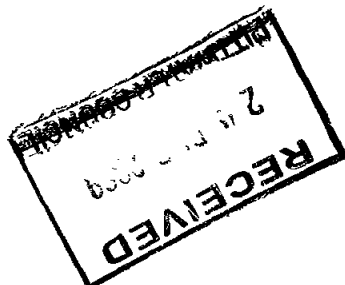


Job No 2005/307

Friday, 18 December 2009

Pittwater Council
P O Box 882
Mona Vale NSW 1660



Attention General Manager

**RE Interim Occupation Certificate No 05/307/02
Warriewood Aged Care Facility,
6 - 14 Macpherson Street, Warriewood**

Please find attached a copy of Occupation Certificate 05/307/02 and required attachments issued by Steve Watson & Partners for the above mentioned development in accordance with Section 109C(1)(c) and 109H of the Environmental Planning and Assessment Act 1979

Please find attached a cheque in the amount of \$30 00 payable for the registration of the Occupation Certificate

Can you please forward SWP a receipt for the acknowledgment of the lodgement cheque

With regard to the attached certificate please do not hesitate to contact me should you have any queries or require any further information

Regards,

Tim Abovian
Assistant Building Regulations Consultant
Steve Watson & Partners Pty Ltd

R-273204
\$30 PRVC
24/12/09
[Signature]

S:\Jobs\2005 Jobs\2005-307 Warriewood Valley Retirement Village
6 14 Macpherson Street, Warriewood\IOC RACF Stage 2\IOC
Docs\2009\204 IOC letter to council.docx

BUILDING REGULATIONS CONSULTANTS AND CERTIFIERS
FIRE SAFETY ENGINEERS
LEVEL 5 432 KENT STREET SYDNEY NSW 2000
TEL +61 2 9283 6555 | FAX +61 2 9283 8500
www.swpartners.com.au
ABN 48 102 366 576



STEVE WATSON & PARTNERS

BUILDING REGULATIONS CONSULTANTS AND CERTIFIERS
FIRE SAFETY ENGINEERS

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sydney@swpartners.com.au
www.swpartners.com.au
ABN 48 102 366 576

INTERIM OCCUPATION CERTIFICATE

Issued under the Environmental Planning and Assessment Act 1979 Section 109C(1)(c) and 109H

Interim Occupation Certificate No. 05/307/02

I, Stephen Watson, certify that

- I have been appointed as the Principal Certifying Authority under section 109E
- I have taken into consideration the health and safety of the occupants of the building.
- A Development Consent or Complying Development Certificate is in force with respect to the building
- A Construction Certificate has been issued with respect to the plans and specifications for the building
- The building is suitable for occupation or use in accordance with its classification under the Building Code of Australia
- Where required, a Final Fire Safety Certificate has been issued for the building or an Interim Fire Safety Certificate has been issued for the relevant part of the building
- Where required a report from the Commissioner of Fire Brigades has been considered

Applicant	Name Anglican Retirement Villages Address P O Box 284 Suburb Castle Hill State NSW Postcode 1765
Location of the Property	Address 6-14 McPherson Street Suburb Warriewood State NSW Postcode 2101 Real Property Description Lot B DP400488, Lot 22 DP5464, Lot B DP358765, Lot B DP345528, PT Lot 1 DP208149, PT Lot 3 DP579309, PT Lot 3 DP942319, PT Lot 4 DP579309
Building Description	Stage 2A RACF – Nursing Home and amenities
Building Code of Australia Classification	Class 5, 7a & 9c
Date of Receipt	Date Received 2 nd December 2009
Determination	Approved Date of Determination 18 th December 2009
Development Consent	Development Consent Number N0102/05 & S96 modifications Council Pittwater Council Date of Determination 6 th April 2006, 24 th October 2007, 22 nd December 2006, 8 th January 2007, 24 th October 2007 & 23 rd May 2008
Construction Certificate	Construction Certificate Number 05/307/03 , 05/307/04 , 05/307/06 Date of Determination 30/01/08 , 08/05/08 , 10/12/08

Steve Watson

Accreditation Body BPB

Accreditation No BPB0432

Date of Endorsement Friday, 18 December 2009

Documentation relied upon to issue Occupation Certificate 05/307/02 for Warnewood Retirement Village

Item No	Description	Date
1	Mandatory inspection record (Final)	29 09 09
2	Application for Occupation Certificate	02 12 09
3	Final fire safety certificate	14 10 09
4	Alternative Solution Report SY080105 R1 4 prepared by Defire (NSW) Pty Ltd	JUL 09
5	Structural Engineering Certification from Cardno (NSW) Pty Ltd	12 10 09
6	Inspection Report from Defire (NSW) Pty Limited	14 10 09
7	Certificates contained within SWP Certification Package	-
8	SWP DA Checklist and associated documentation	-



STEVE WATSON & PARTNERS

BUILDING REGULATIONS CONSULTANTS AND CERTIFIERS
FIRE SAFETY ENGINEERS

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TEL +61 2 9283 6555 FAX +61 2 9283 8500
sydney@swpartners.com.au
www.swpartners.com.au
ABN 48 102 366 576

S162B Site Inspection Record

Project Address	6-14 McPherson Street, Warnewood	Inspection record #	2005/307/02 F
Inspector	Steve Watson	Accreditation #	BPB0432
DA ref	N0102/05 & S96 modifications	CC Ref	05/307/03 , 05/307/04 , 05/307/06
Date	29 09 09	Type	COMPLETION

Checklist

Consistency with approved plans?	Yes	BCA compliance matters OK?	Yes
Pre OC DA Conditions? (see checklist attached)	Yes	Basix matters OK?	N/A

Issues/Rectification works required

#	Issue	Comment/ requirement	Action by
1			

Was the Inspection

- ☒ Satisfactory
☐ Satisfactory subject to resolution of the issues identified above
☐ Unsatisfactory

Signed

Inspector

29th September 2009

Date



STEVE WATSON
& PARTNERS

LEVEL 5, 472 KENT STREET SYDNEY NSW 2007
TEL +61 2 9283 5551 FAX +61 2 9283 8500
SYDNEY OFFICE 002 21
SYDNEY OFFICE 002 21
APN 48 10 365 574

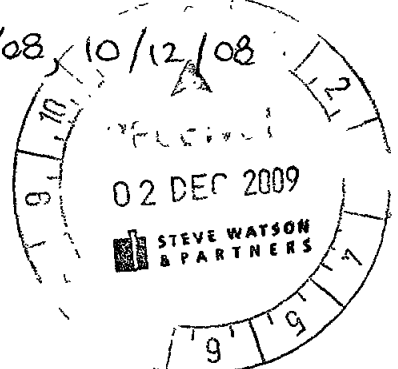
APPLICATION FOR OCCUPATION CERTIFICATE

PART 1 Application and Site Details

Type of Certificate Sought Tick appropriate boxes	<input type="radio"/> Interim certificate <input type="radio"/> Final certificate <input type="radio"/> Change of building use of an existing building <input checked="" type="radio"/> Occupation/use of a new building
Applicant <i>It is important that we are able to contact you if we need more information</i> <i>Please give us as much detail as possible</i>	Mr <input type="checkbox"/> Mrs <input type="checkbox"/> Miss <input type="checkbox"/> Ms <input type="checkbox"/> Other <input type="text"/> Surname (or Company) <u>Anglican Retirement Villages</u> Given names (or ABN) _____ Address <u>PO Box 284, Castle Hill</u> State <u>NSW</u> Post Code <u>1765</u> Phone (02) <u>9421 5316</u> Fax (02) <u>9421 2217</u> Mobile <u>0449 904 902</u> E-mail <u>michael.viskovich@arv.org.au</u>
Location of the Property <i>We need this to correctly identify the land</i>	Address <u>6-14 MacPherson Street</u> <u>Wharfedale</u> State <u>NSW</u> Post Code <u>2101</u> Real Property Description <u>Lot B/DP400488, Lot A/DP400488, Lot 22/DP5464 ;</u> (eg Lot/DP/Section, etc) <u>Lot B/DP358765 ; Lot A/DP358765, Pt Lot B/DP345528</u> <u>Pt Lot 1/DP208149 ; Pt Lot 3/DP579309 ; Pt Lot 3/DP942319 ; Pt Lot 4/DP57930</u> <small>The real property description is mandatory these details are shown on your rate notices property deeds etc</small>

PART 2 Work Description

Development Consent or Complying Development Certificate	Development Consent/Complying Development No <u>N0102/05</u> Date of Determination <u>06/04/06</u>
Construction Certificate	Construction Certificate No <u>05/307/03 ; 05/307/04 ; 05/307/06</u> Date of Determination <u>31/01/08 ; 08/05/08 ; 10/12/08</u>



Building Details

The building classification must be the same as that specified in the Complying Development Certificate or Construction Certificate

If you are applying for an Occupation Certificate for part of the building, describe the part of the building

South East wing, 2nd floor (Chapel),
Activities area, Prayer & office).

Describe the proposed use of the building Aged Care Building

What is the classification of the building under the BCA Auxiliary to 9(c) & 5

Change in Classification

What is the existing classification of the building under the BCA NA

What is the new classification of the building under the BCA NA

Attachments

The following information must accompany an application for an Occupation Certificate

- A copy of Development Consent or Complying Development Certificate
- A copy of the Construction Certificate, where relevant
- A Final Fire Safety Certificate or Interim Fire Safety Certificate (not required for class 1a or 10 buildings)
- Other certificates or documentation relied on

PART 3 Declaration

Declaration

If the applicant is a company or strata title body corporate a director or authorised delegate must sign this declaration

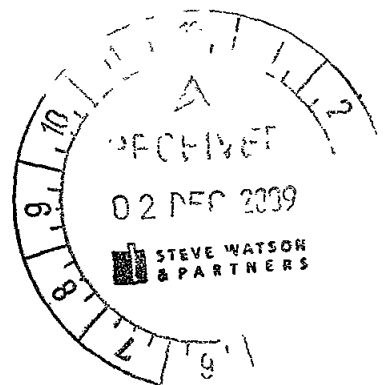
I declare that all the information in the application is, to the best of my knowledge, true and accurate

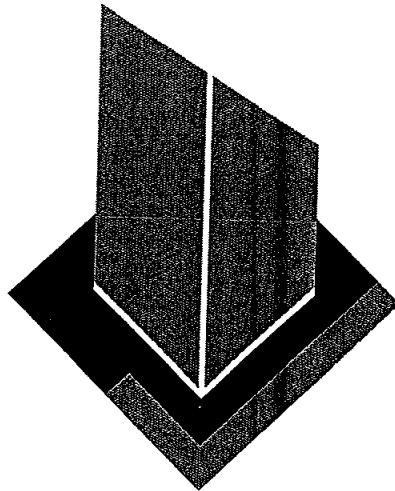
I also understand that if the information is incomplete the application may be delayed or rejected or more information may be requested. I acknowledge that if the information provided is misleading, any approval granted may be void.

Signature [Signature] Date 2 / 12 / 09

Name, if you are not the applicant Michael Viskovich - Anglican Retirement Village

In what capacity are you signing if you are not the applicant Project Manager





Defire

Alternative solution report

Warriewood Valley RACF – Stage 2a

Client Anglican Retirement Villages



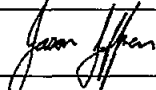
Report number SY080105

Revision R1 4

Report issued July 2009

Defire (NSW) Pty Ltd | ABN 30 099 090 089 | T 2 9211 4333 | F 2 9211 4366
Suite 3, Level 4, 83 97 Kippax Street, Surry Hills

Amendment schedule

Version	Date	Information relating to report			
R1 0	09/05/2008	Reason for issue	Draft report issued for review and comment		
			Prepared by	Reviewed by	Approved by
		Name	Chrstian Kenneby	Magdalena Angerd	
		Signature			
R1 1	15/05/2008	Reason for issue	Revised draft report issued after initial comments from the BCA consultant		
			Prepared by	Reviewed by	Approved by
		Name	Chrstian Kenneby	Magdalena Angerd	
		Signature			
R1 2	04/06/2008	Reason for issue	Final report after minor changes		
			Prepared by	Reviewed by	Approved by
		Name	Chrstian Kenneby	Magdalena Angerd	Magdalena Angerd
		Signature			
R1 3	17/06/2008	Reason for issue	Final report after incorporated minor changes from the architect		
			Prepared by	Reviewed by	Approved by
		Name	Chrstian Kenneby	Magdalena Angerd	Magdalena Angerd
		Signature			
R1 4	08/07/2009	Reason for issue	Report updated to include additional discharge issues for (SW) stair 1 and (G SE) stair 1		
			Prepared by	Reviewed by	Approved by
		Name	Chrstian Kenneby	Chrs Jamieson	Jason Jeffress
		Signature			

Executive summary

This alternative solution report documents the findings of a fire safety engineering assessment undertaken to determine whether the proposed Warnewood Valley RACF – stage 2a complies with the relevant performance requirements of the Building Code of Australia 2007 (BCA). Defire undertook the assessment in accordance with the International Fire Engineering Guidelines at the request of Anglican Retirement Villages.

The project is a two storey aged care building. The south-east wing of building also contains administration and assembly areas. The building is located above a single storey basement carpark.

The building is to be provided with a sprinkler system in accordance with specification E1 5 of the BCA and AS 2118 4 and 6 – 1995.

The design of the building includes areas which do not comply with the deemed-to-satisfy (DTS) provisions of the BCA. Table 1 describes the BCA requirements associated with the alternative solutions.

No	Description of alternative solutions	DTS provision	Performance requirements (A0 10)	Method of meeting performance requirements (A0 5)	Assessment method (A0 9)
1	The fire rating of the construction is proposed to be reduced to be consistent with the requirements for a type C construction.	Clause C1 1 and specification C1 1	CP1 and CP2	Equivalent to DTS A0 5(b)(ii)	Verification method A0 9(c)
2	Openings within 6m of external path of travel from a fire isolated stair are not proposed to be protected in accordance with clause C3 4 of the BCA.	Clause D1 7	CP2 and DP5	Complies with performance requirements A0 5(b)(i)	Verification method A0 9(b)(ii)

Table 1 BCA requirements associated with the alternative solutions

The fire safety engineering assessment undertaken found that the design of the building achieves compliance with the relevant performance requirements of the BCA, subject to the following recommendations:

- This report and the fire safety measures listed in section 5 must be identified on the fire safety schedule for the building. They must be maintained and certified in accordance with the Environmental Planning and Assessment Regulations, 2000 and relevant Australian standards.
- If there are building alterations or additions, a change in use or changes to the fire safety system in the future, a reassessment will be needed to verify consistency with the assessment contained in this report.

Contents

Amendment schedule	2
Executive summary	3
Contents	4
1 Introduction	5
2 Fire engineering brief	5
3 Description of the building and alternative solutions	5
3 1 Building description	5
3 2 Occupant characteristics	6
3 3 Alternative solutions	7
4 Scope, limitations and assumptions	7
4 1 Scope and limitations	7
4 2 Assumptions	8
5 Fire safety measures	9
5 1 General	9
5 2 Structural fire resistance	9
5 3 Fire compartmentation	9
5 4 Protection of openings	11
5 5 Evacuation provisions	16
5 6 Smoke detection and alarm	17
5 7 Fire suppression systems	17
6 Alternative solution 1 – Reduction in FRL	18
6 1 Introduction	18
6 2 Methodology	18
6 3 Intent of the BCA	18
6 4 Acceptance criteria	19
6 5 Impact of sprinklers	19
6 6 Carpark	20
6 7 Class 5 and 9b portion	20
6 8 Fire brigade intervention	23
6 9 Conclusion	23
6 10 Compliance with the performance requirements	24
7 Alternative solution 2 – Discharge of fire-isolated exits	25
7 1 Introduction	25
7 2 Methodology	25
7 3 Intent of the BCA	25
7 4 Acceptance criteria	25
7 5 Assessment	25
7 6 Conclusion	29
7 7 Compliance with the performance requirements	29

1. Introduction

This alternative solution report documents the findings of a fire safety engineering assessment undertaken to determine whether the proposed Warnewood Valley RACF – stage 2a complies with the relevant performance requirements of the Building Code of Australia 2007 (BCA)¹ Defire undertook the assessment in accordance with the International Fire Engineering Guidelines ² at the request of Anglican Retirement Villages

2. Fire engineering brief

A formal fire engineering brief (FEB) meeting was not held before the preparation of the draft report because the alternative solution relates to only minor departures from the deemed-to-satisfy (DTS) provisions of the BCA. The stakeholders were provided with the opportunity to comment on the proposed design, performance requirements identified, assessment methodology and fire safety measures when the draft alternative solution report was issued. Comments were received from Blackett Maguire + Goldsmith on version R1 0 and report amended to address these comments. The main areas raised were to address reduced fire rating in lieu of change of type of construction and all areas of the building being used by the age care residents. Comments were received on version 1 1 by Steve Watson and Partners clarifying that all of the south-east wing of the ground floor has been classified as class 5/9b. This is considered to fulfil the FEB process for the relatively simple issues associated with the project.

If any of the stakeholders identified in Table 2 believe a formal FEB meeting is required please contact Christian Kenneby of Defire to arrange on 02 9211 4333

Name	Role	Organisation	Contact details
Michael Lockwood	Client	Anglican Retirement Villages	02 9421 5333
Greg Weeks	Builder	St Hilliers	02 9259 5319
George Bellas	Architect	Mernn & Cranston Architects	07 3840 3930
David Blackett	BCA consultant	Blackett Maguire & Goldsmith	02 9211 7777
Steve Watson	Private Certifier	Steve Watson & Partners	02 9283 6555
Christian Kenneby	Fire safety engineer	Defire	02 9211 4333

Table 2 Stakeholders

3. Description of the building and alternative solutions

3.1 Building description

The project comprises the construction of Warnewood Valley RACF – stage 2a

The project is a two storey aged care building. The south-east wing of building also contains administration and assembly areas. The building is located above a single storey basement carpark.

The building is to be provided with a sprinkler system in accordance with specification E1 5 of the BCA and AS 2118 4 and 6 – 1995

¹ Building Code of Australia 2007 Australian Building Codes Board Australia 2007
² International Fire Engineering Guidelines – Edition 2005 Australian Building Codes Board Australia 2005

A description of the main characteristics of the building for the purpose of determining compliance with the BCA is given in Table 3³. The proposed use and classification of the building or part in accordance with clause A3.2 of the BCA is described in Table 4.

Characteristic	BCA clause	Description
Effective height	A1.1	Less than 25m
Type of construction required	C1.1	Type B. Reduced fire ratings are proposed.
Rise in storeys	C1.2	Two

Table 3 Main building characteristics

Part of building	Use	Classification (A3.2)
Basement	Carparking and ancillary services	Class 7a
Ground floor level	Offices, public assembly and aged care	Class 5, 9b and 9c
Level 1	Aged care	Class 9c

Table 4 Use and classification

3.2 Occupant characteristics

The characteristics of the occupants expected to be in the building are listed in Table 5.

Characteristic	Description
Familiarity	Office – Occupants are expected to be staff who are familiar with the layout of the building and trained in emergency situations in accordance with AS3745. Aged care – Occupants are expected to be staff, visitors and residents. The residents are expected to require a varying level of assistance from staff, from partially dependent to fully dependant - ie residents may have Dementia. Carpark – Occupants are mainly expected to be associated with the aged care and be within the carpark for short periods.
Awareness	Aged care – Occupants may be asleep at the time of a fire which could delay their response time for evacuation. Some residents – eg Dementia residents - may require full assistance in evacuation. Office/Carpark – Occupants are expected to be awake and alert to a potential emergency event such as a fire in the building.
Mobility	Occupants are elderly, visitors and staff. Some occupants may be mobility impaired. These occupants may require crutches, a wheelchair or similar to evacuate on their own or need assistance from staff. Staged evacuation procedures between fire and smoke compartments are likely to be required.
Age	The majority of the occupants are expected to be elderly people. Staff and visitors are of mixed ages.
Language	Although occupants may have English as their second language, they are expected to understand signs and verbal instructions in English.
Occupant load	Population densities used in this assessment are based upon table D1.13 of the BCA which specifies 30 m²/person for the carpark portion of the building and 10 m²/person for offices. All rooms are for one resident.

Table 5 Occupant characteristics

³ Warnewood Valley RACF(Stage2A) Project No 80124 Blackett Maguire & Associates 31/03/2008

3 3 Alternative solutions

The design of the building includes areas that do not comply with the DTS provisions of the BCA. We intend to use a performance-based fire safety engineering approach to develop alternative solutions to the DTS provisions of the BCA. Table 6 describes the BCA requirements associated with the alternative solutions.

No	Description of alternative solutions	DTS provision	Performance requirements (A0 10)	Method of meeting performance requirements (A0 5)	Assessment method (A0 9)
1	The fire rating of the construction is proposed to be reduced to be consistent with the requirements for a type C construction.	Clause C1 1 and specification C1 1	CP1 and CP2	Equivalent to DTS A0 5(b)(ii)	Verification method A0 9(c)
2	Openings within 6m of external path of travel from a fire isolated stair are not proposed to be protected in accordance with clause C3 4 of the BCA.	Clause D1 7	CP2 and DP5	Complies with performance requirements A0 5(b)(i)	Verification method A0 9(b)(ii)

Table 6 BCA requirements associated with the alternative solutions

4. Scope, limitations and assumptions

4 1 Scope and limitations

- This report is limited to the alternative solutions described in section 3 3.
- This report is limited to compliance with the fire safety aspect of the performance requirements of the BCA. Matters such as property protection (other than protection of adjoining property), business interruption, public perception, environmental impacts and broader community issues – such as loss of a major employer and impact on tourism – have not been considered as they are outside the scope of the BCA.
- This report considers single point arson as a source of ignition. Arson involving accelerants or multiple ignition sources is not considered in this assessment as it is outside the scope of the BCA.
- The scope of our works is limited to considering evacuation and fire safety issues for people with disabilities to the same degree as the DTS provisions of the BCA. Specifically, consideration of evacuation from the building by people with disabilities under the provisions of the Disability Discrimination Act 1992 is excluded.
- If there are building alterations or additions, a change in use or changes to the fire safety systems in the future, a reassessment will be needed to verify consistency with the assessment in this report.
- The data, methodologies, calculations and conclusions documented within this report specifically relate to the building and must not be used for any other purpose.
- A number of issues within the BCA are recognised to be interpretive in nature. Where these issues are encountered, interpretations are made that are consistent with standard industry practice and / or Defire policy formulated in regard of each issue.
- The documentation that forms the basis for this report is listed within Appendix A.

- This report has been prepared based upon information provided by others. Defire has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated into this report as a result

4.2 Assumptions

- The design complies with the current DTS provisions of the BCA except for the specific alternative solutions described within section 3.3
- All of the fire safety systems are assumed to be designed, installed and operate in accordance with the appropriate Australian standards, other design codes, legislation and regulations relevant to the project unless specifically stated otherwise
- For a satisfactory level of fire safety to be achieved, regular testing and maintenance of all fire safety systems and measures, including management-in-use systems, is essential and is assumed in the conclusion of this assessment

5. Fire safety measures

The fire safety engineering assessment undertaken found that the design of the building achieves compliance with the relevant performance requirements of the BCA, subject to the following recommendations

5.1 General

- 1 The design must comply with the current DTS provisions of the BCA unless specifically mentioned. This section does not provide a comprehensive list of fire safety measures required by the DTS provisions of the BCA. The fire safety measures listed within this section relate only to the alternative solutions. The fire safety measures must be read in conjunction with the DTS provisions of the BCA.
- 2 This report and the requirements listed in this section must be identified on the fire safety schedule for the building. They must be maintained and certified in accordance with the Environmental Planning and Assessment Regulations, 2000 and relevant Australian standards.
- 3 If there are building alterations or additions, a change in use or changes to the fire safety measures in the future, a reassessment will be needed to verify consistency with the assessment in this report.

5.2 Structural fire resistance

- 4 The fire resistance levels (FRLs) of the building elements are to be reduced to be consistent with type C construction – including external walls located further than 3m from a fire-source feature are not required to be fire-rated and external load-bearing walls are not required to be of non-combustible construction.

5.3 Fire compartmentation

- 5 Carpark to be separated from ground floor with a separation achieving an FRL of 90/90/90 if load-bearing and -/90/90 if non load-bearing.
- 6 Class 5/9b portion to be separated from class 9c portion with a separation achieving an FRL of 90/90/90 if load-bearing and -/90/90 if non load-bearing and with any doors being -/90/30 fire doors.
- 7 Fire and smoke compartments to comply with clause C2.5 of the BCA in the class 9c portion, including separation of north-west wing and north-east wing as shown in Figure 1 and Figure 2.



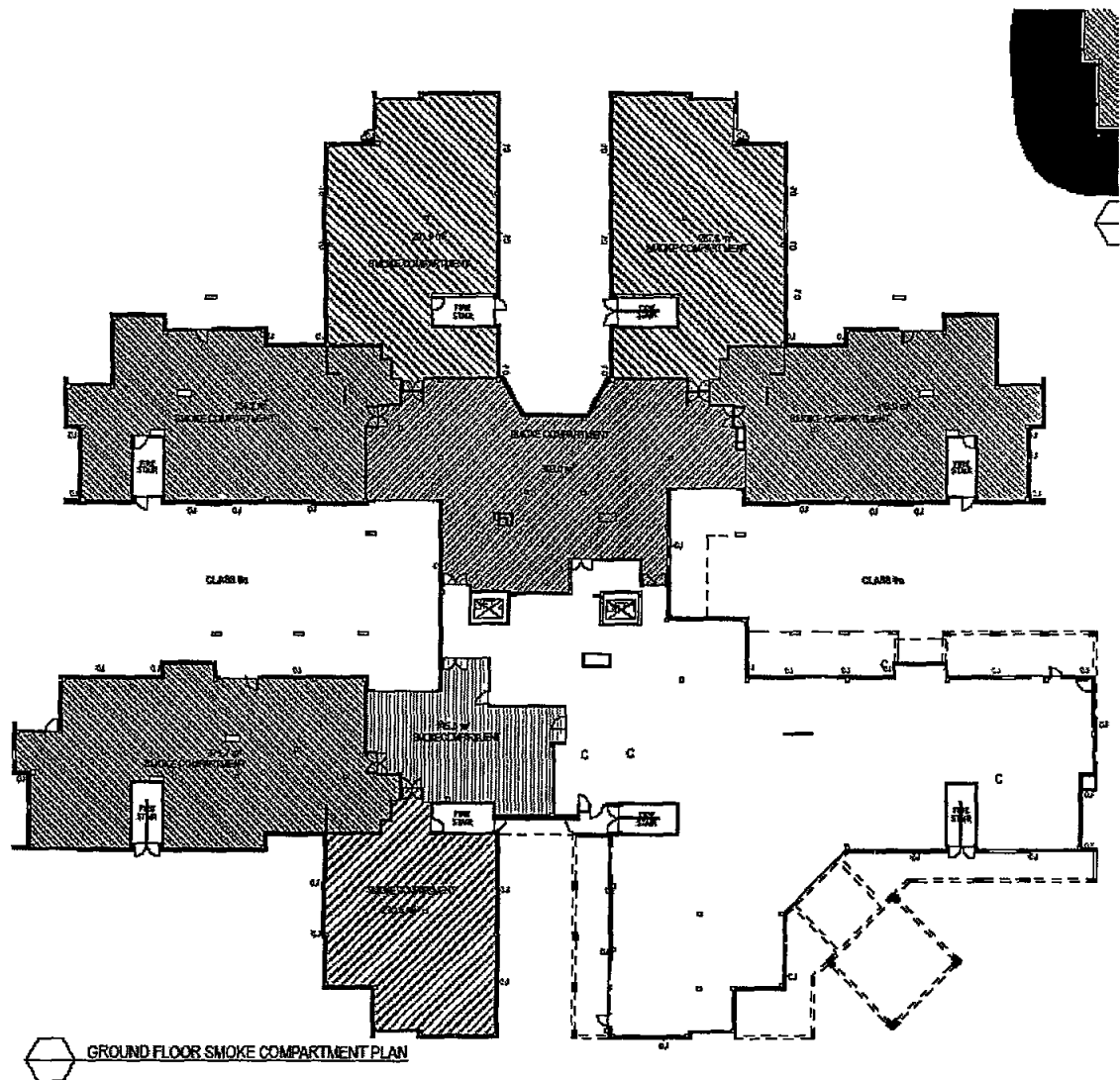


Figure 2 Ground floor smoke compartment plan

5 4 Protection of openings

- 8 Openings within 6m of the path of travel from the discharge of the fire isolated stairs (NW) stair 1, (NE) stair 1, (SE) stair 2, (SW) stair 2, (SW) stair 1 and (G SE) stair 1 – refer to Figure 3 to Figure 6 – need not be protected in accordance with clause D1 7 and C3 4 of the BCA
- 9 Openings within 6m of the path of travel from the discharge of the fire isolated stairs (NW) stair 2 – refer Figure 7 – must be protected in accordance with clause D1 7 and C3 4 of the BCA

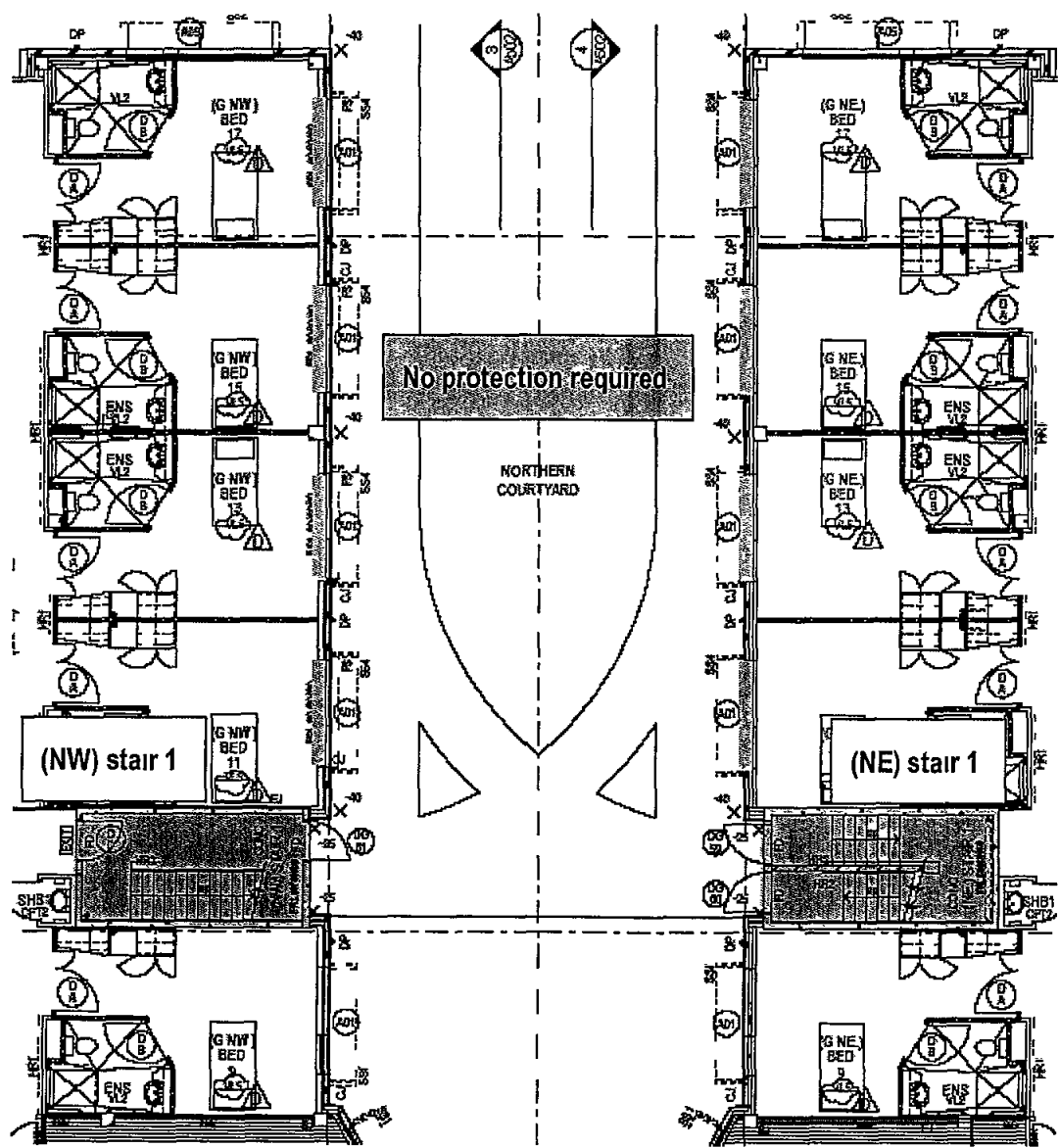


Figure 3 Discharge from (NW) stair 1 and (NE) stair 1

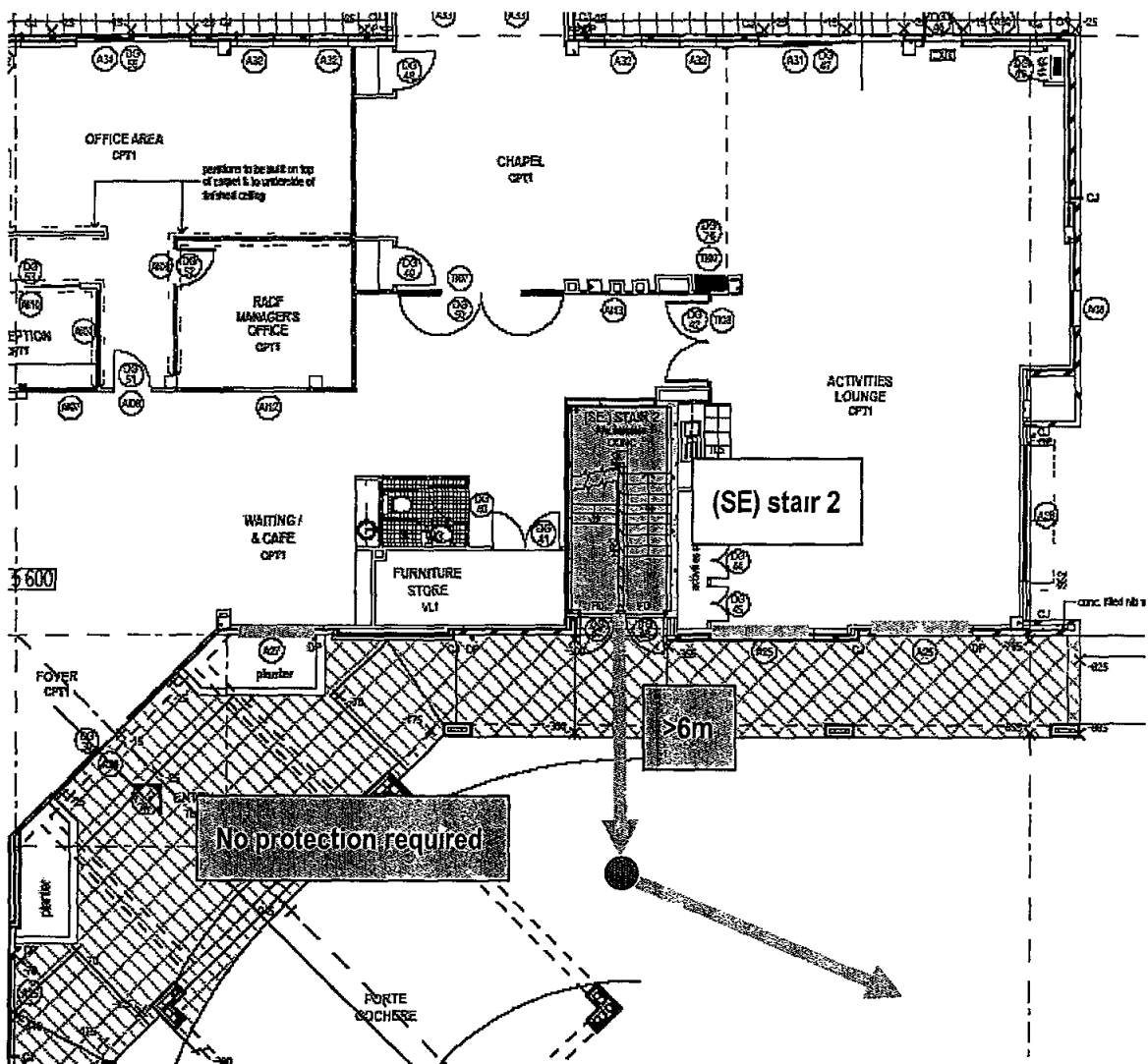


Figure 4 Discharge from (SE) stair 2

Figure 5 Discharge from (SW) stair 2

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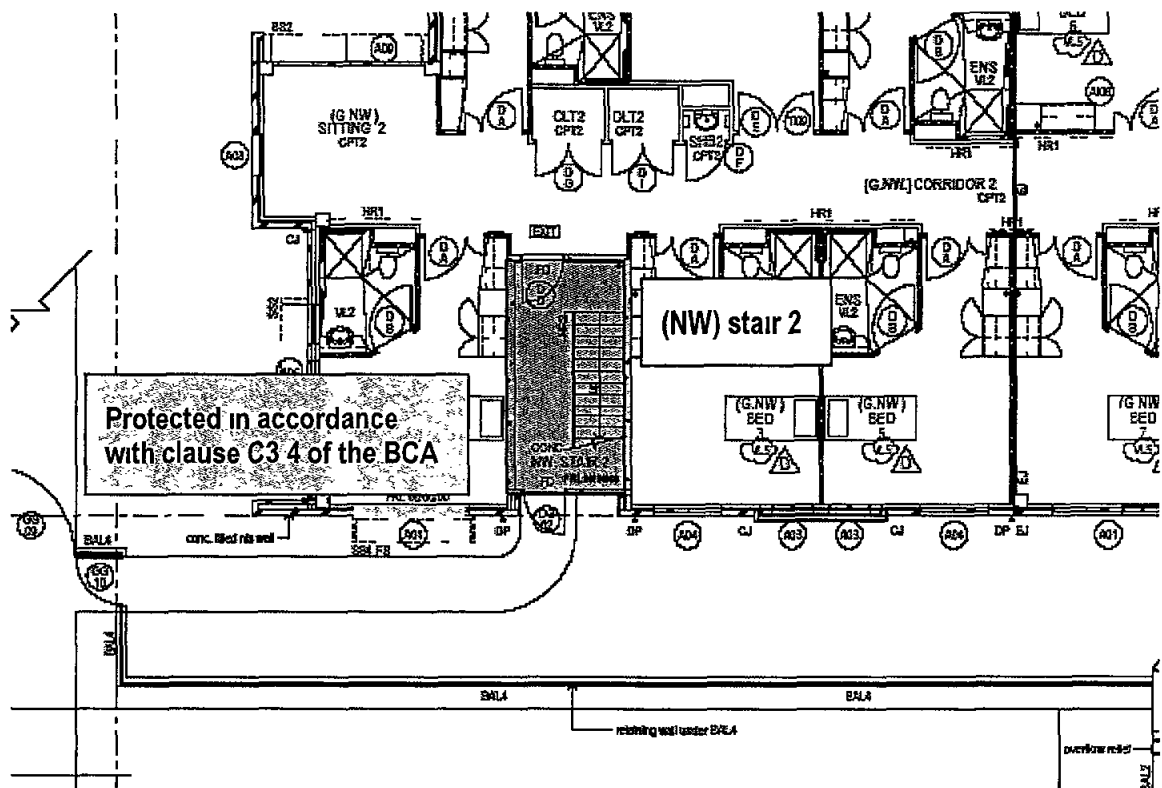


Figure 7 Discharge from (NW) stair 2

5 5 Evacuation provisions

- 10 Travel distances within the building must comply with clauses D1 4 and D1 5 of the BCA
- 11 All exits and paths of travel to exits must be in accordance with clause D1 6 of the BCA
- 12 All exits are to be constructed with materials in accordance with part D2 of the BCA
- 13 The path of travel to open space when discharging from stair (SW) stair 1 and (G SE) stair 1 must comply with items 11, 12 and Figure 8

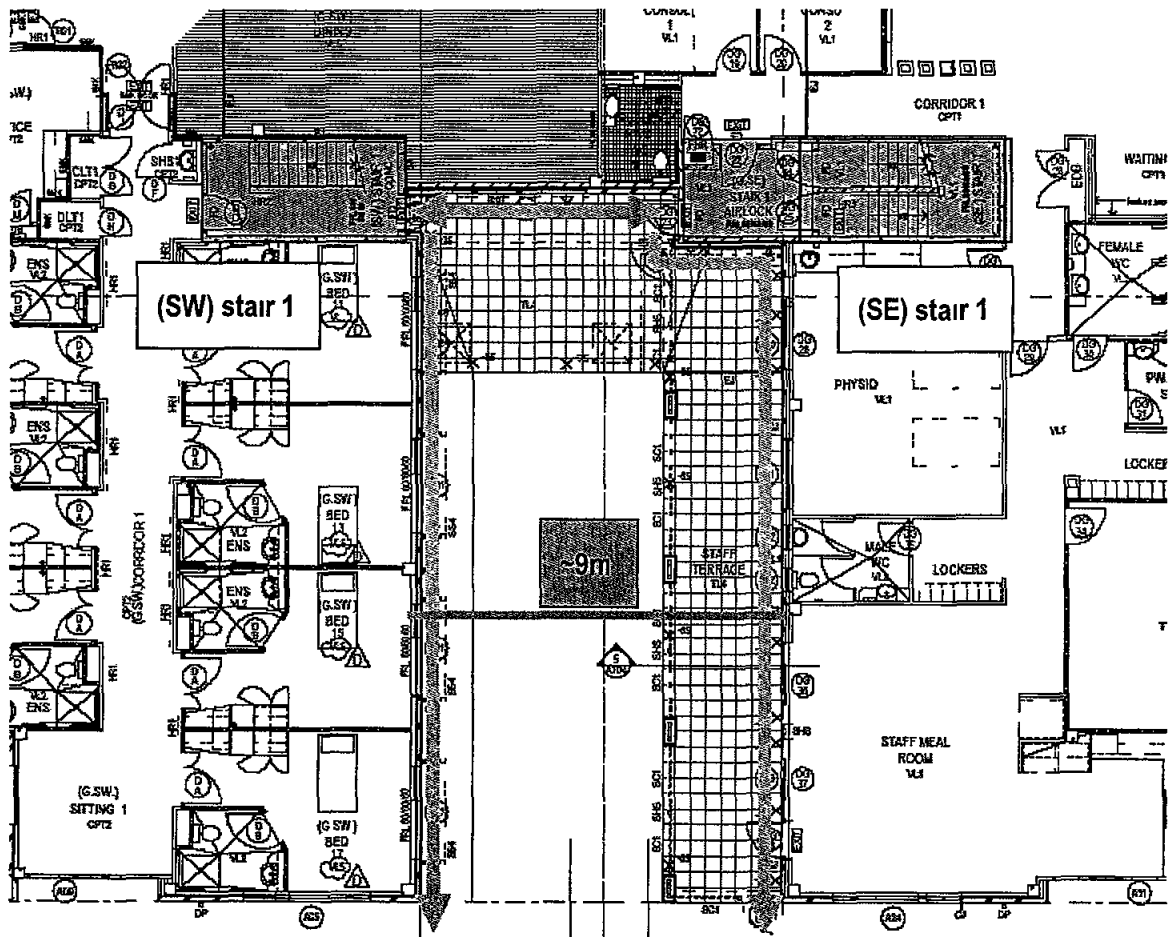


Figure 8 Path of travel to open space

5 6 Smoke detection and alarm

- 14 A detection system must be installed throughout ground floor and level 1 of the building in accordance with clause 4 of specification E2 2a of the BCA

5 7 Fire suppression systems

- 15 A sprinkler system in accordance with the requirements of specification E1 5 of the BCA and AS 2118 4 and 6-1995 must be provided throughout the building

6. Alternative solution 1 – Reduction in FRL

6.1 Introduction

According to table C1 1 of the BCA a class 9 building with a rise in storeys of two is required to be of type B construction. However, under clause C1 5 of the BCA a two storey class 9c aged care building that is protected throughout with a sprinkler system complying with specification E1 5 may be of type C construction provided that the compartment sizes comply with the limitations specified by clause C2 2.

The proposed design includes class 5/9b and class 7a uses and the concession in clause C1 5 of the BCA is therefore not applicable. It is proposed to reduce the FRL to be consistent with the requirements of a building of type C construction – generally requiring a 90 minutes fire rating in lieu of a 120 minutes fire rating.

This assessment was undertaken to demonstrate that the design complies with performance requirements CP1 and CP2 of the BCA by showing that the proposed design is at least equivalent to a DTS compliant design.

6.2 Methodology

The assessment undertaken for the building was a qualitative comparative assessment involving the following sub systems:

- Sub-system C – Fire spread and impact and control
- Sub-system D – Fire detection, warning and suppression
- Sub-system E – Occupant evacuation and control
- Sub-system F – Fire services intervention

6.3 Intent of the BCA

To assess whether the design complies with performance requirements CP1 and CP2 of the BCA, the intent of clause C1 1 must be understood. The Guide to the BCA⁴ says that the intent of clause C1 1 is 'to establish the minimum fire-resisting construction required for class 2-9 buildings'. The guide expands further that 'table C1 1 explains that the required type of construction of a building depends on risk levels as indicated by the class of building and the building's height as indicated by the rise in storeys.

The class of building is a measure of the building's likely

- use,
- fire load,
- population, and
- mobility of the occupants, such as whether they are sleeping or alert.'

The height (rise in storeys) of the building is relevant as a measure of likely evacuation times and evacuation difficulty.'

The guide also notes that other factors may need to be considered such as the maximum fire compartment size.

⁴ Guide to the BCA 2007 Australian Building Codes Board Australia 2007

The Guide to the BCA⁵ says that the intent of clause C1 5 is 'to grant concessions for low-rise Class 2 and Class 3 buildings provided with a good means of egress and sprinkler protected Class 9c aged care buildings'. The guide expands further that 'the concession for Class 9c buildings recognises the benefits of sprinkler systems and differences between Types A, B and C construction. It must be remembered that the Class 9c building must comply with all the other BCA provisions, including the floor area limitations contained in Table C2 2'

6 4 Acceptance criteria

The assessment is to show that the hazard associated with the proposed design is no greater than for a two storey class 9c building which would be allowed to be constructed out of type C construction. This is to be demonstrated by assessing the following:

- Carpark is adequately separated from levels above and is not expected to affect the performance of the levels above. This is to be demonstrated by showing that the carpark is separated to a degree at least equivalent to that required for a Type B construction.
- The hazard associated with the ground and first floor is no higher than for a two storey aged care building. The use, the fire load, the population and the mobility of the occupants is to be considered.

6 5 Impact of sprinklers

6 5 1 Sprinkler reliability

Research conducted in Australia estimates the reliability of automatic sprinklers to be approximately 95%^{6 7}

6 5 2 Impact of sprinklers on fire spread

Full-scale experimental measurements demonstrated that sprinklers provide superior protection to compartmentation in reducing the hazards⁸. Sprinklers provide a higher level of life safety and property protection than an idealised compartment system because sprinklers address the fire hazard more fundamentally. 'Sprinklers limit the fire spread and when successfully activated and prevent fully developed flashover fires, compartmentation limits the fire's effect. Sprinklers protect, to a degree, the room of fire origin and those people in the room not intimately involved in the fire, compartmentation does not protect the room of origin.'

The successful activation of the sprinklers can therefore be considered to control or extinguish the fire, limiting the spread of fire to the area of fire origin and mitigate the risk of fire spread to adjoining fire compartments.

6 5 3 Impact of sprinklers on fire intensity

In the absence of directly relevant data, it is generally assumed that the successful activation of sprinklers has the following impact on compartment temperatures during a fire^{9 10 11}.

⁵ Guide to the BCA 2007 Australian Building Codes Board Australia 2007

⁶ Fire Safety Engineering Guidelines – Edition 2001 Australian Building Codes Board Australia November 2001

⁷ Bukowski R W et al Estimates of the Operational Reliability of Fire Protection Systems International Conference on Fire Research and Engineering US 1999

⁸ Madrzykowski D The Reduction in Fire Hazard in Corridors and Areas Adjoining Corridors Provided by Sprinklers NISTIR 4631 NIST Gaithersburg MD 20899 July 1991

⁹ England J P Young S A Hui M C & Kurban N Guide for the Design of Fire Resistant Barriers and Structures Warminster Fire Research (Aust) Pty Ltd & Building Control Commission Victoria August 2000

¹⁰ Design of Sprinklered Shopping Centre Buildings published by OneSteel – Market Mills

- The average temperatures outside the immediate area of operation of the sprinkler system are below 100°C. This is due to water's high latent heat of vaporisation limiting the temperature of the combustion products to the boiling point of water
- The temperatures in the localised area above the fire are stated to be somewhat higher than the mean compartment temperature but are still unlikely to exceed 200°C except in the immediate vicinity of the flames

England¹² et al also acknowledges that such temperatures are unlikely to have any significant impact on the structural performance of most common building materials such as concrete, steel, timber and masonry. Consequently, the assessment demonstrates that the structure is capable of resisting the effects of a sprinkler controlled fire.

