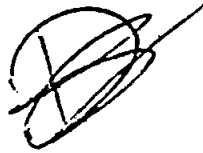


CONSTRUCTION CERTIFICATE No:

X2013-/00291



Signature:

Dom Di Matteo

Approval Date: 03/04/2013

Issued in accordance with the provisions of the Environmental & Assessment Act of 1979 under Sections 109C(1)(b) and 109F

Date Application Received: 19/02/2013

Council: Pittwater Council

Development Consent No: N0155/11
 Name of Certifying Authority:
 Corporate Accreditation No:
 Accreditation Body:

Approval Date: 14/12/2012
 Fitzgerald Building Certifiers Pty. Ltd.
 ABC2
 BUILDING PROFESSIONALS BOARD

Applicant: Susan Hurst C/- Jca Architects
 Address: Po Box 156 Double Bay NSW 1360
 Contact Number: 9327 6706

Owner: Graham & Susan Hurst
 Address: 5 Northview Road Palm Beach NSW 2108
 Contact Number: 0418 552 228

Site Address: Lot 2 DP 584675 - 5 Northview Road Palm Beach NSW 2108

Description of Development: Alterations and additions to the existing dwelling and a new swimming pool.

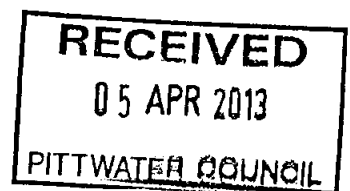
Building Code of Australia Classification: 1a,10b
 Value of Work: \$186705.00

Builder Details
 Name: Dunn & Pilcher Constructions Pty Ltd
 Licence / Permit Number: 88522C
 Address: Po Box 70 Collaroy NSW 2097
 Contact Number: 0412 265 401

Approved Plans and Documents

Plans Prepared By	Drawing Nos.	Dated
Jca Architects	Dwg No. DA100 - DA110, Rev A	Sep 2012
Jca - BASIX Commitments	Dwg No. DA101, Sheet 1 of 1, Rev B	Sep 2012
Dunn & Pilcher Constructions Pty Ltd - Compliance Certificate	Sheet 1 of 1	13/03/2013
Building Specifications	Sheets 1 - 40	Undated
BASIX Certificate	Cert No. A11188B	04/05/2011

Engineer Details	Drawing Nos.	Dated
Paul Bekker Engineering Design Buro Pty Ltd	Dwg No. 62302 S0 - 62302 S08, Rev A	05/03/2013
Paul Bekker Engineering Design Buro Pty Ltd - Sediment and Erosion Control Plan	Dwg No. 62302 SE1, Sheet 1 of 1, Rev A	05/03/2013
Unknown	Sheet 1 of 1	Undated
Paul Bekker Engineering Design Buro Pty Ltd - Erosion & Sediment Control Certificate	Sheet 1 of 1	14/03/2013
Paul Bekker Engineering Design Buro Pty Ltd - Design Certificate	Sheet 1 of 1	12/02/2013
Paul Bekker Engineering Design Buro Pty Ltd - Structural Adequacy Certificate	Sheet 1 of 1	12/02/2013



B36 REC: 339126 5/4/13



1-3 Thornleigh St,
Thornleigh NSW 2120
P: 9980 2155
F: 9980 2166
E: admin@fbcc.com.au

22 February 2013

Pittwater Council
PO Box 882
Mona Vale NSW 1660

Dear Council Officer,

CC No: X2013-/00291
DA No: N0155/11
ADDRESS: 5 Northview Road Palm Beach

Please be advised that the Long Service Levy has been paid by the client for this application.

Our Accounts Officer, Neil Hakainsson, contacted Pittwater Council Officer, Kirk, this morning, confirming that the wrong code was entered on the receipt, when processing the Long Service Levy payment. It was placed under the title, Social Club, instead of Long Service Levy.

Please contact me during normal business hours if you have any further questions regarding this matter.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'H. Brown'.

Hannah Brown



Council
Copy

1-3 Thornleigh St,
Thornleigh NSW 2120
P: 9980 2155
F: 9980 2166
E: admin@fbcc.com.au

SECTION 1: APPLICATION FORM
APPLICATION FOR CONSTRUCTION/COMPLYING DEVELOPMENT CERTIFICATE
Principle Certifying Authority Agreement
Issued under the Environmental Planning & Assessment Act 1979

Privacy policy - The information you provide in this application will enable your application to be assessed by the certifying authority under the Environmental Planning and Assessment Act 1979. If the information is not provided, your application may not be accepted. The application can potentially be viewed by members of the public. Please contact Fitzgerald Building Certifiers if the information you have provided in your application is incorrect or requires modification.

- ☒ Construction Certificate
☐ Complying Development Certificate
☒ Application for Occupation Certificate
☒ Engagement As PCA

Dev. Application No: 155/11
Approval Date: 14 DEC '12

APPLICANT (This Must Be The Owner/Authorised Agent)

Name/s: SUSAN HURST
Postal Address: 5 NORTHVIEW RD, PALM BEACH
Ph: 0418 55 2228
Email: shursty@bigpond.com

LAND TO BE DEVELOPED

Address: 5 NORTHVIEW RD, PALM BEACH
Lot: 2
DP: DP 584675

DETAILS OF DEVELOPMENT

Description of work: ALTERATIONS + ADDITIONS TO EXISTING
Estimated cost of works: \$18670.00 HOUSE + NEW SWIMMING POOL

DETAILS OF BUILDER

Name: WARWICK PILCHER
Licence / Permit No: BUILDERS LICENSE: BB522C
Address: PO BOX 70 COLLAROY, 2097
Phone No: 0412 365 451

SECTION 2: PCA SERVICE AGREEMENT

Engagement

The engagement or the appointment of the PCA will not commence until the proposed PCA has accepted and notified their acceptance of the appointment to the Appointer and the Local Council. The proposed PCA or Fitzgerald Building Certifiers will not accept any responsibility for any damages, losses or delays suffered by the Appointer as a result of omissions or errors contained within this form or failure of the Appointer to comply with all items contained in this form.

Scope

The scope of works covered under this appointment is restricted to those building works as described in the "Details of Development" section of the form. Fitzgerald Certifiers does not undertake quality control inspections. Critical stage inspections do not provide the level of supervision required to ensure that minimum standards and tolerances are achieved, this function is the responsibility of the principle contractor or owner builder.

Terms and Conditions

1. All information provided by the Appointer on this form will be taken to be accurate and correct. The PCA does not accept any responsibility for any intentional or unintentional error or omission made by the Appointer on this form.
2. Where building works have commenced prior to the acceptance of appointment of PCA without the knowledge of the intended PCA the appointment shall be invalid and acceptance of the appointment will be withdrawn.
3. The Appointer is obliged to keep the PCA informed of any changes to the details of Principal Contractor (Builder) and any relevant insurances required by the builder. Failure to meet this obligation will result in the Appointer indemnifying the PCA against any losses or suffering as a result of non compliance with the legislative requirements.
4. The Appointer is responsible for ensuring that a copy of Home Warranty Insurance or Owner Builder Permit is submitted to the PCA prior to the commencement of building works. The acceptance of the appointment will not occur until this requirement has been met.
5. It is the responsibility of the Appointer to ensure that critical stage inspections are booked in with our office, or make arrangements for your builder to do this on your behalf no later than 3pm on the prior business day via fax, post or email.
6. The PCA will not accept responsibility for any damages or costs associated for the inability to issue an Occupation Certificate due to, but not limited to, the following:- non-compliance with a development consent condition, unsatisfactory final inspection, non compliance with Basix commitments, missed critical stage inspections, non compliance with approved building plans or failure to pay the required inspection or Occupation Certificate fees.
7. The PCA does not undertake detailed quality control inspections and the role of the PCA is primarily to ensure that the development proceeds in accordance with the consent, Construction Certificate and that the development, is fit for occupation in accordance with its classification under the Building Code of Australia. Critical Stage Inspections do not provide the level of supervision to ensure that the minimum standards and tolerances specified by the "Guide to Standards and Tolerances" ISBN 0 7347 6010 8 are achieved. The quality of any development is a function of the quality of the principal contractor's or owner builder's supervision of individual contractors and trades on a daily basis during the development. The PCA does not undertake this role. Further, The PCA does not adjudicate, on building contract disputes between the principal contractor, contractors or owner.

Fees

Failure to pay the prescribed Appointment of PCA fee will generally result in a refusal to accept the appointment of PCA. Should an appointment be accepted and payment not honored, the Appointer will be ultimately liable for unpaid fees, regardless of whether the fee was paid directly to the Builder, and any associated debt recovery costs plus interest incurred from the time of the appointment.

It is noted that the PCA and/or Fitzgerald Building Certifiers may suspend its services provided to the appointer or the builder, where fees have not been paid, within the provisions of the Building and Construction Industry Security of Payment Act 1999.

Section 3: Declaration By The Appointer/s

I/We the aforementioned persons as described as the Appointer/s in the PARTICULARS section hereby declared the following that:

1. I/We "have the benefit of the Development Consent or Complying Development Certificate" within the meaning and under EP&A Act 1979 for the proposed works as indicated on this form.
2. I/We, to the best of my/our knowledge, have completed all details in the PARTICULARS section in a correct and accurate manner and hereby indemnify the appointed PCA and Fitzgerald Building Certifiers against any damage, losses or suffering as a result of incorrect information provided under that section.
3. I/We hereby consent to the Builder as shown within the "Particulars" section of this form to apply and obtain on my/our behalf a Construction Certificate, Complying Development Certificate, Occupation Certificate/s or any other "Part 4A Certificate" within the meaning of the EP&A Act 1979.
4. I/We have read, understood and hereby accept the terms and conditions outlined within the PCA Service Agreement on this form.
5. I/We understand that the Appointment of the PCA is not taken to be have been accepted until a copy of the acceptance has been signed by the proposed PCA and released to the Appointer and Council, effective from the date of the acceptance.
6. I/We understand that the Commencement of Building Work cannot be any earlier than 2 business days after the appointment of PCA has been accepted and therefore declare that no building works will commence until after such date.
7. I/We authorise the right of entry for any certifying authority arranged by Fitzgerald Accredited Certifiers to carry out inspection required by the PCA under this agreement.
8. I/We authorise the transfer of PCA to another employee of Fitzgerald Building Certifiers if the original PCA ceases employment with Fitzgerald Building Certifiers for any reason or becomes unable to fulfill their duties as the PCA at no cost to Fitzgerald Building Certifiers.
9. I/We understand the appointment of PCA will not be accepted by Fitzgerald Building Certifiers until documentation of required insurances or owner builder permit is submitted to Fitzgerald Building Certifiers, in accordance with the Home Building Act 1989.
10. I/We understand that it is my/our responsibility to ensure that sufficient notice is given to Fitzgerald Building Certifiers, in writing, to carry out critical stage inspections or make arrangements with your builder to carry out this function on your behalf as a condition of your Building Contract.
11. I/We declare that I/we will notify the PCA at the earliest possible instance of any changes of the appointment of the builder and ensure any mandatory insurances required by the incoming builder in accordance with Home Building Act 1989 are in place.

Section 4: Owners Declaration/Signatures

OWNERS DECLARATION

I, the aforementioned person or authorised representative of a legal entity as described as the Applicant in Section 1 of the Application Form hereby declare the following:

1. I, to the best of my knowledge, have completed all details in the Application Form in a correct and accurate manner and hereby indemnify Fitzgerald Building Certifiers against any damages, losses or suffering as a result of incorrect information provided under that section.
2. I have obtained consent from the owner/s of the property as indicated in the PARTICULARS section to apply and obtain a Construction Certificate. Such written consent will be provided with this application.
3. I have read, understood and hereby accept the terms and conditions outlined in Section 2 of this form.
4. I understand that the Application for a/the Construction Certificate is not complete until all required documentation has been received by Fitzgerald Building Certifiers.
5. I understand that the Application for and acquisition of a/the Construction Certificate does not authorise Commencement of Building Work. (Refer to appointment of PCA on Fitzgerald Building Certifiers PCA Form.)

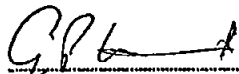
As owners of the above mentioned property we consent to this application.

As owners of the above mentioned property I/we wish to appoint Fitzgerald Building Certifiers as PCA

Owners Signature/s:



Owners Signature/s:



Name/s:

SUSAN HUEST

Name/s:

GRAHAM HUEST

Date:

21-2-13

Council
Copy

Home Warranty Insurance
Certificate of Insurance



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



Policy Number BN0027716BWI-10

GRAHAM & SUSAN HURST
5 NORTHVIEW ROAD
PALM BEACH NSW 2108

Name of Intermediary
AON HIA (NSW/ACT)
GPO BOX 2188
CANBERRA ACT 2601

Account Number
BN0006684
Date Issued
25/03/2013

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	5 NORTHVIEW ROAD PALM BEACH NSW 2108
Carried Out By	BUILDER DUNN & PILCHER CONSTRUCTIONS PL ABN: 85 052 946 666
Declared Contract Price	\$184,300.00
Contract Date	08/04/2013
Builders Registration No.	U88522C
Building Owner / Beneficiary	GRAHAM & SUSAN HURST

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)

Ty Ayscough

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

IMPORTANT INFORMATION REGARDING POOL FENCES

Recent changes to the swimming pools legislation requires that boundary fencing be constructed as follows

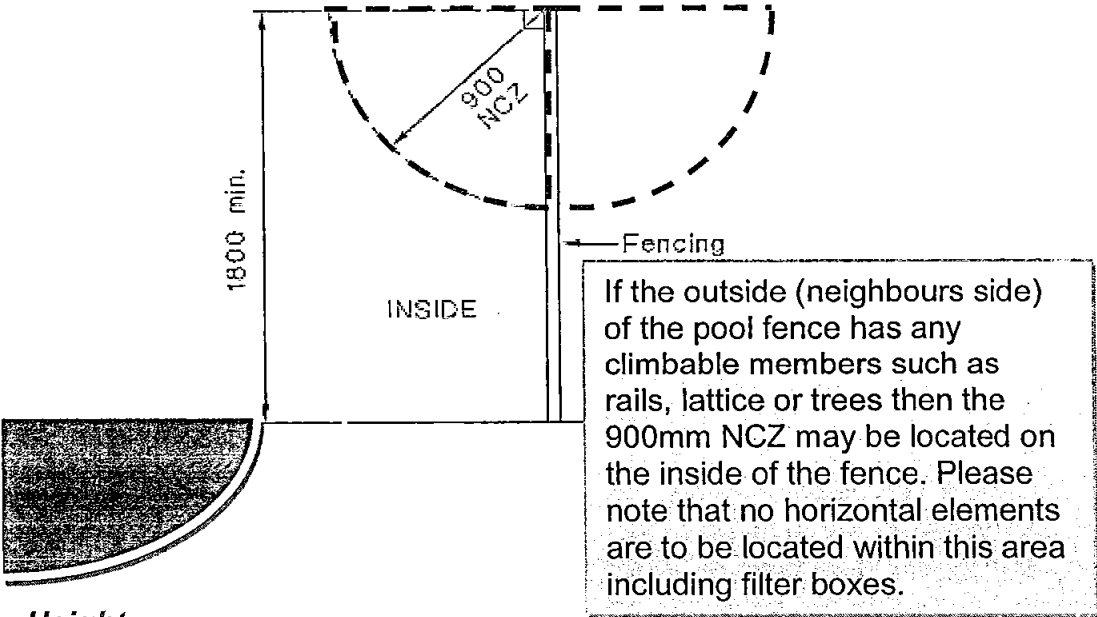
Where any boundary fence is used as part of the swimming pool barrier the boundary fence must be a minimum of 1.8m in height and have a further Non Climb Zone (NCZ) of a minimum 900mm.

Note: A boundary fence being used as a barrier for entry into a pool area is to be non-climbable from the outside of the pool area. However as noted in Part 2.3.1 of AS 1926.1 - 2007 a non climbable zone may be located on the inside of the fencing. This shall be required to be carried out by the property owner should a boundary fence be made climbable.

Swimming Pool Fencing

Boundary Fence used as part of Pool Fence (IMPORTANT)

When a Boundary Fence is used as part of the child-resistant barrier it must be a minimum of 1.8m high. The Non Climbable Zone (NCZ) of 900mm may be measured from the inside (pool side of the fence) of the fence.

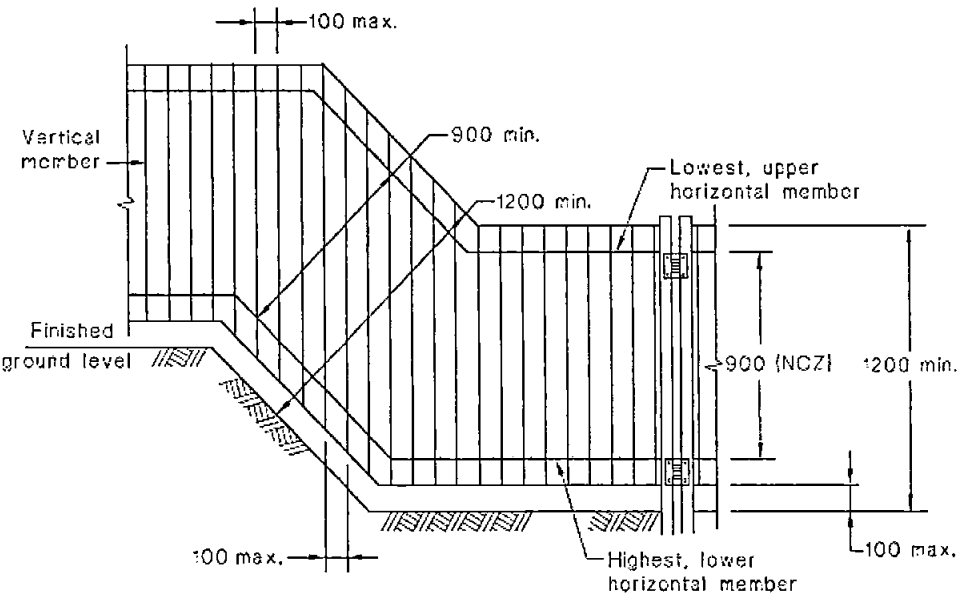


Pool Fence – Height

No other structure can be located within the swimming pool enclosure with the exception of filtration equipment, decking and diving boards. (Cabanas etc are not permitted)

Pool Fence – Height

Pool fences shall be not less than 1.2m high all the way around.





Member
Australian Institute
of Architects

GENERAL NOTES

1. Council with all relevant authorities prior to commencing works.
2. All works shall be in accordance with the relevant Council and State legislation and regulations.
3. The Council reserves the right to require the applicant to provide a bond to cover the cost of any damage to the public domain or to the environment.
4. The Council reserves the right to require the applicant to provide a bond to cover the cost of any damage to the public domain or to the environment.
5. The Council reserves the right to require the applicant to provide a bond to cover the cost of any damage to the public domain or to the environment.

PITTSWATER COUNCIL
APPROVED DEVELOPMENT
CONSENT PLANS

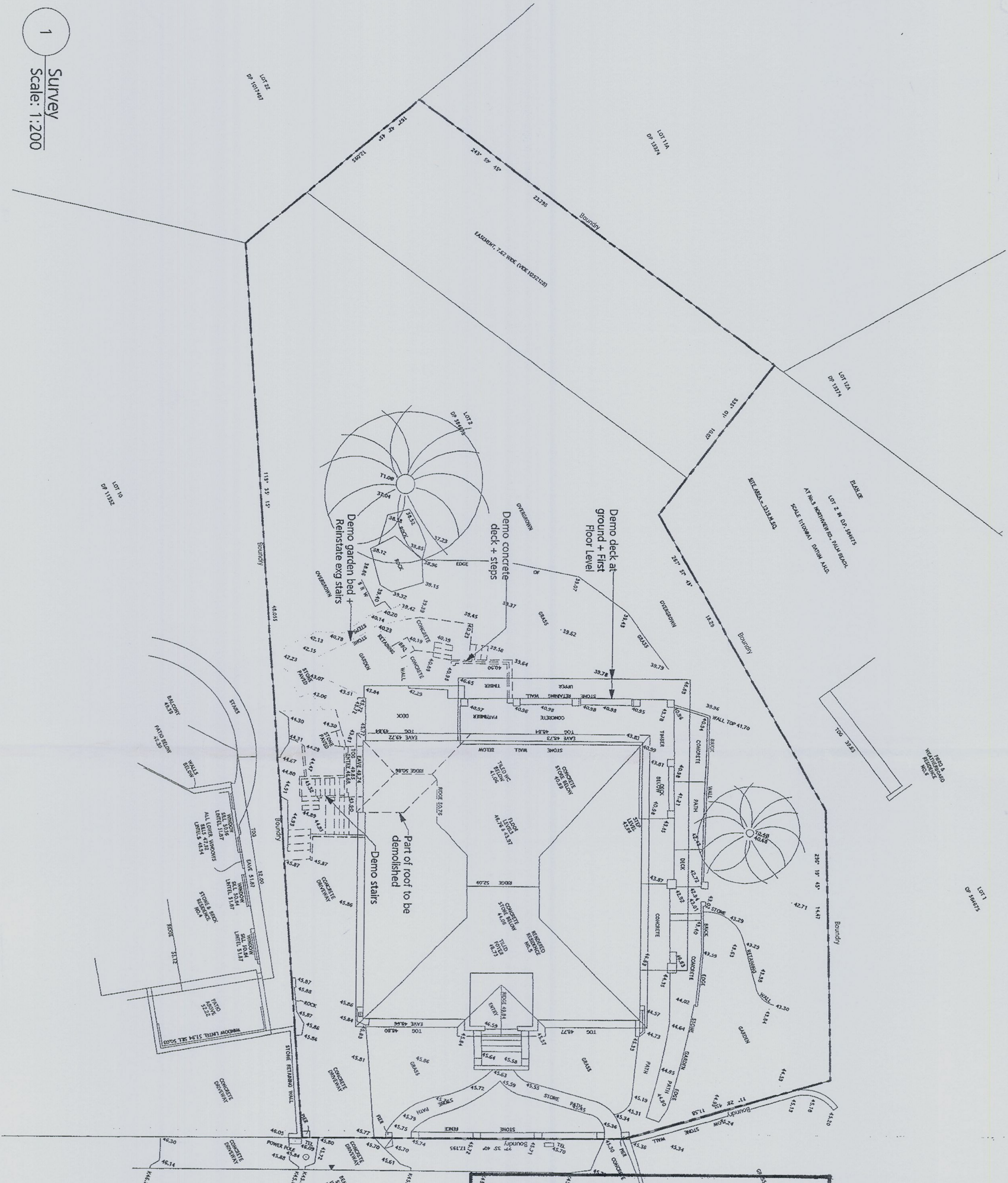
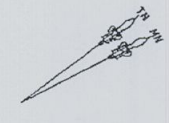
NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT WITH THE CONDITIONS OF

THIS APPROVAL DOES NOT AUTHORISE ANY WORKS ON THE ADJACENT ROAD RESERVE OR ANY COUNCIL RESERVE.

This plan document forms part of the
Approved Construction Certificate
2013/00291

As Issued by Pittswater Council

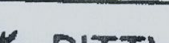
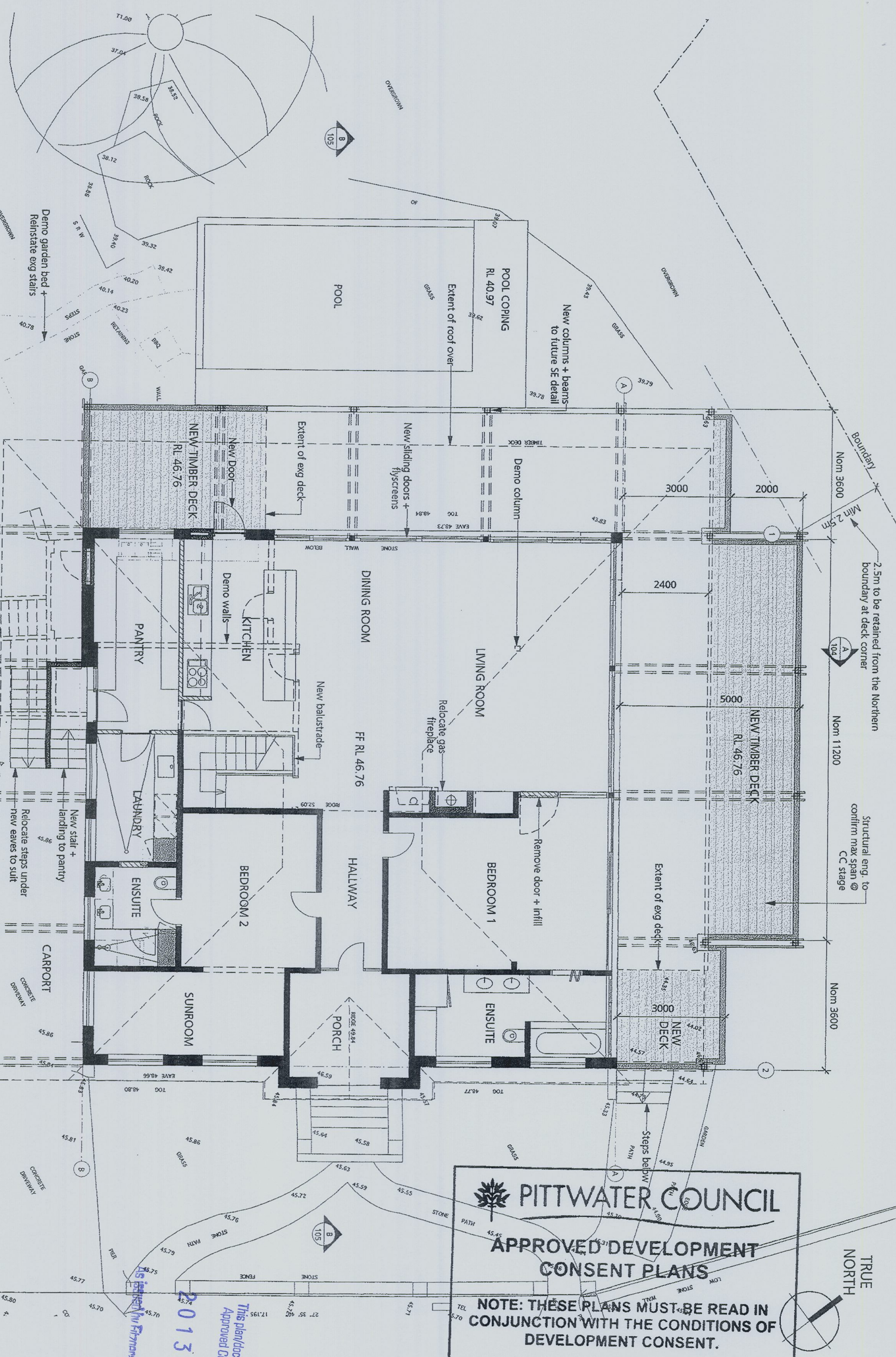
Client	Graham & Sophie Hunt
Project	Alterations + Additions
Address	5 Northcote Road Palm Beach NSW 2108
Drawing No.	1200 @ A3
Scale	For Council Approval
Date	1200 @ A3 PH, JW Sep 2013



1
Survey
Scale: 1:200

1
Proposed First Floor Plan
Scale: 1:100

Scale: 1:100



PITTWATER COUNCIL

**APPROVED DEVELOPMENT
CONSENT PLANS**

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

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Member
Australian Institute of Architects

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Approved Construction Certificate*

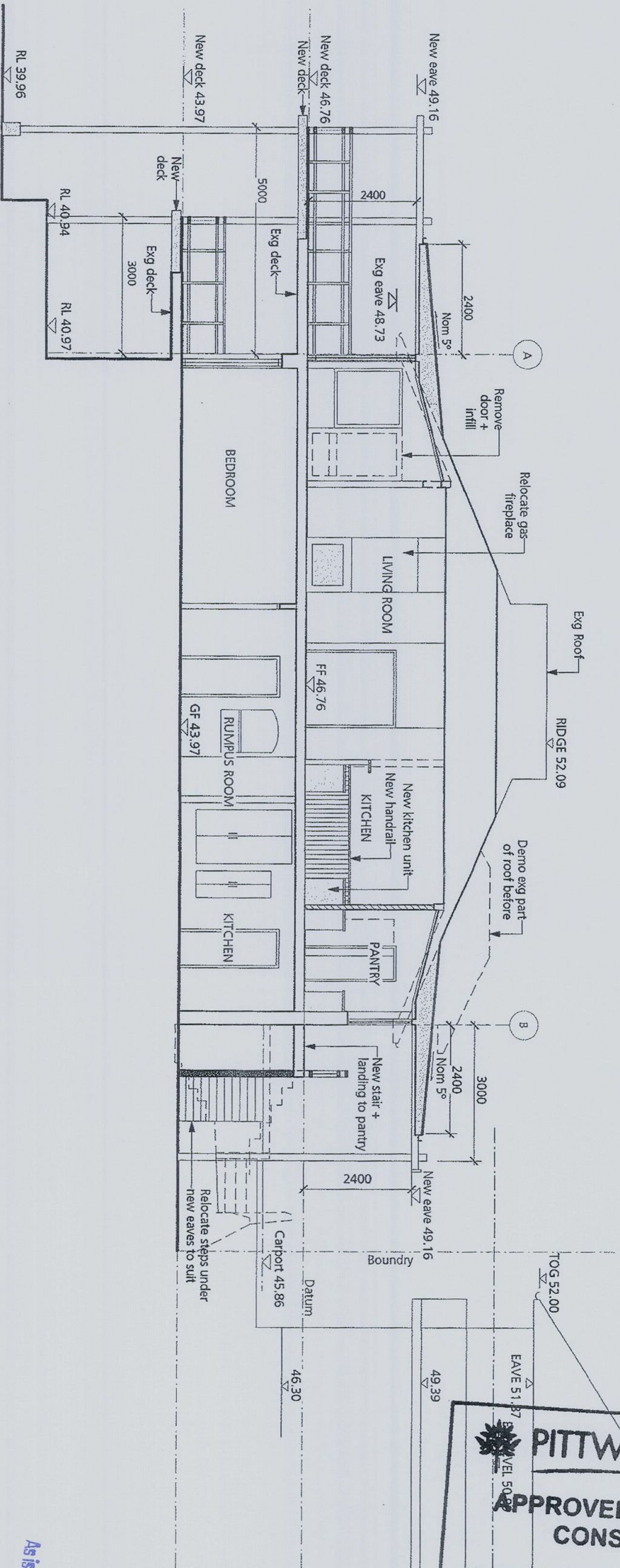
2013/00291

45.74

45.70

Section 171(1) Environmental Planning and Regulations 1997

Owner	Grabin & Sule Huse	
Project	Alterations + Additions	
Address	E Northdown Road Palm Beach NSW 2108	
Contract No.		
Sub	Proposed FF Plan	
Scale	1:100 @ A3	Drawn by MW / PH
Date		
Author	A	Date Sep 2012
Issued/Date	For Council Approval	



1 Section A-A
Scale: 1:100

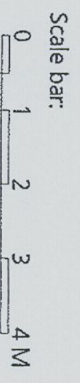
PITTWATER COUNCIL

APPROVED DEVELOPMENT CONSENT PLANS

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

THIS APPROVAL DOES NOT AUTHORISE ANY WORKS ON THE ADJACENT ROAD RESERVE OR ANY COUNCIL RESERVE

Member of the Institute of Architects



As issued by Pittwater Council
2013/00291
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PITTWATER COUNCIL

APPROVED DEVELOPMENT CONSENT PLANS

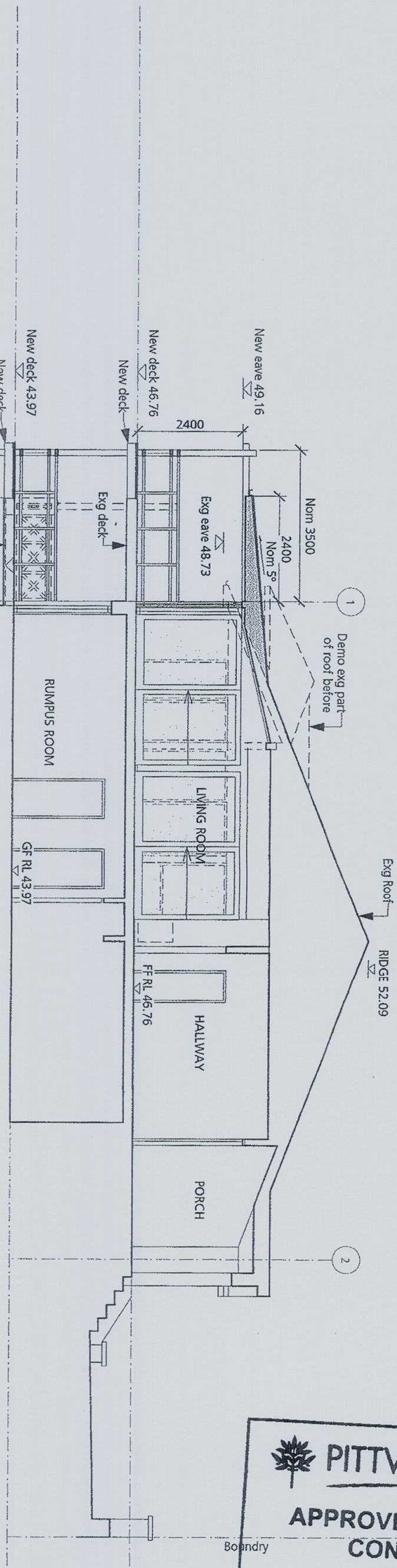
NOTE: THESE PLANS MUST BE READ IN
CONJUNCTION WITH THE CONDITIONS OF
DEVELOPMENT CONSENT.

