insight building certifiers pty ltd

10 February 2011

General Manager
Manly Council
1 Belgrave Street
MANLY 2095

Dear Sir,

Development Application No. 358/09
158 Condamine Street, Balgowlah

For Council's information, please find enclosed Construction Certificate No. 2011/4167 issued for alterations & additions to an existing semi-detached dwelling at the above address, accompanied by:

- Copy of Construction Certificate application form
- Notice of Commencement of Work and Appointment of Principal Certifying Authority
- Home Warranty Insurance Certificate
- Cheque for $30.00 being the prescribed fee to receive the above certificate.

NB: Please forward receipt for the above fee to **Insight Building Certifiers Pty Ltd, PO Box 326, Mona Vale 1660.**

Yours faithfully

Stephen Pinn
Insight Building Certifiers Pty Ltd

$30.00
C/N 753888

Suite 13/90 Mona Vale Road Mona Vale NSW 2103 PO Box 326 Mona Vale NSW 1660 **ph: 9999 0003** fax: 9979 1555
email: info@insightcert.com.au **web:** www.insightbuildingcertifiers.com.au **ABN** 54 115 090 456

insight building certifiers pty ltd

Construction Certificate
Determination

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

Certificate No. 2011/4167

Council	Manly
Determination	Approved
Date of issue	10 February 2011
Subject land	
Address	158 Condamine Street, Balgowlah
Lot No, DP No.	Lot 150 DP 1117653
Applicant	
Name	Mrs Emmalee Pepar
Address	158 Condamine Street, Balgowlah NSW 2093
Contact No.	0416 213 112
Owner	
Name	Mr Andrew & Mrs Emmalee Pepar
Address	158 Condamine Street, Balgowlah NSW 2093
Contact No.	0416 213 112
Description of Development	
Type of Work	Alterations & Additions to an Existing Semi-Detached Dwelling including First Floor Addition
Builder or Owner/Builder	
Name	PN & JE Shaw
Contractor Licence No/Permit	197691C
Value of Work	
Building	$200,000.00

Attachments

- Copy of completed Construction Certificate Application Form
- Manly Council receipt no's. 00750134 & 00751256 for payment of Long Service Levy & Security Deposit
- BASIX Certificate no. A59192 dated 23 November 2009
- Dilapidation Report (Council Assets) dated 16 January 2011

COUNCIL COPY

Suite 13/90 Mona Vale Road Mona Vale NSW 2103 PO Box 326 Mona Vale NSW 1660 **ph: 9999 0003** fax: 9979 1555
email: info@insightcert.com.au **web:** www.insightbuildingcertifiers.com.au **ABN** 54 115 090 456

Plans & Specifications certified

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

- **Architectural Plans, Construction Specification, sediment/erosion control & waste management plan & details reference no.0208 dwg no's CC01,CC02 & CC03 RevA dated 01/11 prepared by Jaggers Kirkham Architects Pty Ltd.**
- **Structural Plans & Details, reference no.MX0152 Dwg No's S1-00,S2-00,S3-00 & S4-00 RevA dated 26/11/2010 prepared by Simpson Design Associates Pty Ltd.**
- **Sydney Water approval dated 13 May 2010**
- **Statement of existing structural adequacy Ref:MX0152 prepared by Simpson Design Associates Pty Ltd dated 12 January 2011.**
- **Waste Management Plan ref:358/09 prepared by Emmalee Pepar dated 17 January 2011.**
- **Stormwater Plans & details Ref:SCP H01 prepared by Hydraulic Design Group dated May 2009 & Compliance Certificate Ref:D 450795 dated 15/6/09 prepared by Mark Holmes.**

Certificate

I hereby certify that the above Plans, documents or Certificates, satisfy:

- The relevant provisions of the Building Code of Australia
- The relevant conditions of this Development Consent

and that work completed in accordance with the documentation accompanying the application for this Certificate (and any modifications as verified by me and shown on that documentation) will comply with the requirements of the Environmental Planning & Assessment Regulation referred to in Section 81A(5) of the Environmental Planning & Assessment Act, 1979.

Signed .....

Date of endorsement 10 FEB 2011

Certificate No. **2011/4167**

Certifying Authority

Name of Accredited Certifier	Stephen Pinn
Accreditation No.	BPB0326
Accreditation Authority	Building Professionals Board
Contact No.	(02) 9999 0003
Address	13/90 Mona Vale Road, Mona Vale NSW 2103

Development Consent

Development Application No.	**358/09**
Date of Determination	**8 March 2010**

BCA Classification **1a**

ABN #:43662858065
Manly Council
PO Box 82
MANLY NSW 1655
Ph 9976 1500 Fax 9976 1400
Email: records@manly.nsw.gov.au
Website: www.manly.nsw.gov.au

Date 28/01/2011 09:44
Receipt 00750134:0001 Terminal 3:535
A & E Pepar

Details	Amount
Long Service Levy 008000.9200.8079 156 Condamine st	522.00
Builders Deposits - 010.2009.00000358.001 156 Condamine st	5000.00
Total Value:	5522.00
Tendered	
Cheque	5522.00
Change	0.00

Thank you for Prompt Payment

THIS DOCUMENT IS NOT AN AUTHORITY TO COMMENCE ANY BUILDING WORKS - NO BUILDING WORK MAY TAKE PLACE UNLESS A CONSTRUCTION CERTIFICATE AND REQUIRED PCA STATUTORY NOTICES HAVE BEEN ISSUED AND RECEIVED.

OWNER'S ACCEPTANCE OF SERVICE AGREEMENT / APPOINTMENT OF PCA

Proposed Building Works:

ALTERATIONS + ADDITIONS TO EXISTING SINGLE STOREY SEMI-DETACHED DWELLING

Council DA No:

358/09

Property Address:

158 CONDAMINE STREET BALGOWLAH NSW 2093

In accordance with the *Terms and Conditions* contained herein, and the issued Fee Proposal document, I hereby agree to this Service Agreement with **Insight Building Certifiers Pty Ltd**, including the associated payment of fees. In accordance with the Act and Regulations, I hereby make application to appoint as the Principal Certifying Authority ('the PCA') for the proposed building works under the subject development consent, concluding upon the issuing of the Final Occupation Certificate or upon termination of this agreement. I acknowledge that **Insight Building Certifiers Pty Ltd** is not the PCA until it has accepted and confirmed its appointment to me in writing.

Owner's Name: Andrew + Emmalee Pepar

Owner's Address: 158 Condamine St Balgowlah 2093, NSW

Owner's Signature: A Pepar E Pepar

ACCREDITED CERTIFIER'S ACCEPTANCE OF SERVICE AGREEMENT

I hereby agree to provide the nominated services detailed in this Service Agreement and the issued Fee Proposal, subject to the terms and conditions attached.

Insight Building Certifiers Pty Ltd
Accredited Certifier No. BPB0326 (Building Professionals Board)

Date: 10 Feb 2011

Suite 11/20 Mona Vale Road Mona Vale NSW 2103 PO Box 326 Mona Vale NSW 1660 ph: 9999 0008 fax 9979 1555

INsight building certifiers pty ltd

NOTICE OF COMMENCEMENT OF BUILDING WORK AND APPOINTMENT OF PRINCIPAL CERTIFYING AUTHORITY (PCA)

1. Subject land details

No. 158 Lot No. 150 DP No. 1117653

Street Name: CONDAMINE STREET Suburb: BALGOWLAH Post Code: 2093

Description of Approved Development

ALTERATIONS + ADDITIONS TO SINGLE STOREY SEMI-DETACHED DWELLING

2. Other consent(s)

Council DA ✓ or Complying Development Consent No. 358/09 Date of Determination 16/02/10

3. Construction Certificate or Complying Development Certificate details

Certificate No. 2011 / 4467 Date of Issue 10 Feb 2011

4. Principal Certifying Authority details

Accredited Certifier: [redacted] Accreditation No: [redacted]
Accredited Certifier: Stephen Pinn Accreditation No: BPB0326

5. Home Building Act 1989 requirements

Has the Principal Certifying Authority been provided with a copy of the Home Warranty Insurance Certificate under Part 6 of the Home Building Act 1989?

Yes ✓ No

6. Date building work is to commence

Date 15th February 2011

7. Builder's details

Builder's Name: Phil + Jacqui Shaw Builders Licence No. 197691C

Address: 18 Elvina Ave, Avalon NSW 2107 Telephone No. 0410 313 907

8. Applicant's declaration & signature

I/We are the persons having the benefit of the Development Consent or Complying Development Certificate for the proposed building works. I/we confirm that I/we am/are not the principal building contractor(s) for this project.

Have all conditions been satisfied prior to the commencement of work?

Yes ✓ No

(Conditions may include payment of security deposits, Section 94 Contributions, endorsement of building work plans by Water Supply Authority, LSL Contributions)

Name: Emmalee Pepar Date: 18/1/2011

Signature(s): E Pepar

COUNCIL COPY

Home Warranty
Insurance
Certificate of Insurance

Policy Number
BN-0028603-BWI-4

Home Warranty
Insurance Fund

Level 3, 85 Harrington St
SYDNEY NSW 2000
Phone 1300790 723
Fax 02 8275 9330
ABN: 78 003 191 035
AFS License No. 239545

QBE

EMMALEE & ANDREW PEPAR
158 CONDAMINE ST
BALGOWLAH NSW 2093

Name of Intermediary
MBA INSURANCE SERVICES
PTY LTD

Account Number
BN-0004023

Date Issued: 25/01/2011

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	158 CONDAMINE STREET BALGOWLAH NSW 2093
Carried Out By	BUILDER PN & JE SHAW ABN: 28 353 563 941
Declared Contract Price	$200,000.00
Contract Date	31/01/2011
Builders Registration No.	U 197691C
Building Owner / Beneficiary	EMMALEE & ANDREW PEPAR

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

IMPORTANT NOTICE:
This Certificate must be read in conjunction with the Policy Wording and kept in a safe place.
These documents are very important and must be retained by you and any successive owners of the property for the duration of the statutory period of cover.

QM277 - 09:9

NEW SOUTH WALES

LICENSEE'S CERTIFICATE OF COMPLIANCE

- for Plumbing and Drainage Work

Owner's Cop

Serial No D 450795

Please supply requested information fully and neatly to ensure the prompt issue of the permit.

PROPERTY & OWNER DETAILS

House No	Lot No	Street	Suburb
158		Condamine St	Balgowlah

Municipality	Postcode	Nearest Cross Street
Manly	2093	

Owner's Name	Full Address
A & E Pepar	As Above

LICENSEE'S DETAILS

Full Name	Address for Notices	Phone No.
Marc Hughes	63 [illegible] Rd Newport 2106	04-[illegible]

Licence No.	Expiry Date	Contractors Authority No.	Expiry Date
L4866	25.12.10	A3484	24.6.09

WORK OF WATER SUPPLY / METER DETAILS

Size of Drilling/No.	Size of Pipework Main to Meter		Main Size-Size of Tee to be cut into Main	Size of Valve
		OR		

Reference No.	Size of Meter	Meter No.	Drilling Date/Time	Office Issued From
			/ /	

Full Description of Work/Affixed Meter or Return Meter and List the Number of Fittings to be Connected:

- Carry out work of Water supply ☐
- Install/Commission/Maintenance of Thermostatic Mixing Valve ☐
- Draw water from Water Authorities Supply, stand pipe or sell water so drawn ☐
- Install, alter disconnect or remove a meter connected to service pipe ☐
- Install, alter disconnect or remove a backflow prevention device ☐

Fittings to be Connected	Number Existing	Number Proposed
W.C		
Basin		
Bath		
Shower		
Kitchen		
Laundry		
Other		

WORK OF SANITARY PLUMBING/DRAINAGE AND STORMWATER

Give Full Description of Work and List The Number of Fittings to be Connected

- Carry out work of sanitary plumbing/drainage ☑
- Carry out work of Stormwater drainage ☐
- Connection to Sewer ☐
- Connection to stormwater system ☐

Fittings to be Connected	Number Existing	Number Proposed
W.C		
Basin		
Bath		
Shower		
Kitchen		
Laundry		
Other (Specify)		

SEWERAGE/WATER SERVICE INSPECTION FEE

Date Fee Paid	Amount	Receipt No.	Building Fee	Receipt No.
11.5.09	$ 15.00	2539294	$	

Authorising Officer	Office	Drainage No./Date
/ /	[illegible] Vale	75267

Date of Commencement of Work	Estimated Date of Completion	Signature of Licensee
12.6.09	15.6.09	[signature] 11.6.09

1. In respect of authorised work carried out by me at the abovementioned property I certify that:
   - (i) The work has been completed in accordance with the Permit issued, or deemed given by the Local Authority;
   - (ii) The work has been installed using only authorised pipes, fittings and fixtures;
   - (iii) The completed work has been tested as required by the Local Authority and has passed such tests;
   - (iv) In my opinion the work complies with the relevant Local authorities Act, Regulations, By-Laws and Codes of Practice;
   - (v) Meter No ______________ that was fixed.
   - (vi) The work was completed on / /
2. If any defect is found in the work carried out by me within a period of twelve (12) months or within the time specified by Local Authorities from the date of completion, and the Local Authorities Inspector for Plumbing and Drainage certifies that in his opinion the defect is due to faulty workmanship or defective materials, then I undertake to rectify such work at my sole expense, if so directed by the Local Authorities Inspector/or any time specified by the Local Authority.