6.6 Carpark

The carpark is proposed to be fire-separated by a construction achieving a 90 minute fire-rating. The BCA clearly acknowledges the relatively low fire hazard associated with a sprinkler protected carpark by allowing certain concessions. Clause 4.2 of specification C1.1 of the BCA allows a carpark in a type B building to be constructed by a construction achieving a 60 minute fire rating if the carpark is protected with a sprinkler system in accordance with specification E1.5 of the BCA. The carpark must also be a separate building or form a part of a building separated from the remainder of the building by a fire-wall. The concession clause allows for a reduction from 120 minute fire-rating to 60 minute fire-rating.

The carpark in the subject building is located at the basement level and is proposed to be fire separated from the levels above by a construction achieving a 90 minute fire-rating and the building is proposed to be sprinkler protected throughout in accordance with specification E1.5 of the BCA. The 90 minute fire-rating and the provision of a sprinkler system is considered to be at least equivalent to a DTS compliant design where a sprinkler protected carpark portion of the building is separated by a 60 minute fire wall.

6.7 Class 5 and 9b portion

Ground floor and level 1 consists of class 9c aged care. A portion of the building – the ground floor south-east wing – has been classified as a class 5/9b portion. The area is proposed to be fire separated from the remainder of the building with a 90 minute fire-rating. It is to be shown that the fire hazard associated with the ground floor and the first floor is no higher than for a two storey class 9c building.

6.7.1 Use and occupant characteristics

All areas of the building except the south-east wing of the ground floor is classified as class 9c - refer to Figure 9. The area is classified as class 5. However, the occupants in this area are to be visitors, staff and residents – ie the same as for the areas of the building classified as class 9c. The area forms the main entrance of the building and contains a foyer, offices, staff areas, chapel and activities lounge. The use of this area is associated with the administration of the aged care and the recreation of the residents of the class 9c portions of the building. This area is only open to the public on invitation to special events. This is consistent with use that may be considered ancillary to an aged care. However as this use is concentrated within one area it has been given a separate classification.

¹¹ Technical Memoranda TM19 1995 – Relationship for smoke control calculations. CIBSE, UK 1995.

¹² England, J.P., Young, S.A., Hui, M.C. & Kurban, N. Guide for the Design of Fire Resistant Barriers and Structures. Warrington Fire Research (Aust) Pty Ltd & Building Control Commission, Victoria, August 2000.

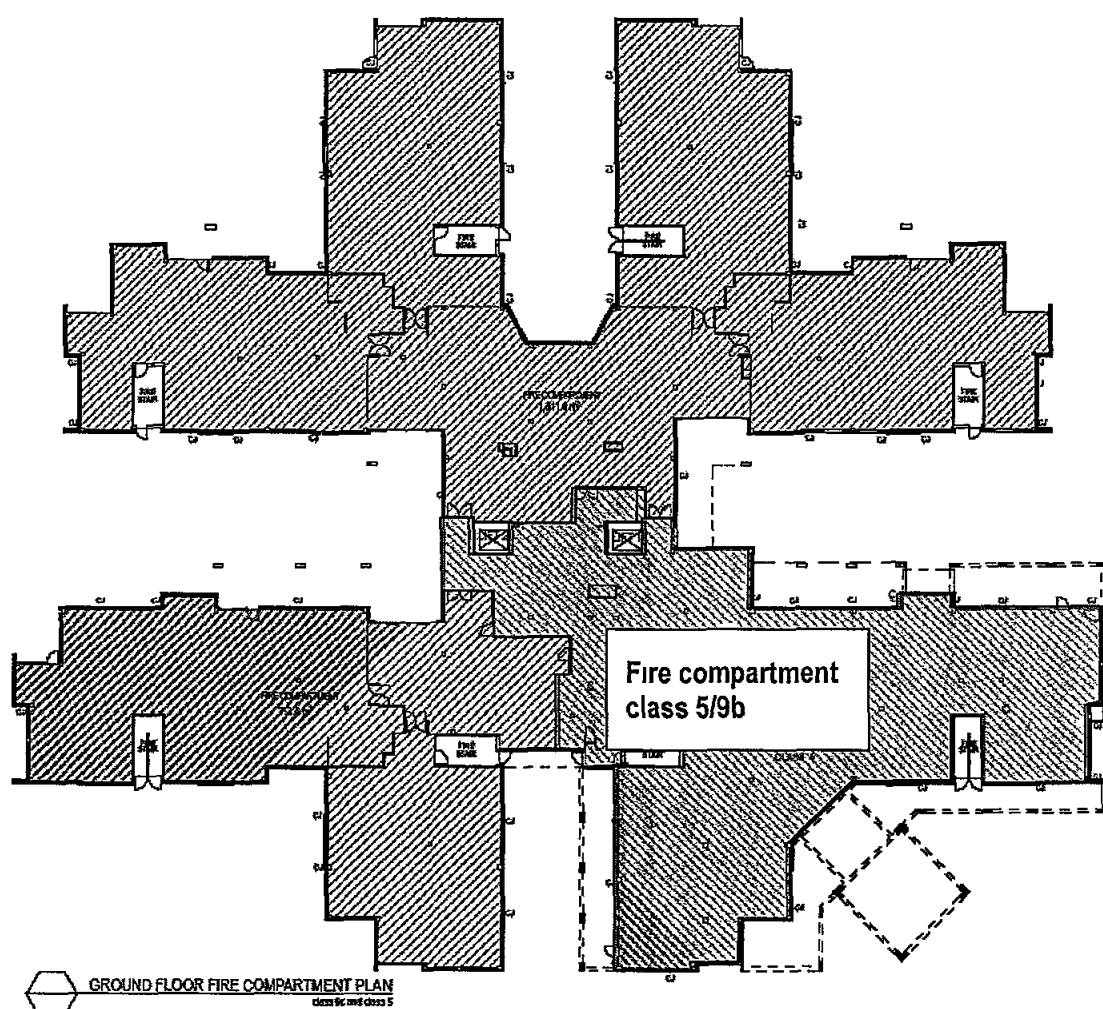


Figure 9 Ground floor – fire compartment class 5/9b

6 7 2 Fire load

The class 5 portion of the building is not considered to have a higher fire-load than the class 9c portions of the building. The fuel load within the waiting room and foyer is expected to be low with a limited amount of chairs, couches and the like. The area is not expected to have a significant amount of storage of combustible materials and the chapel are assumed to be provided with chairs, couches and the like – ie similar fire-load as for the 9c portion with furniture, beds and other combustibles.

It is considered that the concession allowing reduction of type of construction of a two storey aged care is mainly associated with the fact that aged care buildings are required to be sprinkler protected. The building is to be provided with a sprinkler system throughout in accordance with specification E1 5 of the BCA. The benefits of a sprinkler system are discussed within 6 5 1.

6 7 3 Population and mobility

The mobility of occupants and the population will impact on the time required for safe evacuation and for fire brigades to undertake search and rescue. As discussed the characteristics of occupants in the portion classified as class 5/9b is expected to be the same as for the class 9c portion.

The entire class 5/9b portion of the building forms its own fire and smoke compartments with an approximate area of 975m². Due to the classification the area is not required to be divided into smoke compartments not greater than 500m² as required for the 9c portions of the building. The requirement for smoke compartmentation for aged care building is to allow for horizontal evacuation of occupants to a relative place of safety.

It should be noted that even though the smoke compartment is approximate 975m² a significant portion of the area is for staff only and not proposed to be occupied by residents that needs assistance in case of evacuation.

Aged care buildings often require staged evacuation due to occupant's need of assistance. Even though the class 5/9b area of the building is not divided into smaller smoke compartments the area is provided with a number of exits leading directly to the outside plus a number of exits into another smoke/fire compartment – refer to Figure 10. Exits leading directly to the outside versus exits into another smoke compartment are considered to achieve an equivalent level of safety for occupants – as occupants can be moved horizontally to a safe area without vertical movement down stairs.

Due to the use and the compartments size of the class 5/9b portion it may be occupied by a higher number of occupants compared to the 9c portions of the building. However, the occupants in the class 5/9b portion are considered to be relatively mobile compared to the occupants in the 9c portions of the building where occupants may be asleep or in bed awaiting assistance. The class 5/9b portion is also considered to be occupied with a higher number of staff due to the office area and staff meal room that most likely are able to assist residents in a case of evacuation.

It should be noted that the 9c portions of the building will require staged evacuation from level 1 with horizontal movement of occupants between smoke zone and if required evacuation of occupants down stairs.

The evacuation provisions for the class 5/9b portion of the building is considered to be equivalent to the 9c portions of the building due to the occupant characteristics in the area and the benefits of direct egress to the outside.

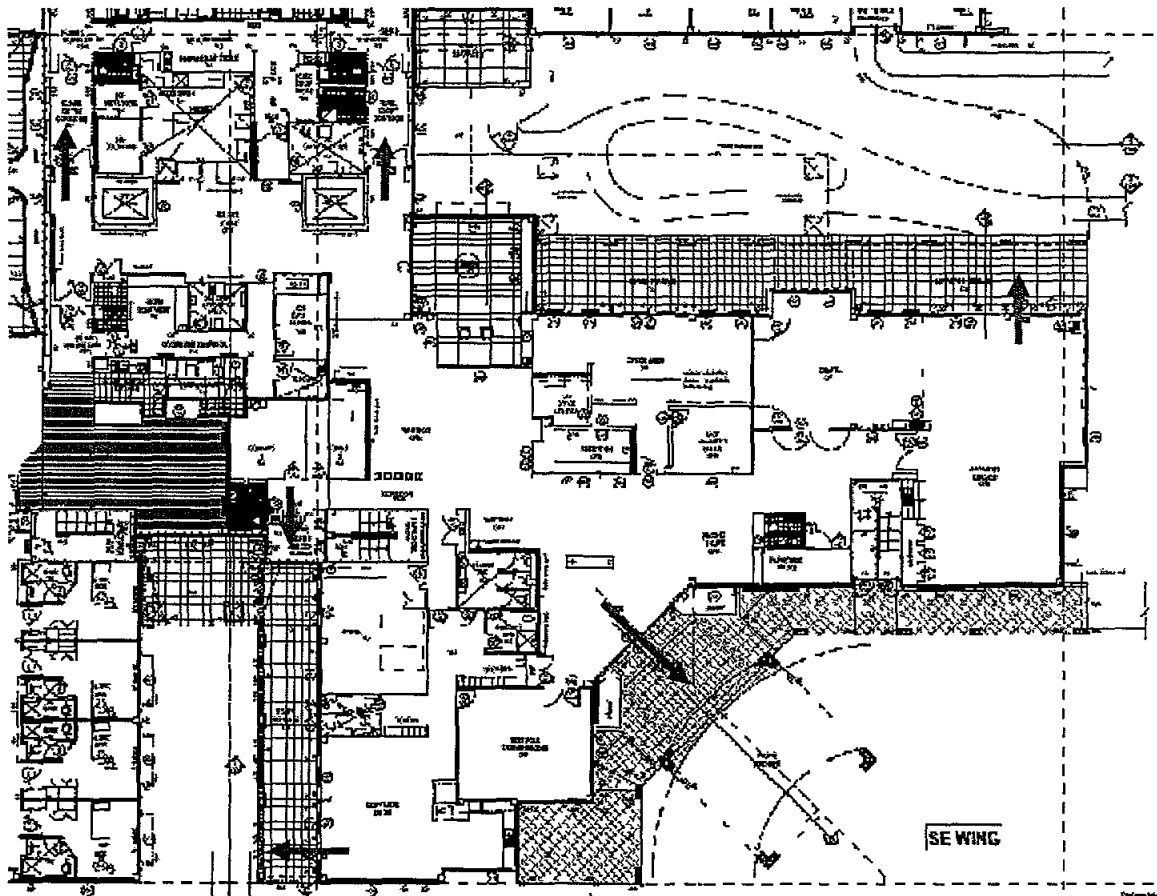


Figure 10 Exits from the class 5/9b area

6 8 Fire brigade intervention

The temperatures described above for a sprinkler controlled fire are below the tenability limits for attending fire-fighters¹³ – heat radiation of 3kW/m² and convected heat of 120°C at 1.5m above floor level – except in the localised area of the fire. The provision of a sprinkler system within the building is considered to significantly improve conditions for fire brigade intervention by controlling fire spread and maintaining low compartment temperatures. It has been demonstrated that the fire hazards associated with the building are not higher than for a building which would be allowed to be constructed out of type C construction and as such fire brigade intervention is also facilitated to the same degree.

6.9 Conclusion

The assessment undertaken for the proposed design demonstrates that the proposed design is equivalent to a DTS compliant design due to the benefits of sprinkler system, the use of the building and the 90 minute fire-rating. The proposed design of the building is therefore considered to achieve compliance with performance requirements CP1 and CP2 of the BCA, subject to compliance with the fire safety measures given in section 5.

¹³ Australian Fire Authorities Council *Fire Brigade Intervention Model V2.2* October 2004

6.10 Compliance with the performance requirements

A summary of the assessment showing compliance with the relevant performance requirements of the BCA is listed as follows

CP1 A building must have elements which will to the degree necessary maintain structural stability during a fire appropriate to—

CP2 A building must have elements which will to the degree necessary avoid the spread of fire—
to exits, and
to sole-occupancy units and public corridors, and
between buildings and
in a building
(b) Avoidance of the spread of fire referred to in (a) must be appropriate to—

Criteria	Compliance
(i) the function or use of the building, and	The project is a two storey aged care building. The south east wing of building also contains administration and assembly areas.
(ii) the fire load, and	The fire load in class 9c is equivalent to a DTS compliant design. Sprinkler is provided in throughout the building to limit fire intensity.
(iii) the potential fire intensity, and	The successful activation of the sprinkler system is expected to limit the potential fire intensity and maintained the average compartment temperatures below approximately 100°C.
(iv) the fire hazard, and	The assessment has demonstrated that the building will be provided with an at least equivalent level of active and passive fire protection as a building complying with the DTS provisions of the BCA.
(v) the number of storeys in the building, and	The building has a rise in storeys of two.
(vi) its proximity to other property, and	Separation distances to adjoining building comply with DTS provisions of the BCA.
(vii) any active fire safety systems installed in the building, and	The building is protected with a sprinkler system in accordance to specification E1 5 throughout and provided with a smoke detection system in accordance with clause 4 of specification E2 2a of the BCA.
(viii) the size of any fire compartment, and	The size of the fire compartments is to comply with the provisions of the BCA.
(ix) fire brigade intervention, and	The assessment has demonstrated that the fire hazards associated with the building are not higher than for a building which would be allowed to be constructed out of type C construction and as such fire brigade intervention is also facilitated to the same degree.
(x) other elements they support, and	Structural elements within the building are expected to retain their loadbearing capability in the event of a sprinkler controlled fire. The class 7a and 5/9b portions are separated from the class 9c providing a level of redundancy in case of sprinkler failure being equivalent to DTS compliant design.
(xi) the evacuation time	The reduced FRL to a 90 minute fire rating is not expected to affect the evacuation time. Class 5/9b portion is provided with direct egress to the outside.

7. Alternative solution 2 – Discharge of fire-isolated exits

7.1 Introduction

According to clause D1 7 of the BCA if a path of travel from the point of discharge of a fire isolated exit necessitates passing within 6m of any part of an opening of the same building measured horizontally at right angles requires openings to be protected in accordance with clause C3 4 of the BCA

The proposed design includes openings in the external wall within 6m of an external path of travel that are not proposed to be protected for stairs (NW) stair 1, (NE) stair 1, (SW) stair 1 and (G SE) stair 1. Other openings are to be protected as required under the DTS provisions of the BCA.

This alternative solution aims to demonstrate that the building design provides occupants with a safe means of evacuation to the degree necessary to comply with performance requirements CP2 and DP5 of the BCA.

7.2 Methodology

The assessment undertaken for the building was a qualitative absolute assessment involving the following sub-systems:

- Sub-system C – Fire spread and impact and control
- Sub-system D – Fire detection, warning and suppression
- Sub-system E – Occupant evacuation and control

7.3 Intent of the BCA

To assess whether the design complies with performance requirements CP2 and DP5 of the BCA, the intent of clause D1 7 must be understood. The Guide to the BCA¹⁴ says that the intent of clause D1 7 is 'to enable occupants to safely enter a fire-isolated exit which discharges to a safe location'.

7.4 Acceptance criteria

The acceptance criterion for the assessment is that fire isolated exits discharge to a point from which a safe path of travel to open space is provided.

7.5 Assessment

The two stairs (NW) stair 1 and (NE) stair 1 do both discharge into the northern courtyard – refer to Figure 11. The NW wing and NE wing are separate smoke compartments.

The two stairs (SW) stair 1 and (G SE) stair 1 discharge into area between the SW wing and the SE wing – refer to Figure 13. The SW and SE wing are separate fire compartments.

It is considered that the risk that occupants will be exposed to untenable levels of radiation from openings in these wings to their path of travel is negated by the ability to move away from the fire affected wing.

Whilst a bedroom on the ground floor at the point of discharge could be on fire and venting to the outside, it is unlikely that two bedrooms on either side of the external area are on fire concurrently from inception or that a fire would develop significantly enough in one of the wings to spread to adjoining

¹⁴ Guide to the BCA 2007 Australian Building Codes Board Australia 2007

Based on the discussion above occupants can discharge from either (NW) stair 1, (NE) stair 1, (SW) stair 1 or (G SE) stair 1 and walk more than 6m measured at a right angle – away from the fire affected wing before turning and proceeding towards open space at a distance of more than 6m from openings in the external wall of the fire affected wing The distance between the external walls is approximately 9m for both the external areas The proposed design is therefore considered to provide an adequate level of protection and meet the intent of the BCA

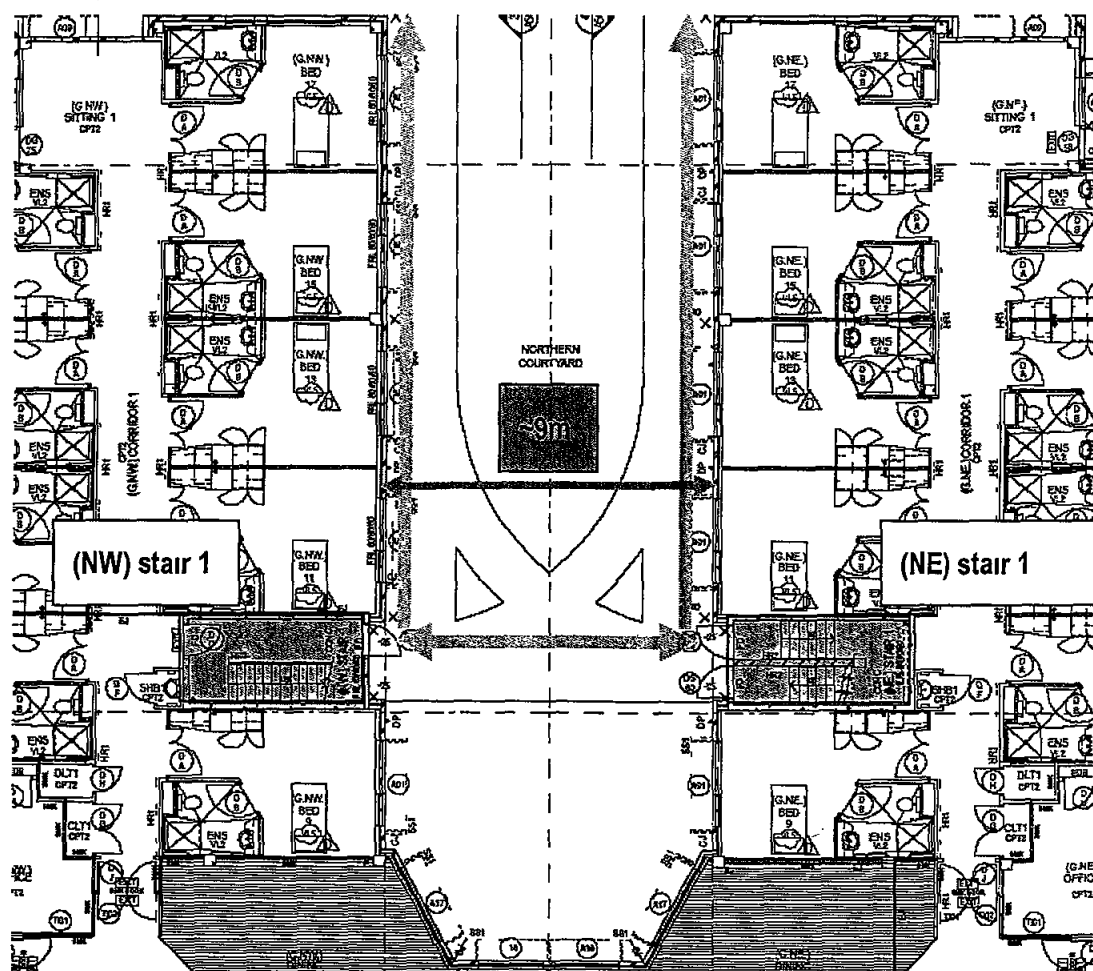


Figure 11 Discharge into the northern courtyard

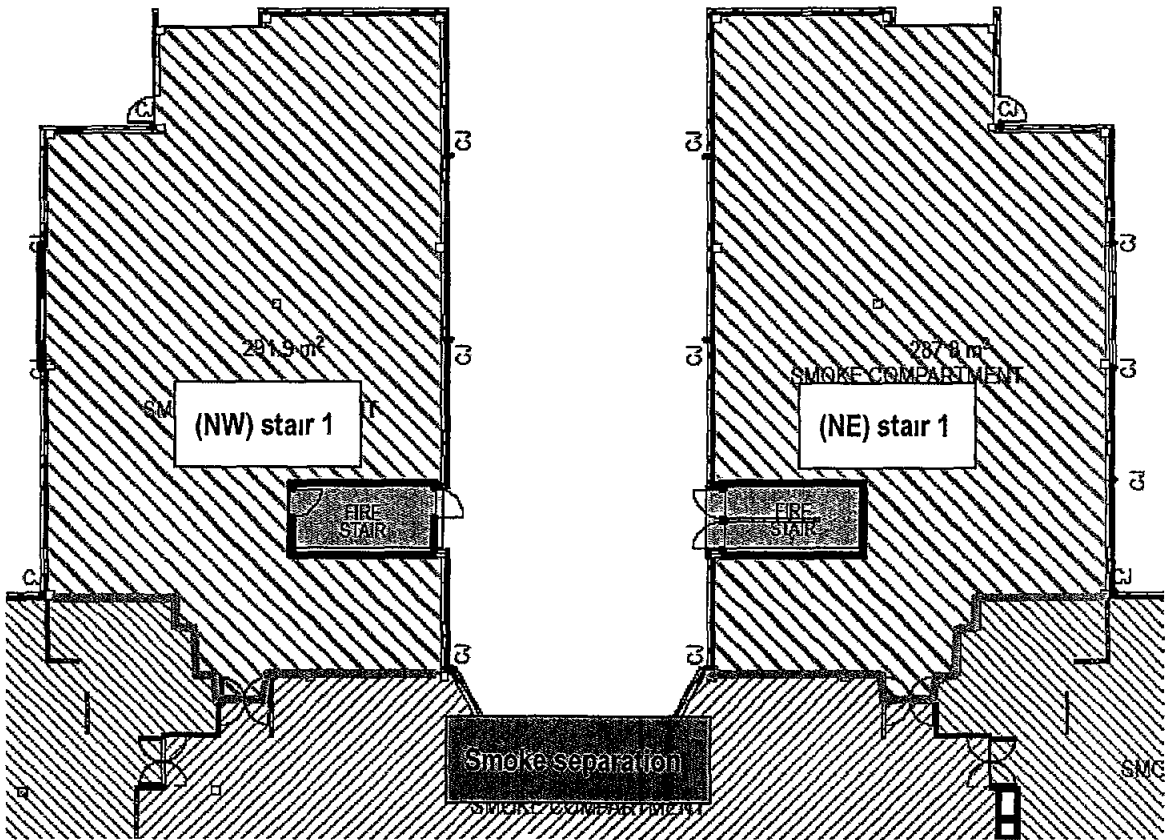


Figure 12 Smoke separation between NW and NE wings – ground floor

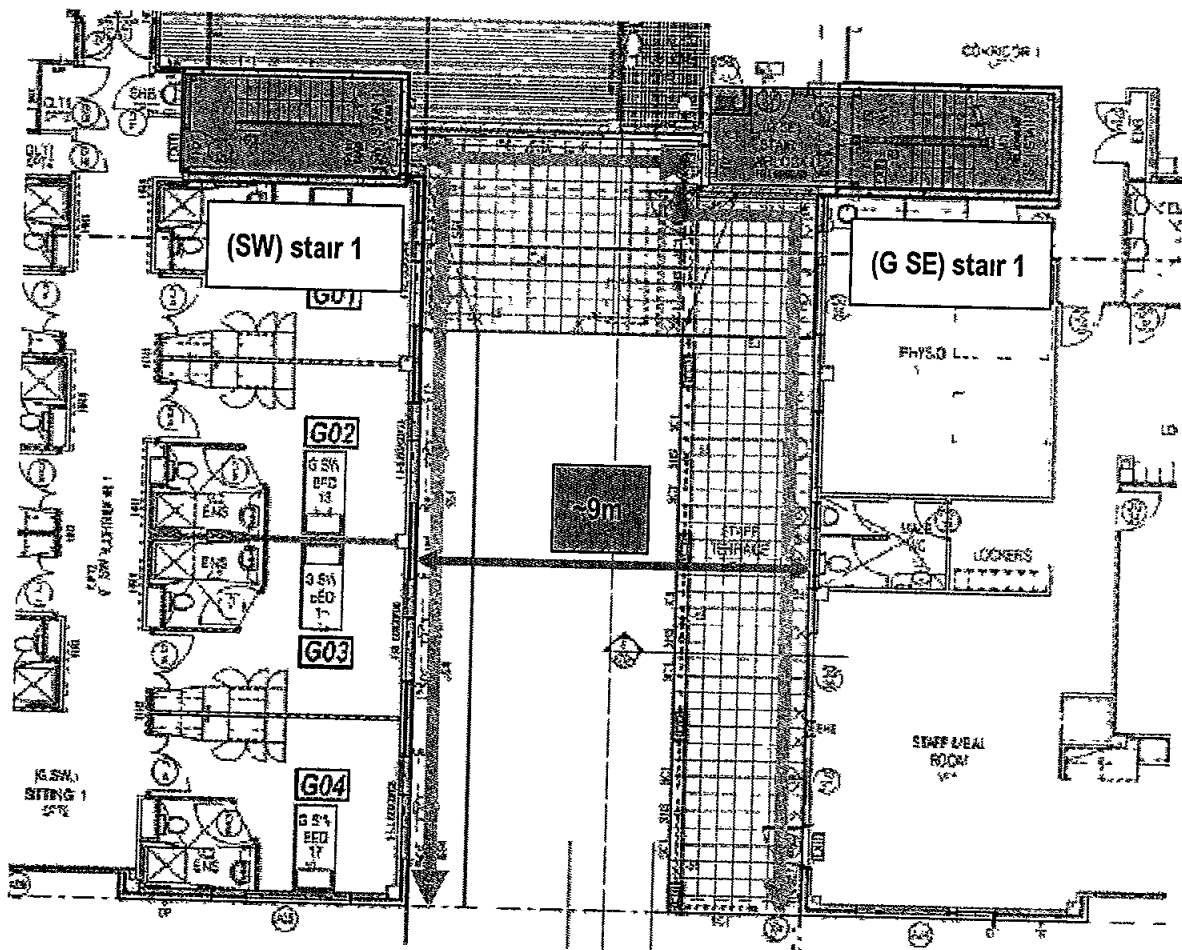


Figure 13 Discharge into the southern courtyard

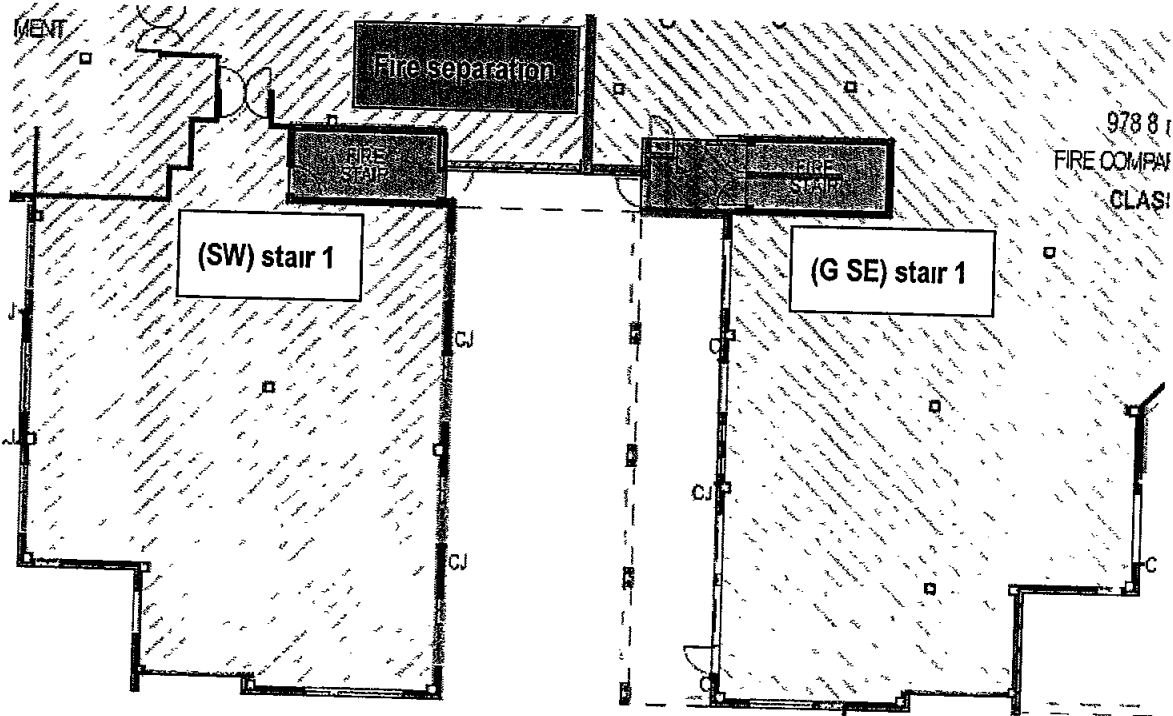


Figure 14 Fire separation between SW and SE wings – ground floor

7.6 Conclusion

The assessment undertaken for the proposed design demonstrates that the provision of alternative paths of travel from the point of discharge of the fire-isolated stairs (NW) stair 1, (NE) stair 1, (SW) stair 1 and (G SE) stair 1, enables occupants to evacuate safely to open space without protecting openings in the external wall. The proposed design of the building is therefore considered to achieve compliance with performance requirements CP2 and DP5 of the BCA, subject to compliance with the fire safety measures given in section 5.

7.7 Compliance with the performance requirements

A summary of the assessment showing compliance with the relevant performance requirements of the BCA is listed as follows:

- CP2** A building must have elements which will, to the degree necessary, avoid the spread of fire—
to exits, and
to sole-occupancy units and public corridors, and
between buildings and
in a building
(b) Avoidance of the spread of fire referred to in (a) must be appropriate to—

Criteria	Compliance
(i) the function or use of the building, and	The project is a two storey aged care building. The south-east wing of building also contains administration and assembly areas.
(ii) the fire load, and	The provision of alternative paths of travel at the discharge point is considered to prevent occupants from having to evacuate within 6m of any fire affected bedroom. The design of the discharge locations is therefore considered to protect occupants to the degree necessary.
(iii) the potential fire intensity, and	
(iv) the fire hazard, and	A fully developed fire within one of the bedrooms adjacent to the discharge point of the fire isolated exits serving the building.
(v) the number of storeys in the building and	The building has a rise in storeys of two.
(vi) its proximity to other property and	The distance to adjacent property does comply with the provisions of the BCA.
(vii) any active fire safety systems installed in the building and	The building is protected with a sprinkler system in accordance with specification E1 5 throughout and provided with a smoke detection system in accordance with clause 4 of specification E2 2a of the BCA.
(viii) the size of any fire compartment, and	The size of the fire compartments is to comply with the provisions of the BCA.
(ix) fire brigade intervention, and	The location of openings in the building is not considered to impact upon fire brigade intervention.
(x) other elements they support and	Supporting elements are not considered to be affected by the openings within the building.
(xi) the evacuation time	The evacuation time is considered to be consistent with that of a typical low rise aged care building.

- DP5** To protect evacuating occupants from a fire in the building exits must be fire isolated to the degree necessary, appropriate to—

Criteria	Compliance
(a) the number of storeys connected by the exits, and	Three

(b) the fire safety system installed in the building and	The building is protected with a sprinkler system in accordance to specification E1 5 throughout and provided with a smoke detection system in accordance with clause 4 of specification E2 2a of the BCA
(c) the function or use of the building, and	The project is a two storey aged care building (class 9c) including office and assembly areas (class 5/9b) and carparking (class 7a)
(d) the number of storeys passed through by the exits, and	Three
(e) fire brigade intervention	The location of openings in the building is not considered to impact upon fire brigade intervention

Appendix A Drawings and information

Drawing title	Dwg no	Date	Drawn
Site plan	A102	28/11/07	Merrin & Cranston
Fire & smoke compartmentation plans	A103	28/11/07	Merrin & Cranston
Basement floor plan	A201	28/11/07	Merrin & Cranston
Ground floor plan	A202	29/04/09	Merrin & Cranston
First floor plan	A203	06/02/08	Merrin & Cranston
Roof plan and plant slab diagram	A204	28/11/07	Merrin & Cranston
Elevations	A501	15/10/07	Merrin & Cranston

Our Ref 274033 091012_Structural Certificate

Contact Praveel Prasad

12 October 2009

Steve Watson and Partners
Level 5, 432 Kent Street
SYDNEY NSW 2000

Dear Sirs

**RACF WARRIEWOOD
STRUCTURAL ENGINEERING CERTIFICATION**

The structural engineering design for the abovementioned works was carried out by Cardno as shown on engineering drawings

- 274033-S100, 200, 250 300 310-312, 320 400-404 450-452 460 500-507, 600, 700, 800, 810, 900, 901, 910, 920, 921, 950, 930 and 961 (all inclusive)

We certify that this design was in accordance with normal engineering practice and the following current Australian Standards

- AS1170 - Structural Design Actions
- AS3600 – Concrete Structures
- AS3700 – Masonry Structures
- AS4100 – Steel Structures

We confirm that we have carried out periodic inspections of the works during construction and at the time of our inspections the works generally conformed to the intent of the design as conveyed by our structural engineering drawings

Our certificate excludes the design and inspection of the following items which were carried out by others as noted below

- Piling by D F Dickson and Associates refer certificate dated 28 January 2009
- Post-tensioned slabs by Ward Engineering Design, refer certificate dated 8 April 2009

This certificate shall not be construed as relieving any other party of their responsibilities or contractual obligations

Yours faithfully

Prasad.

Praveel Prasad MIE (Aust) CP Eng NPER
Senior Structural Engineer
for **Cardno**



Cardno (NSW) Pty Ltd
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Ballina
Newcastle
Gosford
Baulkham Hills
Wollongong
Busselton

Papua New Guinea
Indonesia
Vietnam
China
Kenya
United Arab Emirates
United Kingdom
United States



Our Ref 274033 091012_Structural Certificate

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12 October 2009

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Yours faithfully

Prasad.

Praveel Prasad MIE (Aust) CP Eng, NPER
Senior Structural Engineer
for Cardno



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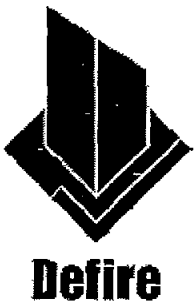
Papua New Guinea
Indonesia
Vietnam
China
Kenya
United Arab Emirates
United Kingdom
United States



Inspection report

Defire (NSW) Pty Limited

ABN 30 099 090 089
Telephone 02 9211 4333
Facsimile 02 9211 4366
Suite 3 Level 4 83 97 Kippax Street Surry Hills NSW 2010
PO BOX 2046 Strawberry Hills NSW 2012



To	Greg Weeks	St Hilliers	GWeeks@sthilliers.com.au
Copy	Steve Watson	Steve Watson & Partners	swatson@swpartners.com.au
From	Christian Kenneby	Job no	SY080105
		Revision no	1
Date	14 October 2009	Pages	5
Subject	Warriewood Valley RACF – Stage 2a		

The information contained in this advice is intended for the individuals named above. If you have received this in error please contact us immediately.

Dear Greg

We have prepared this statement following a visual inspection of Warriewood Valley RACF – Stage 2a by Christian Kenneby and Magdalena Angerd at 3pm on the 2 October 2009 in relation to compliance with alternative solution report SY080105 R1 4 dated July 2009 prepared by Defire.

It is our professional opinion that the inspected building is consistent with the recommendations of alternative solution report SY080105 R1 4 dated July 2009 based upon the visual spot checks undertaken during the inspection and the documentation provided by the installers, subject to completion of the following outstanding issues:

- Copy of fire safety schedule to be provided
- Confirmation required that separate sprinkler and hydrant systems have been installed and therefore AS2118 6-1995 – combined sprinkler and hydrant standard – is not applicable
- Confirmation that the fire doors provided with viewing panels are tested and achieve the required fire ratings as a system
- Caps on smoke detectors to be removed
- Confirmation that the smoke doors are able to open under a force of not more than 110 N

Defire has relied upon certification provided by the various installers with regards to the detailed inspections and commissioning tests for the building fire safety systems – such as sprinkler, smoke detection, or occupant warning systems. Defire was not in attendance at these detailed inspections and commissioning tests.

We have not verified the accuracy and/or completeness of the documentation provided by the various installers and shall not be responsible for any errors or omissions which may be incorporated into this report as a result.

Defire

This statement does not relieve other parties of their responsibilities in ensuring compliance of the other parts of the building with relevant statutes and building codes nor should it be construed that the building otherwise complies with the deemed to satisfy provisions of the BCA

Please contact Christian Kenneby of Defire on 02 9211 4333 if you have any questions regarding this information

Regards



Christian Kenneby
Fire safety engineer
Defire

Inspection checklist

The following checklist is our record of the findings of the inspection conducted and the signoff status of each item. It is noted that outstanding items have been identified on the cover page of this correspondence.

No	Description of fire safety measure	Consistent with requirement?	Comment
General			
1	The design must comply with the current DTS provisions of the BCA unless specifically mentioned. This section does not provide a comprehensive list of fire safety measures required by the DTS provisions of the BCA. The fire safety measures listed within this section relate only to the alternative solutions. The fire safety measures must be read in conjunction with the DTS provisions of the BCA.	NA	To be monitored by certifying authority
2	This report and the requirements listed in this section must be identified on the fire safety schedule for the building. They must be maintained and certified in accordance with the Environmental Planning and Assessment Regulations, 2000 and relevant Australian standards.	No	Copy of fire safety schedule required
3	If there are building alterations or additions, a change in use or changes to the fire safety measures in the future, a reassessment will be needed to verify consistency with the assessment in this report.	NA	Note
Structural fire resistance			
4	The fire resistance levels (FRLs) of the building elements are to be reduced to be consistent with type C construction – including external walls located further than 3m from a fire-source feature are not required to be fire rated and external load bearing walls are not required to be of non-combustible construction.	Certification required	Certification required confirming type C construction
Fire compartmentation			
5	Carpark to be separated from ground floor with a separation achieving an FRL of 90/90/90 if load-bearing and -/90/90 if non load-bearing.	Yes	Certificate provided by Cardno

6	Class 5/9b portion to be separated from class 9c portion with a separation achieving an FRL of 90/90/90 if load bearing and -/90/90 if non load-bearing and with any doors being -/90/30 fire doors	To be confirmed	Certificate provided by Cardno and Costom Linings Spot checks undertaken It was noted that viewing panels were installed in some fire doors To be confirmed that the system been tested and achieves the required FRL's
7	Fire and smoke compartments to comply with clause C2.5 of the BCA in the class 9c portion, including separation of north-west wing and north-east wing	Confirmation required	Certificate provided by Millennium Carpentry Services and Custom Lining Spot checks undertaken Confirmation that smoke doors can be opened by a force of not more than 110N
Protection of openings			
8	Openings within 6m of the path of travel from the discharge of the fire isolated stairs (NW) stair 1, (NE) stair 1, (SE) stair 2, (SW) stair 1 and (G SE) stair 1 need not be protected in accordance with clause D1.7 and C3.4 of the BCA	Yes	Note
9	Openings within 6m of the path of travel from the discharge of the fire isolated stairs (NW) stair 2 must be protected in accordance with clause D1.7 and C3.4 of the BCA	Yes	Certificate provided by Gary Thomson Spot checks undertaken Fire rated roller shutters provided
Evacuation provisions			
10	Travel distances within the building must comply with clauses D1.4 and D1.5 of the BCA	NA	To be monitored by certifying authority
11	All exits and paths of travel to exits must be in accordance with clause D1.6 of the BCA	NA	To be monitored by certifying authority
12	All exits are to be constructed with materials in accordance with part D2 of the BCA	NA	To be monitored by certifying authority
13	The path of travel to open space when discharging from stair (SW) stair 1 and (G SE) stair 1 must comply with items 11 and 12	NA	To be monitored by certifying authority Visual inspection Appears to comply

Defire

Smoke detection and alarm			
14	A detection system must be installed throughout ground floor and level 1 of the building in accordance with clause 4 of specification E2 2a of the BCA	Yes	Certificate provided by National Fire Solutions Caps on smoke detectors to be removed Visual inspection on ground floor Detectors installed
Fire suppression systems			
15	A sprinkler system in accordance with the requirements of specification E1 5 of the BCA and AS 2118 4 and 6-1995 must be provided throughout the building	Yes	Certificate provided by Chubb Fire Safety and GDK Hydraulic Consulting Separate hydrant and sprinkler system installed and therefore AS2118 6-1995 is not applicable Visual spot check on ground floor Sprinklers installed

FIRE SAFETY CERTIFICATE

The owner of a building or the owner's agent needs to provide a fire safety certificate to the certifying authority (a council or a private certifier) with an application for an occupation certificate. You can use this form to do so. A copy of the certificate also needs to be given to the Commissioner of New South Wales Fire Brigades and displayed in the building at a prominent position.

1 Details of the Building being Certified			
Name of the owner of the building or part of the building			
Full name/company name	Anglican Retirement Villages, Diocese of Sydney		
Address of the building			
Flat/street no	6 14	Street name	Macpherson Street
Suburb or town	Warrenwood	Postcode	2101 2102
Nearest cross street	Boondall Road Brands Lane		
This certificate is for whole building			
All new work (entire building) - RACF			
2 Type of Certificate			
This is the final fire safety certificate			
Date of this certificate	14 th October 2009		
3 Certification			
I, <u>Greg Weeks</u> of <u>St Hilliers Contracting</u>			
being the owner of the building described above or the agent of the owner certify that			
<ul style="list-style-type: none">each of the essential fire safety measures listed in part 7 has been assessed by a properly qualified person and was found when it was assessed by that person to be capable of performing to at least the standard required by the current fire safety schedule for the building			
the information contained in this statement is true and accurate to the best of my knowledge and belief			
4 Information Attached to this Certificate			
<input checked="" type="checkbox"/> The current fire safety schedule for the building			
5 Signature			
The owner of the building or the owner's agent must complete and sign the certificate			
Signature	<u>Greg Weeks</u>	Name	<u>Greg Weeks</u>
Address	<u>88 Cumberland St</u> <u>The Rocks, NSW, 2000</u>	The capacity in which you are signing if you are not the owner of the building	<u>St Hilliers</u> <u>Project Manager</u>
6 Privacy policy			
You need to provide the information in this certificate to the certifying authority if you are applying for an occupation certificate. You also need to give the information to the council and the Commissioner of New South Wales Fire Brigades if a fire safety order has been made for the building once you have satisfied that order. If you do not supply a fire safety certificate as required you will be in breach of the <i>Environmental Planning and Assessment Act 1979</i> and you could be found guilty of an offence and/or required to take further action. Please contact the council if the information you have provided in this certificate is incorrect or changes.			

7 Assessment of Fire Safety Measures		
Measure	Standard of performance required by the fire safety schedule	Date of assessment
Access panels doors and hoppers to fire resisting shafts	BCA2007 Clause C3.13 and AS 1530.4	12/08/09
Automatic fall safe devices	Scheduled devices release upon trip of smoke detection, fire detection and sprinkler activation in accordance with BCA2007 clauses D2.19(b) and D2.21 (d) and/or AS 1670.1	06/08/09
Automatic fire detection and alarm system (smoke detection system)	BCA2007 Specification E2.2a and AS 1670.1 – 2004 (note Class 9c requires manual call points and mimic panels) (System monitoring in accordance with AS1670.3-2004)	06/08/09
Automatic fire suppression systems (Residential sprinkler system)	BCA2007 Specification E1.5 and AS2118.4 – 1995	06/08/09
Automatic fire suppression systems (Sprinklers in carpark only)	BCA2007 Specification E1.5 and AS 2118.1 – 1999	06/08/09
Emergency lighting	BCA2007 Clause E4.2, E4.4 and AS 2293.1 – 2005	24/07/09
Exit signs	BCA2007 Clause E4.5 NSW E4.6 E4.8 and AS 2293.1 – 2005	24/07/09
Fire dampers	BCA2007 Clause C3.15 and AS/NZS 1668.1 – 1998 (AS 1682.1 1990 and AS 1682.2 1990)	27/07/09
Fire doors	BCA2007 Specification C3.4 and AS 1905.1 – 2005	07/09/09
Fire hydrant system	BCA2007 Clause E1.3 and AS 2419.1 – 2005	20/07/09
Fire seals protecting openings in fire resisting components of the building Joints, gaps and miscellaneous penetrations	BCA2007 Clause C3.15 and AS 1530.4 and AS 4072.1 and installed in accordance with the tested prototype	17/07/09 27/07/09
Fire seals protecting openings in fire resisting components of the building Electrical penetrations	BCA2007 Clause C3.15 and AS 1530.4 and AS 4072.1 and installed in accordance with the tested prototype.	24/07/09
Fire seals protecting openings in fire resisting components of the building Plumbing and penetrations	BCA2007 Clause C3.15 and AS 1530.4 and AS 4072.1 and installed in accordance with the tested prototype.	20/07/09
Fire shutters	BCA2007 Specification C3.4 and AS 1905.2 – 2005	07/09/09
Hose reel systems	BCA2007 Clause E1.4 and AS 2441 – 2005	20/07/09
Lightweight construction (fire rated)	BCA2007 Specifications C1.8 and A2.3 and AS 1530.4	17/07/09 24/06/09
Mechanical air handling system (automatic shut down of air-handling system)	BCA2007 Clause E2.2 and AS/NZ 1668.1 1998	27/07/09
Portable fire extinguishers	BCA2007 Clause E1.6 and AS 2444 – 2001	17/09/09
Smoke dampers	AS/NZS 1668.1 – 1998 (AS 1682.1 1990 and AS 1682.2 1990)	30/07/09
Smoke detectors and heat detectors (detectors for the automatic closing operation of fire doors and fire shutters in fire walls)	BCA2007 Clause C3.5 and AS 1670.1 – 2004	06/08/09
Smoke detectors and heat detectors (detectors for the automatic closing operation of horizontal exits)	BCA2007 Clause C3.7 and AS 1670.1 – 2004	06/08/09
Smoke detectors and heat detectors (detectors for the automatic closing operation of smoke doors)	BCA2007 Specification C3.4 and AS 1670.1 – 2004	06/08/09
Smoke doors	BCA2007 Specifications C2.5 and C3.4 and AS 1288 – 2006	31/06/09
Warning and operational signs	BCA2007 Clauses D2.23 E1.4 E3.3	09/10/09
Alternative Solution	Fire Safety Engineering Report of Defire Ref SY080105 dated June 2008	14/10/09
1 Discharge of fire stairs and		
2 FRLs and type of construction		



CLIENTS | PEOPLE | PERFORMANCE

10 December 2009

Michael Viskovich
Anglican Retirement Villages
PO Box 284, Castle Hill
NSW 1765

Our ref 21/18604/155997
Your ref

Dear Michael

**ARV Warriewood
Stage 2a WAEX Assessment with respect to Flooding**

1 Requirement for this Letter

This letter reports on our assessment of Works as Executed (WAEX) at the Anglican Retirement Villages Warriewood Retirement Village in relation to flooding and the Water Management Report (WMR, Version 4, December 2006 based on Development Footprint SK19 Rev G, 21/12853/02/109212) for the following works

- Stage 2a works only (RACF)

This letter must be read in conjunction with our letter of 13 August 2009, which assessed the Stage 1 and creek works WAEX information with respect to flooding

2 Available Information

GHD have reviewed the following attached Works as Executed (WAEX) drawing received as CAD drawing file and PDF format

- Received 29/09/2009 Warriewood Stage 2, Works as Executed by Lawrence Group Surveyors
DWG 018557-WAE-001A 28 09 2009

3 Background to the Water Management Report (WMR) with respect to Flooding

The WMR assessed the impact of the proposed development on flooding on and off-site. This flooding was assessed for the 100-year ARI event and the PMF by considering the proposed Development Footprint, SK19 Rev G in its entirety. Use was made of Council's flood model operated by their consultants Cardno Lawson and Treloar. Numerous flood model iterations were undertaken adjusting amongst others

- The rehabilitated creek profile and associated pinch-point
- Internal roads and associated levels,
- Levels and spacings between buildings and
- Site entrance/exit areas

In terms of flood planning levels the Warriewood Valley Urban Land Release Water Management Specification, Revised Version, Pittwater Council February 2001 (WMS) requires building floor levels to



be at or above the PMF level for habitable buildings and underground car park entries. For non-habitable buildings, floor levels need to be above the 100-year ARI level plus freeboard. This has required the developed form to be raised significantly compared to existing conditions. The raising however needed to make allowance for the conveyance of the PMF through the site, to ensure off-site impacts (in particular raised flood levels) are minimised.

