



Construction Certificate

CERTIFICATE NUMBER: 5003017

Pittwater.

yours locally

Sydney North West
21/5 Inglewood Place
Baulkham Hills 2153
PO Box 7321 Baulkham Hills BC NSW 2153
DX 8461 Castle Hill
p 02 9836 5711 f 02 9836 5722

Issued under the Environmental Planning and Assessment Act 1979

SUBJECT LAND:

HNO 53
LOT 92
DP/SP/CP 30836
ARNOTT CRESCENT
WARRIEWOOD 2102

COPY

DEVELOPMENT CONSENT:

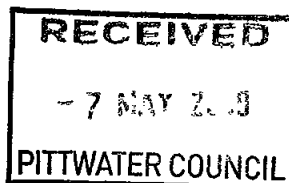
N0599/08

DATE OF CONSENT:

11 MARCH, 2009

DESCRIPTION OF WORK:

DWELLING (TWO STOREY)



LIMITATIONS &/OR EXCLUSIONS:

BUILDING CLASSIFICATION:

1A

The application for this Construction Certificate has been determined as **APPROVED** in accordance with the procedures outlined in Clause 142 of the Environmental Planning and Assessment Regulation 2000. In making this determination, I certify that the work if completed in accordance with the documentation accompanying the application for the Certificate (with such modifications verified by the certifying authority as may be shown on that documentation) will comply with the requirements of this Regulation as referred to in Section 81A(5) of the Environmental Planning and Assessment Act, 1979, as amended.

DOCUMENTATION ACCOMPANYING THE APPLICATION:

PLANS:

PLANS PREPARED BY A & N DESIGNS, DATED JULY 2008, REVISION E DATED 10/02/09, JOB # 0012199, SHEETS 1-9

SPECIFICATIONS:

GENERAL HOUSING SPECIFICATION PREPARED BY EDEN BRAE HOMES

OTHER DOCUMENTS:

APPLICATION FORM
OWNERS CONSENT
HOW CERTIFICATE
COUNCIL RECEIPTS
SYDNEY WATER APPROVAL
EXTERNAL COLOURS CHART
BASIX CERTIFICATE # 214443S, ISSUED 17/09/08
ABSA CERTIFICATE # 56853105, ISSUED 17/09/08
DEVELOPMENT CONTROL PLAN, DATED 03/11/08
ENGINEERS DETAILS PREPARED BY RAFALETOS ZANUTTINI, DATED 26/09/08, JOB # EB30549, SHEETS 1-9
STORMWATER LAYOUT AND DESIGN CERTIFICATION PREPARED BY IBRAHIM STORMWATER CONSULTANTS, REVISION A ISSUE 2 DATED 27/3/09, JOB # E1631-12199, SHEETS 1-2
GEOTECHNICAL ASSESSMENT PREPARED BY DAVIES GEOTECHNICAL CONSULTING ENGINEERS, DATED 21/10/08

FIRE SAFETY SCHEDULE ATTACHED:

☐ YES ☒ N/A

Andrew Dean
CPB0087

28 April, 2009

Date of Certificate



LOCAL

18/3/09

LETTER OF CONSENT

☒ Principal Certifying Authority

☒ Construction Certificate
☒ Complying Development Certificate
☒ Occupation Certificate

☐ Compliance Certificate

5

THE APPLICATION

DATE OF APPLICATION:

LAND TO BE DEVELOPED

Lot No. **92** Deposited Plan: **30836**
House No.: **53** Street Name **Arnott Crescent**
Suburb: **WARRIEWOOD** Post Code: **2102**
Area (m²): **597.0**

29954

THE DEVELOPMENT

Proposed Building Work: Residential ☒ Commercial ☐ Industrial ☐
Description of Development: **Dwelling**
Value of Work: **\$339,261.00**
Type of work: **Erection of a Building**

CONSENTS

Consent Authority: **Pittwater Shire Council**
Development Consent No.: Date of Issue:
Builder or Owner/Builder Name: **Eden Brae Homes**
Licence No.: **120300C**

THE APPLICANT

Surname: **Eden Brae Homes**
First Name:
Street: **Level 2 Nexus Building, 4 Columbia Court**
Suburb: **BAULKHAM HILLS NSW 2153**
Contact No's.: **8860 9224**

THE OWNER/S

	Owner 1	Owner 2	Owner 3	Owner 4
First Name:	Mr Shane	Mrs Rana		
Surname:	WILLIAMS	WILLIAMS		
Street:	53 Arnott Cres	53 Arnott Cres		
Address:	WARRIEWOOD	WARRIEWOOD		
Contact No.:	0405 494 994			



LOCAL

LETTER OF CONSENT

OWNERS CONSENT

I/we the owners of the subject property hereby give consent for the lodgement all relevant applications (i.e. for Construction Certificate/s, Complying Development Certificate/s, Occupation Certificate/s, Compliance Certificate/s) and associated documentation to Local Certification Services Unit Trust for consideration

I/we also declare that all documentation presented as part of an application for a Construction Certificate has remained unaltered from that issued with any Development Consent or that any changes have been documented and Local Certification Services Unit Trust have been advised accordingly

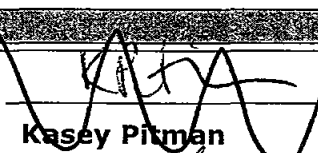
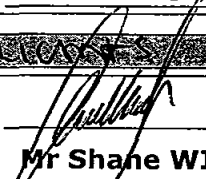
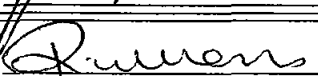
PRINCIPAL CERTIFYING AUTHORITY

With reference to this proposed development I/we the owners of the subject property hereby advise of our decision to appoint ☒ Andrew Dean ☐ Callan Blackwell ☐ Craig Hardy ☐ Daniel Powell ☐ Michael Shanahan ☐ Paul Gearin ☐ Trent McCurley ☐ _____ (please select by ticking the box) to fulfil the role of Principal Certifying Authority (PCA) as outlined in the Environmental Planning and Assessment Act, 1979 (as amended)

I/we understand that this engagement shall be subject to the Terms and Conditions outlined in this application and the associated Schedule and I/we further understand that he will carry out all mandatory inspections required by the Act during the course of construction along with any others that he deems to be necessary and referred to the abovementioned Agreement

I/we also advise that I/we are aware of the conditions attached to any Development Consent (i.e. Local Development Consent or Complying Development Consent) and are aware of our responsibilities in relation to those conditions

SIGNATURES

APPLICANT		
Signed:		
Name (Please Print):	Kasey Pitman	Date: 28/08/08
OWNER/S		
Signed:		
Name (Please Print):	Mr Shane WILLIAMS	Date: 29/08/08
Signed:		
Name (Please Print):	Mrs Rana WILLIAMS	Date: 29/08/08
Signed:		
Name (Please Print):		Date:
Signed:		
Name (Please Print):		Date:



LOCAL

AUSTRALIAN BUREAU OF STATISTICS

ALL NEW BUILDINGS

(Please complete the following)

How many storeys (incl underground floors) will the proposed building consist of ?, ☐1 ☒2 ☐___
What is the gross are of the new building ? 357.1m² m²
What is the gross area of the site on which the proposal will be constructed ? 597m² m²