This copy is to be forwarded to the Owner/Agent within 2 working days of being completed.

Signature of Licensee [signature] 15.6.09

COUNCIL COPY

COMMONWEALTH BANK
EFTPOS
MANLY COUNCIL
MANLY NSW
TERMINAL: 12736300
REFERENCE: 004008 00

CUSTOMER COPY

CARD NO: 8875(1)
PAN SEQ NO: 01
EXPIRY DATE:
AID: A0000000041010
VR: 0000008000
SI: E800
TC: 00047
TC: 763A1BFF76D2E379
[redacted]
PURCHASE $178.00
TOTAL AUD $178.00

1 FEB 2011 12:27
MasterCard
AUTH NO.: R48819

APPROVED 00

1 3:350

Amount

178.00

178.00

178.00
0.00

Balgowlah DA 358/09.

you that the cost of this
from $149,000 to $200,000.
by my builder, Phil Shaw.

$522.00 R/N 750134 paid 28/1/11.

Additional 178.00 R/N 751256 paid 1/2/11.

700.00 (R/N 751256 1/2/11 $178.)
required.

Yours faithfully,

Signature

FROM:

Surname: PEPAN Given Names: ANDREW

Address: 158 Condamine St Balgowlah

Postcode: 2093

Phone (daytime): Mobile: 0404 585 328

COUNCIL COPY

FORM NAME: CSC - GENERAL LETTER

LONG SERVICE LEVY (applies to all classes of buildings)

A Long Service Levy at 0.35% of the cost of works is payable on projects valued $25,000 or more. This sum can be paid directly to the Long Service Payments Corporation or to Council acting as an agent to the Corporation. Partial exemption from the levy may be granted to non profit organizations, churches and to owner/builders. The levy may also be paid in instalments. Application forms for these exemptions are available from Council but all enquiries in this regard should be address to the Long Service Payments Corporation.

THE CONSTRUCTION CERTIFICATION CANNOT BE ISSUED UNLESS THE LONG SERVBICE LEVY AND HOME BUILDING ACT 1989 INSURANCE (APPLICABLE TO RESIDENTIAL PROPERTIES) HAVE BEEN PAID, OR EVIDENCE OF THE EXEMPTION PROVIDED TO COUNCIL.

PARTICULARS OF THE PROPOSAL

What is the area of the land (m^2)? 315m²	Gross floor area of building (m^2) as proposed: 153m²
What are the current uses of all or parts of the building(s)/land? Dwelling House	Location: 2ND STOREY Use: 2 BEDROOMS + BATHROOM
Does the site contain a dual occupancy? No	What is the gross floor area of the proposed addition or new building (sq metres)? 50m²
What are the proposed uses of all parts of the building(s) land? Residential, DWELLING HOUSE	Number of pre-existing dwellings: 1
Number of dwellings to be demolished: 0	How many dwellings proposed? 1
How many storeys will the building consist of? 2	Will the new building be attached to the existing building? YES Will the new building be attached to any new building? YES, SEMI-DETACHED

MATERIALS TO BE USED

The following information must be supplied for the Australian Bureau of Statistics:

Place a tick (√) in the box which best describes the materials the new work will be constructed of:

WALLS		FLOOR		ROOF		FRAME	
Brick veneer	[ ]	Concrete	[ ]	Aluminium	[ ]	Timber	[√]
Full brick	[ ]	Timber	[√]	Concrete		Steel	[ ]
Single brick	[ ]	Other	[ ]	Concrete tile	[ ]	Other	[ ]
Concrete block	[ ]	Unknown	[ ]	Fibrous cement	[ ]	Unknown	[ ]
Concrete/masonry	[ ]			Fibreglass	[ ]		
Concrete	[ ]			Masonry/terracotta shingle	[ ]		
Steel	[ ]			Tiles	[ ]		
Fibrous cement	[ ]			Slate	[ ]		
Hardiplank	[ ]			Steel	[ ]		
Timber/weatherboard	[√]			Terracotta tile	[ ]		
Cladding-aluminium	[ ]			Other	[ ]		
Curtain glass	[ ]			Unknown	[ ]		
Other	[ ]						
Unknown	[ ]						

insight building certifiers pty ltd

APPLICATION FOR A CONSTRUCTION CERTIFICATE

Construction Certificate [X]

Modified Construction Certificate [ ]

02 FEB 20..

1. Applicant's details

It is important that we are able to contact you if we need more information. Please give us as much details as possible

Mr [ ] Mrs [✓] Ms [ ] Dr [ ] Other

Given Names (or ACN)	Family Name (or Company)
Emmalee	Pepar

Postal Address (we will post all mail to this address)

158 Condamine St, BALGOWLAH

Post Code 2093

Daytime telephone	Alternate no.	Mobile no.
		0416 213 11_

2. Owner's consent

Every owner of the land must sign this form. If the owner is a company the form must be signed by an authorised director and the common seal must be stamped on this form. If the property is a unit under the strata title or a lot in a community title, then in addition to the owner's signature, the common seal of the body corporate must be stamped on this form over the signature of the owner and signed by the Chairman or Secretary of the Owners Corporation or the appointed Managing Agent.

Owner(s)

Andrew and Emmalee Pepar

Address

158 Condamine St BALGOWLAH 2093

As owner(s) of the land to which this application relates, I/We consent to this application. I/We also consent for the Principal Certifying Authority and/or Accredited Certifier to enter the land to carry out inspections relating to this application.

Signature(s)

Without the owner's consent we will not accept the application. This is a very strict requirement for all applications. If you are signing on the owner's behalf as the owner's legal representative, you must state the nature of your legal authority and attach documentary evidence (eg, power of attorney, executor, trustee, company director, etc).

COUNCIL COPY

3. Location of property

Unit/Street no.	Street name
158	Condamine St

Suburb	Post code
Balgowlah	2093

Legal Property Description (these details are shown on your rate notices, property deeds, etc)

Lot no.	DP no.
150	1117653

What type of work do you propose to carry out?

Please describe briefly everything that you want approved.

Alt Adds & Addn. [illegible]

The estimated cost of the development or contract price may be subject to review

Estimated cost of work $ 200,000.00

Council Consent no. DA No. 358/09 Date of Determination 16/02/10

This can be found on the development consent BCA Classification class 1

If known, to be completed in the case of residential building work

Name [illegible] Licence no. 197691C

Owner/builder permit no.

I apply for a Construction Certificate to carry out building works as described in this application. I declare that the above Development Consent is valid and that no building works associated with this application have commenced. To the best of knowledge, all the information in this application and checklist is true and correct.

Signature [signature] Date 18/01/11

SUBMISSION REQUIREMENTS

A. GENERAL

Are the plans submitted with the Construction Certificate Application in accordance with the Development Consent?

Yes ☑ No ☐

Have all the conditions of Development Consent relating to the issue of the Construction Certificate been fully complied with?

Yes ☑ No ☐

If you have answered NO to either of the above questions, then you will need to speak with the Accredited Certifier BEFORE LODGING YOUR APPLICATION.

B. ALL PROPOSALS (has the following required information been submitted?)

Yes	No	Not Applicable	In the case of an application for a Construction Certificate for building work:
☑	☐	☐	Three (3) copies of detailed architectural plans and specifications
☑	☐	☐	The plan for the building must consist of a general plan drawn to a scale not less than 1:100 and a site plan drawn to a scale not less than 1.200. The general plan of the building is to: a) show a plan of each floor section b) show a plan of each elevation of the building c) show the levels of the lowest floor and of any yard or unbuilt on area belonging to that floor and the levels of the adjacent ground d) indicate the height, design, and full construction details e) indicate the provision for fire safety and fire resistance (if any)
☑	☐	☐	Where the proposed building work involves any alteration or addition to, or rebuilding of, an existing building, all copies of the general plan are to be coloured or otherwise marked to the satisfaction of the Council to adequately distinguish the proposed alteralion, addilion or rebuilding with a separate letter listing the proposed changes being submitted.
☑	☐	☐	3 copies of a specification: a) to describe the construction and materials of which the building is to be built and the method of drainage, sewerage and water supply b) state whether the materials proposed to be used are new or second hand and give particular
☐	☐	☑	Where the proposed building work involves a modification to previously approved plans and specifications the general plans must be coloured or otherwise marked to the satisfaction of the Accredited Certifier to adequately distinguish the modification.
☐	☐	☑	If the proposed building work involves a modification to previously approved plans and specification which were subject of a Development Consent, has the original Development Consent been modified by Council?
☐	☐	☑	Except in the case of an application for, or in respect of domestic building work: a) a list of any fire safety measures that are proposed to be implemented in the building or on the land on which the building is situated, and b) if the application relates to a proposal to carry out any alteration or rebuilding of, or addition to, an existing building, a separate list of such of those measures as are currently implemented in the building or on the land on which the building is situated. This list must specify the standard of design of each of those fire safety measures to which they were originally installed. c) This list must describe the extent, capability and basis of design of each of the measures concerned.
☑	☐	☐	Copy of BASIX Certificate & Schedule of BASIX Commitments.
☐	☐	☐	Copy of signed BASIX Compliance Statement.
☑	☐	☐	All other documentation to satisfy conditions of Development Consent.

HOME BUILDING ACT 1989 (as amended) OWNER/BUILDER REQUIREMENTS

Applicants for work at a residential property with a value of work over $12,000 require insurance as specified in the Home Building Act 1989.

Owner Builders require Property Owner Builder's Permit issued by the Department of Fair Trading for all projects over $5,000. In addition to this permit all projects valued in excess of $12,000 may also require a contract of insurance under the provisions of the Home Building At 1989 as amended. This requirement will take effect should the property owner offer the property for sale in the ensuing period of 7 years.

Enquiries on any matters relevant to this section should be taken up with the Department of Fair Trading at Level 21, Astra House, 227 Elizabeth Street, Sydney (ph: 133220).

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, the National Building Specification, is for all building structures, with specialist packages for architects, interior designers, landscape architects, structural engineers, service engineers and domestic owners. AUS-SPEC 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 updating services and via the provision of information, tools, products and other services.

