located around the uphill side of the new garage, or elsewhere as appropriate for the building design. The depth of the subsurface drain could be determined from test pits dug in this location at the time of construction.
8. Stormwater and site drainage disposal are to be in accordance with the Stormwater Management Plan prepared by Taylor Consulting as referenced above.

Summary / Limitations

The recommendations discussed in the above report are provided on the basis of the limited geotechnical assessment carried out. In accordance with the provisions of the Pittwater Council Geotechnical Risk Management Policy, it is determined that a detailed Geotechnical Report addressing slope instability risk is not required.

The assessment confirms that, from the geotechnical viewpoint, the proposed development on No.22, as detailed on the drawings referenced above, can be undertaken.

The excavation issues and requirements discussed in the re[prt are to be verified by the engineering design prior to commencement of the construction, ie as part of the Construction Certificate process in accordance with the Council's requirements.

With regard to Pittwater Council's requirements in respect of the slope instability risk zoning for this site, it is our opinion that the proposed development would not alter the currently assessed risk of slope instability for the present slope conditions. This is contingent on the recommendations of this report being implemented in the design, and followed during construction.

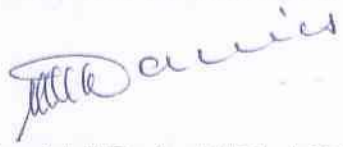
If, during construction, any conditions are encountered that vary significantly from those described, inferred or assumed in the above report, it is a condition of the report that we be advised so that those conditions, and the conclusions discussed in the report, can be reviewed and alternative recommendations assessed, if appropriate.

Attachment B (Limitations of This Report) is provided for further understanding of the context of the investigation undertaken, and the limits of the recommendations provided in the report.

The assessment reported above is based on a geotechnical inspection and slope mapping of the site and immediately adjoining slope areas. Whilst general slope stability issues have been considered in regard to the proposed development, this report does not constitute a slope instability risk appraisal under current AGS 2007 Guidelines.

We trust the above report is adequate for your needs at this time. We will be pleased to assist with any further advice or geotechnical services required in regard to the proposed development. Please contact us if you require further information.

Yours faithfully
DAVIES GEOTECHNICAL Pty Ltd



Warwick N Davies MIEAust CPEng NPER (Civil)
Principal Geotechnical Engineer

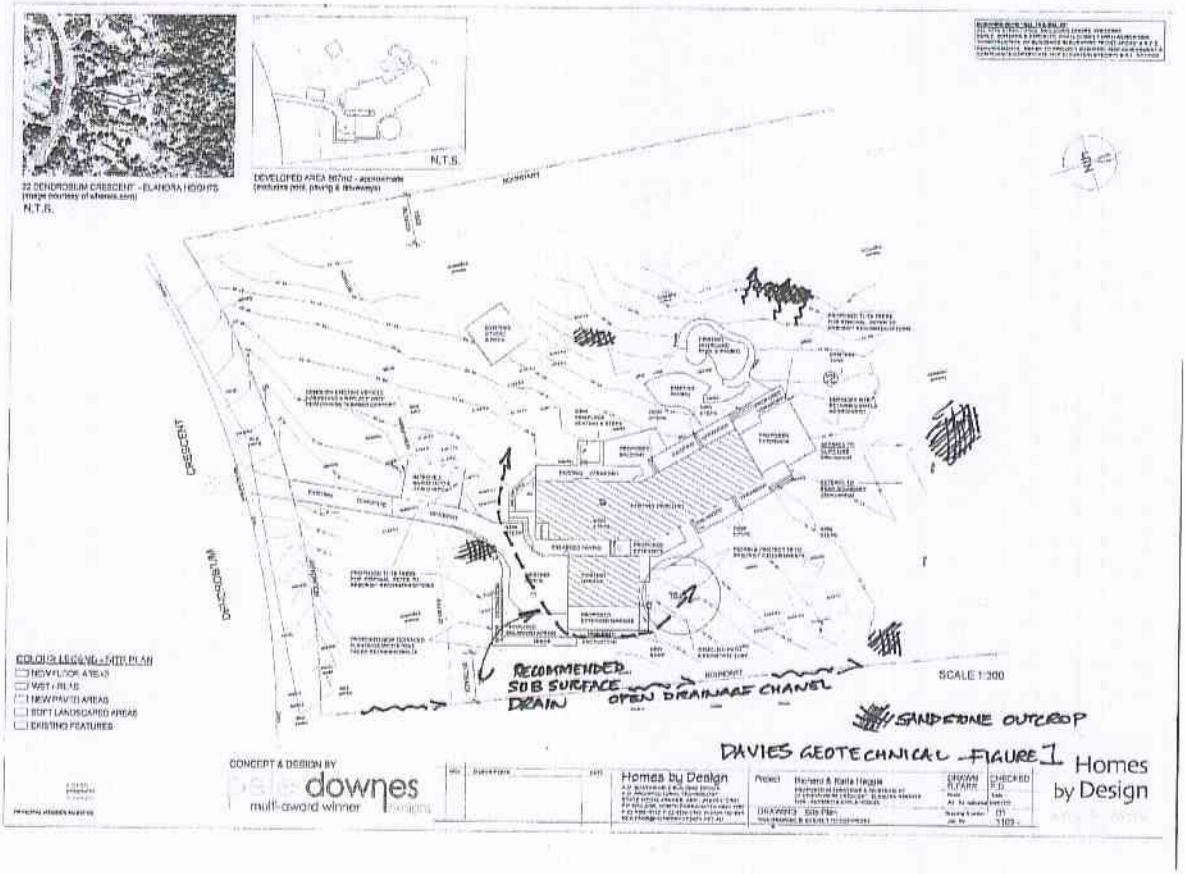
Attachments:

Figure 1 – Site Plan, Geotechnical Features
Figure 2 – Geotechnical Hazard Mapping

PWC Form 1
Attachment A – Extracts from PWC Geotechnical Risk Management Policy
Attachment B – Limitations of This Report

REFERENCES

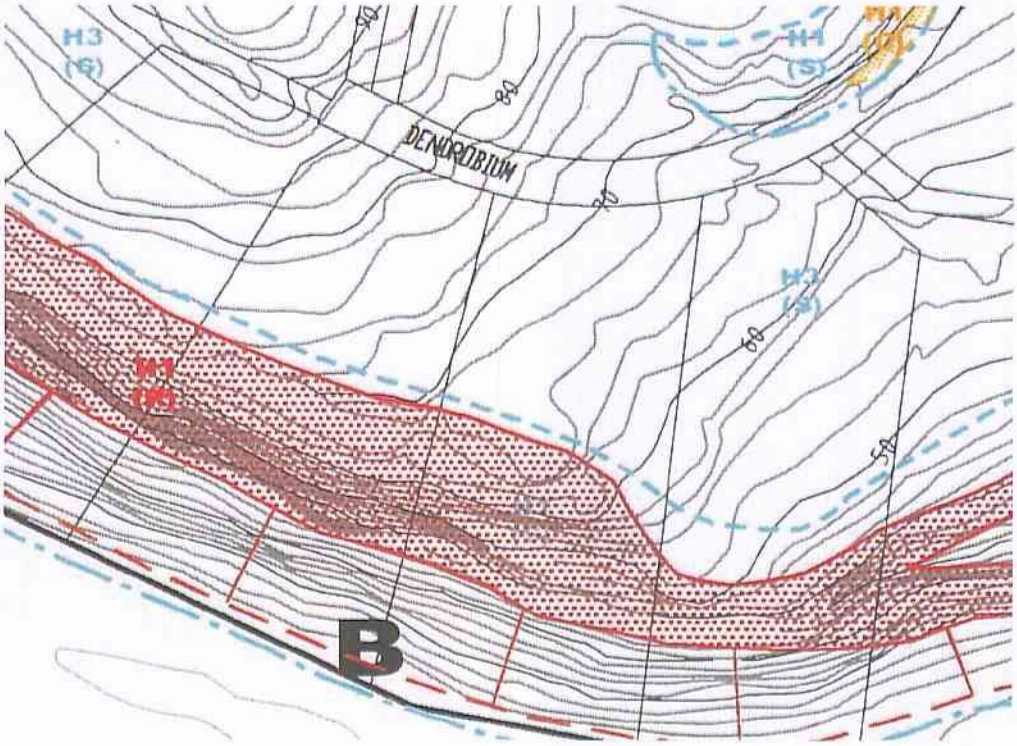
1. *Practice Note Guidelines for Landslide Risk Management 2007 [and Commentary],* Australian Geomechanics, Vol.42, No.1, March 2007.
2. Geol. Sur. NSW, Dept Min Resources (1983). *Geological Series Sheet 9130 (Sydney) 1:100,000.*
3. GHD Geotechnics *Geotechnical Hazard Mapping of the Pittwater LGA, 2007.* Pittwater Council's Risk Management Map P21CDP-BC-MDCP083.



Geotechnical field assessment undertaken 28/6/12.
Drawings supplied client (refer to report). Survey by Richards & Loftus (refer to report). Refer to drawings for dimensions and scales.

DAVIES GEOTECHNICAL
CONSULTING ENGINEERS

Project No: 12-030	**Scale**: as shown	SITE PLAN – GEOTECHNICAL FEATURES NO.22 DENDROBIUM CR ELANORA HEIGHTS NSW (Mr & Mrs R & K Heggie)	**Figure 1**
Drawn: wnd	**Date**: 9 Jul 12		



Geotechnical field assessment undertaken 28/6/12.
Drawings supplied by client (refer to report).
Refer to drawings for dimensions and scales.

DAVIES GEOTECHNICAL
CONSULTING ENGINEERS

Project No: 12-030	**Scale**: as shown	GEOTECHNICAL HAZARD MAPPING NO.22 DENDROBIUM CR ELANORA HEIGHTS NSW (Mr & Mrs R & K Heggie)	**Figure 2**
Drawn: wnd	**Date**: 9 Jul 12		

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1 – To be submitted with Development Application

Development Application for	Mr & Mrs R & K Heggie
Address of site	22 Dendrobium Crescent Elanora Heights NSW

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

I, ***Warwick Davies*** *on behalf of* ***Davies Geotechnical Pty Ltd***

on this the **9th July 2012** 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 Section 6.0 of the Geotechnical Risk Management Policy for Pittwater - 2009. I confirm that 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 evelopment/Alterations.
- Provided the coastal process and coastal forces analysis for inclusion in the Geotechnical Report

Geotechnical Report Details:

Report Title:	Geotechnical Assessment, Proposed Residential Alterations and Additions No.22 Dendrobium Crescent Elanora Heights NSW
Report Date:	Letter report, ref. 12-030.A dated 9 July 2012
Author:	Warwick Davies
Author's Company/Organisation:	Davies Geotechnical Pty Ltd

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

Architectural details prepared by Homes By Design for Peter Downes Designs, ref. 1103, Sheets 00 to 09 dated 4 July 2012
Site survey by Richards & Loftus Surveying Services, Issue A dated 2 July 2012
Taylor Consulting – Stormwater Management Plan dated 15 June 2012

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 aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure, taken as at least 100 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature: 

9 July 2012

Name: Warwick Davies

Chartered Professional Status :MIEAust CPEng NPER (Civil)

Membership No: 385078

Company: Davies Geotechnical Pty Ltd

[NOTE: Form 1A not relevant for this site and development, and is not provided]

ATTACHMENT A

EXTRACTS FROM THE PITTWATER COUNCIL GEOTECHNICAL RISK MANAGEMENT POLICY

(reference 1)

6.2 Minor Development, Minor alternations and/or Development separate from a Geotechnical Hazard

For minor development, minor alteration and/or Development separate from and is not affected by a Geotechnical Hazard, the Geotechnical Engineer/Engineering Geologist may determine that a detailed Geotechnical Report is not required. This must be justified as a clear professional opinion with the supporting basis on which the opinion was formed and must be certified on Form 1.