RESIDENTIAL BUILDINGS ONLY

(Please complete the following for residential buildings)

How many dwellings will be constructed ? _____ ☐0 ☒1 ☐2
How many pre-existing dwellings are there on the site already ? _____ ☒0 ☐1 ☐2
How many dwellings will be demolished ? _____ ☒0 ☐1 ☐2
If the proposal includes a new dwelling/s is it be attached to another new building ? ☐Yes ☒No
If the proposal includes a new dwelling/s is it be attached to another new building ? ☐Yes ☒No
Does the site contain a Dual Occupancy ?
(A dual occupancy is defined as two dwellings on the one site) _____ ☐Yes ☒No

MATERIALS

Please indicate the materials to be used in the construction of the new building/s

Walls

Code

Floor

Code

Brick (Double) _____ ☐ 11
Brick (Veneer) _____ ☒ 12
Concrete or Stone _____ ☐ 20
Fibre Cement _____ ☐ 30
Timber _____ ☐ 40
Curtain (Glass) _____ ☐ 50
Steel _____ ☐ 60
Aluminium _____ ☐ 70
Other _____ ☐ 80
Not Specified _____ ☐ 90

Concrete or Slate _____ ☒ 20
Timber _____ ☐ 40
Other _____ ☐ 80
Not Specified _____ ☐ 90

Roof

Code

Frame

Code

Tiles _____ ☒ 10
Concrete or Slate _____ ☐ 20
Fibre Cement _____ ☐ 30
Steel _____ ☐ 60
Aluminium _____ ☐ 70
Other _____ ☐ 80
Not Specified _____ ☐ 90

Timber _____ ☒ 40
Steel _____ ☐ 60
Aluminium _____ ☐ 70
Other _____ ☐ 80
Not Specified _____ ☐ 90

Local South Coast
48b Princes Highway
Fairly Meadow NSW 2519
P - 02 4284 4709
F - 02 4284 4208

Local Norwest
Suite 21, 5 Inglewood Place
Baulkham Hills NSW 2153
P - 02 9836 5711
F - 02 9836 5722

Local Central Coast
Suite 2/162 The Entrance Road
Erina NSW 2250
P - 02 4365 6051
F - 02 4365 4846

Local Macarthur
PO Box 3190
Narellan DC NSW 2567
P - 02 4648 5666
F - 02 4648 5755

E - info@localgroup.com.au
Web - http://localgroup.com.au
ABN - 30 735 366 565

ISC

Ibrahim Stormwater Consultants



ABN 37 116 185 516

Kasey Pitman
C/O Private Certifying Authority
Eden Brae Homes
Level 2, Nexus Building, Norwest Business Park
4 Columbia Court
Baulkham Hills NSW 2153

27th of March 2009,

Job Ref E1631-12199

STORMWATER DESIGN CERTIFICATION

**RE PROPOSED DEVELOPMENT
AT 53 ARNOTT CRESCENT
WARRIEWOOD
For MR & MRS WILLIAMS
Development Application No 599/08**

Pursuant to the provisions of Part 7A of the Environmental Planning and Assessment Regulation 1994, I Mark Ibrahim of *Ibrahim Stormwater Consultants, Suite 66, 15 Terminus Street, Castle Hill*, hereby certify that the stormwater drainage plans have been checked and comply with

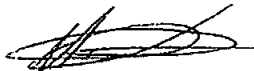
- a) The relevant clauses of Building Code of Australia
- b) The relevant parts of Basix Certificate No 214443S
- c) The architectural plans 0012199 Sheet 1 Rev D dated 25-6-08
(Note raintank relocated)
- d) Condition B2, B3, & C2, only of DA Consent 599/08

I am an appropriately qualified and competent person in this area and such can certify that the design and performance of the design systems comply with the above and which are detailed on the following drawings and relevant calculations

E1631-12199, Sheet 1 and 2, Rev A, dated 27-3-09

Name of Designer Mark Ibrahim
Qualifications B E Hons, M I E Aust ,
Address of designer P O Box 400 Cherrybrook NSW 2126
Business Telephone No 9980 5515 Fax 9980 6114
Name of Employer Ibrahim Stormwater Consultants

Yours faithfully



Per Ibrahim Stormwater Consultants
Mark Ibrahim

P O Box 400 Cherrybrook NSW 2126
www.stormwater.net.au
Ph 02 9980 5515 Fax 02 9980 6114



eden brae homes pty limited
ABN 42 083 807 489

2/38 Brookhollow Avenue, Norwest Business Park,
Baulkham Hills NSW 2153
PO Box 7210, Baulkham Hills Business Park NSW 2153
Phone: 02 3680 6900 Fax: 02 9680 6999

DEVELOPMENT CONTROL PLAN RESIDENTIAL

Waste Management Plan for the Demolition, Construction and use of premises

Site Address	Lot 92, 53 Arnott Crescent WARRIEWOOD		
Applicant Name	Eden Brae Homes Pty Ltd		
Applicant Address	PO Box 7210 Baulkham Hills BC NSW 2153		
Phone	8860 9222	Fax	8860 9233
Buildings and other structures currently on the site	Vacant Lot		
Brief Description of Proposal	Construction of a Double storey dwelling		
The details provided on this form are the intentions for managing waste relating to this project			
 Signature of applicant		3 rd November 2008 Date	

WASTE MANAGEMENT PLAN

DEMOLITION STAGE 1

Materials On Site		DESTINATION		
		REUSE & RECYCLE		DISPOSAL
Type of Material	Estimated Volume (m3) or Area (m2)	<u>ON SITE</u> Specify proposed reuse or on-site recycling methods	<u>OFF SITE</u> Specify contractor and recycling outlet	Specify contractor and landfill site
Excavation Material		NOT APPLICABLE VACANT LOT		
Green Waste				
Bricks				
Concrete				
Timber				
Plasterboard				
Metals				
Other				

CONSTRUCTION – Stage 2(a)

Materials On Site		DESTINATION		
		REUSE & RECYCLE		DISPOSAL
Type of Material	Estimated Volume (m3) or Area (m2)	<u>ON SITE</u> Specify proposed reuse or on-site recycling methods	<u>OFF SITE</u> Specify contractor and recycling outlet	Specify contractor and landfill site
Excavation Material	<u>Import approx 201m³</u>			♦ Riverstone Earthmoving ♦ Collex Waste Management (Riverstone)
Green Waste	NIL			
Bricks & Roof Tiles	5 7m3		♦ M&L Reardon Earthmoving & Landscaping ♦ Sth Windsor Resource Recovery Centre	
Concrete	NIL			
Timber	32m3			♦ M&L Reardon Earthmoving & Landscaping ♦ Sth Windsor Resource Recovery Centre
Plasterboard	48m3			♦ M&L Reardon Earthmoving & Landscaping ♦ Sth Windsor Resource Recovery Centre
Metals	NIL			
Other – Mixed Waste	3 2m3			♦ M&L Reardon Earthmoving & Landscaping ♦ Sth Windsor Resource Recovery Centre

WASTE MANAGEMENT PLAN

DESIGN FACILITIES – Stage 2(b)