STAKEHOLDERS

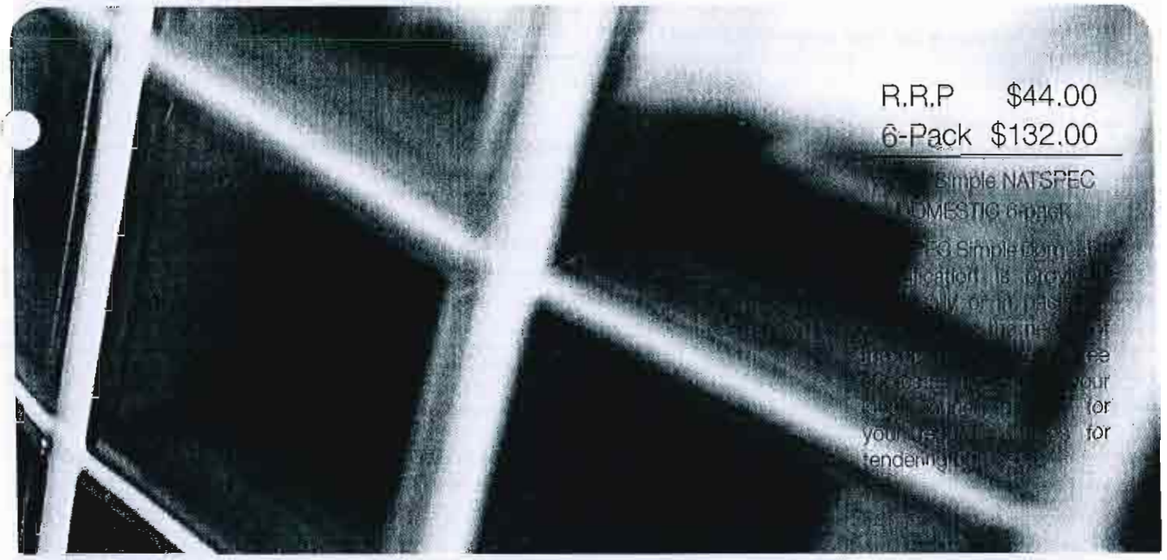
// Air Conditioning and Mechanical Contractors' Association of Australia
// Association of Consulting Engineers Australia
// Australian Council of Built Environment Design Professions
// Australian Elevator Association
// Australian Institute of Architects
// Australian Institute of Building
// Australian Institute of Building Surveyors
// Australian Institute of Quantity Surveyors
// Building Commission Victoria
// Construction Industry Engineering Services Group
// Department for Transport, Energy and Infrastructure (SA)
// Department of Finance and Deregulation
// Department of Public Works (QLD)
// Department of Territory and Municipal Services (ACT)
// Department of Treasury and Finance (TAS)
// Department of Treasury and Finance (WA)
// Engineers Australia
// Master Builders Australia
// NSW Department of Commerce
// NT Department of Planning and Infrastructure
// Standards Australia

CONTACT INFORMATION

NATSPEC//

PHONE	1300 797 142
FAX	1300 797 143
EMAIL	mail@natspec.com.au
WEB	www.natspec.com.au

NATSPEC//



SIMPLE DOMESTIC SPECIFICATION

BCA 2009 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

AIBS
Australian Institute of Building Surveyors

AIQS

ISSN 1328-2220

Published by NATSPEC//Construction Information

Phone 1300 797 142
mail@natspec.com.au
www.natspec.com.au

ABN 20 117 574 606

Use the current edition

This specification is published annually and is aligned with BCA 2009 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 minium 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 cross references, 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 SPECIFCATION

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.

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 2009 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, schedule 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.

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 reports on adjoining properties if there is a danger of damage to adjoining property.
- Existing services which may be used as temporary services for the performance of the contract subject to conditions.

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 36 is an invaluable aid to understanding bushfire protection and is designed to be read in conjunction with the standard. AS 3959-1999 defines 3 levels of construction for medium, high and extreme bushfire risk. Consult local councils for any additional bushfire protection requirements. AS 3959-1999 is cited in the BCA at present. Consider conformance with the more recent AS 3959-2009.
- 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 3.3.3.2.

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.
- 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

- Soil classification to BCA clause 3.2.4.
- Excavation.
- Surface preparation. AS/NZS 3500.3 is referenced in BCA clauses 3.1.2.0 and F1.1 for storm water drainage.
- Crawl space under suspended floors: Ventilation requirements are set out in BCA clauses 3.1.2.3 and 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 clause 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.

0241 Landscape – walling and edging

- Location, material and finish.
- Structural details if used as a retaining wall.
- Filter fabric: Consult manufacturers for information about available fabrics, including their properties and recommended applications. See AS 3705 for identification and marking.
- Location, materials, finish and colour of edging.

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. For children's services centres, the Victoria BCA Appendix references AS 1926.1. 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.

0271 Pavement base and subbase

- Base course material and thickness.

0272 Asphaltic concrete

Asphaltic concrete should be specified by a professional engineer.

- Site preparation.
- Mix and grading.
- Thickness.
- Grading.

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.

0301 Piling

Piling should be specified by a professional engineer.

- Type: Timber, screw piling, concrete, precast, driven, prebored.
- Pile cap detail.
- Depth of pile and spacing.

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 clause 3.2.4 contains a table of soil classifications that are the basis for requirements for footing design. The soil 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 (Class 1 – 5)
  - Class 2 – high.
  - Class 3 – good.
- Surface finish type: Select from:

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		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/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 4671	2001	Steel reinforcing materials
AS/NZS 4680	2006	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS 4785		Timber - Softwood - Sawn and milled products
AS 4785.3	2002	Timber for furniture components
AS 4786		Timber flooring
AS 4786.2	2005	Sanding and finishing
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 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 5604	2005	Timber – Natural durability ratings
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
AS/ACIF S008	2001	Requirements for authorised cabling products
AS/ACIF S009	2006	Installation Requirements for Customer Cabling (Wiring Rules)
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 36	1993	Building in bushfire-prone areas – Information and advice
SAA HB 109	1998	Footings for reinforced masonry houses
SAA HB 230	2006	Rainwater tank design and installation handbook
SAA HB 301	2001	Electrical installations - designing to the Wiring Rules
AIRAH DA09	1998	Load estimation and psychrometrics
ATS 5200	Various	Technical specification for plumbing and drainage products
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	Table 3.3.1.2	Mortar mixes
BCA	3.3.1.6	Acceptable construction – Masonry – Unreinforced masonry – Mortar mixes
BCA	Fig 3.3.1.9	Acceptable construction – Masonry – Unreinforced masonry – Subfloor ventilation – Vertical articulation joint details
BCA	Table 3.2.4.1	Acceptable construction – Footings and slabs – Site classification – General definition of site classes
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	3.7.2	Acceptable solutions - Fire safety – Smoke alarms
BCA	Table 3.7.4.1	Acceptable solutions - Fire safety - Bushfire areas - Construction for medium, high and extreme categories of bushfire attack
BCA	3.8.1.2	Acceptable construction - Health and amenity - Wet areas
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	3.12.1	Acceptable construction – Energy efficiency – Building fabric
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
CBPI Techniques 05	1992	Open fireplace design and construction
NASH Standard	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
Trane Trace		Software for calculating cooling and heating loads – electronic method

AS/NZS 2699.1	2000	Wall ties
AS/NZS 2712	2002	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 2796.3	1999	Timber for furniture components
AS 2820	1993	Gate units for private swimming pools
AS 2858	2004	Timber - Softwood - Visually graded for structural purposes
AS 2870	1996	Residential slabs and footings – Construction
AS/NZS 2904	1995	Damp-proof courses and flashings
AS/NZS 2908		Cellulose-cement products
AS/NZS 2908.2	2000	Flat sheets
AS/NZS 2918	2001	Domestic solid fuel burning appliances - Installation
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	1998	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 3566.2	2002	Corrosion resistance requirements
AS 3600	2001	Concrete structures
AS 3610	1995	Formwork for concrete
AS 3660		Termite management
AS 3660.1	2000	New buildings
AS 3700	2001	Masonry structures
AS 3705	2003	Geotextiles - Identification, marking, and general data
AS 3715	2002	Metal finishing – Thermoset powder coatings for architectural applications of aluminium and aluminium alloys
AS/NZS 3718	2005	Water supply – Tap ware
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 3730.8	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 3730.26	1993	Floor varnish - Moisture cured paint
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	2004	Waterproofing of wet areas within residential buildings
AS 3798	2007	Guidelines on earthworks for commercial and residential developments
AS 3818		Timber - Heavy structural products - Visually graded
AS 3818.2	2004	Railway track timbers
AS 3958		Ceramic tiles
AS 3958.1	2007	Guide to the installation of ceramic tiles
AS 3958.2	1992	Guide to the selection of a ceramic tiling system
AS 3959	1999	Construction of buildings in bushfire prone areas
AS 3959	2009	Construction of buildings in bushfire prone areas
AS 3972	1997	Portland 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	1993	Mechanical locksets for doors in buildings
AS/NZS 4200		Pliable building materials and underlays
AS/NZS 4200.1	1994	Materials
AS/NZS 4200.2	1994	Installation requirements

- Machine float: Under dry floor finishes.
- Steel trowel: Under resilient finishes, garage floors.
- Wool float: External
- Broomed/patterned/coloured: External.
- Rough scored: Under tiles in a morfar bed.
- Specify others.

- Slip resistance, if required.
- Curing.

0331 Brick and block construction

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

Energy efficiency requirements at BCA clause 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, block or AAC.
- 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 3700 clause 5.2.5, 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 clause 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.
- Lintels.
- Chasing locations.
- Air vent location: For subfloor ventilation, BCA clause 3.4.1 and Table 3.4.1.2 provides minimum requirements for various climates.
- Weep holes.
- Weephole guards: Insect only or insect and bushfire ember protection.
- Movement joints: Clay bricks grow after they have been fired and concrete slabs shrink after they have been poured. The provision for movement 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 BCA Figure 3.3.1.9 for joint detail.

0342 Light steel framing

The NASH Standard 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.
- 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 Flooring and decking

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.

- Material and fixings.
- Strip flooring selection.
- Recycled timber flooring: If stained nail holes are unacceptable, specify remedial work such as coring and plugging with matching timber.

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 clause 3.12.1.3 for thermal performance requirements of roof lights serving a habitable room. See BCA clause 3.7.1.10 for locating combustible roof lights. See BCA clause 3.7.4.3 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 clause 3.12.2 sets out thermal performance of external glazing. See BCA clause 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 hatches

- 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 Garage 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 Part 3.12 Energy Efficiency, and check state and local council regulations.
- Sarking membranes: Note if acting as sarking, vapour barrier, reflective thermal insulation or together in combination.
- Sarking membrane type: Vapour barrier or breather. 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.
- Toppings; carpet.
- 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.
- General fixtures / appliances: Clothes line, letterbox, street number, door bell.

0574 Window coverings

- Curtain fabric and blinds: Type, material; fabrication; installation.
- Plastic or timber shutters.
- Internal or external shutters and blinds.

0611 Plastering

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

0612 Cementitious toppings

- Material, substrate, joints and finish.
- Movement joints: Sometimes called expansion joints. Their purpose is to accommodate movement in the finish or the substrate, or both. Movement may be caused by substrate shrinkage, thermal expansion and contraction, and the like. The location and details of all movement control joints should be shown on the drawings. Check the expected movement of structural joints with the structural engineer and ensure the joint width is > 4 times the anticipated movement. Where floor heating is installed or where passive solar heating is a design feature pay particular attention to the added requirements for movement joints and consider flexible adhesive for floor finishes.

0621 Waterproofing – wet areas

- Extent. To BCA clause 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.

REFERENCED DOCUMENTS

AS/NZS 1080		Timber - Methods of test
AS/NZS 1080.1	1997	Moisture content
AS 1163	1991	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 1366.3	1992	Rigid cellular polystyrene – Moulded (RC/PS – M)
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	2001	Steel sheet and strip – Hot-dipped zinc-coated or aluminium/zinc-coated
AS 1478		Chemical admixtures for concrete, mortar and grout
AS 1478.1	2000	Admixtures for concrete
AS 1562		Design and installation of sheet roof and wall cladding
AS 1562.1	1992	Metal
AS 1562.3	1996	Plastic
AS 1604		Specification for preservative treatment
AS 1604.1	2005	Sawn and round timber
AS/NZS 1604.2	2004	Reconstituted wood-based products
AS/NZS 1604.3	2004	Plywood
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 1684.3	2006	Cyclonic areas
AS 1684.4	2006	Simplified – Non-cyclonic
AS 1720		Timber structures
AS 1720.1	1997	Design methods
AS 1789	2003	Electroplated zinc (electrogalvanized coatings on ferrous articles (batch process)
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 1926		Swimming pool safety
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 2159	1995	Piling – Design and installation
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	1998	Systems installed in client's premises
AS/NZS 2208	1996	Safety glazing materials in buildings
AS/NZS 2269	2004	Plywood – Structural
AS/NZS 2270	2006	Plywood and blockboard for interior use
AS/NZS 2271	2004	Plywood and blockboard for exterior use
AS/NZS 2311	2000	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 2334	1980	Steel nails – Metric series
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	2007	Gypsum plasterboard
AS/NZS 2589.1	1997	Gypsum plasterboard
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

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: Analogue and digital television distribution system to AS/NZS 1367.

Antennas: Locate antennas to receive all locally available free-to-air television stations with clear reception.

Network systems: Provide a coaxial cabling system suitable for 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.

General: Label telecommunications cables. cross connects, 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.

- 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.