THIS APPROVAL DOES NOT
WORKS ON THE ROAD OR ANY
OR ANY COUNCIL RESERVE

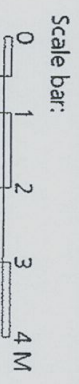


Member
Australian Institute
of Architects

ALL HOUSING
WORKS ON THE
ROAD OR ANY
COUNCIL RESERVE



1 Section B-B
Scale: 1:100

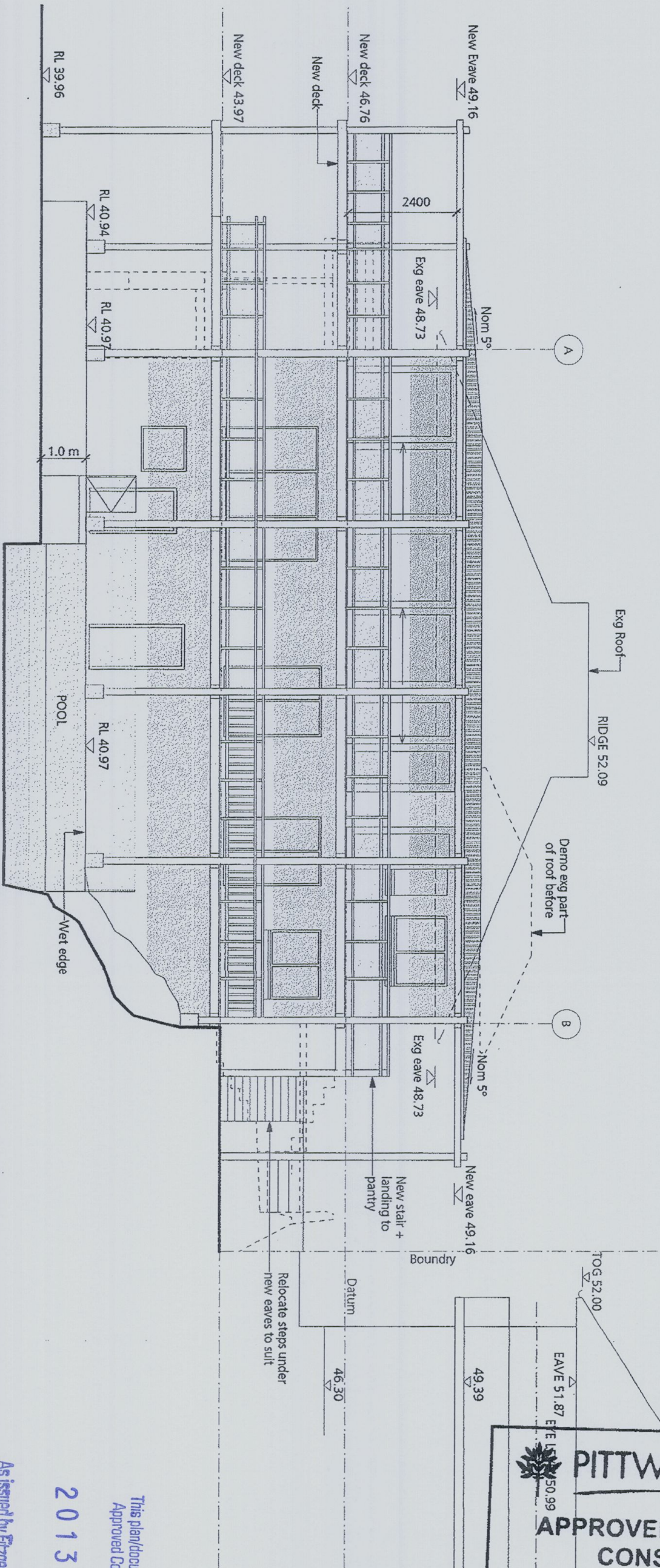


This plan/document forms part of the
Approved Construction Certificate
2013/00291

As issued by Pittwater Council

Drawn	Graham & Squire Hunt
Check	Alterations & Additions
Notes	5 Northview Road Pittwater NSW 2108
Section B-B	
Scale	1:100 @ A3
Drawn By	PH
For Council Approval	
Month	A
Year	May 2012





1 West Elevation
Scale: 1:100

**PITTWATER COUNCIL**
APPROVED DEVELOPMENT
CONSENT PLANS

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

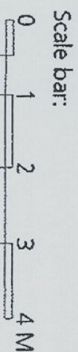
**THIS APPROVAL DOES NOT AUTHORISE ANY
WORKS ON THE ADJACENT ROAD RESERVE
OR ANY COUNCIL RESERVE.**



Municipal Engineer
Australian Institute
of Architects

This plan/document forms part of the
Approved Construction Certificate
2013/00291

As issued by Pittwater Council





MEMBER
AUSTRALIAN INSTITUTE
OF ARCHITECTS



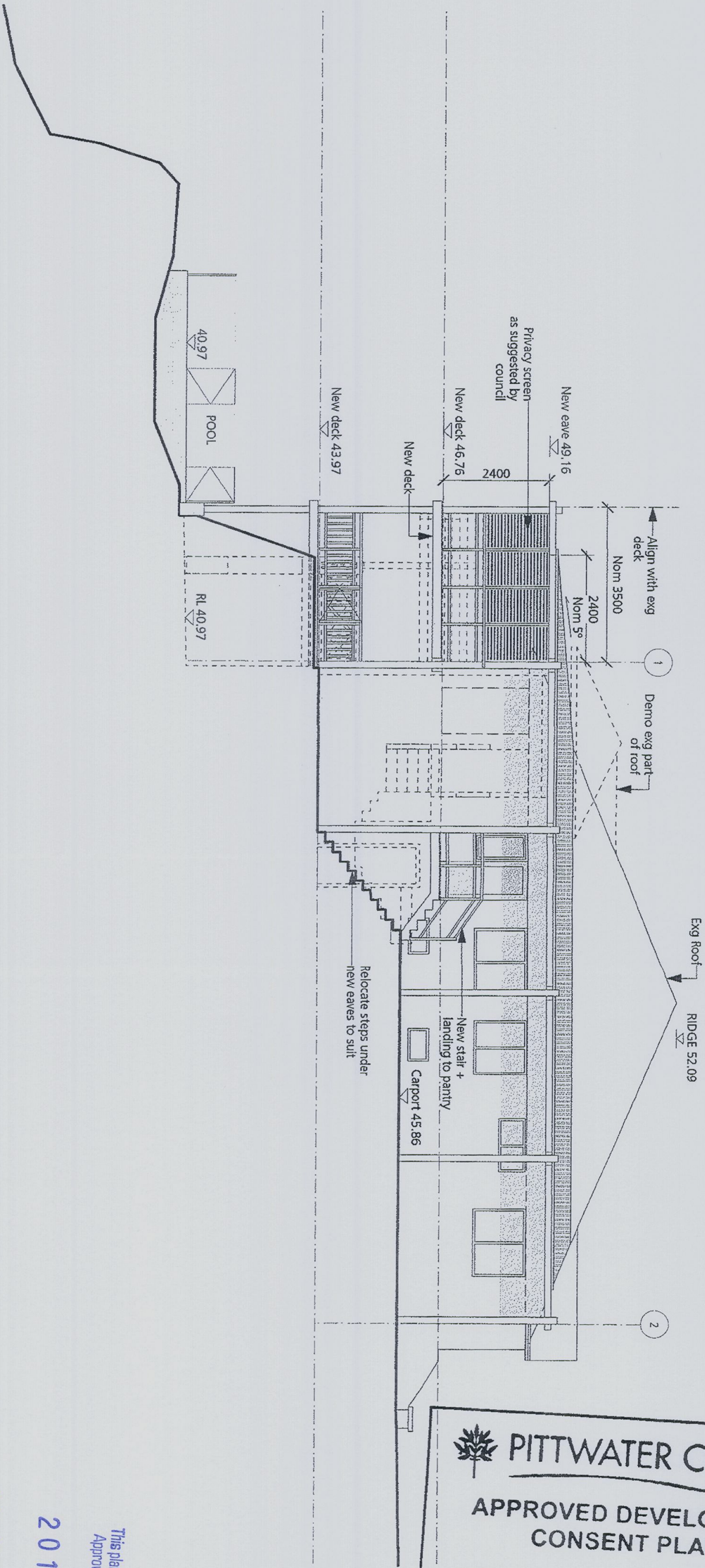
PITTWATER COUNCIL

APPROVED DEVELOPMENT CONSENT PLANS

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

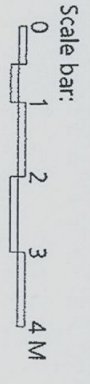
THIS APPROVAL DOES NOT AUTHORISE ANY
WORKS ON THE ADJACENT LOT OR RESERVE
OR ANY COUNCIL RESERVE.

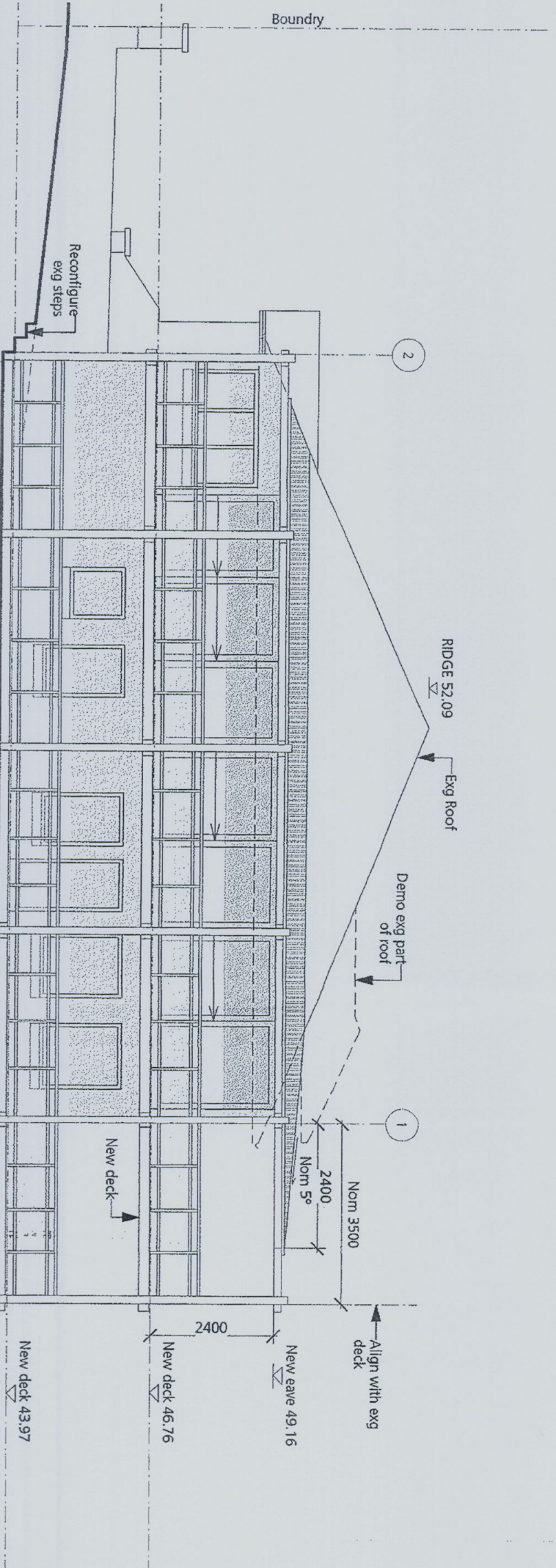
GENERAL NOTES:
1. Council has approved the plans for the proposed development, subject to the conditions of development consent.
2. The applicant is responsible for ensuring that the development complies with all applicable laws, regulations, and standards.
3. The applicant is responsible for ensuring that the development does not cause any adverse impacts on the environment or the community.
4. The applicant is responsible for ensuring that the development is constructed in accordance with the approved plans.
5. The applicant is responsible for ensuring that the development is maintained in accordance with the approved plans.
6. The applicant is responsible for ensuring that the development is demolished in accordance with the approved plans.



1 South Elevation
Scale: 1:100

*This plan/document forms part of the
Approved Construction Certificate*
2013/00291
As issued by Pittwater Council





1 North Elevation
Scale: 1:100

**PITTWATER COUNCIL**

**APPROVED DEVELOPMENT
CONSENT PLANS**

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

THIS APPROVAL DOES NOT AUTHORISE ANY
WORKS ON THE ADJACENT ROAD RESERVE
OR ANY COUNCIL RESERVE.

*This plan/document forms part of the
Approved Construction Certificate*
2013/00291

As issued by Pittwater Council



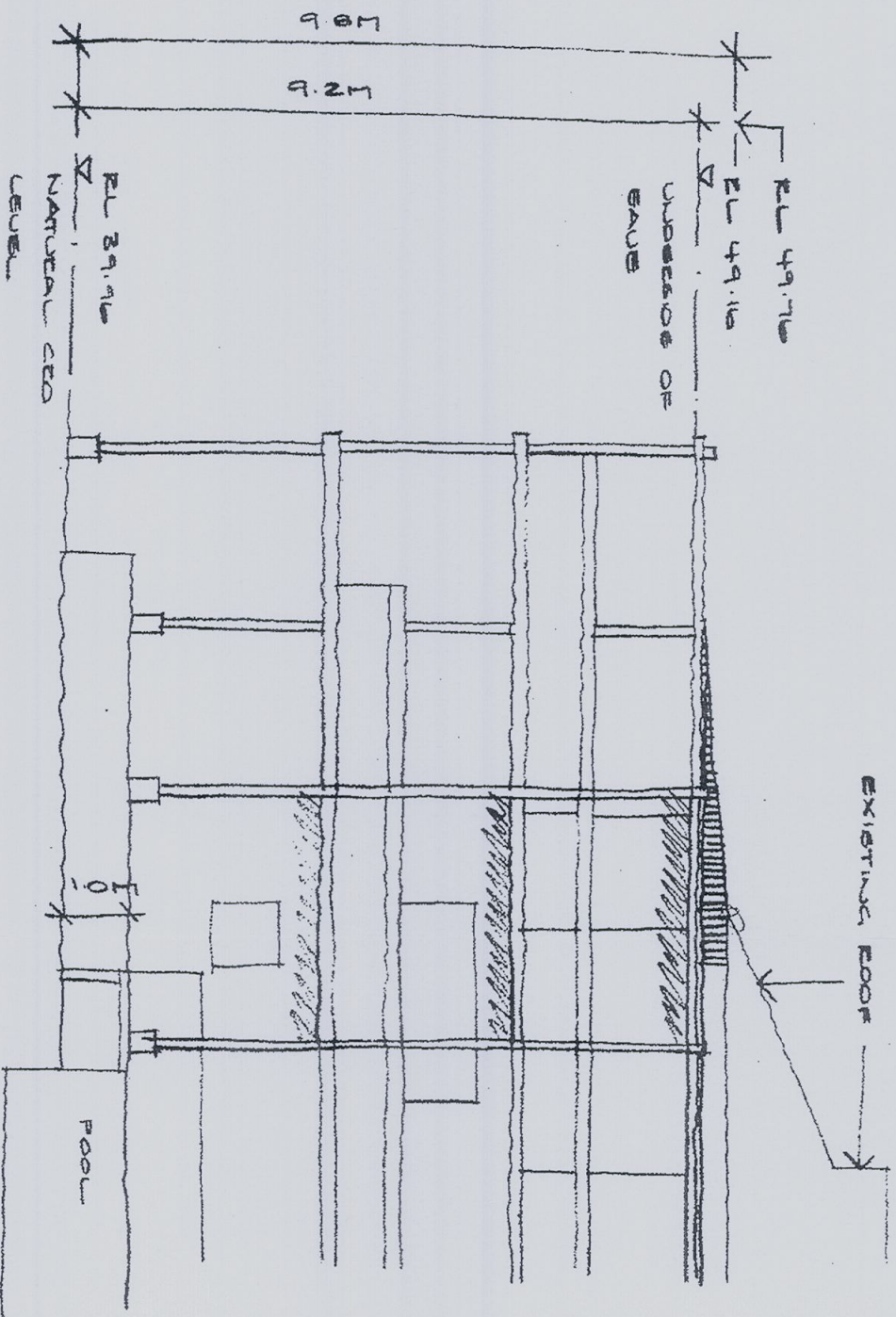
Client	Graham & Sarah Hunt
Project	Alterations & Additions
Address	5 Northview Road Palm Beach NSW 2108
Drawing No.	North Elevation
Scale	1:100 @ A3
Drawn by	PH
For Council Approval	
Version	A
Date	Sep 2012
Drawing No.	

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Australian Institute
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As illustrated by Firmament Building Gardens P/L



PACT WEST ELEVATION

PITTWATER COUNCIL

**APPROVED DEVELOPMENT
CONSENT PLANS**

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

THIS APPROVAL DOES NOT AUTHORISE ANY
WORKS ON THE ADJACENT ROAD RESERVE
OR ANY COUNCIL RESERVE.

ICA
MEMBER OF
THE
AUSTRALIAN
INSTITUTE
OF ARCHITECTS

This plan/document forms part of the
 Approved Construction Certificate
 2013/00291

As Issued by Pittwater Building Certifiers Pty

Graham & Sons (ACT) Alterations & Additions 2 Southview Road Park Road NSW 2118 Building Approval North Sydney City Council 1:100 @ A3 PI For Council Approval 1 May 2012
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DA110

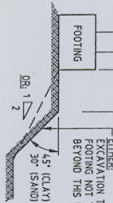
DRG No.	DRAWING TITLE
S0	COVER SHEET
S1	FOOTING AND LOWER GROUND FLOOR LAYOUT AND DETAILS
S2	SWIMMING POOL DETAILS
S3	GROUND FLOOR LAYOUT & DETAILS
S4	FIRST FLOOR LAYOUT
S5	ROOF PLAN AND DETAILS
S6	ROOF DETAILS
S7	ELEVATIONS SHEET ONE
S8	ELEVATIONS SHEET TWO
SET1	SEDIMENT & EROSION CONTROL PLAN

[illegible]

F1. THE SITE HAS BEEN INVESTIGATED BY GEOTECHNICAL ENGINEERS
JACK HODGSON CONSULTANTS

ELEMENT	DESIGN LIVE LOAD
FLOORS	2 kPa
BALCONY	4 kPa

ELEMENT	BEARING PRESSURE
ROCK	800 kPa



C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT SAA CODE AS 3600, WITH AMENDMENTS, EXCEPT WHERE VARYED BY THE CONTRACT DOCUMENTS.

Element	Slump mm	Max. size aggregate mm	Gravel content % ASTM C 136	Concrete grade psi
Footings	80	20	GP	25
All other concrete	80	20	GP	1,0
Pool	80	20	GP	22
-	-	-	-	-
Reinforced concrete for all	80	20	GP	20

MAXIMUM ALLOWABLE CONCRETE SHRINKAGE 500 MICRONS AT 56 DAYS
NO ADMIXTURE TO BE USED WITHOUT PRIOR APPROVAL.
C3. CLEAR CONCRETE COVER TO REINFORCEMENT FOR DURABILITY
SHALL COMPLY WITH AS 3600

CONCRETE COVER FOR CORROSION PROTECTION	COVER IN mm
CONCRETE PLACEMENT CLASSIFICATION	
EXTERIOR ENVIRONMENT CONCRETE ON GROUND	65
EXTERIOR ENVIRONMENT CONCRETE ON GROUND WITH WATERPROOF MEMBRANE	55
INTERIOR ENVIRONMENT CONCRETE ON GROUND	40
INTERIOR ENVIRONMENT CONCRETE ON GROUND WITH WATERPROOF MEMBRANE	30
INTERIOR ENVIRONMENT ABOVE GROUND	25
EXTERIOR ENVIRONMENT ABOVE GROUND	45

REINFORCING COVER FOR CONCRETE IS SPECIFIED TO BE NOT LESS THAN EITHER MINIMUM AGGREGATE SIZE OR NOMINAL SIZE OF BAR OR TENDON TO WHICH COVER IS MEASURED.

CONCRETE EXPOSED TO CORROSIVE VAPOURS, CORROSIVE GROUND WATER, SEA WATER OR SPRAY IS TO HAVE REINFORCEMENT COVER AS NOTED ON THE DRAWINGS PLUS 10mm.

12. REINFORCING CLEAR CONCRETE COVER TO BE REINFORCEMENT + 50mm

C13. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

C14. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.

DRG No.	DRAWING TITLE
S0	COVER SHEET
S1	FOOTING AND LOWER GROUND FLOOR LAYOUT AND DETAILS
S2	SWIMMING POOL DETAILS
S3	GROUND FLOOR LAYOUT & DETAILS
S4	FIRST FLOOR LAYOUT
S5	ROOF PLAN AND DETAILS
S6	ROOF DETAILS
S7	ELEVATIONS SHEET ONE
S8	ELEVATIONS SHEET TWO
SE1	SEDIMENT & EROSION CONTROL PLAN

51. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100, AS 4600 AND AS 1554 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

- [illegible]

ELEMENT	SURFACE CLEANING	PRIME COAT	TOP COAT
ALL U.A.	WIRE BRUSH CLASS 2.0	ONE COAT ROZC	TO ARCH SPEC
EXPOSED	PICKLED	HOT DIP GALVANISE	TO ARCH SPEC
PAINT RATIO	PICKLED	INTUMESCENT PAINT TO ARCH SPEC	TO ARCH SPEC

- [illegible]

01. THE BUILDER SHALL ENSURE THE SITE OPERATES UNDER THE APPLICABLE STATUTORY AUTHORITY'S O&MS REQUIREMENTS FOR A CONSTRUCTION SITE. TO ACHIEVE THIS END THE BUILDER SHALL PREPARE AN O&MS MANAGEMENT PLAN FOR THE SITE FOR THE ENTIRE CONSTRUCTION PERIOD. THE O&MS

- [illegible]

01. THE BUILDER IS RESPONSIBLE FOR COMPLETING A BUILDING WHICH COMPLIES WITH ALL RELEVANT BCA AND AUSTRALIAN STANDARD REQUIREMENTS. IN THIS REGARD THE BUILDER SHALL TAKE THE ADVICE OF THE ARCHITECT'S DRAWINGS AND SPECIFICATION AND THE RELEVANT BCA REPORTS.

- THESE STRUCTURAL DRAWINGS DEPEND ON THE STRUCTURAL STRENGTH, DEFLECTION AND BASIC FIRE RATING CRITERIA REQUIRED BY THE AUSTRALIAN STANDARD STRUCTURAL CODES BUT DO NOT NECESSARILY ENCOMPASS ALL OF THE REQUIREMENTS OF THE BCA ENVIRONMENTAL & AESTHETIC ISSUES SUCH AS ACOUSTIC PERFORMANCE, IMPACT RESISTANCE, ADDITIONAL FIRE RESISTANCE ETC MAY REDUCE THE ADDITION OF A SURFACE COATING OR COVERING OVER OF THE STRUCTURAL MEMBER. THE BUILDER SHALL REFER TO ALL ADDITIONAL INFORMATION SUCH AS BASIX, ACOUSTIC & IMPACT REPORTS, EIA SECTION J COMPLIANCE & ALTERNATIVE FIRE ENGINEERING SOLUTION REPORTS ETC.

11. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT CODE AS 3700 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

- (PORTLAND CEMENT : HYDRATED LIME : SAND) SHALL BE AS FOLLOWS:

RETAINING AND BASEMENT WALLS	CONCRETE BLOCK	20 YRS	1144	FOR BLOCKING GROUT REFER TO CONCRETE QUANTITY
1-3 STOREYS NON-LOAD BEARING NON-LOAD BEARING	BRICK-CLAY BLOCK-CLAY BLOCK-CONCRETE	20 YRS 12 YRS	116 116 OR 113	
4 STOREYS NON-LOAD BEARING	BRICK-CLAY BLOCK-CLAY BLOCK-CONCRETE	14 YRS 12 YRS 20 YRS	116/113 116 OR 113 116	
RETAINING AND BASEMENT WALLS	CONCRETE BLOCK	20 YRS	1144	

NOTE THE CHARACTERISTIC EXPANSION OF BRICKWORK SHALL NOT EXCEED .001 INCH PER INCH.

B3. FOR MASONRY SUPPORTING SLABS AND BEAMS PROVIDE A HORIZONTAL FLAT BED OF MORTAR ON TOP OF THE BRICKWORK WITH TWO LAYERS OF SUPER ALCOA OVER OR OTHER TREATMENT AS

- [illegible]

AT CROSSWALLS

Approved Construction Certificate

2013/00291

As issued by Filtration Publishing Co.

REV	DATE	DESCRIPTION
A	05.03.19	CONSTRUCTION CERTIFICATE & CONSTRUCTION
P2	06.02.19	PRELIMINARY - NOT FOR CONSTRUCTION
P1	28.01.19	PRELIMINARY - NOT FOR CONSTRUCTION

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ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

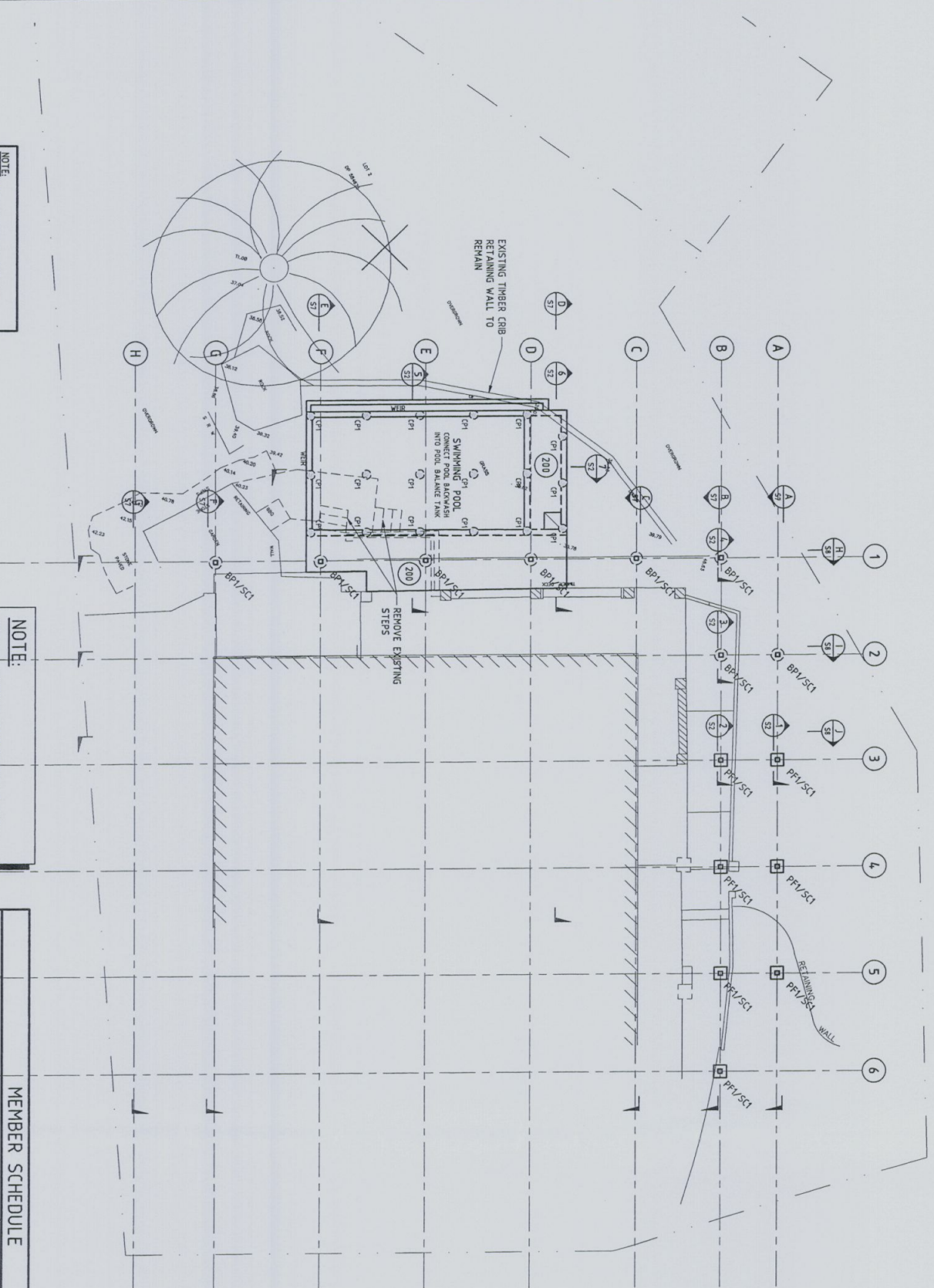
COVER SHEET

BEKKE
paul bekker engineering
design bureau limited

unit 2/11 ringiers road, neutral bay nsw 2089
phone: (02) 9953 6244 fax: (02) 9953 6266
postal address: po box 591 northridge nsw 1560
email: bekker@spin.net.au

DESIGNED

SCALE	DATE	DRG No.	REV
-	JANUARY 2013	62302 S0	A



NOTE:
ALL FALLS, WATERPROOFING AND
DRAINAGE DETAILING SHALL BE
BOXES, BALCONIES AND ROOFING TO
ARCHITECTS DETAILS, TYPICAL.

NOTE:
THIS IS A COMPLETION ENGINEERING AND SURVEY
DRAWING. DESIGNING STRUCTURES AND
OVERLAYED ON AN EXISTING SITE SURVEY.
DP SURVEYING PREPARED BY :
REF: 2264 DATE: 16.07.2012
P/L (02) 9918 3559

MEMBER SCHEDULE		
TAG	SIZE	COMMENT
SC1	125 x 125 x 5 SHS	HD GALV. COLUMN

NOTE:
ALL STEELWORK TO BE HD. GALVANISED.



LOWER GROUND FLOOR PLAN

NOTE - FOOTINGS
FOOTINGS DESIGNED FOR 800kPa SAFE BEARING PRESSURE
ON ROCK. GEOTECHNICAL ENGINEER TO CONFIRM PRIOR TO POURING

NOTE:

- REFER HYDRAULIC ENGINEERS DRAWINGS FOR SEWER, SEEPAGE AND DRAINAGE DETAILS.
- ELECTRICAL AND PLUMBING SERVICES SHALL NOT BE CAST INTO SLAB.
- REFER TO ARCHITECTS DRAWINGS FOR FINISHED SLAB LEVELS AND FALLS.
- TRUNKS OR SERVICES TO BE BACK FILLED TO GIVE SLOPE TO DRAINAGE SERVICES.
- PROVIDE RETAINING WALL, SURFACE AND SEEPAGE DRAINAGE TO DETAILS.

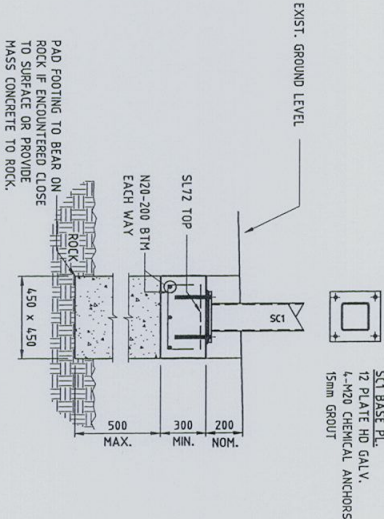
GENERAL NOTES

- PROVIDE ALL NECESSARY WATERPROOFING, FLASHING, CARPING, FALLS AND DRAINAGE TO ROOF AND BALCONY DETAILS.
- TIMBER WALL & ROOF FRAMING AND BALKING IS TO COMPLY WITH AS1664 NATIONAL PROVIDE EAVE GUTTERS AND DOWN PIPES AS REQUIRED BY ARCHITECT TO AS 3500 AND COUNCILS STANDARD REQUIREMENTS.
- PROVIDE LINTELS OVER ALL DOOR/WINDOW OPENINGS TO AUSTRALIAN STANDARDS.
- MAY NOT BE SHOWN BE SHOWN ON PLANS FOR CLARITY.

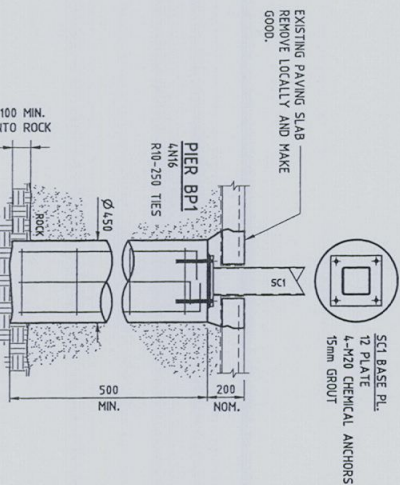
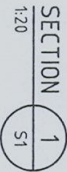
GEOTECHNICAL NOTE:
THIS SITE HAS BEEN ASSIGNED TO HAVE A SAFE BEARING CAPACITY OF 800kPa ROCK. ONCE ON SITE AND EXCAVATIONS FOR FOOTINGS HAVE BEEN CARRIED OUT, BUILDER IS TO ENGAGE A QUALIFIED GEOTECHNICAL ENGINEER TO CONFIRM PRIOR TO POURING.

LEGEND

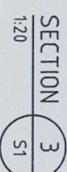
- EXISTING WALL TO REMAIN
- EXISTING WALL DEMOLISHED
- NEW BRICK WALL
- DENOTES SLAB THICKNESS
- DOWN PIPE
- FLOOD WASTE



PAD PF1 / COLUMN SC1 DETAIL



TYPICAL PIER BP1 / COLUMN SC1 DETAIL

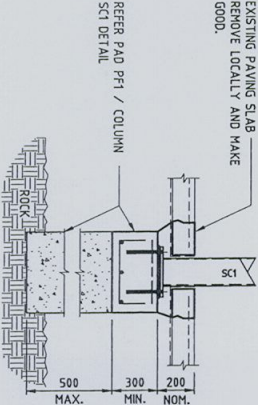
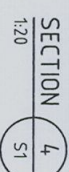


STORMWATER NOTES

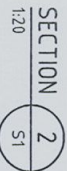
- DIRECTION OF FALLS FOR DRAINAGE LINES
- U/2 V.C. SEWER CLASS DRAINAGE LINE WITH A MINIMUM FALL OF 1.0 %
- UNLESS NOTED OTHERWISE
- REFER LAYOUT FOR DRAINAGE LINE SIZES
- DOWNPIPE

- PROVIDE ALL SURFACE DRAINAGE WITHIN LANDSCAPED AREAS TO SUIT THE LANDSCAPE LAYOUT TO ARCHITECTS & LANDSCAPE ARCHITECTS REQUIREMENTS
- PROVIDE CLEANOUT POINTS AT ALL CHANGES IN DIRECTION OF DRAINAGE LINES.
- BUILDER TO ENSURE ALL PIPES ARE FLUSHED CLEAN PRIOR TO HANDOVER.
- BUILDER SHALL ENSURE ALL AREAS REQUIRING STORMWATER HAVE OVERFLOWS, WHETHER SHOWN ON THE DRAWINGS OR NOT, PROVIDE ONE 100mmØ OVERFLOW FOR EACH 100m² OF CATCHMENT AREA.
- BUILDER TO PROVIDE ALL DRAINAGE REQUIREMENTS TO COMPLY WITH AS 3500.

TYPICAL PIER BP1 / COLUMN SC1 DETAIL



REFER PAD PF1 / COLUMN SC1 DETAIL



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2013/00291

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A	05.03.13	CONSTRUCTION CERTIFICATE & CONSTRUCTION
P2	06.02.13	PRELIMINARY - NOT FOR CONSTRUCTION
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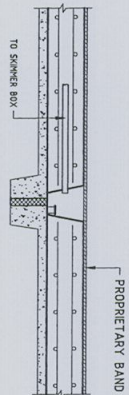
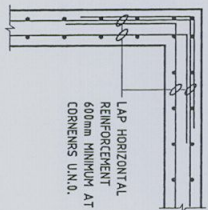
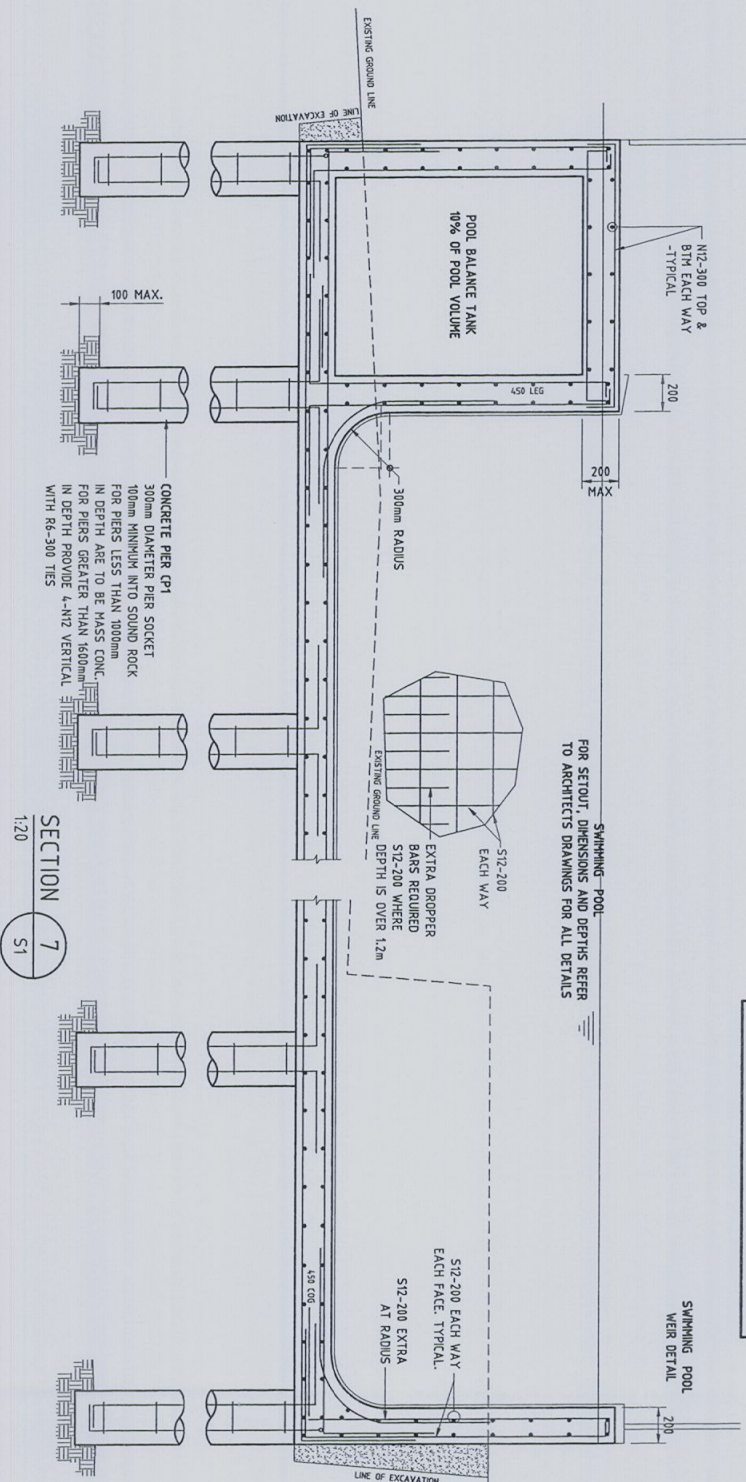
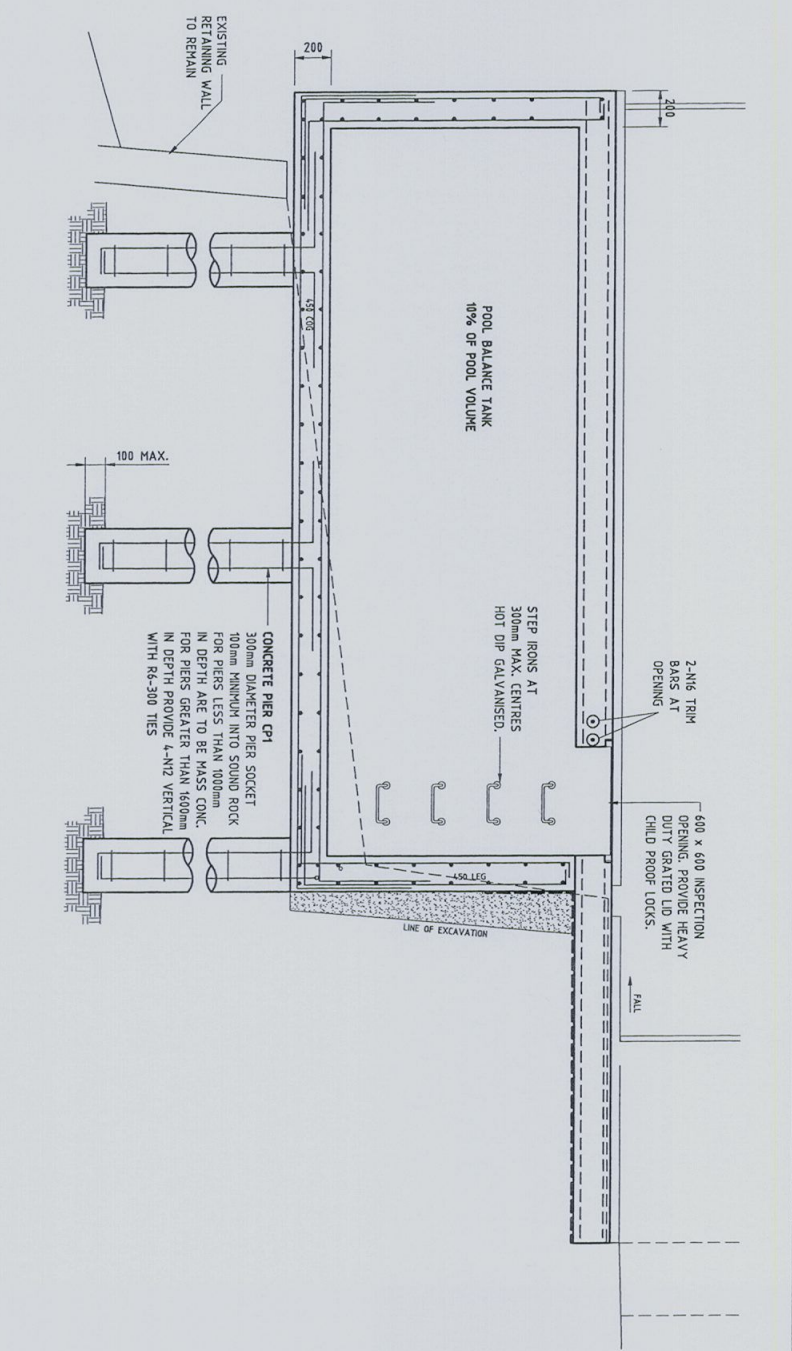
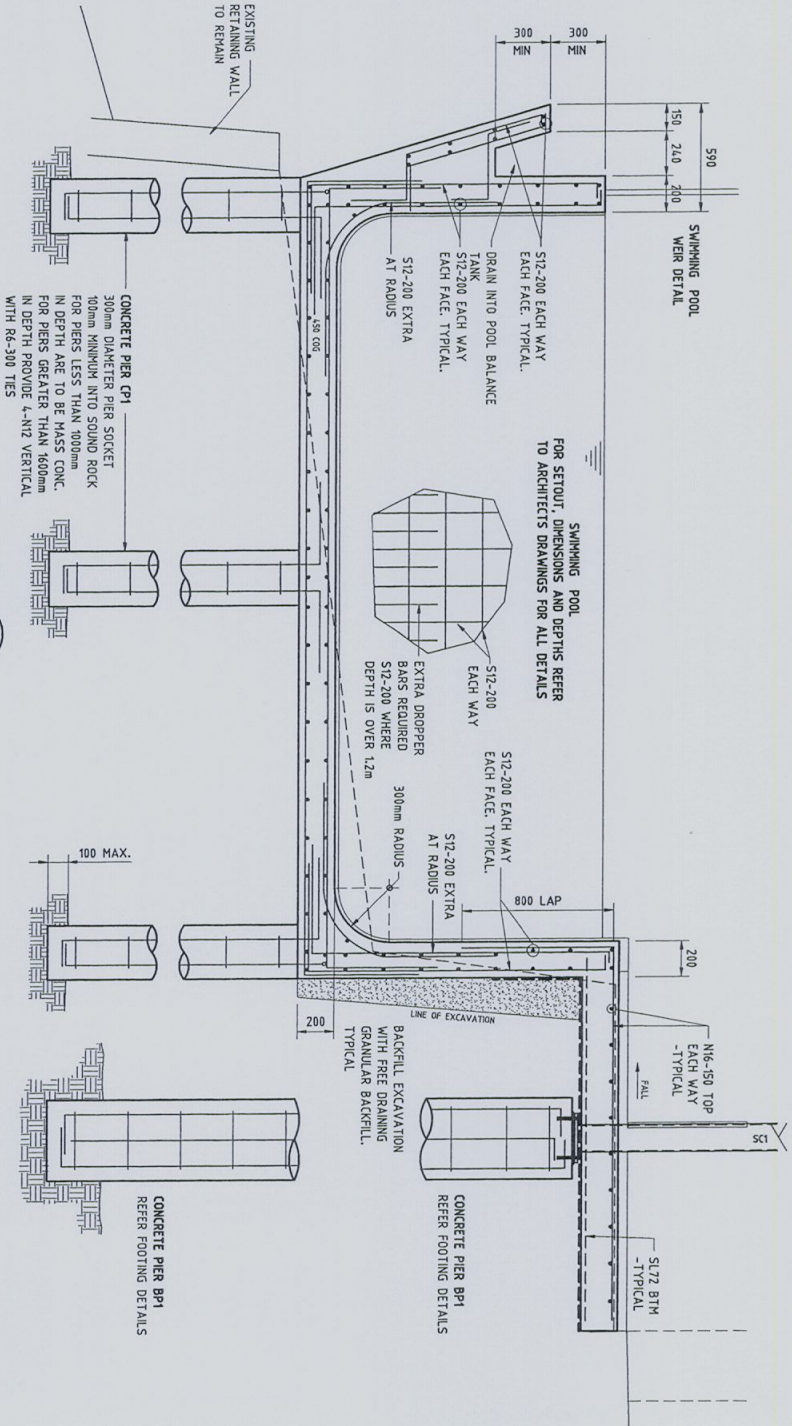
ARCH JCA ARCHITECTS PTY LTD.
JOHN COCKINGS, ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
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PROJECT
ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