TYPE OF WASTE TO BE GENERATED	EXPECTED VOL PER WK	PROPOSED ON-SITE STORAGE AND TREATMENT FACILITIES	DESTINATION
<u>Mixed Waste</u> ♦ Timber ♦ Food scrapes ♦ General	4m3 approx	3m x 3m waste enclosure Located on the front of the lot 4m to 5m from front opening	♦ M&L Reardon Earthmoving & Landscaping ♦ Sth Windsor Resource Recovery Centre
<u>Masonry Waste</u> ♦ Bricks ♦ Roof Tiles ♦ Ceramic Tiles	57m3 approx	3m x 3m waste enclosure Located on the front of the lot 4m to 5m from front opening	♦ M&L Reardon Earthmoving & Landscaping ♦ Sth Windsor Resource Recovery Centre

ONGOING MANAGEMENT – Stage 2(c)

Our on site supervisor will ensure that all waste is placed in the appropriate facilities provided

During our construction process we have two site cleans to empty the waste enclosures These will accommodate both mixed and masonry waste as South Windsor Resource Recovery Centre reclaims materials as per letter attached

As well as the two site cleans our on site supervisor will monitor the waste levels and insure that they are emptied as necessary

Pittwater Council

ABN 61340837871

REPRINTED

TAX INVOICE

OFFICIAL RECEIPT

5/12/2008 Receipt No: 251540

To Eden Brae Homes
53 Arnott Crescent
Warriewood

Qty/ Applic	Reference	Amount
GL Receipt		
TDSY-DA Fees		\$1,269.43
Qty 1, TDSY-T/Plan Advert		\$70 00
1 x n0599/08		
GST		\$7 00
Qty 1, XMIC-Rords Scanning		\$54 55
1 x n0599/08		
GST		\$5 45
GLSL-Builders LSL		\$1,039.00
1 x n0599/08		
Qty 1, XKER-ER Assur Fee		\$199 09
1 x n0599/08		
GST		\$19.91
Qty 1, MODF-Notif Dvlp Sign		\$32 73
1 x n0599/08		
GST		\$3 27

Total Amount \$2,700.43

Includes GST of \$35.63

Amounts Tendered

Cheque	\$2,700 43
Total	\$2,700 43
Rounding	\$0 00
Change	\$0.00
Nett	\$2,700 43

Printed 28/04/2009 11 53.01 AM

Cashier. JCurran

FAX

8860.9233



Insurance services
YOUR INSURANCE PARTNER



Certificate of Insurance

Mr Shane & Mrs Rana Williams
53 Arnott Crescent
WARRIEWOOD NSW 2102
Australia

Owner's Copy
Policy Number. RCW76357770
Date of Issue 09/09/2008

Form 1
Section 92
Home Building Act 1989

CLAIMS ENQUIRY LINE
1800 554 255
Locked Bag 9000
Chatswood NSW 2067

CERTIFICATE IN RESPECT OF INSURANCE

Contract of Insurance Complies With: Section 92
Of The Home Building Act 1989
Issued By: Vero Insurance Limited
ABN 48 005 297 807

Building Contract Details

Contract Date: 29/08/2008

Carried out By: Eden Brae Holdings Pty Ltd
Trading As:
ABN: 42 083 807 489
Licence Number. 120300C
For. Mr Shane & Mrs Rana Williams
In Respect Of. Single Dwelling
At House Number 53
Arnott Crescent
WARRIEWOOD NSW 2102

Permit Authority: Pittwater Council

Subject to the Act and the Home Building Regulation 2004 and the conditions of the insurance contract, cover will be provided to a beneficiary described in the contract and successors in the title to the beneficiary. Please note when the Insurer has issued this certificate, the Insurer is not entitled to refuse to pay a claim or to cancel the insurance contract, on the grounds that the premium was not paid. This certificate is to be read in conjunction with the policy wording, if you have not received a copy of the policy wording please contact the Insurer Vero Warranty a division of Vero Insurance Limited.

COI000488166

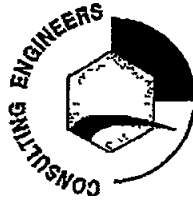
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Signed for and on behalf of the Insurer

Insurer Vero Insurance Limited ABN 48 005 297 807
Vero Warranty is a division of Vero Insurance Limited

3 2 29 23557

RAFELETOS



ZANUTTINI
Pty Ltd

Level 2, 103 Vanessa St.
Kingsgrove NSW 2208

ABN 35 079 047 486
Telephone (02) 9554 9311
Facsimile (02) 9554 9764

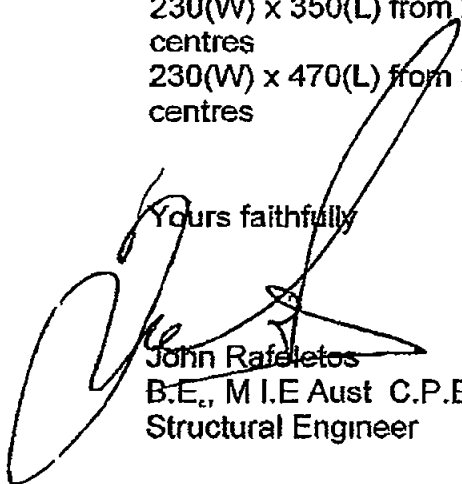
Eden Brae Homes
PO Box 7210
BAULKHAM HILLS BC 2153

STRUCTURAL CERTIFICATE

This is to certify that the following engaged pier sizes are to be constructed in the single leaf garage wall according to the following heights. -

230(W) x 230(L) to a maximum height of 2.40metres at 1.8 centres
230(W) x 350(L) from 2.50metres to a maximum height of 3.3 metres at 1.5 centres
230(W) x 470(L) from 3.4metres to a maximum height of 4.0metres at 1.5 centres

Yours faithfully


John Rafeletos
B.E., M.I.E Aust C.P.Eng
Structural Engineer



"It's where you want to live"

SENDER TO KEEP
SN7247533

DO NOT
LIFT
PEEL

External Colours- Scheme 1

Mr Shane & Mrs Rana WILLIAMS
Lot 92, 53 Arnott Crescent WARRIEWOOD

Face Bricks

Render - Area 1 LINC. TAIL POSSUM



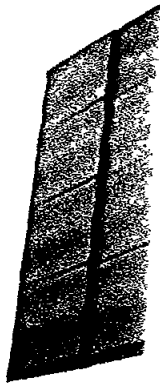
Render - Area 2 GREENSTEAD



Render - Area 3 SHADOW HOUSE

71

Roof Tiles



CSR Monier - Barramundi

Garage Door



Mancha Decro® 30

Windows

Steel-line - DC - 30

Airlite - Clear Anodised

Gutter



Ironstone

Fascia & Barge



Ironstone

Driveway



PGH - Peppercorn



PITTWATER COUNCIL

FAX 8860 4233

Form No UI 203

Consent by Road Authority for Work in Road Reserve

Section 139 – Roads Act 1993

1 July 2008 - 30 June 2009

PLEASE PRINT

Applicant:

EDEM BRAE HOMES

Postal Address:

P.O. BOX 7210 BAULKHAM HILLS

Postcode: 2153

Phone (W):

(M):

Property Address

53 ARNOT CRESCENT WARRIEWOOD

Subject to the payment of the appropriate fee, the Applicant is hereby permitted to construct the driveway (and/or associated work) as detailed below, in strict accordance with the **CONDITIONS** overleaf

I/We the undersigned agree to abide by the said conditions.