At all times any decision regarding the degree of investigations and assessment required must be dictated by consideration of risk to Life and to Property and the recognition by the Geotechnical Engineer/Engineering Geologist that the Council will rely on the Geotechnical Report/Opinion as the basis for ensuring that the geotechnical risk management aspects of the site/proposal have been adequately addressed.

5.2 Construction Certificate Stage

A Geotechnical Report is required to be lodged with a Construction Certificate as follows:

a) For all Excavation and Landfill activities for all development as described in Paragraph 3.2(b) Clause (iv).

3.2 Application of this Policy

This Policy is to be applied as follows:

(a) to address both structural and geotechnical requirements relating to geotechnical issues only. Separate structural requirements will also apply for the erection of any structure in accordance with the Building Code of Australia (BCA), engineering standards and best engineering practice.

(b) to each of the following criteria:

(i) for development on land identified on Pittwater 21 Development Control Plan Map P21DCP-BC-MDCP087 as being areas subject to the Geotechnical Risk Management Policy.

(ii) for development on land identified on Pittwater 21 Development Control Plan Map P21DCP-BC-MDCP017 as being Bluff Management Areas and subject to the Geotechnical Risk Management Policy.

(iii) For development by Utility Companies and Public Authorities including Pittwater Council

- The Policy is to apply to all works by Council or any Authority on public land where identified on the Pittwater 21 Development Control Plan Map (P21DCP – BC-MDCP087) and subject to Part 4 of the Environmental Planning and Assessment Act requiring the lodgement of a Development Application.

(iv) for Excavation and Landfill activities for all development on land in the Pittwater LGA that includes:

- excavations greater than 1 metre deep, the edge of which is closer to the site boundary or a structure to be retained on the site, than the overall depth of the excavation and/or
- any excavation greater than 1.5 metres deep below the existing surface and/or
- any excavation that has the potential to destabilize a tree capable of collapsing in a way that any part of the tree could fall onto adjoining structures (proposed or existing) or adjoining property and/or
- any fill greater than 1.0 metre high and/or
- any works that may be affected by geotechnical processes or which may affect geotechnical processes including but not limited to construction on sites with low bearing capacity soils.

ATTACHMENT B

LIMITATIONS OF THIS REPORT

Soil and rock formations are variable. Information presented as part of this report may indicate the approximate subsurface conditions only at the specific test locations. Boundaries between zones on logs or stratigraphic sections are often not distinct, but rather are transitional and have been interpreted.

The precision with which subsurface conditions are indicated depends largely on the frequency and method of sampling, and on the uniformity of subsurface conditions. The spacing of test sites also usually reflects budget and schedule constraints.

Groundwater conditions described in this report refer only to those observed at the place and under circumstances noted in the report. The conditions may vary seasonally or as a consequence of construction activities on the site or adjacent sites.

Where ground conditions encountered at the site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of this report that Davies Geotechnical Pty Ltd be notified of any variations and be provided with an opportunity to review the recommendations of this report. Recognition of changed soil and rock conditions requires experience and it is recommended that a suitably experienced geotechnical engineer be engaged to visit the site with sufficient frequency to detect if conditions have changed significantly.

The comments given in this report are intended only for the guidance of the design engineer, or for other purposes specifically noted in the report. The number of boreholes or test excavations necessary to determine all relevant underground conditions which may affect construction costs, techniques and equipment choice, scheduling, and sequence of operations would normally be greater than has been carried out for design purposes. Contractors should therefore rely on their own additional investigations, as well as their own interpretations of the borehole data in this report, as to how subsurface conditions may affect their work.

PITTWATER COUNCIL

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 2– PART A – To be submitted with detailed design for Construction Certificate

Development Application for	**Mr & Mrs Heggie** (Name of Applicant)
Address of site	**22 Dendrobium Crescent, Elanora Heights**

PART A: Declaration made by Structural or Civil Engineer in relation to the incorporation of the Geotechnical Issues into the project design

I, Bruce Lewis **on behalf of** Peninsula Consulting Engineers
(insert name) (trading or company name)

on this the 10 December 2013
(date)

certify that I am a Structural or Civil Engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009. 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 also certify that I have prepared the below listed structural documents in accordance with the recommendations given in the Geotechnical Report for the above development and that

Please mark appropriate box

X the structural design meets the recommendations as set out in the Geotechnical Report or any revision thereto.
the structural design has considered the requirements set out in the Geotechnical Report for Excavation and Landfill both for the excavation/construction phase and the final installation in accordance with Clause 3.2 (b)(iv) of the Geotechnical Risk Management Policy.

Geotechnical Report Details:

Report Title: Geotechnical Assessment for 22 Dendrobium Crescent, Elanora Heights.
Project # 12-030.A
Report Date: July 2012
Author: Warwick Davies
Author's Company/Organisation: Davies Geotechnical P/L

13-1103-S01-S07 -Rev -

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

Signature BRUCE .....

Name Bruce Lewis.....

Chartered Professional Status CPEng NPER.....

Membership No. 879131.....

Company Peninsula Consulting Engineers .....

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 2 – PART B – To be submitted with detailed design for Construction Certificate

PART B Declaration made by Geotechnical Engineer or Engineering Geologist and/or Coastal Engineer (where applicable) in relation to the incorporation of the Geotechnical issues into the project design

I, Warwick Davies on behalf of Davies Geotechnical Pty Ltd
(Insert Name) *(Trading or Company Name)*

on this the 12 February 2014
(Date)

certify that I am a Geotechnical Engineer ~~or Engineering Geologist and/or Coastal Engineer~~ as defined by the Geotechnical Risk Management Policy for Pittwater - 2099 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 also certify that I have reviewed the design plans and structural design plans for the Construction Certificate Stage and that I am satisfied that:

Please mark appropriate box

☑ the structural design meets the recommendations as set out in the Geotechnical Report or any revision thereto.

☐ ~~the structural design has considered the requirements set out in the Geotechnical Report for Excavation and Landfill both for the excavation/construction phase and the final installation in accordance with Clause 3.2 (b)(iv) of the Geotechnical Risk Management Policy.~~

Geotechnical Report Details:

Report Title:	Geotechnical Assessment, Additions and Alterations, 22 Denrobium Crescent Elanora Heights NSW
Report Date:	12-030.A dated 9 July 2012
Author:	Warwick Davies

Documentation which relates to or is relied upon in report preparation:

Structural details prepared by Peninsula Consulting Engineers, ref.13-1103, drawings S01 to S04, all Rev- dated January 2014.

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

Signature:

12 February 2014

Name: Warwick Davies

Chartered Professional Status: MIEAust CPEng NPER (Civil)

Membership No. 385078

Company: Davies Geotechnical Pty Ltd

BASIX® Certificate

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

Alterations and Additions

Certificate number: A141700

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Alterations and Additions Definitions" dated 29/9/2006 published by Department of Planning. This document is available at www.basix.nsw.gov.au

Director-General
Date of issue: Thursday, 05, July 2012
To be valid, this certificate must be lodged within 3 months of the date of issue.

Description of project

Project address	
Project name	HEGGIE-1131-ELANORA HEIGHTS
Street address	22 DENDROBIUM Crescent ELANORA HEIGHTS 2101
Local Government Area	Pittwater Council
Plan type and number	Deposited Plan 263422
Lot number	28
Section number	0
Project type	
Dwelling type	Separate dwelling house
Type of alteration and addition	My renovation work is valued at $50,000 or more, and does not include a pool (and/or spa).

NSW GOVERNMENT Planning & Infrastructure

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.*)

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

Certificate Prepared by (please complete before submitting to Council or PCA)
Name / Company Name: B.L.Roles & Associates
ABN (if applicable): 43 467 257 072

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

BASIX Certificate number: A141700

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

Construction	Additional insulation required (R-value)	Other specifications
concrete slab on ground floor.	nil	
suspended floor with enclosed subfloor: concrete (R0.6).	R0.70 (down) (or R1.30 including construction)	
external wall: framed (weatherboard, fibro, metal clad)	R1.30 (or R1.70 including construction)	
internal wall shared with garage: plasterboard (R0.36)	nil	
raked ceiling, pitched/skillion roof: framed	ceiling: R3.00 (up), roof: foil/sarking	dark (solar absorptance > 0.70)

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

Windows and glazed doors glazing requirements

Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing		Shading device	Frame and glass type
			Height (m)	Distance (m)		
W4	E	0.8	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W5	E	3.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W6	SE	0.8	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W7	E	1.3	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)

Glazing requirements

Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing		Shading device	Frame and glass type	Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check
			Height (m)	Distance (m)					
W8	E	2.65	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W9	E	2.6	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W12	S	11.4	0	0	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W13	S	10.5	0	0	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W14	W	1.25	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W15	W	1.25	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W18	S	1.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W19	S	2.3	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W20	W	2.3	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W21	S	2.1	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W22	S	2.1	0	0	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W23	W	2.1	0	0	eave/verandah/pergola/balcony >=750 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
W25	W	1.8	0	0	eave/verandah/pergola/balcony >=750 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			

Glazing requirements

Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing		Shading device	Frame and glass type	Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check
			Height (m)	Distance (m)					
W27	E	1.7	3	2.4	eave/verandah/pergola/balcony >=450 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
D2	W	3.8	0	0	eave/verandah/pergola/balcony >=750 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
D8	E	6.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
D9	E	9.6	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
D10	W	6.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
D11	W	3.15	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
D12	W	3.15	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			
D14	W	6.7	0	0	eave/verandah/pergola/balcony >=900 mm	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)			

Legend
In these commitments, "applicant" means the person carrying out the development.
Commitments identified with a "✓" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
Commitments identified with a "✓" in the "Show on CC/CDC plans & specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate for the development may be issued.