4 A Comment on Staging

At the time of DA, construction was proposed in 4 stages. The first stage included buildings along Macpherson Street followed by the RACF and buildings along Narrabeen Creek on the eastern half of the site. The last stage would have comprised buildings along Narrabeen Creek and buildings on the western half of the site. While this presented the general staging approach, staging plans were still being developed at that time. The first stages were tested using flood modelling and found to result in minor increases in flood levels.

Since then the staging has changed significantly, with Stage 1 (Building A, B/C and associated road work) and Stage 2a (the RACF) complete. This proposed staging has not been tested using flood model simulations and the flood impacts of individual stages through to completion of the project are not known.

This letter is required to comment on only Stage 2a. However since these works have not been simulated in the context of the staged site development, the impacts of the WAEX on flooding cannot be assessed. To this end, we are only able to comment on whether the WAEX drawings are generally in accordance with the WMR intent.

5 Assessment of the WAEX with respect to Flooding

In assessing the WAEX we make specific reference to following key areas of concern:

Stage 2a WAEX

- 1 The area between Building A (Stage 1) and the RACF (Stage 2a) was critical to managing the conveyance of the PMF through the site as part of Development Footprint SK19 Rev G. Located within this corridor is the down ramp to the underground car park of Building A. In November 2007, Morgan Moore and Associates directed flood simulation of this down ramp and the potential blockage this ramp presented to the conveyance of the PMF through the site. The ramp was located centrally in the corridor between the buildings and ground levels were adjusted to 4.75m AHD on either side of the ramp to facilitate PMF flood conveyance.

On previous inspection of the Stage 1 WAEX (our letter dated 13 August 2009), it was noted that the walls associated with the access ramp leading to the Building A underground car park, extending further around the bend towards Building A than was simulated in the November 2007 flood modelling. In addition the flow area around the car park ramp is at elevations above those advised by Cardno Lawson and Treloar. The effect of this is the potential redirecting of flows through the narrow 2m wide pathway between the ramp and the RACF. This could have the potential of raising flood levels in the immediate area.



- 2 In the same area as noted above, access footpaths to Building A and the RACF have resulted in raised ground levels leading from Brands Lane to the corridor between the buildings, compared with what was simulated in the WMR. This would reduce the flood conveyance between the buildings,
- 3 A rendered low brick wall has been constructed along the frontage with McPherson Street. This has the potential to detain and/or redirect flows on the site. However, Buildings K and J have not been constructed; the impact of this low wall on redirecting flood flows is unknown, and
- 4 Ground levels along Brands Lane, along the southern edge (the swale) and the Port Cochere differ from levels that were simulated in the DA flood model. The magnitude of difference varies around the circumference of the RACF and WAEX levels are on average approximately 200 mm higher than the flood model. In a few isolated areas (such as the northern head of the round-about and in the swale), the WAEX levels are approximately 500 mm higher. In the case of the swale, it is acknowledged that this is potentially a temporary arrangement.

6 Findings

It is considered that the Stage 2a development is generally in accordance with the intent of the flooding aspects of the WMR with exception of items in Section 5 above. These issues will have implications on future development of the site and the management of flooding through the site.

Since this letter is required to comment on only Stage 2a and these works have not been simulated in the context of the staged site development, the impacts of the Stage 2a WAEX on flooding cannot be assessed. Therefore, all future site development must be accompanied by flood modelling using Councils flood model, and any future development without flood modelling will render the findings in this letter null and void. In this flood modelling, the progressively completed works would need to be represented from WAEX drawings.

Yours faithfully
GHD Pty Ltd

A handwritten signature in black ink, appearing to read 'R. Berg', written over a horizontal line.

Dr Rainer Berg
Business Group Manager
02 9239 7247

From 24.6 → 7.9

Occupation Certificate

BCA Items

	Design	Install / Action	Closed Out	Data Requested	Notes
1	ACCESS PANELS, DOORS AND HOPPERS TO FIRE RESISTING SHAFTS DESIGN CERTIFICATE	N/A	1	14-J-09	N/A
2	ACCESS PANELS, DOORS AND HOPPERS TO FIRE RESISTING SHAFTS INSTALLATION CERTIFICATE	ACS	1	14-J-09	
3	AUTOMATIC FAIL SAFE DEVICES DESIGN CERTIFICATE	Erb	1	14-J-09	
4	AUTOMATIC FAIL SAFE DEVICES INSTALLATION CERTIFICATE	Jim Hatz	1	14-J-09	
5	AUTOMATIC FIRE DETECTION AND ALARM SYSTEM DESIGN CERTIFICATE	Jim Hatz	1	14-J-09	
6	AUTOMATIC FIRE DETECTION AND ALARM SYSTEM INSTALLATION CERTIFICATE	NFS	1	14-J-09	
7	AUTOMATIC FIRE SUPPRESSION SYSTEMS DESIGN CERTIFICATE	GDK	1	14-J-09	
8	AUTOMATIC FIRE SUPPRESSION SYSTEMS INSTALLATION CERTIFICATE	CHUBB	1	14-J-09	
9	EMERGENCY LIGHTING DESIGN CERTIFICATE	Jim Hatz	1	14-J-09	
10	EMERGENCY LIGHTING INSTALLATION CERTIFICATE	Ferr L & Ives	1	14-J-09	
11	EXIT SIGNS DESIGN CERTIFICATE	Jim Hatz	1	14-J-09	
12	EXIT SIGNS INSTALLATION CERTIFICATE	Ferr L & Ives	1	14-J-09	
13	FIRE DAMPERS DESIGN CERTIFICATE	Erb	1	14-J-09	
14	FIRE DAMPERS INSTALLATION CERTIFICATE	ACS	1	14-J-09	
15	FIRE DOORS INSTALLATION CERTIFICATE	Tila Doors	1	14-J-09	
16	FIRE HYDRANT SYSTEM DESIGN CERTIFICATE	GDK	1	14-J-09	
17	FIRE HYDRANT SYSTEM INSTALLATION CERTIFICATE	Commodore	1	14-J-09	
18	FIRE SEALS PROTECTING MISCELLANEOUS GAPS, JOINTS AND PENETRATIONS IN FIRE	Yorkhill	1	14-J-09	
19	RESISTING COMPONENTS OF THE BUILDING INSTALLATION CERTIFICATE	C. Iom	1	14-J-09	
20	FIRE SEALS PROTECTING OPENINGS IN FIRE RESISTING COMPONENTS OF THE BUILDING — ELECTRICAL PENETRATIONS INSTALLATION CERTIFICATE	Ferr L & Ives	1	14-J-09	
21	FIRE SEALS PROTECTING OPENINGS IN FIRE RESISTING COMPONENTS OF THE BUILDING — PLUMBING PENETRATIONS INSTALLATION CERTIFICATE	Commodore	1	14-J-09	
22	FIRE SHUTTERS INSTALLATION CERTIFICATE	Accert Doors	1	14-J-09	
23	HOSE REEL SYSTEMS DESIGN CERTIFICATE	GDK	1	14-J-09	
24	HOSE REEL SYSTEMS INSTALLATION CERTIFICATE	Commodore	1	14-J-09	
25	LIGHTWEIGHT CONSTRUCTION (FIRE RATED) INSTALLATION CERTIFICATE	C. Iom	1	14-J-09	
26	MECHANICAL AIR HANDLING SYSTEM (FIRE) DESIGN CERTIFICATE	Erb	1	14-J-09	
27	MECHANICAL AIR HANDLING SYSTEM (FIRE) INSTALLATION CERTIFICATE	ACS	1	14-J-09	
28	PORTABLE FIRE EXTINGUISHERS INSTALLATION CERTIFICATE	CHUBB	1	14-J-09	Drawings submitted 21/9/09 view by M/C R po provided ch bb carry g out ch -g
29	SMOKE DAMPERS (AUTOMATIC) DESIGN CERTIFICATE	Erb	1	14-J-09	
30	SMOKE DAMPERS (AUTOMATIC) INSTALLATION CERTIFICATE	ACS	1	14-J-09	
31	SMOKE DETECTORS AND HEAT DETECTORS DESIGN CERTIFICATE	Jim Hatz	1	14-J-09	
32	SMOKE DETECTORS AND HEAT DETECTORS INSTALLATION CERTIFICATE	NFS	1	14-J-09	
33	SMOKE DOORS INSTALLATION CERTIFICATE	Tila Doors	1	14-J-09	
34	WARNING AND OPERATIONAL SIGNS INSTALLATION CERTIFICATE	A & W Sign	1	14-J-09	
35	FIRE-ENGINEERED SOLUTION DESIGN CERTIFICATE	Def	1	14-J-09	Def e to in pect pr ject will p ovide eport il ffercat D f
36	FIRE-ENGINEERED SOLUTION INSTALLATION CERTIFICATE	D. Ives	1	14-J-09	Inspect d 21/09 we'll g final certification
37	COMMERCIAL KITCHEN & EXHAUST DESIGN CERTIFICATE	Erb	1	14-J-09	Def'n inspection 2/10, Report n to SWP 14/10
38	COMMERCIAL KITCHEN & EXHAUST INSTALLATION CERTIFICATE	ACS	1	14-J-09	
39	CONSTRUCTION AND FITOUT OF FOOD PREMISES DESIGN CERTIFICATE	Merril & Cra	1	14-J-09	SWP 1 i pect d lg f
40	CONSTRUCTION AND FITOUT OF FOOD PREMISES INSTALLATION CERTIFICATE	SX Stairs	1	14-J-09	
41	DAMP PROOFING INSTALLATION CERTIFICATE	Millennium	1	14-J-09	
42	DISABLED ACCESS & EGRESS DESIGN CERTIFICATE	Merril & Cra	1	14-J-09	M rrin & Cranston to procure from th l DDA co sula i l f msg with M/C 18/9/09 to discuss F rther m l l ont l M/C 9/10/09 eg rd g l pect
43	DISABLED ACCESS & EGRESS INSTALLATION CERTIFICATE	M&C	0	14-J-09	M/C co rmed commences l f certification t b completed 12/10/09
44	ENERGY EFFICIENCY (AIR-CONDITIONING AND VENTILATION SYSTEMS) DESIGN CERTIFICATE	Erb	1	14-J-09	14-J-09/M&C to provid Acc ss Cors l l sign-off
45	ENERGY EFFICIENCY (AIR-CONDITIONING AND VENTILATION SYSTEMS) INSTALLATION CERTIFICATE	ACS	1	14-J-09	
46	ENERGY EFFICIENCY (ARTIFICIAL LIGHTING AND POWER) DESIGN CERTIFICATE	Jim Hatz	1	14-J-09	
47	ENERGY EFFICIENCY (ARTIFICIAL LIGHTING AND POWER) INSTALLATION CERTIFICATE	Ferr L & Ives	1	14-J-09	
48	ENERGY EFFICIENCY (FABRIC) DESIGN CERTIFICATE	Merril & Cra	1	14-J-09	SWP to dtr as discus ed
49	ENERGY EFFICIENCY (FABRIC) INSTALLATION CERTIFICATE	SI Hill rs	1	14-J-09	SWP 1 dtr as discus ed
50	ENERGY EFFICIENCY (BUILDING SEALING) DESIGN CERTIFICATE	Merril & Cra	1	14-J-09	SWP 1 add es as d cu d
51	ENERGY EFFICIENCY (BUILDING SEALING) INSTALLATION CERTIFICATE	Erb	1	14-J-09	
52	ENERGY EFFICIENCY (GLAZING AND SHADING) DESIGN CERTIFICATE	Custom	1	14-J-09	
53	ENERGY EFFICIENCY (GLAZING AND SHADING) INSTALLATION CERTIFICATE	ACS	1	14-J-09	
54	ENERGY EFFICIENCY (HOT WATER SUPPLY) DESIGN CERTIFICATE	Brad n ms	1	14-J-09	
55	ENERGY EFFICIENCY (HOT WATER SUPPLY) INSTALLATION CERTIFICATE	AGF	1	14-J-09	SWP 1 d
56	FINAL SURVEY INSTALLATION CERTIFICATE	Merril & Cra	1	14-J-09	WAE surv y curre tly being compl d by Law nc Gro p a t 18/9/09
57	FIRE HAZARD PROPERTIES CERTIFICATION INSTALLATION CERTIFICATE	Lawrence Gro p	1	14-J-09	not brand l eport coch ro nd-a bo t complete 17/9/09
58	FIRE RESISTING CONSTRUCTION INSTALLATION CERTIFICATE	Merril & Cra	1	14-J-09	SWP h advised th l th l not ece sary
59	FIRE RESISTING CONSTRUCTION — MASONRY CONSTRUCTION INSTALLATION CERTIFICATE	C. Iom	1	14-J-09	SWP h advised th l th l not ece sary
60	FIRE RESISTING CONSTRUCTION — PLASTERBOARD WALLS AND/OR CEILINGS INSTALLATION CERTIFICATE	York hlr	1	14-J-09	
61	FIRE RESISTING CONSTRUCTION — REINFORCED CONCRETE INSTALLATION CERTIFICATE	C. Iom	1	14-J-09	
62	FIXED PLATFORMS, WALKWAYS, STAIRWAYS & LADDERS INSTALLATION CERTIFICATE	C. Iom	1	14-J-09	No sig off req l ed by STH
63	GLAZING INSTALLATION CERTIFICATE	SI Hill rs	1	14-J-09	N sig f requ ed by STH
64	HEARING AUGMENTATION DESIGN CERTIFICATE	Aut Iron	1	14-J-09	
65	HEARING AUGMENTATION INSTALLATION CERTIFICATE	SafeM lar	1	14-J-09	
66	LIGHTING (GENERAL) DESIGN CERTIFICATE	Custom	1	14-J-09	
67	LIGHTING (GENERAL) INSTALLATION CERTIFICATE	Brad n ms	1	14-J-09	
68	NON-REQUIRED STAIRWAYS, RAMPS AND ESCALATORS INSTALLATION CERTIFICATE	Ferr L & Ives	1	14-J-09	is d l SWP 15/10
69	POOL AND SPA WATER RETICULATION SYSTEM INSTALLATION CERTIFICATE	Ferr L & Ives	1	14-J-09	is ed to SWP 15/10
70	POOL SAFETY REQUIREMENTS INSTALLATION CERTIFICATE	Ferr L & Ives	1	14-J-09	Not applicable on th Project
71	ROOF CONSTRUCTION AND COVERING INSTALLATION CERTIFICATE	SI Hill rs	1	14-J-09	
72	SARKING INSTALLATION CERTIFICATE	N/A	1	14-J-09	
73	SOUND INSULATION DESIGN CERTIFICATE	AGF	1	14-J-09	
74	SOUND INSULATION INSTALLATION CERTIFICATE	AGF	1	14-J-09	
75	STORM WATER DRAINAGE DESIGN CERTIFICATE	Millennium	1	14-J-09	
76	STRUCTURAL ADEQUACY DESIGN CERTIFICATE	C. Iom	1	14-J-09	M&C to sed fy th
77	STRUCTURAL ADEQUACY INSTALLATION CERTIFICATE	C. Iom	1	14-J-09	
78	TERMITTE RISK MANAGEMENT INSTALLATION CERTIFICATE	Commodore	1	14-J-09	
79	VENTILATION (GENERAL) DESIGN CERTIFICATE	C. Iom	1	14-J-09	
80	VENTILATION (GENERAL) INSTALLATION CERTIFICATE	Erbe	1	14-J-09	
81	WATERPROOFING OF WET AREAS DESIGN CERTIFICATE	ACS	1	14-J-09	
82	WATERPROOFING OF WET AREAS INSTALLATION CERTIFICATE	CAPS B te	1	14-J-09	

Total Closed Out 99

T lal 100
% C mpl 99%

ACCESS PANELS, ~~DOORS AND HOPPERS~~ TO FIRE RESISTING SHAFTS -
INSTALLATION CERTIFICATE

Project Name	RCAF Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building) ACCESS PANELS TO KITCHEN EXHAUST DUCTS ONLY

I hereby certify that
a) The works have been inspected during construction and have been completed in accordance with the
nominated Standards of Performance

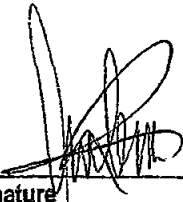
Measure and/or system	Standards of Performance
Access panels doors and hoppers to fire resisting shafts	BCA2007 Clause C3 13 and AS 1530 4

b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards
referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER INSTITUTE OF ENGINEERS
AUSTRALIA MEANST 2015295, AUSTRALIAN INSTITUTE
OF REFRIGERATION AIR CONDITIONING & HEATING A/IAH 13444

c) The information contained in this statement is true and accurate to the best of my knowledge

Name Rico Nicodemus
Company GARRIC Pty LTD.
Address 9, 2-6 Chaplin Drive Lane Cove, NSW
Phone No 02 9427 8779 Fax No 02 9428 2759


Signature

12/08/19
Date

FIRE RESISTANT ACCESS PANELS SCHEDULE

Certificate No

Building Owner ARV

Project Name WARRIEWOOD RACF STAGE 2A

Building Address 8 Macpherson St Warriewood

Reference	Level	Location	Size	Type	Manufacturer	Test Ref
GROUND						
AP-1	Ground	Core	400x400	Fire Rated AP	Bowser	BCA 2007 C3 13& AS1530 4
AP-2	Ground	Core	400x400	Fire Rated AP	Bowser	BCA 2007 C3 13& AS1530 4
AP-3	Ground	Core	400x400	Fire Rated AP	Bowser	BCA 2007 C3 13& AS1530 4
LEVEL-1						
AP 1	L-1	Core	400x400	Fire Rated AP	Bowser	BCA 2007 C3 13& AS1530 4
AP-2	L-1	Core	400x400	Fire Rated AP	Bowser	BCA 2007 C3 13& AS1530 4
AP-3	L-1	Core	400x400	Fire Rated AP	Bowser	BCA 2007 C3 13& AS1530 4

Location
Works Completed For

Anglican Retirement Village Warriewood, 10 McPherson Street
WARRIEWOOD NSW 2102

Garric Pty Ltd
Unit 9, 2-6 Chaplin Drive
LANE COVE NSW 2066

Attention

Carlos Ormazabal

BOWSERS®
THE FIRERATING SPECIALISTS
A Division of Corporate Ventures (Aust) Pty Ltd
ABN 79 099 023 873

CERTIFICATE OF COMPLIANCE

File 00821/3113

THIS IS TO CERTIFY THAT the passive fire resistant treatments identified below provide the nominated FRL in accordance with the specification provided or AS1530 4 - 2005, AS4072.1 - 2005 and the applicable codes and standards

Item No	Primary Location	Secondary Location	Element	Treatment Details	System Used	Description
1	Stage 2 A	Ground Floor & Riser	Duct	Pin mesh and spray kitchen exhaust duct from kitchen wall up into riser to Level 2 floor slab for a two way 120/120/120 FRL	32.106	Fire test on 3500mm wide duct with Calco 300 or CP2
2			Access Panel	Install Vermiculux board access panels to K.E duct for a 120/120/120 FRL	32.3	Vermiculux access panel to sprayed duct
3		Level 1 & Riser	Duct	Pin mesh and spray K.E duct from block wall up to floor slab of Level 2 for a 120/120/120 FRL	32.106	Fire test on 3500mm wide duct with Calco 300 or CP2
4			Access Panel	Install Vermiculux board access panels to K.E duct for a 120/120/120 FRL	32.3	Vermiculux access panel to sprayed duct

Summary of Fire Resistant Treatments Used

Bowers System No	Authority	Test/Assessment/Opinion	FRL	Sponsor
32.106	Bratz	FAR-1806	120/120/120	Exfoliators
32.3	CSIRO	FCO-0757	120/120/120	Trafalgar

* For penetrating services the insulation performance is not established
NOTE For FRLs identified as 'As Per Reg A', the FRL is achieved by the thickness of application APR analysis

I, Dominic Neate, certify that the information contained in this certificate is, to the best of my knowledge and belief, true and accurate



DOMINIC NEATE

24/06/09

DATE



L1644 W1

AUTOMATIC FAIL SAFE DEVICES - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Automatic fail safe devices	Scheduled devices release upon trip of smoke detection, fire detection and sprinkler activation in accordance with BCA2007 clauses D2 19(b) and D2 21 (d) and/or AS 1670 1

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B.Sc, M Sc, MIE Aust,
CP Eng

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Ken Purcam Erbas
Company Erbas & Associates Pty Ltd
Address Level 1, 15 Atchison Street
Phone No (02) 9437 1022 Fax No (02) 9437 1025

[Signature]
Signature

6/8/2009
Date

AUTOMATIC FAIL SAFE DEVICES - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

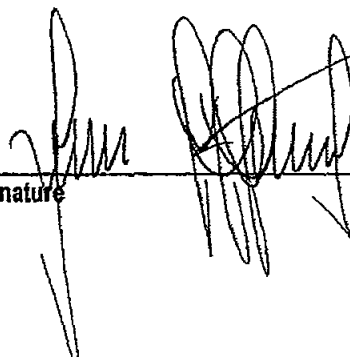
Measure and/or system	Standards of Performance
Automatic fail safe devices	Scheduled devices release upon trip of smoke detection, fire detection and sprinkler activation in accordance with BCA2007 clauses D2 19(b) and D2 21 (d) and/or AS 1670 1

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B ENG (ELEC)

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name JIM HARZIMANOWIS
 Company JIM HARZ & ASSOCIATES
 Address LEVEL 9, 1 CHANDLER ST, ST LEONARDS
 Phone No 9437 1000 Fax No 9437 1020

Signature 

Date 5/8/09

AUTOMATIC FAIL SAFE DEVICES - INSTALLATION CERTIFICATE

Project Name	RCAF Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

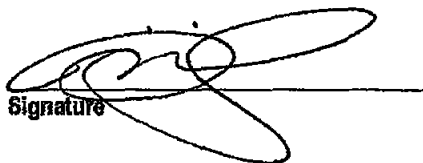
Measure and/or system	Standards of Performance
Automatic fail safe devices	Scheduled devices release upon trip of smoke detection, fire detection and sprinkler activation in accordance with BCA2007 clauses D2 19(b) and D2 21 (d) and/or AS 1670 1

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations: 25 YEARS IN FIRE PROTECTION INDUSTRY

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name PAUL LUSCHWITZ
Company NATIONAL FIRE SOLUTIONS PTY LTD
Address 14/365 WEST BORMY ST ROCKDALE
Phone No 956 77000 Fax No 959 97 444
9007 9905


Signature

06 AUG 09
Date

AUTOMATIC FIRE DETECTION AND ALARM SYSTEM - DESIGN CERTIFICATE

Project Name	RCAF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

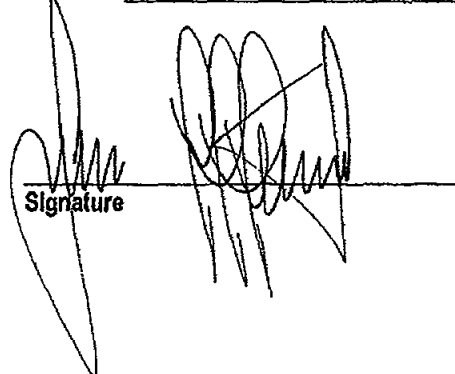
Measure and/or system	Standards of Performance
Automatic fire detection and alarm system (smoke detection system)	BCA2007 Specification E2 2a and AS 1670 1 – 2004 (note Class 9c requires manual call points and mimic panels) (System monitoring in accordance with AS1670 3-2004)

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B.ENG (ELEC)

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name JIM HAZIMIANOLIS
 Company JIM HAZ & ASSOCIATES
 Address LEVEL 9, 1 CHANDOS ST, ST LEONARDS
 Phone No 9437 1000 Fax No 9437 1020


 Signature

6/3/09.
 Date

AUTOMATIC FIRE DETECTION AND ALARM SYSTEM - INSTALLATION
CERTIFICATE

Project Name	RCAF Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.

- a) The works have been inspected during construction and have been completed in accordance with the design, specifications and the nominated Standards of Performance

Measure and/or system	Standards of Performance
Automatic fire detection and alarm system (smoke detection system)	BCA2007 Specification E2 2a and AS 1670 1 – 2004 (note Class 9c requires manual call points and mimic panels) (System monitoring in accordance with AS1670 3 2004)


- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations

25 YEARS IN FIRE PROTECTION INDUSTRY

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name of Certifier PAUL LUSCHNISKI
Company NATIONAL FIRE SOLUTIONS PTY LTD
Address 14/365 WES BOMBY ST ROCKDALE
Phone No 95677600 Fax No 95577664
90075905

Signature 

Date 06 Aug 09.

NOTE – ALSO COMPLETE COMMISSIONING TEST REPORT ON FOLLOWING PAGES

RACF - Warnewood

Page 29

AUTOMATIC FIRE SUPPRESSION SYSTEMS - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Automatic fire suppression systems (Residential sprinkler system)	BCA2007 Specification E1 5 and AS2118 4 – 1995
Automatic fire suppression systems (Sprinklers in carpark only)	BCA2007 Specification E1 5 and AS 2118 1 – 1999

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations Fire Protection designer, project manager, 35 years experience with fire protection systems

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Barrie Waters
Company Chubb Fire Safety
Address Unit 5 120 Silverwater Rd Silverwater
Phone No 8748 7000 Fax No 8748 7310

Signature B Waters

Date 6/8/09



GDK Hydraulics Consulting Pty Ltd
ABN 64 114 102 279
Suite 6 17 Burwood Road
Burwood NSW 2134 Australia
Phone (02) 9745 0700
Fax (02) 9745 0722
Email office@gdk.net.au

DESIGN CERTIFICATION

ADDRESS 8 McPherson Street, Warriewood
PROJECT Residential Aged Care Facility - Stage 2a

Pursuant to the provision of Clause A2.2(a)(iii) of the Building Code of Australia 2007, Vol 1

I, George Koutoulas of GDK Hydraulics Consulting Pty Ltd
6/17 Burwood Road, Burwood, NSW, 2134

Qualifications and experience. Full Member of AHSCA

Hereby certify

That the Hydraulic & Fire Sprinkler Services Design Drawings have been designed to comply with

a) the relevant clauses of the Building Code of Australia, as follows:

Clause E1.3 - Fire Hydrants
Clause E1.4 - Fire Hose Reels
Clause E1.5 - Fire Sprinklers
Part J7 - Hot Water Supply

b) the relevant Australian Standards listed in the Building Code of Australia as follows:

AS 3500.4
AS 2419.1 - 2005
AS 2441 - 2005
AS 2118.1 - 1999 Ordinary Hazard 2, carpark
AS 2118.4 - 1995 Residential

c) The drawings relevant to this Certification are numbered -

Hydraulics - H-01A, H-02B, H-03B, H-04B, H-05B, H-06A, H-07B, H-08A, H-09A, H-10B, H-11A, H-12A,
H-13A & H-14A

Fire Sprinkler - FS-01 to FS-07, Revision A

Note: This Certification does not cover the design of the Fire Sprinklers undertaken by the Contractor.

Signature

G. Koutoulas

Date. 30 July, 2009

RACF - Warriewood

Page 30

AUTOMATIC FIRE SUPPRESSION SYSTEMS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Automatic fire suppression systems (Residential sprinkler system)	BCA2007 Specification E1 5 and AS2118 4 - 1995
Automatic fire suppression systems (Sprinklers in carpark only)	BCA2007 Specification E1 5 and AS 2118 1 - 1999

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations: Fire Protection designer, project manager, 25 years experience with fire protection systems

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Barrie Waters
Company Chubb Fire Safety
Address Unit 5 120 Silverwater Rd Silverwater
Phone No 8748 7000 Fax No 8748 7310

B Waters
Signature

6/8/09
Date

EMERGENCY LIGHTING - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

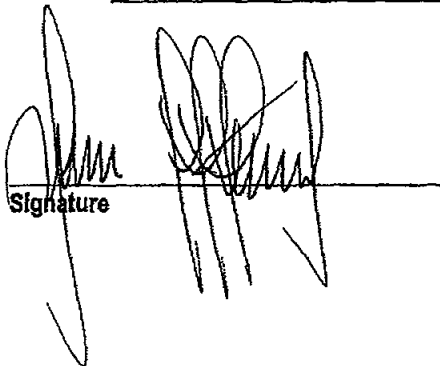
Measure and/or system	Standards of Performance
Emergency lighting	BCA2007 Clause E4 2 E4 4 and AS 2293 1 - 2005

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B ENG (ELEC)

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name JIM HATZIMANOLIS
Company JIM HATZ & ASSOCIATES
Address LEVEL 9, 1 CHANDOS ST, ST LEONARDS
Phone No 9437 1000 Fax No 9437 1020


Signature

5/2/09
Date

EMERGENCY LIGHTING - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Emergency lighting	BCA2007 Clause E4 2 E4 4 and AS 2293 1 – 2005

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations LICENCE NO EC 20001

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name JOHN KERTESZ

Company FERRETT AND IVES ELECTRICAL

Address UNIT 36 BLOCK C 1-3 ENDEAVOUR RD CARINGBAH 2229

Phone No 9525-9288 Fax No 9526-1931

Signature

Date

29/7/09

EXIT SIGNS - DESIGN CERTIFICATE

Project Name	RCAF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Exit signs	BCA2007 Clause E4 5 NSW E4 6 E4 8 and AS 2293 1 – 2005

a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B ENG (ELEC)

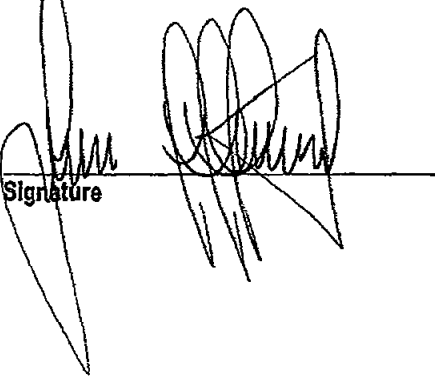
b) The information contained in this statement is true and accurate to the best of my knowledge

Name JIM HATZIMANOUS

Company JIM HATZ & ASSOCIATES

Address LEVEL 9, 1 CHANDOS ST, ST LEONARDS

Phone No 9437 1000 Fax No 9437 1020


Signature

5/8/09.
Date

EXIT SIGNS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Exit signs	BCA2007 Clause E4 5 NSW E4 6 E4 8 and AS 2293.1 - 2005

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations LICENCE NO EC 20001

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name JOHN KERRESE
Company FERRETT AND IVES ELECTRICAL
Address UNIT 36 BLOCK C 1-3 ENDEAVOUR RD CARINGBAH 2229
Phone No 9525-9288 Fax No 9526-1931


Signature

24/7/09
Date

FIRE DAMPERS - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire dampers	BCA2007 Clause C3 15 and AS/NZS 1668 1 – 1998 (AS 1682 1 1990 and AS 1682 2 1990)

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B.Sc, M Sc, MIE Aust, CPeng

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Ken Gurcan Erbas
Company Erbas & Associates Pty Ltd.
Address Level 1, 15 Atchison street
Phone No (02) 9437 1022 Fax No (02) 9437 1023

[Signature]
Signature

6/8/2009
Date

FIRE DAMPERS - INSTALLATION CERTIFICATE

Project Name	RACF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

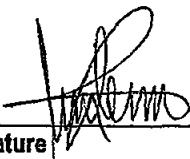
Measure and/or system	Standards of Performance
Fire dampers	BCA2007 Clause C3 15 and AS/NZS 1668 1 – 1998 (AS 1682 1 1990 and AS 1682 2 1990)

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER OF INSTITUTE OF ENGINEERS
AUSTRALIA 2615295 MEMBER OF AUSTRALIAN INSTITUTE OF
REFRIGERATION AIRCONDITIONING & HEATING - 13944

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RICO NICODENUS
Company GARRIC PTY. LTD
Address 9, 2-6 Chaplin Drive Lane Cove NSW, 2066
Phone No 9427 8179 Fax No 9428 2759

Signature 

Date 27/07/09

TOTAL : 5 pages

1 6 INSTALLATION INSTRUCTIONS The fire damper manufacturer shall provide written instructions for installation of fire dampers. Details shall include at least the following:

- (a) Type or types of construction in which the damper has been tested, and achieved the listed FRL, or the type or types of construction in which the testing laboratory considered that the damper would have achieved the listed FRL, if so tested
- (b) Details of the method of installation used in the prototype test as well as any opinion of the testing laboratory in respect of acceptable alternative methods, except where an installation method(s) is in accordance with Clause 5 2 2 2 and Clause 5 2 2 3
- (c) Orientation of the fire damper, i.e. horizontal, vertical, or both
- (d) Packing between the fire damper body and the side of penetration
- (e) Ensure that the commissioning test report located within AS/NZS1668 1 installation certificate is completed

FIRE DAMPERS SCHEDULE

Certificate No

Building Owner ARV

Project Name WARRIEWOOD RACF STAGE 2A

Building Address 8 Macpherson St Warriewood

Reference	Level	Location	Size	Type	Manufacturer	Test Ref
GROUND						
FD-1	Ground	Detergent Store	200x200	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-2	Ground	Cont Waste	250x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 3	Ground	Maintenance	300x150	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-4	Ground	Maintenance	600x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-5	Ground	Maintenance	400x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-6	Ground	Maintenance	250x100	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 7	Ground	Switch Room	300x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 8	Ground	Switch Room	1000x900	Curtain type	Air Grilles	BCA 2007 C 15 AS1168 1 1998
LEVEL-1						
FD-1	L-1	SW Wing	350x200	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 2	L 1	Caught short	200x200	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-3	L-1	Kitchen	300x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-4	L-1	Store Laundry	250mm dia	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 5	L-1	Equip Store	200x200	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-6	L-1	Equip Store	400x400	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 7	L-1	Equip Store	200x200	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-8	L-1	NW Wing	350x200	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-9	L-1	NW Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-10	L-1	NE Wing	350x200	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-11	L-1	NE Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-1 2	L-1	SW Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
LEVEL 2						
FD-1	L-2	Equip store	200x200	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-2	L-2	House Entry	200x200	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-3	L-2	Kitchen	300x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-4	L 2	Kitchen	300x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-5	L-2	Core	300x250	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 6	L-2	Core	400x300	Intumescent/wall	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-7	L-2	SW Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 8	L 2	SW Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 9	L-2	SW Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-10	L-2	SW Wing	300x200	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-11	L-2	SE Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 12	L-2	SE Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-13	L-2	SE Wing	250x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-14	L-2	SE Wing	150x150	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD 15	L-2	NE Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-16	L-2	NE Wing	200x300	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-17	L-2	NE Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-18	L-2	NW Wing	200x300	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-19	L-2	NW Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998
FD-20	L-2	NW Wing	400x250	Intumescent/slab	Lorient	BCA 2007 C 15 AS1168 1 1998

Rico Nicodemus

From Carlos Ormazabal
Sent Tuesday, 16 June 2009 4 10 PM
To Rico Nicodemus
Subject FW No 8 Mcpherson Street Warriewood
Attachments FCO1869 PDF, lvh44 with cables in close proximity test pdf FC1963 REVISION PDF
FC1963 REVISION PDF

From Giles Newcombe [mailto:giles@lorient.com.au]
Sent Tue 16/06/2009 09:47
To Carlos Ormazabal
Cc Colin Moss
Subject No 8 Mcpherson Street Warriewood

Morning Carlos,

Just a follow up regarding the damper installations that I inspected yesterday I understand that this is still a work in progress and that in some instances angles needed to be attached to casings and Lorient Intumescent mastic applied to perimeters to seal the penetrations

* However, from what I viewed the installations were in accordance with Lorient's current approvals and recommended installation methods *

For your reference (and to supply to the certifier) I have attached the relevant covering approvals – please look over these carefully to ensure that all details are being adhered to. These include

- Penetrations through masonry walls
- Penetrations through concrete slabs
- Angle free systems off protected risers
- Lv44 with cables in close proximity to casing

As discussed, there was one installation in the upper level floor slab that was outside the scope of our approvals - where the perimeter gap between the casing and aperture exceeded our approved 25mm. My recommendation would be to incorporate a small transition and install a larger damper to reduce the gap back to an acceptable width.

I hope that this is of assistance to you.

Please do not hesitate to contact myself or Colin if we can be of further assistance.

Kind regards

<<FCO1869 PDF>> <<lv44 with cables in close proximity test pdf>> <<FC1963 REVISION PDF>>
<<FC1963 REVISION PDF>>

27/07/2009

Giles Newcombe

Technical Services Manager

Kilargo Pty Ltd trading as

Lorient Australia

Tel 02 9907 3844

Fax 02 9907 3855

e-mail giles@lorient.com.au

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27/07/2009

TITAN

DOORS & FRAMES PTY LTD

ABN 25 082 689 629

Unit 26, 1 Talavera Rd
Macquarie Park, NSW 2113

P.O. Box 3018
18 Moore Avenue
West Lindfield, NSW 2070

Tel: (02) 9856 0800
Fax (02) 9856 0888

FIRE DOORS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance.

Measure and/or system	Standards of Performance
Fire doors	BCA2007 Specification C3.4 and AS 1905.1 - 2005

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above. (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations

BSC MECH ENGINEERING

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name of Certifier: Aleksandar Veleviski

Company Titan Doors and Frames Pty Ltd

Address Unit 26 / 1 Talavera Road, Macquarie Park NSW 2113

Phone No 02 9856 0800

Fax No 02 9856 0888

A. Veleviski
Signature

07 09 2009
Date

Certificate No TJ 1815 - 0004 - 09

SCHEDULE OF EVIDENCE

Project Name, Building Address:	WARRIEWOOD RETIREMENT VILLAGE MC' PHERSON ST, WARRIEWOOD	Building Owner:	
		Inspection Date:	
		Certifier	TITAN DOORS AND FRAMES PTY LTD

DOOR NO	TAG NO	LOCATION	Nominal Dimension			FRL		Facing	Lockset Type	Closer Type	Miscellaneous (eg Vision Panel etc)	Test Reference Opinion
			Height	Width	Thick							
DB 02	13211	SW - STAIR 2	2040	920	45	-	60	PLY	LWD - 934	LWD - 7724SIL		
DB 03	13212	ARCHIVE ROOM	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DB 04	13675	MAIN SWITCHBOARD	2340	920	45	-	120	PLY	LWD - 938	LWD - 7724SIL		
DB 05	13676	MAIN SWITCHBOARD	2340	920	45	-	120	PLY	LWD - 938	LWD - 7724SIL		
DB 06	13213	SE - STAIR 1	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DB 07	13214	SE STAIR 2	2040	920	45	-	60	PLY	LWD - 934	LWD - 7724SIL		
DB 08	13215	PUMPSET	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DB 14	13677	WORKSHOP & STORE	2040	920	45	-	120	PLY	LWD - 938	LWD - 7724SIL		
DB 15	13678, 13679	CLEAN LINEN CORRIDOR	2280	1740	45	-	120	PLY	LWD 21607/21724	LWD - 7724SIL		
DB 26	13216	NE - STAIR 2	2040	920	45	-	60	PLY	LWD - 934	LWD - 7724SIL		
DB 29	13680, 13681	DIRTY LINEN CORRIDOR	2040	1640	45	-	120	PLY	LWD 21607/21724	LWD - 7724SIL		
DD	13217	G SW STAIR 1/CORRIDOR 1	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DD	13218	G NW STAIR 1/CORRIDOR 1	2040	920	45	-	60	PLY	LWD 938	LWD - 7724SIL		
DD	13219	G NW STAIR 2/CORRIDOR 2	2040	920	45	-	60	PLY	LWD 938	LWD - 7724SIL		
DD	13220	G NE STAIR 2/CORRIDOR 2	2040	920	45	-	60	PLY	LWD - 938	LWD 7724SIL		
DD	13221	F SW STAIR 1/CORRIDOR 1	2040	920	45	-	60	PLY	LWD 938	LWD - 7724SIL		
DD	13222	F SW STAIR 2/CORRIDOR 2	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		

Certificate No TI 1815 - 0004 - 09

SCHEDULE OF EVIDENCE

Project Name:	<u>WARRIEWOOD RETIREMENT VILLAGE</u>	Building Owner:	
Building Address:	<u>MC' PHERSON ST WARRIEWOOD</u>	Inspection Date:	
		Certifier:	<u>TITAN DOORS AND FRAMES PTY LTD</u>

DOOR NO	TAG NO	LOCATION	Nominal Dimension			FRL		Facing	Lockset Type	Closer Type	Miscellaneous (eg. Vision Panel etc)	Test Reference Option
			Height	Width	Thick							
DD	13223	F' NW STAIR 1/CORRIDOR 1	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DD	13224	F' NW STAIR 2/CORRIDOR 2	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DD	13225	F' NE STAIR 1/CORRIDOR 1	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DD	13226	F' NE STAIR 2/CORRIDOR 2	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		
DD	13227	F' SE STAIR 2/CORRIDOR 2	2040	920	45	-	60	PLY	LWD - 938	LWD - 7724SIL		

Certificate No TI 1815 - 0004 - 09

SCHEDULE OF EVIDENCE

Project Name.	WARRIWOOD RETIREMENT VILLAGE	Building Owner	
Building Address.	MC PHERSON ST, WARRIWOOD	Inspection Date	
		Certifier	TITAN DOORS AND FRAMES PTY LTD

DOOR NO	TAG NO	LOCATION	Nominal Dimension			FRL		Facing	Lockset Type	Closer Type	Miscellaneous (eg Vision Panel etc)	Test Reference Opinion
			Height	Width	Thick							
DG 04	13682, 13683	NW ENTRY CORRIDOR	2280	1800	45	-	120	30	PLY	LWD-21607/21724	LWD - 7724SIL	
DG 05	13693 13694	B/O H CORRIDOR 2	2040	1840	45	-	120	30	PLY	LWD-21607/21724	LWD - 7724SIL	
DG 06	13695, 13696	NE ENTRY CORRIDOR	2280	1800	45	-	120	30	PLY	LWD-21607/21724	LWD - 7724SIL	
DG 12	13697, 13698	SW HOUSE ENTRY	2280	1800	45	-	120	30	PLY	LWD-21607/21724	LWD - 7724SIL	
DG 14	13699	SW SERVICE CORRIDOR	2040	1020	45	-	120	30	PLY	LWD - 938	LWD - 7724SIL	VISION PANEL
DG 18	13700	SW SERVICE CORRIDOR	2040	1020	45	-	120	30	PLY	LWD-21607/21724	LWD - 7724SIL	VISION PANEL
DG 22	13228	SE STAIR 1 AIRLOCK	2040	920	45	-	60	30	PLY	LWD - 938	LWD - 7724SIL	
DG 23	13229	SE STAIR 1 AIRLOCK EXIT	2040	920	45	-	60	30	PLY	LWD - 934	LWD - 7724SIL	
DG 24	13230	SE STAIR 1 (Basement exit)	2040	920	45	-	60	30	PLY	LWD - 931	LWD - 7724SIL	
DG 25	13231	SE STAIR 1 (1st Floor exit)	2040	920	45	-	60	30	PLY	LWD - 938	LWD - 7724SIL	
DF 04	13818, 13819	NW ENTRY CORRIDOR	2280	1800	45	-	120	30	PLY	LWD-21607/21724	LWD - 7724SIL	
DF 05	13820 13821	B O H CORRIDOR 2	2040	1840	45	-	120	30	PLY	LWD-21607/21724	LWD - 7724SIL	
DF 06	13822, 13823	NE ENTRY CORRIDOR	2280	1800	45	-	120	30	PLY	LWD 21607/21724	LWD - 7724SIL	
DF 17	13232	SE STAIR 1	2040	920	45	-	60	30	PLY	LWD 038	LWD - 7724SIL	
DP 01	13824 13825	PLANT DECK NORTH	2040	1440	45	-	120	30	PLY	LWD - 938	LWD - 7724SIL	

Certificate No: TI 1815 - 0004 - 09

SCHEDULE OF EVIDENCE

Project Name:	WARRIEWOOD RETIREMENT VILLAGE	Building Owner:	
Building Address:	MC PHERSON ST. WARRIEWOOD	Inspection Date:	
		Certifier:	TITAN DOORS AND FRAMES PTY LTD

DOOR NO	TAG NO	LOCATION	Nominal Dimension			FRL	Facing	Lockset Type	Closer Type	Miscellaneous (eg. Vision Panel etc)	Test Reference Opinion
			Height	Width	Thick						
DP 02	13826	HYDRAULIC PLANT	2040	920	45	- 120 30	PLY	LWD - 931	LWD - 7724SIL		
DP 04	13827	STAIR C1	2040	920	45	- 120 30	PLY	LWD - 938	LWD 7724SIL		

When completed this Schedule is to be attached to and become part of the FIRE DOOR CERTIFICATE which it supports



GDK Hydraulics Consulting Pty Ltd
 ABN 64 114 102 279
 Suite 6 17 Burwood Road
 Burwood NSW 2134 Australia
 Phone (02) 9745 0700
 Fax (02) 9745 0722
 Email office@gdk.net.au

DESIGN CERTIFICATION

ADDRESS 8 McPherson Street, Warriewood
PROJECT Residential Aged Care Facility – Stage 2a

Pursuant to the provision of Clause A2.2(a)(iii) of the Building Code of Australia 2007, Vol 1

I George Koutoulas of GDK Hydraulics Consulting Pty Ltd
 6/17 Burwood Road, Burwood, NSW, 2134

Qualifications and experience Full Member of AHSCA

Hereby certify

That the Hydraulic & Fire Sprinkler Services Design Drawings have been designed to comply with

a) the relevant clauses of the Building Code of Australia, as follows

Clause E1.3 – Fire Hydrants
 Clause E1.4 – Fire Hose Reels
 Clause E1.5 – Fire Sprinklers
 Part J7 – Hot Water Supply

b) the relevant Australian Standards listed in the Building Code of Australia as follows

AS 3500.4
 AS 2419.1 – 2005
 AS 2441 – 2005
 AS 2118.1 – 1999 Ordinary Hazard 2, carpark
 AS 2118.4 – 1995 Residential

c) The drawings relevant to this Certification are numbered -

Hydraulics – H-01A, H-02B, H-03B, H-04B, H-05B, H-06A, H-07B, H-08A, H-09A, H-10B, H-11A, H-12A,
 H-13A & H-14A

Fire Sprinkler – FS-01 to FS-07 Revision A

Note This Certification does not cover the design of the Fire Sprinklers undertaken by the Contractor

Signature

G Koutoulas

Date 30 July, 2009



commodore plumbing nsw pty ltd

CERTIFICATE OF INSTALLATION COMPLIANCE

BUILDING ADDRESS 6-14 Macpherson Street Warriewood 2101

BUILDING PARTICULARS Entire Building (all new work within site only)

ESSENTIAL SERVICE	STANDARD OF PERFORMANCE BCA Australian Standard (and year) or other code requirement applicable to original Design Installation and Performance	DATE OF COMMISSIONING OR INSPECTION
FIRE COLLARS	AS1530 4 AND BCA Clauses C3 12 C3 15 & SPECIFICATION 2007	20/07/09
STORMWATER	AS 3500 3 2 and F1 1 of BCA 2007	20/07/09
PLUMBING AND DRAINAGE	AS 3500 and NSW code of Practice 2007	20/07/09
FIRE HYDRANT	BCA Clause E1 3 AS 2419 1 2005	20/07/09
FIRE HOSE REELS	BCA Clause E1 4 AS 2441-2007	20/07/09
GAS WORKS	AS 5601	20/07/09
ENERGY EFFICIENCY	BCA 2007 Part J7 and Section 8 of AS 3500 4	20/07/09

I Tim Watkin of Commodore Plumbing NSW Pty Ltd certify that the essential service(s) nominated above have been installed and commissioned by this company, and at the date of commissioning / inspection was found to have been properly implemented and to be capable of performing to the abovementioned standard(s)

The information contained in this certificate is to the best of my knowledge and belief
true and accurate

Signed Tom Waters Date 20/7/09

FIRE SEALS PROTECTING MISCELLANEOUS GAPS JOINTS AND PENETRATIONS
IN FIRE RESISTING COMPONENTS OF THE BUILDING - INSTALLATION
CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire seals protecting openings in fire resisting components of the building- Joints, gaps and miscellaneous penetrations	BCA2007 Clause C3 15 and AS 1530 4 and AS 4072 1 and installed in accordance with the tested prototype

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RADENKO DOBRAS
Company CUSTOM LININGS PTY LTD
Address U4, 17-19 GOULD ST, STRATHFIELD NSW
Phone No 9999 5556 Fax No 9999 5557

Radenko Dobras
Signature

17/07/09
Date

FIRE SEALS PROTECTING MISCELLANEOUS GAPS JOINTS AND PENETRATIONS
IN FIRE RESISTING COMPONENTS OF THE BUILDING - INSTALLATION
CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Fire seals protecting openings in fire resisting components of the building- Joints, gaps and miscellaneous penetrations	BCA2007 Clause C3 15 and AS 1530 4 and AS 4072 1 and installed in accordance with the tested prototype

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations: 30 yr Trade & Construction exp.