Applicant's Signature:

Date:

28.4.09

FEES (includes GST)

Consent for access driveway construction only (includes 2 site inspections) per allotment for RESIDENTIAL SINGLE/ DUAL OCCUPANCY.	\$146.00
Consent for access driveway construction only (includes 2 site inspections) per allotment for RESIDENTIAL SINGLE/ DUAL OCCUPANCY which includes any of: major retaining structures, stairs or special landscape treatment.	\$366.00
Consent for access driveway construction only (includes 2 site inspections) per allotment for OTHER THAN RESIDENTIAL SINGLE/ DUAL OCCUPANCY.	\$171.00
Consent for access driveway construction only (includes 2 site inspections) per allotment for OTHER THAN RESIDENTIAL SINGLE/ DUAL OCCUPANCY which includes any of: retaining structures, stairs or special landscape treatment.	\$487.00
Fee per additional site inspection as required	\$133.00

Office Use Only:

Inspected by: _____

Date: _____

Approved: _____

Not approved: _____

Comment: _____

CODE: ESTR 1.7.08 - 30.6.09 Late Fee: \$618 when work commenced prior to issue of Consent Form No: UI 203

FEE PAID: \$

RECEIPT NO. 257730

ISSUED BY: S. M. H.

DATE: 28.4.09

NOTE TO CUSTOMER SERVICE: PHOTOCOPY APPLICATION FORM AND STAPLE WITH RECEIPT FOR CUSTOMER'S RECORD

SECTION 139 – ROADS ACT 1993**CONDITIONS OF CONSENT**

1. The Applicant shall, at all times, keep indemnified Council from and against all actions, suits, proceedings, losses, costs, damages, changes, claims and demands in any way arising out of or by reason of anything done or omitted to be done by the Applicant in respect of the work in question.
2. The Applicant, at all times for the duration of this Consent, will not interrupt or otherwise disturb the traffic flow on the road without first obtaining the consent of Council.
3. The applicant shall make good any damage caused to the property of any person or any property of Council by reason of the carrying out of any work by the Applicant under the Conditions of this Consent.
4. Should the Applicant fail to comply with any of these conditions or any requirement of Council as provided then this Consent shall permanently lapse and any part of the work remaining within the road at that time shall be deemed to be an obstruction or encroachment under Section 107 of the Roads Act 1993.
5. This Permit/Consent receipt must be held on the job and produced to any officer of Council when called upon
6. ***All work within the Road Reserve (including excavation) is to be carried out by Council Authorised Contractors only.***
7. Construction of the vehicular access is to be strictly in accordance with the profile supplied.
8. A formwork inspection and approval by Council is required prior to construction of the driveway
24 HOURS NOTICE IS REQUIRED.
9. **THIS CONSENT AND (PREVIOUSLY ISSUED) APPROVED PROFILE MUST BE RETAINED ON SITE FOR THE INSPECTING COUNCIL OFFICER'S APPROVAL**
10. Type of Construction:
 - **For residential single & dual occupancy – 20MPa Concrete, 150mm thick**
 - **For other – 20MPa Concrete, 180mm thick with F72 mesh**

Pittwater Council

REPRINTED

OFFICIAL RECEIPT

17/04/2009 Receipt No 257730

To Eden Brae Homes

PO Box 7210
Baulkham Hills BC 2153

Applic.	Reference	Amount
GL Recd	EREC-Board Fe	\$116.00
	53 Arnot Crs	

Total:	\$116.00
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Amounts Tendered

Cash	\$0.00
Cheque	\$116 00
Db/Cr Card	\$0.00
Money Order	\$0.00
Agency Rec	\$0.00
Total	\$116.00
Rounding	\$0 00
Change	\$0 00
Nett	\$116.00

27/4/09- Ross (Pittwater Council)
(customer service)
Road opening Payment

Printed 23/04/2009 10:04:08 AM

Cashier: RCrawsh



PITTWATER COUNCIL

Information for Access Driveway Profiles 1 July 2008 – 30 June 2009

To Eden Brae Home
Postal Address PO Box 7210
Baulkham Hills

Date 22/04/09

Receipt No: 257732
Amount \$73 00

ACCESS DRIVEWAY PROFILE AT: 53 Arnott Cres, Warriewood

- The proposed vehicular access driveway profile shall be as per the enclosed plan NL
- **Type of Construction** Domestic
 - **For Residential single & dual occupancy** - 20MPa Concrete, 150mm thick
 - **For Other** - 20MPa Concrete, 180mm thick with F72 mesh
- **Slab Construction** Vehicular access slab 4m long, 4m wide at gutter crossing to 4m wide at the boundary

NB: Remove redundant driveway and layback. Replace with kerb, gutter & turf. Adjust water hydrant to new driveway profile.

- Council will only permit an absolute maximum gradient of 25% (1 in 4) measured at any point on the driveway and that an ease may be required for access into the car stand area, carport or garage Refer to relevant attached profile
- All work within the road reserve (including excavation) in connection with the above, is to be carried out by authorised Contractors only,
- Quotations for the work specified above should be obtained from any of the contractors on Council's list and should be for the whole of the work stated,
- Construction of vehicular access will be strictly in accordance with the profile supplied, and
- A formwork inspection by Council is required prior to construction (Provide minimum 24 hours notice)

1. **NOTE THAT THIS INFORMATION SHEET DOES NOT CONSTITUTE AN APPROVAL TO COMMENCE OR PROCEED WITH ANY WORK ON SITE.**
2. **A SECTION 139 CONSENT UNDER THE ROADS ACT – 1993 IS REQUIRED (FORM UI203).**
3. **FAILURE TO OBTAIN SUCH CONSENT PRIOR TO COMMENCING WORK WILL INCUR A PENALTY.**


Sigi Melders
ASSETS / RESTORATIONS OFFICER

DAVIES GEOTECHNICAL

CONSULTING ENGINEERS

21 April 2009

08-062 C

Eden Brae Homes
Level 2, 4 Columbia Circuit
BAULKHAM HILLS NSW 2153

Attention Kasey Pitman

Dear Kasey

re **GEOTECHNICAL REVIEW – FORM 2 CERTIFICATION
PROPOSED RESIDENTIAL DEVELOPMENT
NO 53 ARNOTT CRESCENT WARRIWOOD, NSW**

In response to your request, we have reviewed the engineering drawings submitted for the proposed residential re-development of the above property. The drawings submitted are -

Rafeletos & Zanuttini Pty Ltd	Structural and engineering details for Eden Brae Homes (Client Williams) at No 53 Amott Crescent Warriewood	Job No EB30549, drawings dated 21 April 2009, as follows relevant to geotechnical matters - Sheet 1 – Concrete Slab Detail Plan, Issue B Sheet 2 – Structural Detail Plan, Issue B Sheet 7 – Sewer Detail Plan, Issue B Sheet 8 – Sewer Detail Plan, Issue B Sheet 9 – Sewer Detail Plan, Issue B
Ibrahim Stormwater Consultants	Stormwater Layout and Details, Proposed Residence at No 53 Amott Crescent Warriewood for Mr & Mrs Williams	Job No E1631–12199, Sheets 1 & 2 Revision A dated 27 March 2009 (Eden Brae Homes)