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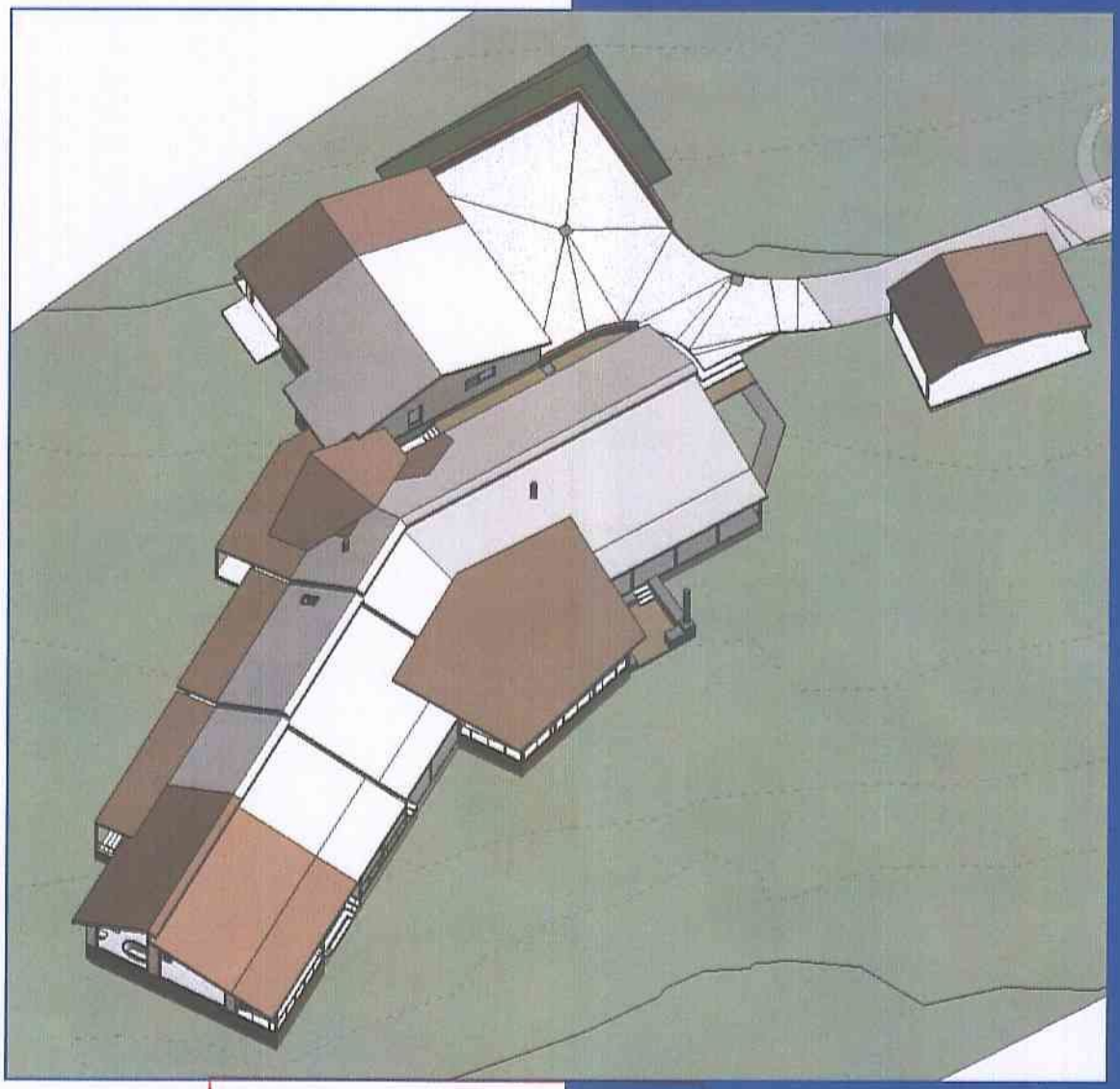

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Bush Fire Construction Specifications
BAL 29

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.*)

SECTION 7
CONSTRUCTION FOR BUSHFIRE ATTACK LEVEL 29 (BAL—29)

SARKING

Any sarking used for BAL-12.5, BAL-19, BAL-29 or BAL-40 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.

7.1 GENERAL

A building assessed in Section 2 as being BAL—29 shall comply with Section 3 and Clauses 7.2 to 7.8.

NOTE: 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 7.2 to 7.8 (see Clause 3.8).

NOTE: BAL—29 is primarily concerned with protection from ember attack and radiant heat greater than 19 kW/m2 up to and including 29 kW/m2.

7.2 SUBFLOOR SUPPORTS

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

a) a wall that complies with Clause 7.4; 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.

d) 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 F); or

(iii) a combination of Items (i) and (ii) above.

NOTE: This requirement applies to the principal building only and not to verandas, decks, steps, ramps and landings (see Clause 7.7).

C7.2 Combustible materials stored in the subfloor space may be ignited by embers and cause an impact to the building.

7.3 FLOORS

7.3.1 Concrete slabs on ground

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

7.3.2 Elevated floors

7.3.2.1 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 7.4; 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.

7.3.2.2 Unenclosed subfloor space

Where the subfloor space is unenclosed, the bearers, joists and flooring, less than 400mm 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.

7.4 EXTERNAL WALLS

7.4.1 Walls

Walls shall be one of the following:

a) Made of non-combustible material (e.g., full masonry, brick veneer, mud brick, concrete, aerated concrete). or

b) Made of timber-framed or steel-framed walls that are sarked on the outside of the frame and clad with—

(i) fibre-cement external cladding, a minimum of 6 mm in thickness; or

(ii) steel sheet; or

(iii) bushfire-resisting timber (see Appendix F); or

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

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

7.4.2 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.

Alternatively, sarking-type material can be applied over the frame prior to fixing any external cladding.

7.4.3 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 they are less than 3 mm (see Clause 3.6).

7.5 EXTERNAL GLAZED ELEMENTS AND ASSEMBLIES AND EXTERNAL DOORS

7.5.1 Bushfire shutters

Where fitted, bushfire shutters shall comply with Clause 3.7 and be made from—

a) non-combustible material; or

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

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

7.5.1A 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).

7.5.2 Windows

Windows shall comply with one of the following:

a) They shall be completely protected by a bushfire shutter that complies with Clause 7.5.1. or

b) They shall comply with the following:

(i) Window frames and window joinery and shall be made from one of the following:

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

(B) Metal. or

(C) 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.

(ii) Externally fitted hardware that supports the sash in its functions of opening and closing shall be metal.

(iii) Glazing shall be toughened glass minimum 5 mm.

(iv) 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), that portion shall be screened externally with a screen that complies with Clause 7.5.1A.

(v) The openable portions of windows shall be screened internally or externally with screens that comply with Clause 7.5.1A.

7.5.3 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) They shall be protected by a bushfire shutter that complies with Clause 7.5.1. or

b) They shall be completely protected externally by screens that comply with Clause 7.5.1A. or

c) They shall comply with the following:

(i) Doors shall be—

(A) non-combustible; or

(B) a solid 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, protected externally by a screen that complies with Clause 7.5.1A; or

(D) a fully framed glazed door, where the framing is made from noncombustible materials or from bushfire-resisting timber (see Appendix F).

(ii) Externally fitted hardware that supports the panel in its functions of opening and closing shall be metal.
(iii) Where doors incorporate glazing, the glazing shall be toughened glass minimum 6 mm.
(iv) 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 door (see Figure D3, Appendix D), that portion shall be screened externally with screens that comply with Clause 7.5.1A.
(v) Door frames shall be made from one of the following:

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

(B) Metal. or

(C) 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.

(vi) Doors shall be tight-fitting to the door frame and to an abutting door, if applicable.
(vii) Weather strips, draught excluders or draught seals shall be installed at the base of side-hung external doors.

7.5.4 Doors—Sliding doors

Sliding doors shall comply with one of the following:

a) They shall be protected by a bushfire shutter that complies with Clause 7.5.1. or
b) They shall be completely protected externally by screens that comply with Clause 7.5.1A. or
c) They shall comply with the following:

(i) Both the door frame supporting the sliding door and the framing surrounding any glazing shall be one of the following:

(A) Bushfire-resisting timber (see Appendix F); or

(B) Metal; or

(C) 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.

(ii) Externally fitted hardware that supports the panel in its functions of opening and closing shall be metal.
(iii) Where sliding doors incorporate glazing, the glazing shall be toughened glass minimum 6 mm, except where both the fixed and openable portions of doors are screened externally with screens that comply with Clause 7.5.1A.
(iv) Sliding doors shall be tight-fitting in the frames.

7.5.5 Doors—Vehicle access doors (garage doors)

The following apply to vehicle access doors:

a) Vehicle access doors 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 combination of any of Items (i), (ii) or (iii) above.
b) (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) (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) (d) Vehicle access doors shall not include ventilation slots.

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

7.6.1 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.
d) A pipe or conduit that penetrates the roof covering shall be non-combustible.

7.6.2 Tiled roofs

Tiled roofs shall be fully sarked. The sarking shall—

a) have a flammability index of not more than 5, when tested to AS 1530.2;
b) be located directly below the roof battens;
c) cover the entire roof area including the ridge; and
d) extend into gutters and valleys.

7.6.3 Sheet roofs

Sheet roofs shall—

a) be fully sarked in accordance with Clause 7.6.2, except that foil-backed insulation blankets may be installed over the battens; or
b) have any gaps greater than 3 mm 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.

7.6.4 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 7.6.1, 7.6.2, 7.6.3, 7.6.5 and 7.6.6.

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 7.4 shall have a non-combustible roof covering and the support structure shall be—

(i) of non-combustible material; or

(ii) bushfire-resisting timber (see Appendix F); or

(iii) timber rafters lined on the underside with fibre-cement sheeting a minimum of

6 mm in thickness, or with material complying with AS 1530.8.1; or

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

7.6.5 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 flash 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.

(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, shall be used in the outer pane of the IGU.

(e) Where roof lights are installed in roofs having a pitch of less than 18 degrees to the horizontal, the glazing shall be protected 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.

(f) Evaporative cooling units shall be fitted with butterfly closers at or near the ceiling 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) External single pane glazed elements of roof lights and skylights, where the pitch of the glazed element is 18 degrees or less to the horizontal, shall be protected 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.

7.6.6 Eaves linings, fascias and gables

The following apply to eaves linings, fascias and gables:

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

b) Gables shall comply with Clause 7.4.

c) Fascias and bargeboards shall—

   (i) where timber is used, be made from bushfire-resisting timber (see Appendix F); or

   (ii) where made from metal, be fixed at 450 mm centres; or

   (iii) be a combination of Items (i) and (ii) above.

d) (d) Eaves linings shall be—

   (i) fibre-cement sheet, a minimum 4.5 mm in thickness; or

   (ii) bushfire-resisting timber (see Appendix F); or

   (iii) a combination of Items (i) and (ii) above.

e) (e) Eaves penetrations shall be protected the same as for roof penetrations (see Clause 7.6.5).

f) (f) 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.