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 airconditioning 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 Preformance 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:

- 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.
- Mixing valves if required.
- External hose cock locations.
- Provisions for additional piping for connecting to irrigation, toilet fushing, laundry, swimming pool top-up and similar uses (if required and permitted).
- 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.
- Water heater location and details e.g. gas instantaneous, electric, and solar or heat pump. Include manufacturer. model/capacity and temperature control for thermostatic mixing valves and special taps.
- Gas Meter location
- Gas appliance connection points
- Gas bayonet outlet locations

- Rainwater tank (if required): Size, material, location, connections, pump and what rainwater serves. Plastic tanks are not to be used in bushfire prone areas.
- Stormwater detention (if required by local authority, and in addition to any rainwater storage).
- 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 values, thermostats, regulating flow e.g. with thermostatic mixing valves, or by using special taps. For the installation of solid fuel heaters the BCA cites AS/NZS 2918.

0902 Electrical design and install

- Switchboards: AS/NZS 3018 describes prohibited locations for switchboards, and the *Electricity Distributor's Service and Installations 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 incandescant and low voltage halogen reflector types by 2012.
- Smoke detection system: To BCA clause 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.

2.2 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.

Solar water and heat pump systems: To AS/NZS 2712 comprising solar collector and storage container, with or without supplementary heating unit and including connections, controls and necessary fittings.

2.3 STORMWATER

General

Downpipe connections: 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.

2.4 RAINWATER TANKS

Standards

Metal tanks and rainwater goods: To AS/NZS 2179.1

Design and installation: To the recommendations of SAA HB 230.

2.5 GAS

General

Buried pipes: During backfilling, lay plastic warning tape 300 mm above and for the full length of buried gas pipes, minimum 100 mm wide, with 'GAS PIPE UNDER' marked continuously.

0902 ELECTRICAL DESIGN AND INSTALL

1 GENERAL

1.1 CROSS REFERENCE

Associated worksections

Conform to the following:

- *Service trenching* for service trenches.

1.2 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 and SAA HB 29.

Domestic electricity meter enclosures: To AS 6002.

Domestic electricity meter enclosures: To AS 6002.

1.3 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: Provide all necessary applications for electricity supply. Liaise with the electricity distributor.

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 accordance 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: 20 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(Int).
- Incandescent lamps: To AS/NZS 4934.2(Int).

Appliances

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

Final coat	Applicable Australian Standard
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 CROSS REFERENCE

Associated worksections

Conform to the following:

- *Electrical design and install* worksection for electrical and exhaust fan requirements.

1.2 AIRCONDITIONING DESIGN

Design basis

Outside design conditions: Use outdoor design conditions listed in AIRAH DA9, 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 airconditioned spaces served by the same zone or system to 3K:

- 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 airconditioning 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 airconditioners: To AS/NZS 3823.1.2 and AS/NZS 3823.2.

Non-ducted airconditioners: 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 CROSS REFERENCES

Associated worksections

Conform to the following:

- *Service trenching*, for service trenches.
- *Roofing*, for roof plumbing.
- *Waterproofing – wet areas*, for wet areas.
- *Painting* for priming steel or iron before installation and exposed piping required to be painted.

1.2 STANDARDS

General

General: To the *Plumbing Code of Australia* and the AS/NZS 3500 series and the ATS 5200 series.

2 EXECUTION

2.1 INSTALLATION

Piping

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 ensure access can be provided throughout for inspection.

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

Pipe support materials: To be 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.

Cover plates: Where 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.

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.

Finishes

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.

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0222 EARTHWORK 4
0223 SERVICE TRENCHING 5
0241 LANDSCAPE – WALLING 5
0242 LANDSCAPE – FENCES AND BARRIERS 6
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0272 ASPHALTIC CONCRETE 7
0274 CONCRETE PAVEMENT 7
0276 SEGMENTAL PAVERS – SAND BED 7
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Ensure all subcontractors are aware of the requirements within 0180 *Common requirements*.

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 ensure 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, 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, 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.
- 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.

- External dependencies including provision of access, document approvals and work by others.
- Periods within which various stages or parts of the work are to be executed.

Time scale: Working days.

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: Adopt *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: Includes zinc-coated steel, zinc/iron alloy-coated steel, and aluminium/zinc-coated steel.
- Hot-dipped galvanized: Protective zinc coating applied by hot-dip immersion in molten zinc of at least 98% purity.
- Professional engineer: Means a person who is listed on the National Professional Engineers Register (NPER) in the relevant discipline at the relevant time.
- Proprietary: Means identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Provide: Means 'supply and install'.
- Required: Means required by the contract documents, the local council or statutory authorities.
- Supply: Means 'supply only'; do not install.

1.4 BUSHFIRE PROTECTION

General
Conformance: In areas designated as bushfire prone, comply with statutory and local authority requirements.

Standard: To AS 3959-1999, in conjunction with SAA HB 36. AS 3959-1999 is cited in the BCA at present. Consider conformance with AS 3959-2009.

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

Autoclaved aerated concrete walls
General: Do not apply oil-based paints.

3 EXECUTION

3.1 PREPARATION

Standards
General: To AS/NZS 2311 Sections 3.

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

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
Fixtures: 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.

Substrate preparation
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.

3.2 PAINTING

Standard
General: To AS/NZS 2311 Section 6.

Protection of steelwork: To AS/NZS 2312 Section 8.

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

Paint application
General: 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.

Quality
General: Ensure each coat of paint or clear finish is uniform in colour, gloss, thickness and texture, and free of runs, sags, blisters, or other discontinuities.

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.

Selection: Provide paint 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 3730.8

Orientation: Fix at 45° to the direction of parquet flooring pattern.

Installation: Lay the length of the sheets at right angles to the supports. Stagger the end joints and locate them centrally over supports. If panels are not tongue and grooved provide noggings or trimmer joists to support the edges.

Fixing to battens:

- Nailed only: 150 mm along ends, 300 mm on intermediate battens.
- Glued/nailed: Continuous 10 mm glue bead and nails at 300 mm.
- Glued only: To the adhesive manufacturer's recommendations with downward pressure during curing.

Underlay movement control joints: Provide joints of widths as follows:

- Against vertical building elements: 12 mm.
- Between tongue and groove sheets: Hand pressure assembly.

Underlay adhesive fixed on concrete slabs

Plywood: Apply a sealant to the underside compatible with the adhesive.

Vapour barrier: A liquid applied membrane compatible with the adhesive system.

Glue and nail fixing:

- Nail centres: 300 mm from edges and at 600 x 600 mm.
- Glue beads: 10 mm diameter and at 500 x 500 mm.

Glued only fixing: Apply adhesive with a notched trowel to the manufacturer's recommendations. Provide downward pressure during curing.

Acoustic underlay

General: Apply the bonded acoustic underlay nominated to the manufacturer's instructions.

Floors on steel joists

General: Screw fix plywood underlay to the steel joists so that their top surfaces are aligned.

3.4 FLOOR FIXING

Adhesive

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

Strip flooring

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

Adhesive: Apply adhesive in addition to nailing over softwood joists or underlay.

Movement control joints

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

Between underlay sheets: 6 mm.

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.

Parquet, panel and adhesive fixed strip flooring

Vapour barrier under adhesive fixed flooring: A liquid applied membrane compatible with the adhesive system.

Trial set-out: Prepare a trial parquet tile or panel set-out to each area.

Orientation: Boards parallel to the longest wall in the room.

Laying method: To the manufacturer's flooring installation guide.

3.5 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.

Spare flooring products

General: Supply an extra 5% of flooring products, to be stored on site as spares.

0656 FLOOR SANDING AND FINISHING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections

Conform to the following:

- *Painting* for applied finishes to external decking and clear and opaque finishes to timber items and internal floors.

1.2 STANDARD

Floor sanding and finishing

General: To AS 4786.2.

0671 PAINTING

1 GENERAL

1.1 STANDARD

Painting

General: Comply 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.

Tinting

General: Provide only products which are colour tinted by the manufacturer or supplier. Alternatively, add tinters or stainers only if this is without detriment to the durability or aesthetic performance of the product.

2 PRODUCTS

2.1 MANUFACTURERS' OR SUPPLIERS' RECOMMENDATIONS

General

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

Corrosion resistance: Conform to the atmospheric corrosivity category for the building location.

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:

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

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: Protect steel products to documented Corrosion protection environment and 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 to be stainless steel 316 or engineered polymer.

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**.

Corrosion resistance table

Environmental corrosivity level as defined in BCA Table 3.3.3.2.	Corrosion resistance class	
	Internal	External
Low	1	3
Medium	2	4
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.

3 EXECUTION

3.1 MOISTURE CONTENT

Flooring
General: Do not commence installation of flooring unless:

- Concrete substrate: The moisture content of the concrete has been tested to AS/NZS 2455.1 Appendix B and values obtained as follows:
  - . ≤ 5.5% when tested by the electrical resistance test.
  - . ≤ 70% when tested by the hygrometer test.
- 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:
  - . Airconditioned buildings: 8 to 10%.
  - . Intermittently heated buildings: 10 to 12.5%.
  - . Unheated buildings: 12 to 15%.

3.2 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 or transmitting the loads imposed, and sufficient to ensure the rigidity of the assembly.

3.3 FOOTPATH CROSSING

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

3.4 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: Provide a copy of the dilapidation record for inspection.

Adjoining owners: Provide 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, prior to 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

2 PRODUCTS

2.1 MATERIALS

Flooring panels
General: To be a proprietary flooring system.

Recycled timber: To be re-sawn and finished to eliminate weathering stains and expose fresh timber.

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

Acoustic underlay
General: Closed cell foam sheeting perforated to receive adhesive beads.

3 EXECUTION

3.1 GENERAL

Storage
Preparation: 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 background is suitable for the installation of the floor. Do not store in areas with wet plaster.

Substrates
General: Ensure substrates are as follows:

- Clean and free of any deposit or finish which may impair adhesion or location and functioning of movement joints.
- If solid or continuous:
  - . Excessive projections are removed.
  - . Voids and hollows > 10 mm with abrupt edges are filled with a cement:sand mix not stronger than the substrate nor weaker than the bedding.
  - . Depressions < 10 mm are filled with a latex modified cementitious product with feathering eliminated by scabbling the edges.

Flatness: < 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.

3.2 FIXINGS

Construction 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 movement joints.

Movement control joints
General: Provide joints:

- 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 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Concrete* for substrates.
- *Flooring and decking* for substrates.

1.2 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.

Acoustic underlay
General: Closed cell foam sheeting perforated to receive adhesive beads.

2.2 STRIP FLOORING

Recycled timber
Appearance: To be re-sawn and finished to eliminate weathering stains and expose fresh timber.

2.3 PARQUET FLOORING AND SUBSTRATES

Timber
Marking: Identify timber by branding on faces or edges which will be concealed in the works.

Plywood underlay
Standard: To AS/NZS 2269.

Particleboard underlay
Particleboard: To AS 1860.2, Class 1.

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.

Substrates
General: Ensure substrates are as follows:

- Clean and free of any deposit or finish which may impair adhesion or location and functioning of movement joints.
- Have < 3 mm deviation of the surface under a 3 m straight edge laid in any direction with no abrupt variations greater than 1mm over 250 mm.

Vapour barrier
Vapour barrier under battens: 200 μm high-impact resistant polyethylene. Lap 300 mm, seal the laps with pressure-sensitive tape and return up the vertical surfaces and trim at the level of the flooring.

3.2 SUPPORT FIXING

Battens on concrete slabs
General: Ensure support members are in full lengths without splicing.

Framing fixed direct: Fix seasoned battens to the concrete slab so that their top surfaces are aligned.

Framing fixed on resilient pads: Fix seasoned battens on resilient pads to the concrete slab so that their top surfaces are aligned.

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

3.3 UNDERLAY FIXING

Underlay batten fixed on concrete slabs
General: Fix plywood underlay to the battens so that their top surfaces are aligned.

3 EXECUTION

3.1 GENERAL

Substrate preparation

Prepare the substrate including the following:

- Stripping and cleaning: Remove deleterious and loose material, including existing floor coverings and any surface treatment which could adversely affect adhesion.
- Repairs: Make good to the surface finish as necessary. Fill depressions with a suitable filler, and remove high spots and projections. If necessary lay a steel-trowelled underlay to concrete substrate.
- Fixtures and fittings: Remove door stops and other fixtures, and refix in position undamaged on completion of the installation.
- Basic sanding: Produce an even plane sanded surface on strip flooring to be covered with resilient sheet or tile. Lightly sand the junctions of sheet flooring.
- Fine sanding: If flooring is to be clear finished, stop with matching filler and produce a smooth sanded surface free from irregularities and suitable to receive the finish.