Davies Geotechnical Pty Ltd has prepared earlier reports for this property, which are relevant to the current stage of the development, as follows -

Letter report 21 October 2008	Geotechnical Assessment, Site Absorption Capability Drainage Disposal, Proposed Residential Development 53 Amott Cr Warriewood , NSW	Ref 08-062 A
Letter report 27 November 2008	Geotechnical Assessment Proposed Residential Development No 53 Amott Crescent Warriewood NSW	Ref 08-062 B

We have reviewed the supplied drawings to verify compliance with the recommendations of the two geotechnical reports above, in accordance with the requirements of the Pittwater Council Geotechnical Risk Management Policy

In regard to the footing details, our report 08-062 A dated 21 October 2008 noted the presence of filling in the rear yard (area of likely location for absorption facility). An extract from that report is attached herewith for information. Our subsequent report 08-062 B dated 27 November 2008 accordingly recommended that the footings for the new development “are to be taken to a uniform bearing in at least stiff to very stiff residual clay, or to bedrock”. The engineering drawings confirm that piers will be provided where required to achieve stable bearing in natural ground, in accordance with our recommendations.

We note the approval conditions by Pittwater Council relevant to geotechnical matters for this development, as below -

- Form 2 – Conditions B1, B3, C1 & C3
- Form 3 – Conditions E1 & E3

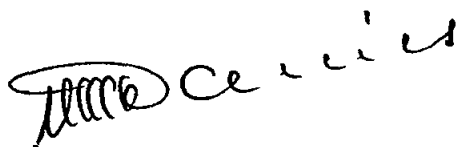
The Form 3 geotechnical certification on completion of the construction will be contingent on opportunity being afforded during construction to verify that the footings achieve a bearing in suitable natural ground. This will require geotechnical inspection of the footing excavations during pier drilling or digging.

In regard to the on-site stormwater disposal, the Form 3 certification could rely on the separate certification (by others) required under Condition E3. A copy of that certification would need to be provided to us when it is available.

We trust the above report is adequate for your needs at this time, and will be pleased to assist if you require further advice on geotechnical issues associated with the proposed development. Please contact the undersigned if you require further assistance.

Yours faithfully

DAVIES GEOTECHNICAL Pty Ltd



Warwick N Davies MIEAust CPEng NPER
Principal Geotechnical Engineer

c08062L.doc

Enclosed

Extract from report 08-062 A (21/10/08) (1 page)

Form 2 (structural)

Form 2 (stormwater disposal)

Local Geology

Published information indicates that the site is located within the Narrabeen Group Newport Formation geological unit (reference 2), bordering on an extensive area of alluvial soil deposits with man-made fill to the south (comprising the Public Reserve area), and is within the mapped extent of the Watagan colluvial soil landscape (reference 3)

Local Drainage Conditions

The proposed disposal area at the rear of No 53 will not be affected by run-off from the street Run-off from adjoining properties is not anticipated

Existing and future surface drainage within the rear of No 53 will flow to the southwest towards the adjoining property and onto the Public Reserve This would present minimal to negligible nuisance to the adjoining development and public land

Changes to the site runoff as a result of the re-development of No 53 could arise from either of the following -

- increased sealed surface areas (roof area and paved house surrounds)
- concentration of drainage runoff where this does not occur at present

Soil Profile in Proposed Disposal Area

The proposed disposal area for drainage from No 53 is located at the rear of the proposed development, in the rear yard of the property, as indicated on the site plan provided in Figure 2 herewith

The natural soil profile down to the inferred bedrock surface was assessed within the likely absorption disposal area, by excavation of a hand augered borehole, and dynamic cone penetrometer (DCP) probes, at the locations shown on the site plan in Figure 2 The soil profile from the hand-augered borehole at the test location comprised the following strata -

0 0 – 0 55m	Fill	SAND (SM), fine to medium grained, dark brown (topsoil) becoming light brown, moist, loose, with shell fragments and sandstone gravels
0 55 – 1 10m	Topsoil	Clayey/silty SAND (SC/SM) fine grained, dark grey/brown, moist, loose, becoming
1 10 – 1 18	"Residual"	CLAY (CL) mottled brown/grey, low plasticity, moist (>PL), soft
Borehole discontinued at 1 18m		

The soil profile encountered is recognisable as man-made fill placed over the natural soil profile associated with the underlying geology The fill may be the fringe of the extensively filled area immediately to the south within the Public Reserve

DCP refusal was not encountered within 1 6m of the present surface levels at the three test locations (DCP1 – DCP3) DCP1 was continued to 3m depth, encountering inferred stiff becoming very stiff clay below about 1 3m depth to the limit of the test

Absorption Capacity/Disposal System Design

The percolation test was carried out in the sand fill, with the base of the test at 450mm depth and a 250mm head of water A permeability of 12m/day (0 3 minutes for a fall of 25mm) was determined from the result of the simple field test carried out

Selection of a suitable design absorption rate for stormwater infiltration should reflect the characteristic soil conditions for the life of the disposal system A lower-bound infiltration rate is normally assessed from the soil permeability under saturated conditions Our recommendations in Table 1 below, for lower-bound design conditions, take into account -

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO 2 - To be submitted with detailed design for construction certificate

Development Application for	MR & MRS S & R WILLIAMS
Name of Applicant	
Address of site	53 ARNOTT CRESCENT WARRIEWOOD

Declaration made by Structural or Civil Engineer in relation to the incorporation of the Geotechnical issues into the project design

I JOHN RAFFELETTOS on behalf of RAFFELETTOS ZANUTTINI PT LTD
(insert name) (trading or company name)

on this the 21 APRIL 2009
(date)

certify that I am a Structural or Civil Engineer as defined by the Geotechnical Risk Management Policy for Pittwater. I am authorised by the above organization/company to issue this document and to certify that the organization/company has a current professional indemnity policy of at least \$2million. I also certify that I have prepared the below listed structural documents in accordance with the recommendations given in the Geotechnical Report for the above development.