7.6.7 Gutters and downpipes

This Standard does not provide construction-specific material requirements for downpipes.

If installed, gutter and valley leaf guards shall be non-combustible.

With the exception of box gutters, gutters shall be metal or PVC-U.

Box gutters shall be non-combustible and flashed at the junction with the roof, with non-combustible materials.

7.7 VERANDAS, DECKS, STEPS, RAMPS AND LANDINGS

7.7.1 General

Decking may be spaced.

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

C7.7.1 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 spacing of 10 mm may preclude this from happening but such a spacing regime may not be practical for a timber deck.

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

7.7.2.1 Materials to enclose a subfloor space

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 7.4; 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.

7.7.2.2 Supports

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

7.7.2.3 Framing

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

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

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.

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

7.7.3.1 Supports

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.

7.7.3.2 Framing

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.

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

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.

7.7.4 Balustrades, handrails or other barriers

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.

7.8 WATER AND GAS SUPPLY PIPES

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

Appendix F list of Timbers AS3959, 2009

Black-butt - Eucalyptus pilularis
Turpentine - Syncarpia glomulifera
Silver Top Ash - Eucalyptus sieberi
Spotted Gum - Corymbia maculate - Corymbia henryi - Corymbia citriodora
Red Iron Bark - Eucalyptus sideroxylon
Kwila[Merbau] - Intsia bijuga
Red River Gum - Eucalyptus camaldulensis

FPA AUSTRALIA
Certified Business
Bushfire Planning & Design

Bush Fire Planning Services

Corporate member of the Fire Protection Association of Australia

Lot 28, DP 263422, 22 Dendrobium Crescent Eleanora Heights NSW 2101.

Thursday, 2 February 2012

Prepared and certified by:	***Matthew Willis*** *BPAD – A* *Certified Practitioner* *Certification No: BPD-PA 09337*		2/02/2012 11/07/2012
Can this proposal comply with AS3959-2009 (inc PBP addendum 3)?	**Yes**		
What is the recommended AS 3959-2009 level of compliance on the fire prone aspects?	**BAL-29**		
Is referral to the RFS required?	**No**		
Can this development comply with the requirements of PBP?	**Yes**		
Plans by "Homes by Design" dated. (Appendix 1)	***04/07/ 2012***		

CC104/2014 covers - Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.)*

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

Bushfire Planning Services

15 Parkcrest Place

Kenthurst NSW 2156

02 96543228

0428408577

mattw@bushfireconsultants.com.au

Bushfire Risk Assessment

Thursday, 2 February 2012

Contact

Rex Farr

Homes by Design

Www.HomesbyDesign.net.au

9738 9772

Owner

Richard and Karla Heggie

22 Dendrobium Crescent

Eleanora Heights

NSW 2101

9970 8706

Subject Property

Lot 28 DP 263422

22 Dendrobium Crescent

Eleanora Heights NSW 2101

1. Contents

BUSHFIRE RISK ASSESSMENT CERTIFICATE

THIS FORM IS TO BE COMPLETED BY A RECOGNISED CONSULTANT IN BUSHFIRE RISK ASSESSMENT IN ACCORDANCE WITH SECTION 79BA 1(b) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 NO 203

Property Address	**22 Dendrobium Cres Elanora Heights**
Description of the Proposal	**Alterations and additions to an existing building**
Plan Reference	**04/07/ 2012**
BAL Rating	**BAL-29**
Does the Proposal Rely on Alternate Solutions?	**No**

I, Matthew Willis of Bushfire Planning Services Pty Ltd

have carried out a bushfire risk assessment on the above mentioned proposal and property. A detailed Bushfire Assessment Report is attached which includes the submission requirements set out in Appendix 4 Of Planning for Bushfire Protection 2006 together with recommendations as to how the relevant Specifications and requirements are to be achieved.

Note: this certificate must be completed and signed by a person recognised by the NSW Rural Fire Service as a qualified consultant in bush fire risk assessment in accordance with 79BA of the EP&A Act 1979 No 203.

I hereby certify, in accordance with Section 79BA of the Environmental Planning and Assessment Act 1979 No 203:

1. That I am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire risk assessment; and

2. That subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the **relevant specifications and requirements***

***The relevant specifications and requirements** being specifications and requirements of the document entitled Planning for Bush Fire Protection prepared y the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by Section 79 BA(1)(a) of the Environmental Planning and Assessment Act 1979 No 203.

I am aware that the Bushfire Assessment Report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Pittwater Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with Planning for Bushfire Protection 2006.

REPORT REFERENCE	**11/07/2012**
REPORT DATE	**11/07/2012**
CERTIFICATION NO/ACCREDITED SCHEME	***FPAA BPAD A BPD-PA 09337***

Attachments:

- Bushfire Risk Assessment Report
- Recommendations

SIGNATURE: ------ *DATE:* -----*11/07/2012*-----

2. Executive summary.

Bushfire Planning Services has been requested by Rex Farr of Homes by Design to supply a bushfire compliance report on lot 28, DP 263422, 22 Dendrobium Crescent, Eleanora Heights NSW 2101 on behalf of the owners Richard and Karla Heggie.

The works proposed include the construction of a new guest room to the southern end of the existing building, an extension to the existing garage, modifications and/or additions to the existing verandas, construction of a new covered balcony, replacement of several windows and some other internal modifications.

The proposal does move the building footprint closer towards the hazard at the southern end of the subject lot however as part of this proposal the establishment of an Asset Protection Zone between the existing building and the top of the escarpment to the south will be required. Currently the vegetation contained in this area could potentially cause a hazard to the existing house. This hazard will be removed as part of this proposal.

The approval of this proposal with its associated Asset Protection Zone should result in a better bushfire outcome for the existing house than that which is currently available.

The block itself is separated into two separate areas by a steep escarpment situated approximately 2/3 of the way along the subject lot. The southern end of lot 28 contains forest type and vegetation which is considered to be the hazard to this development.

The development area is on the northern section of the lot and slopes gently from its frontage with Dendrobium Crescent towards the escarpment towards the South. For the most part this section of lot 28 contains managed gardens and mown lawns.

The remaining vegetation within the study area is contained within the boundaries of established residential allotments and is considered to be managed land and of low threat to this proposal.

The calculations and assumptions outlined in this report show that the development will be required to comply with the construction requirements of AS 3959-2009 BAL-29 on its southern and western aspects, BAL-19 on all other aspects and the Rural Fire Services requirements contained within the addendum to appendix 3 of Planning for Bushfire Protection on all aspects.

It is my considered opinion that this development can comply with the requirements of AS 3959-2009 and Planning for Bushfire Protection 2009.

3. General.

This proposal relates to the alterations and additions of an existing class 1A dwelling on the subject lot and it is ability to comply with the rules and regulations for building in a bushfire prone areas.

The methodology used on this report is based on Planning for Bushfire Protection 2006 (PBP) as published by the New South Wales Rural Fire Service.

Any wording that appears in *blue italics* is quotes from Planning for Bushfire Protection 2006. Some of the measurements used in this report have been taken from aerial photographs and as such are approximate only.

4. Block description

The subject lot is a rural residential allotment situated on the southern side of Dendrobium Crescent.

The total area of lot 28 is approximately 2 ha. The lot is effectively divided in two parts by a very steep escarpment approximately 60 m in height and 140 m from the front, northern end of the subject lot.

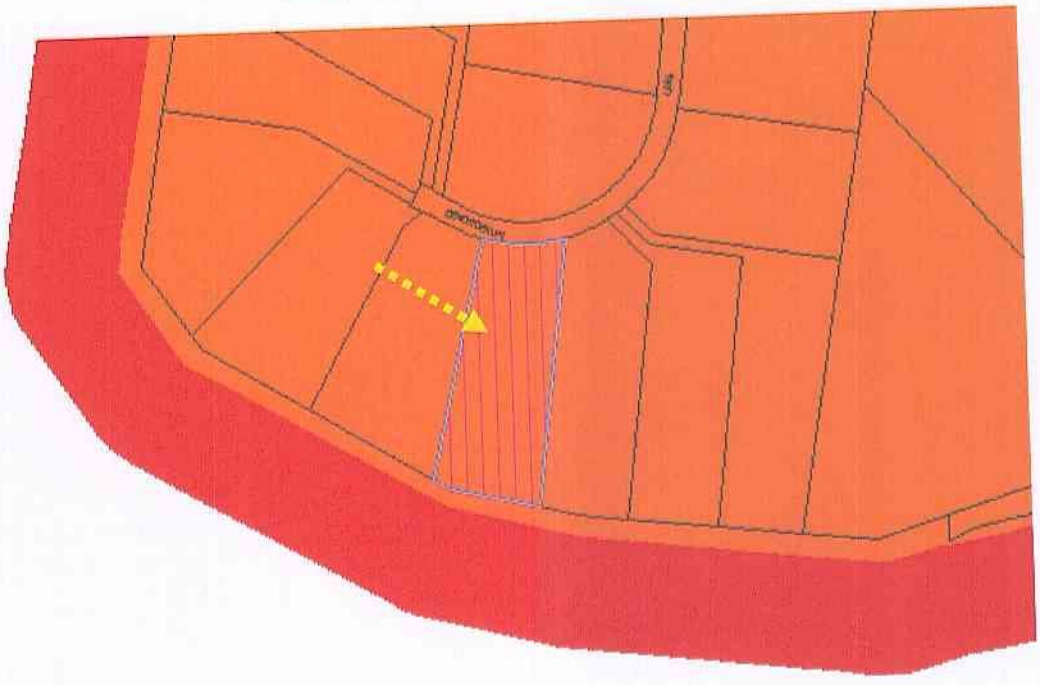
The land to the South of the escarpment is virtually inaccessible and contains forest vegetation.

The developed part of Lot 28 currently contains a class 1A dwelling and a class 10 b swimming pool.

The area immediately around the house contains mature trees, mown lawns and managed gardens. To the South of the existing dwelling, between the dwelling and the top of the escarpment is an area containing numerous trees and large sandstone outcrops.

- Lot; 28
- DP; 263422.
- LGA; Pittwater.
- Area; 2 ha (approximately).
- Address; 22 Dendrobium Crescent, Eleanora Heights.

Map 1; shows the cadastral layout around the subject lot.



Map 2 is an extract from the councils bushfire prone land map. The map shows lot 28 to be within the buffer zone of category 1 bushfire vegetation.

5. Vegetation

The study area for the vegetation is 140m surrounding the subject block.

The vegetation within the study area for this development is considered to be mainly managed land.

The vegetation that is considered to be the hazard to this proposal is contained within the boundaries of the southern ends of the subject and its two neighbouring allotments.

For the purposes of this assessment this vegetation is considered to be forest.