Laying resilient finishes

Sheet set out: Set out sheets to give the minimum number of joints. Run sheet joints parallel with the long sides of floor areas.

Tile set out: Match edges and align patterns. Arrange the material so that variation in appearance is minimised.

Joints: Comply with the following:

- 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.
- Epoxy jointing to slip resistant vinyl sheet: Join seams with epoxy adhesive.

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

Protection: 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: 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 GENERAL

1.1 CROSS REFERENCES

Associated worksections

Conform to the following:

- *Concrete* for substrates.
- *Flooring and decking* for substrates.

2 PRODUCTS

2.1 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.

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.

Soft underlay alternatives

Standard: To AS 4288.

Needled underfelt: Felt composed of 60% animal fibre and 40% jute, reinforced with polypropylene scrim with a minimum mass of 50 g/m^2, or hessian fabric with a minimum mass of 150 g/m^2.

Synthetic foam underlay: High density synthetic latex flat cushion foam sandwiched between reinforced carrier fabric.

Rubber underlay: Heavy-duty natural rubber, waffle pattern, with a backing of reinforcing fabric, either hessian, spun nylon, or polyester.

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.

Carpet

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

Total VOC limit:

- Generally: 0.5 mg/m^2.
- Compliance: To the Environmental Classification Scheme operated by the Carpet Institute of Australia.

3 EXECUTION

3.1 GENERAL

Substrate preparation

Prepare the substrate including the following:

- Stripping and cleaning: Remove deleterious and loose material, including existing floor coverings.
- Repairs: Make good to the surface finish as necessary. Fill depressions with a suitable filler, and remove high spots and projections. If necessary lay a steel-trowelled underlay to concrete substrate.
- Fixtures and fittings: Remove door stops and other fixtures, and refix in position undamaged on completion of the installation.
- Basic sanding: Produce an even plane sanded surface on strip flooring to be covered with carpet. Lightly sand the junctions of sheet flooring.

3.2 LAYING CARPET

Standard

General: To AS/NZS 2455.1.

0654 ENGINEERED PANEL FLOORS

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections

Conform to the following:

- *Concrete* for substrate finishes.
- *Flooring and decking* for substrates.

which are to be altered and which rely for support on work to be demolished.

2.2 PROTECTION

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.

Re-use: 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.

2.3 DEMOLITION

Asbestos removal

Method: Use wet removal methods recommended in the Code of Practice for the Removal of Asbestos (NOHSC: 2002), including Part 4 for insulation and lagging, and Part 9 for asbestos cement.

Dilapidation record

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

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 TREE PROTECTION

Work near trees

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 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.

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

1.2 ENVIRONMENTAL 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 groundworks free of water. Prevent water flow over freshly laid work.

1.3 SITE CLEARING

Extent

General: Clear only the areas to be occupied by structures, paving or landscaping.

Clearing and grubbing

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

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

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

Surplus material

Removal: Remove surplus material from the site.

0222 EARTHWORK

1 GENERAL

1.1 STANDARD

General

Groundworks for slabs and footings: To AS 2870, with soil classification to BCA clause 3.2.4.

1.2 INTERPRETATION

Definitions:

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

- Line of influence: A line 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.
- Subgrade: The trimmed or prepared portion of the formation on which the pavement, footing or slab is constructed.

1.3 EXPLOSIVES

General

Prohibition: Do not use explosives.

2 EXECUTION

2.1 REMOVAL OF TOPSOIL

General

Extent: Remove the topsoil layer of the natural ground which contains substantial organic matter over the areas to be cut, filled and to be occupied by structures, and paving or landscaping.

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.

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 clause 3.4.1.

Bearing surfaces

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

Existing footings

Requirement: If excavation is required below the line of influence of an existing footing, use methods which maintain the support of the footing and ensure that the structure and finishes supported by the footing are not damaged.

Grading
General: Grade the ground surface externally and under suspended floors to drain ground or surface water away from buildings without ponding.

2.3 SUBGRADE PREPARATION

General
Preparation: Before placing fill (including topsoil fill), ground slabs or load-bearing elements, remove loose material, debris and organic matter and compact the ground to achieve the required density.

2.4 PLACING FILL

General
Placement: Place fill in layers ≤ 200 mm and compact each layer to achieve the required density.

Moisture content: If necessary to achieve the required density or moisture content, adjust the moisture content of the fill before compaction.

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 EXECUTION

1.1 GENERAL

Excavating
General: Make trenches straight between manholes, inspection points and junctions.

Backfilling
General: Backfill service trenches as soon as possible after laying the service. Place backfill in layers to BCA 3.2.2. Compact each layer to a density sufficient to minimise settlement.

Backfill material: Excavated spoil or well graded inorganic material with maximum particle size of 75 mm.

- Next to services: Do not place any particles greater in size than 25 mm within 150 mm of services.
- Under paved areas and within 4m of structures: Coarse sand, controlled low strength material or fine crushed rock.
- In reactive clay sites classified M, M-D, H, H-D or E to AS 2870: Impervious material.

0241 LANDSCAPE – WALLING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to *Termite management* for protection of timber elements from termite attack.

2 PRODUCTS

2.1 MATERIALS

Concrete
Standard: To AS 1379 grade N 20 or proprietary packaged mix.

2.2 DRY STONE WALLS

Walling stone
Natural stone: Stone of uniform quality, sound and free from defects liable to affect its strength, appearance or durability.

Field stone: Local weathered uncut random sized natural stones.

Quarried stone: Cut or uncut random or regular size stone.

2.3 SLEEPER WALLS

Sleepers
General: To AS 3818.2.

Hardwood: Durability class 1 or preservative-treated hardwood railway sleepers.

Softwood: Sound preservative-treated softwood sleepers.

2.4 CRIB WALLS

General
Type: Proprietary system of interlocking precast concrete or preservative treated timber cribs with selected backfill placed and compacted progressively with the crib to form a retaining wall.

Standard for masonry segmental retaining wall units: To AS/NZS 4455.3.

2.5 FILTER FABRIC

General
Type: Polymeric fabric formed from a plastic yarn containing stabilisers or inhibitors to make the filaments resistant to deterioration due to ultraviolet light.

Identification and marking: To AS 3705.

Protection
General: Provide heavy duty protective covering. Store clear of the ground and out of direct sunlight. During installation do not expose the filter fabric to sunlight for more than 14 days.

3 EXECUTION

3.1 GENERAL

Set out
General: Set out the positions of walls.

Clearing
Extent: Except trees or shrubs to be retained, clear vegetation within 1 m of the landscape walls. Grub out stumps and roots of removed trees or shrubs and trim the grass to ground level, but do not remove the topsoil.

Excavation
Extent: Excavate for walls as required.

3.2 DRY STONE WALLS

Construction
General: Select the stones for their locations and lay them in the wall with the minimum of stonecutting.

Footings: Select the largest, flattest and most regular stones for footings, and set them one third of their depth into the ground.

Copings: Select stones ot reasonably uniform size and finish the top of the wall to a level line.

Retaining walls
Construction: Where dry stone walls act as retaining walls, construct the stonework to be free draining through the wall. Batter back the wall face 50 – 70 mm for every 300 mm in height. Cap the top of the wall. Backfill progressively, with a layer at least 300 mm thick of porous material, such as coarse aggregate or crushed rock in the size range 20 – 40 mm.

which forms a drained tank suitable for continuous immersion. Do not run under bounding walls.

Curing of liquid applied systems
General: To the manufacturers instructions.

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

Membrane terminations
Edge protection: Provide > 150 mm upturns.

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.

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.

Overlaying finishes on membranes
Compatibility: If a membrane is to be overlayed with another system such as tiles, pavers or acoustic insulation, provide an overlaying system that is compatible with and will 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 sufficient movement joints in the topping or bedding mortar to reduce the movement over the membrane.

3.2 COMPLETION

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

Repair: 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 and AS 3958.2.

Slip resistance
Classification: To AS/NZS 4586.

2 PRODUCTS

2.1 MATERIALS

Adhesives
Standard: To AS 2358.

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

Mortar materials
Cement: To AS 3972.

- Type 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.

Grout
General: Cement-based proprietary grout mixed 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 fillers compatible with the grout material. For cement-based grouts, 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.

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.

Minimum fall generally: 1:100.

Minimum fall in shower areas: 1:60.

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

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

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.

Sealed joints
General: Fill joints 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 GENERAL

1.1 CROSS REFERENCE

Associated worksections
Conform to the following:

- *Concrete* for substrates.
- *Flooring and decking* for substrates.
- *Floor sanding and finishing* for finishing of cork tiles.

2 PRODUCTS

2.1 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.

0612 CEMENTITIOUS TOPPINGS

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Waterproofing – wet areas*, for wet areas.
- *Painting* for priming of embedded steel.

2 PRODUCTS

2.1 MATERIALS

Topping materials
Cement: To AS 3972.

- Type GP.

Sand: To be fine, sharp, well-graded sand with a low clay content and free from efflorescing salts.

Admixtures: To AS 1478.1.

Reinforcement: To AS/NZS 4671

3 EXECUTION

3.1 PREPARATION

Substrates
General: Ensure substrates have:

- Any deposit which may impair adhesion of monolithic or bonded toppings cleaned off.
- Excessive projections removed and voids and hollows filled with a mix not stronger than the substrate nor weaker than the topping.
- Hardened concrete roughened by scabbling or the like to remove 2 mm of the laitance and expose the aggregate.

Bonded toppings
General: Before laying topping wash the substrate with water and use a bonding product or treat as follows:

- Keep wet for ≥ 2 hours.
- Remove surplus water and brush on neat cement or a clean slurry of cement and water.
- Place the topping while the slurry is wet.

3.2 APPLICATION

Laying
General: Spread the mix and compact. Strike off, consolidate and level surfaces to finished levels.

Monolithic toppings: Lay while concrete subfloor is plastic and surface water is no longer visible.

Toppings over 50 mm thick:

- Lay in two layers of equal thickness.
- Place a layer of reinforcement between the layers of toppings. Lap reinforcement 100 mm and tie. Do not create four way laps.

Temperature
General: Ensure that the temperature of mixes, substrates and reinforcement are, at the time of application, ≥ 5°C or ≤ 35°C.

Severe temperature: If the ambient shade temperature is greater than 38°C, do not mix topping.

3.3 MOVEMENT JOINTS

General
General: Provide movement joints as follows:

- Over structural (isolation, contraction, expansion) joints.
- To divide complex room plans into rectangles.
- Around the perimeter of the floor.
- At junctions between different substrates.
- To divide large topping finished areas into bays 6 x 6 m internally and 4 x 4 m externally.

Depth of joint: Right through to the substrate.

Depth of sealant: One half the joint width, or 6 mm, whichever is the greater

3.4 COMPLETION

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

Curing: Use a curing product or, as soon as it has set sufficiently, keep the toppings moist by covering with polyethylene film for ≥ seven days.

0621 WATERPROOFING – WET AREAS

1 GENERAL

1.1 STANDARD

Wet areas
Waterproofing: To AS 3740.

2 PRODUCTS

2.1 MATERIAL COMPONENTS

Membranes
Standard: To AS/NZS 4858.

Membrane systems
General: To be a proprietary membrane systems having one of the following stating that the system is suitable for the intended wet area waterproofing, as follows:

- A current appraisal report issued by CSIRO Building Products and Systems Appraisals.
- 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 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.

Drains
Floor wastes: Turn membrane down onto the floor waste puddle flanges, and adhere.

Hobs
General: Extend membrane over the hob and into the room at least 50 mm. For hobless showers extend 1800 mm into the room.

Wet areas
Walls and floors of showers, baths, laundries and toilets, splashbacks and floorwastes: To BCA clause 3.8.1.2.

External tiling
Requirement: Provide a waterproof membrane under external floor tiling, to balconies and over habitable rooms,

Minimum thickness: 300 mm.

3.3 SLEEPER WALLS

Construction
Wall: Back with hessian or geotextile and place a 100 mm draining layer of coarse sand or fine gravel between the fabric and backfill.

Backing: Backfill to ground level with compacted fine crushed rock gravels or cement stabilised rammed earth.

3.4 CRIB WALLS

Construction
Standard for masonry segmental retaining wall units: To AS/NZS 4455.3

Construction: Construct walls in conformance with the manufacturer's written requirements.