Geotechnical Report Details

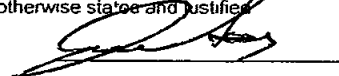
Report Title	LETTER 08-062.B DATED 27/11/08, AS PER DETAILS
Report Date	ATTACHED IN
Author	LETTER 08-062 C HEREWITH

Structural Documents list

DRAWINGS BY RAFFELETTOS & ZANUTTINI PTY LTD
SHEETS 1, 2, 7, 8, 9 REF. EB 30549
(REFER DETAILS ATTACHED IN LETTER 08-062 C 2/4/09)

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

JOHN RAFFELETTOS
(name)



(signature)

Declaration made by Geotechnical Engineer or Engineering Geologist in relation to Structural Drawings

I prepared and/or technically verified the abovementioned Geotechnical Report as per Form 1 dated 21/11/08 and now certify that I have viewed the above listed structural documents prepared for the same development. I am satisfied that the recommendations given in the Geotechnical Report have been appropriately taken into account by the structural engineer in the preparation of these structural documents. I am aware that Pittwater Council relies on the processes covered by the Geotechnical Risk Management Policy including this certification as the basis for ensuring that the geotechnical risk management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure taken as at least 100 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature

Name

Chartered Professional Status

Membership No

WARWICK DAVIES, for & on behalf of DAVIES GEOTECHNICAL PTY LTD

MIEAUST CP Eng NPER (CIVIL)

385078

THIS FORM AND CERTIFICATION ARE TO BE READ IN CONJUNCTION WITH, AND AS PART OF, THE ATTACHED LETTER 08-062 C DATED 21 APRIL 2009

21/4/09

SYDNEY WATER
BUILDING PLAN APPROVED
ASSET NOT AFFECTED

Dolfin No D08/9-02894

Quick Check Ref No 2384147

E-Developer Case No N/A

Property Location

Street No No 53

Street Name Arnot Cres

Suburb WARRIEWOOD

Building/Structure Description New Residence

Building Plan No 0012199

Proposed building/structure is **APPROVED** to be constructed **ADJACENT TO** a Sydney Water sewer/asset as

- 1 Service Location Report reveals the building/structure is outside the Zone of Influence.
- 2 No Special Precautions Required.

Permits are required to fill all new swimming pools with a capacity greater than 10,000 litres. To arrange for a permit please contact Sydney Water on 13 20 92 during business hours. Fines will apply for filling pools without a permit.

APPROVED BY

WSC Company Name Greg Houston Plumbing Pty Limited

Name of Key Personnel Brett Garvey

Signature of Key Personnel

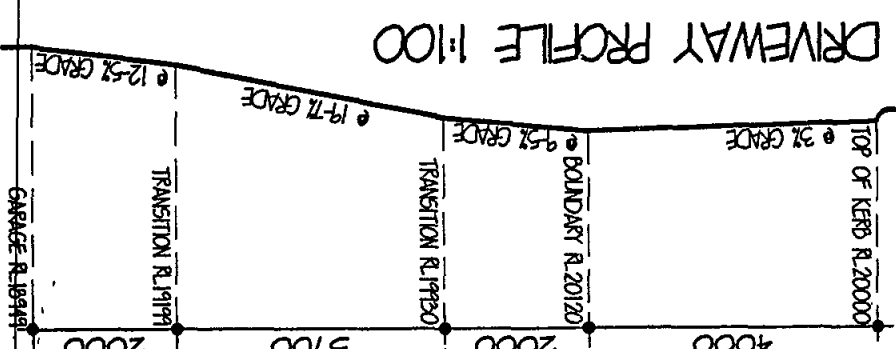
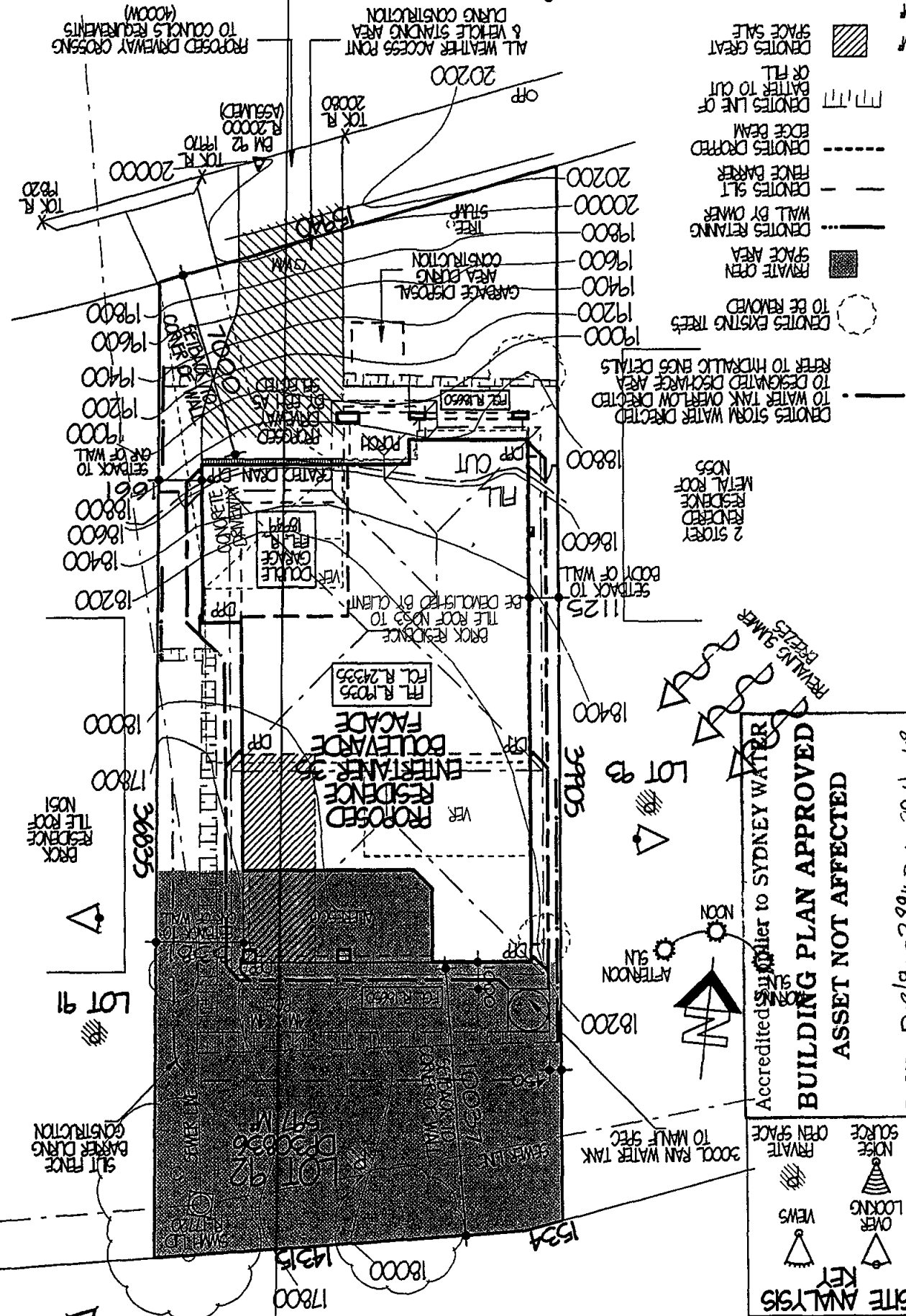
Date 29/10/2008



ISSUE DATE	REVISION	DRAWN	FOR	AT	DATE	DWG NO	PAGE NO	JOB NO	RA
A	25-7-08	DT	WILLIAMS	LOT 92 NOS3 ARNOTT	07/2008	13463	1 OF 9	0012199	RA
B	7-8-08	DT	MR & MRS WILLIAMS	CRESENT WARRIEWOOD	07/2008	13463	1 OF 9	0012199	RA
C	26-8-08	DT	MR & MRS WILLIAMS	CRESENT WARRIEWOOD	07/2008	13463	1 OF 9	0012199	RA
		FF							