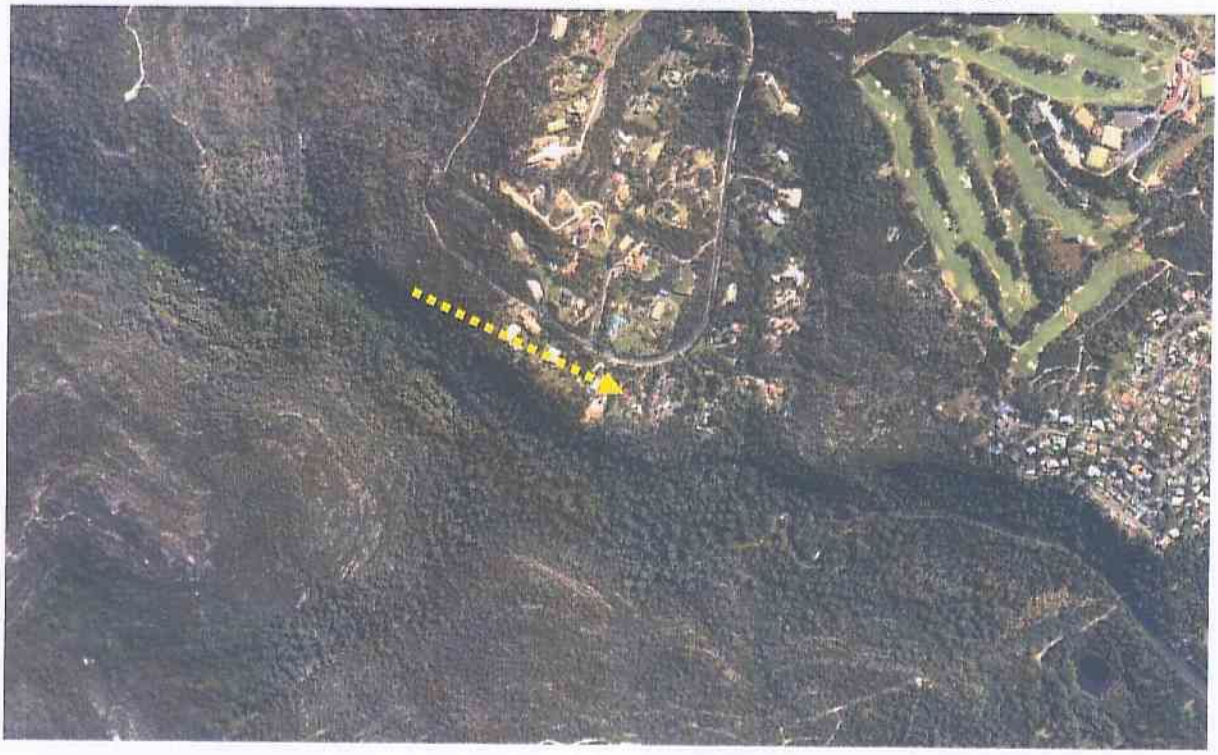


Photo 1 an overview of the vegetation within the general area.

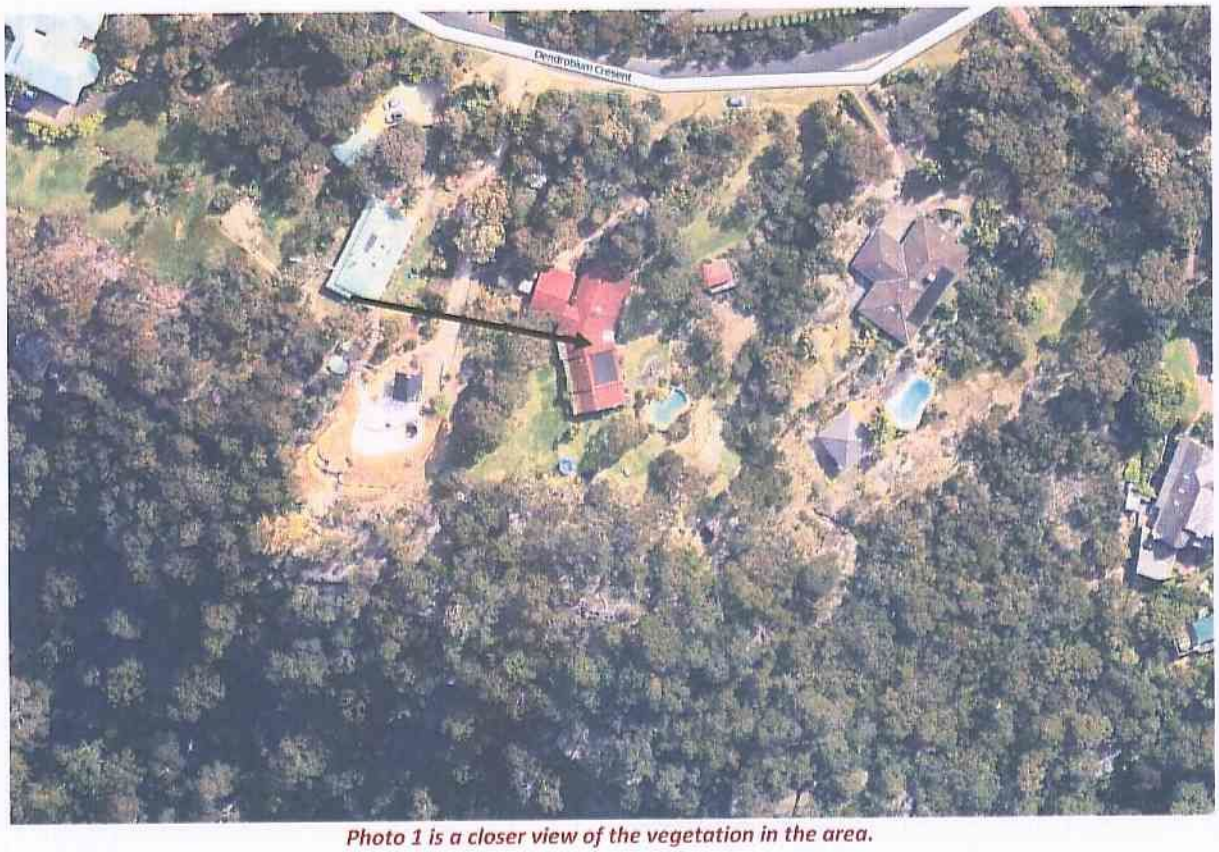


Photo 1 is a closer view of the vegetation in the area.

The following table outlines the vegetation orientation and distance from the development area.

Aspect	North	East	South West	West
Vegetation type	Managed Land	Managed Land	Managed Land and Forest	Maanaged Land
Setback within lot 28	N/A	36m	63m	8m
Off site setback	N/A	32m	N/A	60m
Total setback	N/A	68m	63m	68m

Table 1. Any aspect marked with "N/A" in the table above indicates that it is considered there is no hazard in that direction.

6. Known constraints on subject block

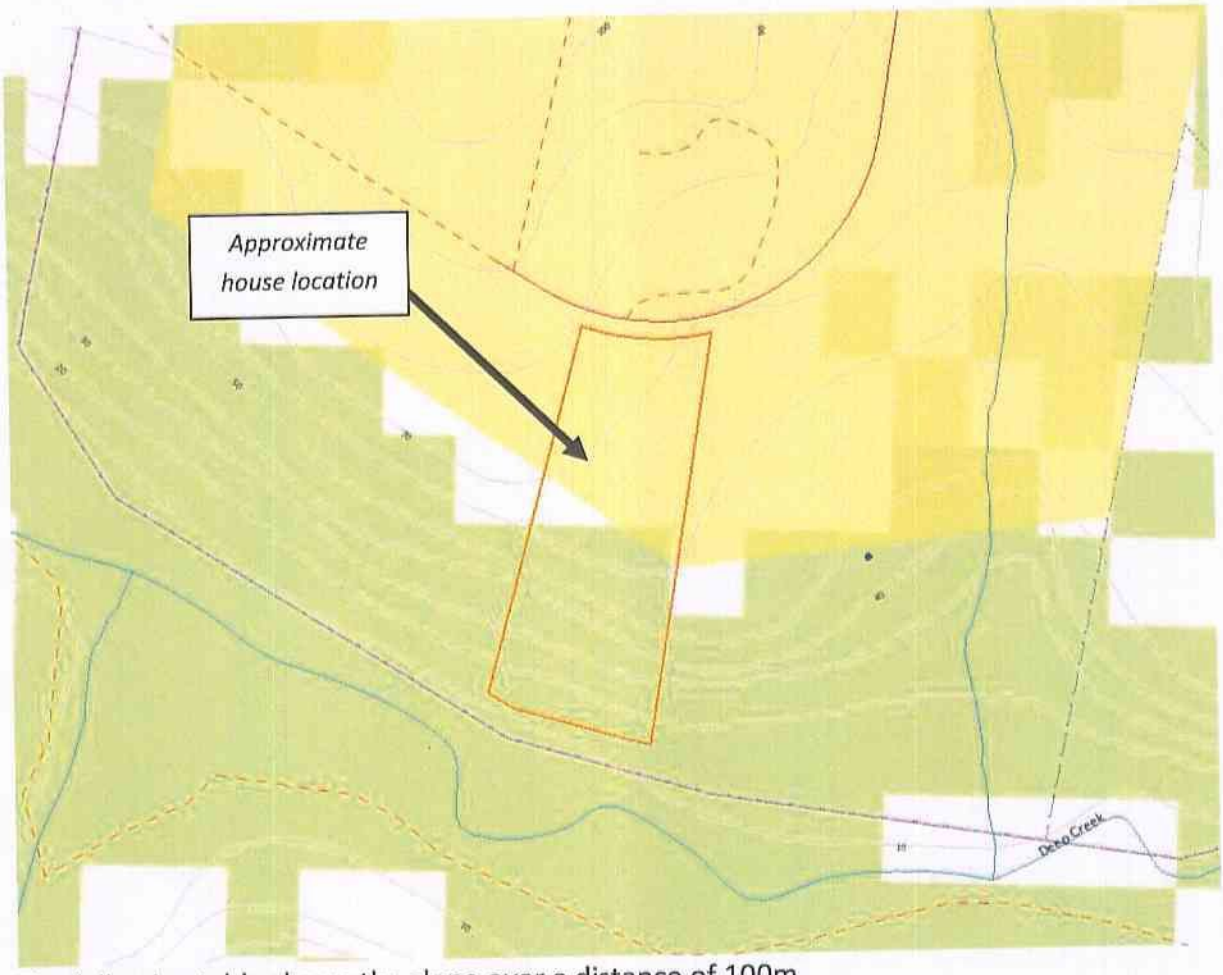
I have not been informed or know of any places of cultural or environmental significance within the boundaries of the subject block.

Given the nature of the surrounding land it is considered highly unlikely that anything of significance will be affected by this development.