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name SIMON NOTT
Company YORKSHIRE (NSW)
Address 5 Valleyview Cres Greenwich 2065
Phone No 9437-9965 Fax No 9437-9968


Signature

27.7.11
Date

YORKSHIRE (NSW) PTL
ABN: 45 104 650 768

**FIRE RESISTING CONSTRUCTION – PLASTERBOARD WALLS AND/OR CEILINGS
- INSTALLATION CERTIFICATE**

Project Name	RCAF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire resisting construction (Plasterboard walls and/or ceilings)	BCA2007 Part C2 and in accordance with an approved Manufacturer's system as required by the Architects drawings

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RADENKO DOBRAS
Company CUSTOM LININGS PTY LTD
Address U4, 17-19 GOULD ST STRATHFIELD STH
Phone No 9999 5556 Fax No 9999 5557

Ladene Dobras
Signature

17/07/09
Date

FIRE RESISTING CONSTRUCTION – MASONRY CONSTRUCTION - INSTALLATION
CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire resisting construction (Masonry)	BCA2007 Part C2 AS 1170 1 1989, AS 1170 2 1989 AS 1170 4 1993 AS 3600 - 2001 AS 3700 - 2001, AS 4100 1998 and in accordance with a tested prototype to the Architects drawings

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations 30yr Trade & Const Experience

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Simon NOTT
Company YORKSHIRE (NSW)
Address 5 Valleyview Cirs Greenwich 2065
Phone No 9437-9965 Fax No 9437-9963


Signature

27.07.09.
Date

YORKSHIRE (NSW) P/L
ABN: 45 104 650 768

FIRE SEALS PROTECTING OPENINGS IN FIRE RESISTING COMPONENTS OF THE BUILDING – ELECTRICAL PENETRATIONS - INSTALLATION CERTIFICATE

Project Name	RCAF Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire seals protecting openings in fire resisting components of the building Electrical penetrations	BCA2007 Clause C3 15 and AS 1530 4 and AS 4072 1 and installed in accordance with the tested prototype

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations LICENCE NO EC 20001

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name JOHN KERTESE
Company FERRETT AND IVES ELECTRICAL
Address UNIT 36 BLOCK C 1-3 ENDEAVOUR RD, CARINGBAH 2229
Phone No 9525-9288 Fax No 9526-1931

John Kerrese
Signature

24/7/09
Date



commodore plumbing nsw pty ltd

CERTIFICATE OF INSTALLATION COMPLIANCE

BUILDING ADDRESS 6-14 Macpherson Street Warriewood 2101

BUILDING PARTICULARS Entire Building (all new work within site only)

ESSENTIAL SERVICE	STANDARD OF PERFORMANCE <small>BCA Australian Standard (and year) or other code requirement applicable to original Design Installation and Performance</small>	DATE OF COMMISSIONING OR INSPECTION
FIRE COLLARS	AS1530 4 AND BCA Clauses C3 12 C3 15 & SPECIFICATION 2007	20/07/09
STORMWATER	AS 3500 3 2 and F1 1 of BCA 2007	20/07/09
PLUMBING AND DRAINAGE	AS 3500 and NSW code of Practice 2007	20/07/09
FIRE HYDRANT	BCA Clause E1 3 AS 2419 1 2005	20/07/09
FIRE HOSE REELS	BCA Clause E1 4 AS 2441 2007	20/07/09
GAS WORKS	AS 5601	20/07/09
ENERGY EFFICIENCY	BCA 2007 Part J7 and Section 8 of AS 3500 4	20/07/09

I Tim Watkin of Commodore Plumbing NSW Pty Ltd certify that the essential service(s) nominated above have been installed and commissioned by this company and at the date of commissioning / inspection was found to have been properly implemented and to be capable of performing to the abovementioned standard(s)

The information contained in this certificate is to the best of my knowledge and belief
true and accurate

Signed Tim Watters Date 20/7/09

FIRE SHUTTERS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire shutters	BCA2007 Specification C3 4 and AS 1905 2 - 2005

b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations See attached

c) The information contained in this statement is true and accurate to the best of my knowledge

Name Able Doors
Company Clary Thomson
Address 107 Long St Smithfield
Phone No 02 97571877 Fax No 02 97571652

[Signature]
Signature

7/9/09
Date

Certificate of Test

No 2067

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This is to certify that the element of construction described below was tested by the CSIRO Division of Materials Science and Engineering in accordance with Australian Standard 1530, Methods for fire tests on building materials components and structures Part 4-2005 on behalf of

Able Door Services Pty Ltd
107 Long Street
SMITHFIELD NSW

A full description of the test specimen and the complete test results are detailed in the Division's sponsored investigation report numbered FSV 1298

Product Name Able Door Services Roller Shutter Assembly

Description The roller shutter curtain comprised interlocking galvanised steel roll-formed horizontal slats. The curtain slats were nominally 2390-mm long x 100-mm wide x 0.9 mm thick and had 5 mm thick cast steel end-clips, fixed with four 6.35 mm x 14-mm long steel rivets to each end of every alternate slat. The curtain overlapped the opening in the brick wall by nominally 75-mm on each side. The bottom rail of the curtain consisted of two 65-mm x 65-mm x 5-mm Galvabond steel angles welded back to back and fixed through the bottom slat using 6.35-mm x 14-mm long steel rivets at nominal 200-mm centres. The roller drum assembly consisted of a black steel tube 168.3-mm O.D. with a wall thickness of 4.8 mm incorporating a CS1020 steel solid axle 34.92-mm in diameter supported at each end (measured distance of approximately 2760-mm) by a barrel bracket without being restrained in any way. The steel drum assembly consisted of springs, cogs and brackets. The axle was supported on top of the 300-mm x 300-mm x 10 mm thick mild steel drum brackets mounted to 600-mm long 65-mm x 65-mm x 8-mm structural angles that were fixed to the masonry wall with five 12-mm diameter x 100 mm long masonry anchors. The centre line of the axle was mounted 300 mm above the opening in the masonry wall.

The element of construction described above satisfied the following criteria for fire-resistance for the period stated

Structural Adequacy	-	not applicable
Integrity	-	no failure at 241 minutes
Insulation	-	2 minutes
Radiation at 365 mm	-	24 minutes

and therefore for the purpose of Building Regulations in Australia, achieved a fire resistance level (FRL) of /240/0. The FRL is applicable for exposure to fire from either direction.

This certificate is provided for general information only and does not comply with the regulatory requirements for evidence of compliance.

Testing Officer: Chns Wojcik Date of Test: 30 October 2007
Issued on the 7th day of March 2008 without alterations or additions

Gary E Collins
Manager Fire Testing and Assessments



This laboratory is accredited (Accreditation No 165 Corporate Site No 3625) by the National Association of Testing Authorities Australia. The tests reported herein have been performed in accordance with its terms of accreditation.



CSIRO Manufacturing & Infrastructure Technology
14 Julius Avenue Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
Telephone 61 2 9490 5444 Facsimile 61 2 9490 5555

**ABLE DOOR SERVICES (NSW) PTY LTD
107 LONG STREET, SMITHFIELD NSW 2164
PHONE: (02) 9757 1877 FAX: (02) 9757 1652**

19/08/09

RE; ACCENT GARAGE DOORS

SITE; ST HILLIERS- MACPHERSON ST WARRIEWOOD

Dear Sir,

**RE: FIRE RATING CERTIFICATE FOR NEW ROLLER
SHUTTERS INSTALLED AT ABOVE ADDRESS.**

CERTIFICATE NO: 009055A 009055B

This is to certify that the rollerShutters described above have been manufactured in accordance with Australian Standard 1530, Compliance with 3.4 of Building Code of Australia 2005 methods for fire tests on building materials, components and structures, part4-1997 and Australian Standard 1905, components for the protection of openings in fire-resistant walls, part 2-1989, fire resistant roller shutters.

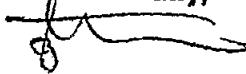
The following criteria for fire resistance for period stated.-

- Structural Adequacy – Not applicable**
 - Integrity – No failure at 120 minutes**
-

The Roller Shutters installed are designed and manufactured as its
Prototype tested and certified by CSIRO as having a FRL of -/240/2
With a difference being ONLY the size of the protected opening

And therefore for the purpose of building regulations in Australia
Achieved a fire-resistance level (FRL) -240/2 FRL
is applicable for exposure to fire from either direction Certificate
number 2067.

Yours faithfully,



GARY THOMSON

GT/cb



GDK Hydraulics Consulting Pty Ltd
ABN 61 114 102 270
Suite 6 17 Burwood Road
Burwood NSW 2134 Australia
Phone (02) 9745 0700
Fax (02) 9745 0722
Email office@gdk.net.au

DESIGN CERTIFICATION

ADDRESS PROJECT 8 McPherson Street, Warriewood
Residential Aged Care Facility – Stage 2a

Pursuant to the provision of Clause A2 2(a)(iii) of the Building Code of Australia 2007, Vol 1

I George Koutoulas of GDK Hydraulics Consulting Pty Ltd
6/17 Burwood Road, Burwood, NSW, 2134

Qualifications and experience Full Member of AHSCA

Hereby certify

That the Hydraulic & Fire Sprinkler Services Design Drawings have been designed to comply with

a) the relevant clauses of the Building Code of Australia, as follows

Clause E1 3 – Fire Hydrants
Clause E1 4 – Fire Hose Reels
Clause E1 5 – Fire Sprinklers
Part J7 – Hot Water Supply

b) the relevant Australian Standards listed in the Building Code of Australia as follows

AS 3500 4
AS 2419 1 – 2005
AS 2441 – 2005
AS 2118 1 – 1999 Ordinary Hazard 2, carpark
AS 2118 4 – 1995 Residential

c) The drawings relevant to this Certification are numbered -

Hydraulics – H-01A, H-02B, H-03B, H-04B, H-05B, H-06A, H 07B, H-08A, H 09A, H-10B, H 11A, H-12A,
H-13A & H 14A

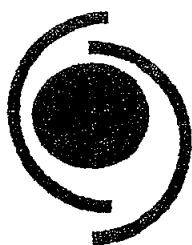
Fire Sprinkler – FS-01 to FS-07 Revision A

Note This Certification does not cover the design of the Fire Sprinklers undertaken by the Contractor

Signature

G Koutoulas

Date 30 July, 2009



commodore plumbing nsw pty ltd

CERTIFICATE OF INSTALLATION COMPLIANCE

BUILDING ADDRESS 6-14 Macpherson Street Warriewood 2101

BUILDING PARTICULARS Entire Building (all new work within site only)

ESSENTIAL SERVICE	STANDARD OF PERFORMANCE BCA Australian Standard (and year) or other code requirement applicable to original Design Installation and Performance	DATE OF COMMISSIONING OR INSPECTION
FIRE COLLARS	AS1530 4 AND BCA Clauses C3 12 C3 15 & SPECIFICATION 2007	20/07/09
STORMWATER	AS 3500 3 2 and F1 1 of BCA 2007	20/07/09
PLUMBING AND DRAINAGE	AS 3500 and NSW code of Practice 2007	20/07/09
FIRE HYDRANT	BCA Clause E1 3 AS 2419 1 2005	20/07/09
FIRE HOSE REELS	BCA Clause E1 4 AS 2441 2007	20/07/09
GAS WORKS	AS 5601	20/07/09
ENERGY EFFICIENCY	BCA 2007 Part J7 and Section 8 of AS 3500 4	20/07/09

I Tim Watkin of Commodore Plumbing NSW Pty Ltd certify that the essential service(s) nominated above have been installed and commissioned by this company and at the date of commissioning / inspection was found to have been properly implemented and to be capable of performing to the abovementioned standard(s)

The information contained in this certificate is to the best of my knowledge and belief
true and accurate

Signed Tim Waters Date 20/7/09

LIGHTWEIGHT CONSTRUCTION (FIRE RATED) - INSTALLATION CERTIFICATE

Project Name	RCAF Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Lightweight construction (fire rated)	BCA2007 Specifications C1.8 and A2.3 and AS 1530.4

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RADENKO DOBRAS
Company CUSTOM LININGS PTY LTD
Address U4, 17-19 GOULD ST STRATHFIELD NSW
Phone No 9999 5556 Fax No 9999 5557

Radenko Dobras
Signature

17/07/09
Date

MECHANICAL AIR HANDLING SYSTEM (FIRE) - DESIGN CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Mechanical air handling system (automatic shut down of air-handling system)	BCA2007 Clause E2 2 and AS/NZ 1668 1 1998

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B.Sc, M.Sc, MIE Aust, CP Eng

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Ken Gurcan Erbas
Company Erbas & Associates Pty Ltd.
Address Level 1, 15 Atchison Street
Phone No (02) 9437 1022 Fax No (02) 9437 1025


Signature

6/8/2009
Date

MECHANICAL AIR HANDLING SYSTEM (FIRE) - INSTALLATION CERTIFICATE

Project Name	RCAF Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Mechanical air handling system (automatic shut down of air-handling system)	BCA2007 Clause E2 2 and AS/NZ 1668 1 1998

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER OF INSTITUTE OF ENGINEERS AUSTRALIA
2615295 MEMBER OF AUSTRALIAN INSTITUTE OF REFRIGERATION
AIR-CONDITIONING & HEATING 13940

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RLO NICOZZANUS

Company GMULC PTY LTD.

Address 9, 2-6 Chaplin Drive, Lane Cove NSW 1506

Phone No 9477 8179

Fax No 9428 2759

Signature

Date

27/07/09



A UTC Fire & Security Company

Chubb Fire Safety Ltd

FINAL FIRE SAFETY CERTIFICATE

Environmental Planning & Assessment (Regulation 2000 Part 9, Division 4)

RECEIVED
21/9/09

TYPE OF CERTIFICATE (see note 1)	Final		
Certificate Name Owner/agent Address	I <i>Bob Martin (Agent)</i> of <i>Chubb Fire Safety, 120 Silverwater Rd, Silverwater, 2128</i>		
	Certify that a) each of the essential fire measures listed below <ul style="list-style-type: none">has been assessed by a person (chosen by me) who was properly qualified to do so, andwas found, when it was assessed, to have been properly implemented and to be capable of performing to a standard no less than that required by the most recent fire safety schedule (refer below) for the building for which the certificate is issued b) the information contained in this certificate is, to the best of my knowledge and belief, true and accurate		
IDENTIFICATION OF BUILDING	Site Address Nearest cross street Suburb	<i>Anglican Retirement Village Warriewood</i> <i>6 -14 Macpherson Street</i> <i>Fantail Ave</i> <i>Warriewood NSW 2102</i>	
PARTICULARS OF BUILDING	WHOLE / PART Description of part (where applicable)	<i>Building</i>	
DATE OF ASSESSMENT	dated this <i>9th</i> day of <i>September 2009</i>		
OWNERS DETAILS	Name ADDRESS		
ESSENTIAL FIRE SAFETY MEASURES (SEE NOTE 3)	Measures <i>Fire Extinguishers</i> <i>Fire Blankets</i>	Standard of Performance <i>AS 2444 – 2001</i> <i>Clause E1 6 of the BCA</i>	
DATE OF CERTIFICATE	Dated this <i>17th</i> day of <i>September 2009</i>		
SIGNATURE	<i>R M Martin</i> CONTRACTOR/AGENT		

A copy of this certificate together with the relevant fire safety schedule must be forwarded to the Council and the Commissioner of the New South Wales Fire Brigades

A copy of this certificate together with the relevant fire safety schedule must be prominently displayed in the building

SMOKE DAMPERS (AUTOMATIC) - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Smoke dampers	AS/NZS 1668 1 – 1998 (AS 1682 1 1990 and AS 1682 2 1990)

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B.Sc., M.Sc., MIE Aust., CP Eng

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Ken Gurcan Erbas
Company Erbas & Associates Pty Ltd.
Address Level 1, 15 Atchison Street
Phone No (02) 9437 1022 Fax No (02) 9437 1025

[Signature]
Signature

6/8/2009
Date

SMOKE DAMPERS (AUTOMATIC) - INSTALLATION CERTIFICATE

Project Name	RCAF Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

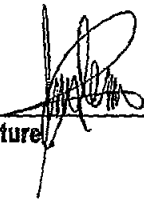
Measure and/or system	Standards of Performance
Smoke dampers	AS/NZS 1668 1 – 1998 (AS 1682 1 1990 and AS 1682 2 1990)

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER INSTITUTE OF ENGINEERS
AUSTRALIA 2615295, MEMBER OF AUSTRALIAN INSTITUTE OF
REFRIGERATION AIRCONDITIONING & HEATING 13944

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Rico Nicodemus
Company GARRIC PEX LTD
Address 9, 2-6 Chaplin Drive, Lane Cove 2156
Phone No 9427 8779 Fax No 9428 2759

Signature 

Date 30/07/09

SMOKE DETECTORS AND HEAT DETECTORS - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Smoke detectors and heat detectors (detectors for the automatic closing operation of fire doors and fire shutters in fire walls)	BCA2007 Clause C3 5 and AS 1670 1 – 2004
Smoke detectors and heat detectors (detectors for the automatic closing operation of horizontal exits)	BCA2007 Clause C3 7 and AS 1670 1 – 2004
Smoke detectors and heat detectors (detectors for the automatic closing operation of smoke doors)	BCA2007 Specification C3 4 and AS 1670 1 – 2004

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B ENG (ELEC)

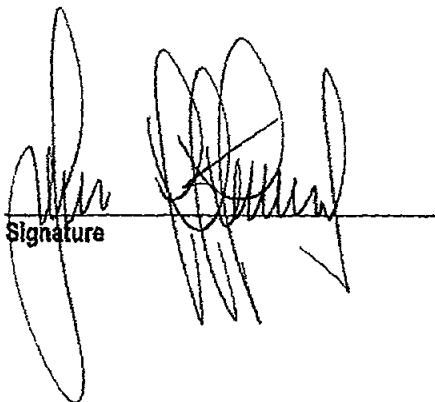
- b) The information contained in this statement is true and accurate to the best of my knowledge

Name JIM HATZIMANOLIS

Company JIM HATZ & ASSOCIATES

Address LEVEL 9, 1 CHANDOS ST, ST LEONARDS

Phone No 9437 1000 Fax No 9437 1020

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke, positioned over a horizontal line.

Signature

5/3/09

Date

SMOKE DETECTORS AND HEAT DETECTORS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that
a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Smoke detectors and heat detectors (detectors for the automatic closing operation of fire doors and fire shutters in fire walls)	BCA2007 Clause C3 5 and AS 1670 1 – 2004
Smoke detectors and heat detectors (detectors for the automatic closing operation of horizontal exits)	BCA2007 Clause C3 7 and AS 1670 1 – 2004
Smoke detectors and heat detectors (detectors for the automatic closing operation of smoke doors)	BCA2007 Specification C3 4 and AS 1670 1 – 2004

b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations
25 YEARS IN FIRE PROTECTION INDUSTRY

c) The information contained in this statement is true and accurate to the best of my knowledge

Name PAUL LUSCHWITZ
Company NATIONAL FIRE SOLUTIONS PTY LTD
Address 14/365 WEST BOSTON ST ROCKDALE
Phone No 95877400 Fax No 95977484
9007 5905

 06 AUG 09



DOORS & FRAMES PTY LTD

ABN 25 082 689 629

Unit 26, 1 Talavera Rd
Macquarie Park, NSW 2113

P O Box 3018
18 Moore Avenue
West Lindfield, NSW 2070

Tel (02) 9856 0800
Fax (02) 9856 0888

SMOKE DOORS – INSTALLATION CERTIFICATE – INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The smoke doors nominated below have been installed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Smoke doors	BCA2007 Specifications C2 5 and C3 4 and AS 1288 - 2006

Door ID #	Door ID #	Door ID #	Door ID #
G SW – Corridor 1 - DJ	G NE – Corridor 1 - DJ	F SE – Corridor 1 - DJ	F NW – Corridor 1 - DJ
G SW – Corridor 2 - DJ	G NE – Corridor 2 - DJ	F SE – Corridor 2 - DJ	F NW – Corridor 2 - DJ
G NW – Corridor 1 - DJ	F SW – Corridor 1 - DJ	F NE – Corridor 1 - DJ	
G NW – Corridor 2 - DJ	F SW – Corridor 2 - DJ	F NE – Corridor 2 - DJ	

- b) The information contained in this statement is true and accurate to the best of my knowledge

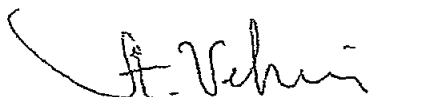
Name of Certifier Aleksandar Veleviski

Company Titan Doors and Frames Pty Ltd

* Address Unit 26 / 1 Talavera Road, Macquarie Park NSW 2113

Phone No 02 9856 0800

Fax No 02 9856 0888


Signature

31 08 2009
Date



A & W SIGNS PTY LIMITED

ABN 50 082 949 746 Address: 4/32 Endeavour Road, PO Box 66 Caringbah NSW 2229

P (02) 9525 3144 F (02) 9525 5013 E awsales@awsigns.com.au W www.awsigns.com.au

WARNING AND OPERATIONAL SIGNS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that:

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Warning and operational signs	BCA2007 Clauses D2.23, E1.4 AS 2441, 133 ^{EP 10 2007 SECTION}

- b) I am a properly qualified person ^{NOT} ~~and~~ ^{BUT} have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations NONE, BUT SIX (6) YEARS
EXPERIENCE IN ADMINISTRATION IN THE SIGN INDUSTRY

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name I HOOPER
Company A & W SIGNS PTY LTD
Address 32 ENDEAVOUR ROAD, CARINGBAH NSW 2229
Phone No 9525 3144 Fax No 9525 5013

Signature

Date

9/10/2009

COMMERCIAL KITCHEN & EXHAUST - DESIGN CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Commercial kitchen exhaust	BCA2007 Clause F4 15 AS/NZS 1668 1 - 1998 and AS 1668 2 1991

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B Sc , M Sc , MIE Aust , CP Eng

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Ken Gurcan Erbas
 Company Erbas & Associates Pty Ltd
 Address Unit 1, 15 Atchison street
 Phone No (02) 9437 1022 Fax No (02) 9437 1025


 Signature

6/8/2009
 Date

COMMERCIAL KITCHEN & EXHAUST - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building) LEVEL-1 DISHWASHER HOOD ONLY

PART ONLY

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Commercial kitchen exhaust	BCA2007 Clause F4 15 AS/NZS 1668 1 - 1998 and AS 1668 2 1991

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER INSTITUTE OF ENGINEERS AUSTRALIA
2615295, MEMBER OF AUSTRALIAN INSTITUTE OF REFRIGERATION
AIRCONDITIONING & HEATING 13940

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Rico Nicodemus
Company GARRIC PTY LTD
Address 9.2-6 Chaplin Drive Lane Cove, NSW 2066
Phone No 9427 8179 Fax No 9428 2759


Signature

27/07/09
Date

NOTES

GROUND FLOOR KITCHEN HOOD - EXCLUDED, HOOD NOT INSTALLED
FIRST FLOOR KITCHEN HOOD - EXCLUDED, HOOD NOT INSTALLED
GROUND FLOOR DISHWASHER HOOD - EXCLUDED, HEIGHT FROM FLOOR TO
UNDERSIDE OF HOOD IS LESS THAN 2000mm



PITTWATER COUNCIL

Food Premises Fit-Out Form

FP-1

I, STEVE LARSON of STEVE LARSON PARTNERS
(Print name of Certifier) (Business name)
at LEVEL 432 KENT ST
(Mailing Address)
0403 066 592
(Contact Phone Number - Landline and Mobile)
swatson@slpartners.com.au
(Email address)

being a Principal Certifier (Accreditation No 0432)

hereby certify that on

I inspected the food premises known as

RACE Larriewood
(Name of Food Shop)

(Shop number and address of Food Shop)

The premises has been designed, fitted out and constructed in accordance with all of the approved plans, documents and requirements of

- 1 ☒ the Development Consent number N102/05 & S96 Mod and
- 2 ☒ the Construction Certificate number 05/307/03, 06/307/04, and
& 05/307/06
- 3 ☒ the Food Safety Standard 3 2 3 - Food Premises and Equipment, and
- 4 ☒ Australian Standard AS 4674-2004 Design, Construction and Fit-Out of Food Premises * intent met see supporting documents

Note The Principal Certifier is to tick all four of the above requirements to acknowledge full compliance

Signature

Date

18/12/09



Michael Viskovich
Anglican Retirement Villages
PO Box 284
CASTLE HILL NSW 1765

3 December 2009

Dear Michael,

Re Residential Aged Care Facility, Macpherson St Warriewood - Commercial Kitchen Bounding Construction

We provide this letter as confirmation of the construction materials, methods and detailing provided in the design of the bounding walls to the food preparation kitchen areas (Level 1 and 2) for the above facility

The bounding wall construction utilises continuous fibrous cement sheet lining from floor to ceiling over stud framing. Floor to ceiling wall tiles are installed over the lining, to provide a solid, joint free and continuous sealed finish. Flooring is impervious vinyl with coved skirtings meeting up to the base of the wall tiles with fully sealed junctions and with solid wall lining as backing

The continuity of sealed detailing over solid sheeting ensures the complete installation is not prone to vermin accessible cavities and voids and thus functions as a complete, vermin resistant installation. Thus we believe this system meets Australian Standard requirements with regard to achieving solid continuous sealed bounding construction

We also confirm that site inspections performed during construction and at contract completion shows that the Builder appears to have provided all materials, detailing and finishing in accordance with the design documents and contract requirements to complete the installation

Yours faithfully,
MERRIN & CRANSTON PTY LTD


DARREN JEFFS

Merrin & Cranston Pty Ltd
ABN 60 010 242 878

Ph 07 3840 3940
Fax 07 3840 3941
Web www.merrincranston.com
Postal PO Box 6243 Fairfield Gardens 4103
Address 14-24 Railway Terrace Dutton Park

Nominated Architect Dwayne Nielsen
Qld 2440 NSW 5907



SANGSTER DESIGN GROUP PTY LTD ABN 90 857 119 706

PO Box 3558 Parramatta NSW 2124
Unit 49 1/9 Palmer Street North Parramatta NSW 2151

Telephone (02) 9630 0148
Facsimile (02) 9630 5755
Email sangdg@ozemail.com.au



8th December 2009

Anglican Retirement Villages
PO Box 284, Castle Hill NSW 1765
Level 2, Century Corporate Centre
62 Norwest Boulevard
Baulkham Hills, NSW, 2153

Attn Mr Michael Viskovich

Re Wall Construction in Foodservice areas at ARV facility – Warriewood

Hello Michael,

We note the letter provided by the Architect, Merrin & Cranston dated 3rd December 2009 regarding the wall construction around the food service areas on the above mentioned site

Based on the information provided in this letter and its confirmation that the builder has constructed the walls in the architects specified manner, we would confirm that this would form a sealed vermin proof structure

We note that the requirement as noted in AS4674-2004 is for wall structures in be built in such a manner as to eliminate the chances of vermin residing in the wall element

Please feel free to contact me should you have any questions

Regards

A handwritten signature in black ink, appearing to be 'BJL' with a large loop at the end.

Brian J Lennox FCSI
Senior Design Consultant

M 0400 323 748
E brian@sangsterdesign.com.au
Skype Brian james lennox

CONSTRUCTION AND FITOUT OF FOOD PREMISES - INSTALLATION CERTIFICATE

Project Name	RCAF - Warrimoo
Address	6-14 Macpherson Street Warrimoo NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Construction and Fitout of Food Premises	Food Act 2003, Food Regulation 2004 and AS 4674-2004

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations Sheet metal Worker 1st Class

Certificate in Industrial Supervision
35 years in S/STEEL Industry

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name S. D. SAAD
Company Southern Cross S/STEEL
Address PO Box 60, Regents Park NSW
Phone No 9644 2811 Fax No 9645 1114

Signature S. D. SAAD

Date 9-10-09

P.N

The works have been performed in accordance with the approved shop drawings

R

DAMP PROOFING - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Damp proofing	BCA2007 Clauses F1 9 and F1 10 and AS/NZS2904 or AS3660 1 and AS2870

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B Sc Engineering (Civil)
Member, Institution of Engineers, Australia

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Mohammad Ali
Company Concrete Connect P/L
Address Unit-6/ 143-155 Bonds Rd, Riverwood
Phone No 9534-7333 Fax No 9153-7983

M Ali
Signature

07/08/09
Date

DAMP PROOFING - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that:

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Damp proofing	BCA2007 Clauses F1 9 and F1 10 and • AS/NZS2904 or AS3660 1 and AS2870

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations: 30+ years industry experience

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name SIMON NOTT
Company YORKSHIRE (NSW)
Address 5 Valleyview Cres Greenwich 2065
Phone No 9437 9965 Fax No 9437 9963


Signature

7 08 09
Date

DAMP PROOFING - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that
a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

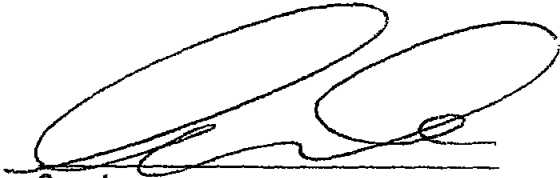
Measure and/or system	Standards of Performance
Damp proofing	BCA2007 Clauses F1 9 and F1 10 and AS/NZS2904 or AS3660 1 and AS2870

b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

c) The information contained in this statement is true and accurate to the best of my knowledge

Name Aidan Connelley
Company Millennium Carpentry Services Pty Ltd
Address Po Box 2170 Roser Bay NT 2030
Phone No 02 95195588 Fax No 02 95195588


Signature

6/8/09
Date



4th December 2009

Michael Viskovich
Merrin & Cranston
PO Box 6243
Fairfield Gardens QLD 4103

Dear Michael,

RE WARRIEWOOD VALLEY RACF (STAGE 2A) - ACCESSIBILITY OCCUPANCY CERTIFICATION

I hereby certify that the construction of the ARV Warriewood RACF (Stage 2A) located at Warriewood Valley is in accordance with normal disability access practice and meets the requirements of the Building Code of Australia, and relevant Australian Standards

In particular the construction is in accordance with the following

AS 1428 1 - General Requirements of Access
BCA part D3 - Building Code of Australia
Consent Conditions C16 & C17

I am an experienced, qualified and competent person in this area and as such can certify that the building systems and layout comply with the above

Full Name	David Goding
Company	Morris-Goding Accessibility Consulting
Qualifications	Bachelor of Civil Engineering, ACAA
Address	Unit 6, Grd Floor, 56 Bowman Street Pyrmont NSW 2009
Phone No	02 9692 9322 Fax 02 9692 8433

Yours faithfully,

David Goding
Morris-Goding Accessibility Consulting

**ENERGY EFFICIENCY (AIR-CONDITIONING AND VENTILATION SYSTEMS) -
DESIGN CERTIFICATE**

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

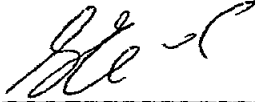
Measure and/or system	Standards of Performance
Energy Efficiency (Air-Conditioning And Ventilation Systems)	BCA2007 Part J5, Specification J5 2 and Specification J5 4 Time switch in accordance with Specification J6

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B.Sc., M.Sc., MIE Aust., CP Eng

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Ken Gurcan Erbas
Company Erbas & Associates Pty Ltd.
Address Level 1, 15 Atchison Street
Phone No (02) 9437 1022 Fax No (02) 9437 1025


Signature

6/8/2009
Date

ENERGY EFFICIENCY (AIR-CONDITIONING AND VENTILATION SYSTEMS) -
INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

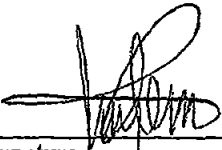
Measure and/or system	Standards of Performance
Energy Efficiency (Air Conditioning And Ventilation Systems)	BCA2007 Part J5, Specification J5 2 and Specification J5 4 Time switch in accordance with Specification J6

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER OF INSTITUTE OF ENGINEERS
AUSTRALIA 2615295, MEMBER OF AUSTRALIAN INSTITUTE OF
REFRIGERATION AIR-CONDITIONING & HEATING 13444

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RKO NICOZAKIS
Company GARRIC PTY LTD
Address 9, 2-6 Chaplin Drive, Lane Cove 2066
Phone No 9427 8177 Fax No 9428 2759

Signature 

27/07/09
Date

**ENERGY EFFICIENCY (ARTIFICIAL LIGHTING AND POWER) - DESIGN
CERTIFICATE**

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Energy Efficiency (Artificial Lighting and Power)	BCA2007 Part J6 and Specification J6

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B ENG (ELEC)

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name JIM HATZIMANOLIS

Company JIM HATZ & ASSOCIATES

Address LEVEL 9, 1 CHANDOS ST, ST LEONARDS

Phone No 9437 1000 Fax No 9437 1020

Signature

Date

5/8/09

ENERGY EFFICIENCY (ARTIFICIAL LIGHTING AND POWER) - INSTALLATION
CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Energy Efficiency (Artificial Lighting and Power)	BCA2007 Part J6 and Specification J6

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations LICENCE NO EC 20001

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name JOHN KERTESE
Company FERRITT AND IVES ELECTRICAL
Address UNIT 36 BLOCK C 1-3 ENDEAVOUR RD CARINDAH 2229
Phone No 9525-9288 Fax No 9526-1931

John Kertese
Signature Date 24/7/09

ENERGY EFFICIENCY (BUILDING SEALING) - DESIGN CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

a) the drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Energy Efficiency (Building Sealing)	<p>Chimneys & Flues</p> <ul style="list-style-type: none"> • BCA2007 Clause 3.2 <p>Roof lights</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.3 <p>Windows and doors</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.4 <p>Exhaust fans</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.5 <p>Construction of roofs, walls and floors</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.6 <p>Evaporative cooler</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.7

} Not applicable

b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations: B Sc, M Sc, MIE Aust, CP Eng

c) The information contained in this statement is true and accurate to the best of my knowledge

Name of Certifier Ken Furcan Erbas
 Company Erbas & Associates Pty Ltd
 Address Level 1, 15 Atchison Street
 Phone No (02) 9437 1022 Fax No (02) 9437 1025


 Signature

6/8/2009
 Date

ENERGY EFFICIENCY (BUILDING SEALING) - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that:

- a) The works have been inspected during construction and have been completed in accordance with the architectural drawings, specifications and the nominated Standards of Performance

Measure and/or system	Standards of Performance
Energy Efficiency (Building Sealing)	<div>Chimneys & Flues<ul style="list-style-type: none">• BCA2007 Clause J3 2</div> <div>Roof lights<ul style="list-style-type: none">• BCA2007 Clause J3 3</div> <div>Windows and doors<ul style="list-style-type: none">• BCA2007 Clause J3 4</div> <div>Exhaust fans<ul style="list-style-type: none">• BCA2007 Clause J3.5</div> <div>Construction of roofs, walls and floors ✓<ul style="list-style-type: none">• BCA2007 Clause J3 6</div> <div>Evaporative cooler<ul style="list-style-type: none">• BCA2007 Clause J3 7</div>

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name of Certifier RADENKO DOBRAS
Company CUSTOM LINING PTY LTD
Address UNIT 4, 17-19 GOULD ST STRATHFIELD STH
Phone No 9999 5556 Fax No 9999 5557

Radenko Dobras
Signature

17/07/09
Date

ENERGY EFFICIENCY (BUILDING SEALING) - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the architectural drawings, specifications and the nominated Standards of Performance


Measure and/or system	Standards of Performance
Energy Efficiency (Building Sealing)	<p>Chimneys & Flues</p> <ul style="list-style-type: none"> • BCA2007 Clause 3 2 <p>Rooflights</p> <ul style="list-style-type: none"> • BCA2007 Clause J3-3 <p>Windows and doors</p> <ul style="list-style-type: none"> • BCA2007 Clause J3 4 <p>Exhaust fans</p> <ul style="list-style-type: none"> • BCA2007 Clause J3 5 <p>Construction of roofs, walls and floors</p> <ul style="list-style-type: none"> • BCA2007 Clause J3 6 <p>Evaporative cooler</p> <ul style="list-style-type: none"> • BCA2007 Clause J3-7

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER OF INSTITUTE OF ENGINEERS
AUSTRALIA 2615295, MEMBER OF AUSTRALIAN
INSTITUTE OF REFRIGERATION AIRCONDITIONING & HEATING 13944

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name of Certifier RICO NICODENUS
 Company GARLIC PTY LTD
 Address 9, 22 Chaplin Drive Lane Cove NSW 2066
 Phone No 9427 8179 Fax No 9428 2789


 Signature

27/07/09
 Date



Bradnam's
windows & doors

Compliance Certificate

BRADNAMS WINDOWS AND DOORS PTY LTD

is a participating member of the **Australian Window Association** whose windows have been manufactured to comply with the Window Standard **AS2047** and the Glass Standard **AS1288**, including human impact requirements as specified in the order and BCA Clauses F1 13 and J2 3, and this company has met the requirements of the annual **Compliance Audit** conducted by a NATA accredited auditor operating within the AWA Accreditation program

The manufacturer certifies that the windows and doors supplied and installed to

St Hilliers Contracting Pty Ltd

Project RACF Warriewood Ref L07105 - STH - 005082

Satisfy the requirements of the aforementioned Australian Standards and BCA as specified

Signature



Bradnam's Windows & Doors

Date 27th July 2009

accredited by the National Association

Accreditation No 13739

This inspection service is

of Testing Authorities Australia The services reported herein

ENERGY EFFICIENCY (BUILDING SEALING) - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that:

- a) The works have been inspected during construction and have been completed in accordance with the architectural drawings, specifications and the nominated Standards of Performance

Measure and/or system	Standards of Performance
Energy Efficiency (Building Sealing)	<p>Chimneys & Flues</p> <ul style="list-style-type: none"> • BCA2007 Clause 3.2 <p>Roof lights</p> <p>• BCA2007 Clause J3.3</p> <p>Windows and doors</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.4 <p>Exhaust fans</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.5 <p>Construction of roofs, walls and floors</p> <ul style="list-style-type: none"> • BCA2007 Clause J3.6 <p>Evaporative cooler</p> <p>• BCA2007 Clause J3.7</p>

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above. (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations: PROJECT MANAGER


- c) The information contained in this statement is true and accurate to the best of my knowledge

Name of Certifier SIMON CARNICAME

Company AGF Metal Roofing Pty Ltd

Address 3 Warraba Road Narrabeen NSW 2101

Phone No 9913 3800 Fax No 9913 1899


Signature

15/7/09
Date



Bradnam's
windows & doors

Compliance Certificate

BRADNAMS WINDOWS AND DOORS PTY LTD

is a participating member of the **Australian Window Association** whose windows have been manufactured to comply with the Window Standard **AS2047** and the Glass Standard **AS1288**, including human impact requirements as specified in the order and BCA Clauses F1 13 and J2 3, and this company has met the requirements of the annual **Compliance Audit** conducted by a NATA accredited auditor operating within the AWA Accreditation program

The manufacturer certifies that the windows and doors supplied and installed to

St Hilliers Contracting Pty Ltd

Project RACF Warriewood Ref L07105 - STH 005082

Satisfy the requirements of the aforementioned Australian Standards and BCA as specified

Signature



Bradnam's Windows & Doors

Date 27th July 2009
accredited by the National Association

Accreditation No 13739

This inspection service is

of Testing Authorities Australia The services reported herein



GDK Hydraulics Consulting Pty Ltd
ABN 64 111 102 279
Suite 6 17 Burwood Road
Burwood NSW 2134 Australia
Phone (02) 9745 0700
Fax (02) 9745 0722
Email office@gdk.net.au

DESIGN CERTIFICATION

ADDRESS 8 McPherson Street, Warriewood
PROJECT Residential Aged Care Facility – Stage 2a

Pursuant to the provision of Clause A2 2(a)(iii) of the Building Code of Australia 2007, Vol 1

I George Koutoulas of GDK Hydraulics Consulting Pty Ltd
6/17 Burwood Road, Burwood, NSW, 2134

Qualifications and experience Full Member of AHSCA

Hereby certify

That the Hydraulic & Fire Sprinkler Services Design Drawings have been designed to comply with

a) the relevant clauses of the Building Code of Australia, as follows

Clause E1 3 – Fire Hydrants
Clause E1 4 – Fire Hose Reels
Clause E1 5 – Fire Sprinklers
Part J7 – Hot Water Supply

b) the relevant Australian Standards listed in the Building Code of Australia as follows

AS 3500 4
AS 2419 1 – 2005
AS 2441 – 2005
AS 2118 1 – 1999 Ordinary Hazard 2, carpark
AS 2118 4 – 1995 Residential

c) The drawings relevant to this Certification are numbered -

Hydraulics – H 01A, H 02B, H-03B, H-04B, H-05B, H-06A, H 07B, H-08A, H-09A, H-10B, H-11A, H-12A,
H 13A & H-14A

Fire Sprinkler – FS-01 to FS-07 Revision A

Note This Certification does not cover the design of the Fire Sprinklers undertaken by the Contractor

Signature

G Koutoulas

Date 30 July, 2009



commodore plumbing nsw pty ltd

CERTIFICATE OF INSTALLATION COMPLIANCE

BUILDING ADDRESS 6-14 Macpherson Street Warriewood 2101

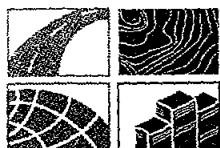
BUILDING PARTICULARS Entire Building (all new work within site only)

ESSENTIAL SERVICE	STANDARD OF PERFORMANCE BCA Australian Standard (and year) or other code requirement applicable to original Design Installation and Performance	DATE OF COMMISSIONING OR INSPECTION
FIRE COLLARS	AS1530 4 AND BCA Clauses C3 12, C3 15 & SPECIFICATION 2007	20/07/09
STORMWATER	AS 3500 3 2 and F1 1 of BCA 2007	20/07/09
PLUMBING AND DRAINAGE	AS 3500 and NSW code of Practice 2007	20/07/09
FIRE HYDRANT	BCA Clause E1 3 AS 2419 1 2005	20/07/09
FIRE HOSE REELS	BCA Clause E1 4 AS 2441 2007	20/07/09
GAS WORKS	AS 5601	20/07/09
ENERGY EFFICIENCY	BCA 2007 Part J7 and Section 8 of AS 3500 4	20/07/09

I Tim Watkin of Commodore Plumbing NSW Pty Ltd certify that the essential service(s) nominated above have been installed and commissioned by this company, and at the date of commissioning / inspection was found to have been properly implemented and to be capable of performing to the abovementioned standard(s)

The information contained in this certificate is to the best of my knowledge and belief true and accurate

Signed Tom Mathis Date 20/7/09



LAWRENCEgroup

Surveyors & Development Consultants

12, 45-51 Huntley Street
Alexandria NSW 2015
PO Box 6416
Alexandria NSW 2015

Regional Areas
T 1300 765 315
F 1300 765 316

T 02 9557 2299
F 02 9557 2699
E info@lawrencegroup.com.au
W www.lawrencegroup.com.au

28th September 2009

Ref 081557

St Hilliers
88 Cumberland Street
The Rocks NSW 2000

Dear Sir,

Re Anglicare – Stage 2, Macpherson Street Warriewood

Acting in accordance with your instructions, we have surveyed for identification purposes only, the land in Certificate of Title Folio Identifier A/358765 being Lot B in Deposited Plan 358765 situated with a frontage to Macpherson Street, Warriewood in the Local Government Area of Pittwater, Parish of Narrabeen and County of Cumberland. This letter relates to this transaction only and it is my opinion that -

- 1 The subject land is shown by red edging on the accompanying sketch
- 2 Standing wholly upon the subject land is a two storey brick and metal building roofed with metal and basement parking
- 3 The location of the fencing in relation to the boundaries is as indicated upon the accompanying sketch. Other than as shown or stated, there are no other apparent encroachments by or upon the subject land
- 4 During the course of the survey no investigation has been undertaken to determine the existence of any possible subterranean encroachments
- 5 The land in this report has been surveyed for identification purposes only. Should any additions or further improvements be erected on the subject property after the date of this report then the boundaries of the land should be marked

SHANE LAWRENCE
Surveyor Registered under the Surveying Act, 2002

FIRE RESISTING CONSTRUCTION – MASONRY CONSTRUCTION - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire resisting construction (Masonry)	BCA2007 Part C2 AS 1170 1 - 1989, AS 1170 2 - 1989 AS 1170 4 1993 AS 3600 2001 AS 3700 - 2001, AS 4100 1998 and in accordance with a tested prototype to the Architects drawings

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations 30yr Trade & Const Experience

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name: Simon Nott
 Company: YORKSHIRE (NSW)
 Address: 5 Vallenview Cirs Greenwich 2065
 Phone No: 9437-9965 Fax No: 9437-9963


 Signature

27.07.09
 Date

YORKSHIRE (NSW) PT
 ABN: 45 104 650 768

FIRE RESISTING CONSTRUCTION – PLASTERBOARD WALLS AND/OR CEILINGS
- INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.
a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fire resisting construction (Plasterboard walls and/or ceilings)	BCA2007 Part C2 and in accordance with an approved Manufacturer's system as required by the Architects drawings

b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

c) The information contained in this statement is true and accurate to the best of my knowledge

Name RADENKO DOBRAS
Company CUSTOM LININGS PTY LTD
Address U4 17-19 GOULD ST STRATHFIELD STH
Phone No 9999 5556 Fax No 9999 5557

Radenko Dobras
Signature

17/07/09
Date

AUS

AUS IRON INDUSTRIES

A.B N 48 874 953 531

Manufacturers of Permanent Stairmetal Formwork

Vic 15-17 Galli Court Dandenong South 3175 Tel 03 9799922 Fax 03 9799 9913

N S W P O Box 686 Seven Hills 1730 Tel 02 98380079 Fax 02 98380081

6th August 2009

CERTIFICATE OF COMPLIANCE

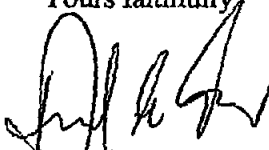
PRINCIPAL CONTRACTOR: St Hilliers Pty Ltd

PROJECT: ARV Warriewood

To Whom It May Concern

This is to certify that the galvanised handrails supplied and installed by ourselves to the above project are in accordance with the Building Code of Australia BCA CLAUSE D2 16 and Australian Standard AS1170 1 The stair flights have been manufactured in accordance with the design documents and the BCA CLAUSE D2 13

Yours faithfully,



David de Vries
(NSW Manager)

**FIXED PLATFORMS, WALKWAYS, STAIRWAYS & LADDERS - INSTALLATION
CERTIFICATE**

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Fixed platforms walkways stairways, and ladders	BCA2007 Clauses D1 16, D2 18 and H1 6, AS1657-1992 and Work Cover Authority requirements

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RADENKO DOBRAS
Company CUSTOM LININGS PTY LTD
Address 04, 17-19 GOULD ST, STRATHFIELD STH
Phone No 9999 5556 Fax No 9999 5557

Radenko Dobras
Signature

17/07/09
Date



Bradnam's
windows & doors

Compliance Certificate

BRADNAMS WINDOWS AND DOORS PTY LTD

is a participating member of the *Australian Window Association* whose windows have been manufactured to comply with the Window Standard **AS2047** and the Glass Standard **AS1288**, including human impact requirements as specified in the order and BCA Clauses F1 13 and J2 3, and this company has met the requirements of the annual **Compliance Audit** conducted by a NATA accredited auditor operating within the AWA Accreditation program

The manufacturer certifies that the windows and doors supplied and installed to

St Hilliers Contracting Pty Ltd

Project RACF Warriewood Ref: L07105 - STH 005082

Satisfy the requirements of the aforementioned Australian Standards and BCA as specified

Signature



Bradnam's Windows & Doors
Date 27th July 2009
accredited by the National Association

Accreditation No 13739

This inspection service is

of Testing Authorities Australia The services reported herein

HEARING AUGMENTATION - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

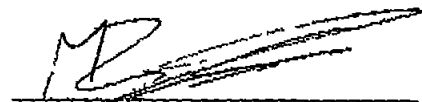
I hereby certify that:
a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Hearing augmentation	BCA2007 D3.7 and AS 1428.1

a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above. (My qualifications and accreditations are listed below)
Relevant qualifications and accreditations: AMPETRONIC HEARING AUGMENTATION
COURSE - AUGUST 2008 - INSTITUTION - HILLS SVL

b) The information contained in this statement is true and accurate to the best of my knowledge

Name MATTHEW DONOVAN
Company COARE COMMUNICATIONS CO PTY LTD
Address PO BOX 6224, ALEXANDRIA NSW 2015
Phone No 02-95194463 Fax No 02-95654545


Signature

14 OCT 2009
Date

HEARING AUGMENTATION - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Hearing augmentation	BCA2007 D3 7 and AS 1428 1

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations EXPERTS IN HEARING
AUGMENTATION AND R-A SYSTEMS
CLARE COMMUNICATIONS)

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name JOHN KERTESZ
Company FERRETT AND IVES (ON BEHALF OF CLARE COMMUNICATIONS)
Address UNIT 36C 1-3 ENDEAVOUR RD, CARINGBAH
Phone No 9525-9288 Fax No 9526-1931