Seulou
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🎉🎉 ARNOTT CRESCENT 🎉🎉



311C AREA = 571 M²
 PRIVATE OPEN SPACE
 REQUIRED = 80 M²
 PROVIDED = 202-2 M²
 BUT UPON AREA
 PERMISSIBLE = 50% OF 280-5 M²
 PROVIDED = 45-3% OF 270-4 M²
 LANDSCAPED AREA
 REQUIRED = 50% OF 280-5 M²
 PROVIDED = 54-7% OF 326-6 M²

TOTAL FLOOR AREA = 357-11 M² OR 384 SQS

GROUND FLOOR AREA = 65.4 M²
(EXCLUDING GARAGE)
GARAGE FLOOR AREA = 32.7 M²
PORCH FLOOR AREA = 5.8 M²
ALFRESCO FLOOR AREA = 25.3 M²
FIRST FLOOR AREA = 122.1 M²
BALCONY FLOOR AREA = 5.8 M²

- ◆ GENERAL NOTES
- ◆ STORMWATER TO DISCHARGE INTO DESIGNATED DISCHARGE POINT TO PCA REQUIREMENTS
- ◆ SEWER TO LOCAL AUTHORITIES REQUIREMENTS.
- ◆ ALL GROUND LINES ARE TO BE VERIFIED ON-SITE BY THE BUILDER.
- ◆ FINAL LOCATION OF BUILDINGS TO BE VERIFIED ON-SITE BY A REGISTERED SURVEYOR
- ◆ OVER SCALING
- ◆ SITE CLASSIFICATION H
- ◆ CUT AND FILL HOUSE PLATFORM APPROXIMATELY TO RL16650 GARAGE TO RL16650
- ◆ HOUSE FLOOR LEVEL, RL17035, 365MM ABOVE GARAGE FLOOR LEVEL, APPROX

The diagram illustrates the design of a KEBB INLET SEDIMENT TRAP. It consists of two main parts: a plan view (top) and a cross-section view (bottom).

Plan View (Top):

- Shows a rectangular inlet structure with a grid pattern.
- Labels include: "POSTS DRIVEN 500MM TO 700MM INTO GROUND", "UNDISTURBED GROUND", "DISTURBED GROUND", "DIRECTION OF FLOW", "3MM MAX", "GEOTEXTILE FILTER FABRIC", "WIRE OR STEEL MESH", and "50MM 50MM".

Cross-section View (Bottom):

- Shows the vertical profile of the trap.
- Labels include: "DIRECTION OF FLOW", "GAP BETWEEN BAGS ACT AS SPILLWAY", "THREE LAYERS OF SANDBAGS WITH ENDS OVERLAPPED", "2M MIN", "SANDBAGS OVERLAP ONTO KERB", and "M.O."

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WILL BE TAKEN AGAINST OFFENDERS.

EDEN BRAE HOMES

SPECIFICATION

BUILDING CODE OF AUSTRALIA

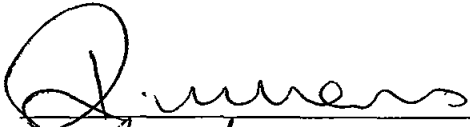
This specification is to be read in conjunction with the standard list of inclusions, working drawings and details referred to in the Building Agreement

Note: Where you have a fixed price tender in your agreement, this overrides any clauses in the specification which relates to extra charges for rock excavation, piling, engineering and concrete pumps but excludes any conditions imposed upon the dwelling by Local Government Authorities.

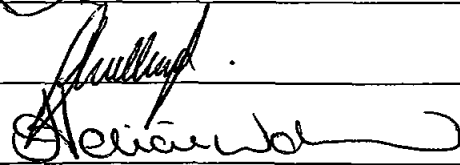
CLIENT	Mr Shane WILLIAMS and Mrs Rana WILLIAMS
LOT	92
STREET	Arnott Crescent
SUBURB	WARRIEWOOD

BUILDING Eden Brae Holdings Pty Ltd
ACN 083 807 489
ABN 42 083 807 489
Nexus Building, Level 2, 4 Columbia Court , BAULKHAM HILLS NSW 2153
PO Box 7210, BAULKHAM HILLS BC NSW 2153

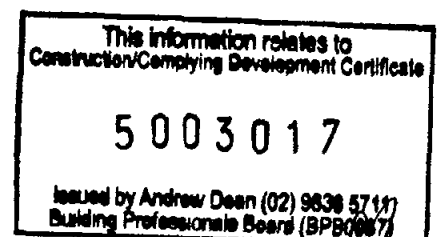
Builders Licence 120300C

SIGNED BY  (Client 1)

(Client 2)

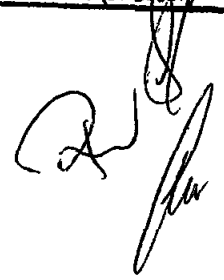
BUILDER 

DATE 29/08/08



Owner's Initials

Builder's initials



INDEX

1	General
2	Services
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4.	Foundations
5	Concretor
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7	Carpenter & Joiner
8	Fit out
9	Roof Cover
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11.	Plumber
12	Electrician
13	Internal Linings
14	Wet Areas
15	Ceramic Tiling
16	Glazier
17	Painter

1. GENERAL

Where Owner(s) is mentioned throughout this specification it shall mean also proprietor(s)
Where the builder is mentioned throughout this Specification it shall also mean Contractor.
The Builder hereinafter referred to shall be.
EDEN BRAE HOLDINGS PTY LTD

1.1 FEES

The builder will obtain permits, pay all fees and notify Local Authorities to enable the works to be carried out within the limits of the working drawings and this specification

1.2 SITE & BOUNDARIES

The house site shall be delivered to the builder in time for the works to commence in accordance with the home Building Agreement cleared of long grass, shrubs and trees
Should an all weather access be required to reach the site and provide suitable traction for all types of vehicles and machinery which the builder considers necessary for the construction of the works then the Owner(s) will provide one at no cost to the builder

Should the condition of the site or the existing weather conditions necessitate the provision of a concrete pump due to the site not being cleared and or accessible as described above then any expense incurred shall be charged as an extra to the contract sum

Any time lost as a result of having to clear the site, provide access or inclement weather shall be added to the contract time and the contract time shall be extended until the builder is able to recommence the works

The Owner shall indicate to the builder the boundaries of the said land and decide upon the position of the works and accept responsibility for the correctness of the position indicated to the Builder. If there are any doubts as to the accuracy of the boundary positions for the setting out of the works or fencing the Owner agrees to have the land resurveyed and pegged at the owners expense

1.3 SANITARY

Prior to the commencement of any works, unless toilet facilities exist on site, the Builder will provide sanitary accommodation to comply with Local Government Authority regulations and will remove on completion of the works.

1.4 PLANT & LABOUR

The Builder shall supply all materials, scaffolding, tools and plant and do all works in all trades as described in the working drawings and schedule of fittings necessary to carry out the true intent of this specification to a reasonable and satisfactory completion of the contract in all respects

1.5 MATERIALS

All materials used throughout the works are to be new (unless otherwise specified) and of good quality of their several respective kinds as hereinafter specified Any defective materials are to be removed from the site

Owner's Initials . Builder's initials

1.6 DIMENSIONS

Figures dimensioned on the working drawings shall be given preference to scaled dimensions. Internal dimensions are to be taken between timber plates. External dimensions shall be taken over brickwork. Ceiling heights shall be taken between the top of the finished floor level to the underside of the ceiling timbers.