7. Slope

The slope of the land beneath the hazard that is most likely to influence bushfire behaviour has been calculated by topographical map analysis to a distance of 100 m from the subject lot.

An extract of the topographical map for the area is shown below and the relevant slope analysis is shown in table 2 also shown below.



The following table shows the slope over a distance of 100m.

Aspect	North	East	South	West
Slope	N/A	5-10 degrees downslope	15-20 degrees downslope	5-10 degrees downslope

Table 2. Any aspect marked with "N/A" in the table above indicates that it is considered there is no hazard in that direction.

8. Utilities

Water

The subject block will be serviced by a reticulated water supply. There is a hydrant point within the required distance near the front of the property.

Photo 2 shows the hydrant point indicated directly in front of the subject lot.

Electricity

Mains electricity is available to the block.

Gas

It is unknown if either bottled of mains gas is to be altered or installed in this proposal.

9. Access/Egress

Access to the development site will be via a short private driveway from Dendrobium Crescent.

Dendrobium Crescent is a sealed all-weather Road that is considered capable of handling emergency services vehicles.

Pedestrian access onto the property is also considered to be adequate.

Analysis of development and recommendation.

10. Compliance with AS 3959-2009

Based on the development design, vegetation classification, effective slope estimate and setback distance already outlined in this report the subject development will be required to comply with the deemed to satisfy construction requirements of AS 3959-2009 BAL-29 and the RFS requirements on the southern and western aspects.

The following is an extract of table 2.4.2 of AS3959 2009 used for determining the Bushfire Attack Level (BAL) for the proposal. The variables that have already been outlined as part of this assessment are highlighted in red on the table. The BAL level is highlighted in yellow.

TABLE 2.4.2

DETERMINATION OF BUSHFIRE ATTACK LEVEL (BAL)—FDI 100 (1090 K)

Vegetation classification	Bushfire Attack Levels (BALs)				
	BAL—FZ	BAL—40	BAL—29	BAL—19	BAL—12.5
	Distance (m) of the site from the predominant vegetation class				
	Downslope >15 to 20 degrees				
A. Forest	<50	50–<61	61–<78	78–<98	98–<100
B. Woodland	<32	32–<41	41–<56	56–<73	73–<100
C. Shrubland	<10	10–<15	15–<22	22–<31	31–<100
D. Scrub	<15	15–<21	21–<31	31–<43	43–<100
E. Mallee/Mulga	<9	9–<13	13–<20	20–<29	29–<100
F. Rainforest	<22	22–<29	29–<42	42–<56	56–<100
G. Grassland	<11	11–<15	15–<23	23–<32	32–<50

For the purpose of this assessment the southern and western aspects have been chosen as the most potentially hazardous aspect due to their effective slope, potential run of fire and the prevailing fire weather of the area.

11. Sighting

The current site provides adequate separation between the proposed building and surrounding vegetation for a compliance structure to be built.

Recommendation;

Nil

12. Construction and design.

Given the suggested construction method and materials of the proposal, complying with the requirements of AS 3959-2009 is considered achievable.

Recommendation; southern and western aspects.

1) *New construction on all southern and western aspects shall comply with the requirements of level BAL-29 Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and section A3.7 Addendum Appendix 3 of "Planning for Bush fire Protection".*
2) *New construction on all other aspects shall comply with the requirements of level BAL 19 Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and section A3.7 Addendum Appendix 3 of "Planning for Bush fire Protection".*
3) *Any new fencing to be property should be in accordance with Rural Fire Service "Fast Fact 2/06".*
4) *New roofing valleys and guttering should be fitted with a non combustible leaf protection to stop the accumulation of debris.*

13. Utilities

Water.

The proposed development will have access to a reticulated water supply. There are several hydrants within the required distance from the dwelling. In addition to the council's reticulated water supply there is also a swimming pool that could be utilised by fire-fighters as a static water supply.

Recommendation;

Nil

Electricity and Gas

Recommendation

5) *Any new electricity or gas connections are to comply with the requirements of section 4.1.3 of Planning for Bushfire Protection.*

14. Asset Protection Zone (APZ)

The Asset Protection Zone is *"An area surrounding a development managed to reduce the bushfire hazard to an acceptable level. The width of an APZ will vary with slope, vegetation and construction level".*

The Asset Protection Zone that will be required for this proposal to comply with the construction levels that are recommended in this assessment will need to be further established.

For the most part the vegetation within the established section of the property will need minimal alteration.

The main area of modification will be to the South of the existing dwelling between the existing cleared area and the top of the escarpment.

This area contains some large rocky outcrops that significantly reduce ground fuel however regular maintenance of these areas will be required to stop the accumulation of potential fire fuels.

Recommendation;

6) *At the commencement of building works and in perpetuity the property around the building shall be managed as follows as outlined within section 4.1.3 and appendix 5 of planning for bushfire protection 2006 and the New South Wales rural fire service document standards for asset protection zones:*

- North as an inner protection area to the property boundary.
- East as an inner protection area to the property boundary.
- West as an inner protection area to the property boundary.
- South has a Inner Protection Area (IPA) to a distance of at least 30 m from the southern end of the proposed new works then a further 30 m further south as a Outer Protection Area (OPA).

15. Landscaping

Landscape plans by Jamie King Landscape Architect (Appendix 2) have been supplied for this proposal

Recommendation;

7) *It is recommended that the supplied landscape plans are used for this proposal.*

16. Constraints on the subject block.

None known.

Recommendation;

Nil

17. Access/Egress

Dendrobium Crescent is considered to be capable of handling emergency service vehicles. Access from the roadway onto the property is also considered to be adequate for fire fighting purposes.

Recommendation

Nil

18. Compliance or non compliance with the specifications and requirements for bushfire protection measures.

APZ *A defendable space is provided onsite.* *An APZ is provided and maintained for the life of the development.*	Achievable with the implementation of the recommendations in section 14
SITING AND DESIGN: *Buildings are sited and designed to minimise the risk of bush fire attack.*	Achievable with the implementation of the recommendations in section 11
CONSTRUCTION STANDARDS: *It is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact.*	Achievable with the implementation of the recommendations in section 12
ACCESS *Safe, operational access is provided (and maintained) for emergency services personnel in suppressing a bush fire while residents are seeking to relocate, in advance of a bush fire, (satisfying the intent and performance criteria for access roads in sections 4.1.3 and 4.2.7).*	Achievable with the implementation of the recommendations in section 17
WATER AND UTILITY SERVICES: • *adequate water and electricity services are provided for fire fighting operations* • *Gas and electricity services are located so as not to contribute to the risk of fire to a building.*	Achievable with the implementation of the recommendations in section 13
LANDSCAPING:	Achievable with the implementation of the

• *it is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause Ignitions.*	recommendations in section 15

19. Conclusions

Based on the above report and with the implementation of the recommendation contained within this report the consent authority should determine that this development can comply with the requirements of AS 3959-2009 and 'Planning for Bushfire Protection' guidelines.

The recommendations contained within this report are to be implemented in their entirety. Changing one aspect may have an adverse effect on the rest of the recommendations.

Bushfires are affected by many external influences such as climactic conditions, vegetation type, moisture content of the fuel, slope of the land and human intervention to name a few and are difficult to predict.

This report does not intend to provide a guarantee that the subject property will survive if a bushfire should impact the surrounding area. The purpose of this report is to show the developments level of compliance or in some cases non-compliance with the New South Wales legislation regarding building in bushfire prone areas.

Where non-compliance is found measures will be suggested that should make the building less susceptible to the various attack mechanisms of a bushfire and comply with the performance requirements of the Building Code of Australia.

The opinions expressed in this report are based on the writers experience and interpretation of the relevant guidelines and standards. Notwithstanding the above, these guidelines and standards are open to interpretation. All care has been taken to ensure that the opinions expressed in this report are consistent with past successful outcomes.

Some of the information used in the compilation of this assessment has been provided by the proponent or the proponent's representatives. While we believe this information to be true and have accepted the information in good faith however this company or its representatives will not accept any responsibility if the provided information is determined to be incorrect.

If any further clarification is required for this report please do not hesitate to contact me using the details above.

Yours Sincerely

Matthew Willis

Grad Dip Planning for Bushfire Prone Areas

Bushfire Planning Services Pty Limited.

20. References

Australian Building Codes Board

Building Code of Australia

Volumes 1&2

Canprint

NSW Government Environmental Planning and Assessment Act [1979]

Part 79BA – Consultation and development Consent – Certain Bushfire Prone Land

NSW Government Printer

Planning NSW [2006]

Planning for Bushfire Protection

A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners

Ramsay C & Rudolph L [2003]