0242 LANDSCAPE – FENCES AND BARRIERS

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to *Termite management* for protection of timber elements from termite attack.

2 PRODUCTS

2.1 MATERIALS

Timber posts and rails
Hardwood:

- Standard: To AS 2082.

Softwood:

- Standard: To AS 2858, stress grade F5.

Timber 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.

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

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

2.2 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

*: Three rail fences only.

Steel tube picket fencing
Posts, rails, stays and pickets: To AS 1163.

- Grade: C350L0.

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.

3 EXECUTION

3.1 GENERAL

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

0250 LANDSCAPE – GARDENING

GENERAL

CROSS REFERENCES

Associated worksections
Conform to the following:

- *Site management* for site preparation.
- *Earthwork* for site excavation.

PRODUCTS

MATERIAL

Soils
Standard: To AS 4419.

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.

Compost
General: Provide well rotted vegetative material or animal manure, free from harmful chemicals, grass and weed growth.

Turf
Source: Turf pods from a specialist grower of cultivated turf.

Quality: Use Turf of even thickness, free from weeds and other foreign matter.

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

EXECUTION

GENERAL

Weed eradication
General: Eradicate weeds using a non-residual glyphosate herbicide in any registered formulae, at the recommended maximum rate.

Watering
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. Comply with local restrictions.

0271 PAVEMENT BASE AND SUBBASE

1 PRODUCTS

1.1 BASE COURSE MATERIAL

General
Material: Provide well-graded crushed rock, natural gravel or recycled concrete aggregate, free of deleterious material.

Grading: A maximum particle size of 26.5 mm, uniformly graded and with a maximum clay content of 6% by mass.

2 EXECUTION

2.1 PREPARATION

General
General: Prepare the subgrade to suit the thickness of the base course and paving.

Compaction: If necessary, loosen the ground to a depth of 200 mm and adjust the moisture content before compaction. Compact the ground to a firm, even surface using at least 2 passes of a vibrating plate compactor or roller. Remove and replace soft areas.

2.2 PLACING

General
Spreading: Spread and compact the base course to a firm, tight, close textured surface.

Compaction: Use at least 3 passes of a vibrating plate compactor or roller. Adjust the moisture content as needed to facilitate compaction.

2.3 BASE COURSE MINIMUM THICKNESS

General
Requirement: Comply with the **Base course minimum thickness table**

Base course minimum thickness table

	Site classification to AS 2870 or BCA Table 3.2.4.1			
	Unit paving		Asphalt paving	
	A	S & M	A	S & M
Foot and bicycle traffic	0	0	50 mm	100 mm
Light domestic traffic occasionally up to 3 tonne gross	0	75 mm	100 mm	150 mm

0272 ASPHALTIC CONCRETE

1 PRODUCTS

1.1 MATERIALS

Tack coating
General: Bituminous emulsion spray.

Asphalt mix
Designation: AC7.

Bitumen binder class: 170.

0274 CONCRETE PAVEMENT

1 GENERAL

1.1 STANDARDS

Concrete
Specification and supply: To AS 1379.

Materials and construction: To AS 3600.

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 with low clay content and free of deleterious materials such as soluble salts which may cause efflorescence.

Mortar edge restraint
Mix proportions: 1:3 cement:sand.

0301 PILING

1 GENERAL

Design
General: As documented by a professional engineer.

2 EXECUTION

2.1 ADJOINING PROPERTY

Damage
General: If damage is caused to adjoining property, stop piling operations.

2.2 INSTALLATION

Bored piers
General: After excavating bored piers, remove loose material and water from the base and confirm the bearing capacity.

Concreting: Do not allow loose material to fall down the hole before or during concreting. If required, provide a liner.

Timber piled footing system
Requirement: Provide a proprietary system designed to AS 2870.

3 EXECUTION

3.1 SUBSTRATE

Substrates
General: Ensure substrates have:

- Any deposit or finish which may impair adhesion of plaster cleaned off.
- If framed or discontinuous, support members in full lengths without splicing.
- If solid or continuous, excessive projections hacked off and voids and hollows filled 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.
- Movement control beads: At all movement 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:

- 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.

3.2 PLASTERING

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 ≥ 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 - Base coats in multi-coat systems with cement or gypsum finishes	Dense and smooth concrete and masonry	1 1	0 0.5	3 4.5
	Regular clay or concrete masonry	1 1	0.5 1	4.5 6
	Lightweight concrete masonry and other weak substrates	1 1	1 2	6 9
Second coat - Internal	Cement render base coats	1 1	1 2	6 9
Second coat - External	Cement render base coats	1 1	1 2	5 6

Mix table – Gypsum finish coat, by volume

Mix type		Substrate	Upper and lower limits of proportions by volume			
			Gypsum	Cement	Lime putty	Sand
Gypsum finish coats	GPF	Cement render base coats	1 1	- -	1.5 2	- -

Mix table – Gypsum finish coat, by weight

Gypsum plaster (kg)	Lime putty (kg)
17	25
34	50
51	75

Thickness limits
One-coat work: 12 – 15 mm.

Multi-coat work:

- First coat: 9 – 15 mm.
- Floating coat (if any): 9 – 15 mm.
- Finishing coat (except setting coat): 6 – 9 mm.
- Setting coat: 2 – 3 mm.

Tolerances
General: Finish plane surfaces within a tolerance of 6 mm in 3000 mm, determined using a 3000 mm straight edge placed anywhere in any direction. Finish corners, angles, edges and curved surfaces within equivalent tolerances.

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.

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.

- Closure retention.
- White thermoset powder coating or nickel plated.

Hardware
Requirement: Provide details of handles and locks.

2.4 WORKING SURFACES

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

Minimum thickness: 32 mm.

Sealing underside: Laminate undersides of benchtops if:

- Likely to be subject to excessive moisture from equipment such as dishwashers.
- The benchtop is not restrained against warping by cupboard carcass or support framing.

Stone or engineered stone benchtops
General: Stone or engineered stone slabs within the visual range of approved samples. In natural stone, repair mud 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 linished finish.

3 EXECUTION

3.1 GENERAL

Basics
Construction: Build components square and install plumb.

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

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

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.

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.

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.

0554 STAIRS

1 EXECUTION

1.1 GENERAL

General
Material, design and construction: To AS 1657.

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

Balustrades: To BCA clause 3.9.2.

0572 MISCELLANEOUS APPLIANCES AND FIXTURES

1 PRODUCTS

1.1 COMPONENTS

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

0574 WINDOW COVERINGS

1 PRODUCTS

1.1 MATERIALS

Fire hazard
General: Do not provide materials which, when subjected to fire conditions, will emit excessive smoke or toxic fumes.

0611 PLASTERING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Waterproofing – wet areas*, for wet areas.
- *Painting* for priming of embedded steel.

2 PRODUCTS

2.1 MATERIALS

Plastering materials
Cement: To AS 3972.

- Type GP.

Limes for building: To AS 1672.1.

Sand: To be fine, sharp, well-graded sand with a low clay content and free from efflorescing salts.

Gypsum plaster
General: To be a proprietary product containing calcium sulfate hemihydrate with additives to modify setting.

Metal lath: Expanded metal to AS 1397.

Screw-in footing system
Requirement: Provide a proprietary system designed to AS 2159.

0310 CONCRETE

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Termite management.*
- *Cementitious toppings.*

1.2 STANDARDS

General
Formwork design and construction, formed surfaces: To AS 3610.

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.

Ground slabs and footings: To AS 2870.

1.3 VAPOUR BARRIER AND DAMP – PROOF MEMBRANE

Requirement
Conform to *Common requirements.*

0331 BRICK AND BLOCK CONSTRUCTION

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to *Termite management.*

1.2 STANDARD

General
Materials and construction: To AS 3700.

2 PRODUCTS

2.1 MATERIALS

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

Masonry durability
Requirement: Conform to AS 3700, Table 5.1.

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

Proportions: Conform to the BCA clause 3.3.1.6 and Table 3.3.1.2.

2.2 COMPONENTS

Wall ties
Standard: To AS/NZS 2699.1.

Non-seismic areas: Type A.

Seismic areas: Type B.

Flashings and damp-proof courses
Standard: To AS/NZS 2904.

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 rated or acoustic.

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.**

Concrete blockwork chasing table

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

0342 LIGHT STEEL FRAMING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Earthwork*, for clearance for masonry bearer supports.
- *Waterproofing-wet areas,* for waterproofing of wet areas.
- *Painting*, for priming of steel before fixing, and repair of zinc-coated steel after cutting and welding.

1.2 STANDARDS

General
Residential and low-rise steel framing: To NASH (National Association of Steel Housing) Standard.

Steel design, fabrication and erection: To AS 4100.

Cold-formed steel: To AS 4600.

0382 LIGHT TIMBER FRAMING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Termite management*, for termite risk reduction.
- *Earthwork*, for clearance for masonry bearer supports.
- *Brick and block construction*, for clearance for timber frame movements.
- *Waterproofing – wet areas*, for waterproofing of wet areas.
- *Painting*, for priming timber before fixing.

1.2 STANDARDS

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

0383 FLOORING AND DECKING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:
- *Termite management*, for termite risk reduction.
- *Resilient finishes* for finishes.
- *Painting* for priming timber before fixing.

1.2 STANDARD

General
Flooring and decking: To AS 1684.4.

2 PRODUCTS

2.1 MATERIALS

Particleboard flooring
Material: To AS/NZS 1860.1.

Fibre cement flooring
Compressed sheets: To AS/NZS 2908.2 Type A, Category 5.

Plywood flooring
Standard: To AS/NZS 2269, bond type A, tongue and grooved.

Recycled timber flooring
Appearance: To be re-sawn and finished to eliminate weathering stains and expose fresh timber.

Decking
Treated softwoods: To AS 4785.

Hardwoods: To AS 2796.

3 EXECUTION

3.1 GENERAL

Strip flooring
Weather: Do not fix strip flooring until the work is weathertight.

Particleboard flooring
Installation: To AS 1860.2.

Junctions: Sand junctions lightly to a smooth, level surface.

Battens on concrete slabs
Framing fixed direct: Fix seasoned battens to the concrete slab so that their top surfaces are aligned.

Framing fixed on resilient pads: Fix seasoned battens on resilient pads to the concrete slab.

Vapour barrier
General: Provide a vapour barrier where open spaces under timber floors can be subjected to hot drying wind.

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

3.2 FIXING

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

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

Between underlay sheets: 6 mm.

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.

Nailing
General: Ensure the boards are in contact with the joists at the time of nailing, particularly where boards are machine nailed. Skew nail in a uniform pattern. If nails are to be less than 10 mm from ends of sheets or boards, pre-drill nail holes 0 – 1 mm undersize.

Sheet flooring
Fibre-cement flooring: Fix sheeting to the supports with adhesive and non-corrosive countersunk screws. Fill the screw holes with sealant before fixing. After fixing, stop the screw heads with the same sealant, finished slightly below the sheet surface.

Particleboard and plywood flooring: Fix sheeting to the supports with adhesive and nail.

Plywood underlay: Fix at 45° to the direction of strip flooring.

Timber decking
Installation: Lay in long lengths (minimum 3 spans) double nailed at each bearing with galvanized nails driven flush. Stagger joints and make them over joists. Leave 4 mm between edges of boards.

Arrises: Chamfered or rounded.

Finishing: Apply the first 2 coats all round before fixing.

3.3 COMPLETION

Protection
General: Protect surfaces as follows:
- Floors: With hardboard or used carpet, taped at all butt joints. Do not cover with sheet plastic.
- Stair treads: Full timber or plywood casing.

0421 ROOFING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:
- *Insulation and sarking membranes* for roof sarking requirements.
- *Hydraulic design and install* for collection of rainwater.

2 PRODUCTS

2.1 COMPONENTS

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

2.2 MATERIALS

Roof tiling
Standard: To AS 2049.

Sheet metal roofing
Standard: To AS 1562.1.

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

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

0551 JOINERY

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:
- *Windows and glazed doors* for reveal and jamb linings.
- *Doors and hatches* for timber doors.

2 PRODUCTS

2.1 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.

Timber veneers: Slip matched and flitch batched and falling within the visual range of the approved samples.

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 background: 1.2 mm.
- For vertical surfaces fixed to a continuous background: 0.8 mm.
- For post formed laminate fixed to a continuous background: 0.8 mm.
- For vertical surfaces fixed intermittently (e.g. to studs): 3.0 mm.