DWG FOOTING, LOWER GROUND FLOOR
& STORMWATER LAYOUT

BEKKER CONSULT AUSTRALIA
paul bekker engineering
design buro pty limited
100/101 Northview Road, Palm Beach, NSW 1555
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Email info@jca-architects.com.au

SCALE	DATE	DWG No.	REV
1:100 @ A1	JANUARY 2013	62302 S01	A



GENERAL NOTES:

- ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH SAA 2783-1992 AND ORDINANCES OF THE LOCAL BUILDING AUTHORITY.
- THE OVERALL DIMENSIONS SHALL BE CHECKED ON SITE. DIMENSIONS SHOWN ARE CONCRETE SIZES AND DO NOT INCLUDE FINISHES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT BUT DO NOT FORM PART OF THE CONTRACT. DO NOT SCALE FROM THIS DRAWINGS. ANY DISCREPANCIES SHALL BE NOTIFIED TO THE ENGINEER.
- THE FOUNDATION MATERIAL MUST BE STABLE AND SHALL HAVE A MINIMUM BEARING OF 100 kpa. ANY VARIATIONS IN THE FOUNDATIONS FROM THAT ASSUMED SHALL BE IMMEDIATELY REFERRED TO THE ENGINEER. THE UNDERSIDE OF THE POOL SHELL SHALL BE SEPARATED FROM THE FOUNDATION MATERIAL BY AN IMPERIOUS MEMBRANE OVERLAPPING A 50mm THICKNESS OF PERMEABLE MATERIAL DRAINING TO THE HYDROSTATIC VALVE.
- EXCAVATION SHALL NOT BE PERMITTED WITHIN 2 METRES OF AN EXISTING STRUCTURE WITHOUT PRIOR APPROVAL OR RECOMMENDATIONS FOR SHORING OR UNDERPINNING PROVIDED BY ENGINEER.
- VALWAYS HAVE BEEN DESIGNED FOR A DISTRIBUTED LOAD OF 4 kpa AND A LIVE LOAD OF 3kN/m². NO ADDITIONAL LOADS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- REINFORCED CONCRETE SHELL IN ACCORDANCE WITH AS 2783-1992
- THE MIX SHALL BE PROPORTIONED TO PRODUCE A MIN. 28 DAY COMPRESSIVE STRENGTH OF 32 Mpa SUITABLE FOR PNEUMATIC APPLICATION. ALL WORKMANSHIP AND THE MATERIALS TO BE IN ACCORDANCE WITH AS 3600.
- THE USE OF CALCIUM CHLORIDE AS AN ACCELERATOR WILL NOT BE PERMITTED WITHOUT REFERENCE TO THE ENGINEER.
- CONCRETE COVER SHALL BE AS PER THE SWIMMING POOL CODE. MIN COVER FOR SPRAY CONCRETE SHALL BE 50mm.
- CONCRETE SHALL BE MOST CURED BY THE MEANS OF A HAND HELD HOSE APPROXIMATELY FOUR TIMES A DAY, CONTINUE MINIMUM OF SEVEN DAYS AFTER CONCRETE DISPLACEMENT. THIS WORK SHALL BE CARRIED OUT BY THE OWNER.
- ALL REINFORCING STEEL TO BE FIXED BY AN APPROVED METHOD AND SUPPORTED AT 1m MAX. CENTRES. N-DENTED HIGH YIELD BAR. S-DENTED STRUCTURAL GRADE 230 DEFORMED BAR.
- ALL LAPS TO BE 300mm UNLESS NOTED OTHERWISE.

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2013/00291

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REV	DATE	DESCRIPTION
A	05.03.13	CONSTRUCTION CERTIFICATE & CONSTRUCTION
P2	06.02.13	PRELIMINARY - NOT FOR CONSTRUCTION
P1	---	NOT USED

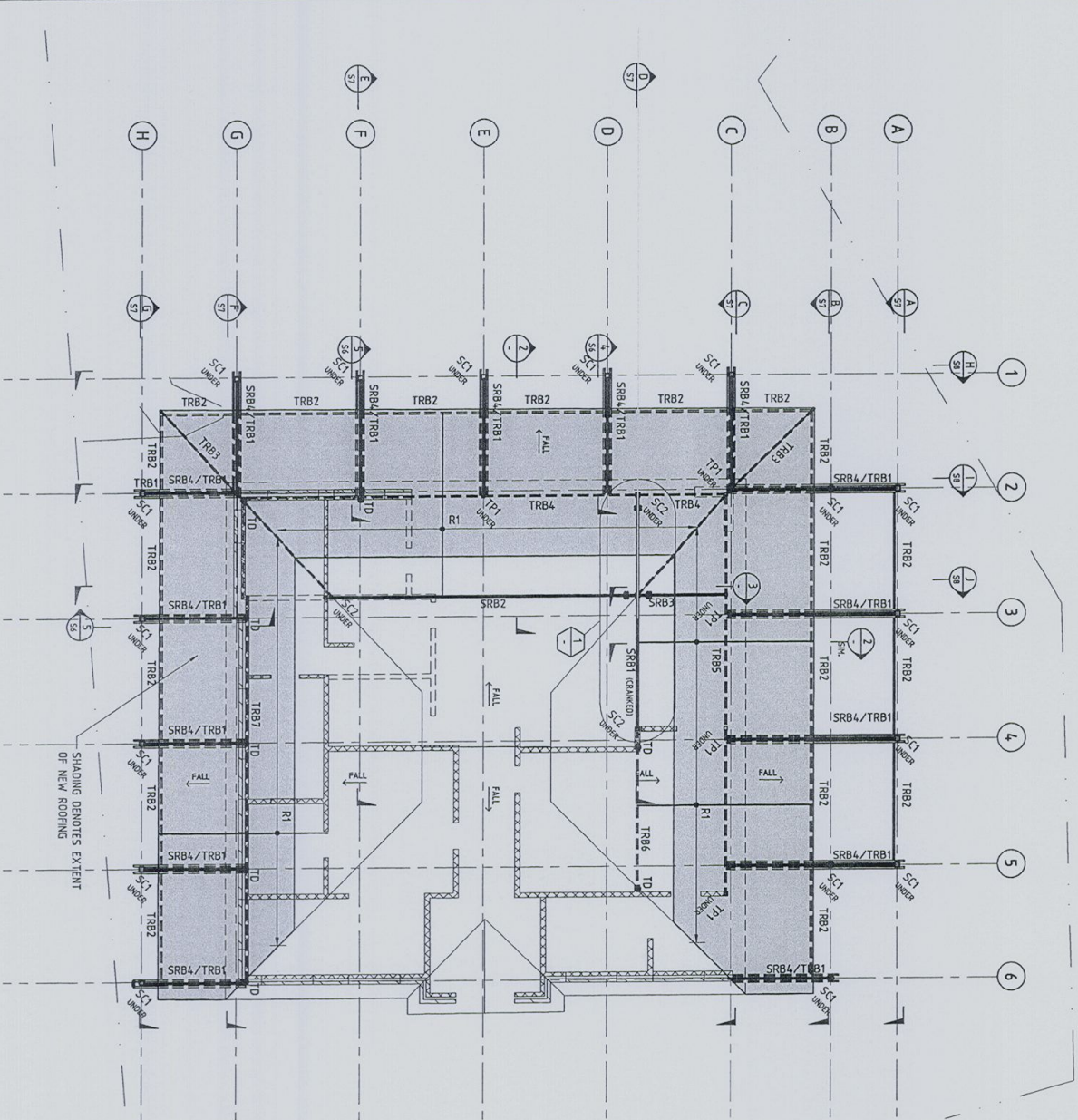
ARCH JCA ARCHITECTS Pty Ltd,
JOHN COCKINGS, ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
Tel 9327 6706 Fax 9327 2706
Email info@jca-architects.com.au

PROJECT
ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

DWG
SWIMMING POOL DETAILS

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email beker@pbe-engineering.com.au

SCALE	DATE	DWG No.	REV
1:20 @ A1	JANUARY 2013	62302 S02	A



ROOF PLAN

- GENERAL NOTES**
1. PROVIDE ALL NECESSARY WATERPROOFING, FLASHING, CAPPING, FALLS AND DRAINAGE AS REQUIRED FOR DECK & ROOF TO ARCHITECTS DETAILS.
 2. TIMBER WALL, DECK & ROOF FRAMING AND BRACING IS TO COMPLY WITH AS1864 NATIONAL TIMBER FRAMING CODE AND WITH ALL RELEVANT ARCHITECTURAL DETAILS.
 3. PROVIDE EAVE GUTTERS AND DOWN PIPES TO AS 3500 AND COUNCILS REQUIREMENTS.
 4. PROVIDE UNITS OVER ALL DOOR/WINDOW OPENINGS TO AUSTRALIAN STANDARDS, THAT NOT BE SHOWN BE SHOWN ON PLANS FOR CLARITY.

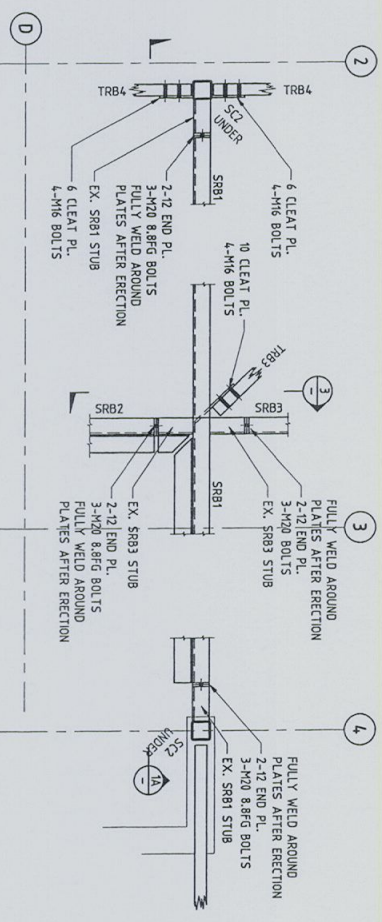
LEGEND

- EXISTING WALL TO REMAIN
- EXISTING WALL DEMOLISHED
- NEW BRICK WALL
- DOWN PIPE
- FLOOR WASTE
- 60% TIE DOWN ROD / POST

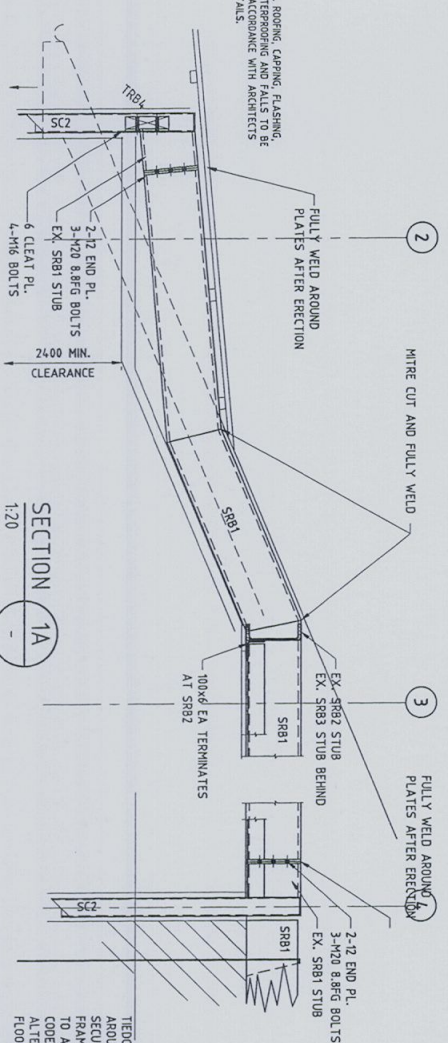
- NOTE: ALL TIMBER FRAMING TO AS1864, TYPICAL.
- NOTE: ALL EXTERNAL STEELWORK TO BE H.D. GALVANISED.
- NOTE: ALL FLASHING, CLADDING AND WATERPROOFING TO ARCHITECTS DETAILS.
- NOTE: ALL FALLS, WATERPROOFING AND DRAINAGE OUTLETS FOR PLANTER BOXES, BALCONIES AND ROOFING TO ARCHITECTS DETAILS. TYPICAL.

ROOF MEMBER SCHEDULE		
TAG	SIZE	COMMENT
SC1	125 x 125 x 5 SHS	H.D. GALV. COLUMN
SC2	90 x 90 x 10 SHS	COLUMN
TP1	120 x 120 F7 TIMBER	TIMBER POST
SRB1	300 PFC + 100 x 6 EA (CRANKED)	STEEL ROOF BEAM
SRB2	300 PFC + 100 x 6 EA (CRANKED)	STEEL ROOF BEAM
SRB3	300 PFC	STEEL ROOF BEAM
SRB4	120 x 120 x 4 SHS	H.D. GALV. STEEL ROOF BEAM
TRB1	250 x 50 SEASONED F77 HARDWOOD	TIMBER ROOF BEAM
TRB2	300 x 50 SEASONED F77 HARDWOOD	TIMBER ROOF BEAM
TRB3	300 x 50 SEASONED F77 HARDWOOD	TIMBER ROOF BEAM
TRB4	240 x 43 LVL	TIMBER ROOF BEAM
TRB5	280 x 65 SEASONED F77 HARDWOOD	TIMBER ROOF BEAM
TRB6	240 x 43 LVL	TIMBER ROOF BEAM
TRB7	170 x 35 AT 600 CTS TREATED SEASONED FS	TIMBER ROOF RAFTER

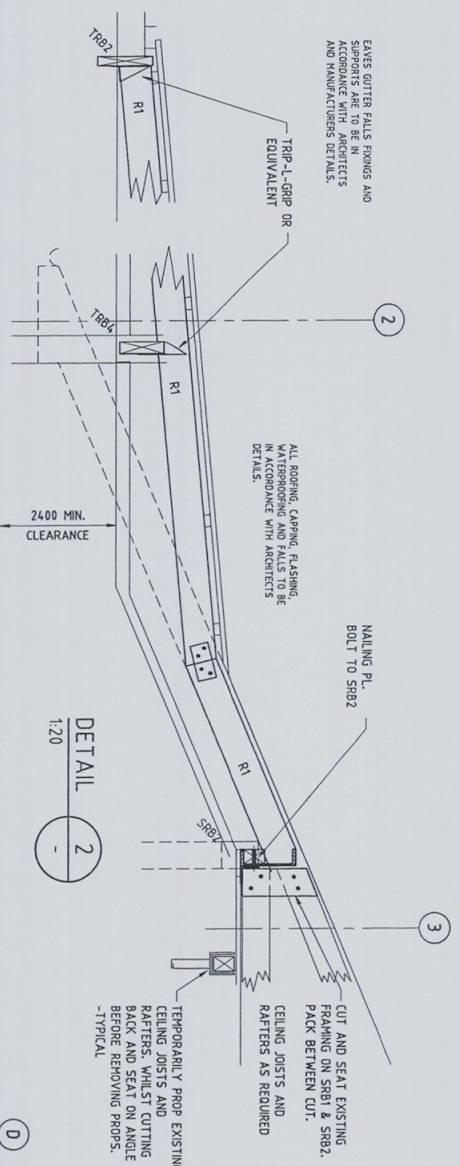
NOTE: ALL EXTERNAL STEELWORK TO BE H.D. GALVANISED.



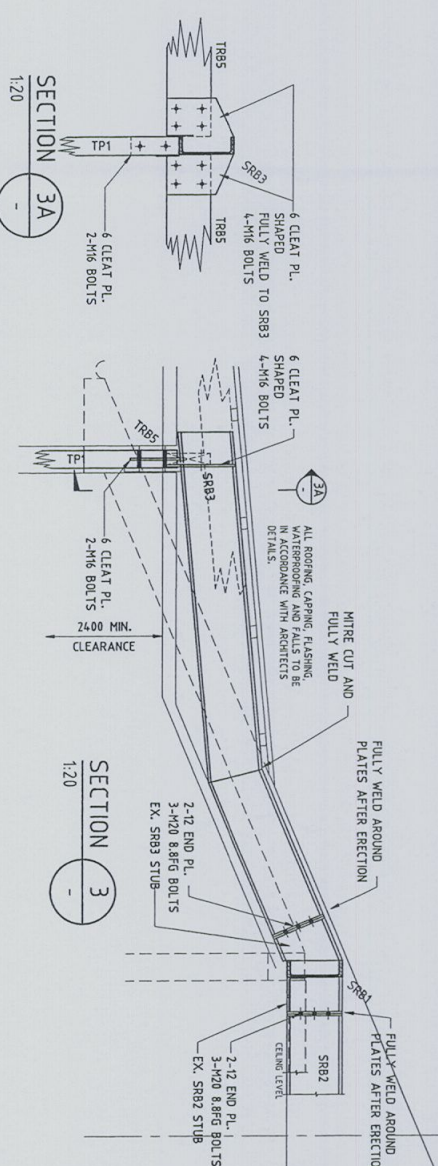
DETAIL 1
1/20



SECTION 1A
1/20



DETAIL 2
1/20



SECTION 3A
1/20

As issued by Environmental Building Partners Pty Ltd

2013/06/29

TYPICAL TIE DOWN (TD) DETAIL

THIS DOCUMENT FORMS PART OF THE CONSTRUCTION CERTIFICATE TO AS1864, NATIONAL TIMBER FRAMING CODE, RELEVANT TO THE CONSTRUCTION OF THE BUILDING. IT IS TO BE USED IN CONJUNCTION WITH THE CONSTRUCTION CERTIFICATE TO AS1864, NATIONAL TIMBER FRAMING CODE, RELEVANT TO THE CONSTRUCTION OF THE BUILDING.

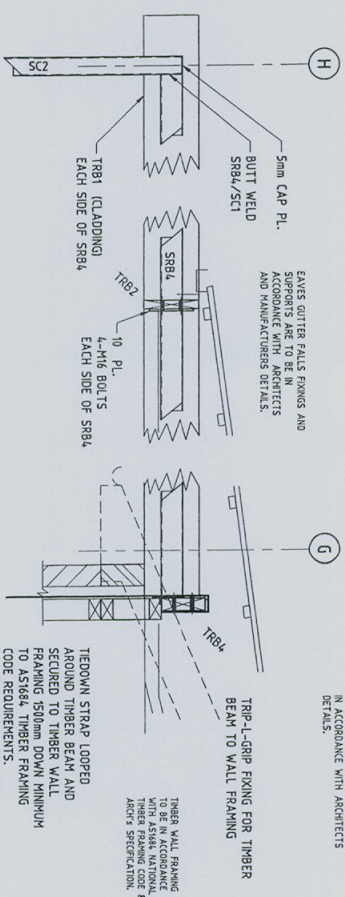
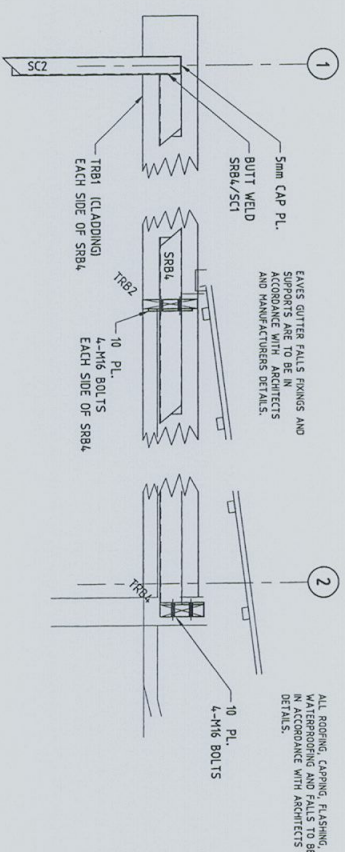
REV	DATE	DESCRIPTION
A	05.03.13	CONSTRUCTION CERTIFICATE & CONSTRUCTION
P2	06.02.13	PRELIMINARY - NOT FOR CONSTRUCTION
P1	28.01.13	PRELIMINARY - NOT FOR CONSTRUCTION

ARCH: JCA ARCHITECTS Pty Ltd,
JOHN COCKINGS, ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
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PROJECT	ALTERATIONS AND ADDITIONS 5 NORTHVIEW ROAD PALM BEACH, NSW
DRG	ROOF LAYOUT & DETAILS

BEKKER CONSULT AUSTRALIA
paul bekker engineering
design bureau pty limited
MEMBER
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Unit 2/711 Rogers Road, Neutral Bay NSW 2089
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SCALE: 1:100 @ A1
DATE: JANUARY 2013
DOC No: 62302 S05
REV: A



TYPICAL TIE DOWN (TD) DETAIL

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REV	DATE	DESCRIPTION		

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JOHN COCKINGS, ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
Tel 9327 6706 Fax 9327 2706
Email info@jca-architects.com.au

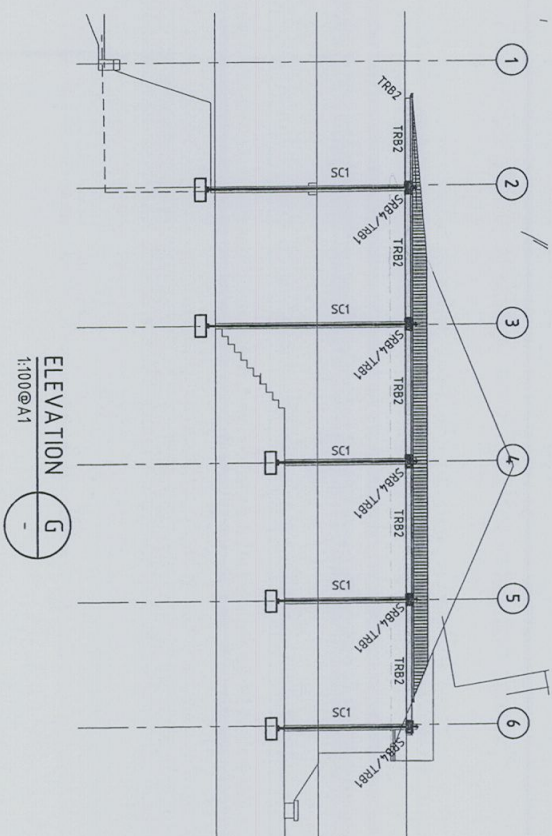
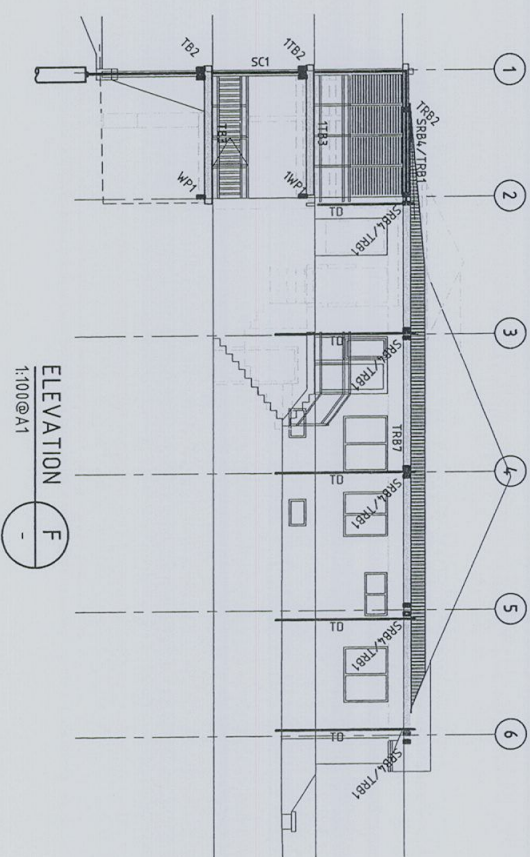
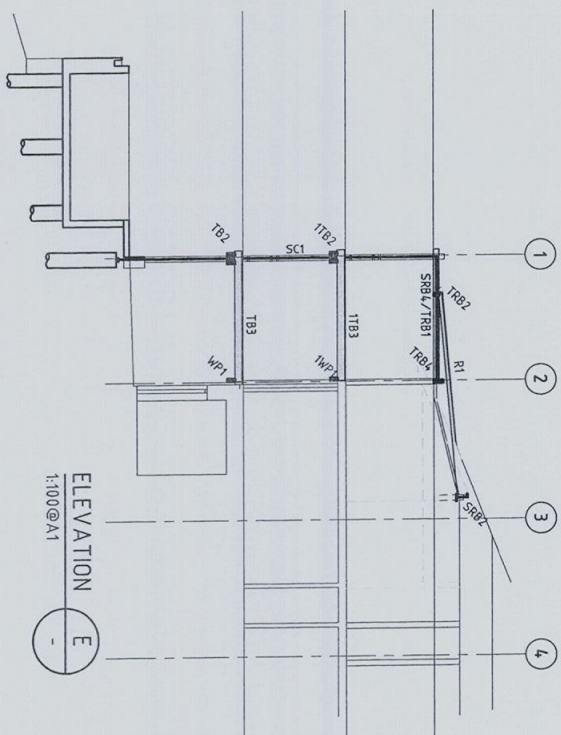
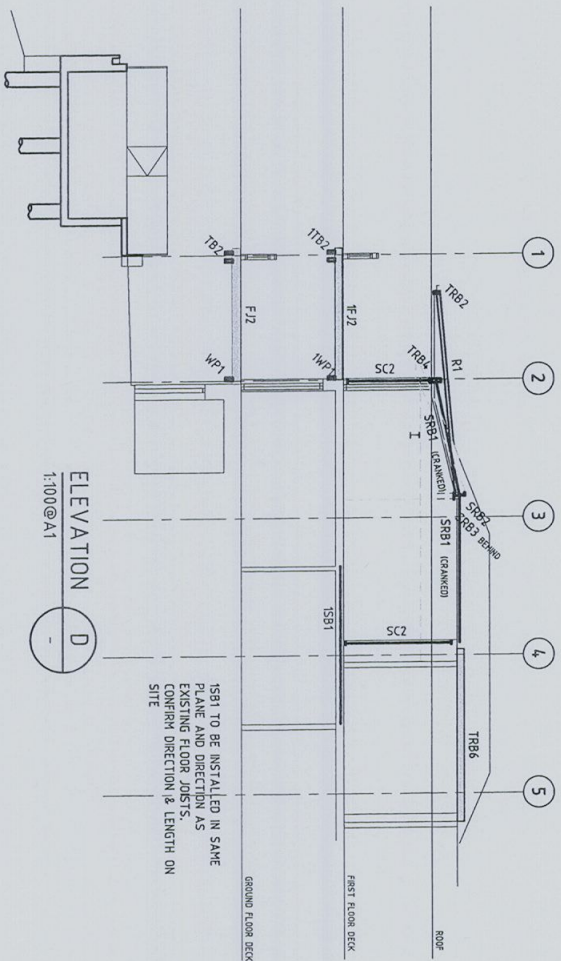
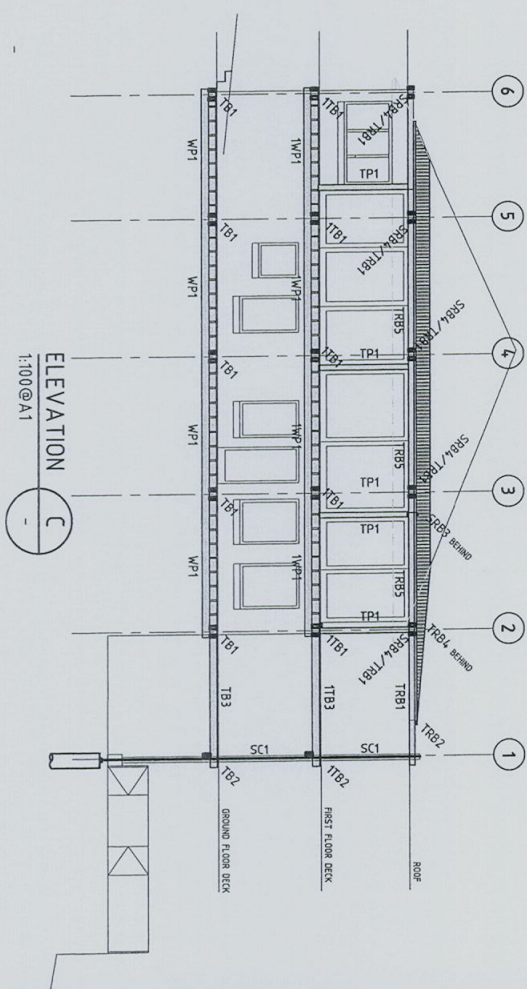
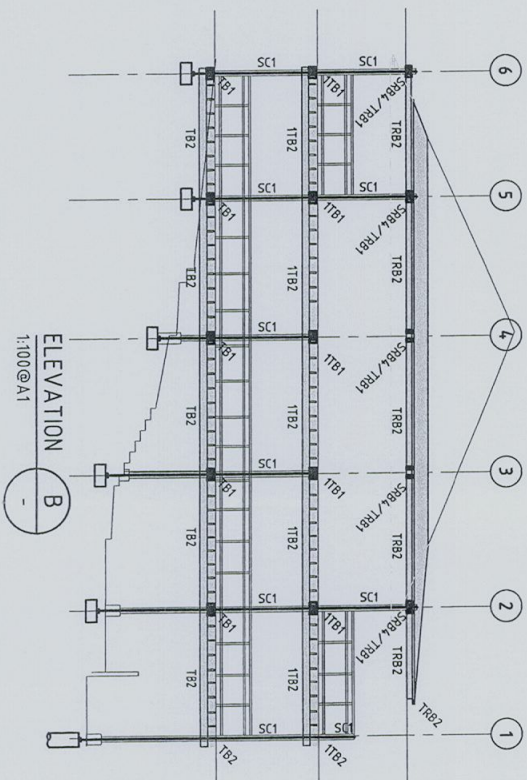
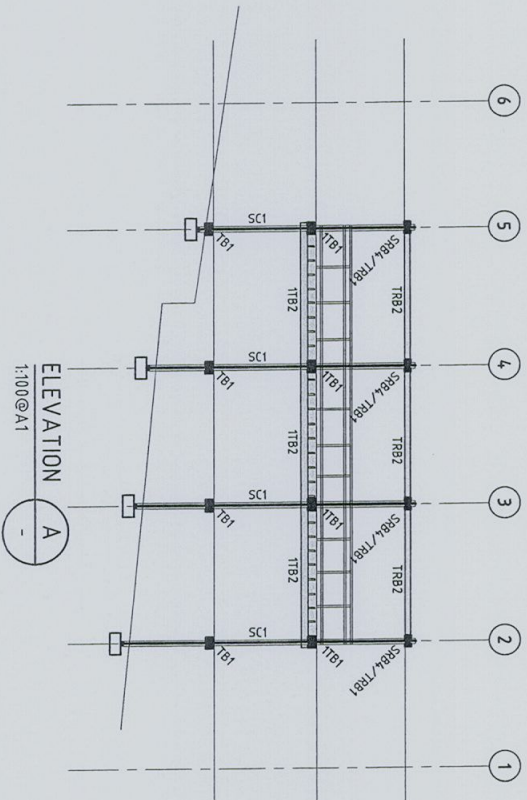
PROJECT
ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

DRG ROOF DETAILS

BEKKER
CONSULT AUSTRALIA

MEMBER
paul bekker engineering
design bureau pty limited
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phone (02) 9953 4246 fax (02) 9953 4246
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postal address po box 571 north sydney nsw 1585
dob 08/11/87 772 517

SCALE 1:100 @ A1	DATE JANUARY 2013	DRG NO. 62302 S06	REV A
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P1	28.01.13	PRELIMINARY - NOT FOR CONSTRUCTION