Landscape and Building Design for Bushfire Prone Areas

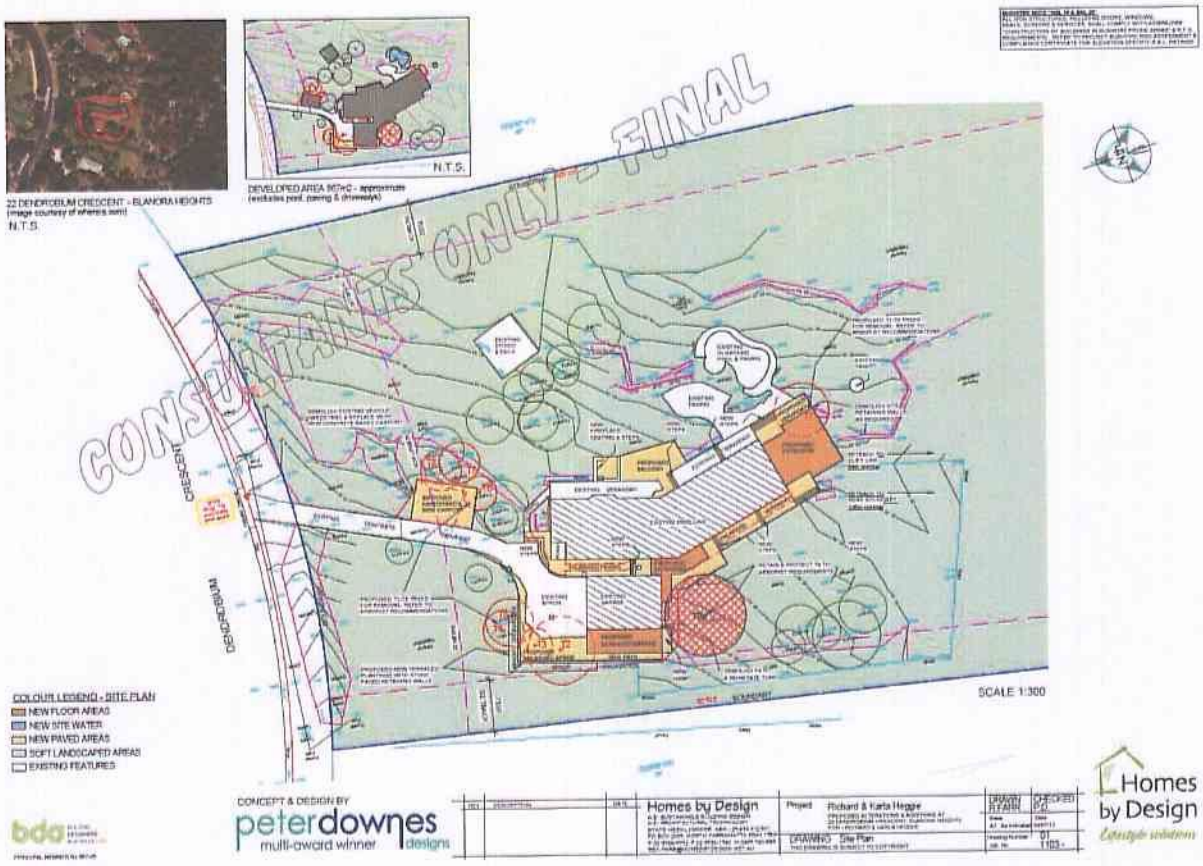
CSIRO Publishing

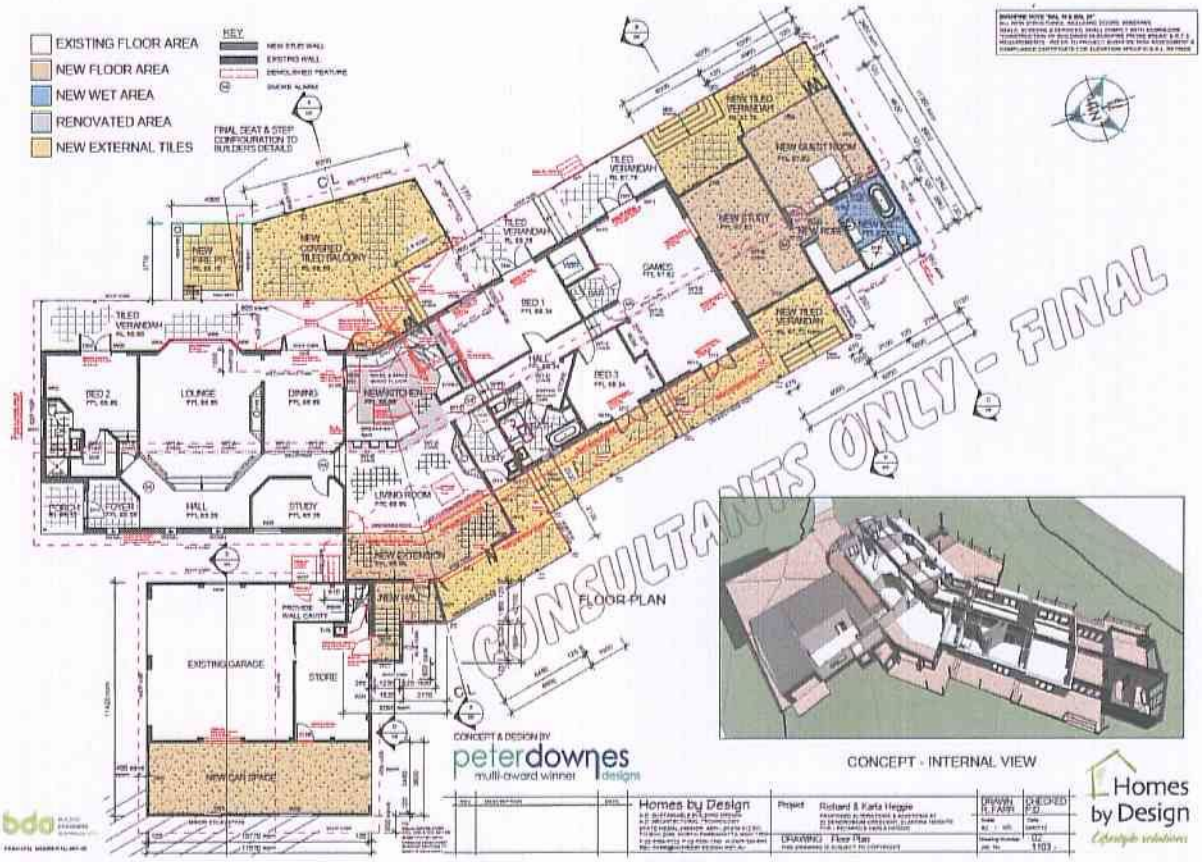
Standards Australia [2009]