For edge strips: 0.4 mm.

2.2 DOMESTIC KITCHEN ASSEMBLIES

Standard
General: To AS/NZS 4386.1.

2.3 WARDROBE, CUPBOARD AND DRAWER UNITS

Plinths, carcasses, drawer fronts, shelves and doors
Material: Melamine overlaid high moisture - resistant particleboard or melamine overlaid high moisture-resistant medium density fibreboard.

Minimum thickness: 16 mm.

Finish: Decorative laminated sheet or veneer if necessary:
- To conceal fasteners.
- To provide selected colours.

Drawer fronts: Rout for drawer bottoms.

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

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.

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.

Frame: Proprietary system to BCA clause 3.9.2.

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 retarding or thermal reflective insulation.

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 Section 7.

Polyisocyanurate (rigid cellular sheets RC/PIR): To AS 1366.2.

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

Polystyrene (moulded rigid cellular sheets): To AS 1366.3.

Wool: To AS/NZS 4859.1, Section 6.

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

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.

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

Loose fill: Provide boxing to retain loose fill at external edges, cavities and penetrations, and to prevent spilling.

Cavity walls
Product type: Rigid cellular extruded polystyrene sheets.

Application: To the inner brick skin or brick veneer framing.

Fixing: Proprietary plastic clips on pre installed wall ties.

Installation: Horizontally with the tongue to the top edge and firmly against the inner brick skin or wall framing. Keep sheets clean and dry and free from mortar and grout. Do not bridge the cavity.

Flashings: Install flashings prior to installing insulation sheets. Prevent entry of water behind the insulation.

Fixing: No. 12-14 x 45 mm Hex Buildex Hi Teks screws.

Flashings: Install flashings prior to installing insulation sheets. Prevent entry of water behind the insulation.

Sarking installation
Standard: To AS/NZS 4200.2.

Wall sarking
General: Provide vapour-permeable sarking behind cladding which does not provide a permanent weatherproof seal, 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.
- In bushfire prone areas to AS 3959-1999.

Installation: Apply to the outer face of external stud walls from the top plate down over the bottom plate and flashing. Run across the studs and lap at least 150 mm at joints. At top, seal across the wall cavity.

Roof sarking
Location: Provide sarking under tile and shingle roofs.

Anti-ponding boards: Provide 4.5 mm fibre-cement anti - ponding boards to eaves of tile roofs below 20° pitch.

Ridge ventilation: Finish sarking at least 50 mm clear of ridges.

Vapour barrier
Requirement: Where the sarking also forms a vapour barrier, seal the laps and penetrations to form a continuous air tight seal and seal to the walls.

0511 LINING

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:

- Waterproofing – wet areas, for wet areas.

1.2 STANDARDS

Plasterboard
Standard: To AS/NZS 2588.

Fibre cement
Standard: To AS/NZS 2908.2.

Wall and ceiling linings: Type B, Category 2.

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

Polycarbonate: To AS 4256.5.

Glazed roofing
Glass selection and installation: To AS 1288.

StandardsMark: Required.

Skylights
General: To AS 4285.

Skylights (rooflights) in bushfire prone areas: To AS 3959-1999 clause 3.9.1.4 and AS 3959-2009.

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.

Tiled roofs: 20kg/m^2 lead.

3 EXECUTION

3.1 GENERAL

Installation
General: To the supplier's recommendations.

Plastic sheet: To AS 1562.3.

Tiles: To AS 2050.

3.2 ROOF PLUMBING

Installation of 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 the roof abuts a wall, 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.
- Planked cladding: Stepped.
- Other: Raking.

Gutters
Minimum slope of eaves gutters: 1:200.

Minimum width overall of valley gutters: 400 mm.

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.

Access cover: Provide a removable watertight access cover at the foot of each downpipe stack.

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

Flashing material
Standard: To AS/NZS 2904.

Hardboard cladding
Standard: To AS/NZS 1859.4.

Exterior cladding: Exterior hardboard.

Sheltered exterior cladding: Tempered hardboard.

Plank cladding: Proprietary system of hardboard planks 9.5 mm thick.

- Joints and edges: PVC-U extrusions.
- External corners: Preformed metal joining pieces.
- Internal corners: Scribe.

Fibre cement cladding
Standard: To AS/NZS 2908.2 Type A, Category 3.

Plank cladding: Proprietary system of single-faced fibre cement planks 7.5 mm thick.

- Joints and edges: PVC-U extrusions.
- Corners: Preformed metal joining pieces.

Sheet cladding: Single-faced fibre cement sheets 6 mm thick.

- Joints, corners and edges: PVC-U extrusions.

Eaves lining: Proprietary system of single-faced fibre cement sheets 4.5 mm thick.

Sheet metal cladding
Standard: To AS 1562.1.

Plywood cladding
Standard: To AS 2271.

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

Fasteners
Steel nails: To AS 2334.

Hot-dip galvanizing: To AS/NZS 4680.

3 EXECUTION

3.1 GENERAL

Cladding
Installation: To the supplier's recommendations.

0451 WINDOWS AND GLAZED DOORS

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to following:

- *Lining* for architraves.
- *Painting* for priming of frames and doors before installation.

1.2 STANDARD

Glass
Selection and installation: To AS 1288.

Windows including louvres
Selection and installation: To AS 2047.

2 PRODUCTS

2.1 MATERIALS

Flashings
Standard: To AS/NZS 2904.

Metal finishes
Zinc plating: To AS 1789, at least Fe/Zn8.

Anodising: To AS 1231, at least class AA20.

Thermoset powder coating: To AS 3715.

2.2 COMPONENTS

Louvre window assemblies
Description: Provide louvre blades mounted in a metal surround frame or subframe and able to withstand the permissible-stress-design wind pressure for that location without failure or permanent distortion of members, and without blade flutter.

Adjustable louvres: Provide louvre blades clipped into blade holders pivoted to stiles or coupling mullions, linked together in banks, each bank operated by an operating handle incorporating a latching device, or by a locking bar.

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.

Safety
Security grilles: To AS 5039.

Security screen doors: To AS 5040.

Bushfire screens: To BCA Table 3.7.4.1 and AS 3959-1999.

3 EXECUTION

3.1 GENERAL

Standards
Security screen door and window grill installation: To AS 5039.

Preglazing
General: If possible, preglaze doors and windows.

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 HATCHES

1 GENERAL

1.1 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Lining* for architraves.
- *Painting* for priming of frames and doors before installation.

1.2 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 MATERIALS

Flashings
Standard: To AS/NZS 2904.

2.2 COMPONENTS

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

Door construction
Flush doors: To be of balanced construction.

Medium density fibreboard doors: Board designated by the manufacturer as having a moisture resistance which is suitable for the exposure of the door.

Safety
Security screen doors: To AS 5040.

Bushfire screens: To BCA Table 3.7.4.1.

3 EXECUTION

3.1 GENERAL

Installation
Windows: To AS 2047.

Security screen door grilles installation: To AS 5039.

Preglazing
If possible, preglaze doors and windows.

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.

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.

0454 OVERHEAD DOORS

1 GENERAL

1.1 STANDARD

General
Garage doors: To AS/NZS 4505.

0455 DOOR HARDWARE

1 PRODUCTS

1.1 COMPONENTS

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.

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

2 EXECUTION

2.1 GENERAL

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

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

Hinges table

Thickness of door (mm)	Size of door (mm x mm)	Number of hinges (per door leaf)	Size of hinges (steel)
35 mm	2040 x 920	3	100 x 70 x 3 mm
40 mm	2040/2400 x 1020	4	100 x 80 x 3.5 mm

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 CROSS REFERENCES

Associated worksections
Conform to the following:

- *Windows and glazed doors.*

1.2 SUBMISSIONS

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

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.

Solid backed annealed glass mirrors
Backing: 9 mm waterproof plywood.

Adhesive fixing to backing: Non-acidic silicone adhesive at the rate recommended by the manufacturer.

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

BASI Certificate

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

Alterations and Additions

Certificate number: A59192

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

Director-General
Date of issue: Monday, 23, November 2009

NSW GOVERNMENT | Planning

Description of project

Project address	
Project name	Pepar Residence
Street address	158 Condamine Street Balgowlah 2093
Local Government Area	Manly Council
Plan type and number	Deposited Plan 1117653
Lot number	150
Section number	0
Project type	
Dwelling type	Attached dwelling house
Type of alteration and addition	My renovation work is valued at $50,000 or more, and does not include a pool (and/or spa).

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

Construction	Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check

Insulation requirements

The applicant must construct the new or altered construction (floor(s), walls, and 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
floor above existing dwelling or building.	nil	
external wall: framed (weatherboard, fibro, metal clad)	R1.30 (or R1.70 including construction)	
raked ceiling, pitched/skillion roof: framed	ceiling: R1.74 (up), roof: foil backed blanket (55 mm)	medium (solar absorptance 0.475 - 0.70)

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

Windows and glazed doors

The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below. Relevant overshadowing specifications must be satisfied for each window and glazed door.	✓	✓	✓
The following requirements must also be satisfied in relation to each window and glazed door:		✓	✓
Each window or glazed door with standard aluminium or timber frames and single clear or toned glass may either match the description, or, have a U-value and a Solar Heat Gain Coefficient (SHGC) no greater than that listed in the table below. Total system U-values and SHGCs must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions.		✓	✓
For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill.	✓	✓	✓
Pergolas with polycarbonate roof or similar translucent material must have a shading coefficient of less than 0.35.		✓	✓
External louvres and blinds must fully shade the window or glazed door beside which they are situated when fully drawn or closed.		✓	✓
Pergolas with fixed battens must have battens parallel to the window or glazed door above which they are situated, unless the pergola also shades a perpendicular window. The spacing between battens must not be more than 50 mm.		✓	✓

Windows and glazed doors glazing requirements

Window / door no.	Orientation	Area of glass inc. frame (m2)	Overshadowing Height (m)	Overshadowing Distance (m)	Shading device	Frame and glass type
W1-B4	N	4	0	0	external louvre/blind (adjustable)	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)
W2-Bth2	N	4	0	0	eave/verandah/pergola/balcony >=900 mm	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)
W3-B3	N	12	0	0	external louvre/blind (adjustable)	timber or uPVC, single clear, (or U-value: 5.71, SHGC: 0.66)