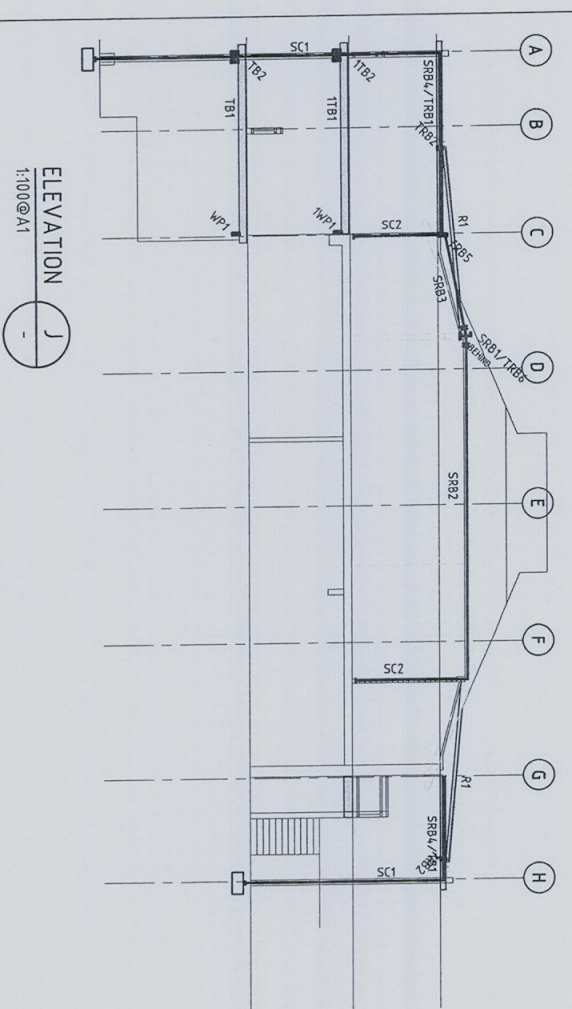
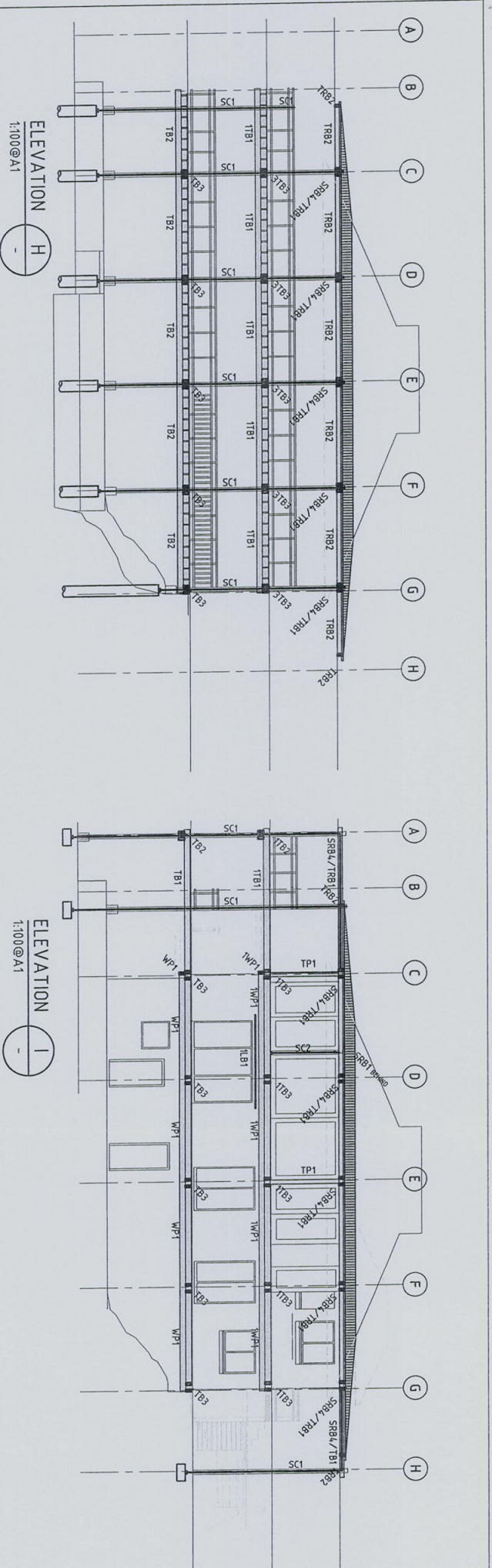
ARCH JCA ARCHITECTS PTY LTD,
JOHN COCKINGS, ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
Tel 9321 6706 Fax 9321 2706
Email info@jca-architects.com.au

PROJECT
ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

DWG
ELEVATIONS

BEKKER CONSULT AUSTRALIA
paul beker engineering
design bureau pty limited
unit 2/11 rogers road mirani bay nsw 2085
phone (02) 9953 6214 fax (02) 9953 6266
mobile (02) 9953 6214 email beker@pbekker.com.au
residential address po box 591 northbridge, nsw 1548

SCALE	DATE	DWG No.	REV
1:100 @ A1	JANUARY 2013	62302 S07	A



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Approved Construction Certificate
2013/00291

As Issued by Environmental Planning Certifiers P1

A	05.03.13	CONSTRUCTION CERTIFICATE & CONSTRUCTION
P2	06.02.13	PRELIMINARY - NOT FOR CONSTRUCTION
P1	28.01.13	PRELIMINARY - NOT FOR CONSTRUCTION
REV	DATE	DESCRIPTION

ARCH JCA ARCHITECTS Pty Ltd.
JOHN COCKINGS, ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
Tel 9327 6706 Fax 9327 2706
Email info@jca-architects.com.au

PROJECT
ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

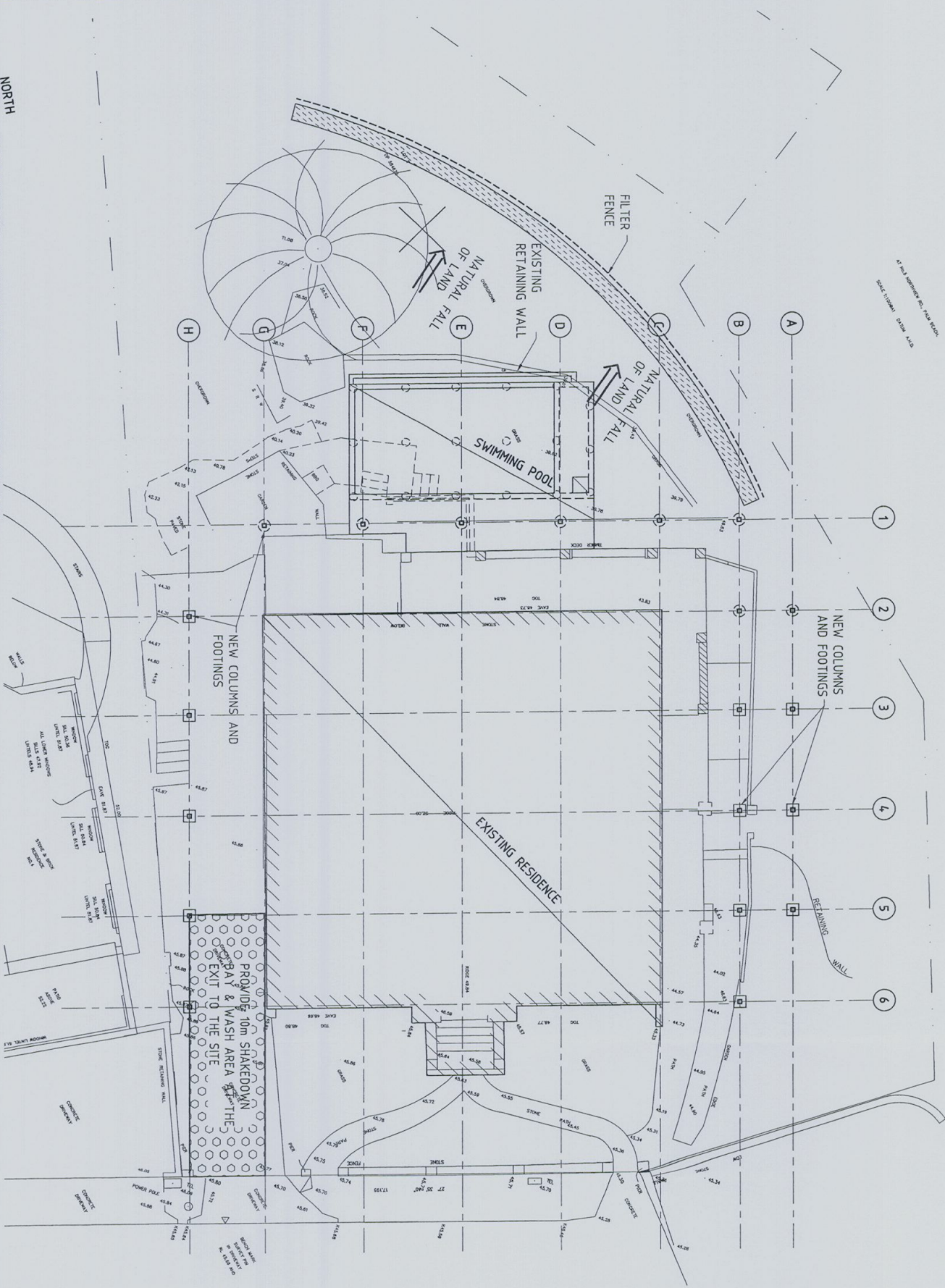
DWG
ELEVATIONS

BEKKER
CONSULT AUSTRALIA
MEMBER

paul bekker engineering
design buro pty limited
Unit 2/111 Rogers Road, Neutral Bay NSW 1585 4344
Tel 9392 0000 Fax 9392 0001
Postal address: po box 591 Northbridge, nsw 1540

Scale 1:100 727 577
Scale 1:100 727 577
Scale 1:100 727 577
Scale 1:100 727 577

SCALE	DATE	DWG No.	REV
1:100 @ A1	JANUARY 2013	62302 S08	A



SEDIMENT & EROSION CONTROL PLAN
1:50 @ A1

LEGEND
EARTH BATTER
FILTER FENCE
TEMPORARY SEWAGE COLLECTION PIT AND STORMWATER COLLECTION BASIN
STAKED HAY BALES

1. THE FOLLOWING SOIL & EROSION CONTROL PLAN IS A SUGGESTED PROCEDURE REQUIRED BY COUNCIL FOR D.A. SHOULD THE PLAN REQUIRE AMENDMENT DURING CONSTRUCTION, THE BUILDER SHALL AMEND THE PLAN & SEEK APPROVAL FROM COUNCIL'S COMPLIANCE OFFICER.

2. THE BUILDER IS AT ALL TIMES REQUIRED TO CONTROL EROSION SEDIMENT & STORMWATER FLOWS TO THE SATISFACTION OF COUNCIL & IN ACCORDANCE WITH COUNCIL'S "SOIL & WATER MANAGEMENT FOR URBAN DEVELOPMENT".

3. ALL EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER, ESPECIALLY CLEANING DEBRIS/SEDIMENT OFF FILTER FENCE.

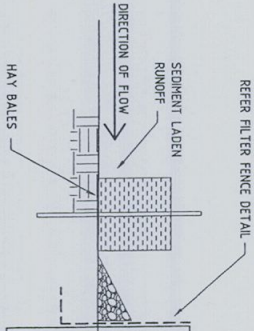
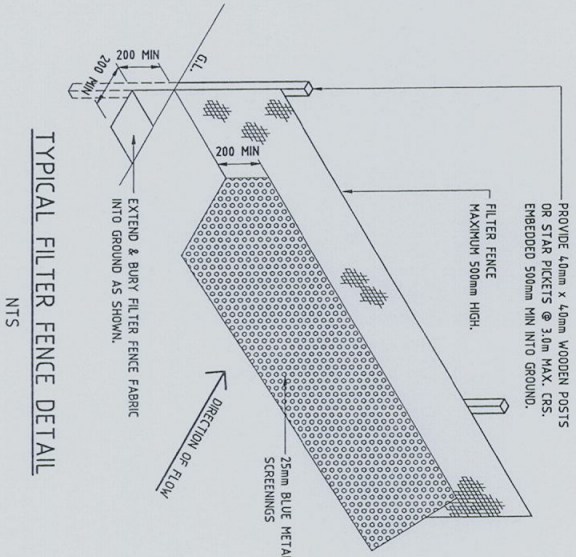
4. MINORLY CULDED AREAS WHERE POSSIBLE.

5. ALL TOPOGRAPHY TO BE CLEAR FROM DRAINS, GUTTERS & FOOTPATHS.

6. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.

7. EXTERNAL ROADS & FOOTPATHS ARE TO BE SWEEP DAILY.

BUILDING SETOUT
FOR BUILDING SETOUT REFER TO LATEST ARCHITECTURAL DRAWINGS.



As issued by Fireman's Foundation Pty
2013/00291
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REV	DATE	DESCRIPTION
A	05.03.13	CONSTRUCTION CERTIFICATE & CONSTRUCTION
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P1	28.01.13	PRELIMINARY - NOT FOR CONSTRUCTION

ARCH JCA ARCHITECTS PTY LTD.
JOHN COCKINGS ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
Tel 9327 6706 Fax 9327 2706
Email info@jca-architects.com.au

PROJECT
ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

DWG
SEDIMENT AND EROSION
CONTROL PLAN

BEKKER
CONSULT AUSTRALIA
MEMBER
paul becker engineering
design bureau pty limited

THIS IS A CONSULTATION ENGINEERING AND SURVEY DRAWING. DEPICTING STRUCTURAL ELEMENTS OVERLAPPED ON AN EXISTING SITE SURVEY. SITE SURVEY PREPARED BY :
DP SURVEYING
REF: 2264
DATE: 06.07.2012

DESIGNED

SCALE 1:100 @ A1

DATE JANUARY 2013

DWG No. 62302 SE1

REV A

SCHEDULE OF BASIX COMMITMENTS

WATER COMMITMENTS

FIXTURES:

- 1. ALL NEW AND ALTERED SHOWER HEADS TO HAVE A FLOW RATE NO GREATER THAN 9 LITRES PER MINUTE OR 3 STAR WATER RATING.
- 2. ALL NEW AND ALTERED TOILET FLUSHING SYSTEMS TO HAVE A FLOW RATE NO GREATER THAN 4 LITRES PER AVERAGE FLUSH OR A MINIMUM 3 STAR WATER RATING.
- 3. ALL NEW AND ALTERED TAPS TO HAVE A FLOW RATE NO GREATER THAN 9 LITRES PER MINUTE OR 3 STAR WATER RATING.

RAINWATER WATER:

- 1. THE APPLICANT MUST INSTALL A RAINWATER TANK OF 1029 LITRES MINIMUM, AND MUST MEET, AND BE INSTALLED IN ACCORDANCE WITH, THE REQUIREMENTS OF ALL APPLICABLE REGULATORY AUTHORITIES.
- 2. THE APPLICANT MUST CONFIGURE THE RAINWATER TANK TO COLLECT RAIN RUNOFF FROM AT LEAST 200 SQUARE METERS OF ROOF AREA.
- 3. THE APPLICANT MUST CONNECT THE RAINWATER TANK TO AT LEAST ONE OUTDOOR TAP LOCATED WITHIN 10 METRES OF THE EDGE OF POOL.

OUTDOOR SWIMMING POOL:

- 1. THE SWIMMING POOL MUST BE OUTDOORS.
- 2. THE SWIMMING POOL MUST NOT HAVE A VOLUME GREATER THAN 45 KILOLITRES.
- 3. THE SWIMMING POOL MUST HAVE A POOL COVER AND MUST BE PROTECTED.
- 4. THE APPLICANT MUST INSTALL A POOL PUMP TIMER FOR THE SWIMMING POOL.
- 5. THE APPLICANT MUST INSTALL THE FOLLOWING HEATING SYSTEM FOR THE SWIMMING POOL THAT IS PART OF THIS DEVELOPMENT: SOLAR (GAS BOOSTED).

ENERGY COMMITMENTS

HOT WATER:

- 1. THE APPLICANT MUST HAVE A HOT WATER SYSTEM WITH A HIGH ENERGY RATING OF GAS INSTANTANEOUS.

LIGHTING:

- 1. THE APPLICANT MUST HAVE A MINIMUM OF 40% OF NEW AND ALTERED LIGHT FIXTURES FITTED WITH FLUORESCENT, COMPACT FLUORESCENT, OR LIGHT-E MITTING-DIODE (LED) LAMPS.

VENTILATION:

- 1. THE APPLICANT MUST HAVE INSTALLED THE FOLLOWING EXHAUST SYSTEM:
 - a. AT LEAST 1 BATHROOM: NO MECHANICAL VENTILATION (ie. NATURAL).
 - b. KITCHEN: INDIVIDUAL FAN, NOT DUCTED; OPERATION CONTROL;
 - c. LAUNDRY: NATURAL VENTILATION ONLY.

NATURAL LIGHTING:

- 1. THE DEVELOPMENT MUST HAVE A WINDOW IN THE KITCHEN FOR NATURAL VENTILATION.
- 2. THE DEVELOPMENT MUST HAVE A WINDOW IN ALL BATHROOMS AND TOILETS FOR NATURAL VENTILATION.

OUTDOOR SWIMMING POOL:

- 1. THE APPLICANT MUST INSTALL THE FOLLOWING HEATING SYSTEM FOR THE SWIMMING POOL THAT IS OF THIS DEVELOPMENT: SOLAR (GAS BOOSTED).
- 2. THE APPLICANT MUST INSTALL A POOL PUMP TIMER FOR THE SWIMMING POOL.

OTHER:

- 1. THE APPLICANT MUST INSTALL A GAS COOKTOP AND ELECTRIC OVEN IN THE KITCHEN.
- 2. THE APPLICANT MUST CONSTRUCT THE REFRIGERATOR SPACE IN THE RESIDENCE SO THAT IT IS WELL VENTILATED AS DEFINED IN THE BASIX DEFINITIONS.
- 3. THE APPLICANT MUST HAVE INSTALLED A FIXED OUTDOOR CLOTHES DRYING LINE.

THERMAL COMFORT COMMITMENTS

CONSTRUCTION INSULATION REQUIREMENTS:

- 1. THE PROJECT MUST BE CONSTRUCTED IN ACCORDANCE WITH ALL THERMAL PERFORMANCE SPECIFICATIONS SET OUT IN THE CERTIFICATE NUMBER A111888, AND IN ACCORDANCE WITH THOSE ASPECTS OF THE DEVELOPMENT APPLICATION WHICH WHERE USED TO CALCULATE THOSE SPECIFICATIONS.

WINDOWS AND GLAZED DOORS GLAZING REQUIREMENTS:

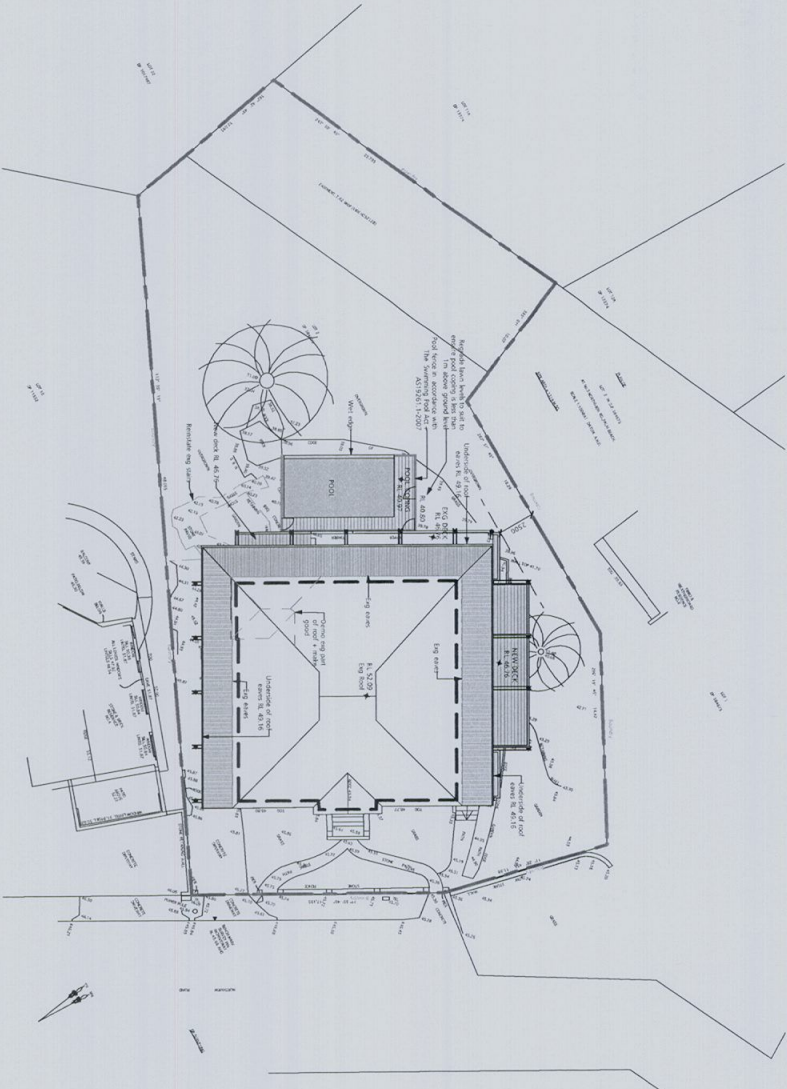
- 1. THE APPLICANT MUST INSTAL THE WINDOWS, GLAZED DOORS AND SHADING DEVICES IN ACCORDANCE WITH THE SPECIFICATIONS LISTED IN THE CERTIFICATE NUMBER A111888. RELEVANT OVERSHADOWING SPECIFICATIONS MUST BE SATISFIED FOR EACH WINDOW AND GLAZED DOOR.
- 2. FOR PROJECTIONS DESCRIBED IN MILLIMETRES, THE LEADING EDGE OF EACH EAVE, PERGOLA, VERANDAH, BALCONY OR AWNING, MUST NOT BE MORE THAN 500mm ABOVE THE HEAD OF A WINDOW OR HEAD OF A GLAZED DOOR & NO MORE THAN 2400mm ABOVE THE SILL.

WINDOW AND GLAZED DOOR SCHEDULE

No.	Height	Width	Area
W1	1.50	2.40	3.60
W2	0.90	1.20	1.08
W3	2.10	1.50	3.15
W4	2.40	1.50	3.60
W5	2.40	3.60	8.64
W6	2.40	7.00	16.80
W7	2.40	6.00	14.40
W8	1.50	4.00	6.00
W9	1.50	2.40	3.60
W10	1.50	2.40	3.60
W11	1.50	2.40	3.60
W12	1.50	2.40	3.60
W13	1.50	2.40	3.60
W14	1.50	2.40	3.60
W15	1.50	2.40	3.60
W16	1.50	2.40	3.60
W17	2.10	1.50	3.15
W18	2.10	2.00	4.20
W19	2.10	3.00	6.30
W20	1.20	1.00	1.20
W21	1.20	1.00	1.20
W22	1.20	1.50	1.80
W23	1.20	1.00	1.20
W24	1.20	1.20	1.44

NOTE:

- 1. ALL WINDOWS & GLAZED DOORS TO BE TIMBER FRAMED.
- 2. WINDOWS AND GLAZED DOORS TO BE FITTED WITH SINGLE CLEAR GLAZED (U-VALUE: 5.71, SHGC: 0.66).
- 3. WINDOWS AND GLAZED DOORS DENOTED TO BE FITTED WITH SINGLE TONED GLAZING (U-VALUE: 5.67, SHGC: 0.49).



1 Proposed Site plan / Roof Plan
Scale: 1:500



Member
Australian Institute
of Architects

GENERAL NOTES

- Consult with ALL relevant authorities prior to commencing work.
- DO NOT scale. All dimensions are nominal + should be confirmed on site.
- Obtain setting out information from architect P804 to - bring discrepancies to the immediate attention of the Architect before proceeding with the work.
- Works seek instruction from the Architect before proceeding.
- General, specification, schedule, and other information issued by the Architect

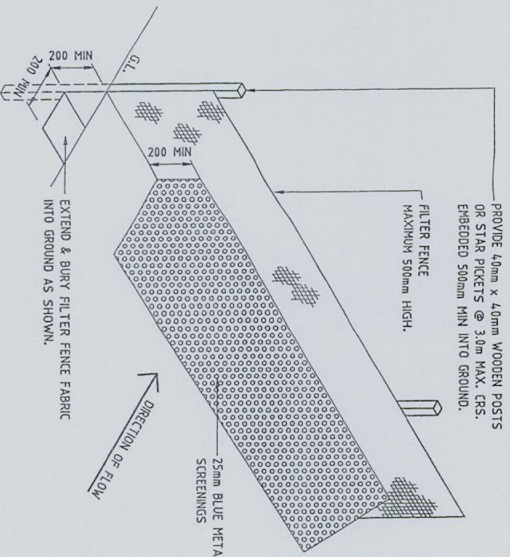
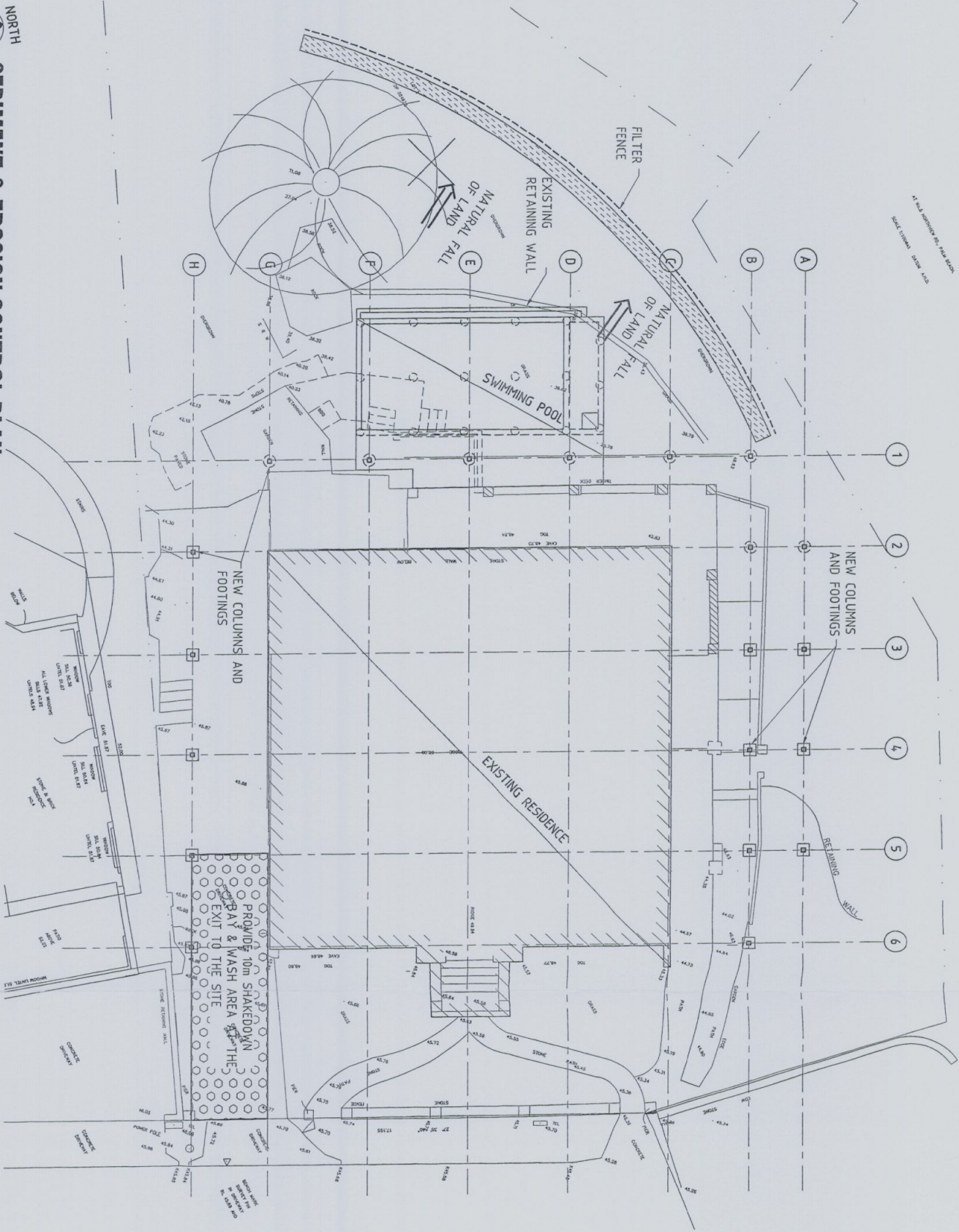
This plan/document forms part of the
Approved Construction Certificate

2013/00291

As issued by the Principal Certifying PI

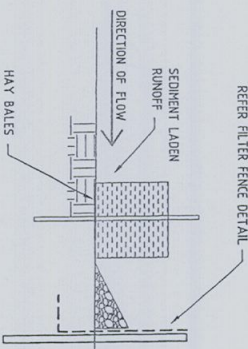
Client	Graham & Sue Hunt
Project	Alterations & Additions
Address	5 Northern Road NSW 2038
Project	Site Plan / Roof Plan
Scale	1:500 @ A3
Drawn by	John B. P1, MV
Check by	John B. P1, MV
Issue	Construction Certificate
Version	B
Date	Sep 2012
Project Number	





TYPICAL FILTER FENCE DETAIL

NTS



FILTER FENCE / HAY BALE DETAIL

DURING CONSTRUCTION

NTS

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2013/00291

As issued by Fitzpatrick Architects Pty Ltd

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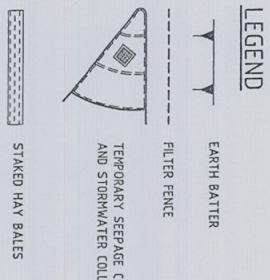
ARCH JCA ARCHITECTS Pty Ltd
JOHN COCKINGS, ARCHITECT AIA NSW ARB 6055
PO Box 156, Double Bay, NSW 1360
Tel 9327 6706 Fax 9327 2706
Email info@jca-architects.com.au

PROJECT
ALTERATIONS AND ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH, NSW

DWG
SEDIMENT AND EROSION
CONTROL PLAN

NOTE:
THIS IS A COMPILATION ENGINEERING AND SURVEY
DRAWING DEPICTING STRUCTURAL ELEMENTS
OVERLAIN ON AN EXISTING SITE SURVEY.
NO SURVEYING PREPARED BY:
REF: 7264 DATE: 06/07/2012
Ph: (02) 9918 3359

BUILDING SETOUT
FOR BUILDING SETOUT REFER TO LATEST
ARCHITECTURAL DRAWINGS.

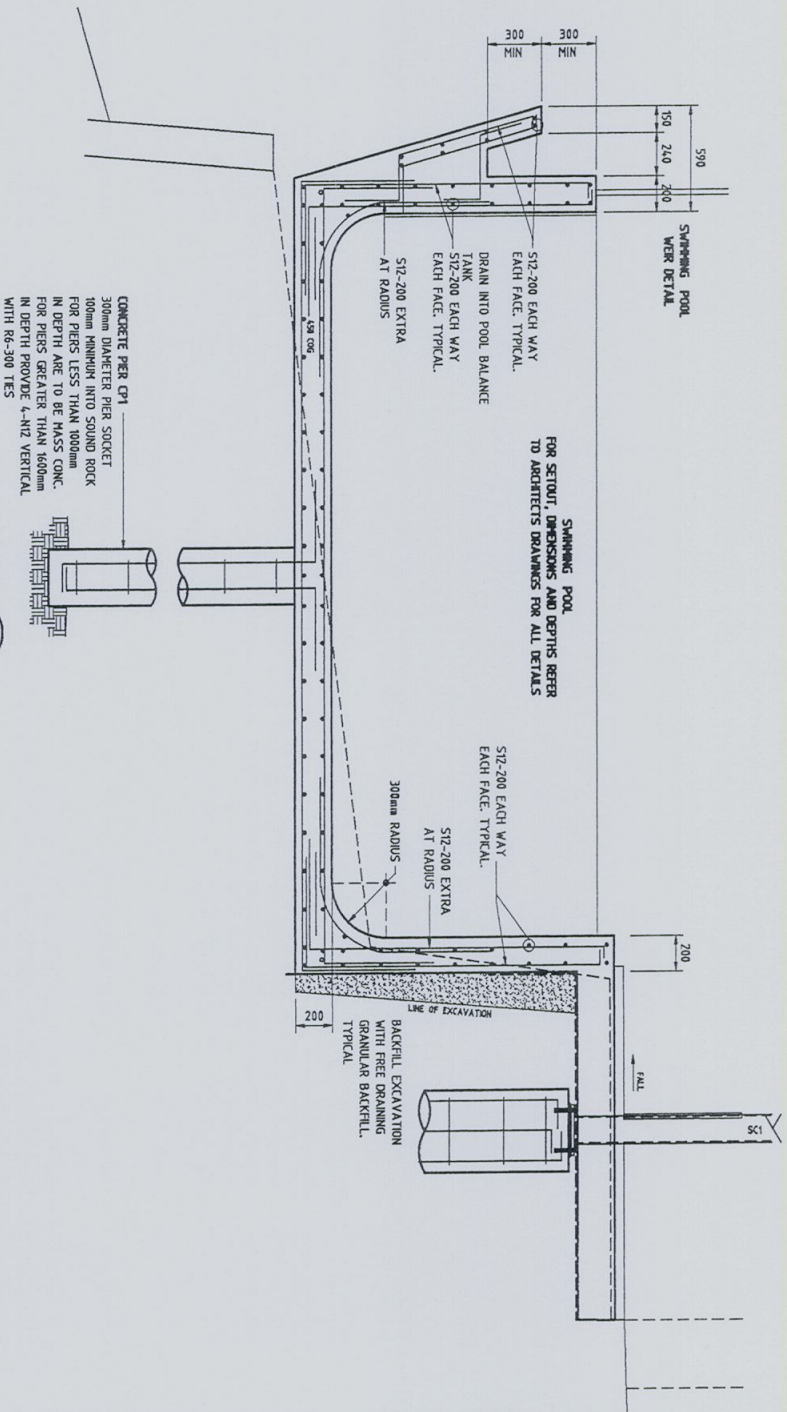


SEDIMENT & EROSION CONTROL PLAN

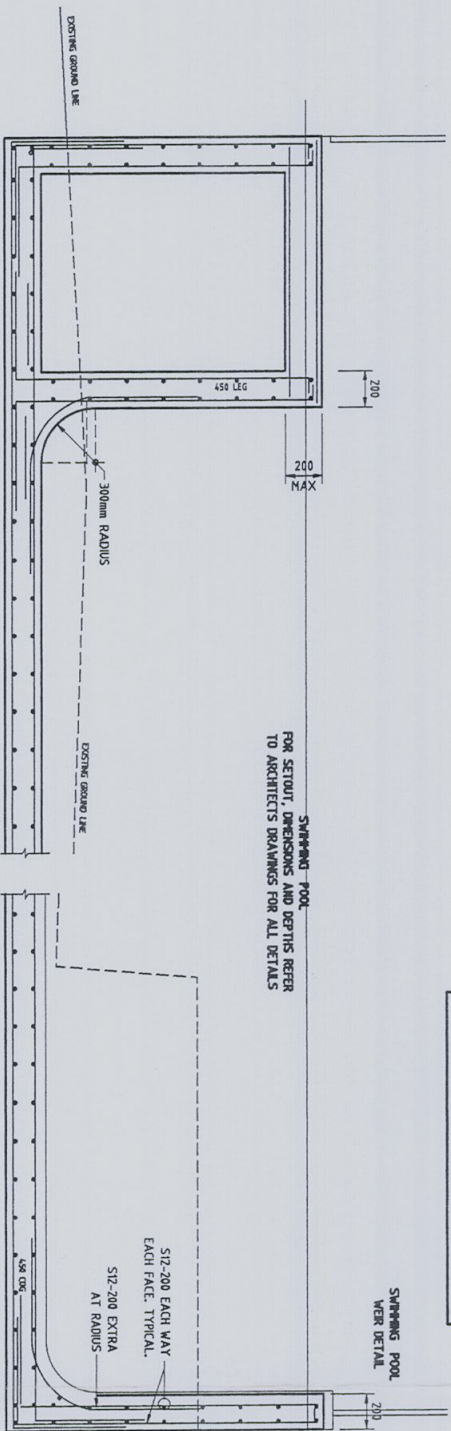
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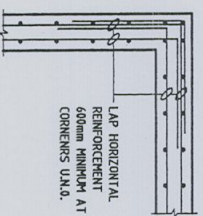
1. THE FOLLOWING SOIL & EROSION CONTROL PLAN IS A SUGGESTED PROCEDURE REQUIRED BY COUNCIL FOR D.A. SHOULD THE PLAN REQUIRE AMENDMENT DURING CONSTRUCTION, THE BUILDER SHALL AMEND THE PLAN & SEEK APPROVAL FROM COUNCIL'S COMPLIANCE OFFICER.
2. THE BUILDER IS AT ALL TIMES REQUIRED TO CONTROL EROSION SEDIMENT & STORMWATER FLOWS TO THE SATISFACTION OF COUNCIL & IN ACCORDANCE WITH COUNCIL'S "SOIL & WATER MANAGEMENT FOR URBAN DEVELOPMENT".
3. ALL EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.
4. ALL EROSION & SEDIMENT CONTROL MEASURES ARE TO BE MAINTAINED DAILY BY SITE MANAGER.
5. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS & FOOTPATHS.
6. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
7. EXTERNAL ROADS & FOOTPATHS ARE TO BE SWEEPED DAILY.



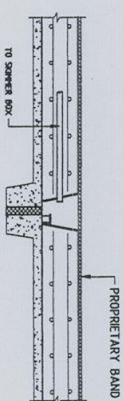
SECTION 5
1:20
ST



SECTION 7
1:20
ST



TYPICAL CORNER LAP FOR SWIMMING POOL REINFORCEMENT



HYDROSTATIC RELIEF VALVE AND MAIN DRAIN

GENERAL NOTES:

- ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH SAA 2783-1992 AND ORDINANCES OF THE LOCAL BUILDING AUTHORITY.
- THE OVERALL DIMENSIONS SHALL BE CHECKED ON SITE. DIMENSIONS SHOWN ARE CONCRETE SIZES AND DO NOT INCLUDE FINISHES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT BUT DO NOT FORM PART OF THE CONTRACT. DO NOT SCALE FROM THIS DRAWINGS. ANY DISCREPANCIES SHALL BE NOTIFIED TO THE ENGINEER.
- THE FOUNDATION MATERIAL MUST BE STABLE AND SHALL HAVE A MINIMUM BEARING OF 100 kPa. ANY VARIATIONS IN THE FOUNDATIONS FROM THAT ASSUMED SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER. THE FOUNDATION MATERIAL SHALL BE STABLE AND SHALL HAVE A MINIMUM BEARING OF 100 kPa. ANY VARIATIONS IN THE FOUNDATIONS FROM THAT ASSUMED SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER. THE FOUNDATION MATERIAL SHALL BE STABLE AND SHALL HAVE A MINIMUM BEARING OF 100 kPa. ANY VARIATIONS IN THE FOUNDATIONS FROM THAT ASSUMED SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
- EXCAVATIONS SHALL NOT BE PERMITTED WITHIN 2 METRES OF AN EXISTING STRUCTURE WITHOUT PRIOR APPROVAL OR RECOMMENDATIONS FOR SHORING OR UNDERPINNING PROVIDED BY ENGINEER.
- WALLWAYS HAVE BEEN DESIGNED FOR A DISTRIBUTED LOAD OF 4 kPa AND A LIVE LOAD OF 3000N. NO ADDITIONAL LOADS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- REINFORCED CONCRETE SHELL IN ACCORDANCE WITH AS 2783-1992
- THE MAX SHALL BE PROPORTIONED TO PRODUCE A MIN. 28 DAY COMPRESSIVE STRENGTH OF 32 MPa SUITABLE FOR PRELIMINARY APPLICATION. ALL WORKMANSHIP AND THE MATERIALS TO BE IN ACCORDANCE WITH AS 3600.
- THE USE OF CALCIUM CHLORIDE AS AN ACCELERATOR WILL NOT BE PERMITTED WITHOUT REFERENCE TO THE ENGINEER.
- CONCRETE COVER SHALL BE AS PER THE SWIMMING POOL CODE. MIN COVER FOR SPRAY CONCRETE SHALL BE 50mm.
- CONCRETE SHALL BE MOIST CURED BY THE MEANS OF A HAND HELD HOSE APPROXIMATELY FOUR TIMES A DAY, CONTINUE MINIMUM OF SEVEN DAYS AFTER CONCRETE DISPLACEMENT. THIS WORK SHALL BE CARRIED OUT BY THE OWNER.
- ALL REINFORCING STEEL TO BE FIXED BY AN APPROVED METHOD AND SUPPORTED AT 1m MAX. CENTRES.
- N-DENOTED HIGH YIELD BAR S-DENOTED STRUCTURAL GRADE 240 DEFORMED BAR
- ALL LAPS TO BE 300mm UNLESS NOTED OTHERWISE.