John Kertesz
Signature

30.9.09
Date

66

LIGHTING (GENERAL) - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

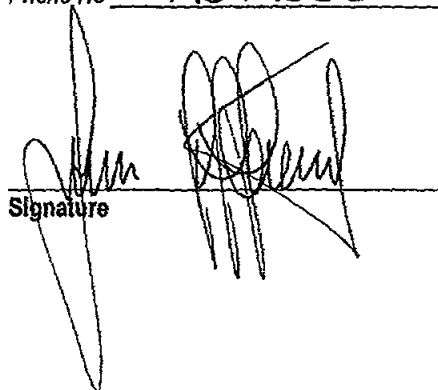
Measure and/or system	Standards of Performance
Light (general)	BCA2007 Clause F4.4 and AS 1680.0 - 1998

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B ENG (ELEC)

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name JIM HATZIMANOLIS
Company JIM HATZ & ASSOCIATES
Address LEVEL 9, 1 CHANDOS ST, ST LEONARDS
Phone No 9437 1000 Fax No 9437 1020


Signature

5/8/09
Date

LIGHTING (GENERAL) - INSTALLATION CERTIFICATE

Project Name	RCAF Warrewood
Address	6-14 Macpherson Street Warrewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Light (general)	BCA2007 Clause F4.4 and AS 1680.0 - 1998

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations L I C E N C E N O . E C 2 0 0 0 1

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name JOHN KERTESZ
Company FERRETT AND IVES ELECTRICAL
Address UNIT 36 BLOCK C 1-3 ENDEAVOUR RD, CARINGBAH 2229
Phone No 9525-9288 Fax No 9526-1931

John Kertesz 29/7/09
Signature Date

ROOF CONSTRUCTION AND COVERING - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Roof construction and covering	BCA2007 Clauses B1.4 and F1.5 AS/NZS 1562.3 & AS4256 1, 2, 3 & 5 (plastic roofing) AS2049 & AS2056 (roof tiling) • AS/NZS 2908 1 with safety mesh installed in accordance with AS/NZS 1562 3 (Gangled roof sheeting) • AS1562 1 (Metal roofing)

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations PROJECT MANAGER

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name SIMON CARNOVALE
 Company AGIF METAL ROOFING P/L
 Address 3 WARBARA ROAD NARRAREEN NSW 2101
 Phone No 9913 3800 Fax No 9913 1899


 Signature

28/7/09
 Date

SARKING - INSTALLATION CERTIFICATE

Project Name	RCAF Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Sarking for roof and walls	BCA2007 F1 6 and AS/NZS4200 1 and 2

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Adam Carricom
 Company MILLENNIUM CARPENTRY SERVICES PTY LTD
 Address PO Box 2170 Rose Bay North 2030
 Phone No 02 95195188 Fax No 02 95195188


 Signature

6/8/09
 Date

SARKING - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

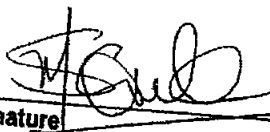
Measure and/or system	Standards of Performance
Sarking for roof and walls	BCA2007 F1 6 and AS/NZS4200 1 and 2

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations PROJECT MANAGER

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name SIMON CARNAHAN
 Company ARF Metal Roofing Pty Ltd
 Address 3 Warraba Road Narrabeen NSW 2101
 Phone No 9913 3800 Fax No 9913 1899


 Signature

15/7/09
 Date

SMOKE PROOF WALLS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that:

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

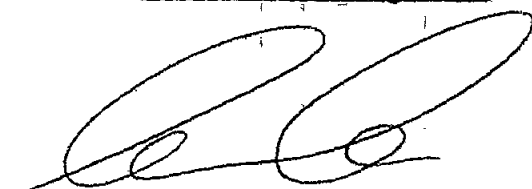
Measure and/or system	Standards of Performance
Smoke proof walls	BCA2007 NSW Clause C2 5 and Clause C2 14 and Specification C2 5

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Aidan Connelley
 Company Millennium Carpentry Services Pty Ltd
 Address PO Box 2170 Roser Bay NT 2030
 Phone No 02 95195588 Fax No 02 95195588


 Signature

6/8/09
 Date

SMOKE PROOF WALLS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Smoke proof walls	BCA2007 NSW Clause C2 5 and Clause C2 14 and Specification C2 5

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RADENKO DOBRAS
Company CUSTOM LININGS PTY LTD
Address 04, 17-19 GOULD ST, STRATHFIELD NSW
Phone No 9999 5556 Fax No 9999 5557

Radenko Dobras
Signature

17/07/09
Date

SOUND INSULATION - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6 14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Sound insulation	BCA2007 Part F5 Specification F5 2 and Specification F5 5 AS/NZS 1276 1 1999 or ISO 717 1 - 1996 and AS/ISO 717 2 - 2004

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations _____

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name RADENKO DOBRAS
Company CUSTOM LININGS PTY LTD
Address U4 17-19 GOULDS ST, STRATHFIELD NSW
Phone No 9999 5556 Fax No 9999 5557

Radenko Dobras
Signature

17/07/09
Date

The information contained in this certificate is to the best of my knowledge and belief true and accurate

Signed Ann Mathers Date 20/7/09



Your Ref L07-105
Our Ref 201/12270

Smartbuilt (NSW) Pty Ltd
ABN 48 111 440 558

Northern Office
PO Box 3718 Tuggerah NSW 2259
T 1300 737 889 F 02 4351 7378

Southern Office
PO Box 83 INGLEBURN NSW 2565
T 1300 737 889 F 02 9605 8426

W www.termimesh.com
E sales@smartbuiltNSW.com.au

St Hilliers Pty Ltd
Ground Floor, 88 Cumberland St
THE ROCKS NSW 2000

Certificate of Installation - AS 3660.1

This is to certify that the Termimesh Poison-free Termite Control System has been installed by a Termimesh System accredited installer to deter concealed entry by termites from the soil to the building above the System, generally in accordance with Australian Standard AS 3660 1-2000 "Termite Management - Part 1 New Building Work" and to the following details,

Date of Installation: 15 September 2009
Site Address: RACF Nursing Home, 6-14 Macpherson Street, WARRIEWOOD
For: Nursing Home
Owners: TBA
Installation Details: Termimesh System Standard Warranty (attached - 4 pages)
Termimesh System Specifications

109A - Service penetrations through concrete slab
102C - Perimeter installation to rebated raft slab within the wall cavity
106 - Cappings for isolated piers, posts, stumps
111 - Retaining Wall Sheeting
102T - Tile strip protection
103B - Perimeter protection

Recommended

Inspection Interval. 12 months (refer AS 3660 2 and page 1 of Domestic Warranty)

Remarks Termites are able to bridge barrier systems Regular inspections must be conducted at recommended intervals to ensure maximum building protection

The hot water unit, downpipes etc, being located adjacent the exterior wall so as not to obstruct regular inspection of physical barriers

Perimeter protection to patio/terrace areas provided by tile strip installation between nosing and riser tiles

Please Note. Protection begins at ground floor level Control joints are NOT protected, as slab deemed monolithic construction


Michael Field
Operations Manager



Termimesh Standard Warranty

WARRANTY NUMBER

293943

SCHEDULE

This Warranty is issued to the owner of the Premises situated at

Location No 6-14 Nursing Home RACF Macpherson St

Suburb WARRIEWOOD

State 2102 PostCode NSW

Installation Date Tuesday 15 September 2009

Number of attached Units Sharing this Warranty 1

Unit or Identity numbers

Name of Builder St Hilliers Pty Ltd

Name of Owner

TYPE OF INSTALLATION

Unattached Building or Unit ☒

Attached Building or Unit ☐

Standard Warranty

Applicable To Commercial Site ☒

Addition/Extension ☐

Other ☐

Service Centre No 201

Job Reference No 12270

This Warranty is issued in relation to a Termimesh Barrier Installed to protect from Damage each Unit identified in the Schedule on the date of installation specified in the Schedule ("the Date of Installation") This Warranty relates only to the quality of Materials and work skill of the Installation It is not a policy of insurance

Your Responsibility for Care and Maintenance

- Please look after your Termimesh Barrier.
- Remind trades people of its existence so that they do not unintentionally damage the Barrier.
- Take precautions to prevent materials being placed adjacent to the Barrier.
- Take particular care with garden beds and paving. Always leave a clear inspection zone, making sure that finished ground levels, paving, footpaths and garden beds are below the Barrier, as failure to do so may result in termites Bridging.
- The purpose of termite barriers is to deter concealed access. No barrier can prevent the foraging activity of termites, which is why Standards Australia and TERMIMESH strongly recommend that you arrange for a professional inspection of the Premises at least once every year and more frequently if the Premises is located in an area which is highly susceptible to termite activity. Failure to conduct inspections may result in termite entry and damage to the Premises that is not covered by this Warranty.

This page must be read in conjunction
with pages 2, 3 and 4 of the Termimesh Standard Warranty

7. What the Warranty covers

In any case in which a valid Claim is made, subject to the limitations set out in Clause 9, below, the Service Centre will Repair or Replace (at the cost of TERMIMESH in the case of Faulty Materials):

- (a) So much of the Barrier, as, in the discretion of a Service Centre Representative, is deemed necessary;
- (b) Structural Timber or Secondary Timber on the Premises which has been rendered Structurally Unsafe as a result of Damage caused by Termites penetrating the Barrier or which in the opinion of the Service Centre Representative is visually unacceptable.

8. What the Warranty does not cover

This Warranty does *not* provide cover in relation to:

- (a) any matter which is not expressly provided for under Clause 7;
- (b) loss or damage caused otherwise than as a result of Termites penetrating the Barrier due to Faulty Installation or Faulty Materials;
- (c) loss or damage arising from any of the following:
 - (i) termite activity resulting from Bridging;
 - (ii) damage to the Barrier caused by a party other than a Service Centre Representative;
 - (iii) damage to the Barrier resulting from land movement or subsidence;
 - (iv) damage to the Barrier arising from any "Act of God" such as fire, flood, lightning, or storm;
- (d) any matter of which notice is not given to the Service Centre within 30 days of you becoming aware of any activity or damage which may reasonably suggest the presence of termites on the Premises unless the Service Centre has accepted responsibility under Clause 3.

9. Limitation on Cost of Repair or Replacement

The maximum liability of the Service Centre and TERMIMESH under this Warranty shall be, in respect of the cost of Repair and/or Replacement of Structural Timber and/or Secondary Timber arising as a result of any and all Claims, as follows:

- (a) If this Warranty is issued in relation to a Group of Attached Units:
 - (i) \$150,000 in respect of the Group of Attached Units; and
 - (ii) subject to sub-clause 9(a)(i), \$50,000 in respect of each Unit in the Group of Attached Units;
- (b) In any case to which sub-clause 9(a) does not apply, \$50,000.

10. Limitation on liability to match materials

When Repairing or Replacing any Property, the Service Centre shall make every reasonable effort to match substitute materials with those being Repaired or Replaced. However, the Service Centre shall not be obliged to Replace any Property solely for matching purposes.

Nothing in this Warranty operates to exclude or limit your statutory rights

Definitions

For the purposes of this Warranty, the following definitions apply:

"Barrier" means the mesh barrier, including mesh flanges on service pipes, comprised of Materials approved by TERMIMESH, which has been installed at the Premises on the Date of Installation, in respect of which this Warranty is issued.

"Bridging" means entry by termites into the Premises by a means of access other than penetration of the Barrier.

"Builder" means the party primarily responsible for the construction of the Premises, and includes each of its employees, agents and subcontractors.

"Building" means any Unit referred to in the Schedule as being a Unit in which the Barrier was installed to protect from Damage.

"Claim" means a claim to the benefit of this Warranty.

VENTILATION (GENERAL) - DESIGN CERTIFICATE

Project Name	RCAF - Warnewood
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The drawings and specifications have been designed in accordance with the nominated Standards of Performance

Measure and/or system	Standards of Performance
Ventilation (general)	BCA2007 Clause NSW F4 5(b) and AS 1668 2 – 1991

- a) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations B.Sc., M.Sc., MIE Aust., CP Eng

- b) The information contained in this statement is true and accurate to the best of my knowledge

Name Ken Gurcan Erbas
Company Erbas & Associates Pty Ltd.
Address Unit 1, 15 Atchison Street
Phone No (02) 9437 1022 Fax No (02) 9437 1025

[Signature]
Signature

6/8/2009
Date

VENTILATION (GENERAL) - INSTALLATION CERTIFICATE

Project Name	RCAF - Warriewood
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance


Measure and/or system	Standards of Performance
Ventilation (general)	BCA2007 Clause NSW F4 5(b) and AS 1668 2 – 1991

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations MEMBER OF INSTITUTE OF ENGINEERS
AUSTRALIA - 2615 295 MEMBER OF AUSTRALIAN INSTITUTE OF
REFRIGERATION, AIR CONDITIONING & HEATING - 13944

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Rico Nicolson
Company EAIRIC PTY LTD
Address 9, 2-6 Chaplin Drive, Lane Cove NSW 2066
Phone No 02 9427 8179 Fax No 02 9428 2759


Signature

27/07/07
Date

WATERPROOFING OF WET AREAS - INSTALLATION CERTIFICATE

Project Name	RCAF - Warnewood
Address	6 14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work (entire building)

I hereby certify that.

- a) The works have been inspected during construction and have been completed in accordance with the nominated Standards of Performance

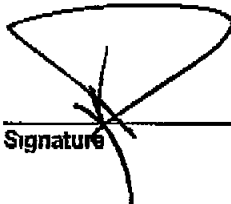
Measure and/or system	Standards of Performance
Waterproofing of wet areas	BCA2007 Clause F1 7 and AS 3740 - 2004 and installed in accordance with the manufacturer's recommendations

- b) I am a properly qualified person and have a good working knowledge of the relevant codes and standards referenced above (My qualifications and accreditations are listed below)

Relevant qualifications and accreditations TRADE LICENCE W/P
18359C

- c) The information contained in this statement is true and accurate to the best of my knowledge

Name Keith Pike
Company CAPS BETA P/L
Address 207 Parramatta rd Haberfield
Phone No 02 97985888 Fax No 97985666


Signature

7/8/09
Date

WATERPROOFING WORKS SUMMARY OF COMPLIANCE METHODS

Wall/floor types waterproofed	concrete / FC sheeting	
Product type and brand - floor	WPM 002	ARDEX
Product type and brand - walls	WPM 002	ARDEX
Product used as bond breaker	ARDEX ST Neutral cure silicone	
Enclosed or open (frameless) showers?	Enclosed	
Waterstop angle locations?	No	

Schedule of Areas waterproofed

Unit or level #	Main	Ensuite	Laundry	Balcony
Grand Floor		✓	✓	✓
First Floor		✓	✓	✓

Other areas waterproofed (roofs, planter boxes landscaped areas, etc)

Location	Description
Grand Floor Planters	2 layer torch on membrane
Basement walls	
Plant room	WPM 350/355

ATTACH MANUFACTURERS DATA SHEET FOR ALL PRODUCTS USED



ARDEX WPM 002

(Superflex Bathroom and Balcony Two Part)

Rapid Drying Time

Two Component Undertile Waterproofing Membrane

Advanced acrylic – will not re-emulsify

Liquid reinforced – eliminates the need for reinforcing mat

Water based – safe to use, low odour and easy cleaning

Meets class III category for AS4858 Wet Area Membranes

Low VOC content – meets Green Building Council of Australia
Green Star IEQ-13 requirements

ARDEX Australia Pty Ltd
20 Powers Road
Seven Hills NSW 2147
Tel (02) 9851 9199
Fax (02) 9674 5621
Email techinfo@ardexaustralia.com
Internet www.ardex.com

ARDEX New Zealand Ltd
32 Lane St, Woolston
Christchurch, New Zealand
Tel (03) 384 3029
Fax (03) 384 9779
Email techinfo@ardexaustralia.com
Internet www.ardex.com

ARDEX WPM 002

(Superflex Bathroom and Balcony Two Part)

Two Component Undertile Waterproofing Membrane

PRODUCT DESCRIPTION

ARDEX WPM 002 (Superflex Two Part) is a tough, fast drying two component waterproofing membrane specifically designed for use under tiles. The product has been uniquely formulated with synthetic microfibres to increase its strength and eliminate the need for a separate reinforcement mat. ARDEX WPM 002 is based on the most advanced acrylic polymer technology, and is totally resistant to re-emulsification.

ARDEX WPM 002 is flexible, safe to use, low in odour, and is fully compatible with polymer modified tile adhesives. ARDEX WPM 002 is one of the fastest drying acrylic membranes on the market – normally ready to tile in 16-24 hours @ 23°C.

ARDEX WPM 002 meets the Green Building Council of Australia Green Star IEQ-13 requirements for Architectural Sealant when tested in accordance with SCAQMD Method 304-91 Determination of Volatile Organic Compounds (VOC) in Various Materials as referenced by South Coast Air Quality Management Division (SCAQMD) Rule 1168.

FEATURES/BENEFITS

Fast drying ARDEX WPM 002 can be tiled over in 16-24 hours, or 4 hours @ 23°C/50% RH in non critical areas*.

Features benefits

- Fibre reinforced. Excellent strength, eliminates need for reinforcing mat.
- Flexible. Accommodates normal building movement.
- Advanced acrylic. Will not re-emulsify.
- Designed for tiling. Fully compatible with ABA/ARDEX tile system adhesives.
- Water based, safe to use, low odour and easy cleaning for undertile waterproofing in shower recesses.
- Excellent exterior.
- Conforms to the requirements of AS/NZ 4858 2004 Wet Area Membranes (Ref. CSIRO Report 3879).

*Critical areas include areas where the membrane is applied at greater than 0.5mm or over impermeable substances such as over bond breakers or incorporating other reinforcement. Longer drying times are necessary in these areas.

APPLICATION RANGE

Performance levels

Commercial and residential

Location

Internal and external wet areas, balconies, decks, and other areas that will be tiled or otherwise protected from regular foot traffic.

Surfaces

Walls and floors

Substrates

Concrete

Cured for min. 28 days or sealed when set with one coat ARDEX HydrEpoxy WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet concrete should be allowed to dry thoroughly or sealed with one coat of ARDEX HydrEpoxy WPM 300 as above.

Renders and screeds

Cured for min. 7 days or sealed when set with one coat ARDEX HydrEpoxy WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet render should be allowed to dry thoroughly or sealed with one coat of ARDEX HydrEpoxy WPM 300 as above.

Fibre cement

Wet area grade only

Plasterboard

Wet area grade only

Plywood

Structural plywood (PAA branded) or marine grade or other wet area grade only. Not recommended for external use (refer ARDEX).

Particleboard

Wet area grade internal use only (special preparation is required – contact ARDEX). Not recommended for external use (refer ARDEX).

Permanent immersion

In conditions of permanent immersion, it is recommended that WPM 002 must be covered with tiles for full immersion applications.

Contact ARDEX for use over existing membranes, covering materials and any other substrates not listed.

SPECIFICATION CLAUSE

ARDEX WPM 002 (Superflex Two Part)

The waterproofing membrane shall be ARDEX WPM 002, a two component cementitious acrylic modified fibre reinforced membrane formulated to provide a tough long lasting water barrier under tiling systems.

PACKAGING

Two component 20kg (approx 20 litres) liquid pail/
2 x 10kg bags powder

SHELF LIFE

12 months when stored in the original unopened packaging, in a dry place at 23°C. Do not store in direct sunlight. Replace lid tightly after use. Use remaining contents from part used containers within 3 months.

TABLE 1

	Thickness per coat		Total dry film thickness (2 coats)	Coverage		
	Coat 1	Coat 2		Part A	Part B	Kit
FLOORS	0.6mm	0.9mm	1.2mm	32m ²	16m ²	40kg kit
WALLS	0.4mm	0.6mm	0.8mm	48m ²	24m ²	40kg kit

COVERAGE

Two coats are recommended for an effective waterproof membrane

Coverage will vary depending on the porosity of the surface

One 40kg kit will cover approximately 16-24m² (based on two coats) depending on area requirements between wall and floor surfaces to be treated

DRYING TIMES

Curing time will vary depending on temperature and humidity

Recoat time

1-2 hours (23°C/50% RH) between first and second coats. Alternatively, if a woven cloth reinforcement mat is used between coats then the second coat can be applied whilst the first coat is still wet

Dry through

The slowest drying areas are those where the membrane has been applied over a silicone bond breaker eg wall and floor junctions. The membrane cannot be tiled over until these critical areas are completely dry

ARDEX WPM 002 membrane is totally dry in 16 hours at 23°C/50% RH but can take up to 24 hours at 10°C / 50% RH in corners or for thick films

In areas where bond breakers or additional reinforcement are not used, ARDEX WPM 002 can be tiled over after 4 hours at 23°C / 50% RH

Fully cured

The shower should not be used until the membrane has reached its full strength. Normally ARDEX WPM 002 membranes are fully cured after 3 days at 23°C, or after 5 days at 10°C

Drying times will vary depending on humidity, surface temperature and surface porosity

Do not apply on substrates where the surface temperature is below 10°C or above 35°C

CLEANING

Wash hands, brushes, rollers, etc, with water while the membrane is still fresh. Remove cured material with mineral turpentine

SAFETY PRECAUTIONS

Do not use the product in the following situations

- Areas subject to negative hydrostatic pressure or rising damp unless treated with ARDEX HydrEpoxy WPM 300
- Where the substrate is wet – wet surfaces can be sealed with one coat of ARDEX HydrEpoxy WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight
- Where rain is imminent
- Where the membrane will be left exposed and subjected to regular foot traffic
- On glazed glass or other totally impervious surfaces (eg areas pre-treated with water repellants)
- Where the surface temperature is below 10°C or greater than 35°C
- All floor areas must have adequate falls either built into the substrate or achieved with a sand/cement screed prior to application of the ARDEX WPM 002

For substrates or situations other than those listed contact ARDEX

SAFETY DATA

ARDEX WPM 002 Part A is non-hazardous. It may produce discomfort of the eyes, respiratory tract and skin. It should not be swallowed or inhaled. Avoid contact with skin and wear eye/face protection. In case of contact with eyes, rinse with plenty of water and contact a doctor or Poisons Information Centre.

ARDEX WPM 002 Part B is hazardous. It may cause burns and serious damage to eyes. Do not breathe dust and avoid contact with eyes. Wear dust masks, goggles and gloves when handling. Keep container locked up and in a well ventilated place.

Additional information is listed in the Material Safety Data Sheet.

ARDEX WPM 002

(Superflex Bathroom and Balcony Two Part)

Two Component Undertile Waterproofing Membrane

APPLICATION

Apply ARDEX WPM 002 by brush or roller. A medium nap (12-15mm pile) paint roller is recommended. New rollers should be dampened with water before being used for the first time.

For best results with a paint brush use a good quality, 50mm long bristle variety.

To achieve the required dry film thickness per coat application must consist of laying the product onto the surface and light finish the surface. Do not try to apply in the same manner as a building paint. A conventional building paint is normally applied at 25-40 micrometers wet film thickness while ARDEX WPM 002 needs to be applied at between 0.6 and 0.9 millimeters per coat depending on product and application (Refer Table 1).

Critical areas

INTERNAL WET AREAS

- 1 Construction should be in accordance with Australian 3740 - 2004 Waterproofing of wet areas within residential buildings.
- 2 All render and tile bed requirements should be completed before application of the membrane and tiles or other floor coverings should be direct bonded to the membrane.
- 3 Ensure wall and floor sheets are installed as per sheet manufacturer's recommendations.
- 4 Ensure suitable brick/concrete hobs are used (do not use timber), and that the top of the hob does not slope outwards.
- 5 Ensure that falls to the waste are min 1:60 (ie approx 30mm in 2mtr) before waterproofing. Ensure outlet pipes are fixed securely and that the waste or drainage flanges are recessed into the floor.
- 6 Avoid sheet joints in shower recess floor. Ensure that sheets are securely fixed to the wall at the bottom edge, and sheet joints are sealed with a neutral cure silicone sealant spread approximately 6mm on either side of the joint.

- 7 Treat nail and screw holes with neutral cure silicone sealant.
- 8 Seal the perimeters of taps, shower outlets and waste outlets with neutral cure silicone sealant.
- 9 Apply a bead of neutral cure silicone sealant to all horizontal and vertical corners.
- 10 Apply a bead of neutral cure silicone sealant to the junction of the hob or angle and walls.
- 11 Waste outlets shall incorporate a puddle flange or similar in accordance with AS3740 and the top surface shall be set flush with the surface to which the membrane is to be applied. A bead of neutral cure silicone shall be applied across the intersection of the puddle flange and the screed/floor.
- 12 Apply the membrane to the entire shower recess floor and down into waste or drainage flange. Apply the membrane over the hob and at least 100mm beyond the outside edge of the hob (ideally to entire wet area floor).
- 13 Plastic (eg PVC) fittings should be primed with a solvent based plumbers primer. Prime metal surfaces with a suitable metal primer.
- 14 Apply the membrane 1800mm up the walls or 80mm above the height of the shower rose within the shower recess.
- 15 Install the shower screen to inside edge of the hob.

BALCONIES AND DECKS

- 1 Ensure that the deck is constructed with falls to edge/drains of min 1:100 (ie 20mm in 2mtr) or else achieve the fall with a sand/cement screed.
- 2 Ensure a min set down (step down) of 50mm to the finished floor level (ie top of tiles).
- 3 Ensure suitable flashing is installed ideally prior to the installation of the balcony screen/sliding door.
- 4 Treat any sheet joints with a neutral cure silicone prior to waterproofing.

Fig 1 - Shower recess - critical areas

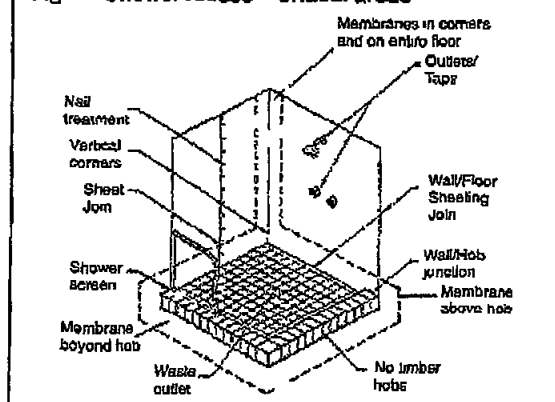
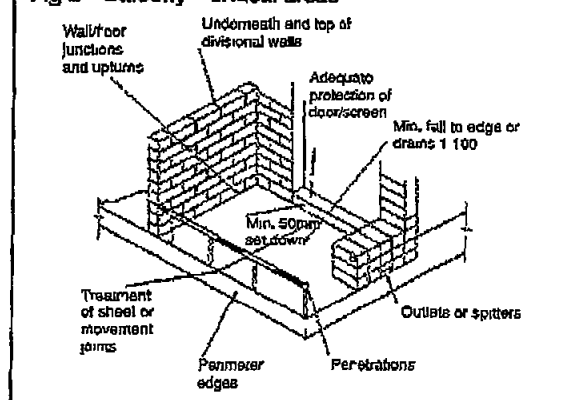


Fig 2 - Balcony - critical areas



- 5 Prepare and seal all wall/floor junctions with a bead of neutral cure silicone
- 6 Apply the membrane up the step down and as far up underneath the screen door flashing as possible (ideally waterproof prior to installing door)
- 7 Where possible, apply the membrane prior to building divisional walls
- 8 Apply the membrane to the entire balcony floor and at least 150mm up the wall above the top surface of the finished tiles and finished below the wall drainage vents
- 9 Apply the membrane to the top of the parapets and divisional walls or else install suitable metal capping
- 10 Apply the membrane down over the front edge of the balcony onto the drip rail
- 11 Carefully seal any gaps around balcony penetrations prior to applying the membrane
- 12 Apply the membrane down into outlets and drains, ensuring excess material is removed
- 13 Ensure all weep holes are above the membrane application area

APPLICATION NOTES

Surface preparation

- Ensure all surfaces are structurally sound and totally dry. The pores of concrete surfaces should be open (absorbent surface). All sheet substrates must be securely fixed in accordance with the manufacturers instructions
- Falls to outlets of at least 1:60 or approx. 30mm in 2m (wet areas) or 1:100 externally, must be achieved prior to tiling
- The surface to be coated should be free from dust, oil, paint, curing compounds and any other contaminating materials
- Damaged concrete should be repaired (leveled) and surface defects including all cracks and sharp protrusions should be treated prior to the application of the membrane
- Remove laitance on concrete or screeds by mechanical means
- Highly dense (>40MPa) or steel trowelled concrete should be roughened by suitable mechanical means (shot blasting, grinding, etc)

Priming

The primer is a critical part of the waterproofing system. Apply one coat of ARDEX WPM 265 water based primer by brush or roller to all areas to be waterproofed including the floor waste. Allow the primer to be completely dry prior to the application of the ARDEX WPM 002 membrane. This will take around 20-30 minutes depending upon weather conditions and porosity of the substrate. Coverage is approximately 6m² per litre. Plastic (eg PVC) pipes should be primed with a solvent based plumbers pink primer. Prime metal surfaces with a suitable metal primer such as epoxy polyamide primer.

GENERAL APPLICATION

Crack preparation

Cracks <2mm

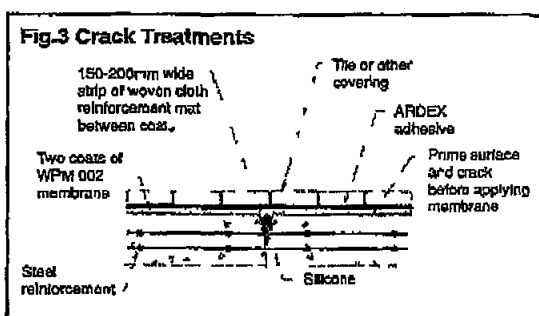
Clean and remove any loose particles in the crack. Prime the crack and adjacent area carefully with ARDEX WPM 265 water based primer and allow to dry before applying two coats of ARDEX WPM 002 membrane, in a band at least 200mm wide equidistantly across the crack, along the length of the crack.

Cracks 2-6mm

(Refer Fig 3) prepare and prime the crack as above. Apply a bead of neutral cure silicone into the crack and extend it 6mm either side. Apply a 300mm wide band of ARDEX WPM 002 equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of ARDEX "Deckweb" woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Cracks >6mm

Contact your local ARDEX representative



ARDEX WPM 002

(Superflex Bathroom and Balcony Two Part)

Two Component Undertile Waterproofing Membrane

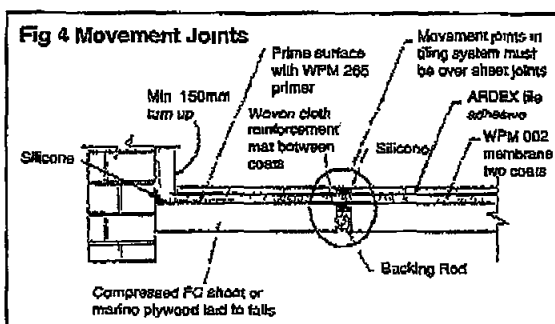
Movement/construction joints

Movement joints (<6mm)

Clean and prime the joint before filling it with a bead of neutral cure silicone and extending it 6mm each side of joint. Apply a 300mm wide band of ARDEX WPM 002 (Superflex Two Part) equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of ARDEX "Deckweb" woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Construction joints (>6mm)

Use the same procedure as above but replace the reinforcing mat with 120mm of ARDEX Coving Bandage. Note: if tiling, movement joints should be taken to the surface of the tiles. Fill the joints between the tiles immediately above the movement joints with an appropriate joint sealant. (Refer Fig 4)



Corners and coving areas

After priming with ARDEX WPM 265 water based primer and allowing to dry, apply a generous bead (16mm) of neutral cure silicone sealant in coving areas and corners (Refer Fig 5). Smooth over the silicone so that it extends 8mm up the wall and 8mm over the floor and allow to touch dry.

Apply a first coat of ARDEX WPM 002 to the area and allow the membrane to dry.

Apply a second coat ensuring that excess product is removed from the junction (the final dry film thickness should be around 1.2mm). Alternatively, if a woven cloth reinforcement mat is used between coats then the second coat can be applied as soon as the mat is fully bedded into the first coat.

WALL/FLOOR JUNCTION

After priming with ARDEX WPM 265 water based primer and allowing to dry, apply a generous bead (16mm) of neutral cure silicone sealant to seal all junctions between two substrates. Smooth over the silicone so that it extends 8mm up the wall and 8mm over the floor and allow to touch dry. Place a 190mm wide band of ARDEX "Deckweb" woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. The ARDEX WPM 002 should be applied to at least 150mm up the wall surfaces as per the recommendations for the application of ARDEX WPM 002 to floors.

Walls

Two coats of ARDEX WPM 002 are required to achieve a minimum total dry film thickness of 0.8mm.

After priming with ARDEX WPM 265 water based primer and allowing to dry, apply two coats of ARDEX WPM 002 (to achieve a minimum dry film thickness of 0.8mm) in two opposite directions. Wall sheets joints should be treated with a neutral cure silicone, PVC duct tape or base jointing compound. In balcony situations take the membrane up underneath any existing cover flashing or install appropriate flashing. Allow the first coat to dry before applying the second coat.

Floors

Two coats of ARDEX WPM 002 are required to achieve a minimum total dry film thickness of 1.2mm. The flooring recommendations should be extended at least 150mm up all perimeter walls.

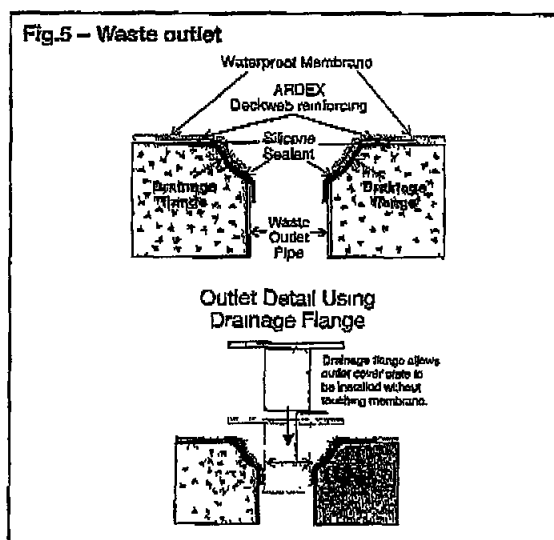
Prime the surface with ARDEX WPM 265 water based primer and allow to dry.

Apply the first coat over the primed surface and allow it to dry (1.2 hours at 23°C, 50% RH) before applying a second coat in an opposite direction. In shower recesses a drainage flange must be installed on all timber/sheeted floors, and are strongly recommended on all other substrates. Where possible rebate the flange into the floor. Seal the perimeter of the flange with neutral cure silicone sealant. If a flange is not installed the membrane must be applied down into the pipe (Refer Fig 5). Allow the membrane to dry completely before tiling. Refer drying times above.

Waste outlet

Prime the surface with ARDEX WPM 265 water based primer and allow to dry. Surfaces of outlet flange must be primed with an appropriate primer.

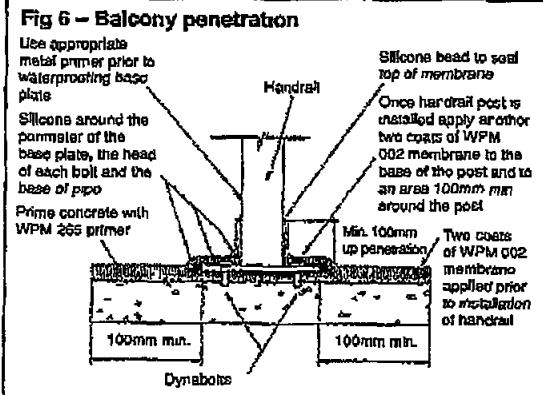
Apply ARDEX WPM 002 (Superflex Two Part) over the adjacent floor surface extending down into the waste outlet pipe overlapping the pipe surfaces by at least 30mm. Place ARDEX "Deckweb" woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. (Refer Fig 5)

Fig.5 – Waste outlet**Balcony penetrations (Refer Fig.6)**

All upstands are to be mechanically fixed through the membrane, which must be fabricated with a base plate flange

Prime the metal with an appropriate metal primer such as an epoxy polyamide primer and allow to dry. Apply a 10mm bead of neutral cure silicone around the perimeter of the penetration. Apply the first coat of ARDEX WPM 002 on the substrate and the flanged metal.

Allow first coat to dry before applying a second coat ensuring a finished dry film thickness of no less than 1.2mm is achieved. Place a suitable flashing collar around the penetration sealing it with a suitable sealant.

Fig 6 – Balcony penetration**Tiling systems**

It is advisable to conduct a flood test of the shower once the membrane has cured (normally after 48 hours) and before the tiling commences. A broad range of ARDEX tile adhesives can be used over ARDEX Superflex membranes. Contact ARDEX or your nearest ARDEX stockist for advice on the most suitable system.

QUALITY PRODUCT

ARDEX WPM 002 is manufactured and tested to ARDEX procedures which are maintained in accordance with Quality System Standard ISO 9001

USER NOTES

The technical details and recommendations contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is the responsibility of the user to ensure that the product is used in accordance with ARDEX instructions and in applications for which they are intended.

TECHNICAL DATA**ARDEX WPM 002****Characteristics of components**

Form & Colour	Liquid	white, medium viscosity
	Powder	off white

Characteristics of mixed product

Mixing Ratio	1 : 1 by weight
SG of mixed product	1.44kg/litre
Non Volatile Matter	77±1%
Colour	light grey/green

Characteristics of cured membrane

Shore A hardness ASTM D2240	
- dry film	85 – 90
- wet film	75 – 80

Tensile Strength	
7 days dry AS1145	1.7 MPa
Full Cure 28 days	2.9 MPa

Elongation at Break	
7 days dry AS1145	332%

NOTE Most of the tests have been carried out in the ARDEX laboratory under standard conditions (23±2°C, 50±5% RH)

DISCLAIMER

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program.

Country specific recommendations depending on local standards, codes of practice, building regulations or industry guidelines may effect specific installation recommendations.

The supply of our products and services is also subject to certain terms, warranties and exclusions which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

ARDEX Australia Pty Ltd

New South Wales	Ph (02) 9851 9100	Fax (02) 9838 7970
Queensland	Ph (07) 3817 6000	Fax (07) 3881 3188
Victoria/Tasmania	Ph (03) 9308 9255	Fax (03) 9308 9332
South Australia	Ph (08) 8268 2511	Fax (08) 8345 3207
Western Australia	Ph (08) 9256 8600	Fax (08) 9455 1227

ARDEX New Zealand Ltd

Auckland	Ph (09) 5800 005	Fax (09) 5799 963
Wellington	Ph (04) 5685 949	Fax (04) 5686 376
Christchurch	Ph (03) 3843 029	Fax (03) 3849 779

Technical Services Toll Free, 1800 224 070

April 2009

DA Items

	Design	Install / Action	Close d Out	Date Requested	Date Received	Notes
1						
B11	Handrailer and baniscan to comply with schedule 2 and 3 under the Local Government (orders) Regulation 1999	Mernn & Cranston	0			GW spoke with DJ 28/9 M&C to expedite
2	External garbage areas	SVP to check	1			STH sign-off not required
B14	Roamed garbage areas	SVP to check	0			STH to seal floor
3	Roamed garbage areas	SVP to check	1			Stage 2a garbage area is not roomed the condition does not apply
B15	Walls of roamed garbage room	SVP to check	1			Stage 2a garbage area is not roomed this condition does not apply
4	Water conservation devices to be installed	Mernn & Cranston	1			M&C to provide design certificate DJ returning after phone call w GW 26/9
5	Water conservation devices to be installed	Mernn & Cranston	1			M&C not provide refer Commodore
B30	External glazing is to have a maximum reflective index of 25%	Commodore	1			GW sent email to Commodore 28/9, Commodore issued 29/9
6	External glazing is to have a maximum reflective index of 25%	Mernn & Cranston	1			M&C not required to provide GW agreed 28/9
B33	Roads to all structures are to be dark grey, brown and/or green tones only	Bradshaws	1			Completed
9	Roads to all structures are to be dark grey, brown and/or green tones only	SVP to check	1			SVP site inspection 15/9 OK
B38	Services	SVP to check	1			SVP site inspection 15/9 OK
10	Services	SVP to check	1			Compliance certificate to be forwarded to SVP
C1	Doebell Landscape Plans/Working Drawings	Taylor Brannner	1			required before Construction Certificate SVP to sign-off
C7	Quick check plans	GDK	1			Not applicable this project is not Building J
12	Food area to comply with AS 4874 and Food Safety Standard 3.2.3	Mernn & Cranston	1			required before Construction Certificate SVP to sign-off
13	Food area to comply with AS 4874 and Food Safety Standard 3.2.3	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
14	Certification from the Accredited Access Address	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
C18	Removal of hazardous & Environmental Waste certified complete	Mernn & Cranston	1			STH completed as per design SVP site inspection 15/9
15	Removal of hazardous & Environmental Waste certified complete	Mernn & Cranston	1			CR to issue Lawrence Survey and Bradshaws does urgently 28/9 STH issued
E2	Removal of hazardous & Environmental Waste certified complete	Mernn & Cranston	1			GHD to respond
16	Parking areas and drive ways	GHD	1			STH action not required
E3	Parking areas and drive ways	SVP to check	1			STH note this is not applicable due to McPherson St works and Brands Ln
17	Street levels and road reserve	GHD	0			boundaries being newly constructed
18	Street levels and road reserve	St Hilliers	1			Council to inspect the areas inspection booked for 30/9
E4	Street levels and road reserve	St Hilliers	1			Council to inspect the areas inspection booked for 30/9
20	Street trees and road reserve	St Hilliers	1			Advised SVP email dated 29/6/09 closed out
21	Street trees and road reserve	Council	0			Advised SVP email dated 29/6/09 closed out
E5	Damaged public infrastructure	Council	0			Advised SVP email dated 29/6/09 closed out
22	Damaged public infrastructure	SVP	1			M&C to action urgently. GW again requested from DJ on Mon 28/9
E6	OC application pending development needs requirements	SVP	1			Advised SVP email dated 29/6/09 closed out
23	OC application pending development needs requirements	STH	0			Advised SVP email dated 29/6/09 closed out
E8	Council compliance certificate From Environmental Health Officer	STH	0			STH to arrange Council inspection with Health Officer Dona Thurs
24	Council compliance certificate From Environmental Health Officer	ARV	0			14/0/09 STH issued kitchen sign off from SVP to Council on 7/10/09
E9	Trade waste agreement	ARV	0			ARV to provide agreement from Sydney Water
25	Trade waste agreement	Ebas	1			Complete
E9	Mechanical exhaust	ACS	1			Complete
26	Mechanical exhaust	ARV	0			ARV to notify NSW Food Authority online
E10	NSW food authority	ARV	0			Advised SVP email dated 29/6/09 closed out
27	NSW food authority	ARV	0			Advised SVP email dated 29/6/09 closed out
E11	Copy of Section 73 Compliance Certificate	ARV	1			Advised SVP email dated 29/6/09 closed out
28	Copy of Section 73 Compliance Certificate	ARV	1			Advised SVP email dated 29/6/09 closed out
E12	Installation of approved hard wired smoke alarms	Mernn & Cranston	0			Advised SVP email dated 29/6/09 closed out
29	Installation of approved hard wired smoke alarms	Mernn & Cranston	0			Advised SVP email dated 29/6/09 closed out
E13	Department of Medical Resources works to creek corridor	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
30	Department of Medical Resources works to creek corridor	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
E14	Access consultant	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
31	Access consultant	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
E15	Details of easements through private property	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
32	Details of easements through private property	Mernn & Cranston	1			Advised SVP email dated 29/6/09 closed out
E17	Public road	ARV	1			Advised SVP email dated 29/6/09 closed out
33	Public road	ARV	1			Advised SVP email dated 29/6/09 closed out
E19	Infrastructure	ARV	1			Advised SVP email dated 29/6/09 closed out
34	Infrastructure	ARV	1			Advised SVP email dated 29/6/09 closed out
E20	Documents & Payments required for OC release	GHD	1			Advised SVP email dated 29/6/09 closed out
35	Documents & Payments required for OC release	GHD	1			Advised SVP email dated 29/6/09 closed out
E21	Engineering plans	GHD	0			Advised SVP email dated 29/6/09 closed out
36	Engineering plans	GHD	0			Advised SVP email dated 29/6/09 closed out
E22	Roads, drainage and civil engineering works	GHD	0			Advised SVP email dated 29/6/09 closed out
37	Roads, drainage and civil engineering works	GHD	0			Advised SVP email dated 29/6/09 closed out
E23	Maintenance period to council dedicated civil works	GHD	1			Advised SVP email dated 29/6/09 closed out
38	Maintenance period to council dedicated civil works	GHD	1			Advised SVP email dated 29/6/09 closed out
E24	Works as excised plans	Lawrence Group	1			Advised SVP email dated 29/6/09 closed out
39	Works as excised plans	Lawrence Group	1			Advised SVP email dated 29/6/09 closed out
E25	Works as excised plans	Lawrence Group	1			Advised SVP email dated 29/6/09 closed out
40	Works as excised plans	Lawrence Group	1			Advised SVP email dated 29/6/09 closed out
E26	Driveways	GHD	0			Advised SVP email dated 29/6/09 closed out
41	Driveways	GHD	0			Advised SVP email dated 29/6/09 closed out
E26	Public Infrastructure	St Hilliers	1			Advised SVP email dated 29/6/09 closed out
42	Public Infrastructure	St Hilliers	1			Advised SVP email dated 29/6/09 closed out
E27	Water Management System certification	Council	0			Advised SVP email dated 29/6/09 closed out
43	Water Management System certification	Council	0			Advised SVP email dated 29/6/09 closed out
E28	Completion of water management system conditions	Council	1			Advised SVP email dated 29/6/09 closed out
44	Completion of water management system conditions	Council	1			Advised SVP email dated 29/6/09 closed out
E29	Water Management Report	Council	1			Advised SVP email dated 29/6/09 closed out
45	Water Management Report	Council	1			Advised SVP email dated 29/6/09 closed out
E30	Maintenance period to water quality control devices	Council	1			Advised SVP email dated 29/6/09 closed out
46	Maintenance period to water quality control devices	Council	1			Advised SVP email dated 29/6/09 closed out
E31	Section 148 (2) Flood Category 1 or 2	Council	1			Advised SVP email dated 29/6/09 closed out
47	Section 148 (2) Flood Category 1 or 2	Council	1			Advised SVP email dated 29/6/09 closed out
E32	Add Substrate Soils Management Plan	Council	1			Advised SVP email dated 29/6/09 closed out
48	Add Substrate Soils Management Plan	Council	1			Advised SVP email dated 29/6/09 closed out
E33	Remedial Act n Plan (P. Clifton)	Council	1			Advised SVP email dated 29/6/09 closed out
49	Remedial Act n Plan (P. Clifton)	Council	1			Advised SVP email dated 29/6/09 closed out
E34	Odour mitigation works	Council	1			Advised SVP email dated 29/6/09 closed out
50	Odour mitigation works	Council	1			Advised SVP email dated 29/6/09 closed out
E35	Odour mitigation works	Council	1			Advised SVP email dated 29/6/09 closed out
51	Odour mitigation works	Council	1			Advised SVP email dated 29/6/09 closed out
E36	Car parking	Council	1			Advised SVP email dated 29/6/09 closed out
52	Car parking	Council	1			Advised SVP email dated 29/6/09 closed out
E36	Car parking	Council	1			Advised SVP email dated 29/6/09 closed out
53	Car parking	Council	1			Advised SVP email dated 29/6/09 closed out

Total
53
77%

Total Closed Out
41

WATER CONSERVATION DEVICES TO BE INSTALLED

Project Name		RACF Warriewood
Address		6-14 MacPherson St Warriewood NSW 2101
Part of Building to be certified		All new Work

In regards to DA No. N0102/05 for the Warriewood RACF (ARV) project,

Specifically **Part 2 Section B Clause 30**

"Water conservation devices with an AAA rating must be installed, including tap flow regulators, shower head roses and dual flush toilets. All new hot water systems are to have a minimum rating of 3.5 stars"

I hereby certify that I have complied with the above Development Consent condition

Name /Jim WATKIN
Qualifications PLUMBER
Company Commodore Plumbing
Address 6/3 Apollo St Warriewood
Phone Number 9997 3166 Fax Number 9997 3266

Signature /Jim WATKIN
Date 29/9/09

Attachments Pls refer to manuals for details

MAXIMUM REFLECTIVE INDEX OF 25%

Project Name	RACF Warrewood
Address	6-14 MacPherson St Warrewood NSW 2101
Part of Building to be certified	All new Work

In regards to DA No N0102/05 for the Warrewood RACF (ARV) project
Specifically Part 2 Section B Clause 33.

"All external glazing is to have a maximum reflectivity index of 25% "

I hereby certify that I have complied with the above Development Consent condition

Name G R. Attwood

Qualifications NSW Contracts Manager

Company BRADBURNS Windows & Doors P/L

Address 4 HARVEY RD, KINGS FERR

Phone Number 88088100 Fax Number 88088110

Signature G R. Attwood
Date 10/8/2009

Attachments Certificates of Compliance



Compliance Certificate

BRADNAM'S WINDOWS AND DOORS

is a participating member of the **Australian Window Association** whose windows have been manufactured to comply with the Window Standard **AS2047** and the Glass Standard **AS1288**, including human impact requirements as specified in the order, and this company has met the requirements of the annual **Compliance Audit** conducted by a NATA accredited auditor operating within the AWA Accreditation program.