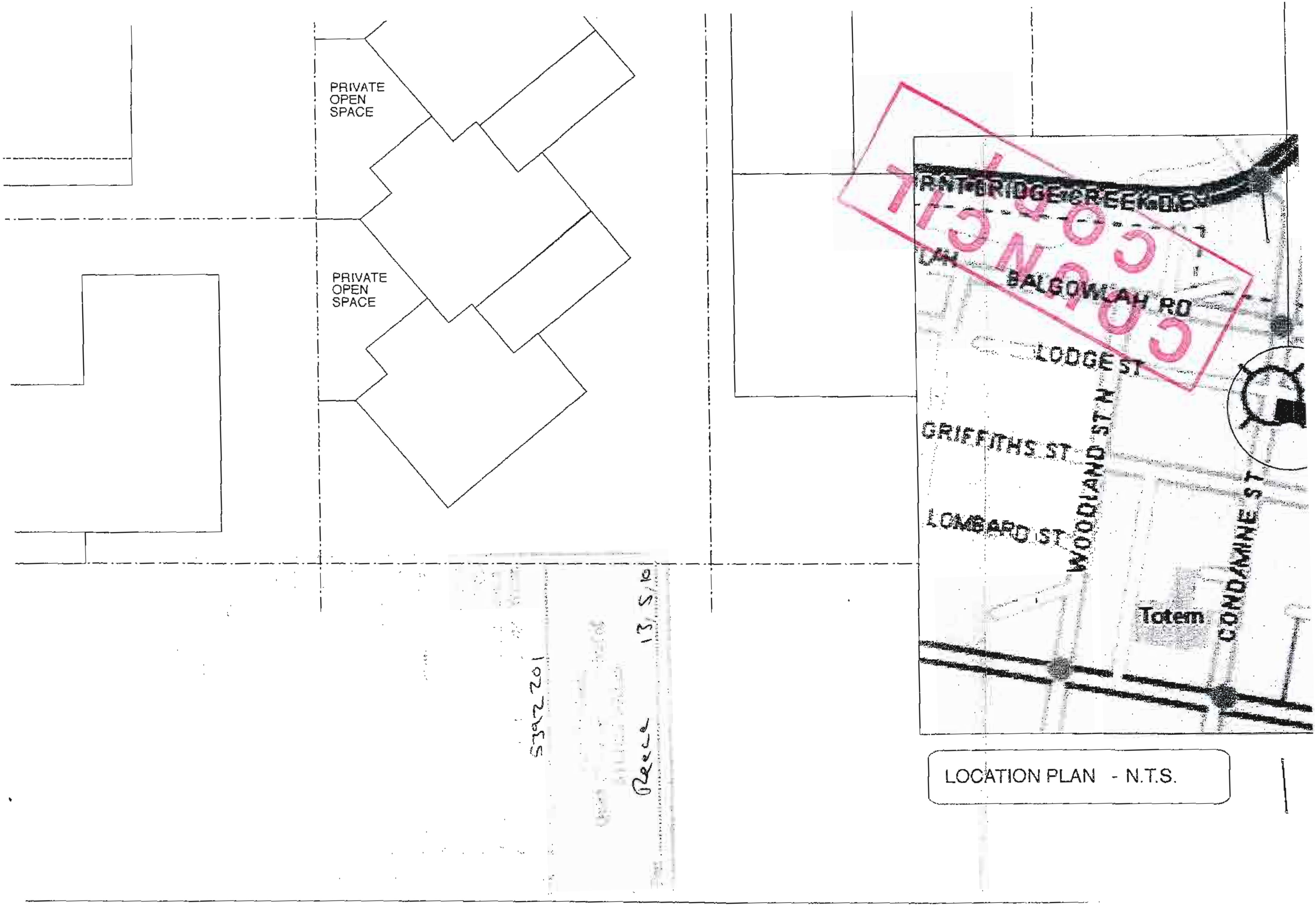
Skylights

Glazing requirements	Show on DA Plans	Show on CC/CDC Plans & specs	Certifier Check
The applicant must install the skylights in accordance with the specifications listed in the table below.	✓	✓	✓
The following requirements must also be satisfied in relation to each skylight:		✓	✓
Each skylight 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.		✓	✓

Skylights glazing requirements

Skylight number	Area of glazing inc. frame (m2)	Shading device	Frame and glass type
S1	0.9	no shading	aluminium, moulded plastic single clear, (or U-value: 6.21, SHGC: 0.808)

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.



LOCATION PLAN - N.T.S.

Timber Stud Systems

SYSTEM SPECIFICATION	TYPICAL LAYOUT	ACOUSTIC OPINION
• Lining material as per system table. • Timber Framing in accordance with AS1684 or AS1720.1. • Cavity insulation as per system table. • 20-40mm separation between frame and GYPROCK SHAFT LINER PANEL. • 25mm GYPROCK SHAFT LINER PANEL between steel H-Studs at 600mm maximum centres. • 20-40mm separation between frame and GYPROCK SHAFT LINER PANEL. • Cavity insulation as per system table. • Timber Framing in accordance with AS1684 or AS1720.1. • Lining material as per system table.		PKA 018 Deemed Discontinuous Construction by BCA Vol 2 Clause 3.8.6.2.

FRL Report/Opinion	SYSTEM N°	WALL LININGS	CAVITY INFILL	Rw / Rw+Ctr STUD DEPTH	
				70mm	90mm
60/60/60 WFRA SF45743.3	CSR 500	*Both Sides* • 1 x 10mm GYPROCK SOUNDCHEK	(a) 75mm Bradford Comfortseal R1.5 - both sides	59/47	61/**50**
			(b) 95mm Bradford Comfortseal R2.0 - both sides	61/49	63/**52**
			(c) ASB3 Autex or TSB3 Tontine Polyester - both sides	57/45	59/48
			(d) ASB5 Autex or TSB5 Tontine Polyester - both sides	59/47	61/**50**
			MINIMUM WALL THICKNESS mm	225	265
60/60/60 WFRA SF45743.3	CSR 501	*Both Sides* • 1 x 10mm GYPROCK FLAMECHEK MR	(a) 75mm Bradford Comfortseal R1.5 - both sides	58/46	60/49
			(b) 95mm Bradford Comfortseal R2.0 - both sides	60/48	62/**51**
			(c) ASB3 Autex or TSB3 Tontine Polyester - both sides	56/44	58/47
			(d) ASB5 Autex or TSB5 Tontine Polyester - both sides	58/46	60/49
			MINIMUM WALL THICKNESS mm	225	265
60/60/60 WFRA SF45743.3	CSR 502	*Both Sides* • 1 x 13mm GYPROCK SOUNDCHEK	(a) 75mm Bradford Comfortseal R1.5 - both sides	62/**51**	64/**54**
			(b) 95mm Bradford Comfortseal R2.0 - both sides	64/**53**	66/**56**
			(c) ASB3 Autex or TSB3 Tontine Polyester - both sides	60/49	62/**52**
			(d) ASB5 Autex or TSB5 Tontine Polyester - both sides	62/**50**	64/**54**
			MINIMUM WALL THICKNESS mm	231	271
60/60/60 WFRA SF45743.3	CSR 503	*Both Sides* • 1 x 6mm Cemintel™ Wallboard	(a) 75mm Bradford Comfortseal R1.5 - both sides	59/46	61/49
			(b) 95mm Bradford Comfortseal R2.0 - both sides	61/48	63/**51**
			MINIMUM WALL THICKNESS mm	217	257

FIRE AND ACOUSTIC MEASURES for 158 Condamine Street, Balgowlah

Construction will be in accordance with the BCA, which requires 60/60/60 which can be achieved with a single skin of brickwork 230mm thick.

The existing 230mm party wall will be carried up to the underside of the proposed roof and wall cladding. The brickwork is to be finished within 50mm of the roof and cladding and be filled with a non-combustible insulation material.

TERMITE PROTECTION

RE: ALTERATIONS AND ADDITIONS TO 158 CONDAMINE STREET, BALGOWLAH

1. SCOPE OF WORKS

The works consist of a first floor addition built of light timber framing and cladding.

2. APPROACH TO TERMITE PROTECTION

The first floor addition framing of both structural and non structural members will be built using timber treated for termites.

Regular inspections will be carried out to ensure termite activity is not present within the house.

SDA

Simpson Design Associates Pty Ltd ACN 088 796 785
Consulting Engineers
Studio 1, 84 Mullens Street
Balmain NSW 2041
Telephone 02 9810 6911
Facsimile 02 9810 6922
Email sda@simpsondesign.com.au
www.simpsondesign.com.au

12 January 2011

Project Number: MX0152

Emmalee & Andrew Pepar
158 Condamine Street
Balgowlah NSW 2093

158 Condamine St, Balgowlah - Alts & Adds - Structural Adequacy Certificate

Dear Emmalee & Andrew,

We visited the property at 158 Condamine St., Balgowlah to inspect the structure and assess its capacity to withstand the loads exerted by the proposed alterations and additions.

The proposed alterations are shown on the DA drawings produced by Jaggers Kirkham Architects that indicate Alts & Adds to the property.

The existing building structure was noted as being masonry walls with suspended timber floors and appeared to be in a good condition.

Details of the structural work associated with the proposed alterations and additions are shown on our drawings MX0152 – S1.00, S2.00, S3.00 and S4.00.

Based on our inspection of the property we confirm that the existing walls are capable of supporting the loads from the proposed alterations and additions. The adequacy of the structure will not be affected provided the work is carried out in accordance with our details.

Yours sincerely,

Marie O'Looney

Marie O'Looney,
SIMPSON DESIGN ASSOCIATES Pty Ltd

Waste Minimisation and Management Plan & Checklist

The demolition and construction of developments generates significant amounts of waste. The aim of this plan is to facilitate maximum resource recovery and reduction in waste materials and minimise environmental impacts of developments. Manly Council requires on site management of any waste generated during demolition and construction; this involves planning the reuse, recycling and disposal of waste from all types of developments. Carefully managing waste from a development decreases the social costs and health and safety risks associated with waste. The plan encourages the efficient use of resources, which is not only environmentally sustainable but is also economically beneficial.

Applicant Details	
Application No.	358/09
Name	Emmalee Pepar
Address	158 CONDAMINE STREET BALGOWLAH NSW 2093
Phone number(s)	0416 213 112
Email	emmaleepepar@gmail.com
Project Details	
Address of development	158 CONDAMINE STREET BALGOWLAH NSW 2093
Existing buildings and other structures currently on the site	DWELLING HOUSE (SEMI-DETATCHED)
Description of proposed development	FIRST FLOOR ADDITION INCLUDING 2 BEDROOMS AND A BATHROOM

This development achieves the waste objectives set out in the DCP. The details on this form are the provisions and intentions for minimising waste relating to this project. All records demonstrating lawful disposal of waste will be retained and kept readily accessible for inspection by regulatory authorities such as council, DECC or WorkCover NSW.

Name	Emmalee Pepar
Signature	EmPepar
Date	17/1/11

DEMOLITION (All Types of Developments)				
	Reuse	Recycling	Disposal	
Type of waste generated	Estimate Volume (m3) or Weight (t)	Estimate Volume (m3) or Weight (t)	Estimate Volume (m3) or Weight (t)	Specify method of onsite reuse, contractor and recycling outlet and /or waste depot to be used
Excavation material N/A				
Timber (specify) Concrete N/A		OREGON ROOF FRAMING		KIMBRIKI TIMBER RECYCLING
Bricks/pavers N/A				
Tiles - TERRACOTTA ROOF				KIMBRIKI TILE RECYCLING
Metal (specify) N/A				
Glass N/A				
Furniture N/A				
Fixtures and fittings N/A				
Floor coverings N/A				
Packaging (used pallets, pallet wrap) N/A				
Garden organics N/A				
Containers (cans, plastic, glass) N/A				
Paper/cardboard N/A				
Residual waste				IF ANY, DISPOSED OF AND RE-CYCLED WHERE POSSIBLE
Hazardous/special waste e.g. asbestos (specify)			NONE KNOWN	IF FOUND WASTE WILL BE DISPOSED OF ACCORDING TO STATUTORY REQUIREMENTS
Other (specify)				

CONSTRUCTION (All Types of Developments)				
	Reuse	Recycling	Disposal	
Type of waste generated	Estimate Volume (m3) or Weight (t)	Estimate Volume (m3) or Weight (t)	Estimate Volume (m3) or Weight (t)	Specify method of on site reuse, contractor and recycling outlet and /or waste depot to be used
Excavation material N/A				
Timber (specify) OFF-CUTS				KIMBRIKI TIMBER RE-CYCLING
Concrete N/A				
Bricks/pavers N/A				
Tiles				ANY BATHROOM TILES TO BE RETAINED FOR FUTURE REPAIRS
Metal (specify) N/A				
Glass N/A				
Plasterboard (offcuts)				KIMBRIKI TIP
Furniture N/A				
Fixtures and fittings N/A				
Floor coverings				
Packaging (used pallets, pallet wrap)				PALLETS TO BE RETURNED WRAP TO BE DISPOSED OF
Garden organics N/A				
Containers (cans, plastic, glass) N/A				
Paper/cardboard				RECYCLED
Residual waste				IF ANY, DISPOSED OF AND RE-CYCLED WHERE POSSIBLE
Hazardous/special waste (specify) N/A				
Other (specify)				

ONGOING OPERATION (Residential, Multi Unit, Commercial, Mixed Use and Industrial)

Address of development:

158 CONDAMINE ST BALGOWLAH

Type of Waste to be Generated	Expected Volume per week	Proposed on-site storage and treatment facilities	Destination of waste
Please specify. For example: glass, paper, food waste, offcuts,	Litres or m^3	Please specify. For example: waste storage and recycling area, garbage chute, on-site composting, compaction equipment	Please specify. For example: Recycling depot, name of landfill site, compost in garden, contractor etc.

ONGOING MANAGEMENT OF WASTE

Please describe the methods that will be employed to ensure the ongoing management of waste onsite (e.g. lease conditions, caretaker/manager onsite)

MANLY COUNCIL WASTE & RECYCLING SERVICES ARE TO BE MAINTAINED.

CONSTRUCTION DESIGN (All Types of Developments)

Outline how measures for waste avoidance have been incorporated into the design, material purchasing and construction techniques of the development

ALL MATERIALS WILL BE ORDERED + MEASURED TO ENSURE MINIMAL WASTAGE OCCURS.