This plan/document forms part of the
Approved Construction Certificate

2013/00291

As issued by Fitzroy's Building Practitioners Pty

BEKKER

paul bekker engineering design buro pty limited
abn 89 118 772 517

po box 591, northbridge, nsw 1560
2/11 rangers road, neutral bay, nsw 2089
telephone 9953 6244
facsimile 9953 6266
email address bekker@spn.net.au

March 14, 2013

PB/bm 62302

STRUCTURAL
CIVIL
AND
WATERPROOFING
ENGINEERS

Ms S Hurst
C/O Dunn & Pilcher Constructions Pty Ltd
PO Box 70
COLLARROY NSW 2097

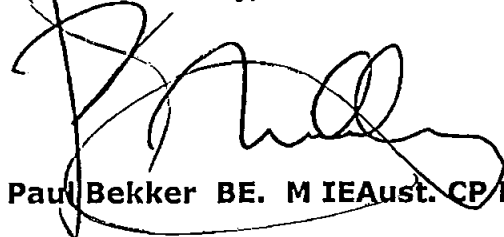
Atten: MR W Pilcher

RE: ALTERATIONS & ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH

Dear Sir,

We certify that the drawings submitted for the Erosion & Sediment Management Plan have been designed in accordance with the NSW Dept of Land & Water Conservation's Urban Erosion & Sediment Control manual.

Yours faithfully,



Paul Bekker BE. M IEAust. CP Eng. M ACEA

This plan/document forms part of the
Approved Construction Certificate

2013/00291

As issued by Fitzroy Building Partners Pty



BEKKER

paul bekker engineering design buro Pty limited

abn 89 118 772 517

po box 591, northbridge, nsw 1560

2/11 rangers road, neutral bay, nsw 2089

telephone 9953 6244

facsimile 9953 6266

email address bekker@spin.net.au

62302 / February 12, 2013

CERTIFICATE OF DESIGN INTENT STRUCTURAL ENGINEERING CONSULTANCY

CONSTRUCTION CERTIFICATE

STRUCTURAL
CIVIL
AND
WATERPROOFING
ENGINEERS

ADDRESS OF DEVELOPMENT: 5 Northview Road, Palm Beach

PROJECT: Residential Alterations

Pursuant to the provisions of Clause A2.2 of the Building Code of Australia, I, Paul Bekker of 2/22 Rangers Rd Neutral Bay, being a practicing structural engineer, a corporate member of the Institution of Engineers Australia, a member of the ACEA and ASCE and the holder of documentary evidence from the Institute to that effect, ph 9953 6244, Fax: 9953 6266, Mob: 0411 570 948, hereby certify that the structural engineering drawings for this project are designed to comply with: -

- a) The relevant clauses of the Building Code of Australia and the Consent Conditions.
- b) The relevant Australian Standards listed in the Building Code of Australia as follows:

AS1170.1, 2 & .4 (amend '94), AS1289, AS1684, AS2159, AS 2327, AS2500, AS3500, AS3600, AS3700 & AS4100.

- c) The engineering plans submitted to the Accredited Certifier for approval are: PBEDB drawings 62302 - S00A to S08A

This approval forms part of the Approved Construction Certificate

2013/00291

Signature:

Paul Bekker BE, MIE Aust. CP Eng. M ACEA

As issued by Accredited Building Certifier D/A

Date: February 12, 2013



BEKKER

paul bekker engineering design buro Pty limited

abn 89 118 772 517

po box 591, northbridge, nsw 1560

2/11 rangers road, neutral bay, nsw 2089

telephone 9953 6244

facsimile 9953 6266

email address bekker@spin.net.au

February 12, 2013

PB/bm 62302

STRUCTURAL
CIVIL
AND
WATERPROOFING
ENGINEERS

**Ms S Hurst
C/O Dunn & Pilcher Constructions Pty Ltd
PO Box 70
COLLAROY NSW 2097**

Atten: MR W Pilcher

**RE: ALTERATIONS & ADDITIONS
5 NORTHVIEW ROAD
PALM BEACH**

Dear Sir,

**We have inspected the above premises and confirm that the
existing building is structurally adequate to carry the proposed
additions as shown on the approved DA drawings.**

Yours faithfully,

Paul Bekker BE. M IEAust. CP Eng. M ACEA

*This plan/document forms part of the
Approved Construction Certificate*

2013/00291

As issued by Fitzgerald Building Certifiers Pty



DUNN & PILCHER

CUSTOM HOMES & RESTORATIONS

Paul Fitzgerald
Fitzgerald Building Certifiers
1-3 Thornleigh St
Thornleigh NSW 2120

13 March 2013

Dunn & Pilcher Constructions Pty Ltd.
54 Hilltop Road Clareville NSW 2107
M 0412 265 401 / F 9973 1432 / T 9973 1344
E pilcher10@bigpond.com.au
Postal Address PO Box 70 Collaroy NSW 2097
Builders Licence 88522C / ABN. 85 052 946 666

Dear Paul,
Re: 5 Northview Rd, Palm Beach 2108
Development Consent: 155/11

In accordance with Condition C5 we confirm that the following will be undertaken as part of the works at 5 Northview Rd, Palm Beach:

5. Any proposed demolition works shall be carried out in accordance with the requirements of AS2601-2001 *The Demolition of Structures*.

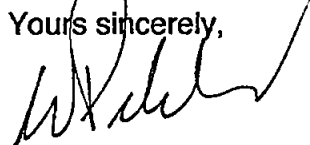
Amongst others, precautions to be taken shall include compliance with the requirements of the Workcover Authority of New South Wales, including but not limited to:

1. Protection of site workers and the general public.
2. Erection of hoardings where appropriate.
3. Asbestos handling and disposal where applicable.
4. Any disused service connections shall be capped off.

Council is to be given 48 hours written notice of the destination/s of any excavation or demolition material. The disposal of refuse is to be an approved waste disposal depot.

Thank you.

Yours sincerely,



Warwick Pilcher

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Approved Construction Certificate

2013/00291

As issued by Fitzgerald Building Certifiers Pty

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

on this the 14TH MARCH, 2013
(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 – 2009 and I am authorised by the above organization/company to issue this document and to certify that the organization/company has a current professional indemnity policy of at least \$2million. I also certify that I have reviewed the design plans and structural design plans in accordance 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: RISK ANALYSIS & MANAGEMENT FOR PROPOSED SWIMMING POOL, ADDITIONAL DECK, ADDITIONAL ROOM & CARPORT AT 5 NORTH VIEW ROAD, PALM BEACH MM 27458

Report Date: 8TH MARCH, 2011

Author: BEN WHITE

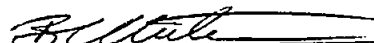
Documentation which relates to or is relied upon in report preparation:

ARCHITECTURAL PLANS PREPARED BY J D EVANS & COMPANY DWG NO 1381-1 -1381-8 & 841-91 DATED FEBRUARY, 2011
STRUCTURAL PLANS PREPARED BY PAUL BEKKER ENGINEERING DESIGN BURO P/L DWG NO 62302 S0-S08 REV A DATED JANUARY, 2013

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.

BEN WHITE

(name)


(signature)

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 in the Report and that reasonable and practical measures have been identified to remove foreseeable risk

Signature 
Name Ben White
Chartered Professional Status M.Sc Geol AusIMM CP Geo
Membership No. 222757
Company Jack Hodgson Consultants Pty Ltd

This plan/document forms part of the
Approved Construction Certificate

2013/00291

As issued by 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 _____ Name of Applicant
Address of site <u>SNOOKMAN RD PAIN BEACH</u>

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

I PAUL BEKKER on behalf of PAUL BEKKER CIVIL DESIGN BUREAU
(insert name) (trading or company name)
on this the 4.3.13
(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

☒

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:
Report Date:
Author:
Author's Company/Organisation: <u>JACK HODGSON CONSULTANTS</u>

Structural Documents list:

<u>62032 - SOA TO SOBA</u>

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.

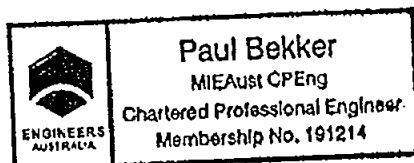
Signature PAUL BEKKER

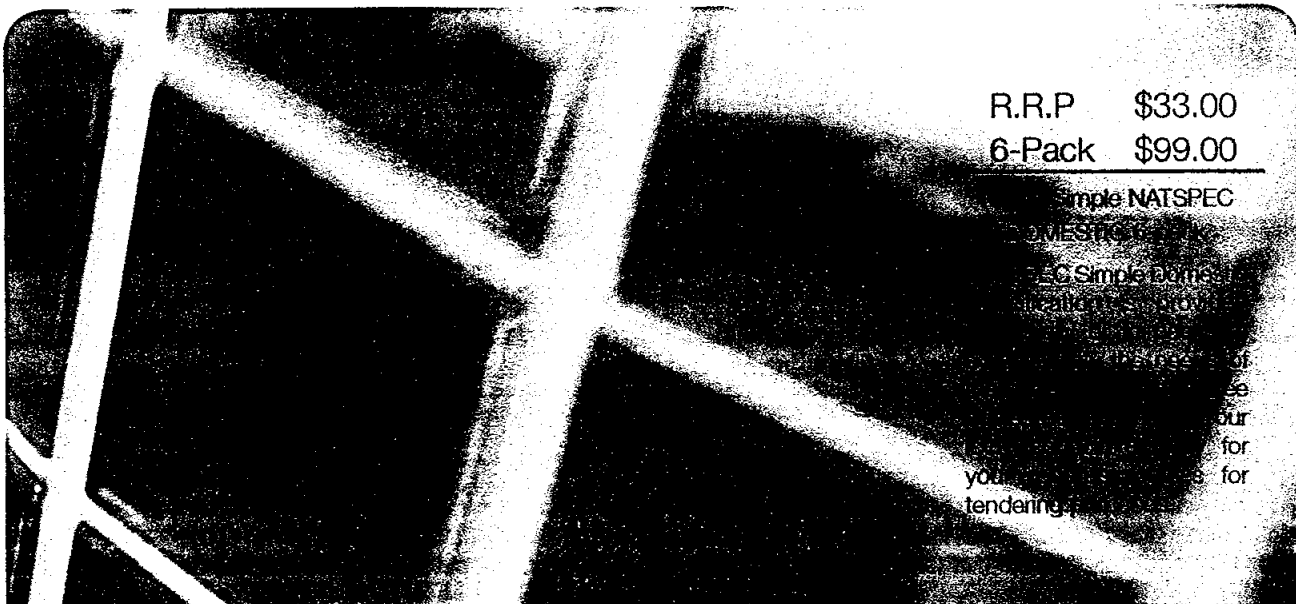
Name PAUL BEKKER

Chartered Professional Status MIEAust ACMD CEM/BPR

Membership No. 191214

Company PAUL BEKKER CIVIL DESIGN BUREAU PT





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DOMESTIC SPECIFICATION

Simple Domestic
Specification

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SIMPLE DOMESTIC SPECIFICATION

BCA 2012 COMPLIANT

A specification reduces the number of variations or extras, by enabling a clear understanding of the acceptable level of quality for the project. Without a specification, such as SIMPLE DOMESTIC SPECIFICATION, you may find a number of small extra items resulting in unexpected, substantial additional cost, and you may not receive the quality you would like. For a specification to be enforceable, it needs to be included or referenced in the contractual agreement between you and your contractor.

SIMPLE DOMESTIC SPECIFICATION is suitable for owner-builders undertaking new domestic building work or alterations and additions using conventional construction practice under normal conditions covered by Class 1a and Class 10 of the Building Code of Australia.

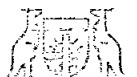
SIMPLE DOMESTIC SPECIFICATION is a reference specification. It provides a quality statement which defines the minimum level of acceptable materials and workmanship for the building works. It should be included, along with drawings and schedules, as a condition of contract between the owner and the builder.

SIMPLE DOMESTIC SPECIFICATION relies on the 'organiser only' owner taking responsibility for complying with statutory, local government and other mandatory requirements. A comprehensive checklist of project specific information which may require additional documentation, such as drawings or schedules, is included to assist the owner. For work involving extensive structural design, customised airconditioning, prestige finishes or unusual features, facilities or conditions (e.g. snow, high winds, earthquake, bushfire zoning and/or marine exposure), the owner is recommended to engage professional consultants to prepare a customised specification.

Professional consultants should use the NATSPEC national building specification system for architects, building designers, landscape architects, structural engineers and services engineers.

NATSPEC

Endorsed by


**Australian
Institute of
Architects**

This plan is a product of the
Approved Building Certificate
Australian Institute of Building Surveyors

2013/00291



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BY:

As issued by the Australian Building Certifiers P/L

THE IMPORTANCE OF THE SPECIFICATION

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Use the current edition

This specification is published annually and is aligned with BCA 2012 Volume 2 Housing Provisions.

DEFINITIONS

Specifications are written descriptions of the required quality of the built product and its component products.

Drawings are graphic descriptions which define quantity, position and sometimes quality.

Schedules are also written selections, often presented as tables, which form an appendix or addition to another document such as the specification or a drawing.

PURPOSE

The quality of a building project is dependent on the documentation included as part of the contract. The adoption of the Building Code of Australia (BCA) under State and Territory building regulation establishes a minimum level of quality of construction. Higher standards of construction and quality of workmanship are achieved through the contractual agreement between the owner and the builder and are not defined by the BCA or administered by the certifying or approval authority. The contract documents include the general conditions of contract, the schedules, the drawings and the specification which complement each other to express the owner's intentions to the builder. The specification has many roles. It may be:

- A written record of design decisions taken.
- A document demonstrating compliance with statutory requirements.
- An estimating document.
- A tendering document.
- A legal (contractual) document.
- An on-site working document.
- A dispute settlement document.
- A project management tool.

THE FORM OF A SPECIFICATION

NATSPEC SIMPLE DOMESTIC SPECIFICATION is divided into worksections classified, numbered and sequenced according to the National Classification System which corresponds to Australian construction industry practice. Where appropriate, each worksection is divided into three parts:

- **General** including standards, definitions and submission requirements.
- **Products** including details of materials and components.
- **Execution** dealing with the fabrication, installation, erection and completion as part of a project.

METHODS OF SPECIFICATION

NATSPEC SIMPLE DOMESTIC SPECIFICATION uses the well recognised methods of specifying by:

- **Reference:** Where an identifiable printed and published document is incorporated by reference. Such documents may be Australian Standards or manufacturer's technical manuals. The Australian standards referenced in NATSPEC SIMPLE DOMESTIC SPECIFICATION include those which are referenced in the BCA and are relevant to domestic work, have other statutory application, are important to the quality of materials and work in terms of public safety and long-term performance of the building and/or are widely accepted in the building industry.
- **Performance:** That is, by stating a desired end result and the criteria by which the result will be judged for its acceptability.
- **Description:** Detailing the materials, workmanship and installation procedures to be used.
- **Direct:** Specification stating a proprietary trade name product. The owner may specify particular brands or products on the drawings or in the schedules.

INTRODUCTION

NATSPEC SIMPLE DOMESTIC SPECIFICATION is a reference specification and does not require editing or amendment. It is intended for inclusion, along with other documents such as drawings and schedules, as a condition of contract for the building works. It assumes all project specific design information is shown on the drawings or in schedules, including the requirements of the consent authority. The *Preliminaries* worksection provides for the requirements of the drawings and schedules to override conflicting requirements of this reference specification.

Building Code of Australia

The Building Code of Australia (BCA), including State and Territory variations, is enforced by local authorities and controls domestic construction in Australia, along with the requirements of statutory authorities (e.g. electricity and water supply). NATSPEC recommends that the users of this document have ready access to BCA Volume 2 (e.g. local library). This specification has been aligned with BCA 2012 Volume 2 but any local requirements must take precedence.

Occupational Health and Safety (OH&S)

Everyone at a workplace is responsible for complying with stringent Occupational Health and Safety legislation. However, the accountable person has primary control over the workplace and therefore the greatest OH&S responsibility. A builder engaged to manage a project and organise the relevant sub-contractors is the accountable person and must ensure that they, their employees and sub-contractors work in a safe manner. An owner builder, engaging independent tradespeople as required, is the accountable person responsible for ensuring the tradespeople comply with safety standards. OH&S legislation in some States and Territories also includes statutory obligations on designers in relation to OH&S issues arising out of their designs during and after construction. It is important to note that OH&S obligations differ in each State and Territory.

Standards and tolerances

Check that the building work conforms to requirements of the drawings, schedules and this specification. *Guide to Standards and Tolerances* is a reference document of best construction practice which can be referred to during and after construction. It is available at:
www.buildingcommission.com.au
www.fairtrading.nsw.gov.au
www.wst.tas.gov.au/building and
www.actpla.act.gov.au.

Dispute resolution

Many building contracts include dispute resolution provisions and in most states there are dispute resolution services provided and/or mandated under State legislation.

OWNER'S RESPONSIBILITIES AND SELECTIONS

The following is a checklist of project specific information that may require additional documentation on the drawings or in schedules.

This checklist is provided to assist the owner and does not form part of the contract between the owner and the builder.

0131 Preliminaries

- Prior applications and approvals: List of applications made and approvals received. All items noted in the Local Council Development Approval and Construction Certificate checklist. Conditions of approval that impact design and construction.
- Mines Subsidence Districts: Note Conditions of approval
- Occupied premises: Define.
- Energy efficiency: Approval commitments.
- Site restrictions: Easements, restrictions arising out of actions of adjoining land owners, limitations related to continued occupancy by owner, toxic ground conditions.
- Block and survey pegs for the purpose of setting out, checking or measuring the work.
- Site access: Define access to and within the site, use of the site for temporary works and constructional plant, working and storage areas, parking.
- Conditions for work on adjoining property: Define.
- Existing services: Define use of existing services as temporary services for the performance of the contract.
- Temporary services: Define if it is necessary to specify particular requirements such as temporary services for owner facilities if construction activities interfere.
- Items to be supplied by the owner: Define items and any conditions of supply.
- Requirements for dilapidation records on adjoining properties if there is a danger of damage to adjoining property.

0180 Common requirements

- Bushfire protection. AS 3959 is incorporated in the BCA, but many local authorities have their own requirements which must also be complied with. SAA HB 330 is an invaluable aid to understanding bushfire protection and is designed to be read in conjunction with the standard. AS 3959 defines 6 levels of construction for low to extreme Bushfire Attack Levels (BAL). Consult local councils for any additional bushfire protection requirements.
- Timber durability: See **Natural and treated timber durability table of Common requirements**. AS 5604 gives a comprehensive table of the natural durability of timber species. Clause 6 sets rules for the use of timber in relation to its natural durability class and for its preservative treatment if it does not have the required natural durability.
- Recycled material: Nominate type, certification and source.
- Corrosion protection environment: Nominate the Corrosion protection environment as defined in BCA Table 3.5.1.1a.
- Moisture content: A convenient method for testing the moisture content of new concrete is the hand held hygrometer that is mastic sealed to the surface and left 16 hours overnight. The reading obtained is the relative humidity in the instrument chamber after equalisation with the concrete. A rule of thumb for the approximate drying time for concrete slabs is one month for every 25 mm thickness.

0184 Termite management

- Location: Slab, slab penetrations, slab control joints and footing/slab joints, under slabs, building perimeters, under suspended floors and timber poles and posts.

- Type: Select from concrete slab, sheet materials, woven stainless steel mesh, graded particles, chemical barriers or reticulated systems.
- Termite barrier notice: Locate in the electrical meter box.

0201 Demolition

- Identify items for removal, recycling or re-use.
- Identify items for protection in their existing location.
- Notification of asbestos products.

0221 Site management

- Temporary fence: Location. A temporary fence or safety barrier may be required by the local authority.
- Trees and shrubs to be protected. Local authorities often have detailed requirements for protection of trees.
- Trees and shrubs to be removed.
- Include erosion and sedimentation control and any other site management requirements noted by the local authority.
- Soil stockpile locations

0222 Earthwork

- Site classification to BCA 3.2.4.
- Excavation.
- Surface preparation. AS/NZS 3500.3 is referenced in BCA 3.7.2.0 for storm water drainage.
- Crawl space under suspended floors: Sub-floor ventilation requirements are set out in BCA 3.1.2.3 and BCA 3.4.1. These requirements vary for climate zones. Open spaces under timber floors can be subjected to hot drying wind at times that could shrink the flooring and in these circumstances a vapour barrier is recommended under the flooring. BCA 3.4.1 calls for a general clearance of 400 mm under suspended timber floors that can be reduced to 150 mm within 2 m of an external wall for sloping sites.
- Placing fill: Requirements for load-bearing fill should be specified by a professional engineer. AS 3798 gives general advice on earthworks. Inadequate backfilling can lead to differential settlement and damage to paving and landscaping. In reactive clay soils, it is important that service trenches do not act as a conduit to carry moisture into the ground next to the foundations, so impervious material should be used for backfill.

0223 Service trenching

- Trench widths.
- Backfilling material.

0242 Landscape – fences and barriers

- Location, material, manufacturer, height, finish and colour of fencing and gates.
- The construction and maintenance of common fences dividing land with separate titles is covered by state legislation.
- Nominate a preservative treatment.
- Fencing for swimming pools: Check the local authority for additional requirements. AS 1926.1 and AS 1926.2 are referenced in the BCA for safety fencing of swimming pools. Hazards such as fountains, fish ponds, incinerators, barbecues, and vehicle manoeuvring areas should also be fenced off or otherwise secured. AS 2820 covers gate units for private swimming pools.

250 Landscape – gardening

- Imported topsoil: Composition and supplier.
- Removal and disposal of excess spoil.
- Turfed areas.
- Schedule of plants: Species, size as supplied and location.

OWNER'S RESPONSIBILITIES AND SELECTIONS

0271 Pavement base and subbase

- Base course material and thickness.

0274 Concrete pavement

Concrete pavements, except footpaths should be specified by a professional engineer. The requirements for in situ concrete may be varied if it is unreinforced. AS 3727 can then be used for design purposes.

- Site preparation.
- Mix, thickness, grading, location of control joints and finish.
- Concrete strength.
- Reinforcement.
- Type: Select concrete colour, broom finish or stamped finish.
- Curing.

0276 Segmental pavers – sand bed

- Preparation and bedding sand/mortar edge restraint.
- Thickness, grading and laying.
- Cutting.
- Type: Select from clay brick pavers or concrete.
- Pattern: Select from rectangular or interlocking.

0310 Concrete

- Construction notes/specification on structural engineer's drawings.
- Because ground conditions vary so much within Australia, concrete ground slabs or footings are usually designed by a professional engineer, but this is not always necessary. AS 2870 has 'deemed-to-comply' provisions. The BCA 3.2.4 contains a table of site classifications that are the basis for requirements for footing design. The site classification should be determined by the local council engineer or a geotechnical engineer. SAA HB 28 and SAA HB 109 are also useful design guides.
- Formwork: Stripping times and repair. The design of the formwork is the contractor's responsibility. This applies to all formwork types, including conventional, proprietary or purpose-made formwork.
- Ground slab vapour barrier: Note type. Provision of a vapour barrier for external slabs on ground prevents water loss to the subgrade and has the potential to reduce slab curling at edges and corners.
- Concrete strength.
- Reinforcement: Location, cover to reinforcement and splicing.
- Joints.
- Surface finish class: To AS 3610.1 (Class 1 – 5)
 - Class 2 – high.
 - Class 3 – good.
- Surface finish type: Select from:
 - Machine float: Under dry floor finishes.
 - Steel trowel: Under resilient finishes, garage floors.
 - Wood float: External
 - Broomed/patterned/coloured: External.
 - Rough scored: Under tiles in a mortar bed.
 - Specify others.
- Slip resistance, if required.
- Curing.

0331 Brick and block construction

For buildings not conforming to the scope of AS 4773 series use AS 3700.

Consult the local approval authority to determine where walls over a certain height require design by a professional engineer.

Energy efficiency requirements at BCA 2.6 set out minimum insulation performance requirements for walls, roofs, floor slabs and external glazing depending on climate zone and orientation.

- Masonry units: Brick or block.
- Reinforced blockwork.
- Masonry unit description: Type/size, colour, texture, supplier. Check durability if soil is aggressive or heavily fertilized.
- Mortar type: M3 applies generally, except that M4 applies for interior elements subjected to saline wetting and drying, elements below the damp-proof course or in contact with ground that are in aggressive soils, elements in severe marine environments as defined by AS 4773.1 clause 4.3.1, elements in saline or contaminated water including tidal and splash zones and elements in especially aggressive environments.
- Mortar colour.
- Damp proof courses.
- Cavity width: Note increased width if wall insulation is required to BCA 3.12.1.4.
- Wall ties: Type and location.
- Flashing details.
- Mortar joint types: Select tooled, weatherstruck or raked. Mortar joints which are not completely filled and tooled may not provide adequate weatherproofing. A flush joint which is cut with the trowel without compacting the mortar should not be used externally unless agreed.
- Brick rods.
- Bond patterns.
- Joints.
- Cornices.
- Chasing locations.
- Air vent location: For subfloor ventilation, BCA 3.4.1 and BCA Table 3.4.1.2 provides minimum requirements for various climates.
- Weep holes.
- Weephole guards: Insect only or insect and bushfire ember protection.
- Control joints: Clay bricks grow after they have been fired and concrete slabs shrink after they have been poured. The provision for control joints is based on a minimum age of bricks and supporting concrete. If these ages cannot be complied with, additional joints may be necessary. Refer to AS 4773.2 Section 7 for joint detail.

0342 Light steel framing

The NASH 1 is cited in the BCA. It sets out the design criteria to comply with the performance requirements of the BCA for steel framing of low-rise housing as well as commercial buildings. Design of structural steelwork, and cold-formed steel framing except domestic, should be by a professional engineer. The local authority may have requirements for permanent earthing of the frame. Refer to AS/NZS 3000 Section 5 for earthing arrangements and earthing conductors.

- Framing to NASH 1.
- Cyclonic area as classified in BCA figure 3.10.1.4.
- Steel roof truss: Type and supplier.

0382 Light timber framing

Detailed requirements for timber framing in areas with design gust wind speeds up to 33 m/s are set out in AS 1684.4 but other codes designed for local conditions may be acceptable or mandatory. For cyclonic areas refer to AS 1684.3.

Design of timber framing to AS 1720.1 should be by a professional engineer.

- Cyclonic area as classified in BCA figure 3.10.1.4.
- Framing to AS 1684.
- Bracing.
- Timber roof truss: Supplier.
- Truss type. Design of timber trusses to AS 1720.1.
- Fascias and barge boards.

0383 Decking and platform floors

- Material and fixings.
- Timber decking selection.

0411 Waterproofing – external and tanking

- Application: Roofing, planter, balcony or vertical tanking.
- Type of membrane: Single layer sheet system, bituminous multilayer or liquid membrane system.
- Location.
- Membrane protection

0421 Roofing

- Roof tiles: Manufacturer, material, pattern and colour.
- Sheet metal roofing: Manufacturer, profile, finish, BMT and colour.
- Flashing and rainwater goods: Material, finish and colour.
- Roof lights: Selection details. Check the product for compliance, particularly spark arrestor mesh. See BCA 3.12.1.3 for thermal performance requirements of roof lights serving a habitable room. See BCA 3.7.1.10 for locating combustible roof lights. See BCA 3.7.4 for construction requirements for buildings in bushfire prone areas.
- Roof ventilators: Selection details.

0431 Cladding

- Cladding type: Fibre cement planks or sheeted system, plywood, timber weatherboards, hardboard planks, AAC panels, or EIFS (external insulated finishing system).
- Description: Manufacturer, material, pattern and colour.

0451 Windows and glazed doors

Performance: For each elevation document the total U-value, solar heat gain coefficient, reflectance %, WERS energy rating % (heating and cooling) and AWA (Australian Window Association) Compliance certificate. BCA 3.12.2 sets out thermal performance of external glazing. See BCA 3.12.3 for sealing of windows and doors.

- Location.
- Size.
- Door and window type.
- Operation: Swing, sliding or cavity sliding.
- Material: Aluminium, timber, PVC.
- Sliding internal doors; removable pelmets.
- Finish and colour.
- Insect/security screens.
- Bushfire screens.
- External glazing systems.

0453 Doors and access panels

- Location.
- Size.
- Door type: Flush solid core, flush hollow core, timber panelled, aluminium framed and glazed.
- Operation: Swing, sliding or cavity sliding doors.
- Material.
- Door frames: Timber, steel, or aluminium.
- Multiple folding doors.
- Sliding internal doors; removable pelmets.
- Security screen doors and bushfire screens.
- Floor clearances.

0454 Overhead doors

- Type: Roller, tilting, sectional, plywood, prefinished steel, stain/clear, paint or powder coated.
- Manufacturer.
- Operation. e.g. Direct manual or Motorised.
- Motorised operation: e.g. Direct push-button, Key switch, Radio remote controller, etc.

0455 Door hardware

- Lock function.

- Lock durability, physical security and keying security. Refer to AS 4145.2.
- Door furniture style.
- Weatherseal requirements.

0467 Glass components

- Mirrors, shower screens, glass balustrades: To AS 1288.
- Mirror fixing: Select adhesive (double sided adhesive tape) or mechanical (screw fixing, frame fixing, bead fixing or clip fixing). Where mirrors are required, by AS 1288, to be Grade A safety glass, ordinary annealed glass may be substituted when the panel is fully backed by and completely adhered to a solid material. Mirrors with backing avoid the distortion problem associated with toughened mirror glass. In wet or moist areas the space behind the mirror should be either well ventilated or entirely sealed.
- Glass balustrades: Framed (post fixing) or frameless (side fixings), pocket fixing (size, set back from concrete, glazing and sealing material). AS/NZS 1170.1, clause 3.6 deals with imposed loads on barriers, including parapets, balustrades and railings.
- Glazed shower screens: Water shedding details, sliding assemblies.

0471 Insulation and sarking membranes

- Location on plan and within the building element.
- Energy efficiency: Type, thickness and R-value for floors, walls, ceilings and roofs. See BCA 3.12 Energy Efficiency, and check state and local council regulations.
- Sarking membranes: Note if acting as vapour permeable, vapour barrier, reflective thermal insulation or together in combination. In cool climates provide a vapour barrier on the warm side of bulk insulation.
- Slab edge insulation.
- Pipe insulation.

0511 Lining

- Material: Plasterboard, fibre cement, timber/plywood feature lining.
- Trims: Skirtings, cornices, architraves and picture rails.

0551 Joinery

- Layout and location: Kitchen, laundry, study, bedrooms.
- High moisture resistance materials: Plinths, carcasses, drawer fronts, shelves and doors.
- Finishes and colour: Carcass, bench tops, splashbacks, cupboards and internal surfaces.
- Benchtop details.
- Wardrobe carcasses and frames.
- Wardrobe doors and panels.
- Drawer and door hardware, including handles.
- Edge treatment to laminated panels and benchtops e.g. rolled edge or plastic edgestrip.

0554 Stairs

- Type and material.
- Details: Reinforced concrete; structural steel; timber; proprietary system.
- Balustrades.

0572 Miscellaneous furniture, appliances and fixtures

- Kitchen appliances: Product selection, colour and connection details for dishwasher, wall oven, cook top, range hood, microwave.
- Laundry appliances: Product selection, colour and connection details for washing machine and dryer.
- All appliances: Compliance with Minimum Energy Performance Standards (MEPS).
- Bathroom fixtures: Towel rails, soap holders, toilet paper holder, handrails, clothes hooks and cabinets.

OWNER'S RESPONSIBILITIES AND SELECTIONS

- General fixtures / appliances: Clothes line, letterbox, street number, door bell.

0611 Plastering

- Level of finish: See *Guide to Standards and Tolerances*.
- Material, substrate, thickness, joints.
- Finish: wood float (sandy finish), steel trowel (polished) and sponge (smooth textured).
- Cornices.
- Cornice cement.

0621 Waterproofing – wet areas

- Extent. To BCA 3.8.1.2.
- Membrane: Manufacturer and type.
- Shower tray: PVC, copper, stainless steel.

0631 Ceramic tiles

- Location.
- Internal tile selection: Floors, skirtings, walls, dado.
- External tile selection: Slip resistance to AS/NZS 4586.
- Grout: Type and colour.

0651 Resilient finishes

- Location.
- Product and manufacturer.

0652 Carpets

- Location.
- Product and manufacturer.
- Underlay.
- Edge strip: Type, material and colour.
- Fixing method: Select from covers gripper, direct-stick, or double-bond systems.

0654 Engineered panel floors

- Location.
- Product and manufacturer.

0655 Timber flooring

- Location.
- Species and manufacturer.
- Profile, width.
- Recycled timber flooring: If stained nail holes are unacceptable, specify remedial work such as coring and plugging with matching timber.

0656 Floor sanding and finishing

- Location.
- Product and manufacturer.

Guidance on the properties of coating systems is given in AS 4786.2 Appendix C. Advice on the properties include edge bonding, fume nuisance, darkening with age, flammability, wear resistance and gloss levels. Coating systems can be selected from the following groups: Oil based finishes, solvent based polyurethane finishes or water based finishes.

0671 Painting

Select your paint and supplier.

- External: Final coat paint type, finish (full, semi, low gloss or flat) and colour for fascias and barges, rainwater goods, eaves, cladding, shutters, balustrades and handrails, posts and beams and masonry.
- Windows and external doors: Final coat paint type, finish (full, semi, low gloss or flat) for internal, external and mouldings. Front and garage door panels and frames and windows.
- Internal: Final coat paint type, finish (full, semi, low gloss or flat) and colour: Room by room schedule for walls, ceilings, doors and frames and joinery.

0702 Mechanical design and install

So that the air conditioning systems can be adequately designed, the drawings should show:

- Preferences for heating and cooling systems (e.g. ducted, non-ducted split etc.) otherwise leave to the contractor's choice.
- The extent and performance (R-values) of insulation for the walls roof and floor.
- The type, location and performance of windows.
- External shading of windows and intended type of internal shading (e.g. blinds, curtains).
- The preferred location of plant, otherwise leave to the contractor's choice.
- Any provisions for ducts (e.g. duct risers, roof spaces).
- Rooms requiring mechanical ventilation. The BCA requires that where its requirements for natural ventilation are not satisfied, mechanical ventilation must be provided. Identify areas requiring mechanical ventilation on the drawings. If local exhaust fans are required (e.g. for a bathroom), include the fans in *Electrical design and install*.
- The type of supply, return and exhaust grilles if there is a preference, otherwise leave to the contractor's choice.

It is recommended that the following be provided by tenderers for review before the mechanical tender is accepted:

- Outside design conditions, corresponding geographic location and source of data.
- Calculated total and sensible cooling capacities and heating capacity.
- Name of calculation method used.
- Makes and model numbers of proposed equipment.
- Compliance of proposed equipment with Minimum Energy Performance Standard (MEPS).
- Details and locations of controls.
- Total and sensible cooling capacities and heating capacity of the proposed equipment, adjusted for the specified outdoor and indoor conditions and any effects of the proposed plant configuration.
- Any assumptions on which the calculations are based (e.g. that the curtains will be closed at all times).
- Details of any departures from this specification.
- A drawing of the proposed duct, pipe and equipment layout showing proposed zoning.
- An explanation of why the proposed zoning has been chosen.
- Licence numbers and type of licences held by persons responsible for the installation.

Other matters:

- The *AIRAH Residential Air Conditioning Best Practice Guideline* for each State and Territory (available free from www.airah.org.au) sets out industry best practice guidelines for the selection, installation and maintenance of residential air conditioning units. The guideline addresses issues such as energy efficiency and air conditioner noise in a clear and concise manner.
- The plant should have at least 12 months defects liability and maintenance period to ensure it operates through the full range of cooling and heating seasons.