The manufacturer certifies that the windows and doors supplied to

St Hilliers Contracting Pty Ltd

Project: RACF 6-14 MacPherson St, Warriewood (ARV)

This Certificate of Compliance confirms the reflectivity index of the glazing is less than 25%

A handwritten signature in black ink, appearing to read "S. R. Hilliers".

Signature



Bradnam's Windows & Doors

Date
Association

Accreditation No 13739

This inspection service is accredited by the National

of Testing Authorities Australia. The services reported herein

Steve Watson & Partners Pty Ltd
Level 5/ 432 Kent Street
SYDNEY NSW 2000

Attention Steve Watson

To whom it may concern,

CERTIFICATE OF DESIGN
SUBJECT PREMISES
ARV Warriewood
6 to 14 MacPherson Street
NO 102/05

We have inspected the above development upon practical completion of the works dated 5th August 2009

Pursuant to the provisions of Clause A2.2 of the Building Code of Australia, I hereby certify that the above design is in accordance with normal engineering practice and meets the requirements of the Building Code of Australia, any relevant fire safety engineering report, the Environmental Planning and Assessment Regulation, relevant Australian Standards and relevant conditions of the Development Consent. In particular the design is in accordance with the following DA requirements for landscape of the Warriewood RACF (ARV) project,

Specifically Part 2 Section C Clause 1

DA Condition Part 2 Section C1 Stating that 3 sets of detail landscape plans/ working drawings were submitted prior to the release of Construction Certificate, and that the plans were prepared in accordance with the landscape master plan. Plans are to be prepared in accordance and compliance with the Landscape Master Plan (05/121/LA01 issue B, as prepared by Taylor Brammer Landscape Architects)

- Landscape Plans to provide working drawings which cover the following elements of the proposed site works: Taylor Brammer, MacPherson Street Streetscape Works (as part of Warriewood Valley Landscape Master Plan). Existing trees along street frontage to be retained where feasible. Use of 400 litre Ficus rubiginosa for island plantings with no use of turf in road reserve areas. Applicant to liaise with Council in relation to retention/removal of street trees in the MacPherson Street road reserve and documentation of any civil works in the road reserve. All areas to be mass planted

- MacPherson Street Building Setback Area — use of small tree/shrubs to screen building mass from street (use of 45/100 litre sizes for trees) in accordance with landscape cross section C LA028

- Entry driveway (off MacPherson Street) use of 400 litre trees for avenue planting, use of large 2m 4m sized sandstone boulders as entry statement

- Incorporation of water course as identified

- Brands Lane — no bioswale to be located in public road reserve area to be used for extensive landscaping/screening of cycleway and proposed residences Use of 200/400 litre trees to provide avenue along the lane from entry to end
- Brands Lane Setback Area — extensive use of small tree shrub planting to building setback to screen bulk and scale of development from Brands Lane as per cross section FLA LA02B
- Water Quality Pond/Lake — As detailed by Taylor Brammer Master Plan 05 121/LA01A to include tree planting of endemic Eucalypts (45 litre) and aquatic edge treatment/lakeside pavilion
- Eastern Boundary Setback — Extensive use of large small canopy trees/shrubs to reduce bulk and scale of building from adjoining residences "
- DA Condition B44 All fencing is to be keeping with the requirements of section D14 16 of Pittwater 21 DCP
- DA Condition D2 Chain wire protective mesh fencing was provided in accordance with the above condition prior to commencement of works on site

I am an appropriately qualified and competent person in this area being employed as a Landscape Architect and as such can certify that the design and performance of the design systems comply with the above and which are detailed on the following drawings

- LC01 Cover Sheet Rev E
- LC02 Landscape Finishes Rev F
- LC03 Landscape Finishes Rev F
- LC04 Planting Plan Rev E
- LC05 Planting Plan Rev E
- LC06 Planting Plan Rev F
- LC07 Planting Plan Rev E
- LC08 Planting Plan Rev D
- LC09 Landscape Details Rev D
- LC10 Landscape Details Rev F

I possess Indemnity Insurance to the satisfaction of the building owner or my principal and hereby certify that I have complied with the above Development Consent condition

Full Name of Designer James Heron
 Qualifications BLArch (Hons 1) HNDip Hort
 Address of Designer 218 Oxford Street
 WOLLAHRA NSW 2025
 Business Telephone No 02 9387 8855
 Fax No 02 9387 8155

Name of Employer Matthew Taylor Director
 Signature

Matthew Taylor



4th December 2009

Michael Viskovich
Merrin & Cranston
PO Box 6243
Fairfield Gardens QLD 4103

Dear Michael,

RE WARRIEWOOD VALLEY RACF (STAGE 2A) - ACCESSIBILITY OCCUPANCY CERTIFICATION

I hereby certify that the construction of the ARV Warriewood RACF (Stage 2A) located at Warriewood Valley is in accordance with normal disability access practice and meets the requirements of the Building Code of Australia, and relevant Australian Standards

In particular the construction is in accordance with the following

AS 1428 1 - General Requirements of Access
BCA part D3 - Building Code of Australia
Consent Conditions C16 & C17

I am an experienced, qualified and competent person in this area and as such can certify that the building systems and layout comply with the above

Full Name David Goding
Company Morris-Goding Accessibility Consulting
Qualifications Bachelor of Civil Engineering, ACAA
Address Unit 6, Grd Floor, 56 Bowman Street Pyrmont NSW 2009
Phone No 02 9692 9322
Fax 02 9692 8433

Yours faithfully,

David Goding
Morris-Goding Accessibility Consulting



St Hilliers Contracting
Pty Limited
ABN 60 082 594 563

Sydney Office

Ground Floor
88 Cumberland Street
THE ROCKS NSW 2000

GPO Box 5370
SYDNEY NSW 2001

Tel 02 9259 5200
Fax 02 9259 5201

www.sthilliers.com.au

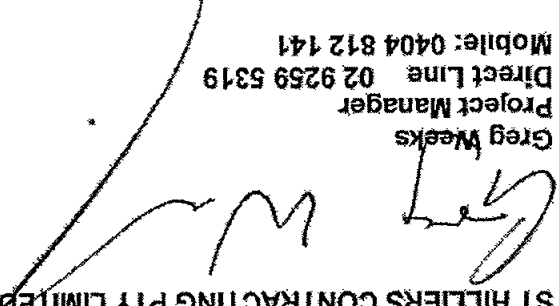
Steve Watson & Partners
Principal Certifying Authority
Level 5 432 Kent Street
Sydney NSW 2000

Date 13 October 2009

Attention Steve Watson

Re ARV Warrewood Stage 2A (RACF) – DA Consent Condition E3

All parking areas and driveways have been sealed to an all weather standard,
inemarked and signposted as documented

Yours sincerely,
ST HILLIERS CONTRACTING PTY LIMITED

Greg Weeks
Project Manager
Direct Line 02 9259 5319
Mobile: 0404 812 141

PLANS

Project Name	RACF Warriewood – Stage 2
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work

In regards to DA No. N0102/05 for the Warriewood RACF – Stage 2a (ARV) project,

Specifically Part 2 Section E Clause 4

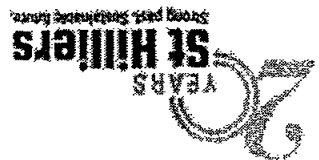
"Plans together with street levels provided by Council and a certificate submitted by a Chartered Professional Engineer confirming to the satisfaction of the Principal Certifying Authority that the works in the public road reserve comply with Council requirements and street levels are to be provided with the Occupation Certificate application "

I hereby certify that the works (as provided in the work as executed survey and witnessed during inspections) have been constructed in accordance with the above Development Consent condition

Name Grahame Sproats
Company GHD Pty Ltd.
Address Level 15, 133 Castlereagh Street, Sydney, NSW 2000
Phone No (02) 9239 7100 Fax No (02) 9239 7199

G. Sproats Signature M. E. Aust No 226966
Date 13/10/09

Attachments WAE Drawing
21-13577-C250
Works as Executed Versus Design Levels

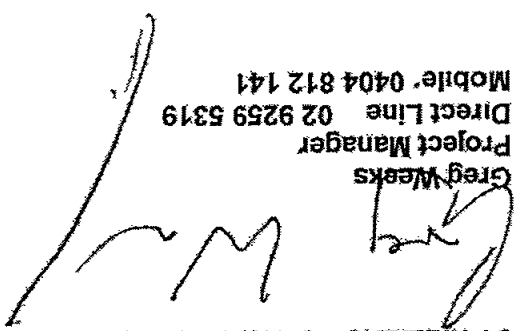


St Hilliers Contracting
Pty Limited
ABN 60 082 594 563
Sydney Office
Ground Floor
88 Cumberland Street
THE ROCKS NSW 2000
GPO Box 5370
SYDNEY NSW 2001
Tel 02 9259 5200
Fax 02 9259 5201
www.sthilliers.com.au

Steve Watson & Partners
Principal Certifying Authority
Level 5, 432 Kent Street
Sydney NSW 2000
Date 10 October 2009
Attention Steve Watson

Re. ARV Warriewood Stage 2A (RACF) – DA Consent Condition E5

Find attached photos dated 13th October 2009 showing adjoining areas following completion of construction works
We confirm that any damage done to the above areas has been remediated back to original condition.

Yours sincerely,
ST HILLIERS CONTRACTING PTY LIMITED

Greg Weeks
Project Manager
Direct Line 02 9259 5319
Mobile 0404 812 141

Status Closed-out



ST HILLIERS COMMUNICATION

Ref No L07105-STH-006514

Date Sent 21 September 2009

To Steve Watson & Partners
Cc St Hilliers Contracting Pty Limited
From Greg Weeks, St Hilliers Contracting Pty Limited
Re FWD CL-C-ARV-000238 FW ARV - Warriewood - Stage 1 - Letter to council for LandDedication

Response required by
Orig Ref No
Phone 9259 5200

Steve,

no doubt you have this letter to sign off "land dedication" consent conditions

Regards,

Greg Weeks
Project Manager

Email 107105@sthillers.com.au
Ph 9259 5319
F 9259 5468
m 0404 812 141

St Hilliers Contracting Pty Limited

88 Cumberland St, The Rocks Sydney 2000
tel (02) 9259 5319 fax Email 107105@sthillers.com.au
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ipline	Area	Location
----- Original Message -----		
RACF Warriewood		Anglican Retirement Villages
A B N		

CLIENT COMMUNICATION

Ref No L07105-ARV-000238

Date Sent 21 September 2009

To St Hilliers Contracting Pty
Attn Greg Weeks

From Michael Viskovich, Anglican Retirement Villages
Re FW ARV - Warriewood - Stage 1 - Letter to council for LandDedication


Response required by
Orig Ref No

This mail item is received via EMAIL from Michael Viskovich on 2009-09-21 11 21 55 AM and processed by Chris Ryan of St Hilliers Contracting Pty Limited on 2009-09-21 11 53 53 AM Comments by Mail Processor

From Michael Viskovich<Michael.Viskovich@arv.org.au>
Sent Monday, 21 September 2009 11:20:16 AM
To Greg Weeks<107105@sthillers.com.au>
Cc Richard Abbott<Richard@morganmoore.com.au>, Darren Jeffs<darren@merrincranston.com>, Nathan Campling<nathan@merrincranston.com>
Subject FW: ARV - Warrewood - Stage 1 - Letter to Council for Land Dedication
Attachment(s) 090809 Memo to Council for Land Dedication pdf, Attachment for Land Dedication pdf

Greg,
As discussed please find attached a letter on land dedication which was provided to the PCA for Stage 1 OC. The process is still in place between ARV and Pittwater Council.


Regards



ANGLICAN RETIREMENT VILLAGES
Diocese of Sydney

Michael Viskovich
Project Manager
P 02 9421 5316
F 02 9421 2217
M 0449 904 902
michael.viskovich@arv.org.au

Anglican Retirement Villages
PO Box 284, Castle Hill
NSW 1765
Level 2, Century Corporate Centre
62 Northwest Boulevard
Baulkham Hills, NSW, 2153




50 YEARS
Share. Celebrate. Live.

From Michael Viskovich
Sent Wednesday, 12 August 2009 9:20 AM
To Richard Abbott, 'Andrew Rys'
Subject ARV - Warrewood - Stage 1 - Letter to Council for Land Dedication

Richard / Andrew,

Please find attached the Letter to Council in relation to Land Dedication including attachments as required by the Development Application for Occupation Certificate


Regards



ANGLICAN RETIREMENT VILLAGES
Diocese of Sydney

Michael Viskovich
Project Manager
P 02 9421 5316
F 02 9421 2217
M 0449 904 902
michael.viskovich@arv.org.au

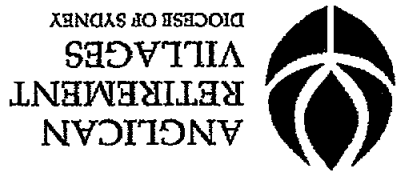
Anglican Retirement Villages
PO Box 284, Castle Hill
NSW 1765
Level 2, Century Corporate Centre
62 Northwest Boulevard
Baulkham Hills, NSW, 2153



50 YEARS
Share. Celebrate. Live.

Anglican Retirement Villages

PO Box 284 Castle Hill
tel 02 9421 5316 fax 9421 2217 Email michael.viskovich@arv.org.au
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ANGLICAN
RETIREMENT
VILLAGES
DIOCESE OF SYDNEY

Creating Communities of Christian Care

memo

7th August 2009

Mr Ross McWhirter
Project Leader
Pittwater Council
PO Box 882
Mona Vale NSW 1660

Dear Ross,

Land Dedication
Development Application No. N0102/05
6-14 Macpherson Street, Warriewood

Pursuant to the Development Application for Warriewood Brook and in particular Conditions E17, E18 and E19 please find attached documents associated with the dedication of land to Pittwater Council

The survey drawings as prepared by Summit Geomatic Pty Ltd attached are as follows

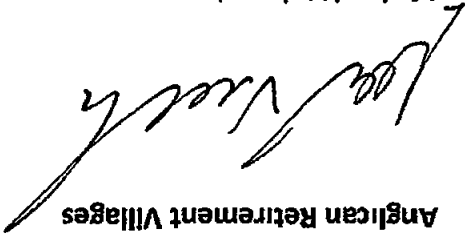
- Plan of Subdivision of Lots A & B DP358765, Lots A & B DP400488, Lot 22 SEC C DP5463 and Lots 5, 6, 7 & 8 in DP 1115877
- Form 6 Signature Sheet
- 88B Instrument creating / releasing easements
- Please sign and seal and then return the documents to Anglican Retirement Villages

Should you require any further information, please do not hesitate to contact the undersigned on (02) 9421 5316, or alternatively, Mr Richard Abbott of Morgan Moore & Associates on (02) 9957 6188

If you have any questions, please do not hesitate to contact me

Regards,

Anglican Retirement Villages



Michael Viskovich
Project Manager

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of

sheet(s)

* OFFICE USE ONLY

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants		PURSUANT TO SEC 88B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO CREATE		1 EASEMENT FOR DRAINAGE 2.5 WIDE [A]		PURSUANT TO SEC 88B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO RELEASE		2 EASEMENT FOR DRAINAGE 0.915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 70 (D768122)		3 EASEMENT FOR DRAINAGE 0.915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 71 (D768122)		IT IS INTENDED TO DEDICATE TO THE PUBLIC AS ROAD		1 ROAD WIDENING OF BRANDS LANE (AT MACPHERSON STREET)		2 ROAD WIDENING (AT MACPHERSON STREET)	
for additional certificates, signatures, seals and statements																	
Crown Lands NSW/Western Lands Office Approval																	
1 in approving this plan certify (Authorised Officer) that all necessary approvals in regard to the allocation of the land shown herein have been given																	
Signature Date File Number Office																	
Subdivision Certificate I certify that the provisions of s 109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed (insert 'subdivision' or 'new road') set out herein * Authorised Person/General Manager/Accredited Certifier * Delete whichever is inapplicable																	
SURVEYOR'S REFERENCE 2644-STG2		Plans used in the preparation of survey/compilation DP 581495 DP 972209 DP 579309 DP 228171 DP 1088226 DP 270426 DP 1011273 DP 581495 DP 345528 DP 1115877 DP 553816 DP 537054 DP 400488 DP 1071760 DP 647935 DP 5671414 DP 349085 DP 5464 (if insufficient space use Plan Form 6A annexure sheet)															
Type Urban/Rural		Datum Line "X"- "Y"															
Signature		Surveyor registered under the Surveying Act, 2002															
Dated 19/12/2008																	
(specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey)																	
The survey relates to LOTS 1 - 6																	
on 10/05/2008																	
a surveyor registered under the Surveying Act, 2002 certify that the survey represented in this plan is accurate, has been made in accordance with the Surveying Regulation, 2006 and was completed																	
I, PETER LAURENCE NANCARROW																	
of SUMMIT GEOMATIC PTY LTD																	
Surveying Regulation, 2006																	
LGA		PITWATER		Locality		WARRIEWOOD		Parish		NARRABEEN		County		CUMBERLAND			
Registered		PLAN OF SUBDIVISION OF LOTS A & B DP358765, LOTS A & B DP400488, LOT 22 SEC C DP5464 AND LOTS 5, 6, 7 & 8 IN DP 1115877															
Title System																	
Purpose																	
*																	
*																	

SURVEY REPORT

PLAN OF SUBDIVISION

No 6 - 14 MACPHERSON STREET, WARRIEWOOD

Lot A & B DP 358765, Lot A & B DP 400488, Lot 22 SEC C DP 5464 AND Lots 5, 6, 7 & 8 DP 1115877

SURVEYORS REFERENCE 2644-STG2
DATE 10/05/2008

The survey was completed in May 2008. The purpose of the survey is to subdivide nine lots into six, dedicate road widening and create a public reserve

The rear of the property is bounded by Narrabeen Creek

The original position of this creek has been altered substantially due to the construction of a channel which cuts across the subject lots and removing the original 'dogs leg' section of the creek. From accounts by neighboring landholders this work was carried out by the council approximately thirty years ago to ease the flow of water and reduce flooding in the area. Dredging work along the channel was also carried out at various times to maintain the flow of the creek.
Adjacent properties to the west (fronting Macpherson Street) have had substantial fill placed adjoining and over the original creek position which has largely obliterated the natural water course

AZIMUTH OF SURVEY

The datum line of azimuth adopted was between SSM 145906 FD (EST) and PM 15783 FD (EST), being a line of bearing 81°49'48" MGA and a distance of 662.314 by survey. Confirmation to five other established marks showed good agreement between observed and calculated positions

BOUNDARY DEFINITION

Boundary redefinition of Warriewood Road and Macpherson Street frontages was established from recent and older plans dating back to 1906.
In particular DP 1071760 was used to redefine Warriewood Road frontage and DP 1080979 was used to define Macpherson Street frontage. Very good agreement was found between these plans and surveyed positions of marks. A registered plan of subdivision carried out by myself (DP 1115877) was also used as a basis for the definition

Remaining marks were also found to be in good agreement

Creek Boundary

Observations to the northern and southern banks were taken using electronic total station from a closed traverse to determine the current position of Narrabeen Creek adjoining the surveyed land

As discussed above, the present position has altered significantly since the creek was plotted in 1906 by DP 5464. The original position cannot be determined due to extensive fill and excavation which has been ongoing for many years

In order to determine the original position of the creek the position as plotted by DP 5464 was traced. Short lines representing the original creek position were created to re-define the boundary. DP 5464 was chosen as the creek has been shown clearly over an extended section of the creek. Agreement between Macpherson Street and Warriewood Road was also very good with original distances available at the eastern side of the surveyed lots

The land on the southern side of the redefined creek position is to be dedicated a public reserve. Land to the north of the creek will also be dedicated in the future as public reserve when development takes place. Lots 1 – 5 in the plan are to be developed into a retirement village by Anglican Retirement Villages

ENCROACHMENTS

No encroachments were discovered during the course of the survey with the exception of fencing as shown on the plan

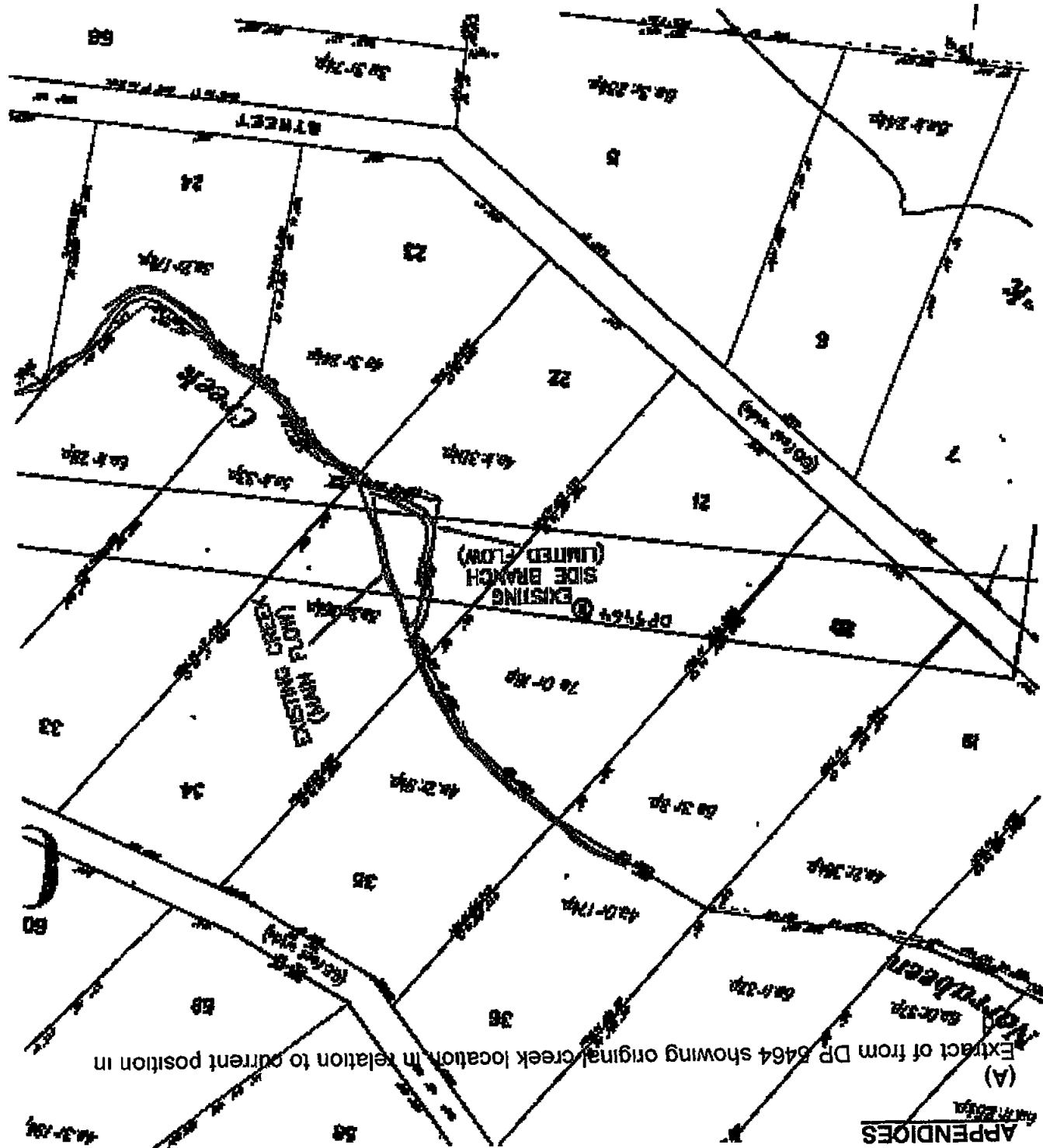
Peter Nancarrow
Registered Surveyor
Summit Geomatic Pty Ltd
Ph 02 9891 1490

10th May 2008

APPENDICES

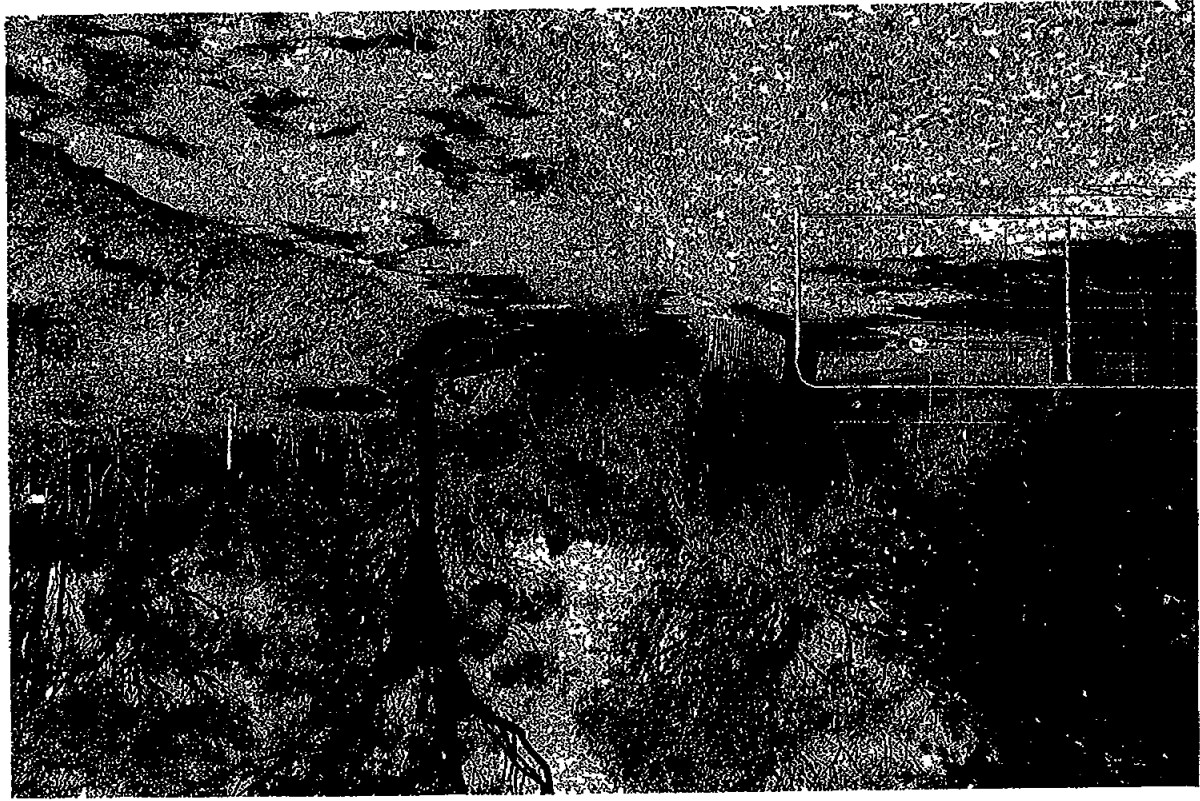
(A)

Extract of from DP 5464 showing original creek location in relation to current position in



(B)
Photo of Narrabeen Creek easternmost corner of proposed lot 3 looking to the south-
west





(C)
Photo of Narrabeen Creek (new channel) near south east corner proposed lot 3 looking
to the south

Attention: **Michael Lockwood**
Company: **Anglican retirement Villages**
Project: **Warriewood Brook Subdivision**
MacPherson Street, Warriewood
Our Ref: **2644-STG2**

Summit Geomatic
Registered Consulting Surveyors



PRECISE SURVEYING SOLUTIONS

Date: **4 August, 2008** Time: **11:34:55 AM**

Michael,

Please find enclosed the following documents and plans requiring signatures and approvals to finalise subdivision at Warriewood Brook

- 1 Five copies of final subdivision plan for council approval
- 2 Form 6 signature sheet
- 3 88B instrument creating / releasing easements

Notes

- All seals and signatures are to be placed on the Form 6 signature sheet
- Signatures and seals are required from the owner of the property, Council as well as anyone with a financial interest in the property (i.e. Bank or other financial institution)
- An original certificate of title must be produced before registration of the plan at the LPI
- Once all signatures and approvals have been obtained please return original signature sheet to us. When the original documents are returned to us we will scan the documents and lodge the subdivision plans electronically by LPI NSW ePlan facility
- Registration of the plan is carried out after the plan has been checked by LPI NSW and all lodgment fees submitted

Should you have any queries in relation to the abovementioned matters then please do not hesitate to contact the undersigned

Yours faithfully,
Summit Geomatic P/L


Peter Nancarrow
Registered Surveyor

SUMMIT GEOMATIC Pty Ltd
A.B.N 71 092 947 601

PO Box 9271, 69 Marion Street, Harris Park, NSW, 2150
Tel: (02) 9891 1490 Fax: (02) 9891 1060
Email: survey@summitgeo.com.au

INSTRUMENT SETTING OUT TERMS OF EASEMENTS INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919

(Sheet 1 of 2 sheets)

Plan

**PLAN OF SUBDIVISION OF
LOTS A & B IN DP 358765,
LOTS A & B IN DP 400488,
LOT 22 SEC C IN DP 5464 AND
LOTS 5, 6, 7 & 8 IN DP 1115877**

Full Name and Address of the Registered Proprietors of the Land

**ANGLICAN RETIREMENT VILLAGES
(DIOCESE OF SYDNEY)
ABN 39 922 848 563
Level 2, Century Corporate Centre
62 Norwest Boulevard, Baukham Hills
NSW 2153**

PART 1 (Creation)

Number of item shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be created and referred to in the plan	Burdened lot(s) or parcel(s)	Benefited lot(s), road(s), bodies or Prescribed Authorities
1	EASEMENT FOR DRAINAGE 2.5 WIDE	Lot 1	Pittwater Council

PART 1A (Release)

Number of item shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be released and referred to in the plan	Burdened lot(s) or parcel(s)	Benefited lot(s), road(s), bodies or Prescribed Authorities
2	EASEMENT FOR DRAINAGE 0.915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 70 (D768122)	Lot A in DP 358765	Pittwater Council
3	EASEMENT FOR DRAINAGE 0.915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 71 (D768122)	Lot B in DP 358765	Pittwater Council

Plan

PLAN OF SUBDIVISION OF
LOTS A & B IN DP 358765,
LOTS A & B IN DP 400488,
LOT 22 SEC C IN DP 5464 AND
LOTS 5, 6 ,7 & 8 IN DP 1115877

EXECUTED by ANGLICAN
RETIREMENT VILLAGES
(DIOCESE OF SYDNEY)
ABN 39 922 848 563)
)
)

in accordance with section 127 of the
Corporations Act

Signature of director

Signature of director/secretary

Name (please print)

Name (please print)

EXECUTED by PITTWATER COUNCIL)
ABN 61 340 837 871)
)
PO Box 882
MONA VALE NSW 1660

Signature of General Manager

Name (please print)

Timothy Abovian

From Andrew Rys
Sent Friday, 18 December 2009 2:03 PM
To Timothy Abovian
Subject FW: ARV - Warriewood - Stage 2 - Trade Waste Agreement
Attachments ATT00001.png, ATT00002.png

If you have any questions please do not hesitate to call me

Regards

Andrew Rys
Senior Building Regulation Consultant
for Steve Watson & Partners Pty Ltd
Level 5, 432 Kent Street Sydney NSW 2000
Ph (02) 9283 6555
*Mob 0413 943 826
Fax (02) 9283 8500
www.swpartners.com.au

MERRY CHRISTMAS!

Please note our office will close

for the festive season from the 22nd December 2009

and we will re-open on the 11th January 2010. We would like to take this opportunity

to wish you a very happy and safe Christmas and New Year. We look forward to working with you next year!

From Michael Viskovich [mailto:Michael.Viskovich@arv.org.au]
Sent Friday, 18 December 2009 1:42 PM
To Andrew Rys
Cc George Koutoulas
Subject FW: ARV - Warriewood - Stage 2 - Trade Waste Agreement

Andrew,

Please find attached comments from Trade Waste inspector

Regards



**ANGLICAN
RETIREMENT
VILLAGES**
Diocese of Sydney

Michael Viskovich
Project Manager
P 02 9421 5316
F 02 9421 2217
M 0449 904 902
michael.viskovich@arv.org.au

Anglican Retirement
Villages
PO Box 284, Castle Hill NSW
1765
Level 2, Century Corporate
Centre
62 Norwest Boulevard
Baulkham Hills, NSW, 2153



From REG ACKERMAN [mailto:REG.ACKERMAN@sydneywater.com.au]
Sent Friday, 18 December 2009 1:04 PM
To Michael Viskovich
Subject Re: ARV - Warriewood - Stage 2 - Trade Waste Agreement

Hi Michael

*

I wish to advise after my site visit of the Warriewood ARV project that all Trade Waste requirements have been met and a Trade Waste Water Permit is now being issued early next week

Regards

Reg Ackerman
Customer Service Rep - Trade Waste
Gate 0 33-73 Links Rd
St Marys 2760
Ph 9406 5420 Mob 0419 256 933
Email reg.ackerman@sydneywater.com.au

>>> Michael Viskovich <Michael.Viskovich@arv.org.au> 18/12/2009 9:52 am >>>
Reg,

Further to your site visit yesterday at Warriewood I note

Would you be able to issue an email to me that I can provide to the PCA stating words to the effect that the trade waste is all in order with the final agreement to be issued early next week,

I am after my OC from the Private Certifier today and he wants confirmation from Sydney Water that the Trade Waste agreement is all in order

Regards



**ANGLICAN
RETIREMENT
VILLAGES**
Diocese of Sydney

Michael Viskovich
Project Manager
P 02 9421 5316
F 02 9421 2217
M 0449 904 902
michael.viskovich@arv.org.au

Anglican Retirement
Villages
PO Box 284, Castle Hill NSW
1765
Level 2, Century Corporate
Centre
62 Norwest Boulevard
Baulkham Hills, NSW, 2153



Water Wise Rules now replace drought restrictions in Sydney, the Blue Mountains and the Illawarra To know more, visit sydneywater.com.au

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Case No 110589
Stage 2

SUBDIVIDER/DEVELOPER COMPLIANCE CERTIFICATE
(A certificate under Division 9 Section 73 of the Sydney Water Act 1994)

DESCRIPTION OF SUBDIVISION/DEVELOPMENT	
Council	Pittwater Council
Street	6 – 14 Machperson Street, Warriewood (STAGE 2)
Property	Lot B DP 400488, Lot A DP 400488, Lot 22 DP 5464, Lot B DP 358765, Lot A DP 358765, Pt Lot B DP 345528, Pt Lot 1 DP 208149, Pt Lot DP 579309, Pt Lot 3 DP 942319 & Pt Lot 4 DP 579309
Development	119 Bed Residential Aged Care Facility
NAME OF APPLICANT	Anglican Retirement Villages
APPLICANT'S ADDRESS	C/o Bowdens Group Australia P/L P O Box 387 PARRAMATTA NSW 2124

Sydney Water Corporation certifies that the above named applicant has complied with the requirements, relating to the plan of Subdivision/Development described above, of Division 9 of the Sydney Water Act, 1994

THE FOLLOWING ITEMS 2 AND 5 APPLY TO THE DEVELOPMENT

- ~~1 Water facilities are to be provided as a result of the subdivider/developer's compliance with Sydney Water's requirements~~
- 2 Water facilities are available**
- ~~3 Water facilities cannot be provided within a reasonable time from the date of this certificate~~
- ~~4 Sewerage facilities are to be provided as a result of the subdivider/developer's compliance with Sydney Water's requirements~~
- 5 Sewerage facilities are available**
- ~~6 Sewerage facilities are under the control of the local council~~
- ~~7 Sewerage facilities cannot be provided within a reasonable time from the date of this certificate~~
- ~~8 Sydney Water's requirements for future subdivision of this dual occupancy development have NOT been met. On subdivision an additional certificate will be required~~

THE FOLLOWING ITEMS AND APPLY TO LOT/S IN THE DEVELOPMENT

- ~~9 Water facilities have NOT been provided. They will only be provided after compliance with Sydney Water's requirements placed on a future applicant for subdivision/development or connection~~
- ~~10 Sewerage facilities have NOT been provided. They will only be provided after compliance with Sydney Water's requirements placed on a future applicant for subdivision/development or connection~~
- ~~11 Sewerage facilities are under the control of the local council~~

Applicant Reference No **718571/Mcphers2** Council Reference No **DAN0102/05**
Staged Development

Name **Tracy Sutherland** Signature 
(Approving Officer for and on behalf of Sydney Water)

Name **Brian Malligan** Signature 
(Approving Officer for and on behalf of Sydney Water)

Developer Asset Services **Head Office** Dated **6th August 2009**

THIS CERTIFICATE IS ONLY VALID WHEN SIGNED BY TWO AUTHORISED SYDNEY WATER OFFICERS
A signed copy is held by Sydney Water

The original of this certificate must be presented to the appropriate consent authority, usually Council, with which the plan of subdivision/development was lodged so that you can satisfy the relevant condition of consent

Andrew Rys

From Michael Viskovich [Michael Viskovich@arv.org.au]
Sent Friday, 4 December 2009 12:41 PM
To Andrew Rys
Cc Darren Jeffs
Subject FW: 6-14 Macpherson St Warriewood

Andrew,

Please find attached for your information

Regards



**ANGLICAN
RETIREMENT
VILLAGES**
Diocese of Sydney

Michael Viskovich
Project Manager
P 02 9421 5316
F 02 9421 2217
M 0449 904 902
michael.viskovich@arv.org.au

Anglican Retirement
Villages
PO Box 284 Castle Hill NSW
1765
Level 2, Century Corporate
Centre
62 Norwest Boulevard
Baulkham Hills, NSW, 2153



From George Koutoulas [mailto:george@gdk.net.au]
Sent Friday, 4 December 2009 8:58 AM
To Michael Viskovich
Subject Fw: 6-14 Macpherson St Warriewood

Michael

Contacted Sydney Water Trade Waste and they have confirmed that application has been received and is being processed

Regards
George Koutoulas

----- Original Message -----

From REBECCA CAMSELOISE
To george@gdk.net.au

Sent Friday, December 04, 2009 8:39 AM
Subject 6-14 macpherson st warriewood

Hi George

The application has been received and registered

Thank you

Rebecca

Rebecca Camseoloise
Customer Contact Scheduler
Sydney Water
Commercial Industrial Customer Services

Status Outstanding

RACF Warriewood | St Hilliers Contracting Pty Limited
A B N 60 082 594 563



ST HILLIERS COMMUNICATION

Ref No L07105-STH-006732

Date Sent 07
October
2009

To Pittwater Council
From Greg Weeks St Hilliers Contracting Pty Limited
Re Kitchens & Serveries C12

Attn Tom Prsa

Phone 9970 1225
Orig Ref No
Response required by

iTom

Further to inspection last week and your concern re consent condition C12 please find below comments from certifier for your review

regards

Greg Weeks
Project Manager

email l07105@sthillers.com.au
Ph 9259 5319
F 9259 5468
m 0404 812 141

St Hilliers Contracting Pty Limited

88 Cumberland St. The Rocks Sydney 2000
tel (02) 9259 5319 fax Email l07105@sthillers.com.au
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Discipline Area Location

— Original Message —

RACF Warriewood | Steve Watson & Partners
A B N

CONSULTANT COMMUNICATION

Ref No L07105-STAWAT-000005

To St Hilliers Contracting Pty Limited
Cc St Hilliers Contracting Pty Limited
St Hilliers Contracting Pty Limited
From Steve Watson Steve Watson & Partners
Re RE Kitchens & Serveries C12

Attn Greg Weeks
Attn Chris Ryan
Andrew Cummins

Date Sent 07 October 2009
Phone (02) 9259 5319
Phone 9259 5200
02 9259 5726

Orig Ref No
Response required by

This mail item is received via EMAIL from Steve Watson on 2009 10-06 06 39 11 PM and processed by Chris Ryan of St Hilliers Contracting Pty Limited on 2009 10-07 7 45 44 AM Comments by Mail Processor

From Steve Watson <SWatson@swpartners.com.au>
Sent Tuesday 06 October 2009 06 38 48 PM
To Greg Weeks <l07105@sthillers.com.au>
Subject: RE Kitchens & Serveries C12

g

The Condition is reproduced below

I do remember discussing this with Andrew and I think we took the view it only applied in Building J. Also I don't really think that the RACF qualifies as a Food Business as defined in AS4674 and hence the standard would not strictly apply (eg as per the introduction to the standard)

- 12 The applicant shall submit to the accredited Certifier details of the kitchen, cafe, and kiosk in building J. The design, fitout and construction of these food areas must comply with AS 4674 and Food Safety Standard 3 2 3

Having said that I think compliance would be considered good practise in the kitchen area. My observation is that the kitchen generally complies anyway with the small section of stud wall being the only issue. Given the way the condition is drafted and the ambiguity in the application of the standard in this instance I recommend that you discuss the matter further with the Council to see if the as built arrangement can be deemed adequate

Regards,

Steve Watson
Managing Director
Steve Watson & Partners
Level 5 432 Kent St
Sydney 2000
ph 9283 8555
fax 9283 8500
mob 0403 066 592

From Greg Weeks [mailto:teambsystem@sthillers.com.au] On Behalf Of Greg Weeks
Sent Friday, 2 October 2009 5 46 PM
To Steve Watson
Subject Kitchens & Serveries C12

RACF Warriewood | St Hilliers Contracting Pty Limited
A B N 60 082 594 563



ST HILLIERS COMMUNICATION

Ref No L07105-STH 006716

Date Sent 02
October
2009

To Steve Watson & Partners
From Greg Weeks St Hilliers Contracting Pty Limited
Re Kitchens & Servenes C12

Attn Steve Watson

Phone
Orig Ref No
Response required by

Steve

As discussed yesterday please review condition C12 in relation to the kitchen construction requirements in accordance with AS4674 As discussed the Council Health Officer is saying that this should be solid construction as required Please provide your view and interpretation of the above noted condition so I can provide to Council

The Council Officer is noting potential issues with hollow core walls in kitchen and joinery kickboards in the serveries

Regards

Greg Weeks
Project Manager

email l07105@sthiliers.com.au
Ph 9259 5319
F 9259 5468
m 0404 812 141

St Hilliers Contracting Pty Limited

88 Cumberland St. The Rocks Sydney 2000
tel (02) 9259 5319 fax Email l07105@sthiliers.com.au
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Discipline	Area	Location
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Steve Watson & Partners

tel fax Email swatson@swpartners.com.au
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Discipline	Area	Location
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Date Responded



CLIENTS' PEOPLE PERFORMANCE

13 August 2009

Richard Abbott
Morgan Moore and Associates
Level 5 140 Arthur Street
North Sydney
NSW, 2060

Our ref 21/18604/152918
Your ref

Dear Richard

**ARV Warriewood
Stage 1 and Creek Works WAEX Assessment with respect to Flooding**

1 Requirement for this Letter

This letter reports on our assessment of Works as Executed (WAEX) at the Anglican Retirement Villages Warriewood Retirement Village in relation to flooding and the Water Management Report (WMR, Version 4 December 2006 based on Development Footprint SK19 Rev G 21/12853/02/109212) for the following works

- Stage 1 works only (Buildings A, B/C and associated roads), and
- Creek works half creek only

2 Available Information

GHD have reviewed the following attached Works as Executed (WAEX) drawings received as CAD drawing files and PDF format

- Received 05/08/2009 from Morgan Moore and Associates McPherson Street Warriewood Works as Executed and Site Levels from Project Surveyors DWG 19248-20419 31 07 2009 and surveyed 03 08 2009
- Received 13/08/2009 from Morgan Moore and Associates Plan showing As Built Levels Warriewood Brook Creek works from Proust & Gardner DWG 22646-CreekDetail-C 12/08/09

3 Background to the Water Management Report (WMR) with respect to Flooding

The WMR assessed the impact of the proposed development on flooding on and off-site. This flooding was assessed for the 100-year ARI event and the PMF by considering the proposed Development Footprint, SK19 Rev G in its entirety. Use was made of Councils flood model operated by their consultants Cardno Lawson and Treloar. Numerous flood model iterations were undertaken adjusting amongst others

- The rehabilitated creek profile and associated pinch-point
- Internal roads and associated levels,
- Levels and spacings between buildings and





redirecting of flows through the narrow 2m wide pathway between the ramp and the RACF. This could have the potential of raising flood levels in the immediate area.

- 2 In the same area as noted above, access footpaths to Building A and the RACF have resulted in raised ground levels leading from Brands Lane to the corridor between the buildings, compared with what was simulated in the WMR. This would reduce the flood conveyance between the buildings.
- 3 Internal roads leading from Building A to the McPherson Street entrance are generally within approximately 100 mm to 200 mm of design levels and the levels simulated in the flood model. Better tolerances would be desirable and attention needs to be given to landscaping on either side of the roadways to ensure conveyance of the PMF through the site.
- 4 A rendered low brick wall has been constructed along the frontage with McPherson Street. This has the potential to detain and/or redirect flows on the site. However, Buildings K and J have not been constructed, the impact of this low wall on redirecting flood flows is unknown.
- 5 Building A floor levels were not provided, however balcony levels are noted as 5.94 m AHD. The WMR requires Building A floor levels to be 6.0 m AHD. Building B/C floor levels were not provided, however balcony levels are noted as 5.52 m AHD. The WMR required Building B/C floor levels to be 5.5 m AHD. The entrance ramp to the car park crest is noted as 5.44 m AHD. PMF levels provided in Appendix S of the WMR are approximately 5.45 m AHD in this area. However, it must be noted that the levels in this area will be sensitive to resolving the issues noted in Item 1 and 2 above, with potential ramifications on flood levels, and
- 6 The area between Building A and the creek, before the battering down to the creek invert, is approximately 300 mm lower than was simulated in the flood model. This area was lowered as a flood relief.

Creek WAEX

- 7 The creek works are generally in accordance with the design intent with exception of Item 8 below. We understand that, in some areas, the creek cross-sections needed adjustment to correct for existing creek invert levels and creek centrelines. In doing so, the overall cross-section flow area was maintained by adjusting the flow width on the ARV creek side, and
- 8 The pinch point in the creek opposite Building A differs to the final iteration used in the flood modelling. The WAEX pinch point is wider than simulated and the overflow level is approximately 1 m below the intended crest level of 5.2 m AHD.



6 Findings

It is considered that the Stage 1 development and creek works are generally in accordance with the intent of the flooding aspects of the WMR with exception of items 1 2 and 8 above. These issues will have implications on future development of the site and the management of flooding through the site.

Since this letter is required to comment on only Stage 1 and creek works (half creek) and these works have not been simulated in the context of the staged site development, the impacts of the WAEX on flooding cannot be assessed. Therefore, all future site development must be accompanied by flood modelling using Council's flood model, and any future development without flood modelling will render the findings in this letter null and void. In this flood modelling, the progressively completed works would need to be represented from WAEX drawings.

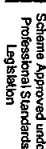
Yours faithfully
GHD Pty Ltd

A handwritten signature in black ink, appearing to read 'R. Berg', written over a horizontal line.

Dr Rainer Berg
Business Group Manager
02 9239 7247

BEARINGS RELATE TO MGA NORTH
NOT ALL SERVICES ARE SHOWN

THIS TITLE BLOCK IS AN INTEGRAL PART OF THIS
DRAWING WHICH IS NOT TO BE REMOVED



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SW STORMWATER
WM WATER METER

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APPROVAL IS STRICTLY PROHIBITED

[illegible]

SHEET 1 OF 1 - DETAIL SURVEY

CLIENT SOUTHERN CROSS

CONCLUSIONS	
SILBERMAN	ADAM W

DATUM	AUSTRALIAN HEIGHT DATUM
ORIGIN	PM 15549 RL9 375 ACC L2

COMPUTER REF 20419
DRAWING No 19248-20419

DATE OF SURVEY	31 7 2009 AND 3.8 2009
REDUCTION RATIO	1 500

PLAN OF MCPHERSON STREET

.....