Australian Standards 3959

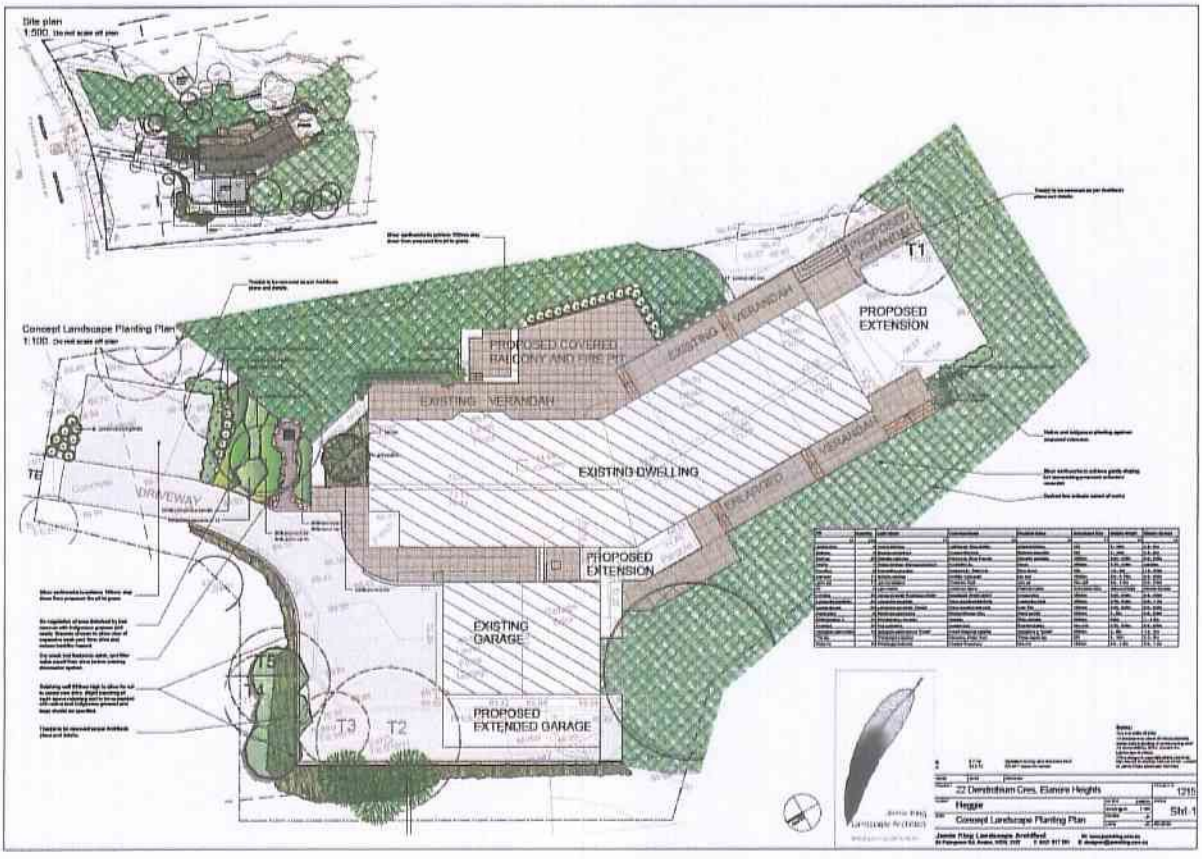
Australian Building Code Board

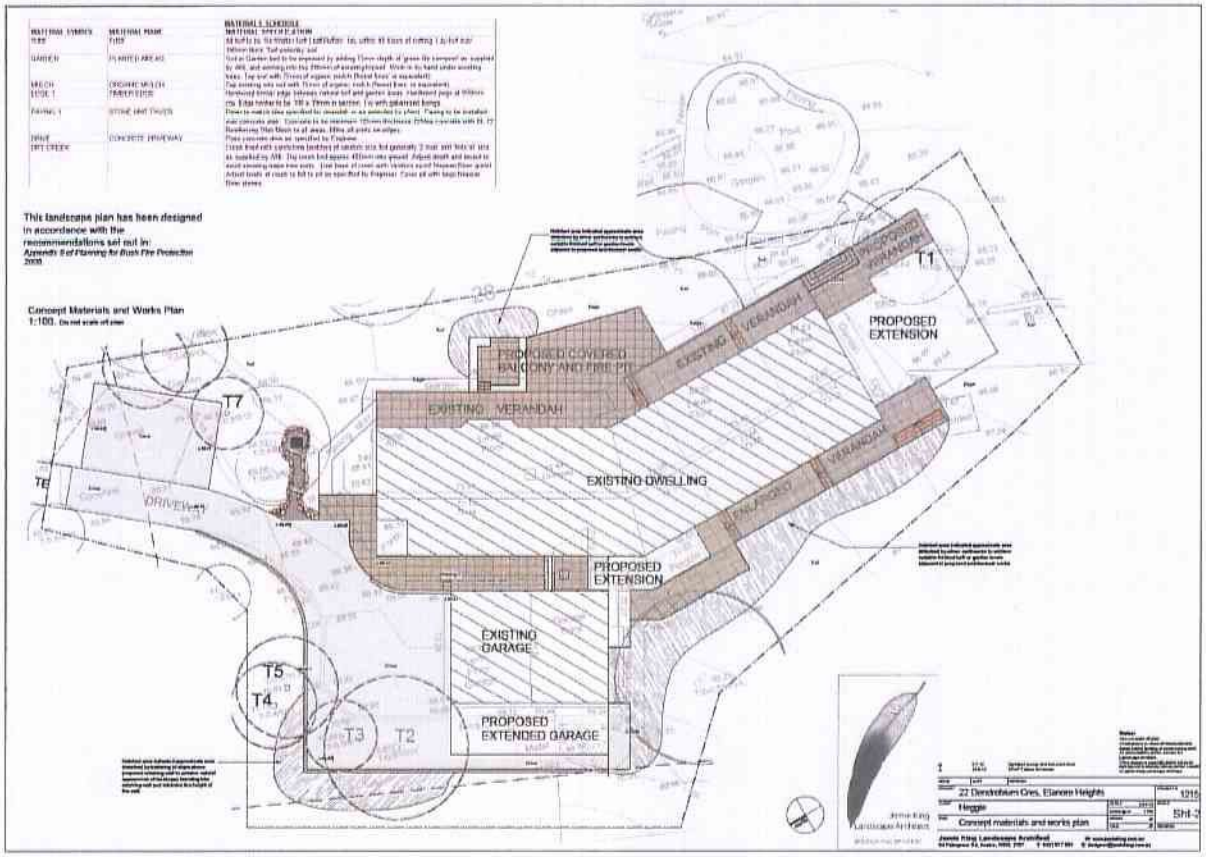
21. Appendix 1. Plans

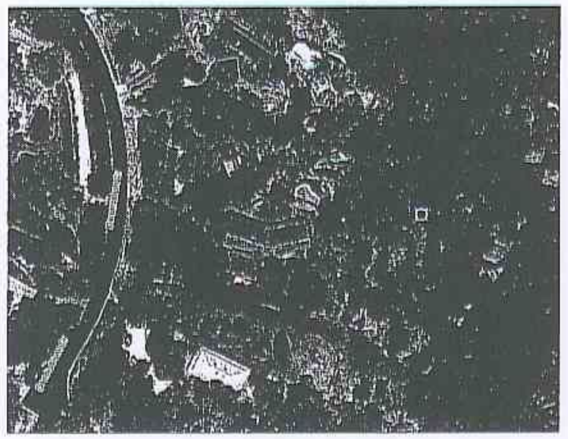




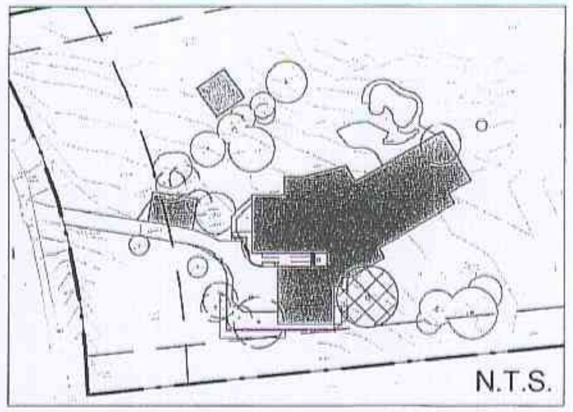
22. Appendix 2 Landscape Plans




MATERIALS SCHEDULE
This landscape plan has been designed in accordance with the recommendations set out in:
Appendix 5 of Planning for Bush Fire Protection 2006
Concept Materials and Works Plan
1:100. Do not scale off plan
PROPOSED COVERED BALCONY AND FIRE PIT
EXISTING VERANDAH
EXISTING DWELLING
PROPOSED EXTENSION
EXISTING GARAGE
PROPOSED EXTENDED GARAGE
DRIVEWAY
T1
T2
T3
T4
T5
T7
22 Dendrobium Cres, Elanora Heights
Heggie
Concept materials and works plan



22 DENDROBIUM CRESCENT - ELANORA HEIGHTS
(image courtesy of whereis.com)
N.T.S.



DEVELOPED AREA 867m2 - approximate
(excludes pool, paving & driveways)

BUSHFIRE NOTE "BAL 19 & BAL 29"
ALL NEW STRUCTURES, INCLUDING DOORS, WINDOWS, SEALS, SCREENS & SERVICES, SHALL COMPLY WITH AS3959-2009 "CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS" & R.F.S. REQUIREMENTS. REFER TO PROJECT BUSHFIRE RISK ASSESSMENT & COMPLIANCE CERTIFICATE FOR ELEVATION SPECIFIC B.A.L. RATINGS

CERTGROUP BUILDING CERTIFIERS
APPROVED CONSTRUCTION CERTIFICATE
PLAN / DOCUMENTATION

1. Position of [illegible] in relation to Sydney Water's [illegible].
2. Connection [illegible] sewer/water services [illegible] the issue of a [illegible].
3. It is the [illegible] to ensure that all [illegible] to Sydney Water [illegible].
4. Any [illegible] Drainage Work to be carried [illegible] the Sydney Water [illegible] NSW Code of [illegible].
5. [illegible] Boundary Trap [illegible] Roof, [illegible] cover [illegible] Sydney Wat[illegible].
6. [illegible] 3413107

Reece 14/10/13

SCALE 1:300

COLOUR LEGEND - SITE PLAN

- NEW FLOOR AREAS
- NEW POOL OR TANKS
- NEW PAVED AREAS
- SOFT LANDSCAPED AREAS
- EXISTING FEATURES

bda BUILDING DESIGNERS AUSTRALIA NSW
PRINCIPAL MEMBER No 867-05

CONCEPT & DESIGN BY
peterdownes designs
multi-award winner

REV	DESCRIPTION	DATE

Homes by Design
A.D. SUSTAINABLE BUILDING DESIGN
A.D. ARCHITECTURAL TECHNOLOGY
STATE MEDAL WINNER ABN - 24 674 412 501
PO BOX 2085, NORTH PARRAMATTA NSW 1750
P 02 9138-9712 F 02 9138-1140 M 0404 780-559
REX.FARR@HOMESBYDESIGN.NET.AU

Project: Richard & Karla Heggie
PROPOSED ALTERATIONS & ADDITIONS AT 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS FOR - RICHARD & KARLA HEGGIE

DRAWING Site Plan
THIS DRAWING IS SUBJECT TO COPYRIGHT

DRAWN	CHECKED
R.FARR	P.D.
Scale: A2 As indicated	Date: 04/07/12
Drawing Number:	01
Job. No.	1103 -

Homes by Design
Lifestyle solutions

Levy Online Payment Receipt

Building and Construction

MCCARRY HOMES PTY LTD
U 50 5 PONDEROSA PDE
WARRIEWOOD NSW 2102

Application Details:

Applicant Name:	**MCCARRY HOMES PTY LTD**
Levy Number:	**5072648**
Application Type:	**DA**
Application Number:	**NO208/12**
Approving Authority:	**PITTWATER COUNCIL**

Work Details:

Site Address:	**22 DENDROBIUM CRES** **ELANORA HEIGHTS NSW 2101**
Value of work:	**$306,370**
Levy Due:	**$1,072.00**

Payment Details:

LSC Receipt Number:	**174581**
Payment Date:	**15/08/2014 10:13:13 AM**
Bank Payment Reference:	**761130370**
Levy Paid:	**$1,072.00**
Credit card surcharge:	**$4.29**
Total Payment Received:	**$1,076.29**

CERTGROUP
BUILDING CERTIFIERS

Please fill out the form with particular attention to those parts marked with "x"

APPLICATION FORM

Made under the Environmental Planning and Assessment Act 1979, Sections 81A(2), 84A, 85A, & 109C, Environmental Planning and Assessment Regulation 2000, clauses 126, 139.

To complete this form, please place a tick (✓) in the boxes and complete sections as appropriate. No Faxed applications please.

APPLICATION SOUGHT

- [x] Construction Certificate
- [x] Principal Certifying Authority
- [ ] Complying Development Certificate
- [ ] NSW Housing Code (SEPP Exempt & Complying Development Code)
- [ ] Council existing Exempt & Complying Development Policy

Office Use Only
CC: 109/14
CDC:
Job:
Date Receipt: 5.4.14.

SUBJECT LAND

Address 22 DENDROBIUM CRESCENT, ELANORA HEIGHTS

Lot No Lot 28 DP 263422 SP _____ Vol/Fol, Etc _____

DETAILS OF THE APPLICANT

Name / Company X RICHARD & KARLA HEGGIE Contact Person X RICHARD

Mailing Address X 22 DENDROBIUM CRESCENT

ELANORA HEIGHTS Postcode 2101 State NSW

E-mail X richard.heggie@heggies.org Tel 99708706 Mobile X 0411 556 022

Applicant Signature X Richard Heggie Date X 25/11/13

CONSENT OF OWNER(S)

I/ We as the owner/s of the above property authorise for Mark Wysman to provide Construction or Complying Development Certification and to act as the Principal Certifying Authority for the subject building works, including site inspections and to lodge the Notice of Commencement/Appointment of the Principal Certifying Authority with the relevant Council.

Name / Company X RICHARD & KARLA HEGGIE Contact Person X RICHARD

Owner's Address X 22 DENDROBIUM CRESCENT

ELANORA HEIGHTS Postcode 2101 State NSW

Mailing Address X AS ABOVE

Postcode State

E-mail richard.heggie@heggies.org Tel 99708706 Mobile 0411556022

Owner/ s Signature/s X Richard Heggie Date 25/11/13

Karla Heggie Date 25/11/13

DESCRIPTION OF WORK

Type of work proposed:

☐ New Building ☒ Additions / Alterations

Class of Building under Building Code of Australia 1a and 10a

Description of the work: Construction of the new covered balcony, new carport and the reroofing of the existing dwelling and garage only (**Excludes** - *new additions of hall, new extension to living room, new study, new guest room, new ensuite, new verandahs, new kitchen and new internal & external alterations to walls, doors and windows of the existing dwelling.*)

Construction Cost of Works $ $306,370 ~

DETAILS OF THE RELEVANT CONSENTS

Consent No. N0208/12 Date issued: 17th January 2013

Construction Certificate No. 104/2014. Date issued: 28-8-14

Complying Development Certificate No. _____ Date issued: _____

STATISTICAL RETURN FOR AUSTRALIAN BUREAU OF STATISTICS

Peter will fill this part out

What is the site area of land? In square metres 20,000

Gross floor area of existing building? NIL if building does not exist. In square metres 311

What is the existing building or site used for at present? Main Uses RESIDENTIAL

Other Uses _____

Does the site contain dual occupancy? ☐ Yes ☑ No

Gross floor area of proposed building? In square metres 415

What will the proposed building be used for? Main Uses RESIDENTIAL

Other Uses _____

HOW MANY DWELLINGS:-

Are pre-existing at this property? 1 Are proposed to be demolished? 0

Are proposed to be constructed? 1 Are attached to an existing building? 0

Are attached to a new building? 0 How many storeys will the building consist of? 1

WHAT ARE THE MAIN BUILDING MATERIALS (PLEASE TICK APPROPRIATE BOXES)

WALLS	ROOF	FLOOR	FRAME
☐ Full Brick	☐ Aluminium	☑ Concrete or slate	☑ Timber
☑ Brick Veneer	☐ Concrete of Slate	☐ Timber	☑ Steel
☐ Concrete or Stone	☐ Tile	☐ Other	☐ Aluminium
☐ Steel	☐ Fibrous Cement	☐ Unknown	☐ Other
☐ Fibrous Cement	☑ Steel		
☑ Timber/weatherboard	☐ Other		
☐ Cladding- aluminium			
☐ Other			

PRIVATE POLICY & TERMS

All information provided by the owner / applicant on this form will be taken to be accurate & correct. CERTGROUP Building Certifiers does not accept any responsibility for any intentional or unintentional error or omission made by the owner / applicant on this form. The information you provide in this notice is required under the Environmental Planning and Assessment Act 1979 if you erect a building. The information will be held by the consent authority and by the council (if the council is not the consent authority). Please contact CERTGROUP Building Certifiers if the information you have provided in this notice is incorrect or changes.