0802 Hydraulic design and install

The drawings should show:

- Cold water pipe material, otherwise leave to the contractor's choice. In bushfire prone areas, above-ground gas and water pipes, and pipes < 300mm below ground are to be metal, not plastic.
- Heated water pipe material, otherwise leave to the contractor's choice.
- Mixing valves if required.
- Water heater location and details e.g. gas instantaneous, electric, and solar or heat pump. Include manufacturer, model/capacity and

OWNER'S RESPONSIBILITIES AND SELECTIONS

- temperature control for thermostatic mixing valves and special taps.
- Cold and heated water: For insulation of heated water pipes see AS/NZS 3500.4 Sections 8 or AS/NZS 3500.5 clause 3.3.8 which require insulation only at the heater and between the heater and the kitchen sink, document additional insulation, if required. A maximum temperature of 50°C is required by AS/NZS 3500.5 at clause 3.4.2 for all personal hygiene sanitary fixtures. A maximum temperature of 60°C is recommended for kitchen sinks and laundry tubs. This can be achieved by adjusting tempering valves, thermostats, regulating flow e.g. with thermostatic mixing valves, or by using special taps.
 - Provisions for additional piping for connecting to irrigation, toilet flushing, laundry, swimming pool top-up and similar uses (if required and permitted).
 - External hose cock locations.
 - Stormwater detention (if required by local authority, and in addition to any rainwater storage).
 - Sanitary plumbing and drainage layout including the location of the connection point to the Network Utility Operator's mains and/or rainwater tanks if required by local authority.
 - Sanitary ware items, locations and tapware e.g. sinks, basins, baths, WC, shower trays, laundry tub.
 - Location of other plumbed items e.g. dishwasher, washing machine.
 - For WCS: P-trap or S-trap, dual or single flush, exhaust ventilation through cistern.
 - For sinks and hand basins: Number of tap holes for each (0, 1, 2 or 3).
 - Waste disposal unit, if required.
 - Rainwater tank (if required): Size, material, location, connections, pump and what rainwater serves. Plastic tanks are not to be used in bushfire prone areas.
 - Gas Meter location.
 - Gas appliance connection points.
 - Gas bayonet outlet locations.
 - Greywater system (if required): Source of greywater (e.g. laundry), location of the greywater diversion devices, surge tanks and connections to intended use (e.g. irrigation system).
- 0902 Electrical design and installation**
- Switchboards: AS/NZS 3018 describes prohibited locations for switchboards and the *Electricity Distributor's Service and Installation Rules* defines further prohibited locations for switchboards and metering equipment.
 - Telecommunications installation: Fees in respect of applications for electricity and telecommunications services are normally paid by the owner. Consider specifying as 'smart-wired'. See www.smartwiredhouse.com.au
 - Accessory schedule: Type, function and location of socket outlets, light switches, dimmers, telephone outlet, data outlet, exhaust fans, circulating fans, and computer outlets.
 - Luminaire schedule: Type, product selection, lamp type and location. The Australian Government has introduced a programme to eliminate low efficiency lamps (including incandescent and low voltage halogen reflector types by 2012).
 - Smoke detection system: To BCA 3.7.2. Details of automatic 'back to base' alarms if required.
 - Cable/satellite television network operator.
 - Intruder alarm system. Method of arming/disarming and details of automatic action on alarm registering i.e. local or 'back to base' or auto dialler.
 - Garage door operation.
 - Home automation. Full details of location functionality and equipment selected.

TABLE 1. *Continued*

0382 LIGHT TIMBER FRAMING
0383 SHEET FLOORING AND DECKING
0421 ROOFING.....
0431 CLADDING.....
0451 WINDOWS AND GLAZED DOORS.....
0453 DOORS AND access panels
0454 OVERHEAD DOORS
0455 DOOR HARDWARE.....
0467 GLASS COMPONENTS.....
0471 INSULATION AND SARKING MEMBRANES.....
0511 LINING
0551 JOINERY.....
0572 MISCELLANEOUS APPLIANCES AND FIXTURES.....
0611 PLASTERING.....
0621 WATERPROOFING – WET AREAS.....
0631 CERAMIC TILES.....
0651 RESILIENT FINISHES
0652 CARPETS
0654 ENGINEERED PANEL FLOORS.....
0655 TIMBER FLOORING.....
0656 FLOOR SANDING AND FINISHING.....
0671 PAINTING.....
0702 MECHANICAL DESIGN AND INSTALL.....
0802 HYDRAULIC DESIGN AND INSTALL.....

Ensure all subcontractors are aware of the requirements within 0180 Common requirements.

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DA 155/11, 5 Northview Road
Palm Beach NSW 2108

0131 PRELIMINARIES

1 GENERAL

1.1 THE SITE

Occupied premises

General: For the parts of the site which are occupied premises:

- Allow occupants to continue in secure possession and occupancy of the premises for the required period.
- Make available safe access for occupants.
- Arrange work to minimise nuisance to occupants and for their safety.
- Protect occupants against weather, dust, dirt, water or other nuisance, by such means as temporary screens.

Protection of persons and property

Temporary works: Provide and maintain required barricades, guards, fencing, shoring, temporary roadways, footpaths, signs, lighting, watching and traffic flagging.

Accessways and services: Do not obstruct or damage roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Determine the location of such services.

Property: Do not interfere with or damage property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site, and trees.

Rectification

Accessways and services: Rectify immediately any obstruction or damage to roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Provide temporary services whilst repairs are carried out.

Property: Rectify immediately any interference or damage to property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site, and trees.

Existing services

General: Attend to existing services as follows:

- If the service is to be continued, repair, divert or relocate. Submit proposals.
- If the service crosses the line of a required trench, or will lose support when the trench is excavated, provide permanent support for the existing service. Submit proposals.
- If the service is to be abandoned, submit proposals, remove redundant parts and make safe.

Signs

General: Provide a signboard displaying the lot number, the builder's name, address and licence number, and the BCA accreditation authority, address and contact details, if required.

1.2 BUILDING THE WORKS

Order of precedence of documents

Precedence: Requirements of the schedules and drawings override conflicting requirements in this reference specification.

Survey marks

Definition: A survey peg, bench mark, reference mark, signal, alignment, level mark or any other mark used for the purpose of setting out, checking or measuring the work.

Care: Preserve and maintain the survey marks in their true positions.

Rectification: If survey marks are disturbed or obliterated, immediately rectify.

Items supplied by owner

General: Documented materials and other items supplied free of charge to the contractor for installation in the execution of the works. Unload and take delivery of them, inspect them for defects and then take care of them. If defects are found, advise. Return unused items to the owner.

1.3 MISCELLANEOUS

Contractor and owner to observe confidentiality

Publicity: Do not issue information concerning the project for publication in the media without prior written approval of the owner.

0180 COMMON REQUIREMENTS

1 GENERAL

1.1 APPLICABILITY

General

Requirement: Conform to *Common requirements*, as appropriate, in all worksections.

1.2 STANDARDS

Current editions

General: Use referenced Australian or other standards (including amendments), and the BCA including State and Territory variations which are current three months before the date of the contract except where other editions or amendments are required by statutory authorities. Any local authority requirements take precedence.

1.3 INTERPRETATION

Definitions:

General: For the purposes of this document the definitions given below apply:

- Builder: Means the same as 'contractor'.
- Metallic-coated: Steel coated with zinc or aluminium-zinc alloy via a continuous hot-dip process.
- Hot-dip galvanized: Zinc coated to AS/NZS 4680 after fabrication.
- Professional engineer: A person who is listed on the National Professional Engineers Register (NPER) in the relevant discipline at the relevant time.
- Proprietary: Proprietary means identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Provide: 'Provide' and similar expressions mean 'supply and install' and include development of the design beyond that documented.
- Required: Means required by the contract documents, the local council or statutory authorities.
- Supply: 'Supply', 'furnish' and similar expressions mean 'supply only'.

1.4 SUBSTITUTION

Identified proprietary items

Identification of a proprietary item does not necessarily imply exclusive preference for the item so identified, but indicates the necessary properties of the item.

Alternatives

If alternatives to the documented products, methods or systems are proposed, submit sufficient information to permit evaluation of the proposed alternatives

1.5 BUSHFIRE PROTECTION

General

Conformance: In areas designated as bushfire prone, comply with statutory and local authority requirements.
Standard: To AS 3959 in conjunction with SAA HB 330.

2 PRODUCTS

2.1 MANUFACTURERS' OR SUPPLIERS' RECOMMENDATIONS

General

Requirement: Provide, including select, store and handle proprietary products or systems in conformance with the current published recommendations and instructions of the manufacturer or supplier.

2.2 TIMBER

Acclimatisation

General: Acclimatise timber fitouts by stacking them for two weeks in the in-service conditions with air circulation to all surfaces after the following construction operations are complete:

- Air conditioning operational.
- Lighting operational.
- Site drainage and stormwater works are complete.
- Space fully enclosed and secure.
- Wet work complete and dry.

Unseasoned timber

General: If unseasoned timber is provided, or variation in moisture content is likely, make allowance for shrinkage, swelling and differential movement.

Durability

General: Provide timbers with natural durability appropriate to the conditions of use or preservative-treated timbers of equivalent durability.

Minimum requirement: To the Natural and treated timber durability table.

Natural durability class of heartwood: To AS 5604.

Preservative treatment: To the AS 1604 series.

Natural and treated timber durability table

Exposure	Natural timber	Treated timber	Remarks
	Required durability class to AS 5604	Required hazard class to AS 1604 series	
Inside, above ground. Completely protected from the weather. Well ventilated.	Class 4	H1	Treated timber resistant to lyctids. Untreated timber must be protected from termites.
Inside, above ground. Protected from wetting with nil leaching. Well ventilated.	Class 3	H2	Treated timber resistant to borers and termites. Untreated timber must be protected with a finish.
Above ground, exposed to weather. Periodic moderate wetting and leaching.	Class 2	H3	Treated timber resistant to borers, termites and moderate decay. Applicable to weatherboards, fascias, pergolas (above ground), window joinery, framing and decking.
In-ground	Class 1	H4 (Severe wetting and leaching).	Treated timber resistant to borers, termites and severe decay. Applicable to fence posts, greenhouses, pergolas (in-ground) and landscaping timbers.
		H5 (Extreme wetting and leaching and/or critical uses.)	Applicable to retaining walls, piling, house stumps, building poles, cooling tower fill.

2.3 STEEL

Durability

General: Provide steel products protected from corrosion to suit the conditions of use.

Internal engineer designed steel members: Remove mill scale, rust, moisture and oil. Coat with a zinc phosphate primer to the manufacturer's instructions.

Built-in products below damp proof course: Stainless steel 316 or engineered polymer.

Corrosion resistance

Atmospheric corrosivity category: To AS/NZS 2312.

Minimum external corrosion protection requirements for corrosive environments: Conform to BCA Volume 2.

Galvanizing

General: Galvanize mild steel components (including fasteners) to AS 1214 or AS/NZS 4680, as appropriate, if:

- Exposed to weather.
- Embedded in masonry.
- Exposed to or in air spaces behind external leaves of masonry walls.
- In contact with chemically treated timber.

2.4 PROTECTIVE COATINGS

General

Environment: To AS/NZS 2312 clause 2.3.

Coating designation: to AS/NZS 2312 Table 6.3.

CCA (copper chrome arsenic) treated timber

Restrictions: Do not use CCA-treated timber for items in frequent and close contact with people, including garden

furniture, picnic tables, exterior seating, children's play equipment, patios, decking and handrails.

Greasing: Before placing bolts or other metal components in contact with CCA-treated timber, paint contact surfaces or coat in grease or a bituminous coating.

Unseasoned timber

General: Do not fix in contact with steel framing without fully painting the contact surfaces of timber and steel.

2.5 FASTENERS

Self drilling screws

Corrosion resistance: To AS 3566.2 Table 1 and the **Corrosion resistance table**.

Atmospheric corrosivity category to AS/NZS 2312	Corrosion resistance class	
	Internal	External
A and B (Low)	1	3
C (Medium)	2	4
D and F (High)	3	Stainless steel 316

2.6 VAPOUR BARRIER

General

Vapour barrier: To AS 2870 clause 5.3.3.

Type: Medium impact resistant polyethylene film, minimum 0.2 mm thick which has been pigmented and branded by the manufacturer.

2.7 DAMP-PROOF MEMBRANES

General

Damp-proof membrane: To AS 2870 clause 5.3.3.

Type: High impact resistant polyethylene film, minimum 0.2 mm thick which has been pigmented and branded by the manufacturer.

3 EXECUTION

3.1 WALL CHASING

Holes and chases

General: Make holes and chases required in masonry walls so that the structural integrity of the wall is maintained. Do not chase walls nominated as fire or acoustic rated.

Parallel chases or recesses on opposite faces of a wall: Not closer than 600 mm to each other.

Chasing of blockwork: Only in core-filled hollow blocks or in solid blocks which are not designated as structural and to the **Concrete blockwork chasing table**.

Block thickness (mm)	Depth of chase (maximum mm)
190	35
140	25
90	20

3.2 MOISTURE CONTENT

Flooring

General: Do not commence installation of floor finishes unless:

- Concrete substrate: The moisture content of the concrete has been tested to AS/NZS 2455.1 Appendix B and values in AS/NZS 2455.1 clause 2.4.2(c) have been obtained.
- Plywood and timber: The moisture content of battens/joists or plywood background has been tested to AS/NZS 1080.1 and values obtained as follows:
 - . Air conditioned buildings: 8 to 10%.

- . Intermittently heated buildings: 10 to 12.5%.
- . Unheated buildings: 12 to 15%.

3.3 FIXING

General

Suitability: If equipment and services are not suitable for fixing to non-structural building elements, fix directly to structure and trim around penetrations in non-structural elements.

Fasteners

Sufficiency: Use proprietary fasteners capable of transmitting the loads imposed, and sufficient to ensure the rigidity of the assembly.

3.4 FOOTPATH CROSSING

General

Requirement: Provide a footpath and kerb crossing to local authority requirements.

3.5 COMPLETION

General

Removal of temporary work, services and plant: Remove temporary work services and construction plant within 10 working days after occupation of the works.

Rectification: Clean and repair damage caused by the installation or use of temporary work and services and restore existing facilities used during construction to original condition.

Final cleaning: Remove rubbish and surplus material from the site and clean the works throughout including interior and exterior surfaces exposed to view. Vacuum clean carpeted and soft surfaces. Clean debris from the site, roofs, gutters, downpipes and drainage systems.

Samples: Remove non-incorporated samples, sample panels and prototypes.

Warranties: Register with manufacturers, as necessary, and obtain copies of manufacturers' warranties.

Instruction manuals: Provide the manufacturers' instruction manuals.

Operation: Ensure moving parts operate safely and smoothly.

Surveyor's certificate: Provide a certificate which confirms that the work, including boundary fences, has been correctly located.

Services layout: Provide a plan which shows the location of underground services.

Authorities' approvals: Provide evidence of approval of the local authority or principal accredited certifier and statutory authorities whose requirements apply to the work.

Keys: Provide two keys for each set of locks keyed alike and two keys for each lock keyed to differ.

0184 TERMITE MANAGEMENT

1 GENERAL

1.1 STANDARD

General

Standard: To AS 3660.1.

0201 DEMOLITION

1 GENERAL

1.1 STANDARD

General

Demolition: To AS 2601.

1.2 SUBMISSIONS

Records

Dilapidation record: Submit a copy of the dilapidation record for inspection. Submit to each owner of each adjacent property a copy of the part of the record relating to that property and obtain their written agreement to the contents of the record, before commencement of demolition.

2 EXECUTION

2.1 SUPPORT

Temporary support

Existing buildings: Until permanent support is provided, provide temporary support for sections of existing buildings which are to be altered and which rely for support on work to be demolished.

2.2 PROTECTION

Encroachment

General: Prevent the encroachment of demolished materials onto the adjoining property including public places.

Weather protection

General: If walls or roofs are opened for alterations and additions, or the surfaces of adjoining buildings are exposed, provide temporary covers to prevent water penetration. Provide covers to protect existing plant equipment and materials intended for re-use.

Security

General: If walls or roofs are opened for alterations or additions, provide security against unauthorised entry to the building.

2.3 DEMOLITION

Asbestos removal

Method: Use wet removal methods recommended in the Code of Practice for the Removal of Asbestos (NOHSC: 2002).

Dilapidation record

Purpose: Use the dilapidation record to assess the damage and making good arising out of demolition work.

Notice of completion

General: Give at least 7 working days notice of completion of demolition so that adjacent structures may be inspected following completion of demolition.

Making good: Make good any damage arising out of demolition work. Obtain written acceptance from the owner of each adjoining property of completeness and standard of making good.

0221 SITE MANAGEMENT

1 EXECUTION

1.1 CONTROL AND PROTECTION

Erosion control

General: Plan and carry out the work so as to avoid erosion, contamination, and sedimentation of the site, surrounding areas, and drainage systems. Include any local authority site management requirements.

Dewatering

General: Keep earthworks free of water. Prevent water flow over freshly laid work.

1.2 TREE PROTECTION

General

Protection: Protect from damage trees which are required to be retained. Provide a temporary fence or safety barrier if required by the local authority.

Work near trees

Harmful materials: Keep the area within the dripline free of sheds and paths, construction material and debris.

Work under trees: Do not remove topsoil from, or add topsoil to, the area within the dripline of the trees. Comply with local authority requirements for protection of trees.

1.3 SITE CLEARING

Extent

General: Clear only areas to be occupied by works such as structures, paving, excavation, regrading and landscaping.

Clearing and grubbing

Clearing: Remove everything on or above the site surface, including rubbish, scrap, grass, vegetable matter and organic debris, scrub, trees timber, stumps, boulders and rubble.

Turf: Remove turf to a depth just sufficient to include the root zone.

Grubbing: Grub out stumps and roots over 75 mm diameter to a minimum depth of 500 mm below subgrade under buildings, embankments or paving, and 300 mm below the finished surface in unpaved areas.

Surplus material

Removal: Take possession of surplus material and remove it from the site.

0222 EARTHWORK

1 GENERAL

1.1 STANDARD

General

Earthworks: To AS 3798.

1.2 INTERPRETATION

Definitions:

General: For the purposes of this worksection the following definitions apply:

- Site classification: To AS 2870 and BCA 3.2.4.
- Subgrade: The trimmed or prepared portion of the formation on which the pavement, footing or slab is constructed. Generally taken to relate to the upper line of the formation.
- Zone of influence: A foundation zone bounded by planes extending downward and outward from the bottom edge of a footing, slab or pavement and defining

the extent of foundation material having influence on the stability or support of the footings, slab or pavement.

2 EXECUTION

2.1 REMOVAL OF TOPSOIL

General

Extent Areas of cut or fill and areas occupied by structures, pavements and embankments.

Maximum depth: 200 mm.

2.2 EXCAVATION

Extent

Site surface: Excavate over the site to give correct levels and profiles required as the basis for structures, paving and landscaping. Make allowance for compaction or settlement or heaving.

Rock: Do not use explosives.

Footings: Excavate for footings to the required sizes and depths. Confirm that the foundation conditions meet the design bearing capacity.

Crawl space: Provide a clear space under timber or steel bearers:

- Minimum clearance: 400 mm generally and to BCA 3.4.1.

Bearing surfaces

General: Provide even plane bearing surfaces for loadbearing elements including footings. Step to accommodate level changes.

Existing footings

Requirement: If excavation is required within the zone of influence of an existing footing, use methods including (temporary) shoring and underpinning which maintain the support of the footing and ensure that the structure and finishes supported by the footing are not damaged.

Existing services

Utility services: Contact DIAL BEFORE YOU DIG to identify location of underground utility services pipes and cables. See www.1100.com.au.

Grading

External areas: Grade to give falls away from buildings, minimum 1:100.

Subfloor areas: Grade the ground surface under suspended floors to drain ground or surface water away from buildings without ponding.

2.3 PREPARATION FOR FILLING

Preparation

Stripping: Prepare the ground surface before placing fill (including topsoil fill), ground slabs or load bearing elements to AS 3798 clause 6.1.5. Remove materials which will inhibit or prevent satisfactory placement of fill layers, loose material, debris and organic matter.

2.4 PLACING FILL

Placing fill

Placement: To BCA 3.2.2.

Layers: Place fill in near-horizontal layers of uniform thickness no greater than 150 mm after compaction, deposited systematically across the fill area.

Moisture content: Adjust the moisture content of fill during compaction in order to achieve the required density.

Base preparation under ground slab vapour barrier or damp-proof membrane: Blind the surface with sufficient sand to cover any hard projections. Dampen the sand just before placing the vapour barrier.

0223 SERVICE TRENCHING

1 PRODUCTS

1.1 FILL MATERIALS

General

Backfill material: Excavated spoil or well graded inorganic material free from stones larger than 100 mm maximum dimension and as follows:

- Next to services: Do not place any particles greater in size than 25 mm within 150 mm of services.
- Under paved areas and within 4 m of structures: Coarse sand, controlled low strength material or fine crushed rock.
- In reactive clay: In sites classified M, M-D, H1, H1-D, H2, H2-D, E or E-D to AS 2870, re-use excavated site material at a moisture content within $\pm 1\%$ of that of the adjoining in situ clay.

2 EXECUTION

2.1 EXCAVATING

Excavation

General: Excavate for underground services in conformance with the following:

- To required lines and levels, with uniform grades.
- Straight between access chambers, inspection points and junctions.

2.2 TRENCH BACKFILL

General

Timing: Backfill service trenches as soon as possible after laying and bedding the service, if possible on the same working day.

Layers: Compact all material in layers not exceeding 150 mm compacted thickness. Compact each layer to the relative compaction specified before the next layer is commenced.

2.3 SURFACE RESTORATION

General

Reinstatement: Reinstatement existing surfaces removed or disturbed by trench excavation to match existing and adjacent work.

0242 LANDSCAPE – FENCES AND BARRIERS

1 PRODUCTS

1.1 TIMBER

Posts and rails

Hardwood:

- Standard: To AS 2082.

Softwood:

- Standard: To AS 2858, stress grade F5.

Pickets and palings

Hardwood: To AS 2796.1, Section 8.

- Grade to AS 2796.2: Select.

Softwood: To AS 4785.1, Section 7.

Seasoned cypress pine: To AS 1810, Section 5.

Preservative treatment

Timber type: Provide only timbers with preservative treatment appropriate to the Hazard class.

NATSPEC SIMPLE DOMESTIC SPECIFICATION

Cut surfaces: Provide supplementary preservative treatment to all cut and damaged surfaces.

1.2 STEEL

Steel tube

Posts, rails, stays and pickets: To AS/NZS 1163.
- Grade: C350L0.

1.3 COMPONENTS

Steel panel fencing

Steel framing: Zinc-coated or aluminium/zinc alloy coated steel to AS 1397.

Steel sheeting: Prepainted to AS/NZS 2728.

Timber fencing sizes

General: Conform to the timber members in the Timber fencing sizes table.

Timber fencing sizes table

Member	Preservative treated soft wood picket (mm)	Preservative treated soft wood paling/lap & cap (mm)	Hardwood or cypress pine paling/lap & cap (mm)
Maximum height	1200	1800	1800
End/corner gate posts	90 x 90	100 x 100	125 x 125 or 100 x 100
Intermediate posts	90 x 90	140 x 45 or 100 x 75	125 x 50 or 100 x 75
Maximum post spacing	2400	2400/2700*	2700*
Rails	70 x 40	75 x 50 or 100x 38	75 x 50 or 100x 38
Picket/paling size	70 x 19	75, 100 or 150 x 15*	100 or 150 x 13*
Capping	-	125 x 35	100 x 50
Footing type	Earth	Earth	Earth
Footing size (diameter x depth)	200 x 600	250 x 600	250 x 600

*: Three rail fences only.

Fencing for swimming pools

Design, construction and performance: To AS 1926.1.

Location of fencing for private swimming pools: To AS 1926.2 and local authority.

2 EXECUTION

2.1 GENERAL

General

Installation: Adopt local industry practices for set out, clearing of vegetation, excavation, minimum footing size materials, components and erection.

0250 LANDSCAPE – GARDENING

1 GENERAL

1.1 STANDARDS

Soils

Site and imported topsoil: To AS 4419.

Composts, soil conditioners and mulches: To AS 4454.

2 PRODUCTS

2.1 MATERIAL

Topsoils

Source: Provide topsoil which contains organic matter, will support plant life and is free from stones, contaminants and weeds

Site: If available, provide site topsoil.

Turf

Source: Obtain turf from a specialist grower of cultivated turf.

Quality: Provide turf of even thickness, free from weeds and other foreign matter.

Plants

General: Provide plants in conformance with the local authority approval requirements.

EXECUTION

GENERAL

Weed eradication

Herbicide: Eradicate weeds with a non-residual glyphosate herbicide in any of its registered formulae, at the recommended maximum rate.

Watering

General: Comply with local restrictions.

Turf: Water immediately after laying turf until the topsoil is moistened to its full depth. Continue watering to maintain moisture to this depth.

Planting: Water as required to maintain planting to the completion of the contract.

0271 PAVEMENT BASE AND SUBBASE

1 PRODUCTS

1.1 BASE AND SUBBASE MATERIAL

Granular material

Requirement: Provide unbound granular materials, including blends of two or more different materials as follows:

- Uniform in grading and physical characteristics.
- Develop structural stability when compacted.

Crushed rock and recycled material class

Requirement: Provide crushed rock and recycled material as documented, from the following classes:

- Class 2: Pavement base material (with no minimum plasticity index) for unbound pavements which may not require a very high standard of surface preparation.
- Class 3: Subbase material for unbound flexible pavements.

2 EXECUTION

2.1 SUBGRADE PREPARATION

General

Requirement: Prepare the subgrade in conformance with the Earthwork worksection.

2.2 PLACING BASE AND SUBBASE

General

Weak surfaces: Do not place material on a surface that is weakened by moisture and is unable to support, without damage, the construction plant required to perform the works.

Spreading: Spread material in uniform layers without segregation.

Moisture content: Maintain wet mixed materials at the required moisture content before and during spreading. Add water to dry mixed materials through fine sprays to the entire surface of the layer after spreading, to bring the material to the required moisture content.

Layer thickness: 200 mm maximum and 100 mm minimum (prior to compaction). Provide layers of equal thickness in multilayer courses.

2.3 TOLERANCES

Surface level

General: Provide a finished surface which is free draining and evenly graded between level points.

2.4 SUBBASE AND BASE COMPACTION

General

Construction operation: Compact each layer of fill to the required depth and density, as a systematic construction operation and to conform to the **Minimum relative compaction table**.

Minimum relative compaction table

Item description	Minimum dry density ratio (modified compaction) to AS 1289.5.2.1
Subbase	95
Base	98

Compaction requirements

General: Apply uniform compactive effort, over the whole area to be compacted, until the required density is achieved or until failure is acknowledged.

Equipment: Use rollers appropriate to the materials and compaction requirements documented.

0274 CONCRETE PAVEMENT

1 GENERAL

1.1 STANDARDS

General

Specification and supply: To AS 1379.

Materials and construction: To AS 3600.

Guide to residential pavements: To AS 3727.

Vapour barrier or damp-proof membrane.

Requirement: Conform to *Common requirements*.

0276 SEGMENTAL PAVERS – SAND BED

1 PRODUCTS

1.1 MATERIALS

Sand

Bedding and joint filling: Well graded and free of deleterious materials such as soluble salts which may cause efflorescence.

Mortar edge restraint

Mix proportions: 1:3 cement:sand.

2 EXECUTION

2.1 GENERAL

Preparation

General: Trim the subgrade to the required profile and to suit the thickness of pavers and sand bed. Compact to a firm, even surface.

Base course

General: Conform to the *Pavement base and subbase* worksection.

Edge restraint

Perimeter: Provide edge restraints to bedding and units, where not provided by other structures.

Type: Bed units in mortar at least 40 mm thick.

Bedding course

Bedding sand: Screed uncompacted sand over prepared base uniformly to achieve a 30 mm thick layer. Maintain sand at a uniform loose density and moisture content.

Grading

General: Grade paving to even falls to drain away from buildings to drainage outlets without ponding. Minimum fall for drainage: 1:100.

Laying

Pattern: Lay paving units on the screeded sand bedding to the nominated pattern shown on the drawings.

Joints: 2 – 5 mm gap.

Compaction: Compact the sand bedding after laying paving units using a vibrating plate compactor and appropriate hand methods, and continue until lipping between adjoining units is eliminated.

Joint filling: Spread dry sand over the paving units and fill the joints by brooming. Undertake one or more passes with the vibrating plate compactor and refill the joints with sand. Repeat the process until the joints are completely filled.

0310 CONCRETE

1 GENERAL

1.1 STANDARDS

General

Formwork design and construction, formed surfaces: To AS 3600 and AS 3610.1.

Profiled steel sheeting including shear connectors: To AS 2327.1.

Specification and supply of concrete: To AS 1379.

Concrete materials and construction: To AS 3600.

Residential ground slabs and footings: To AS 2870.

Design

Requirement: As documented by a professional engineer.

Vapour barrier or damp-proof membrane.

Requirement: Conform to *Common requirements*.

0331 BRICK AND BLOCK CONSTRUCTION

1 GENERAL

1.1 STANDARD

General

Materials and construction: To AS 4773.1 and AS 4773.2.

2 PRODUCTS

2.1 DURABILITY

General

Exposure locations: To AS 4773.1 clause 4.3.

2.2 MATERIALS

Bricks and blocks

Standard: To AS/NZS 4455.1 and AS/NZS 4455.3.

Salt attack resistance grade: To AS 4773.2 Table 2.1.

Mortar materials

Sand: Fine aggregate with a low clay content and free from efflorescing salts, selected for grading and colour for facework.

Proportions: To AS 4773.1 Table 3.1.

2.3 BUILT-IN COMPONENTS

General

Durability class of built-in components: To AS 4773.1 Table 4.1.

Steel lintels

Angles and flats: Sizes to AS 4773.1 Table 12.1.

Cold-formed lintels: Designed to AS/NZS 4600.

Corrosion protection: To AS/NZS 2699.3.

Galvanizing: Do not cut after galvanizing.

Wall ties

Standard: To AS/NZS 2699.1.

Type: A.

Spacing: To AS 4773.2 clause 9.7 and clause 10.6.

Corrosion protection: To AS/NZS 2699.1.

Flashings and damp-proof courses

Standard: To AS/NZS 2904.

- Internally: If wall is to be plastered, do not rake more than 10 mm to give a key.
- Thickness: 10 mm.

3.2 FACEWORK

Cleaning

General: Clean progressively as the work proceeds to remove mortar smears, stains and discolouration. Do not erode joints if using pressure spraying.

Acid solution: Do not use.

Colour mixing

Distribution: In facework, distribute the colour range of units evenly to prevent colour concentrations and banding.

Sills and thresholds

General: Solidly bed sills and thresholds and lay them with the top surfaces drain away from the building.

3.3 SUBFLOOR WORK

Access openings

General: In internal walls, leave door-width openings beneath doorways to give access to underfloor areas.

Air vent location

General: Provide air vents to give adequate cross ventilation to the space under suspended ground

3.4 CAVITY WORK

Cavity width

General: Provide minimum cavity widths in conformance with the following:

- Masonry walls: 50 mm.
- Masonry veneer walls: 40 mm between the masonry leaf and the loadbearing frame and 25 mm minimum between the masonry leaf and sheet bracing.

3.5 DAMP-PROOF COURSES

Location

General: To BCA 3.3.4.

Installation

General: Lay in long lengths. Lap the full width of angles and intersections and 150 mm at joints. Step as necessary, but not more than 2 courses per step for brickwork and 1 course per step for blockwork. Sandwich damp-proof courses between mortar.

3.6 FLASHINGS

Location

General: To AS 4773.2 clause 9.6 and clause 10.5.

Installation

General: Sandwich flashings between mortar except where on lintels.

Pointing: Point up joints around flashings to fill voids.

Weepholes

Location: Provide weepholes to external leaves of cavity walls in the course immediately above flashings, and cavity fill, and at the bottoms of unfilled cavities.

Maximum spacing: 1200 mm.

3 EXECUTION

3.1 GENERAL

Mortar mixing

General: Measure volumes accurately to achieve the documented proportions. Machine mix for at least six minutes.

Protection from contamination

General: Protect masonry materials and components from ground moisture and contamination.

Bond

Type: Stretcher bond.

Clearance for timber frame shrinkage

General: In timber frame brick veneer construction, leave clearances between window frames and brick sill and between roof frames and the brick veneer as follows:

- Additional clearance: Accommodate additional shrinkage of unseasoned floor timbers.
- Single storey frames and ground floor windows (not for slab on ground): 10 mm.
- Two storey frames and upper floor windows: 20 mm.

Joining to existing

General: Provide a control joint where joining to existing structures. Do not tooth new masonry into existing work unless approved by a professional engineer.

Mortar Joints

Finish: Conform to the following:

- Externally: Tool to give a dense water-shedding finish.

0342 LIGHT STEEL FRAMING

1 GENERAL

1.1 STANDARDS

General
Steel design, fabrication and erection: To AS 4100.
Cold-formed steel: To AS 4600.
Residential and low-rise steel framing: To NASH.1.

2 EXECUTION

2.1 GENERAL

Fabrication

Length: Cut members accurately to length so that they fit firmly against abutting members.
Service holes: Form holes by drilling or punching.
Site cut holes: Provide plastic bushes or grommets to site cut holes.
Site work: Do not fabricate on site where welded connections are required.

Prefabricated wall frames and trusses

Assembly: Factory assemble wall frames and trusses.
Bracing: Provide details of bracing.
Certification: Obtain certification from a professional engineer for the erected frames.
Protection: Protect from damage or distortion during storage, transport and erection. Provide temporary protection for members until permanent covering is in place.

Metal separation

General: Install lagging to separate non-ferrous service pipes and accessories from the framing.

Unseasoned or CCA treated timber

General: Do not fix in contact with framing without fully painting the timber and/or the steel.

Earthing

Permanent earthing: Required.

Protection

General: Restore coatings which have been damaged by welding or other causes. Thoroughly clean affected areas to base metal and coat with zinc rich organic primer.
Grommets: Provide grommets to isolate piping and wiring from cold-formed steel framing.
Swarf: Remove swarf and other debris from cold-formed steel framing immediately.

Vermin barriers

Brick veneer barrier: Close nail 10 mm galvanized steel wire mesh to the underside of the bottom plate of external stud walls, extending across the cavity for building into brickwork.

Anti-ponding boards

Standard: To AS/NZS 4200.2.

Fascia, valley gutter and barge boards

Requirement: Supply and fix fascia, valley gutter and barge boards in conformance with the manufacturer's requirements.

0382 LIGHT TIMBER FRAMING

1 GENERAL

1.1 STANDARDS

General
Residential timber framed construction: To AS 1684.2, AS 1684.3 or AS 1684.4, as appropriate.

2 EXECUTION

2.1 GENERAL

Fabrication

Length: Cut members accurately to length so that they fit firmly against abutting members.
Service holes: Form holes by drilling.

Prefabricated wall frames and trusses

Assembly: Factory assemble wall frames and trusses.
Bracing: Provide details of bracing.
Certification: Obtain certification from a professional engineer for the erected frames.
Protection: Protect from damage or distortion during storage, transport and erection. Provide temporary protection for members until permanent covering is in place.

Timber fasteners

Meta washers: Provide washers to the heads and nuts of all bolts and coach screws.

Connectors: Press connector plates fully into the frame members. Knots not permitted in plate area.

Joints

General: No gaps greater than 2 mm.

Priming

Steel: Before fixing, prime steel which is not galvanized or metallic-coated.

Vermin barriers

Brick veneer barrier: Close nail 10 mm galvanized steel wire mesh to the underside of the bottom plate of external stud walls, extending across the cavity for building into brickwork.

Anti-ponding boards

Standard: To AS/NZS 4200.2.

Fascia, valley gutter and barge boards

Requirement: Supply and fix fascia, valley gutter and barge boards in conformance with the manufacturer's requirements.

0383 SHEET FLOORING AND DECKING

1 GENERAL

1.1 STANDARD

General
Flooring and decking: To AS 1684.2, AS 1684.3 or AS 1684.4, as appropriate.

2 PRODUCTS

2.1 DECKING

New timber decking

Standard:
- Treated softwood to AS 4785.1 Section 4.

- Hardwood to AS 2796.1 Section 4.

2.2 SHEET FLOORING

Plywood

Standard: To AS/NZS 2269.0.

Grade: Bond type A.

Particleboard

Particleboard: To AS 1860.1, Class 1.

Compressed fibre cement sheeting

Standard: To AS/NZS 2908.2, Type: A.

Category: 5.

3 EXECUTION

3.1 GENERAL

Timber decking on steel joists

General: Screw fix seasoned timber battens to the steel joists so that their top surfaces are aligned.

3.2 FIXING SHEET FLOORING

Particleboard flooring

Installation: To AS 1860.2.

Plywood flooring

Installation: To AS 1684.2, AS 1684.3 or AS 1684.4, as appropriate.

Compressed fibre cement flooring

Installation: Lay the length of the sheets at right angles to the joists. Stagger the end joints and locate centrally over joists. Apply adhesive to edges of sheets and firmly butt join together.

Minimum number of spans across support: 2.

Fixing: Pre-drill screw holes with 1 mm clearance over screw diameter and countersink. Fix with corrosion resistant countersunk screws.

Spacing of fasteners:

- Sheet edge and intermediate: < 450 mm
- Corners and sheet edges: At least 12 mm from sheet edges and 50 mm from corners.

Wet area flooring: Stop screw heads with sealant.

3.3 FIXING DECKING

Timber decking

Installation: Lay in long lengths with the ends of each board firmly butted to the next and firmly in contact with the joists. Stagger joints and make over joists.

Gap between edges of seasoned boards: 4 mm.

Minimum number of spans across support: 3.

Nailing:

- General: Make sure the boards are in contact with the joists at the time of nailing, particularly where boards are machine nailed. If nails are to be less than 10 mm from ends of boards, pre-drill nail holes 0 – 1 mm undersize.
- Top nailing: Double nail at each bearing with nails driven flush. Offset nails at intermediate fixings or skew nail 10° in opposite directions.

Sealing: Apply 1 coat of water repellent preservative and 1 coat of finish coat to top surface of joists and all surfaces of boards before fixing.

0421 ROOFING

1 PRODUCTS

1.1 COMPONENTS

Fasteners

Exposed fasteners: Provide fasteners which are prefinished with a coating to match the roofing material.

1.2 MATERIALS

Sheet metal roofing

Standard: To AS 1562.1.

Corrosion protection: To BCA Table 3.5.1.1.a.

Roof tiling

Standard: To AS 2049.