AND SITE LEVELS

COUNCIL SUBMISSION

MACQUARIE PARK
PO Box 4004 MACQUARIE CENTRE NSW 2113

SUILE 404 LEVEL 4 No13-15 LYON PARK ROAD
MACQUARIE PARK NSW 2113

email office@projectsurveyors.com.au

1000

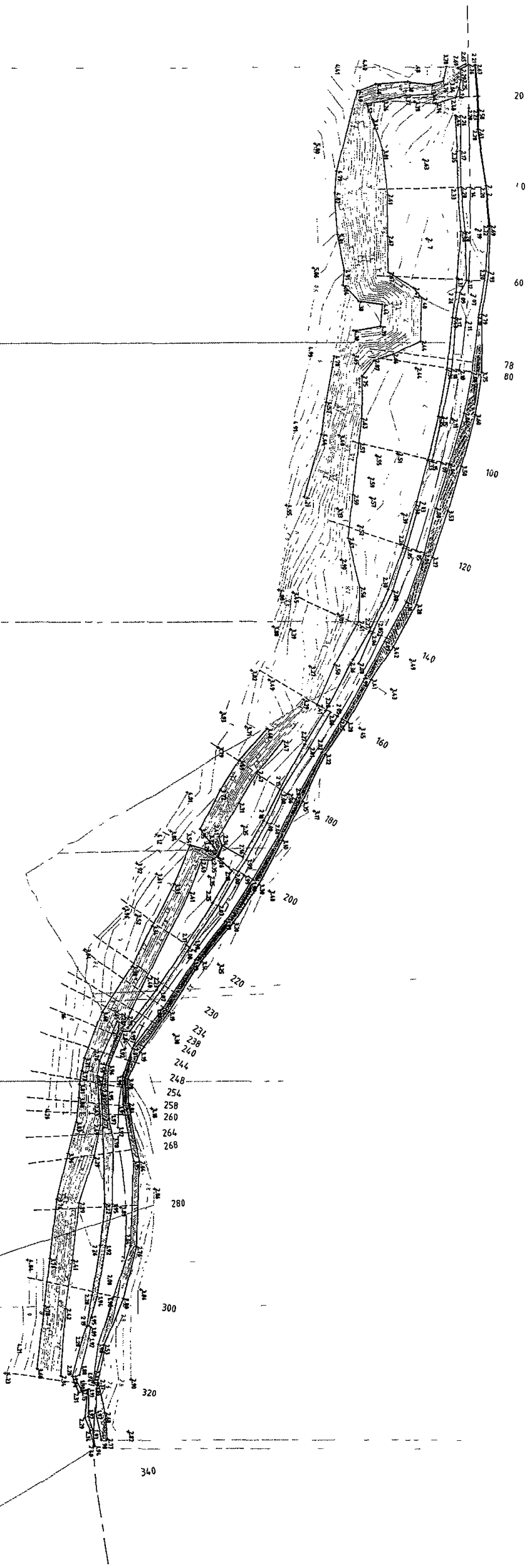
Great

RDS

PROJECT

Professoren der Institution Berlin

A1



- NOTES:
1. BOUNDARIES HAVE BEEN PLOTTED ACCORDING TO DP 118377 AND DP 5464
 2. CREEK CENTRELINE AND CHANGES AND CREEK WORKS BOUNDARY HAVE BEEN MARKED FROM DRAWING NO 21 13577 C1002 REV 6 DATED 12/06/09
 3. PROVIDED ELECTRONICALLY BY LTD ON 06/12/08
 4. COUNCIL APPROVED LANDSCAPES PTY LTD ON 06/12/08
 5. CONTOURS ARE INDICATIVE ONLY
 6. CONTOUR INTERVAL 0.1m
- LEGEND:
- - - - - DENOTES DESIGN CREEK CENTRELINE
 - + - - - AND CHANGES

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OA# E17,
E18,
E19



ANGLICAN
RETIREMENT
VILLAGES
DIOCESE OF SYDNEY

PO Box 284
CASTLE HILL NSW 1765
Phone 61 2 9421 5333
Fax 61 2 9421 5222
www.arv.org.au
ABN 39 922 848 563

Creating Communities of Christian Care

memo

7th August 2009

Mr Ross McWhirter
Project Leader
Pittwater Council
PO Box 882
Mona Vale NSW 1660

Dear Ross,

**Land Dedication
Development Application No N0102/05
6-14 Macpherson Street, Warriewood**

Pursuant to the Development Application for Warriewood Brook and in particular Conditions E17, E18 and E19 please find attached documents associated with the dedication of land to Pittwater Council

The survey drawings as prepared by Summit Geomatic Pty Ltd attached are as follows

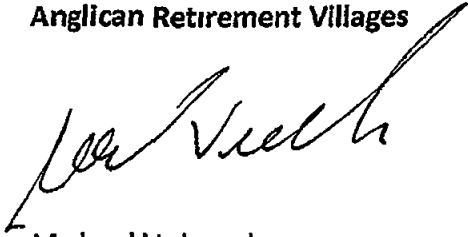
- Plan of Subdivision of Lots A & B DP358765, Lots A & B DP400488, Lot 22 SEC C DP5463 and Lots 5, 6, 7 & 8 in DP 1115877
- Form 6 Signature Sheet
- 88B Instrument creating / releasing easements
-

Please sign and seal and then return the documents to Anglican Retirement Villages


Should you require any further information, please do not hesitate to contact the undersigned on (02) 9421 5316, or alternatively, Mr Richard Abbott of Morgan Moore & Associates on (02) 9957 6188

If you have any questions, please do not hesitate to contact me

Regards,
Anglican Retirement Villages

A handwritten signature in black ink, appearing to read 'Michael Viskovich', with a long, sweeping flourish extending from the end of the name.

Michael Viskovich
Project Manager

DEPOSITED PLAN ADMINISTRATION SHEET		Sheet 1 of sheet(s)
<div>SIGNATURES, SEALS and STATEMENTS of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants</div> <div>PURSUANT TO SEC 88B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO CREATE</div> <div>1 EASEMENT FOR DRAINAGE 2 5 WIDE [A]</div> <div>PURSUANT TO SEC 88B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO RELEASE</div> <div>2 EASEMENT FOR DRAINAGE 0 915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 70 (D768122)</div> <div>3 EASEMENT FOR DRAINAGE 0 915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 71 (D768122)</div> <div>IT IS INTENDED TO DEDICATE TO THE PUBLIC AS ROAD</div> <div>1 ROAD WIDENING OF BRANDS LANE (AT MACPHERSON STREET)</div> <div>2 ROAD WIDENING (AT MACPHERSON STREET)</div>		<div>*</div> <div>Registered</div> <div>Title System</div> <div>Purpose</div> <div>PLAN OF SUBDIVISION OF LOTS A & B DP358765, LOTS A & B DP400488, LOT 22 SEC C DP5464 AND LOTS 5, 6, 7 & 8 IN DP 1115877</div>
<div>Use PLAN FORM 6A for additional certificates, signatures, seals and statements</div> <div>Crown Lands NSW/Western Lands Office Approval</div> <div>I (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given</div> <div>Signature</div> <div>Date</div> <div>File Number</div> <div>Office</div>		<div>LGA PITTWATER</div> <div>Locality WARRIEWOOD</div> <div>Parish NARRABEEN</div> <div>County CUMBERLAND</div> <div>Surveying Regulation, 2006</div> <div>I, PETER LAURENCE NANCARROW of SUMMIT GEOMATIC PTY LTD a surveyor registered under the Surveying Act, 2002, certify that the survey represented in this plan is accurate, has been made in accordance with the Surveying Regulation, 2006 and was completed on 10/05/2008</div> <div>The survey relates to LOTS 1 6</div> <div>(specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey)</div> <div>Signature  Dated 10/7/2008</div> <div>Surveyor registered under the Surveying Act, 2002</div> <div>Datum Line "X"-"Y"</div> <div>Type Urban/Rural</div>
<div>Subdivision Certificate</div> <div>I certify that the provisions of s 109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to</div> <div>the proposed set out herein</div> <div>(insert 'subdivision' or 'new road')</div> <div>* Authorised Person/General Manager/Accredited Certifier</div> <div>Consent Authority</div> <div>Date of Endorsement</div> <div>Accreditation no</div> <div>Subdivision Certificate no</div> <div>File no</div>		<div>Plans used in the preparation of survey/compilation</div> <div>DP 581495 DP 972209 DP 579309</div> <div>DP 553816 DP 537054 DP 228171</div> <div>DP 208149 DP 400488 DP 1088226</div> <div>DP 270426 DP 1071760 DP 1080979</div> <div>DP 1011273 DP 647935 DP 5671414</div> <div>DP 581495 DP 358765 DP 349085</div> <div>DP 345528 DP 942319 DP 5464</div> <div>DP 1115877</div> <div>(if insufficient space use Plan Form 6A annexure sheet)</div> <div>SURVEYOR'S REFERENCE 2644-STG2</div>

* OFFICE USE ONLY

* Delete whichever is inapplicab^e

SURVEY REPORT

PLAN OF SUBDIVISION

No 6 – 14 MACPHERSON STREET, WARRIEWOOD

**Lot A & B DP 358765, Lot A & B DP 400488, Lot 22 SEC C DP 5464 AND Lots 5, 6,
7 & 8 DP 1115877**

SURVEYORS REFERENCE 2644-STG2

DATE 10/05/2008

The survey was completed in May 2008. The purpose of the survey is to subdivide nine lots into six, dedicate road widening and create a public reserve.

The rear of the property is bounded by Narrabeen Creek.

The original position of this creek has been altered substantially due to the construction of a channel which cuts across the subject lots and removing the original 'dogs leg' section of the creek. From accounts by neighboring landholders, this work was carried out by the council approximately thirty years ago to ease the flow of water and reduce flooding in the area. Dredging work along the channel was also carried out at various times to maintain the flow of the creek.

Adjacent properties to the west (fronting Macpherson Street) have had substantial fill placed adjoining and over the original creek position which has largely obliterated the natural water course.

AZIMUTH OF SURVEY

The datum line of azimuth adopted was between SSM 145906 FD (EST) and PM 15783 FD (EST), being a line of bearing 81°49'48" MGA and a distance of 662.314 by survey. Confirmation to five other established marks showed good agreement between observed and calculated positions.

BOUNDARY DEFINITION

Boundary redefinition of Warriewood Road and Macpherson Street frontages was established from recent and older plans dating back to 1906.

In particular DP 1071760 was used to redefine Warriewood Road frontage and DP 1080979 was used to define Macpherson Street frontage. Very good agreement was found between these plans and surveyed positions of marks. A registered plan of subdivision carried out by myself (DP 1115877) was also used as a basis for the definition.

Remaining marks were also found to be in good agreement

Creek Boundary

Observations to the northern and southern banks were taken using electronic total station from a closed traverse to determine the current position of Narrabeen Creek adjoining the surveyed land

As discussed above, the present position has altered significantly since the creek was plotted in 1906 by DP 5464. The original position cannot be determined due to extensive fill and excavation which has been ongoing for many years.

In order to determine the original position of the creek the position as plotted by DP 5464 was traced. Short lines representing the original creek position were created to redefine the boundary. DP 5464 was chosen as the creek has been shown clearly over an extended section of the creek. Agreement between Macpherson Street and Warnewood Road was also very good with original distances available at the eastern side of the surveyed lots.

The land on the southern side of the redefined creek position is to be dedicated as a public reserve. Land to the north of the creek will also be dedicated in the future as public reserve when development takes place.

Lots 1 – 5 in the plan are to be developed into a retirement village by Anglican Retirement Villages.

ENCROACHMENTS

No encroachments were discovered during the course of the survey with the exception of fencing as shown on the plan.

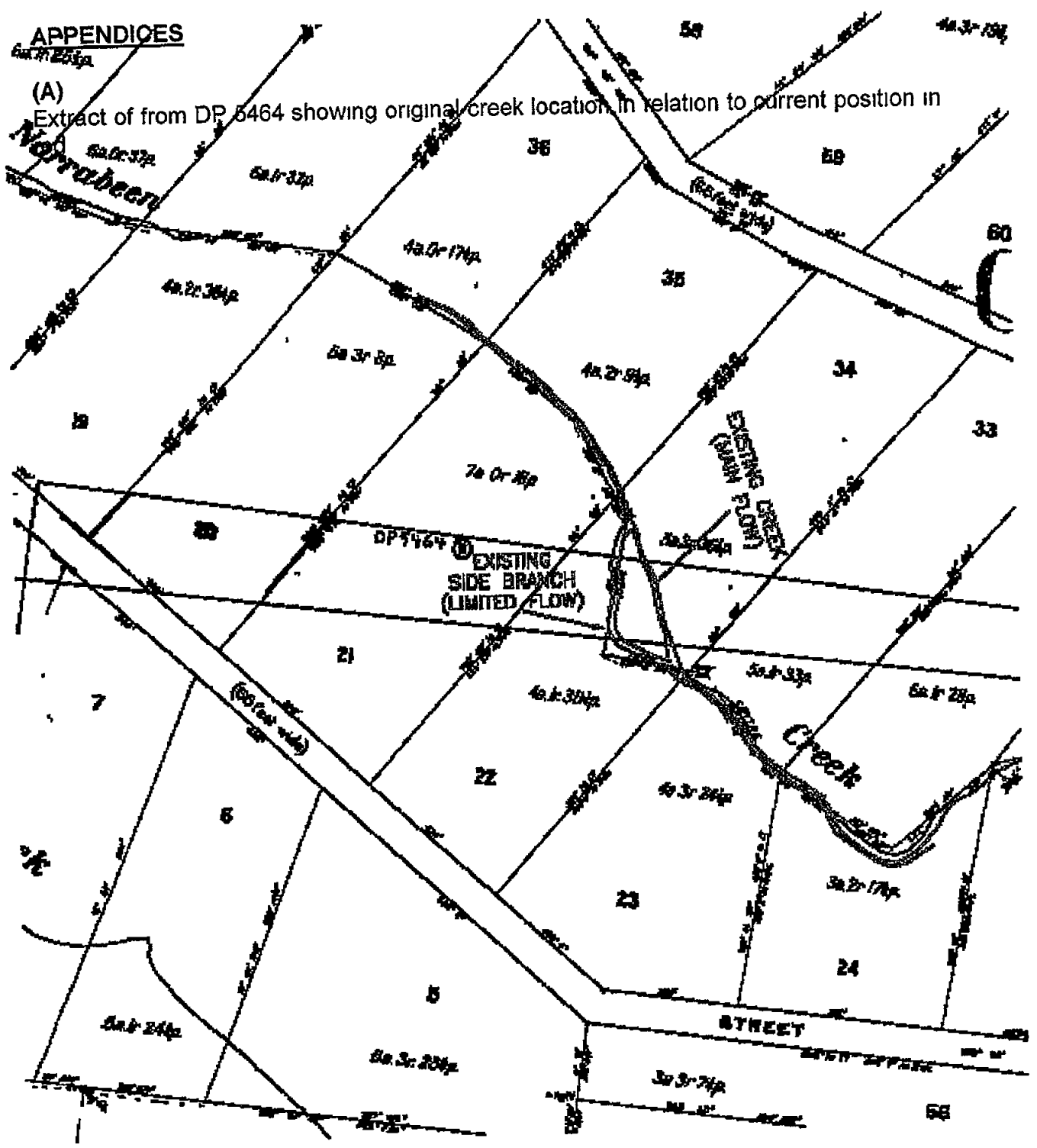
Peter Nancarrow
Registered Surveyor
Summit Geomatic Pty Ltd
Ph 02 9891 1490

10th May 2008

APPENDICES

(A)

Extract of from DP 5464 showing original creek location in relation to current position in



(B)
Photo of Narrabeen Creek easternmost corner of proposed lot 3 looking to the south-
west

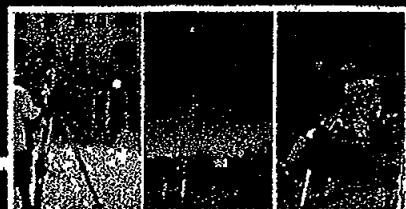


(C)
Photo of Narrabeen Creek (new channel) near south east corner proposed lot 3 looking to the south



Attention: **Michael Lockwood**
Company: **Anglican retirement Villages**
Project: **Warriewood Brook Subdivision**
MacPherson Street, Warriewood
Our Ref: **2644-STG2**

Summit Geomatic
Registered Consulting Surveyors



Date: **4 August, 2008** Time: **11:34:55 AM**

PRECISE SURVEYING SOLUTIONS

Michael,

Please find enclosed the following documents and plans requiring signatures and approvals to finalise subdivision at Warriewood Brook

- 1 Five copies of final subdivision plan for council approval
- 2 Form 6 signature sheet
- 3 88B instrument creating / releasing easements

Notes

- All seals and signatures are to be placed on the Form 6 signature sheet
- Signatures and seals are required from the owner of the property, Council as well as anyone with a financial interest in the property (i.e. Bank or other financial institution)
- An original certificate of title must be produced before registration of the plan at the LPI
- Once all signatures and approvals have been obtained please return original signature sheet to us. When the original documents are returned to us we will scan the documents and lodge the subdivision plans electronically by LPI NSW ePlan facility
- Registration of the plan is carried out after the plan has been checked by LPI NSW and all lodgment fees submitted

Should you have any queries in relation to the abovementioned matters then please do not hesitate to contact the undersigned

Yours faithfully,
Summit Geomatic P/L



Peter Nancarrow
Registered Surveyor

SUMMIT GEOMATIC Pty Ltd
A.B.N 71 092 947 601

PO Box 9271, 69 Marion Street, Harris Park, NSW, 2150
Tel: (02) 9891 1490 Fax: (02) 9891 1060
Email: survey@summitgeo.com.au

INSTRUMENT SETTING OUT TERMS OF EASEMENTS INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919

(Sheet 1 of 2 sheets)

Plan

**PLAN OF SUBDIVISION OF
LOTS A & B IN DP 358765,
LOTS A & B IN DP 400488,
LOT 22 SEC C IN DP 5464 AND
LOTS 5, 6 ,7 & 8 IN DP 1115877**

Full Name and Address of the Registered Proprietors of the Land

**ANGLICAN RETIREMENT VILLAGES
(DIOCESE OF SYDNEY)
ABN 39 922 848 563
Level 2, Century Corporate Centre
62 Norwest Boulevard, Baulkham Hills
NSW 2153**

PART 1 (Creation)

Number of item shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be created and referred to in the plan	Burdened lot(s) or parcel(s)	Benefited lot(s), road(s), bodies or Prescribed Authorities
1	EASEMENT FOR DRAINAGE 2 5 WIDE	Lot 1	Pittwater Council

PART 1A (Release)

Number of item shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be released and referred to in the plan	Burdened lot(s) or parcel(s)	Benefited lot(s), road(s), bodies or Prescribed Authorities
2	EASEMENT FOR DRAINAGE 0 915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 70 (D768122)	Lot A in DP 358765	Pittwater Council
3	EASEMENT FOR DRAINAGE 0 915 WIDE SHOWN SO BURDENED IN VOL 5852 FOL 71 (D768122)	Lot B in DP 358765	Pittwater Council

Plan

PLAN OF SUBDIVISION OF
LOTS A & B IN DP 358765,
LOTS A & B IN DP 400488,
LOT 22 SEC C IN DP 5464 AND
LOTS 5, 6, 7 & 8 IN DP 1115877

EXECUTED by ANGLICAN
RETIREMENT VILLAGES
(DIOCESE OF SYDNEY)
ABN 39 922 848 563

)
)
)

in accordance with section 127 of the
Corporations Act

Signature of director

Signature of director/secretary

Name (please print)

Name (please print)

EXECUTED by PITTWATER COUNCIL
ABN 61 340 837 871
PO Box 882
MONA VALE NSW 1660

)
)
)

Signature of General Manager

Name (please print)

Andrew Rys

From Steve Watson
Sent Friday, 18 December 2009 1 44 PM
To Andrew Rys
Subject FW ARV -Warriewood -Stage 2 - Land Dedication Documents

This looks OK

Steve Watson
Managing Director
Steve Watson & Partners
Level 5, 432 Kent St,
Sydney 2000
ph 9283 6555
fax 9283 8500
mob 0403 066 592

From Michael Viskovich [mailto:Michael.Viskovich@arv.org.au]
Sent Friday, 18 December 2009 12 39 PM
To Steve Watson, Andrew Rys
Subject FW ARV -Warriewood -Stage 2 - Land Dedication Documents

Steve / Andrew,

Please find attached email from Lindsay Dyce

Based on this advice please issue the Occupation Certificate for Warriewood Stage 2 today

Regards

 ANGLICAN RETIREMENT VILLAGES <small>Diocese of Sydney</small>	<u>Michael Viskovich</u> Project Manager P 02 9421 5316 F 02 9421 2217 M 0449 904 902 michael.viskovich@arv.org.au	<u>Anglican Retirement Villages</u> PO Box 284, Castle Hill NSW 1765 Level 2, Century Corporate Centre 62 Norwest Boulevard Baulkham Hills, NSW, 2153	 <small>share. celebrate. life.</small>
--	---	---	---

From lindsay_dyce@pittwater.nsw.gov.au [mailto:lindsay_dyce@pittwater.nsw.gov.au]
Sent Friday, 18 December 2009 12 15 PM
To Michael Viskovich
Cc Caty_Pilley@pittwater.nsw.gov.au
Subject Re ARV -Warriewood -Stage 2 - Land Dedication Documents

On the Basis that the Plan is Lodged with the LTO within 2 working Days and not uplifted prior to Registration CI has no objection to the issue of an occupation Certificate as proposed

Further the arrangements as proposed by Steve Watson in regard to the STP capping are also accepted as appropriate

I cannot Email Steve Watson with these details due to a server problem (we think at his end) Please advise Steve Watson directly of the Above

Thankyou

Lindsay Dyce

Admin instruction (Caty to file)

From Michael Viskovich <Michael Viskovich@arv.org.au>
To lindsay_dyce@pittwater.nsw.gov.au <lindsay_dyce@pittwater.nsw.gov.au>
Cc Steve Watson <SWatson@swpartners.com.au> Andrew Rys <arys@swpartners.com.au>
Date 18/12/2009 09:45 AM
Subject ARV Warriewood Stage 2 Land Dedication Documents

Lindsay,



Further to our discussions on Wednesday 16th December 2009 please find attached a letter in relation to land dedication documents requesting that you allow the PCA to issue Occupation Certificate for Stage 2 today based on Council having the land dedication documents

As discussed I require the Occupation issued today in order to finalise the arrangements with the Department of Health and Ageing and for Commonwealth Certification inspection date to be confirmed otherwise the opening date of the facility will be extended beyond the intended opening date of 1st February 2010

Once again I appreciate your assistance on this matter

I look forward to your response

Regards

 <p>ANGLICAN RETIREMENT VILLAGES <small>Diocese of Sydney</small></p>	<p><u>Michael Viskovich</u> <u>Project Manager</u> P 02 9421 5316 F 02 9421 2217 M 0449 904 902 <u>michael.viskovich@arv.org.au</u></p>	<p><u>Anglican Retirement Villages</u> PO Box 284, Castle Hill NSW 1765 Level 2, Century Corporate Centre 62 Norwest Boulevard Baulkham Hills, NSW, 2153</p>	 <p>50 YEARS <small>share. celebrate. life.</small></p>
--	---	--	---

This e-mail has been scanned for viruses by MCI's Internet Managed Scanning Services - powered by MessageLabs For further information visit <http://www.mci.com>[attachment "0912017 Letter to Council on Land Dedication pdf" deleted by Lindsay Dyce/Pittwater Council]

mailgate pittwater.nsw.gov.au made the following annotations

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL
Please be advised that Pittwater Council will close to the public at 12 noon on Thursday 24 December 2009

and will re-open at 8 00am on Tuesday 29 December 2009 For all urgent matters during this time please phone Council's after hours service on 9970 1111

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Pittwater Council

www.pittwater.nsw.gov.au

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PROJECT CERTIFICATION

Project Name	Warnewood – Creek Works
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	Narrabeen creek along plot frontage

In regards to DA No N0102/05 for the Warnewood RACF – Creek Works (ARV) project
Specifically **Part 2 Section E Clauses 21(iii) and (iv)**

The following documents and payments are to be submitted to Council in a single package to ensure the efficient release of the Occupation Certificate

(iii) *The private certifier's Compliance Certificate* Each component of the work as outlined above is to be certified as being carried out in accordance with the relevant plans and documentation by suitably qualified professional persons as outlined in this development consent In particular, the construction of the Water Management System is to be supervised and certified by person(s) with appropriate experience and expertise in Environmental Science, Hydrology and Hydraulics, and must be NPER registered members of the Institution of Engineers (Australia)

(iv) *Work-as-executed plans for all structures or facilities which have been dedicated to Council or which are located with the drainage easements or which require ongoing maintenance by Council"*

I hereby certify that the works (as provided in the work-as-executed survey and witnessed during inspections) have been constructed in accordance with the above Development Consent condition


Name Alan Liddle

Company GHD Pty Ltd

Address Level 15, 133 Castlereagh Street, Sydney, NSW 2000

Phone No (02) 9239 7100

Fax No (02) 9239 7199


Signature

25/11/09
Date

Attachments WAE Drawings

21-13577 C1001 Cover Sheet Locality and Drg List	21 13577 C1022 Cross Sections – Sheet 3 of 4
21-13577 C1002 Creek Plan & Longitudinal Section	21 13577 C1023 Cross Sections – Sheet 4 of 4
21-13577 C1003 Existing Site Plan	21 13577 C1030 Typical Creek Sections Sheet 1 of 3
21 13577 C1004 General Notes	21 13577 C1031 Typical Creek Sections Sheet 2 of 3
21 13577 C1020 Cross Sections – Sheet 1 of 4	21-13577 C1032 Typical Creek Sections Sheet 3 of 3
21-13577 C1021 Cross Sections – Sheet 2 of 4	21 13577 C1041 Sediment and Erosion control plan
21-13577 C1021 Cross Sections – Sheet 2 of 4	21 13577 C1042 Sediment and Erosion – Details
	21 13577 C1043 Sediment and Erosion Details

Ross McWhirter, Project Leader - Warriewood Infrastructure
8am to 5pm Mon - Fri
Phone 9970 1207 Mobile 0419 629 007

3 December 2009

Anglican Retirement Villages
PO Box 284
CASTLE HILL NSW 1765

Attention - Michael Viscovich

Dear Sir

Re 6-14 MacPherson Street, Warriewood - Consent No N0102/05 (Stage 2A)

Council provides advice with regard to the Interim Occupation Certificate for Stage 2A of the Seniors Living development at the abovementioned property

The following security deposits have been lodged with Council -

- Bank guarantee for road maintenance (Brands Lane and MacPherson Street) in the amount of \$17 500 (in accordance with condition E21(v) of Consent No N0102/05)
- Bank guarantee for restoration of pavement resulting from Telstra's relocation works in the amount of \$100 000

Conditions E5 E6 and E27 of Consent No N0102/05 have been satisfied as all restorations relating to Stage 2A have been completed satisfactorily or securities lodged with Council to ensure completion

The following information is required to be submitted to Council prior to the release of Stage 2A Occupation Certificate -

- Evidence of the creation of easements (condition E17 of Consent No N0102/05)
- Evidence of the dedication of land as Public Road (condition E19 of Consent No N0102/05)
- Work as executed plans (in electronic form) for all structures or facilities which will be dedicated to Council or which are located within drainage easements or which require ongoing maintenance by Council (condition E21 (iv) and E25 of Consent No N0102/05) The plans are to include the reconstruction of Narrabeen Creek
- Certification of the water management works (condition E28 of Consent No N0102/05)
- Submission to Council of the updated Water Management Report (condition E30 of Consent No N0102/05)

This advice relates solely to the Stage 2A Interim Occupation Certificate

Yours faithfully



Ross McWhirter
PROJECT LEADER - WARRIEWOOD INFRASTRUCTURE



PITTWATER COUNCIL

Telephone (02) 9970 1111
Facsimile (02) 9970 7150

Facsimile

To Steve Watson
Fax 9283 8500
From Ross McWhirter
CC

Company Steve Watson & Partners
Date 3 December 2009
Re 6-14 MacPherson Street, Warriewood
Pages 2

☐ Urgent

☒ For Review

☐ Please Comment

☐ Please Reply

Message Interim Occupation Certificate for Stage 2A

Steve

Attached is a copy of Council's letter dated 3 December 2009 concerning the above matter

Please contact the below mentioned Council officer if you have any queries concerning this matter

Regards

Ross McWhirter
PROJECT LEADER WARRIEWOOD INFRASTRUCTURE

Attachment

CONFIDENTIALITY NOTICE TO RECIPIENTS EXTERNAL TO PITTWATER COUNCIL

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CIVIL WORKS

Project Name	Warnewood – Creek Works
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work

In regards to DA No N0102/05 for the Warnewood Creek Works (ARV) project

Specifically Part 2 Section E Clause 22

Certification is to be provided to Council, by an experienced civil engineer who is NPER accredited by the Institution of Engineers Australia, that all roads, drainage and other civil engineering works relating to ~~MacPherson Street, Brands Lane~~ and the development site have been carried out and completed in accordance with the engineering plans an specifications required under conditions C21, C22 and C23 of this consent "

I hereby certify that the works (as provided in the work as executed survey and witnessed during inspections) have been constructed in accordance with the above Development Consent condition

Name Alan Liddle

Company GHD Pty Ltd

Address Level 15, 133 Castlereagh Street, Sydney, NSW 2000

Phone No (02) 9239 7100

Fax No (02) 9239 7199

Signature

25/11/09
Date

Attachments WAE Drawings

CIVIL WORKS

Project Name	RACF Warriewood – Stage 2
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work

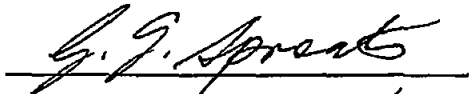
In regards to DA No N0102/05 for the Warriewood Stage 1 (ARV) project,

Specifically **Part 2 Section E Clause 22**

“Certification is to be provided to Council, by an experienced civil engineer who is NPER accredited by the Institution of Engineers Australia, that all roads, drainage and other civil engineering works relating to MacPherson Street, Brands Lane and the development site have been carried out and completed in accordance with the engineering plans and specifications required under conditions C21, C22 and C23 of this consent ”

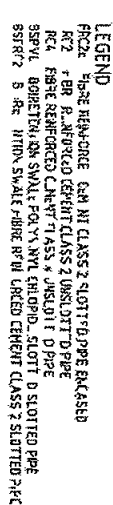
I hereby certify that the works (as provided in the work as executed survey and witnessed during inspections) have been constructed in accordance with the above Development Consent condition

Name Grahame Sproats
Company GHD Pty Ltd.
Address Level 15, 133 Castlereagh Street, Sydney, NSW 2000
Phone No (02) 9239 7100 Fax No (02) 9239 7199

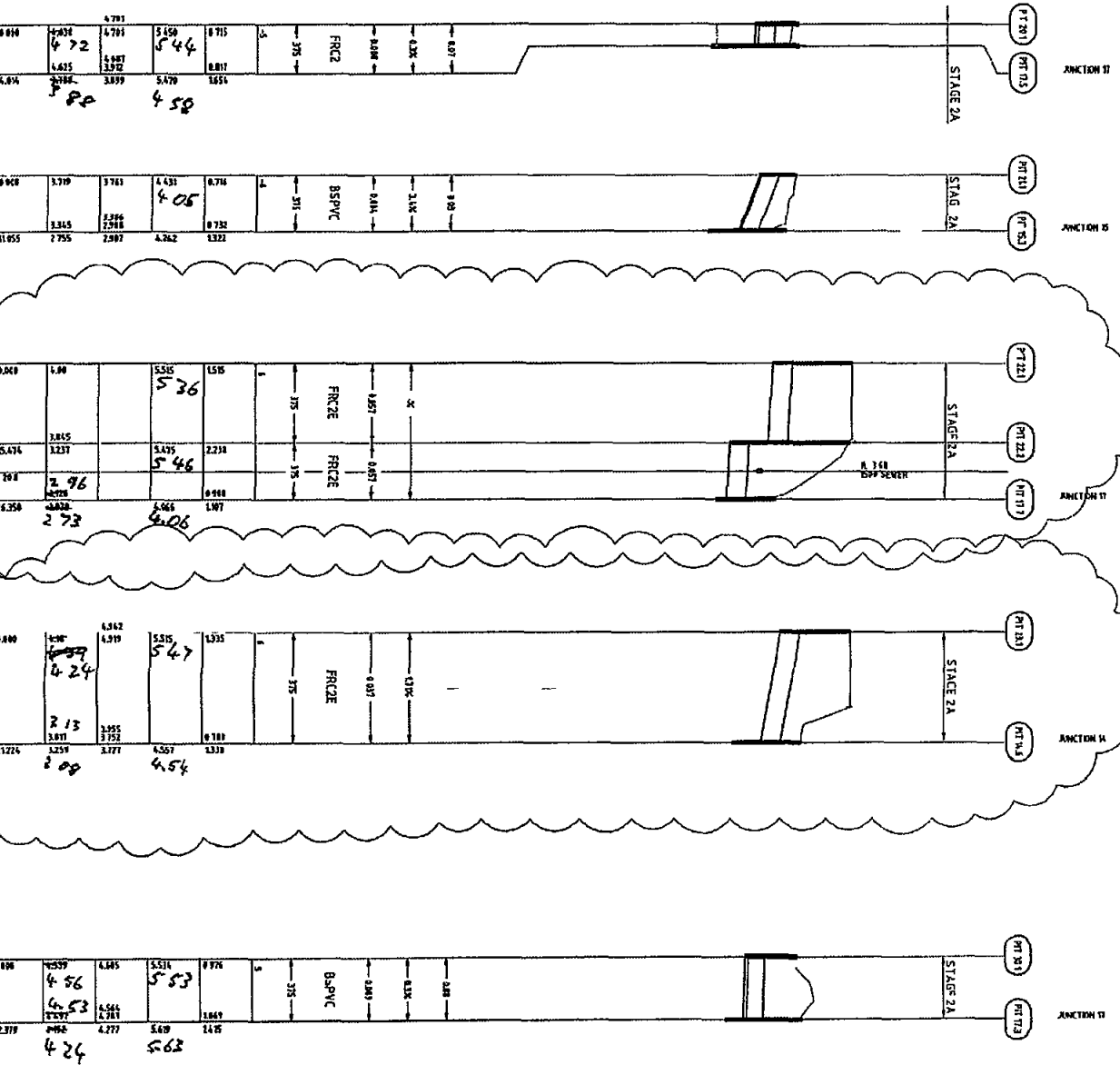
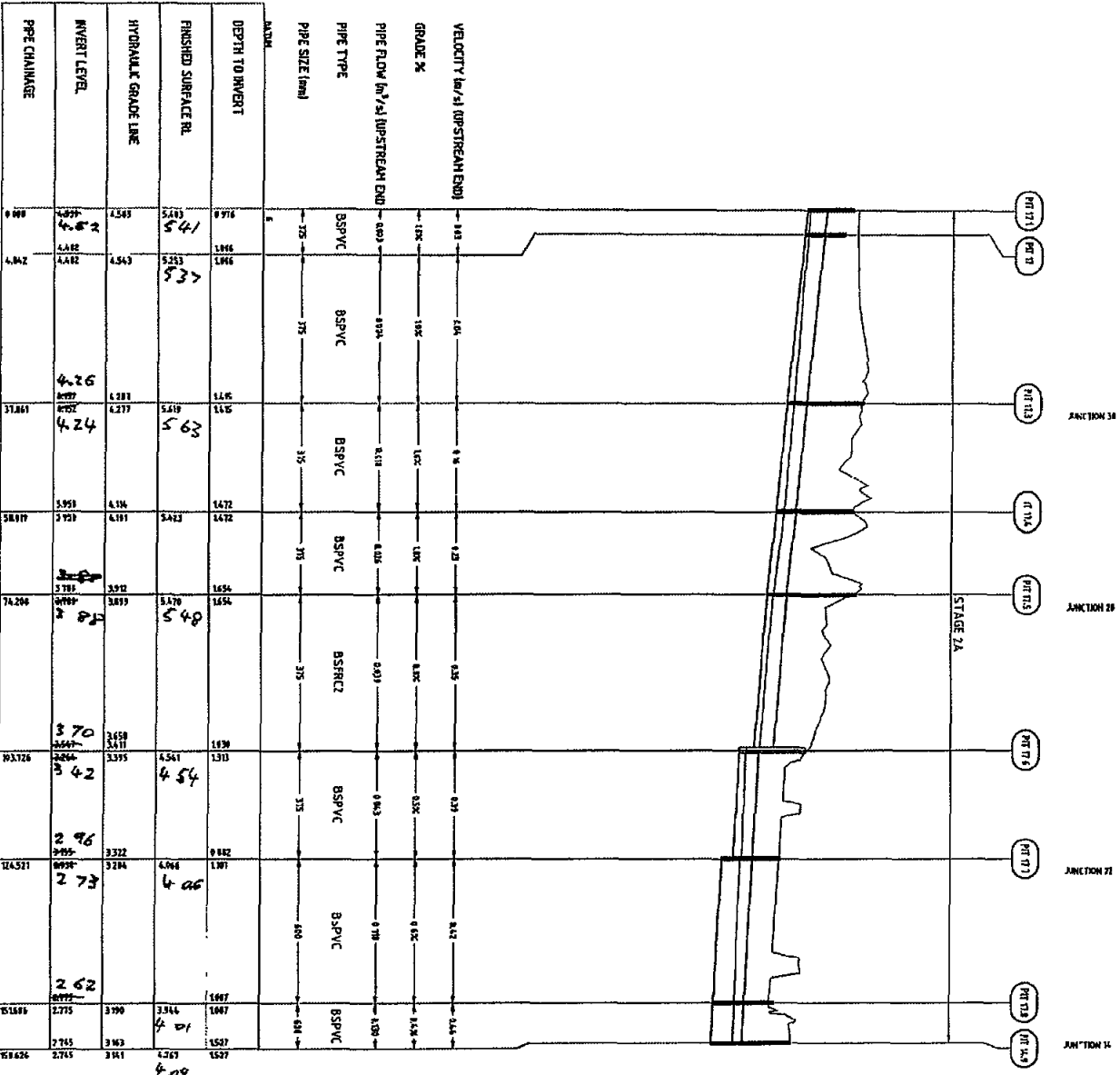

Signature M. I. E. Aust Date 13/10/09
No 226966

Attachments WAE Drawings

- 21-13577-C119 Stormwater Longsection Stage 2a Sheet 1
- 21-13577-C120 Stormwater Longsection Stage 2a Sheet 2
- 21-13577-C250 Works as Executed Versus Design Levels



Work As Executed
Signed: *SS Sprunt*
Date: 13.10.09



LEGEND

RFC: FIBRE REINFORCED CEMENT CLASS 4 UN-SLOTTED PIPE

PVC: POLYVINYL CHLORIDE SLOTTED PIPE

RFC: FIBRE REINFORCED CEMENT CLASS 4 UN-SLOTTED PIPE

3. LEVEL CHANGES WATER TANK & TOWERS

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ANGLO-AMERICAN RETIREMENT VILLAGES

CIVIL WORKS

STORMWATER LONG SECTION - STAGE 2a SHEET 2

DRAWING NO. 21-13577-C120

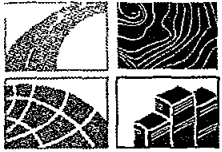
REV 3

Work As Executed

Signed: *[Signature]*

Date: 13/10/09

CONSTRUCTION



LAWRENCEgroup

Surveyors & Development Consultants

12, 45-51 Huntley Street
Alexandria NSW 2015
PO Box 6416
Alexandria NSW 2015

Regional Areas
T 1300 765 315
F 1300 765 316

T 02 9557 2299
F 02 9557 2699
E info@lawrencegroup.com.au
W www.lawrencegroup.com.au

28th September 2009

Ref 081557

St Hilliers
88 Cumberland Street
The Rocks NSW 2000

Dear Sir,

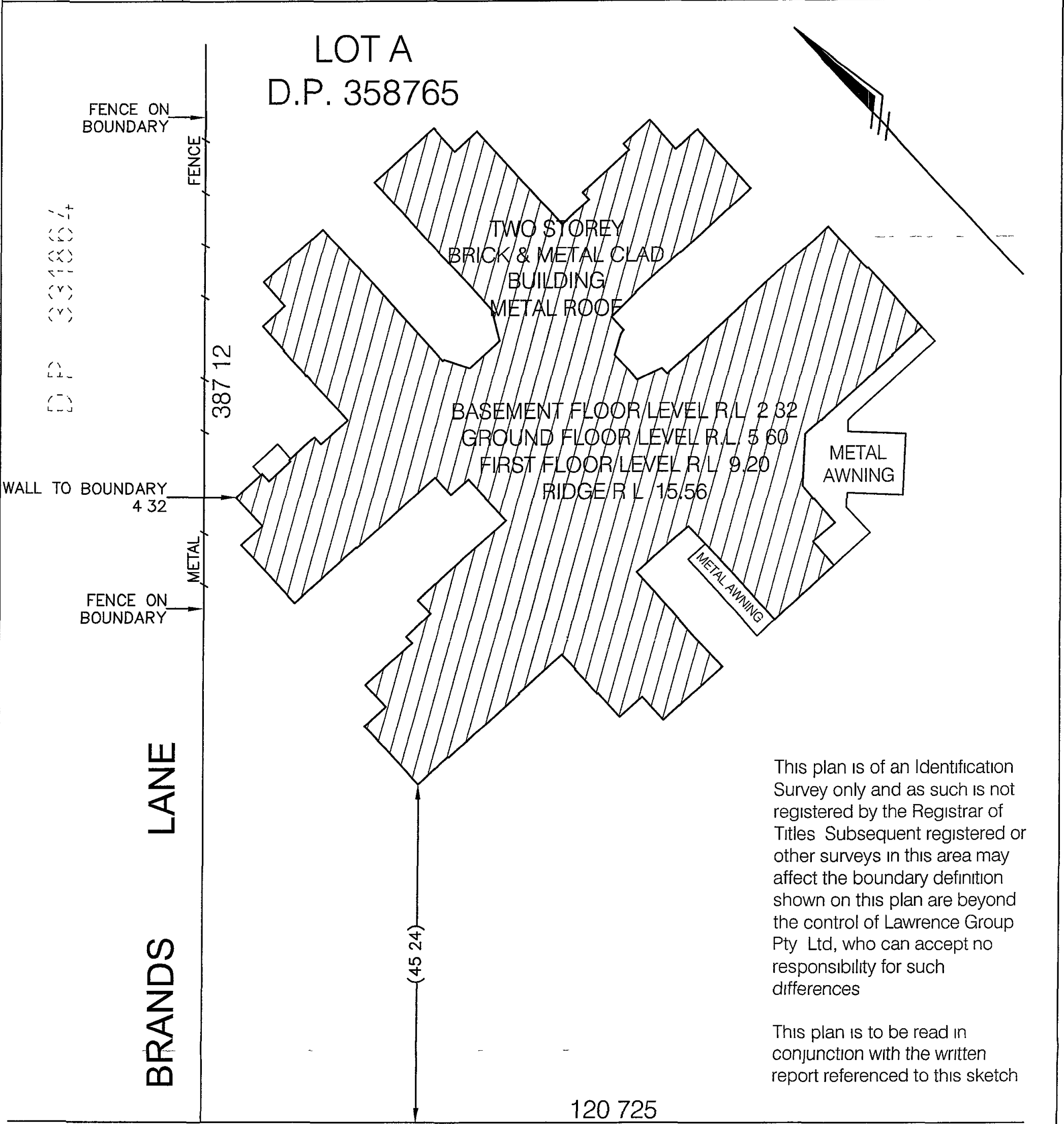
Re Anglicare – Stage 2, Macpherson Street Warriewood

Acting in accordance with your instructions, we have surveyed for identification purposes only, the land in Certificate of Title Folio Identifier A/358765 being Lot B in Deposited Plan 358765 situated with a frontage to Macpherson Street, Warriewood in the Local Government Area of Pittwater, Parish of Narrabeen and County of Cumberland. This letter relates to this transaction only and it is my opinion that -

- 1 The subject land is shown by red edging on the accompanying sketch
- 2 Standing wholly upon the subject land is a two storey brick and metal building roofed with metal and basement parking
- 3 The location of the fencing in relation to the boundaries is as indicated upon the accompanying sketch. Other than as shown or stated, there are no other apparent encroachments by or upon the subject land
- 4 During the course of the survey no investigation has been undertaken to determine the existence of any possible subterranean encroachments
- 5 The land in this report has been surveyed for identification purposes only. Should any additions or further improvements be erected on the subject property after the date of this report then the boundaries of the land should be marked

SHANE LAWRENCE
Surveyor Registered under the Surveying Act, 2002

CLIENT ST HILLIERS	TITLE INFORMATION	Lot	A	PROJECT WARRIEWOOD ANGLICARE (STAGE 2)
		Plan No	358765	
		Title / Folio	A/358765	
		L G A	PITTWATER	DRAWING TITLE IDENTIFICATION
		Parish	NARRABEEN	
		County	CUMBERLAND	




This plan is of an Identification Survey only and as such is not registered by the Registrar of Titles. Subsequent registered or other surveys in this area may affect the boundary definition shown on this plan are beyond the control of Lawrence Group Pty Ltd, who can accept no responsibility for such differences.

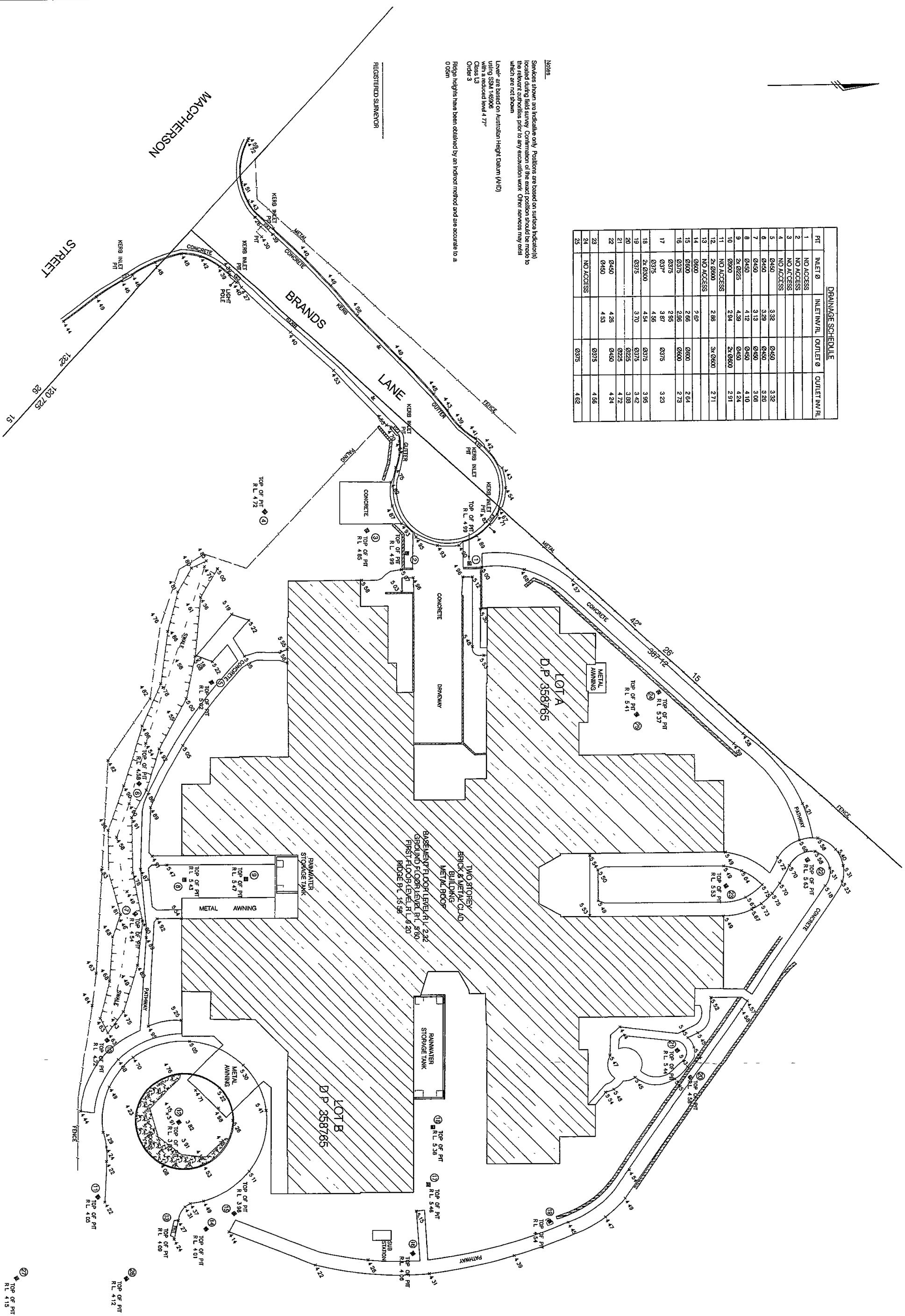
This plan is to be read in conjunction with the written report referenced to this sketch.

MACPHERSON

STREET

S. Lawrence
REGISTERED SURVEYOR

 LAWRENCE group Surveyors & Development Consultants Head Office 12-551 Hurlley Street T 1300 765 315 Alexandria NSW 2015 F 1300 765 316 PO Box 6416 E info@lawrencengroup.com.au Alexandria NSW 2015 W www.lawrencengroup.com.au Sydney Wollongong Nowra Gosford	<small>THIS DOCUMENT IN BOTH ELECTRONIC AND HARD COPY IS CONFIDENTIAL AND REMAINS THE PROPERTY OF LAWRENCE GROUP PTY LTD. IT MUST NOT BE REPRODUCED BY ANY PERSON OR USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN APPROVAL OF LAWRENCE GROUP PTY LTD.</small> COPYRIGHT © <small>COMPLETION OF QUALITY ASSURANCE IS EVIDENCED BY THE SIGNATURE OF THE SURVEYOR AND THE DRAWING HAS BEEN VERIFIED AS "CONFIRMED" WITH THE QUALITY ASSURANCE IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE NATIONAL QUALITY ASSURANCE STANDARD FOR SURVEYING (AS/NZS 4180:2001).</small>	Surveyor	BJ	Date of Survey	11/09/09	Date of Plan	28/09/09
		Drawn	PL	Datum	AHD	Co-ords	
		Checked by	SL	Date	28/09/09	Scale	NTS
		Approved by	SL	Date	28/09/09	Cad ref	081557-IDTF-001A.dwg
		QUALITY ASSURANCE	(Original size A4)	JOB NUMBER	081557	DRAWING NUMBER / ISSUE	IDTF-001 / A



DRAINAGE SCHEDULE				
PT	INLET Ø	INLET IN/AL	OUTLET Ø	OUTLET IN/AL
1	NO ACCESS			
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3	NO ACCESS			
4	NO ACCESS			
5	Ø450	3.32	Ø450	3.32
6	Ø450	3.28	Ø450	3.28
7	Ø450	3.13	Ø450	3.08
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9	2x Ø225	4.38	Ø450	4.24
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12	2x Ø600	2.98	3x Ø600	2.71
13	NO ACCESS			
14	Ø600	2.92		
15	Ø600	2.68	Ø600	2.64
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17	Ø375	2.93		
18	Ø375	4.56	Ø375	3.23
19	2x Ø300	4.54	Ø375	3.95
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21			Ø225	3.48
22	Ø450	4.26	Ø225	4.72
23	Ø450	4.53	Ø450	4.24
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25			Ø375	4.62

Notes

Services shown are indicative only. Positions are based on surface indicator(s) located during field survey. Confirmation of the exact position should be made to the relevant authorities prior to any excavation work. Other services may exist which are not shown.