Plastic sheet roofing

Unplasticised polyvinyl chloride (UPVC) sheet: To AS 4256.2.

Glass fibre reinforced polyester (GRP) sheet: To AS 4256.3.

Polycarbonate: To AS 4256.5.

Skylights

General: To AS 4285.

Skylights/rooftlights in bushfire prone areas: To AS 3959.

Roof ventilators

Roof mounted heat exhaust vents: To AS 2427.

Proprietary roof mounted ventilators or smoke/heat ventilating systems: To AS 2665.

Finish: Match adjacent roofing.

Roof plumbing goods

Standard: To AS/NZS 3500.3.

Flashing and capping

Standard: To AS/NZS 2904.

2 EXECUTION

2.1 GENERAL

Installation

General: To the manufacturer's recommendations.

Roof tiling: To AS 2050.

Plastic sheet roofing: To AS 1562.3.

2.2 ROOF PLUMBING

Jointing sheet metal rainwater goods

Sealing: Seal fasteners and mechanically fastened joints with silicone sealant.

Flashings and cappings

Upstands: Flash projections above or through the roof with two part flashings consisting of an apron flashing and an over-flashing, with at least 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Wall abutments: Provide overflashings where roofs abut walls, stepped to the roof slope in masonry and planked cladding, otherwise raking and as follows:

- Masonry: Stepped and built into the full width of the leaf, turned up and extended across the cavity, to be fixed to the inner leaf at least 75 mm above.

Gutters

Minimum slope of eaves gutters: 1:200.

Minimum width overall of valley gutters: 400 mm.

High-fronted gutters: Provide overflows to prevent back flow into roof or building structure.

Downpipes

General: Prefabricate downpipes to the required section and shape where possible. Connect heads to gutter outlets and, if applicable, connect feet to rainwater drains.

Downpipe support: Provide supports and fixings for downpipes.

0431 CLADDING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections

Conform to the following:

- *Insulation and sarking membranes* for wall sarking requirements.

2 PRODUCTS

2.1 MATERIALS

Sheet metal cladding

Standard: To AS 1562.1.

Hardboard planks

Wet-processed fibreboard (including hardboard):

Standard: To AS/NZS 1859.4.

Plank cladding: Proprietary system of hardboard planks:

- Plank thickness: 9.5 mm.
- Joints and edges: UPVC extrusions.
- External corners: Preformed metal joining pieces.
- Internal corners: Scribe.

Fibre cement planks

Standard: To AS/NZS 2908.2.

Plank cladding: Proprietary system of single-faced fibre cement planks:

- Plank thickness: 7.5 mm.
- Joints and edges: PVC-U extrusions.
- Corners: Preformed metal joining pieces.

Fibre cement cladding

Standard: To AS/NZS 2908.2.

Cladding, eaves and soffit linings: Type A Category 3.

Compressed cladding: Type A Category 5.

Sheet cladding: Provide a proprietary system of single faced fibre cement sheets:

- Arrangement: Set out in even panels with joints coinciding with framing.
- Sheet thickness: 6 mm.
- Joints, corners and edges: UPVC extrusion.

Eaves lining: Single faced fibre cement:

- Sheet thickness: 4.5 mm.
- Joints: UPVC extrusion.

Plastic cladding

Unplasticised polyvinyl chloride (PVC-U) sheet: To AS 4256.4.

Glass fibre reinforced polyester (GRP) sheet: To AS 4256.3.

Polycarbonate: To AS 4256.5.

2.2 COMPONENTS

Flashing material

Standard: To AS/NZS 2904.

3 EXECUTION

3.1 GENERAL

Cladding

Installation: To the manufacturer's recommendations.

0451 WINDOWS AND GLAZED DOORS

1 GENERAL

1.1 STANDARD

General

Selection and installation: To AS 2047.

Glazing

Selection and installation: To AS 1288.

2 PRODUCTS

2.1 GENERAL

Standards

Flashings: To AS/NZS 2904.

Aluminium extrusions: To AS/NZS 1866.

Safety glasses: To AS/NZS 2208.

Aluminium frame finishes

Powder coating: To AS 3715:

Grade: Architectural coating.

Anodising: To AS 1231:

- Thickness: ≥ 15 microns to 20 microns.

2.2 COMPONENTS

Insect screens

Aluminium framed insect screens: Provide aluminium extruded or folded box frame sections with mesh fixing channel, mitred, staked and screwed at corners. Provide an extended frame section where necessary to adapt to window opening gear.

- Mesh: Bead the mesh into the frame channel with a continuous resilient gasket, so that the mesh is taut and without distortion.

Bushfire screens and seals

Protection: Protect glazed windows and doors from the ingress of embers.

Standard: To AS 3959.

Security

Security grilles: To AS 5039.

Security screen doors: To AS 5040.

2.3 HARDWARE

Hardware documented generically

General: Provide hardware of sufficient strength and quality to perform its function, appropriate to the intended conditions of use, compatible with associated hardware, and fabricated with fixed parts firmly joined.

3 EXECUTION

3.1 INSTALLATION

Preglazing

Window assemblies and glazed doors: Supply inclusive of glazing, shop preglazed.

Weatherproofing

Flashings and weatherings: Install flashings, weather bars, drips, storm moulds, caulking and pointing so that water is prevented from penetrating the building between frames and the building structure under prevailing service conditions, including normal structural movement of the building.

Fixing

Packing: Pack behind fixing points with durable full width packing.

Prepared masonry openings: If fixing of timber windows to prepared anchorages is by fastening from the frame face, conceal the fasteners by sinking the heads below the surface and filling the sinking flush with a material compatible with the surface finish.

Trim

General: Provide mouldings, architraves, reveal linings, and other internal trim using materials and finishes matching the window frames. Install to make neat and clean junctions between frames and the adjoining building surfaces.

0453 DOORS AND ACCESS PANELS

1 GENERAL

1.1 INTERPRETATION

Definition

General: For the purposes of this worksection the definition given below applies:

- Doorset: An assembly comprising a door or doors and supporting frame, guides and tracks including the hardware and accessories necessary for satisfactory operation.

2 PRODUCTS

2.1 DOORS

General

Doors: Proprietary products manufactured for interior or exterior applications and for the finish required.

Flush doors

General: Provide flush doors of balanced construction.

Construction

Door thickness

- Generally: 35 mm.
- External doors and doors over 900 mm wide: 40 mm.

Tolerance

Squareness (the difference between the lengths of a diagonal of a door): ≤ 3mm.

Twist (the difference between perpendicular measurements taken from diagonal corner): ≤ 3mm.

Nominal size (mm):

- Height: +2, -2.
- Width: +2, -0.

Security screen doors

Standard: To AS 5039.

Bushfire screens and seals

Protection: Protect glazed windows and doors from the ingress of embers.

Standard: To AS 3959.

2.2 ANCILLARY MATERIALS

Flashings

Standard: To AS/NZS 2904.

3 EXECUTION

3.1 GENERAL

Security screen doors

Security screen door grilles installation: To AS 5039.

Ceiling access

General: Trim an opening and provide a loose access panel of minimum size 600 x 400 mm.

Under floor access

Requirements: Provide a frame and a door, minimum size 720 mm wide x 600 mm high, complete with padbolt.

Priming

General: Prime timber door leaves on top and bottom edges before installation.

3.2 FRAMES

Timber frames

Fixing to masonry openings: Build in seasoned timber plugs to masonry joints or use proprietary expansion anchors and screw twice through jambs at each fixing.

Fixing to stud frame openings: Back screw twice to jambs at each fixing.

Heads of fasteners: Conceal where possible, otherwise sink the head below the surface and fill the sinking flush with a material compatible with the surface finish.

Finishing

Trim: Provide mouldings, architraves, reveal linings, and other internal trim using materials and finishes matching the window frames. Install to make neat and clean junctions between frames and the adjoining building surfaces.

Weatherproofing

Flashings and weatherings: Install flashings, weather bars, drips, storm moulds, caulking and pointing so that water is prevented from penetrating the building between frames and the building structure under prevailing service conditions, including normal structural movement of the building.

3.3 SLIDING INTERNAL DOORS

Accessories

Face mounted: Provide overhead track supports and head and jamb linings appropriate to the arrangement of the door, and removable pelmets at the head to allow access to the wheel carriages for adjustment.

Wheel carriages: Fully adjustable precision ball race type providing smooth, quiet operation.

Cavity sliding door assemblies: Proprietary item.

0454 OVERHEAD DOORS

1 GENERAL

1.1 STANDARD

General

Garage doors: To AS/NZS 4505.

Bushfire screens and seals: To AS 3959.

0455 DOOR HARDWARE

1 PRODUCTS

1.1 COMPONENTS

Hinges

Requirement: Provide 3 hinges for external doors and door leaves over 2040 mm in height and 600 mm in width. Conform to the Hinges table.

Hinges table

Size of door (mm x mm)	Number of hinges (per door leaf)	Size of hinges (steel)
2040 x 920	3	100 x 75 x 3 mm
2040/2400 x 1020	4	100 x 100 x 3.5 mm

Locksets

External doors: Push-button key and knob set and a double-cylinder dead bolt to each door.

Internal doors:

- Generally: Passage sets.
- Bathrooms, showers and toilets: Privacy sets.
- Sliding patio doors and windows: Key-lockable surface mounted bolts.

Keying

Requirement: Key doors (excluding garage doors) alike and key windows alike.

2 EXECUTION

2.1 INSTALLATION

Supply

Delivery: Deliver door hardware items, in individual complete sets for each door.

Mounting height

Door lockset mounting heights: 1000 mm above finished floor to centreline of spindle.

Door stops

Fixing: Fix on the floor, skirting or wall, as appropriate, to prevent the door or door furniture striking the wall or other surface.

0467 GLASS COMPONENTS

1 GENERAL

1.1 SUBMISSIONS

Balustrade design

Certification: Provide a professional engineers' certificate confirming compliance with AS/NZS 1170.1 clause 3.6.

Sealant compatibility

Compatibility statements: Submit statements from all parties to the installation that certify the compatibility of sealants and glazing systems to all substrates.

2 PRODUCTS

2.1 MIRRORS

Reflective surface

Type: Silver layer deposited on the glass or glazing plastic.

Protective coatings: Electrolytic copper coating at least 5 µm thick and 2 coats of mirror backing and edge sealing paint having a total dry film thickness of at least 50 µm.

Safety mirror

Type: Vinyl backed Grade A safety mirror.

Safety compliance: To AS/NZS 2208.

2.2 SHOWER SCREENS

Type

Proprietary system comprising frames of extruded aluminium, stainless steel, or PVC, assembled around safety glass to form fixed panels and sliding, hinged or pivoted doors.

2.3 GLASS BALUSTRADES

General

Glass: Grade A safety glass to AS 1288 Section 7.

0471 INSULATION AND SARKING MEMBRANES

1 GENERAL

1.1 INTERPRETATION

Definition

General: For the purposes of this worksection the definition given below applies.

- Sarking membrane: Flexible membrane material normally used for waterproofing, vapour proofing or thermal reflectance.

1.2 ENERGY EFFICIENCY

Commitment to energy efficiency required by authorities

General: Provide details as required by state and local authorities.

2 PRODUCTS

2.1 MATERIALS

Bulk insulation

Cellulosic fibre (loose fill): To AS/NZS 4859.1 Section 5.

Mineral wool blankets and cut pieces: To AS/NZS 4859.1, Section 8.

Polyester: To AS/NZS 4859.1 Section 7.

Polystyrene (extruded rigid cellular sheets): To AS 1366.4.

Reflective insulation: To AS/NZS 4859.1, Section 9.

Wool: To AS/NZS 4859.1, Section 6.

Sarking membrane

Standard: To AS/NZS 4200.1.

Floor insulation

Material: Bulk insulation.

Requirement: Perforated material.

3 EXECUTION

3.1 GENERAL

Framed wall thermal break strips

Product type: Proprietary item.

Application: To steel or timber framing with lightweight external cladding.

R-value: ≥ 0.2.

Screw fixing: Button head screws at 1 m centres.

Adhesive fixing: Wallboard adhesive 'walnuts' at 1 m centres.

Bulk insulation
Standard: To AS 3999.

Sarking installation
Standard: To AS/NZS 4200.2.

3.2 FLOOR INSULATION

Under suspended framed floors - bulk insulation
Product type: Fibre batts.

Batts: Fit tightly between framing members. If support is not otherwise provided, staple nylon twine to the framing and stretch tight.

Below concrete slab on ground

Laying pattern: Stretcher bond, with edges tightly butted.
Location: Under the damp proof membrane.

3.3 WALL INSULATION

Bulk insulation to framed walls
Product type: Fibre batts.

Batts: Friction fit between framing members. If support is not otherwise provided, staple nylon twine to the framing and stretch tight.

Vapour permeable wall wrap

Application: Provide wall wrap behind cladding which does not provide a permanent weatherproof seal or may be subject to condensation forming on the internal face, including the following:

- Boards fixed vertically or diagonally.
- Boards or planks fixed in exposed locations where wind driven rain can penetrate the joints.
- Unpainted or unsealed cladding.
- Behind external cladding in bushfire prone areas to AS 3959.
- Masonry veneer.

Installation: Fix wall wrap to all framing members after being pulled taught over the framing. Apply to run horizontally to the outer face of external stud walls from the bottom plate up, over the flashing. Seal across the wall cavity at the top.

Horizontal laps: At least 150 mm wide with the direction of the lap ensuring that water is shed to the outer face of the membrane.

3.4 ROOF INSULATION

Roof sarking

Sarking membrane:

- Installation to AS 2050.
- Location: Provide sarking under tile and shingle roofs.

Vapour barrier

Installation: Lay over the roof support frame with sufficient sag to allow the bulk insulation to achieve its full thickness. Overlap roll edges 150 mm and seal all joints with pressure sensitive adhesive tape.

Bulk insulation – metal roofs

Batts: Fit tightly between framing members.

Blanket for sound insulation: Install over the roof support frame, reflective thermal insulation (if any), and mesh support, so that the blanket is in continuous contact with the underside of the metal roofing sheets.

Bulk insulation to ceiling insulation

Product type: Fibre batts.

Batts: Friction fit between framing members

0511 LINING

1 GENERAL

1.1 STANDARDS

Plasterboard

Standard: To AS/NZS 2588.

Fibre cement

Standard: To AS/NZS 2908.2.

Wall and ceiling linings: Type B, Category 2.

2 EXECUTION

2.1 SHEET LINING

Supports

General: Install timber battens or proprietary cold-formed galvanized steel furring channels as follows:

- Where framing member spacing exceeds the recommended spacing.
- Where direct fixing of the sheeting is not possible due to the arrangement or alignment of the framing or substrate.
- Where the lining is the substrate for tiled finishes.
- To support fixtures.

Installation

Plasterboard: To AS/NZS 2589.

Wet areas: To AS 3740

Fixing: Do not use adhesive fixing alone.

Joints

Flush joints: Provide recessed edge with setting compound and perforated reinforcing tape. Finish flush.

External corner joints: Make joints over zinc-coated steel corner beads.

Control joints: Provide purpose-made zinc-coated control joint beads at not more than 12 m centres and to coincide with structural control joints.

Wet areas: Install additional supports, flashings, trim and sealants as required.

Joints in tiled areas: Do not apply a topping coat after bedding perforated paper tape in bedding compound.

Trim

General: Provide timber or medium density fibreboard trim, such as beads, skirtings, architraves, mouldings and stops to make neat junctions between components, finishes and adjacent surfaces.

Proprietary items: Provide complete with installation accessories.

0551 JOINERY

1 PRODUCTS

1.1 MATERIALS

Joinery timber

Hardwood: To AS 2796.3.

Seasoned cypress pine: To AS 1810.

Softwood: To AS 4785.3.

Finished sizes for milled timbers: Actual dimensions which are at least the required dimensions, except for dimensions qualified by a term such as 'nominal' or 'out of' to which industry standards for finished sizes apply.

Plywood

Interior use generally: To AS/NZS 2270.
Interior use, exposed to moisture: To AS/NZS 2271.

Non-structural glued laminated timber
Standard: AS 5067.

Wet processed fibreboard (Including hardboard)
Standard: To AS/NZS 1859.4.

Particleboard
Standard: To AS/NZS 1859.1.

Dry processed fibreboard (Including medium density fibreboard)
Standard: To AS/NZS 1859.2.

Decorative overlaid wood panels
Standard: To AS/NZS 1859.3.

Certification

General: Brand panels under the authority of a recognised certification program applicable to the product. Locate the brand on faces or edges which will be concealed in the works.

Plywood certified formaldehyde emission level to AS/NZS 2098.11: E1.

Wood panel certified formaldehyde emission level to AS/NZS 4266.16: E1.

High-pressure decorative laminate sheets
Standard: To AS/NZS 2924.1.

High-pressure decorative laminate sheet application table

Classes: Provide classes as follows:

Class to AS/NZS 2924.1	Application
HGS or HGP	Kitchen work-tops
VGS or VGP	Kitchen front panels
VLS	Other vertical locations

Thickness (minimum):

- For horizontal surfaces fixed to a continuous substrate: 1.2 mm.
- For vertical surfaces fixed to a continuous substrate: 0.8 mm.
- For post formed laminate fixed to a continuous substrate: 0.8 mm.
- For vertical surfaces fixed intermittently (e.g. to studs): 3.0 mm.
- For edge strips: 0.4 mm.

1.2 DOMESTIC KITCHEN ASSEMBLIES

Standard
General: To AS/NZS 4386.1.

1.3 WARDROBE, CUPBOARD AND DRAWER UNITS

Plinths, carcasses, drawer fronts, shelves and doors
Material: Select from the following:

- Overlaid high moisture resistant particleboard.
- Overlaid high moisture resistant medium density fibreboard.

Thickness: 16 mm.

Adjustable shelves: Support on proprietary pins in holes bored at equal spacing of 32 mm centres vertically.

Fasteners: Conceal with finish.

Drawer fronts: Rout for drawer bottoms.

Drawer and door hardware

Hinge types: Concealed metal hinges with the following features:

- Adjustable for height, side and depth location of door.
- Self-closing action.
- Hold-open function.
- Nickel plated.

Slides: Metal runners or drawer systems with the following features:

- 30 kg loading capacity.
- Closure retention.
- White thermoset powder coating or nickel plated.

Hardware

Requirement: Provide details of handles and locks.

1.4 WORKING SURFACES

Material: High moisture-resistant particleboard or medium density fibreboard.

Finish: High pressure decorative laminate sheet.

Exposed edges: Extend laminate over shaped nosing, finishing > 50 mm back on underside. Splay outside corners at 45°.

Minimum thickness: 32 mm.

Balance underside: Extend laminate to the undersides of benchtops if subject to excessive moisture from equipment such as dishwashers.

Stone or engineered stone benchtops

General: Provide stone or engineered stone slabs within the visual range of approved samples. In natural stone, repair and veins or lines of separation that are integral to the selected pattern with resin fillers and back lining.

Splashbacks

Glass: 6 mm toughened colourback glass with a factory applied opaque coating to the back.

Standard: To AS/NZS 2208.

Stainless steel: Grade 304, fine finished finish.

2 EXECUTION

2.1 JOINERY

General

Joints: Provide materials in single lengths whenever possible. If joints are necessary, make them over supports.

Framing: Frame and trim where necessary for openings, including those required by other trades.

Fasteners

Installation: Secure plinths and carcasses to floors, walls, or both at not more than 600 mm centres.

Visibility: Do not provide visible fixings except in the following locations:

- Inside cupboards and drawer units.
- Inside open units, in which case provide proprietary caps to conceal fixings.

Adhesives

General: Provide adhesives to transmit the loads imposed and to ensure the rigidity of the assembly, without causing discolouration of finished surfaces.

Finishing

Junctions with structure: Scribe plinths, benchtops, splashbacks, ends of cupboards, kickboards and returns to follow the line of structure.

Benchtops

Installation: Fix to carcass at least twice per 600 mm length of benchtop.

Joint sealing: Fill joints with sealant matching the finish colour and clamp with proprietary mechanical connectors.

NATSPEC SIMPLE DOMESTIC SPECIFICATION

Edge sealing: Seal to walls and carcasses with a sealant, which matches the finish colour.

Splashbacks

Glass: Fix with non-acidic silicone adhesive. Apply at the rate recommended by the manufacturer.

Installation: Clean the back of the glass panel and apply 'wallnuts' of adhesive together with double sided adhesive tape for temporary support, and affix directly to the substrate.

0572 MISCELLANEOUS APPLIANCES AND FIXTURES

1 PRODUCTS

1.1 COMPONENTS

General

Requirement: Provide kitchen and laundry appliances, and bathroom and other fixtures as documented.

1.2 PROPRIETARY STAIR SYSTEMS

General

Material, design and construction: To AS 1657 and BCA 3.9.1

Balustrades: To BCA 3.9.2.

Requirement: Provide details of stairs, including proposed finishes, before fabrication and/or construction.

0611 PLASTERING

1 PRODUCTS

1.1 MATERIALS AND COMPONENTS

Aggregates

Sand: Fine, sharp, well-graded sand with a clay content between 1% and 5% and free from efflorescing salts.

Cement

Standard: To AS 3972.

- Type GP.

Lime

Limes for building: To AS 1672.

Metal lath

Internal: Expanded metal to AS 1397 coating class Z350.

External: Stainless steel or PVC.

Mixes

General: Select a mix ratio to suit the conditions of application in conformity to the Mixes table.

Measurement: Measure binders and sand by volume using buckets or boxes. Do not allow sand to bulk by the absorption of water.

Plaster mixing: Machine mix $\geq 3 < 6$ minutes.

Strength of successive coats: Ensure successive coats are no richer in binder than the coat to which they are applied.

Mixes table – Cement render

Mix type	Substrate	Upper and lower limits of proportions by volume		
		Cement	Lime	Sand
- Single or multi-coat systems with integral finishing treatments	Dense and smooth concrete and masonry	1	0	3
		1	0.5	4.5
	Regular clay or	1	0.5	4.5

Mix type	Substrate	Upper and lower limits of proportions by volume		
		Cement	Lime	Sand
- Base coats in multi-coat systems with cement finishes	concrete masonry	1	1	6
	Lightweight concrete masonry and other weak substrates	1	1 2	6 9
Second coat - Internal	Cement render base coats	1	1	6
		1	2	9
Second coat - External	Cement render base coats	1	1	5
		1	2	6

Water

General: Clean and free from any deleterious matter.

2 EXECUTION

2.1 SUBSTRATE

Substrates

General: Provide substrates as follows:

- Clean and free from any deposit or finish which may impair adhesion of plaster.
- If framed or discontinuous, support members in full lengths without splicing.
- If solid or continuous, remove excessive projections and fill voids and hollows with plaster stronger than the first coat and not weaker than the substrate.

Untrue substrates: If the substrate is not sufficiently true to ensure conformity with the thickness limits for the plaster system or has excessively uneven suction resulting from variations in the composition of the substrate, apply additional coats without exceeding the thickness limits for the substrate or system.

Beads

Location: Fix beads as follows:

- Angle beads: At all external corners.
- Drip beads: At all lower terminations of external plaster.
- Beads for control of movement: At all control joints.
- Stop beads: At all terminations of plaster and junctions with other materials or plaster systems.

Material:

- Internal location: Metallic-coated sheet AZ 150.
- External location: Stainless steel or PVC.

Bonding treatment

General: If bonding treatment is required, throw a wet mix onto the background of 1 part cement to 2 parts sand.

Curing: Keep continuously moist for ≥ 5 days and allow to dry before applying plaster coats.

Embedded items

General: If there are water pipes and other embedded items, sheath them to permit thermal movement.

Lath

Location: Provide lath as follows:

- Chases: If chases or recesses are 50 mm wide or greater, fix metal lath extending ≥ 75 mm beyond each side of the chase or recess.
- Metal and other non-porous backgrounds: Fix metal lath to provide a key.

Weepholes

Requirements: Keep opening free of plaster. Maintain consistent opening size.

2.2 APPLICATION

Control joints

General: Provide joints in the finish to coincide with control joints in the substrate. Ensure that the joint in the substrate is not bridged during plastering.

Plaster thickness

General: Conform to the Plaster thickness table.

Plaster thickness table

Substrate	Cement render, total thickness of single or multi-coat work (mm)
Brickwork and blockwork	12 min
Lightweight concrete and blocks	12 min
Metal lath measured from the face of the lath.	18 min

Tolerances

General: Finish plane surfaces within a tolerance of 6 mm in 2400 mm, determined using a 2400 mm straight edge placed anywhere in any direction. Finish corners, angles, edges and curved surfaces within equivalent tolerances.

Curing

General: Prevent premature or uneven drying out and protect from the sun and wind.

Keeping moist: If a proprietary curing agent is not used, keep the plaster moist as follows:

- Base coats and single coat systems: Keep continuously moist for 2 days and allow to dry for 5 days before applying further plaster coats.
- Finish coats: Keep continuously moist for 2 days.

0621 WATERPROOFING – WET AREAS

1 GENERAL

1.1 STANDARDS

Wet areas

Waterproofing: To AS 3740.

2 PRODUCTS

2.1 PRODUCTS

Membranes

Standard: To AS/NZS 4858.

Membrane systems

Requirement: Provide a proprietary membrane system certified as suitable for the intended external waterproofing by the following:

- A current BRANZ Appraisal Certificate.

Shower tray

General: Purpose-made waterproof jointless shower tray, with wall upstands at least 50 mm higher than the hob upstands. Set hob masonry on the inside of the tray hob upstands.

3 EXECUTION

3.1 PREPARATION

Substrates

General: Provide substrates as follows:

- Clean and free of any deposit or finish which may impair adhesion of membranes.

- If walls or floors are framed or discontinuous, support members in full lengths without splicing.
- If floors are solid or continuous remove excessive projections and fill voids, hollows and cracks.

Moisture content

Concrete substrates: Cure for > 21 days.

Bond breakers

Requirement: After the priming of surfaces, provide bond breakers at all wall/floor, hob/wall junctions and at control joints where the membrane is bonded to the substrate.

3.2 APPLICATION

Protection

General: Protect membrane from damage during installation and for the period after installation until the membrane achieves its service characteristics that resist damage.

Extent of waterproofing

Waterproof or water resistant surfaces: To requirements of BCA clause 3.8.1.2.

Vertical membrane terminations

Upstands: At least 150 mm above the finished tile level of the floor or 25 mm above the maximum retained water level, whichever is the greater.

Anchoring: Secure sheet membranes along the top edge.

Edge protection: Protect edges of the membrane.

Waterproofing above terminations: Waterproof the structure above the termination to prevent moisture entry behind the membrane using tiler's angle and finish overlaps.

Drainage connections

Floor wastes: Turn membrane down 50 mm minimum into the floor waste drainage flanges and adhere to form a waterproof connection.

Enclosed showers with hobs

Internal membranes: Extend membrane over the hob and into the room at least 50 mm.

Unenclosed showers

Requirement: Extend membrane at least 1500 mm into the room from the shower rose outlet on the wall.

Membrane vertical penetrations

Pipes, ducts, and vents: Provide separate sleeves for all pipes, ducts, and vents and have fixed to the substrate.

Membrane horizontal penetrations

Sleeves: Provide a flexible flange for all penetrations, bonded to the penetration and to the membrane.

Curing of liquid applied systems

General: To the manufacturers instructions.

Curing: Allow membrane to fully cure before tiling. Make sure acrylic membranes are cured 7 days minimum before tiling over.

Overlaying finishes on membranes

Requirement: Protect waterproof membranes with compatible water-resistant surface materials that not cause damage to the membrane.

Bonded or partially bonded systems: If the topping or bedding mortar requires to be bonded to the membrane, provide control joints in the topping or bedding mortar to reduce the control over the membrane.

3.3 COMPLETION

Protection

General: Keep traffic off membrane surfaces until bonding has set or for 24 hours after laying, whichever period is the longer.

Reinstatement: Repair or replace faulty or damaged work.

0631 CERAMIC TILES

1 GENERAL

1.1 STANDARDS

Tiling

General: Comply with the recommendations of AS 3958.1 which are referenced in this worksection.

Slip resistance

Classification: To AS/NZS 4586.

2 PRODUCTS

2.1 MATERIALS

Adhesives

Standard: To AS 2358 and AS 4992.1.

PVA (polyvinyl acetate)-based adhesives: Do not use in wet areas or externally.

Mortar materials

Cement to AS 3972: GP.

Sand: Fine aggregate with a low clay content selected for grading, sharp and free from efflorescing salts.

Bedding mortar

Proportioning: Select proportions from the range 1:3 to 1:4 cement:sand by volume to obtain satisfactory adhesion. Provide minimum water.

Water

General: Clean and free from any deleterious matter.

Grout

Cement-based proprietary grout: Mix with water. Fine sand may be added as a filler in wider joints.

Terra cotta tiles: Proprietary polymer modified grout.

Pigments for coloured grout: Colourfast pigments compatible with the grout material. For cement-based grouts, provide lime-proof natural or synthetic metallic oxides compatible with cement.

3 EXECUTION

3.1 APPLICATION

Preparation of substrates

General: Ensure substrates are as follows:

- Clean and free of any deposit or finish which may impair adhesion or location of tiles.
- Compatible with all components of the floor system.

Floor finish dividers

General: Finish tiled floors at junctions with differing floor finishes with a corrosion-resistant metal dividing strip fixed to the substrate. If changes of floor finish occur at doorways, make the junction directly below the closed door.

Bath ventilation

Requirement: Ventilate the space below fully enclosed baths with at least 2 vermin proofed ventilating tiles.

Falls and levels

General: Grade floor tiling to even and correct falls generally and to floor wastes and elsewhere as required. Make level junctions with walls. If falls are not required, lay level.

Fall, general: 1:100 minimum.

Fall, in shower areas: 1:60 minimum.

Change of finish: Maintain finished floor level across changes of floor finish including carpet.

Sealant joints

General: Provide sealant joints filled with silicone sealant and finish flush with the tile surface where tiling joins sanitary fixtures and at internal corners of walls.

0651 RESILIENT FINISHES

1 PRODUCTS

1.1 MATERIALS

Wet processed fibreboard (hardboard) underlay

Standard: To AS/NZS 1859.4.

Classification: General purpose medium board, manufactured specifically as flooring underlay.

Thickness: 5.5 mm.

2 EXECUTION

2.1 GENERAL

Substrates

Cleaning concrete surfaces: Mechanically remove the following surface treatments:

- Sealers and hardeners.
- Curing compounds.

Cleaning timber surfaces: Remove oil, grease and traces of applied finishes.

Concrete substrate correction: Remove projections and fill voids and hollows with a levelling compound compatible with the adhesive.

Timber substrate correction: Remove projections. If conformance to a flatness tolerance of 3 mm in 3000 mm, determined using a 3000 mm straight edge placed anywhere in any direction can not be achieved, fix an underlay in brick pattern with joints avoiding substrate joints.

Fixtures: Remove door stops and other fixtures, and refix in position undamaged on completion of the installation.

2.2 SHEET AND TILE INSTALLATION

Sheet set out

General: Set out sheets to give the minimum number of joints. Run sheet joints parallel with the long sides of floor areas, vertically on non-horizontal surfaces.

Tile set out

General: Set out tiles from centre of room. If possible cut tiles at margins only, to give a cut dimension of at least 100 mm x full tile width. Match edges and align patterns. Arrange the material so that any variation in appearance is minimised.

Joints

Non-welded: Butt edges together to form tight neat joints showing no visible open seam.

Cold welding: Apply seaming compound 100 mm wide to the substrate centrally under the seam. Roll the seam until the compound is forced up into the joint. Clean off flush using a damp cloth.

Junctions

General: Scribe neatly up to returns, edges, fixtures and fittings. Finish flush with adjoining surfaces.

2.3 COMPLETION

Protection of sheet materials

General: Keep traffic off floors until bonding has set or for 24 hours after laying, whichever period is the longer. Do not allow water in contact with the finish for 7 days.

Reinstatement: Repair or replace faulty or damaged work. If the work cannot be repaired satisfactorily, replace the whole area affected.

Cleaning

General: Clean the finished surface. Buff and polish. Before the date for practical completion, mop and leave the finished surface clean and undamaged on completion.

0652 CARPETS

1 PRODUCTS

1.1 MATERIALS

Carpet

Minimum class: Residential Medium use under the Australian Carpet Classification Scheme.

Total VOC limit:

- Generally: 0.5 mg/m².
- Compliance: To the Environmental Classification Scheme operated by the Carpet Institute of Australia.

Wet processed fibreboard (hardboard) underlay

Standard: To AS/NZS 1859.4.

Classification: General purpose medium board, manufactured specifically as flooring underlay.

Thickness: 5.5 mm.

Soft underlay alternatives

Standard: To AS 4288.

Hot-melt adhesive tape

General: Glass fibre and cotton thermoplastic adhesive coated tape 60 mm wide on a 90 mm wide metal foil base and backed with silicon-coated release paper.

Preformed gripper strips

General: Domestic grade plywood carpet gripper strip with 3 rows of rust-resistant angled pins of length appropriate to the carpet type.

Edge strip

Location: At exposed edges of the carpet and at junctions with different floor finishes or finishes of different thickness. Where edge strips occur at doorways, locate the junctions directly below the closed door.

2 EXECUTION

2.1 GENERAL

Substrates

Cleaning concrete surfaces: Mechanically remove the following surface treatments:

- Sealers and hardeners.
- Curing compounds.

Cleaning timber surfaces: Remove oil, grease and traces of applied finishes.

Concrete substrate correction: Remove projections and fill voids and hollows with a levelling compound compatible with the adhesive.

Timber substrate correction: Remove projections. If conformance to the a flatness tolerance of 6 mm in 3000 mm, determined using a 3000 mm straight edge placed anywhere in any direction can not be achieved, fix

an underlay in brick pattern with joints avoiding substrate joints.

2.2 LAYING CARPET

Standard

General: To AS/NZS 2455.1.

0654 ENGINEERED PANEL FLOORS

1 PRODUCTS

1.1 MATERIALS

Flooring panels

General: Provide a proprietary flooring system.

Adhesive

Ventilation: Provide adequate ventilation appropriate for moisture curing.

Floating floor underlay

General: Provide a proprietary closed cell foam sheeting that is integral to the flooring system.

Acoustic underlay

General: Resilient underlay fixed with a compatible adhesive.

2 EXECUTION

2.1 GENERAL

Storage

General: Deliver panel flooring to site in unbroken wrapping or containers and store so that its moisture content is not adversely affected. Do not store on the substrate until the moisture content of the substrate is suitable for the installation of the floor. Do not store in areas with wet plaster.

Substrates

Cleaning concrete surfaces: Mechanically remove the following surface treatments:

- Sealers and hardeners.
- Curing compounds.

Concrete substrate correction: Remove projections and fill voids and hollows with a levelling compound compatible with the adhesive.

Existing timber flooring substrates: Remove cupping, rough material and surface finishes by basic sanding.

Flatness: Not greater than 3 mm. deviation of the surface under a 3 m straight edge laid in any direction with no abrupt variations greater than 1 mm over 250 mm.

2.2 LAYING

Trial set-out

General: Prepare a trial panel set-out to each area as follows to:

- Maximise the size of equal margins of cut panels.
- Locate control joints.

Control joints

General: Provide control joints as follows:

- Against vertical building elements: 12 mm wide cork filled.
- To divide floors into maximum dimensions of 6 m: 4 mm wide silicone sealant filled.

0655 TIMBER FLOORING

1 GENERAL

1.1 TOLERANCES

Tolerances

Maximum deviation of the finished floor surface: 3 mm under a 3 m straight edge laid in any direction.

2 PRODUCTS

2.1 GENERAL

Adhesive

Ventilation: Provide ventilation for moisture curing.

2.2 STRIP FLOORING

Recycled timber

Standard: To FWPA PN06.1039.

- Grading: To Section 5.

New timber

General: Conform to the Grading table.

Grading table

Product	Standard	Grade
Hardwood	AS 2796.2	High Feature Grade if available for the species selected, otherwise Select Grade.
Seasoned cypress pine	AS 1810	1
Softwood – pinus ssp	AS 4785.2	Appearance
Softwood – other	AS 4785.2	Select

3 EXECUTION

3.1 PREPARATION

Storage

General: Deliver timber flooring to site in unbroken wrapping or containers and store so that its moisture content is not adversely affected.

3.2 SUPPORT FIXING

Battens for strip flooring on steel joists

General: Screw fix seasoned battens along the steel joists with countersunk screws so that their top surfaces are aligned.

3.3 FLOOR FIXING

Adhesive

General: Use a urethane elastomer adhesive in addition to nails.

Nailing

General: Make sure the boards are in contact with the subfloor at the time of nailing, particularly where boards are machine nailed. Skew nail in a uniform pattern. If nails are to be less than 12 mm from ends of sheets or boards, pre-drill nail holes 0 – 1 mm undersize.

Secret nailing: Do not use boards of more than 85 mm cover width, and use one nail or staple skewed at 45°. Do not cramp more than one board at a time.

Sinking: Punch nails 3 mm below finished surfaces and fill the sinking flush with a material tinted to match the flooring which is compatible with the floor finish.

Top nailing: For boards more than 65 mm cover width, use two nails skewed 10 degrees in opposite directions. Do not cramp more than 800 mm width of boards at one time.

Control joints

Perimeters: Provide 12 mm wide joints against vertical building elements.

Floors under 6 x 6 m: Partially cramp strip flooring to allow a 1 mm gap every 600 mm or 1.5 mm every metre.

Floors over 6 x 6 m: Additionally, divide floors into maximum dimensions of 6 m with joints 4 mm wide filled with a flexible sealant compatible with the applied finish.

Strip flooring

Installation: Lay in straight and parallel lines with each board firmly butted to the next and firmly in contact with the subfloor. Cramp sufficient only to bring the boards together and no more than 800 mm of flooring at any one time.

Fixing to softwood joists, battens or underlay: Apply adhesive in addition to nailing.

3.4 COMPLETION

Protection

General: Provide protection as follows:

- Floors: With hardboard taped at all butt joints. Do not cover with sheet plastic.
- Stair treads: Full timber or plywood casing.

0656 FLOOR SANDING AND FINISHING

1 GENERAL

1.1 STANDARD

Floor sanding and finishing

General: To AS 4786.2.

0671 SANDING

Basic sanding – general

General: Remove irregularities caused by cupping or mismatching of the flooring materials, with a drum type sanding machine and coarse abrasives.

Basic sanding – strip flooring

General: First cut at 45° to the length of the boards, second cut at 90° to the first cut, and third cut parallel to the length of the boards.

Boundary areas: Bring to the same surface condition as the main sanded area, using disc sanding.

Inaccessible areas: Hand scrape to produce an even, plane surface.

Stopping and filling

General: Select a colour to produce an average match with the final coated timber in tone, colour and texture.

Fill minor cracks and stop punched nails with a putty knife.

Fill deeper holes in layers > 6 mm allowing each fill to dry. Make sure cavities are filled slightly above the surface without air pockets.

Flood fill porous timber with the cloth application of water based filler diluted to a creamy consistency.

Finish sanding – strip flooring

General: After basic sanding, cut twice parallel to the length of the boards using increasingly fine abrasives. If hard surfaces show excessive scratching apply an initial cut at 90° to the grain direction.

Boundary areas: Bring to the same surface condition as the main sanded area, using disc sanding.

Inaccessible areas: Hand scrape to produce the same surface condition as the main sanded area.

Water based coating system: Sand with a final grade of paper of minimum F220 screen back.

0671 PAINTING

1 GENERAL

1.1 STANDARD

Painting

General: In conformance with the recommendations of those parts of AS/NZS 2311 which are referenced in this worksection.

2 PRODUCTS

2.1 PAINTING MATERIAL

Low VOC emitting paints

VOC limits for low odour/low environmental impact paint types:

- Primers and undercoats: < 65 g/litre.
- Low gloss white or light coloured latex paints for wall areas: < 16 g/litre.
- Coloured low gloss latex paints: < 16 g/litre.
- Gloss latex paints for timber doors and trims: < 75 g/litre.

Combinations

General: Do not combine paints from different manufacturers in a paint system.

Clear timber finish systems: Provide only the combinations of putty, stain and sealer recommended by the manufacturer of the top coats.

Delivery

General: Deliver paints to the site in the manufacturer's labelled and unopened containers.

Putty and fillers

Material: To the recommendation of the paint system manufacturer as suitable for the substrate and compatible with the primer.

Tinting

General: Provide only products which are colour tinted by the manufacturer or supplier.

3 EXECUTION

3.1 PREPARATION

Order of work

Other trades: Before painting, complete the work of other trades as far as practicable within the area to be painted, except for installation of fittings, floor sanding and laying flooring materials.

Clear finishes: Complete clear timber finishes before commencing opaque paint finishes in the same area.

Protection

General: Before painting, clean the area and protect it against dust entry. Use drop sheets and masking to protect finished surfaces or other surfaces at risk of damage during painting.

Internal and external fixtures and furniture: Remove door furniture, switch plates, light fittings and other fixtures before starting to paint, and refix in position on completion of painting.

Adjacent surfaces: Protect adjacent finished surfaces liable to damage from painting operations.

Wet paint warning

General: Place notices conspicuously and do not remove them until the paint is dry.

Repair

General: Clean off marks, paint spots and stains progressively and restore damaged surfaces to their original condition. Touch up damaged new decorative paintwork or misses with the paint batch used in the original application.

Substrates

General: Prepare substrates to receive the painting systems.

Cleaning: Clean down the substrate surface. Do not cause undue damage to the substrate or damage to, or contamination of, the surroundings.

Filling: Fill cracks and holes with fillers, sealants, putties or grouting cements as appropriate for the finishing system and substrate, and sand smooth.

Clear finish: Provide filler tinted to match the substrate.

Clear timber finish systems: Prepare the surface so that its attributes will show through the clear finish without blemishes, by methods which may involve the following:

- Removal of bruises.
- Removal of discolourations, including staining by oil, grease and nailheads.
- Bleaching where necessary to match the timber colour sample.
- Puttying.
- Fine sanding (last abrasive no coarser than 220 grit) to show no scratches across the grain.

Standards

General: To AS/NZS 2311 Sections 3.

Protection of steelwork: To AS/NZS 2312 Sections 4.

Unpainted surfaces

Standard: To AS/NZS 2311 Section 3.

Previously painted surfaces

Standard: To AS/NZS 2311 Section 7.

3.2 PAINTING

Light levels

General: During preparation of surfaces, painting, and inspection, maintain light levels to ≥ 400 lux to allow close examination of the entire process.

Paint application

Standard: To AS/NZS 2311 Section 6.

Timing: Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Apply subsequent coats after the manufacturer's recommended drying period has elapsed.

Priming before fixing

General: Apply one coat of wood primer (2 coats to end grain) to the back of the following before fixing in position:

- External fascia boards.
- Timber door and window frames.
- Bottoms of external doors.
- Associated trims and glazing beads.
- Timber board cladding.

Spraying

General: If the paint application is by spraying, use conventional or airless equipment which does the following:

- Satisfactorily atomises the paint being applied.
- Does not require the paint to be thinned beyond the maximum amount recommended by the manufacturer.
- Does not introduce oil, water or other contaminants into the applied paint.

Paint with known health hazards: Not permitted on site.

Sanding

Clear finishes: Sand the sealer using the finest possible abrasive (no coarser than 320 grit) and avoid cutting through the colour. Take special care with round surfaces and edges.

Repair of galvanizing

General: For galvanized surfaces which have been subsequently welded, or which have been welded, prime the affected area.

Primer: Organic zinc rich coating for the protection of steel.

Services

General: If not embedded, paint new services and equipment, except chromium, anodised aluminium, GRP, UPVC, stainless steel, non-metallic flexible materials and normally lubricated machined surfaces. Repaint proprietary items only if damaged.

3.3 PAINT SYSTEMS

Paint system description

Generally: The paint system is referred to by its final coat.

Primers and undercoats: Provide primers and undercoats recommended by the manufacturer of the selected final coat as suitable for the substrate and the final coat.

Number of coats: Unless specified as one or two coat systems, each paint system consists of at least 3 coats.

Selection: Provide paint systems that conform to the Paint final coat table.

Paint final coat table

Final coat	Applicable Australian Standard
Interior	
Flat latex	AS 3730.1
Floor varnish – moisture cured	AS 3730.27
Floor varnish – two pack isocyanate cured	AS 3730.27
Low gloss latex	AS 3730.3
Semi gloss latex	AS 3730.2
Gloss latex	AS 3730.12
Exterior	
Full gloss solvent - borne	AS 3730.6
Flat latex	AS 3730.7
Low gloss latex	AS 3730.8
Gloss latex	AS 3730.10
Stain, lightly pigmented	AS 3730.28
Latex stain, opaque	AS 3730.16
Semi gloss latex	AS 3730.9
Paving	
Paving paint, semi gloss	AS 3730.29
Paving paint, gloss	AS 3730.29

0702 MECHANICAL DESIGN AND INSTALL

1 GENERAL

1.1 AIR CONDITIONING DESIGN

Design basis

Outside design conditions: Use outdoor design conditions listed in AIRAH DA09, Table 1 or Table 1A for the location geographically closest to the site and Comfort (or non-critical process) conditions.

Inside design conditions:

- Summer: 24°C dry bulb, 50% relative humidity.
- Winter: 21°C dry bulb.

Temperature variation: Limit the temperature difference in air conditioned spaces served by the same zone or system to 3°C as follows:

- Between any 2 points in the space from floor level to 1500 mm above floor level.
- > 2000 mm from cooking equipment and > 1000 mm from any other appliance.
- When outside conditions are in the range specified above.
- After the plant has been operating for one hour.
- With the temperatures measured in the same 5 minute period.

Zoning: Divide the systems into temperature controlled zones to meet the specified permissible temperature variation and documented system divisions.

Fresh air: Supply fresh air to spaces with air conditioning systems via the air handling system.

Heating: Reverse cycle.

Windows, walls, floors and roofs: Refer to the drawings for construction, insulation, window details, external and internal shading.

Ambient noise emitted: Lower than the level that can be heard within a habitable room in any neighbouring residential premises regardless of whether any door or window to that room is open.

2 PRODUCTS

2.1 COMPONENTS

Standards

Ducted air conditioners: To AS/NZS 3823.1.2.

Non-ducted air conditioners: To AS/NZS 3823.1.1.

Controls

General: Provide the following functions:

- Temperature control for each zone located to accurately sense zone temperature.
- Fan speed selection for multi and variable speed fans.
- Day/night zone changeover if scheduled.
- Time switch for each system with ≥ 6 temperature programs per day, separate programs for each day of the week, manual set point over ride and 'Vacation' temperature set back.

0802 HYDRAULIC DESIGN AND INSTALL

1 GENERAL

1.1 STANDARDS

General

Plumbing and drainage: To AS/NZS 3500.1, AS/NZS 3500.2, AS/NZS 3500.3, AS/NZS 3500.4, AS/NZS 3500.5 and the PCA.

2 EXECUTION

2.1 INSTALLATION

Connections to Network Utility Operator mains

General: Excavate to locate and expose the connection points and connect to the Network Utility Operator mains. On completion, backfill and compact the excavation and reinstate surfaces and elements which have been disturbed such as roads, pavements, kerbs, footpaths and nature strips.

Piping

Embedded pipes: Do not embed pipes that operate under pressure in concrete or surfacing material.

Concealment: If practicable, conceal piping and fittings requiring maintenance or servicing so that they are accessible within non-habitable enclosed spaces such as roof spaces, subfloor spaces and ducts. Keep pipelines in subfloor spaces at least 150 mm above ground and make sure access can be provided throughout for inspection.

Cover plates: If exposed piping emerges from wall, floor or ceiling finishes, provide cover plates of non-ferrous metal, finished to match the piping, or of stainless steel.

Pipe support materials: The same as the piping, or galvanized or non-ferrous metals, with bonded PVC-U or glass fibre woven tape sleeves where needed to separate dissimilar metals.

2.2 FINISHES

General

General: Finish exposed piping, including fittings and supports as follows:

- Internal locations such as toilet and kitchen areas: Bright chrome plate.
- Externally and steel piping or worn fittings internally: Paint.
- In concealed but accessible spaces (including cupboards and non-habitable enclosed spaces): Leave copper and plastic unpainted except for required identification marking. Prime steel piping and iron fittings.
- Valves: Finish valves to match connected piping.

2.3 COLD AND HEATED WATER

Water heaters

Location: Locate water heaters where they can be maintained or replaced without damaging adjacent structures, fixtures or finishes.

Tariff: Install so that the heating system qualifies for the tariff concession or subsidy offered by the statutory authority.

Heated water temperature

Standard: To AS/NZS 3500.4.

Solar and heat pump systems

General: Provide a proprietary automatic water heater comprising solar collector and storage container, with or without supplementary heating unit and including connections, controls and necessary fittings.

Standard: To AS/NZS 2712.

2.4 STORMWATER

Downpipe connections

General: Turn up drain branch pipelines to finish 50 mm above finished ground or pavement level.

Subsoil drains

Connection: Connect subsoil drains to the stormwater drainage system.

Trench width: Minimum 450 mm.

Subsoil drains: Provide proprietary perforated plastic pipe.

Filter fabric: Provide a polymeric fabric formed from a plastic yarn containing stabilisers or inhibitors to make the filaments resistant to deterioration due to ultraviolet light.

Filter sock: Provide a polyester permeable sock capable of retaining particles of 0.25 mm size. Securely fit or join the sock at each joint.

Pits

Cover levels: Locate the top of covers or gratings, including frames as follows:

- In paved areas: Flush with the paving surface.

- In landscaped areas: 25 mm above finished surface.
- Gratings taking surface water runoff: Set to receive the runoff without ponding.

2.5 WASTEWATER

Standards

General: To AS/NZS 3500.2 or AS/NZS 3500.5.

Cleaning

During construction: Use temporary covers to openings and keep the system free of debris.

On completion: Flush the system using water and leave it clean.

Septic tanks

Standard: To AS/NZS 1546.1.

Vent pipes

Staying to roof: If fixings for stays penetrate the roof covering, seal the penetrations and make watertight.

Terminations: Provide bird-proof vent cowls made of the same material and colour as the vent pipe.

2.6 RAINWATER TANKS

Standards

Metal tanks and rainwater goods: To AS/NZS 2179.1

Design and installation: To the recommendations of SAA HB 234

2.7 GAS

Standard

Reticulated gas systems: To AS/NZS 5601.1.

Buried pipes

Warning tape: During backfilling, lay plastic warning tape 300 mm above and for the full length of buried gas pipes.

Type: Minimum 100 mm wide, with 'GAS PIPE UNDER' marked continuously.

Commissioning

General: On completion of installation and testing, turn on isolating and control valves and purge and charge the installation.

0902 ELECTRICAL DESIGN AND INSTALL

1 GENERAL

1.1 STANDARD

Electrical installation: To AS/NZS 3008.1.1 and SAA HB 301.

Telecommunications cabling: To AS/ACIF S008, AS/ACIF S009, AS/NZS 3080, SAA HB 29 and SAA HB 252.

Domestic electricity meter enclosures: To AS 6002.

1.2 INTERPRETATION

Abbreviations:

General: For the purposes of this worksection the abbreviations given below apply:

- ED S&IR: The Electricity Distributor's Service and Installation Rules.
- RCD: Residual Current Device.

2 EXECUTION

2.1 GENERAL

Applications and compliance

General: Submit all necessary applications for electricity supply. Liaise with the electricity distributor and comply with the ED S&IR.

Consumers mains and metering

General: Provide consumers mains and connect them to the electricity distributor mains.

Switchboards

Standard: To AS/NZS 3439.3.

Construction: Enclosed type with a hinged lid. Provide circuit breakers and RCDs.

Location: Verify that the location selected is compliant before proceeding.

Maximum demand and spare capacity

General: Calculate the maximum demand of the installation in conformance with AS/NZS 3000 and provide a copy of the calculations.

Spare capacity: Provide the following:

- > 10% spare capacity in mains and submains.
- > 25% spare capacity in final subcircuits.

Spare spaces: Provide switchboards with ≥ 25% spare positions for future single phase circuit breakers.

Accessories

General: Provide accessories necessary for a complete installation including but not limited to switches, dimmers, socket outlets, and telecommunications outlets. All accessories located in close proximity to be of the same manufacture, size and material.

Mounting: Flush mount accessories to the wall (or ceiling) unless noted otherwise. Provide proprietary wall boxes in masonry and wall brackets in stud walls.

Wiring

Sequence of work: Install conduits and cables before the installation of wall and ceiling linings, and before any external landscaping works.

Installation: Do not penetrate damp proof courses. Arrange wiring such that it does not bridge the cavity in external masonry.

Minimum conduit diameter: 29 mm.

Conduits for future use: Provide a non-metallic drawstring having a breaking strain > 100 kg.

Luminaires

Standard: to AS/NZS 60598.1.

Non-specified luminaires: Provide a bayonet cap batten holder and lamp at each lighting point location where no luminaire is documented.

Minimum energy performance standards:

- General: To AS/NZS 4783.2 and AS/NZS 4782.2.
- Self ballasted lamps: To AS/NZS 4847.2.
- Incandescent lamps: To AS 4934.2.

Appliances

General: Provide final subcircuits and terminate at fixed appliances, hot water units, packaged air conditioning and other plant and equipment.

Telecommunications

General: Liaise with the telecommunication services carrier.

Installations requiring telephony only: To AS/ACIF S009.

Small office/home office installations: Category 6, to AS/ACIF S009 and AS/NZS ISO/IEC 15018 and in accordance with the recommendations of SAA HB 29.

Television systems

General: Provide an analogue and digital television distribution system to AS/NZS 1367 and conforming to the recommendations of Digital Broadcasting Australia.

Antennas: Provide and locate antennas to receive all locally available free-to-air television stations.

Network systems: Provide a coaxial cabling system suitable for satellite and cable network operators' services.

Intruder alarm system

Standard: To AS 2201.1.

Smoke detection

General: Provide smoke detectors to the requirements of the Building Code of Australia. Connect smoke detectors to mains power.

Labelling

General: Provide labels.

Telecommunications cables: Label telecommunications cables, cross connects and outlets in accordance with the requirements of AS/NZS 3080, and SAA HB 29.

2.2 COMPLETION

Testing and certification

Electrical installations: Test to AS/NZS 3017. Provide a certificate showing test results and certifying compliance with AS/NZS 3000.

Telecommunications cabling: To the recommendations of SAA HB 29. Provide a certificate showing test results and certifying compliance with AS/NZS ISO/IEC 15018.

Submission: Provide Telecommunications Cabling Advice (TCA1).

Television and audio systems: To AS/NZS 1367. Test the complete television and audio system. Provide a certificate showing test results and certifying compliance.

NATSPEC SIMPLE DOMESTIC SPECIFICATION

REFERENCED DOCUMENTS

AS/ACIF S008	2006	Requirements for authorised cabling products
AS/ACIF S009	2006	Installation Requirements for Customer Cabling (Wiring Rules)
AS/NZS 1080		Timber - Methods of test
AS/NZS 1080.1	1997	Moisture content
AS/NZS 1163	2009	Cold formed structural steel hollow sections
AS/NZS 1170		Structural design actions
AS/NZS 1170.1	2002	Permanent, imposed and other actions
AS 1214	1983	Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)
AS 1231	2000	Aluminium and aluminium alloys – Anodic oxidation coatings
AS 1288	2006	Glass in buildings – Selection and installation
AS 1366		Rigid cellular plastics sheets for thermal insulation
AS 1366.4	1989	Rigid cellular polystyrene – Extruded (RC/PS-E)
AS/NZS 1367	2007	Coaxial cable systems for the distribution of analogue television and sound signals in single and multiple unit installations
AS 1379	2007	Specification and supply of concrete
AS 1397	2011	Steel sheet and strip – Hot-dipped zinc-coated or aluminium/zinc-coated
AS/NZS 1546		On-site domestic wastewater treatment units
AS/NZS 1546.1	2008	Septic tanks
AS 1562		Design and installation of sheet roof and wall cladding
AS 1562.1	1992	Metal
AS 1562.3	2006	Plastic
AS 1604	Various	Specification for preservative treatment
AS 1657	1992	Fixed platforms, walkways, stairways and ladders – Design, construction and installation
AS 1672		Limes and limestones
AS 1672.1	1997	Limes for building
AS 1684		Residential timber-framed construction
AS 1684.2	2010	Non-cyclonic areas
AS 1684.3	2010	Cyclonic areas
AS 1684.4	2010	Simplified – Non-cyclonic areas
AS 1720		Timber structures
AS 1720.1	2010	Design methods
AS 1810	1995	Timber - Seasoned cypress pine - Milled products
AS/NZS 1859		Reconstituted wood-based panels – Specifications
AS/NZS 1859.1	2004	Particleboard
AS/NZS 1859.2	2004	Dry-processed fibreboard
AS/NZS 1859.3	2005	Decorative overlaid wood panels
AS/NZS 1859.4	2004	Wet-processed fibreboard
AS/NZS 1860		Particleboard flooring
AS/NZS 1860.1	2002	Specifications
AS 1860.2	2006	Installation
AS 1866	1997	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
AS 1926		Swimming poolsafety
AS 1926.1	2007	Fencing for swimming pools
AS 1926.2	2007	Location of fencing for private swimming pools
AS 2047	1999	Windows in buildings – Selection and installation
AS 2049	2002	Roof tiles
AS 2050	2002	Installation of roof tiles
AS 2082	2007	Timber - Hardwood - Visually stress-graded for structural purposes
AS/NZS 2098		Methods of test for veneer and plywood
AS/NZS 2098.11	2005	Determination of formaldehyde emissions for plywood
AS 2179		Specifications for rainwater goods, accessories and fasteners
AS 2179.1	1994	Metal shape or sheet rainwater goods, and metal accessories and fasteners
AS 2201		Intruder alarm systems
AS 2201.1	2007	Systems installed in client's premises
AS/NZS 2208	1996	Safety glazing materials in buildings
AS/NZS 2269	2004	Plywood – Structural
AS/NZS 2269.0	2008	Specs
AS/NZS 2270	2006	Plywood and blockboard for interior use
AS/NZS 2271	2004	Plywood and blockboard for exterior use
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
AS 2327		Composite structures
AS 2327.1	2003	Simply supported beams
AS 2358	1990	Adhesives – For fixing ceramic tiles
AS 2427	2004	Smoke/heat release vents
AS/NZS 2455		Textile floor coverings – Installation practice
AS/NZS 2455.1	2007	General
AS/NZS 2588	1998	Gypsum plasterboard
AS/NZS 2589	2007	Gypsum linings - Application and finishing
AS 2601	2001	The demolition of structures
AS 2665	2001	Smoke/heat venting systems- Design, installation and commissioning
AS/NZS 2699		Built in components for masonry construction

NATSPEC SIMPLE DOMESTIC SPECIFICATION

AS/NZS 2699.1	2000	Wall ties
AS/NZS 2699.3	2002	Lintels and shelf angles (durability requirements)
AS/NZS 2712	2007	Solar and heat pump water heaters - Design and construction
AS/NZS 2728	2007	Prefinished/prepainted sheet metal products for interior/exterior building applications – Performance requirements
AS 2796		Timber – Hardwood – Sawn and milled products
AS 2796.1	1999	Product Spec
AS 2796.2	2006	Grade description
AS 2796.3	1999	Timber for furniture components
AS 2820	1993	Gate units for private swimming pools
AS 2858	2008	Timber - Softwood - Visually graded for structural purposes
AS 2870	2011	Residential slabs and footings
AS/NZS 2904	1995	Damp-proof courses and flashings
AS/NZS 2908		Cellulose-cement products
AS/NZS 2908.2	2000	Flat sheets
AS/NZS 2924		High pressure decorative laminates – Sheets made from thermosetting resins
AS/NZS 2924.1	1998	Classification and specifications
AS/NZS 3000	2007	Wiring rules
AS/NZS 3008		Electrical installations – Selection of cables
AS/NZS 3008.1.1	2009	Cables for alternating voltages up to and including 0.6/1 kV – Typical Australian installation conditions
AS/NZS 3017	2007	Electrical installations – Testing and inspection guidelines
AS/NZS 3018	2001	Electrical installations – Domestic installations
AS/NZS 3080	2003	Telecommunications installations - Generic cabling for commercial premises (ISO/IEC 11801:2002, MOD)
AS 3439		Low-voltage switchgear and controlgear
AS 3439.3	2002	Particular requirements for low-voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access for their use – Distribution
AS/NZS 3500		Plumbing and Drainage
AS/NZS 3500.1	2003	Water services
AS/NZS 3500.2	2003	Sanitary plumbing and drainage
AS/NZS 3500.3	2003	Stormwater drainage
AS/NZS 3500.4	2003	Heated water services
AS/NZS 3500.5	2000	Domestic installations
AS 3566		Self-drilling screws for the building and construction industries
AS 3566.2	2002	Corrosion resistance requirements
AS 3600	2009	Concrete structures
AS 3610	1995	Formwork for concrete
AS 3610.1	2010	Documentation and surface finish
AS 3660		Termite management
AS 3660.1	2000	New buildings
AS 3700	2011	Masonry structures
AS 3715	2002	Metal finishing - Thermoset powder coatings for architectural applications of aluminium and aluminium alloys
AS 3727	1993	Guide to residential pavements
AS 3730		Guide to the properties of paints for buildings
AS 3730.1	2006	Latex - Interior - Flat
AS 3730.2	2006	Latex - Interior - Semi-gloss
AS 3730.3	2006	Latex - Interior - Low-gloss
AS 3730.6	2006	Solvent-borne - Exterior - Full gloss enamel
AS 3730.7	2006	Latex - Exterior - Flat
AS 3730.8	2006	Latex - Exterior - Low-gloss
AS 3730.9	2006	Latex - Exterior - Semi-gloss
AS 3730.10	2006	Latex - Exterior - Gloss
AS 3730.12	2006	Latex - Interior - Gloss
AS 3730.16	2006	Latex - Timber finish - Exterior
AS 3730.27	2006	Floor varnish - Two pack - Isocyanate cured
AS 3730.28	2006	Wood stain - Solvent-borne - Exterior
AS 3730.29	2006	Solvent-borne - Exterior/interior - Paving paint
AS 3740	2010	Waterproofing of domestic wet areas
AS 3798	2007	Guidelines on earthworks for commercial and residential developments
AS/NZS 3823		Performance of electrical appliances - Airconditioners and heat pumps
AS/NZS 3823.1.1	1998	Non-ducted airconditioners and heat pumps - Testing and rating for performance
AS/NZS 3823.1.2	2001	Test Methods - Ducted airconditioners and air-to-air heat pumps - Testing and rating for performance
AS 3958		Ceramic tiles
AS 3958.1	2007	Guide to the installation of ceramic tiles
AS 3959	2009	Construction of buildings in bushfire prone areas
AS 3972	2010	General purpose and blended cements
AS 3999	1992	Thermal insulation of dwellings – Bulk insulation – Installation requirements
AS 4100	1998	Steel structures
AS 4145		Locksets
AS 4145.2	2008	Mechanical locksets for doors in buildings
AS/NZS 4200		Pliable building materials and underlays

NATSPEC SIMPLE DOMESTIC SPECIFICATION

AS/NZS 4200.1	1994	Materials
AS/NZS 4200.2	1994	Installation requirements
AS 4256		Plastic roof and wall cladding materials
AS 4256.2	2006	Unplasticized polyvinyl chloride (uPVC) building sheets
AS 4256.3	2006	Glass fibre reinforced polyester (GRP)
AS 4256.4	2006	Unplasticized polyvinyl chloride (uPVC) wall cladding boards
AS 4256.5	2006	Polycarbonate
AS/NZS 4266		Reconstituted wood-based panels - Methods of test
AS/NZS 4266.16	2004	Formaldehyde emission - Dessicator method
AS 4285	2007	Skylights
AS 4288	2003	Soft underlays for textile floor coverings
AS/NZS 4386		Domestic kitchen assemblies
AS/NZS 4386.1	1996	Kitchen units
AS 4419	2003	Soils for landscaping and garden use
AS 4454	2012	Composts, soil conditioners and mulches
AS/NZS 4455		Masonry units, pavers, flags and segmental retaining wall unit
AS/NZS 4455.1	2008	Masonry units
AS/NZS 4455.3	2008	Segmental retaining wall units
AS/NZS 4505	1998	Domestic garage doors
AS/NZS 4586	2004	Slip resistance classification of new pedestrian surface materials
AS/NZS 4600	2005	Cold-formed steel structures
AS/NZS 4680	2006	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS 4773		Masonry in small buildings
AS 4773.1	2010	Design
AS 4773.2	2010	Construction
AS/NZS 4782		Double-capped fluorescent lamps - Performance specifications
AS/NZS 4782.2	2004	Minimum Energy Performance Standard (MEPS)
AS/NZS 4783		Performance of electrical lighting equipment - Ballasts for fluorescent lamps
AS/NZS 4783.2	2002	Energy labelling and minimum energy performance standards requirements
AS 4785		Timber - Softwood - Sawn and milled products
AS 4785.1	2002	Product Spec
AS 4785.2	2002	Grade description
AS 4785.3	2002	Timber for furniture components
AS 4786		Timber flooring
AS 4786.2	2005	Sanding and finishing
AS/NZS 4847		Self-ballasted lamps for general lighting services
AS/NZS 4847.2	2010	Minimum Energy Performance Standards (MEPS) requirements
AS/NZS 4858	2004	Wet area membranes
AS/NZS 4859		Materials for the thermal insulation of buildings
AS/NZS 4859.1	2002	General criteria and technical provisions
AS/NZS 4934		Incandescent lamps for general lighting service - Test methods
AS/4934.2	2011	Minimum Energy Performance Standard (MEPS) requirements
AS 4992		Ceramic tiles - Grouts and adhesives
AS 4992.1	2006	Terms, definitions and specifications for adhesives
AS 5039	2008	Security screen doors and security window grilles
AS 5040	2003	Installation of security screen doors and window grilles
AS 5067	2003	Timber - Non-structural glued laminated - Performance and production requirements
AS/NZS 5601		Gas installation
AS/NZS 5601.1	2010	General installations
AS 5604	2005	Timber - Natural durability ratings
AS 6002	1999	Domestic electric meter enclosures
AS/NZS ISO/IEC 15018	2005	Information technology - Generic cabling for homes
AS/NZS 60598		Luminaires
AS/NZS 60598.1	2003	General requirements and tests
SAA HB 28	1997	The design of residential slabs and footings
SAA HB 29	2007	Communications Cabling Manual, Module 2: Communications Cabling Handbook
SAA HB 109	1998	Footings for reinforced masonry houses
SAA HB 230	2008	Rainwater tank design and installation handbook
SAA HB 252	2007	Communications Cabling Manual, Module 3: Residential communications cabling handbook
SAA HB 301	2001	Electrical installations - designing to the Wiring Rules
SAA HB 330	2009	Living in bushfire-prone areas
AIRAH DA09	1998	Load estimation and psychrometrics
BCA	2.6	Energy efficiency
BCA	3.1.2.0	Acceptable construction - Site preparation - Drainage - Acceptable construction manual
BCA	3.1.2.3	Acceptable construction - Site preparation - Drainage - Surface water drainage
BCA	3.2.2	Acceptable construction - Footings and slabs - Preparation
BCA	3.2.4	Acceptable construction - Footings and slabs - Site classification
BCA	3.3.4	Weatherproofing of masonry
BCA	3.4.1	Acceptable construction - Framing - Sub-floor ventilation
BCA	Table 3.4.1.2	Acceptable construction - Framing - Sub-floor ventilation - Sub-floor ventilation and clearance
BCA Table 3.5.1.1a		Acceptable corrosion protection for sheet roofing
BCA	3.7.1.10	Roof lights
BCA	3.7.2	Acceptable solutions - Fire safety - Smoke alarms
BCA	3.8.1.2	Acceptable construction - Health and amenity - Wet areas

NATSPEC SIMPLE DOMESTIC SPECIFICATION

BCA	3.9.1	Acceptable construction - Safe movement and access - Stair construction - General requirements
BCA	3.9.2	Acceptable construction - Safe movement and access - Balustrades
BCA	Fig 3.10.1.4	Acceptable construction - Additional construction requirements - High wind areas - Cyclonic areas
BCA	3.12	Acceptable construction - Energy efficiency
BCA	3.12.1.3	Acceptable construction - Energy efficiency - Building fabric - Roof lights
BCA	3.12.1.4	Acceptable construction - Energy efficiency - Building fabric -
BCA	3.12.2	Acceptable construction - Energy efficiency - External glazing
BCA	3.12.3	Acceptable construction - Energy efficiency - Building sealing
NASH 1	2005	Residential and low-rise steel framing
NOHSC 2002	2005	Asbestos Code of Practice for the safe removal of Asbestos [NOHSC:2002 (1988)] 2nd edition
PCA	2012	Plumbing Code of Australia

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Palm Beach NSW 2108

CORPORATE INFORMATION

NATSPEC is the trading name of Construction Information Systems Limited, ABN 20 117 574 606.

NATSPEC, founded in 1975, is a not-for-profit organisation that is owned by the design, build, construct and property industry through professional associations and government property groups. It is impartial and is not involved in advocacy or policy development.

NATSPEC's major service is the provision of the comprehensive national specification systems endorsed by government and professional bodies. NATSPEC's National Building Specification is for all building structures, with specialist packages for architects, interior designers, landscape architects, structural engineers, service engineers and domestic owners. AUSSPEC is the Local Government specification system for the life-cycle management of assets. Packages include Urban and Open Spaces, Roadworks and Bridges, Public Utilities, and Maintenance.

NATSPEC's objective is to improve the quality of construction in Australia through its up-to-date services and via the provision of information, tools, products and other services.

STAKEHOLDERS

- // Air Conditioning and Mechanical Contractors Association of Australia
- // Australian Council of Building Environment Design Professions
- // Australian Elevator Association
- // Australian Institute of Architects
- // Australian Institute of Building
- // Australian Institute of Building Services Engineers
- // Australian Institute of Quantity Surveyors
- // Building Commission Victoria
- // Construction Industry Engineering Services Group
- // Consult Australia
- // Department of Construction and Infrastructure (NT)
- // Department of Finance and Deregulation (Federal)
- // Department of Finance and Services (NSW)
- // Department of Finance (WA)
- // Department of Planning, Transport and Infrastructure (SA)
- // Department of Public Works (QLD)
- // Department of Treasury (ACT)
- // Department of Treasury and Finance (TAS)
- // Engineers Australia
- // Master Builders Australia
- // Standards Australia

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NATSPEC//

BASIX Certificate

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

Alterations and Additions

Certificate number A111888

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 29/8/2006 published by Department of Planning. This document is available at www.basix.nsw.gov.au

Director General
Date of issue: Wednesday 04 May 2011



Project address	
Project name	Graham & Susie Hurst
Street address	5 Northview Road Palm Beach 2108
Local Government Area	Pittwater Council
Plan type and number	Deposited Plan 584676
Lot number	2
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 includes a pool (and/or spa)

This plan/document forms part of the
Approved Construction Certificate

2013 / 00291

As issued by Fitzroyland Building Certifiers Pty

Pool and Spa		Show on EA Plans	Show on C/CADD Plans & Specs	Complet Check
Rainwater tank				
The applicant must install a rainwater tank of at least 1079 litres on the site. This rainwater tank must meet, and be installed in accordance with, the requirements of all applicable regulatory authorities.		✓	✓	✓
The applicant must configure the rainwater tank to collect rainwater runoff from at least 200 square metres of roof area.			✓	✓
The applicant must connect the rainwater tank to a tap located within 10 metres of the edge of the pool.			✓	✓
Outdoor swimming pool				
The swimming pool must be outdoors.		✓	✓	✓
The swimming pool must not have a capacity greater than 45 kilolitres.		✓	✓	✓
The swimming pool must have a pool cover.			✓	✓
The applicant must install a pool pump timer for the swimming pool.			✓	✓
The applicant must install the following heating system for the swimming pool that is part of this development: solar (gas boosted).			✓	✓

Fixtures and systems		Shower on CA Plans	Shower on GCC/DCD Plans & spec	Contract Check
Hot water		✓	✓	✓
The applicant must install the following hot water system in the development gas instantaneous				
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
EA Plans

Show on
CC/CD/DC
Plans

Specs

Certifier
Check

Insulation requirements

The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m², b) insulation specified is not required for parts of altered construction where insulation already exists

Construction	Additional insulation required (R value)	Other specifications			
suspended floor with open subfloor framed (R0.7)	R0.8 (down) (or R1.60 including construction)				
suspended floor with enclosed subfloor framed (R0.7)	R0.60 (down) (or R1.30 including construction)				
external wall brick veneer	R1.16 (or R1.70 including construction)				
external wall framed (weatherboard fibro, metal clad)	R1.30 (or R1.70 including construction)				
flat ceiling pitched roof	ceiling R1.95 (up), roof foil backed blanket (55 mm)	dark (solar absorbance > 0.70)			
raked ceiling pitched/skillion roof framed	ceiling R2.24 (up), roof foil backed blanket (55 mm)	dark (solar absorbance > 0.70)			

Glazing requirements

Show on
DA Plans

Section
CCQDD
Plans &
Specs

Checker
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 600 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 60 mm

Windows and glazed doors glazing requirements

Window / door no.	Orientation	Area of glass (m ²)	Overshadowing height (m)	Distance (m)	Shading device	Frame and glass type			
W1	S	3.8	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.68)			
W2	S	1.08	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.68)			
W3	S	3.15	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71 SHGC 0.68)			
W4	W	3.6	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.68)			
W5	W	8.64	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.68)			

Glazing requirements

Show on
DA Plans
Specs

Show on
CCO/CDO
Plans &
Specs

Can't see
Check

Window / Glazing element (m ²)	Area of glazing (m ²)	Depth (mm)	Thickness (mm)	Glazing type	Frame (m ²)	Glazing type
W6	16.8	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 6.71, SHGC 0.66)	
W7	14.4	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 5.71, SHGC 0.66)	
W8	6	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 6.71, SHGC 0.66)	
W9	3.6	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 5.71, SHGC 0.66)	
W10	3.6	0	0	eave/verandah/pergola/balcony >=450 mm	timber or uPVC, single toned, (or U-value 5.67, SHGC 0.49)	
W11	3.6	0	0	eave/verandah/pergola/balcony >=450 mm	timber or uPVC, single toned, (or U-value 5.67, SHGC 0.49)	
W12	3.6	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 5.71, SHGC 0.66)	
W13	3.6	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 5.71, SHGC 0.66)	
W14	3.6	0	0	eave/verandah/pergola/balcony >=450 mm	timber or uPVC, single toned, (or U-value 5.67, SHGC 0.49)	
W15	3.6	0	0	eave/verandah/pergola/balcony >=450 mm	timber or uPVC, single toned, (or U-value 5.67, SHGC 0.49)	
W16	3.6	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 5.71, SHGC 0.66)	
W17	3.15	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 5.71, SHGC 0.66)	
W18	4.2	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear, (or U-value 5.71, SHGC 0.66)	

Glazing requirements

Show on
DA Plans

Show on
CCX/EDS
Plans &
Specs

Certifier
Check

Window Label	Orientation	Area of glass m ²	Height (m)	Distance (m)	Shading device	Frame and glass type
W19	W	6.3	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.66)
W20	N	1.2	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.66)
W21	N	1.2	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.66)
W22	N	1.8	0	0	eave/verandah/pergola/balcony >=800 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.66)
W23	N	1.2	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.66)
W24	N	1.44	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear (or U-value 5.71, SHGC 0.66)

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.