Levels are based on Australian Height Datum (AHD) using SSM 145906 with a reduced level of 77'

Class 13
Order 3

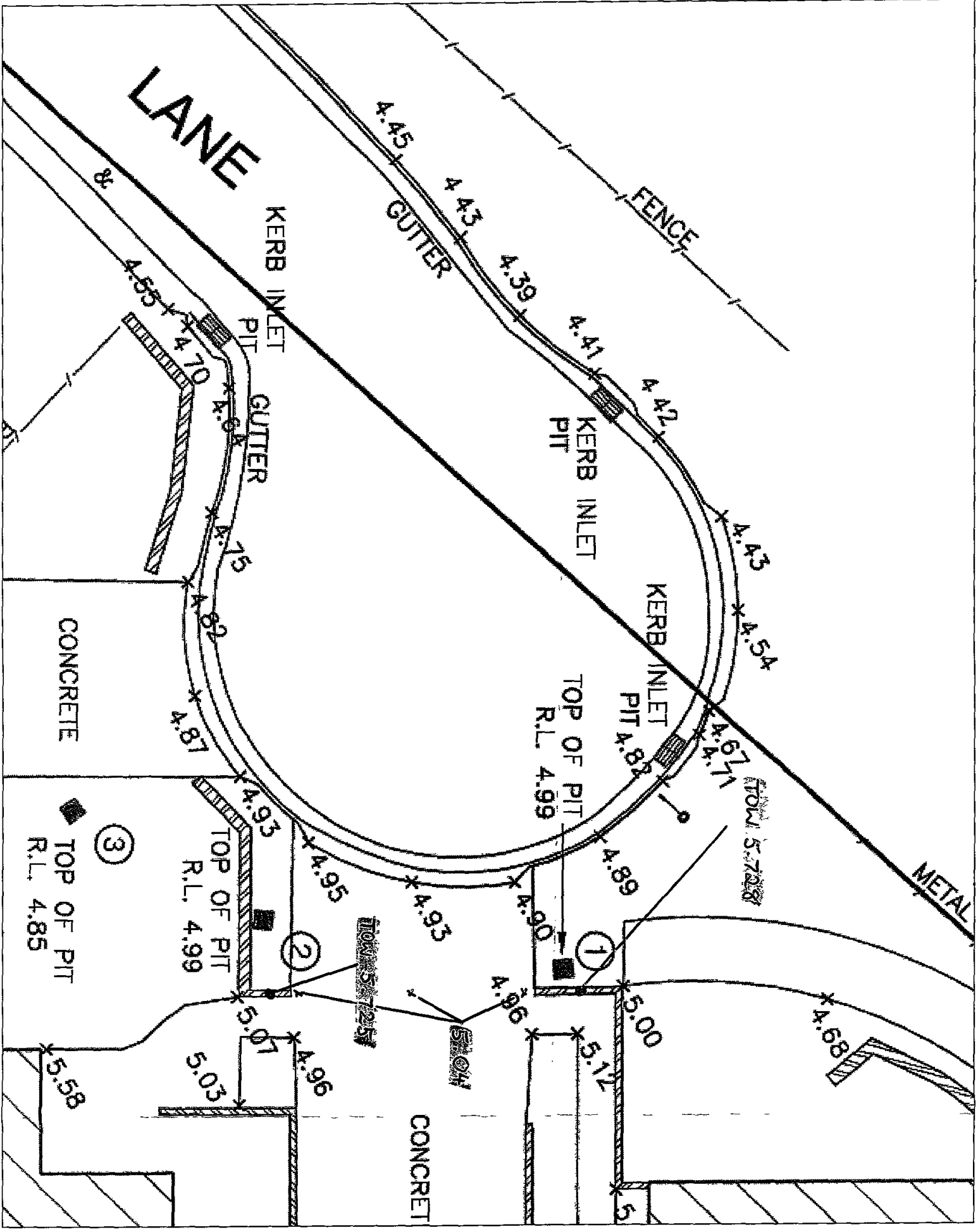
Order 3

Ridge heights have been obtained by an indirect method and are accurate to $\pm 0.05\text{m}$

REGISTERED SURVEYOR

[illegible]

EXTRACT - WORK AS EXECUTED DRAWING
DRAWING NO - WAE-001-A
LAWRENCE GROUP SURVEYORS





MAINTENANCE

Project Name	Warnewood – Creek Works
Address	6-14 Macpherson Street Warnewood NSW 2101
Part of Building to be certified	All new work

In regards to DA No N0102/05 for the Warnewood Creek Works (ARV) project

Specifically **Part 2 Section E Clause 24**

"A maintenance period is to apply to all civil engineering works to be dedicated to Council or which will require ongoing maintenance by council. The maintenance period will apply for six (6) months after the issue of the Occupation Certificate. In that period the applicant will be liable for any part of the works which fail to conform in the manner required by the relevant certifications or would reasonably be expected under the design conditions." Actual maintenance period for the creek works is more than 6 months

I hereby certify that the works (as provided in the work as executed survey and witnessed during inspections) have been constructed in accordance with the above Development Consent condition

Name Alan Liddle

Company GHD Pty Ltd

Address Level 15, 133 Castlereagh Street, Sydney, NSW 2000

Phone No (02) 9239 7100 Fax No (02) 9239 7199

Signature

25/11/09

Date

Attachments WAE Drawings

DRIVEWAYS

Project Name	RACF Warriewood – Stage 2
Address	6-14 Macpherson Street Warriewood NSW 2101
Part of Building to be certified	All new work


In regards to DA No N0102/05 for the Warriewood Stage 1 (ARV) project,

Specifically **Part 2 Section E Clause 26**

"A certificate by a qualified Engineer or Architect confirming that all driveways have been constructed in accordance with the approval plans is to be submitted to the Council and the accredited certifier (if any) prior to the issue of Occupation certificate "

I hereby certify that the works (as provided in the work as executed survey and witnessed during inspections) have been constructed in accordance with the above Development Consent condition

Name Grahame Sproats
Company GHD Pty Ltd
Address Level 15, 133 Castlereagh Street, Sydney, NSW 2000
Phone No (02) 9239 7100 Fax No (02) 9239 7199


Signature M. I. E. Aust Date 13/10/09
No 226966

Attachments WAE Drawing
21-13577-C250 Works as Executed Versus Design Levels

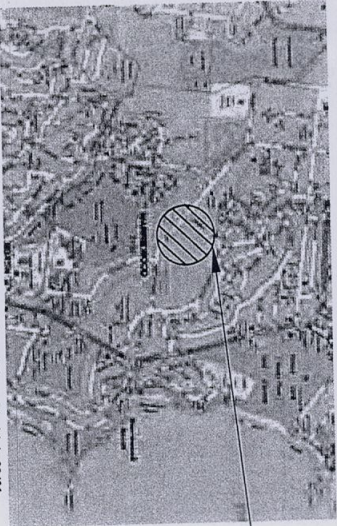


ANGLICAN RETIREMENT VILLAGE

WARRIEWOOD BROOK

CREEK WORKS

GHD PROJECT No. 21-13577-31

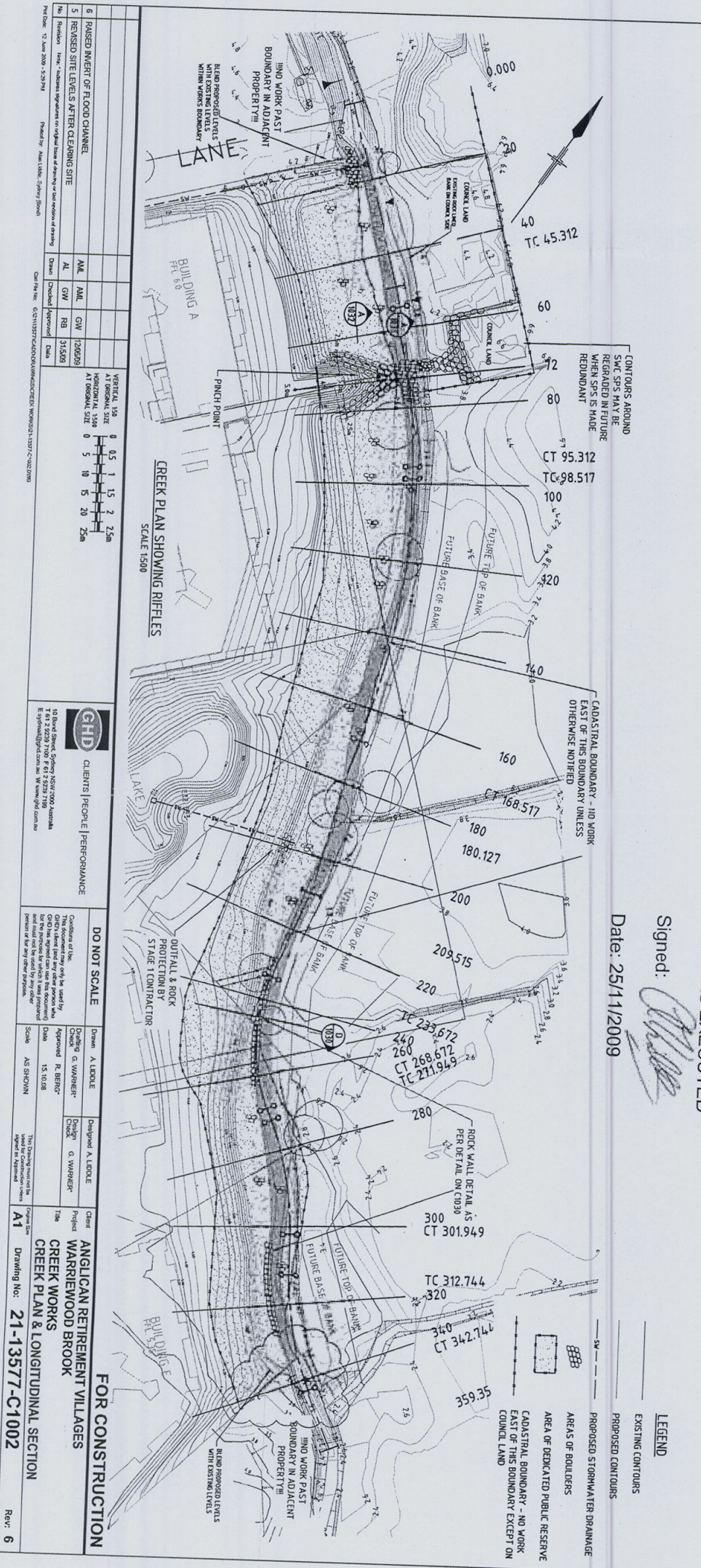
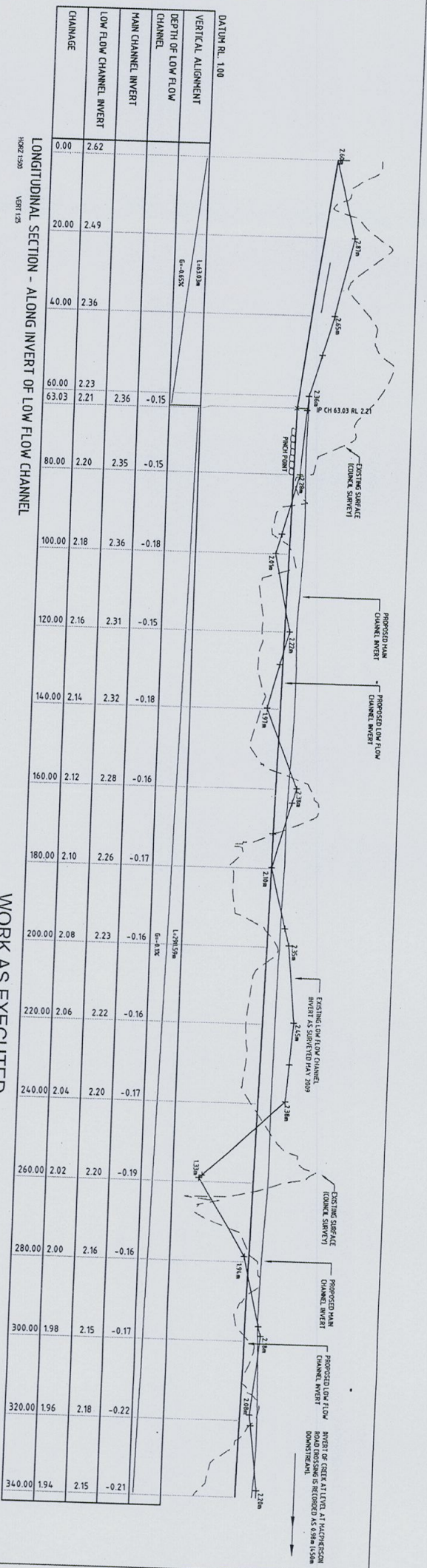


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LOCALITY PLAN

DRAWING LIST	
DRG. No.	DRAWING TITLE
21-13577-C1001	COVER SHEET, LOCALITY PLAN & DRAWING LIST
21-13577-C1002	CREEK PLAN & LONGITUDINAL SECTION
21-13577-C1003	EXISTING SITE PLAN
21-13577-C1004	GENERAL NOTES
21-13577-C1020	CREEK CROSS SECTIONS SHEET 1 OF 3
21-13577-C1021	CREEK CROSS SECTIONS SHEET 2 OF 3
21-13577-C1022	CREEK CROSS SECTIONS SHEET 3 OF 3
21-13577-C1030	TYPICAL CREEK CROSS SECTIONS 1 OF 2
21-13577-C1031	NOTES & TYPICAL CREEK CROSS SECTIONS 2 OF 2
21-13577-C1040	WARRIEWOOD BROOK EROSION ZONE
21-13577-C1041	SEDIMENT & EROSION PLAN
21-13577-C1042	SEDIMENT & EROSION DETAILS SHEET 1 OF 2
21-13577-C1043	SEDIMENT & EROSION DETAILS SHEET 2 OF 2

WORK AS EXECUTED
Signed:
Date: 25/11/2009

GHD CLIENTS PEOPLE PERFORMANCE			
15 Bower Street, Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199 E info@ghd.com.au W www.ghd.com.au			
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DO NOT SCALE	Drawn AL Checked GW Approved RS Date 16.10.08 Scale AS SHOWN	Designed AL Checked GW Approved RS Date 16.10.08 Scale AS SHOWN	Client Project ANGLICAN RETIREMENT VILLAGES WARRIEWOOD BROOK CREEK WORKS COVER SHEET, LOCALITY PLAN & DRAWING LIST Drawing No: 21-13577-C1001 Rev: 0



FOR CONSTRUCTION

ANGELICAN RETIREMENT VILLAGES

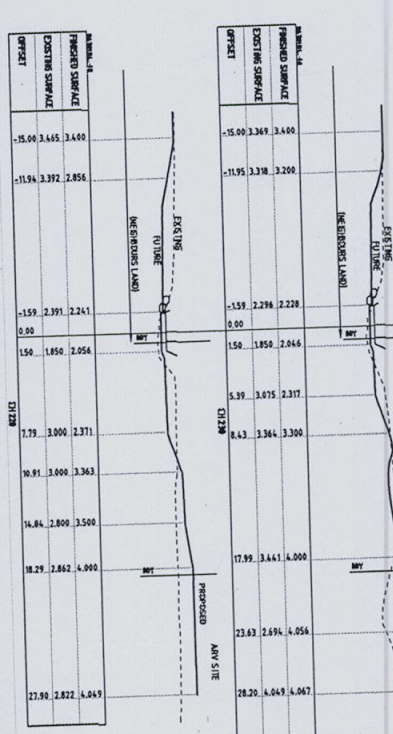
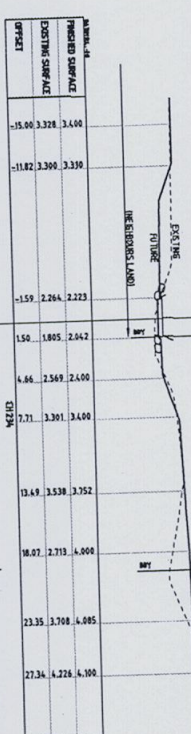
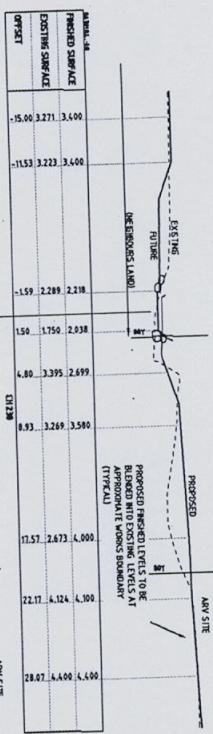
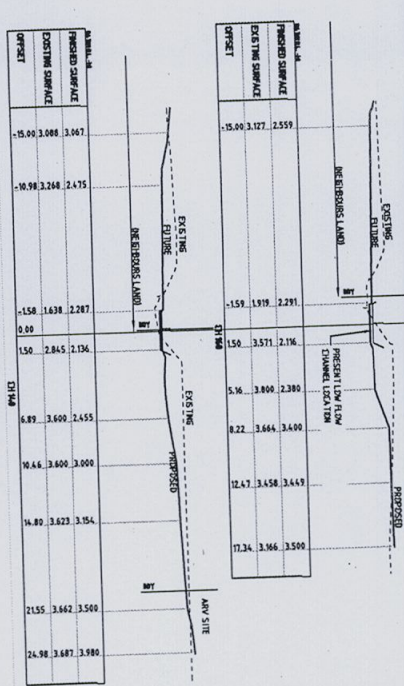
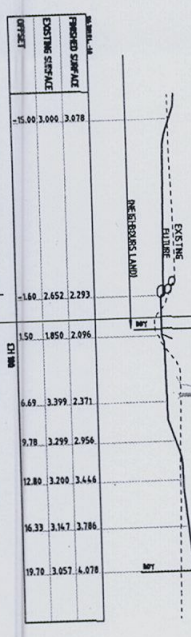
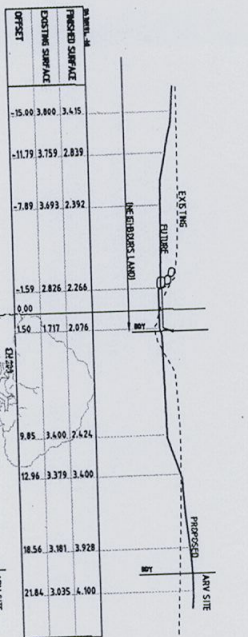
WARRENWOOD BROOK

CREEK WORKS

CREEK PLAN & LONGITUDINAL SECTION

Drawing No: 21-13577-C1002

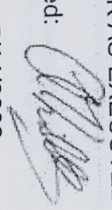
Rev: 6





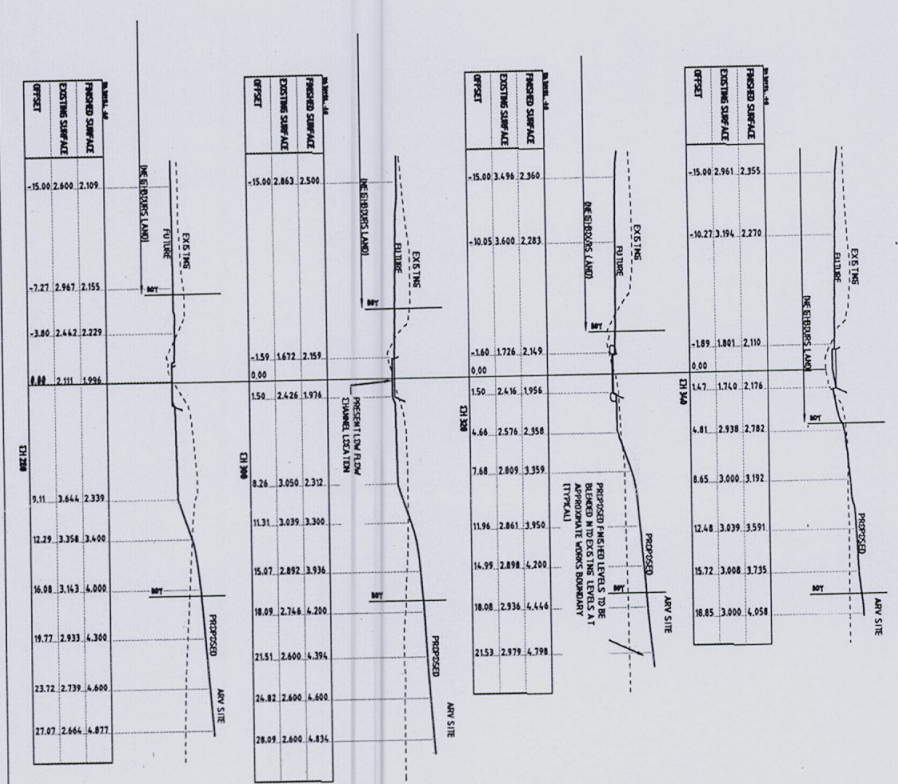
LEGEND:

- PROPOSED SURFACE (FOR FUTURE WORK)
- FUTURE SURFACE
- ORIGINAL, WHEN SURFACE
- EXISTING SURFACE LEVELS
- ROOT WORKS

CREEK CROSS SECTIONS
SCALE 1:200 (Notional)

WORK AS EXECUTED
Signed: 
Date: 25/11/2009

4	EXISTING LOW FLOW INVERT SHOWN, SECTIONS ADDED.	AML	GN	AML	2009		 CLIMATE PEOPLE PERFORMANCE 100 Broad Street, Suite 100, 2000 Lakeside T 613 2 2224 7700 F 613 2 823 7199 E info@ghd.com.au W www.ghd.com.au	DO NOT SCALE This document is the property of GHD. It is to be used for the project and site only. It is not to be reproduced, stored, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without prior written permission from GHD. This drawing has been prepared using AutoCAD 2009 and plotted using AutoCAD 2009. The drawing is not to be used for any other purpose without the prior written permission of GHD. The drawing is not to be used for any other purpose without the prior written permission of GHD.	Drawn: LSH	Designed: LSH	Client: ANGLICAN RETIREMENT VILLAGES Project: WARREWOOD BROOK CREEK CROSS SECTIONS SHEET 2 OF 4 Drawing No: 21-13577-C1021	Rev: 5
3	FLAT SPOTS REMOVED FROM CREEK BASE	AML	GN	AML	2009				Approved: R. BERTON	Checked: G. WARDEN		
2	INCORPORATED COUNCIL COMMENTS OF 10/2009	AML	GN	AML	2009				Drawn: LSH	Designed: LSH		
1	CREEK PROFILE RAISED & WIDENED	AML	GN	AML	2009				Drawn: LSH	Designed: LSH		
0	Revision: None, unless otherwise specified in the title block or in the notes.	AML	GN	AML	2009				Drawn: LSH	Designed: LSH		



NOTE:
1. FLOOD LEVELS ARE SHOWN FOR FUTURE AND PROPOSED WORKS MODEL AND ARE TO BE USED FOR LANDSCAPING PURPOSES ONLY.
2. 25 YEAR FLOOD LEVELS ARE INTERPOLATED AS HALF-WAY BETWEEN EXISTING AND PROPOSED LEVELS.
3. BETWEEN BASE OF CREEK & 5 YEAR LEVELS, FOR TYPICAL CREEK TREATMENTS REFER TO DRG'S C1030 AND C1031

CREEK CROSS SECTIONS
SCALE 1200 (HORIZ.)

WORK AS EXECUTED
Signed: [Signature]
Date: 25/11/2009

4	EXISTING LOW FLOW INVERT SHOWN SECTIONS ABOVE	AML	GW	AML	12629
3	FLAT SPOTS BELOW CREEK BASE	AML	GW	AML	12629
2	INCORPORATED COUNCIL COMMENTS OF 10/2/09	AML	GW	AML	12629
5	CREEK PROFILE RAISED & WIDENED	AML	GW	AML	12629
1	Revisions	10/2/09	10/2/09	10/2/09	10/2/09

0 2 4 6 8 10m

SCALE 1200 AT ORIGIN

CHD

CLIENTS | PEOPLE | PERFORMANCE

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E: info@chd.com.au W: www.chd.com.au

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Drawn: LSN

Checked: R. BRIDG

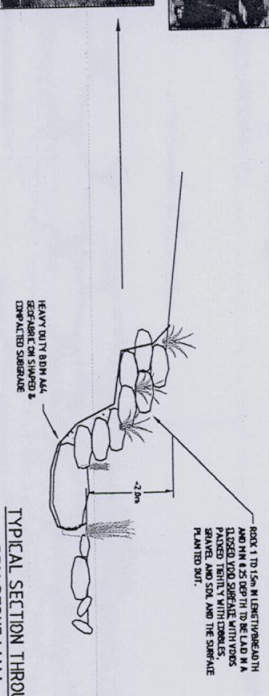
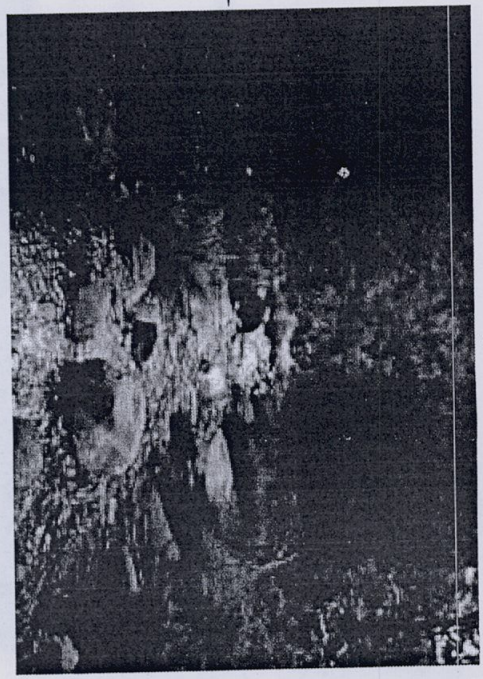
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
Project: ANGLICAN RETIREMENT VILLAGES

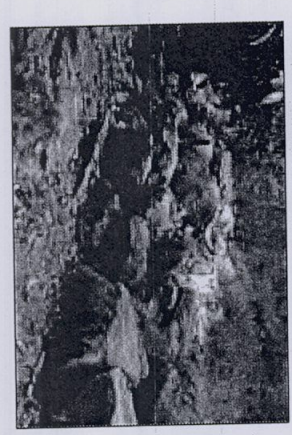
Sheet: CREEK CROSS SECTIONS SHEET 4 OF 4

Drawing No: 21-13577-C1023

Rev: 5



WORK AS EXECUTED
Signed: 
Date: 25/11/2009

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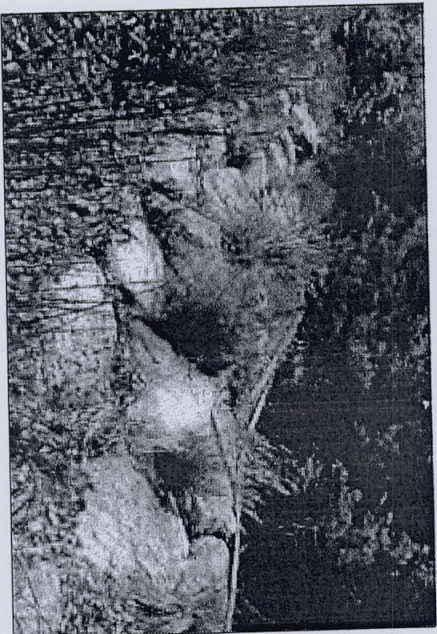
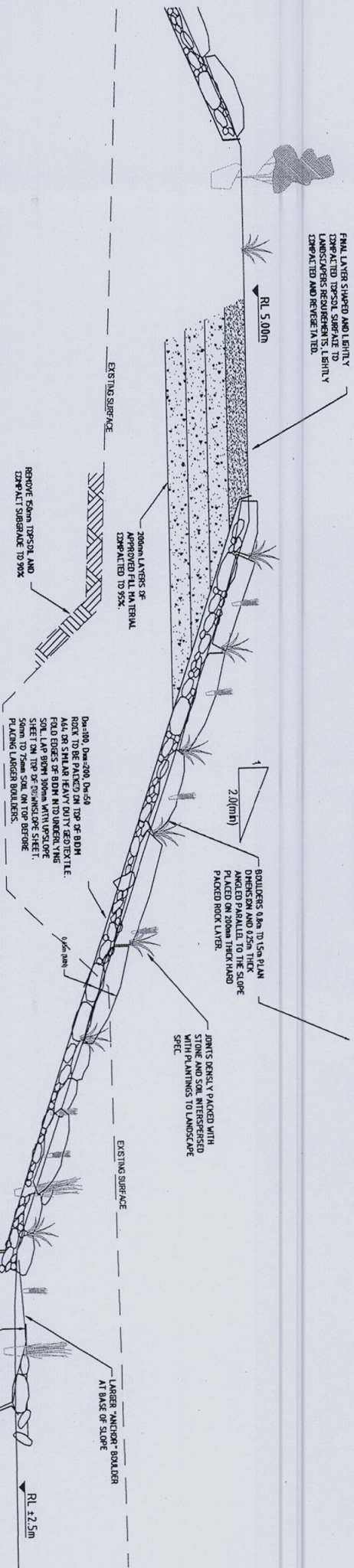


PHOTO EXAMPLES OF ROCK PROTECTION TO STEEPER BANKS AT PINCH POINT. THESE PHOTOS WERE TAKEN AT WARREWOOD ON THE OPPOSITE BANK TO THE PROPOSED PINCH POINT



SECTION THROUGH PINCH POINT AT CH72m WITH SLOPE <1:2.5

A SECTION
1002 SCALE 1:25

WORK AS EXECUTED
Signed: *[Signature]*

Date: 25/11/2009

ANGILCAN RETIREMENT VILLAGES WARREWOOD BROOK TYPICAL CREEK SECTIONS SHEET 3 OF 3	
Rev: 1	
Drawing No: 21-13577-C-1032	
Scale: 1:25	
Date: 06.10.09	
Drawn: A.L.	
Checked: A. LOCKER	
Approved: R. BIRD	
Title: TYPICAL CREEK SECTIONS SHEET 3 OF 3	
Project: WARREWOOD BROOK	
Client: ANGILCAN RETIREMENT VILLAGES	
Location: 100	

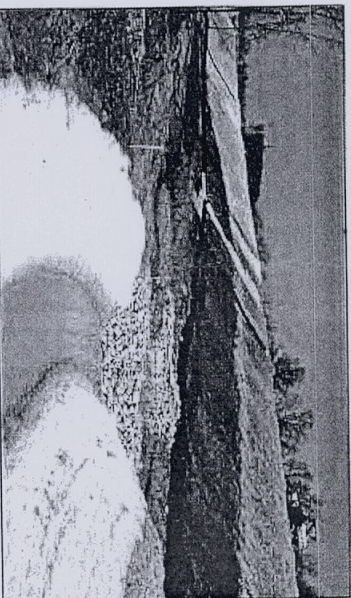
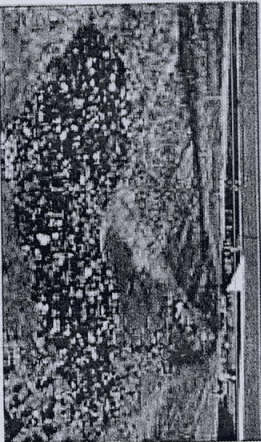


Figure 4.4 Pivoting at rehabilitation is clearly evident on this bottle

TYPICAL TEMPORARY SEDIMENTATION WORKS

NTS



Labels for process with/out context for multiprocess systems as follows

TYPICAL TEMPORARY SEDIMENTATION WORKS

NTS

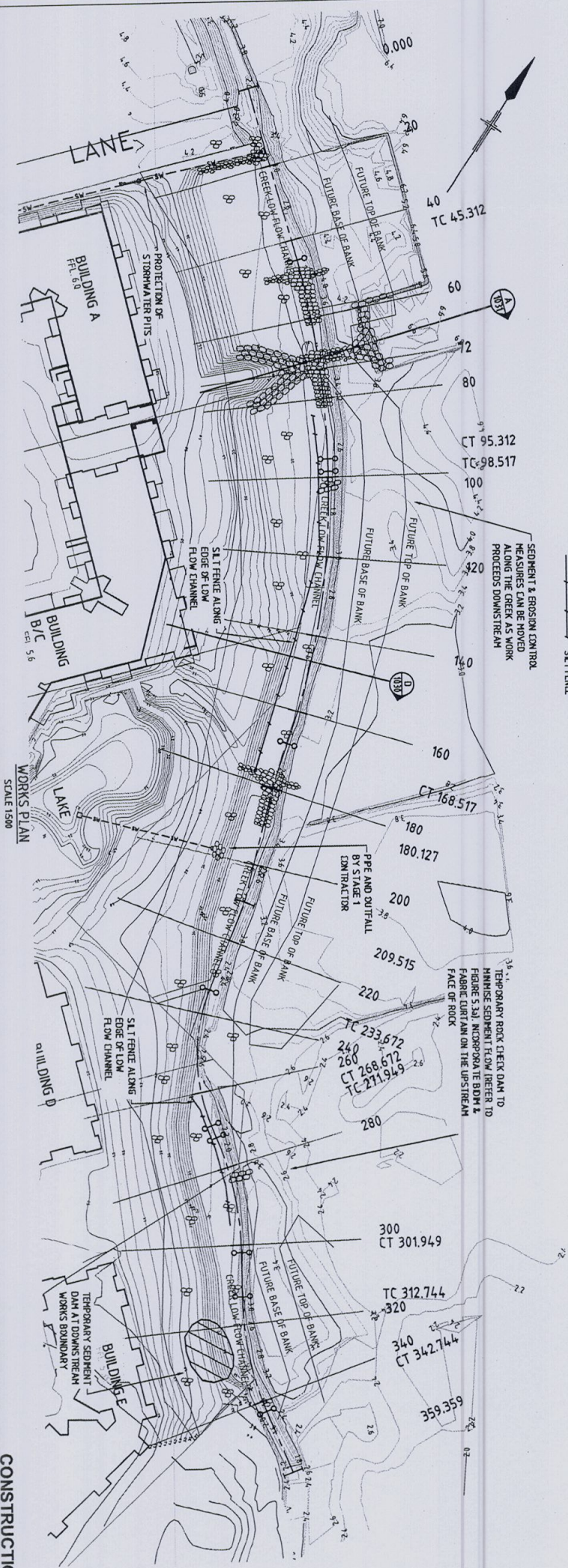
LEGEND

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WORK AS EXECUTED

Signed:

Date: 25/11/2009



CONSTRUCTION

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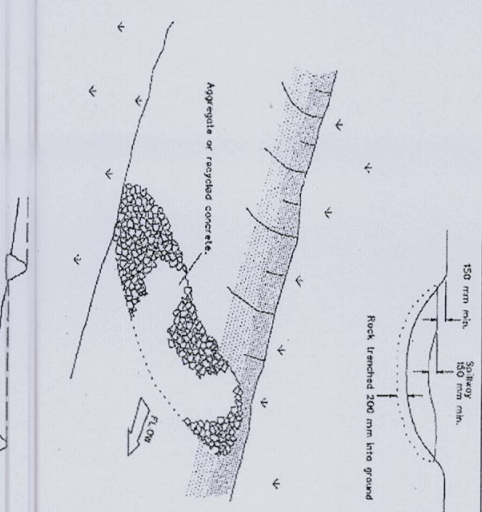
- NOTES**
1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE IN ACCORDANCE WITH THE DEPARTMENT OF HOUSING MANAGING URBAN STORMWATER EROSION CONTROL BLUE BOOK.
 2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN THE FOLLOWING SEQUENCE:
 1. INSTALL ALL SLOPE FENCING.
 2. CONSTRUCT DIVERSION DRAINS.
 3. INSTALL OTHER EROSION AND SEDIMENT CONTROLS.
 4. STRIP AND STOCKPILE TOPSOIL AND CARRY OUT BULK EARTHWORKS.
 5. TOPSOIL AND REHABILITATE BULK EARTHWORK AREAS IMMEDIATELY UPON COMPLETION.
 6. UNDERTAKE REPAIRING SITE WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS.
 7. REHABILITATE THE REMAINING SITE.
 8. REMOVE SOIL AND WATER MANAGEMENT WORKS ONCE UPSTREAM SURFACES ARE STABILISED TO THE SATISFACTION OF THE SUPERINTENDENT AND COUNCIL.
 2. THIS ORDER MAY BE CHANGED SUBJECT TO FIELD CONDITIONS BUT ANY SUCH CHANGE MUST ACHIEVE ALL ENVIRONMENTAL AND CONSTRUCTION GOALS.

EROSION CONTROL MEASURES

3. CONTROLS AFFECTED BY WORKS ARE TO BE RE-ESTABLISHED PRIOR TO THE COMPLETION OF EACH DAYS WORK.
4. THE CONTRACTOR IS TO STABILISE TOPSOIL STOCKPILES AND ALL DISTURBED AREAS AS SOON AS THEY REACH FINAL LEVELS.
5. WHERE SURFACE SLOPES ARE STEEPER THAN 8:1, FURTHER STABILISATION WILL NEED TO BE PROVIDED.
6. DUST CONTROL MEASURES SHALL BE IMPLEMENTED CONTINUOUSLY DURING CONSTRUCTION WORKS TO THE SATISFACTION OF THE SUPERINTENDENT AND COUNCIL.
7. TOPSOIL SHALL BE RESERVED AND STABILISED AS SOON AS POSSIBLE. DISTURBED AREAS SHALL BE LEFT WITH A SCARPED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST SETTING IN TOPSOIL.
8. THE CONTRACTOR SHALL TEMPORARILY REHABILITATE ANY DISTURBED AREAS WITHIN 20 DAYS, WHERE FINAL SHAPING HAS OCCURRED. THE CONTRACTOR SHALL PROVIDE FINAL REHABILITATION WITHIN 20 DAYS.

SEDIMENT CONTROL MEASURES

9. SEDIMENT TRAPS AND BASINS ARE TO BE MAINTAINED SUCH THAT:
 - (A) SEDIMENT IS REMOVED SUCH THAT NO LESS THAN 70% OF THE DESIGN CAPACITY REMAINS AT ANY ONE TIME.
 - (B) MATERIALS ARE REPLACED OR REPAIRED AS REQUIRED TO ENSURE SERVICEABILITY OF BOTH THE ELEMENT AND THE TRAP OR BASIN.
10. PERMANENT DRAINAGE STRUCTURES INCLUDING PRES. PITS ARE TO BE MAINTAINED OVER IN A CLEAN CONDITION AT THE COMPLETION OF THE CONTRACT MAINTENANCE PERIOD.
11. FOLLOWING COMPLETION AND RESTORATION OF SITE: REMOVE ALL MATERIALS AND FILL DIVERSION DRAINS, WATERWAYS, SEDIMENT TRAPS, AND SEDIMENT BASINS AND COMPACT IN ACCORDANCE WITH COUNCIL SPECIFICATION TO NATCO LEVELS OF THE PREVIOUSLY COMPLETED WORKS. PROVIDE 100mm TOPSOIL AND HYDROSEED.
12. ACCESS POINT TO ALLOW MACHINE ENTRY / EXIT ARE TO INCLUDE A ROUNDED DIVERSION BANK 0.3m HIGH WITH 8:1:1 BATTERS TO DIVERT RUNOFF TO SEDIMENT FENCES EITHER SIDE OF ENTRY.
13. TEMPORARY KERB NEELED SEDIMENT TRAPS TO BE PROVIDED TO ALL EXISTING KERB NEELED IN THIS VENUE.
14. THE CONTRACTOR SHALL MAINTAIN A LOG BOOK DETAILING:
 - RECORDS OF ALL MATERIALS.
 - RECORDS OF ALL EROSION AND SEDIMENT CONTROL MEASURES.
 - ANY OPEN EXPOSURE OF SOIL TO BE MAINTAINED TO A MINIMUM OF 100mm TOPSOIL.
 - VOLUMES OF ALL WATER DISCHARGED TO THE COUNCIL'S DRAINAGE SYSTEM.THE LOG BOOK SHALL BE MAINTAINED ON A WEEKLY BASIS AND BE MADE AVAILABLE TO ANY AUTHORIZED PERSON UPON REQUEST. THE ORIGINAL LOG BOOK SHALL BE ISSUED TO THE PROJECT MANAGER AT THE COMPLETION OF THE WORKS.
15. THE CONTRACTOR SHALL, AT ALL TIMES, RESTRICT CONSTRUCTION EQUIPMENT MOVEMENT TO THE ESSENTIAL CONSTRUCTION AREAS. THE CONTRACTOR SHALL NOT EXTEND LAND DISTURBANCE BEYOND 2m FROM THE EDGE OF ANY ESSENTIAL CONSTRUCTION ACTIVITY.



Construction Notes

1. Check dams can be built with various materials, including rock, aggregate and storm coils. The maintenance program should be designed to ensure the dam is kept in good condition with stone bales. In the case of stone, the material should be replaced each time to keep the dam.
2. Trench the check dam 200 mm into the ground across its whole width.
3. Normally, rock masonry height should not exceed 100 mm above the gully floor. The center should act as a spillway, being at least 100 mm lower than the outer edges.
4. Space the dams so the top of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM

SD 5-4

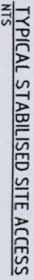
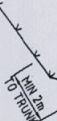
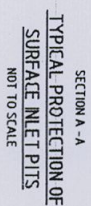
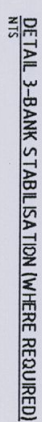
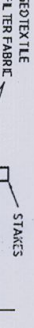
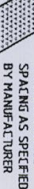
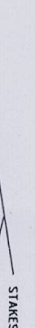
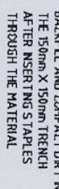
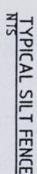


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
Signed:

Date: 25/11/2009

0		PART 2A PERMIT		No		Residence		State - Michigan		City - Grand Haven		County - Ottawa		Zip - 49431		Date - 10/20/2020		Time - 3:57 PM	
				AML		AML		AML		PER00069									



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Signed: 

Date: 25/11/2009

[illegible]



CLIENTS' PEOPLE PERFORMANCE

13 August 2009

Richard Abbott
Morgan Moore and Associates
Level 5, 140 Arthur Street
North Sydney
NSW 2060

Our ref 21/18604/152918
Your ref

Dear Richard

**ARV Warriewood
Stage 1 and Creek Works WAEX Assessment with respect to Flooding**

1 Requirement for this Letter

This letter reports on our assessment of Works as Executed (WAEX) at the Anglican Retirement Villages Warriewood Retirement Village in relation to flooding and the Water Management Report (WMR Version 4 December 2006 based on Development Footprint SK19 Rev G 21/12853/02/109212) for the following works

- ▶ Stage 1 works only (Buildings A B/C and associated roads) and
- ▶ Creek works, half creek only

2 Available Information

GHD have reviewed the following attached Works as Executed (WAEX) drawings received as CAD drawing files and PDF format

- ▶ Received 05/08/2009 from Morgan Moore and Associates McPherson Street Warriewood Works as Executed and Site Levels from Project Surveyors DWG 19248-20419 31 07 2009 and surveyed 03 08 2009
- ▶ Received 13/08/2009 from Morgan Moore and Associates Plan showing As Built Levels Warriewood Brook Creek works from Proust & Gardner, DWG 22646-CreekDetail-C, 12/08/09,

3 Background to the Water Management Report (WMR) with respect to Flooding

The WMR assessed the impact of the proposed development on flooding, on and off-site This flooding was assessed for the 100-year ARI event and the PMF by considering the proposed Development Footprint SK19 Rev G in its entirety Use was made of Councils flood model operated by their consultants Cardno Lawson and Treloar Numerous flood model iterations were undertaken adjusting amongst others

- ▶ The rehabilitated creek profile and associated pinch-point
- ▶ Internal roads and associated levels
- ▶ Levels and spacings between buildings and





► Site entrance/exit areas

In terms of flood planning levels the Warnewood Valley Urban Land Release Water Management Specification Revised Version, Pittwater Council, February 2001 (WMS) requires building floor levels to be at or above the PMF level for habitable buildings and underground car park entries. For non-habitable buildings, floor levels need to be above the 100-year ARI level plus freeboard. This has required the developed form to be raised significantly compared to existing conditions. The raising however needed to make allowance for the conveyance of the PMF through the site to ensure off-site impacts (in particular raised flood levels) are minimised.

4 A Comment on Staging

At the time of DA, construction was proposed in 4 stages. The first stage included buildings along Macpherson Street followed by the RACF and buildings along Narrabeen Creek on the eastern half of the site. The last stage would have comprised buildings along Narrabeen Creek and buildings on the western half of the site. While this presented the general staging approach, staging plans were still being developed at that time. The first stages were tested using flood modelling and found to result in minor increases in flood levels.

Since then the staging has changed significantly, with Stage 1 (Building A B/C and associated road work) complete and Stage 2 (the RACF) currently under construction. This proposed staging has not been tested using flood model simulations and the flood impacts of individual stages through to completion of the project are not known.

This letter is required to comment on only Stage 1 and creek works (half creek). However since these works have not been simulated in the context of the staged site development the impacts of the WAEX on flooding cannot be assessed. To this end, we are only able to comment on whether the WAEX drawings are generally in accordance with the WMR intent.

5 Assessment of the WAEX with respect to Flooding

In assessing the WAEX we make specific reference to following key areas of concern.

Stage 1 WAEX

- 1 The area between Building A (Stage 1) and the RACF (Stage 2) was critical to managing the conveyance of the PMF through the site as part of Development Footprint SK19 Rev G. Located within this corridor is the down ramp to the underground car park of Building A. In November 2007 Morgan Moore and Associates directed flood simulation of this down ramp and the potential blockage this ramp presented to the conveyance of the PMF through the site. The ramp was located centrally in the corridor between the buildings and ground levels were adjusted to 4.75m AHD on either side of the ramp to facilitate PMF flood conveyance.

On inspection of the WAEX it is noted that the walls associated with the access ramp leading to the Building A underground car park extending further around the bend towards Building A than was simulated in the November 2007 flood modelling. In addition the flow area around the car park ramp is at elevations above those advised by Cardno Lawson and Treloar. The effect of this is the potential



redirecting of flows through the narrow 2m wide pathway between the ramp and the RACF. This could have the potential of raising flood levels in the immediate area.

2. In the same area as noted above, access footpaths to Building A and the RACF have resulted in raised ground levels leading from Brands Lane to the corridor between the buildings, compared with what was simulated in the WMR. This would reduce the flood conveyance between the buildings.
3. Internal roads leading from Building A to the McPherson Street entrance are generally within approximately 100 mm to 200 mm of design levels and the levels simulated in the flood model. Better tolerances would be desirable and attention needs to be given to landscaping on either side of the roadways to ensure conveyance of the PMF through the site.
4. A rendered low brick wall has been constructed along the frontage with McPherson Street. This has the potential to detain and/or redirect flows on the site. However, Buildings K and J have not been constructed; the impact of this low wall on redirecting flood flows is unknown.
5. Building A floor levels were not provided, however balcony levels are noted as 5.94 m AHD. The WMR requires Building A floor levels to be 6.0 m AHD. Building B/C floor levels were not provided, however balcony levels are noted as 5.52 m AHD. The WMR required Building B/C floor levels to be 5.5 m AHD. The entrance ramp to the car park crest is noted as 5.44 m AHD. PMF levels provided in Appendix S of the WMR are approximately 5.45 m AHD in this area. However, it must be noted that the levels in this area will be sensitive to resolving the issues noted in Item 1 and 2 above, with potential ramifications on flood levels, and
6. The area between Building A and the creek, before the battering down to the creek invert, is approximately 300 mm lower than was simulated in the flood model. This area was lowered as a flood relief.

Creek WAEX

7. The creek works are generally in accordance with the design intent, with exception of Item 8 below. We understand that in some areas the creek cross-sections needed adjustment to correct for existing creek invert levels and creek centrelines. In doing so, the overall cross-section flow area was maintained by adjusting the flow width on the ARV creek side, and
8. The pinch point in the creek opposite Building A differs to the final iteration used in the flood modelling. The WAEX pinch point is wider than simulated and the overflow level is approximately 1 m below the intended crest level of 5.2 m AHD.