1.7 COLOURS

The Owner shall provide to the builder upon request selected colours for all items and materials specified on the colour selection schedule.

1.8 SUBSTITUTION

Should any items or materials to be used in the construction of the works and which are the subject of selection by the Owner(s) be not available for use in construction of the works until after a period in which the opinion of the builder will cause unwarranted delay, then the Owner(s) shall within fourteen (14) days from receipt from a written request from the builder select other readily available items or materials which shall take the place of those originally chosen. Should the Owner(s) fail to comply with the written request within the stipulated period, the builder reserves the right to select an alternative item or material equal in quality to the original choice and use in substitution.

1.9 VARIATION OF COLOUR & TEXTURE

Manufacturing processes may vary colour and texture of samples from which selections are made. Variations in clay base material deposits and climatic conditions may from time to time vary colour and texture of bricks supplied. The builder shall not accept any responsibility for any such variation in colour or texture provided that the supplied items or materials are of the same brand name, colour type or description as selected by the Owner.

2.0 SERVICES

2.1 WATER

The Contract Price allows for the house water supply to be available from an existing main of the local authority located directly in front of the site. When the contract price provides for tapping an existing water main located on the opposite side of the street of the site such price allows for the existence of an under road conduit and does not allow under road boring or road opening costs. Should such additional work have to be undertaken the cost incurred shall be charged as an extra to the contract sum. When no reticulated water supply exists the owner is to arrange a temporary fresh water supply for tradesman and building purposes with tanks or other means satisfactory to the builder and is to be available prior to the commencement of construction.

2.2 GAS SERVICE

The Owner shall make application to the Gas Authority for connection to the main and pay the necessary fees when requested by the Builder. Where Liquid Petroleum gas type equipment is specified the builder will provide the supply lines from the appliances to a wall connection point for the gas cylinders on the external brickwork. The gas cylinders are to be provided at the expense of the owner. The owner is responsible for the arrangement of the supply of the gas cylinders and connection of the cylinders to the supply line along with all other associated equipment and fittings.

Owner's Initials

Builder's initials

2.3 AERIAL/UNDERGROUND POWER SUPPLY

The contract allows for the power supply to be connected to the dwelling directly from the Authority's 240 volt power supply terminal not more than 18 metres away from the works. Should the power supply be further away any extension costs or heavier cable requirements needed due to low voltage or underground cable are to be carried out at the expense of the owner.

2.4 SEWER CONNECTION

Sewer connection to be carried out by licensed drainer to boards or council junction point as per sewer diagram in accordance with Australian Standards.

2.5 SEPTIC CONNECTION

Septic connection to be carried out by nominated licensed sub contractor in accordance with Council approval plans.

3.0 EXCAVATOR

3.1 INSPECTIONS

All footing trenches shall be inspected by the Local authority and approved by either the Local authority and / or a qualified engineer prior to concrete placement.

3.2 FOOTING TRENCHES

Provide concrete footings in accordance with engineers' details. Footings to comply with Local Authorities requirements and / or the Building Code of Australia ref part 3 2 2 BCA 04.

3.3 SERVICE TRENCHES

The Builder shall excavate service trenches to a minimum cover of 150mm where site conditions allow.

3.4 DEMOLITION

Demolition by the owner shall occur before works are carried out by the builder. All demolition to be done as to comply with AS 2601. No used or excess material shall be buried on the site.

3.5 TREE TO BE RETAINED

Trees nominated by Council that are to be retained shall be marked using suitable, easily visible and removable means of identification.

4.0 FOUNDATIONS

The contract price allows for the provision of excavations and footings as indicated on the working drawings. No allowance has been made by the Builder for the excavation of rock either in the excavation or the digging out of the footing or in any underground service supply lines to the works unless stated in the Home Building Agreement. Likewise should the Local Authority require the Builder to excavate for foundations and footings deeper and or wider than those indicated on the working drawings then the additional expense, including the provision of extra concrete, brickwork, blasting, plant and materials shall be charged to the Owner(s) at rates detailed in clause 17.5(b) of the home building agreement and shall be paid by the Owner(s) to the Builder upon demand in writing by the Builder.

If as a result of carrying out the excavation of the site it becomes apparent that it will be necessary to provide

- a a different type of filling material suitable for compaction other than that excavated on the site and/or

Owner's Initials

Builder's initials

- b foundations and/or footings of a different design or type from those specified in the working drawing

then the amount of any additional expenses including design incurred by the builder in providing such different compaction/ filling material or footings shall be agreed upon between the Builder and the Owner(s) prior to the commencement of the work to provide such different compaction/filling material or footing type. Should an agreement be unable to be reached then both parties agree to be bound by a determination by an independent arbitrator.

4.1 TERMITE TREATMENT

Provide a termite barrier treatment in accordance with part 3.1.3 BCA 04 housing provisions or AS 3660.1-2000 in all areas where the Local Authority requires such treatment.

NOTE Many of the materials used in the construction of your home may be subject to termite attack. You should ensure that your home is checked at least annually by an appropriate expert in termite control whose advice should be sought and followed.

5.0 CONCRETOR

5.1 MATERIALS AND MIX

Concrete shall be 20mpa grade with an 80mm slump or as nominated on the engineers drawings. 15mpa grade concrete may be used in pier or bulk pours subject to engineers specification.

5.2 CONCRETE SLAB

Concrete slab to be 85mm reinforced concrete with rebated edge and integral beams in accordance with engineer requirements ref AS 2870.

5.3 CONCRETE SLAB ON GROUND (WAFFLE POD)

Concrete slab to be 80mm reinforced concrete with rebated edge and integral beams in accordance with engineer requirements ref AS 1379.

5.4 TIMBER FLOORS

Footings to be reinforced concrete of a type and depth as required by engineering details.
Concrete porches (timber floor construction only)

5.5 CONCRETE PORCHES (IF BY BUILDER AND VARIATION)

Concrete porches and porch slabs shall be constructed as shown on working drawings and to engineering details.

5.6 PRECAST CONCRETE STEP TREADS (TIMBER FLOOR CONSTRUCTION ONLY)

Provide concrete treads and rises to ground level as shown on working drawings.

Owner's Initials . . .

Builder's initials . . .

5.7 CONCRETE PATHS

External concrete paths shall be generally as shown on plans and finished with a wooden float in accordance with AS 3727

5.8 CONCRETE DRIVEWAYS

Concrete driveways shall be generally as shown on plans and constructed in accordance AS 3727

6.0 BRICKLAYER

6.1 GENERAL

Bricks used shall be the same as those selected on the colour selection schedule Brickwork is to be laid to the various heights and thickness as shown on the working drawings.

Brick cavity to be minimum 25mm with galvanised wall ties tied to timber frame at 610mm spacings horizontally and 460mm vertically

Provide 1 damp proof course in brickwork at underside of bearer for timber floors and 1 bed joint for concrete slab

6.2 MORTAR

All mortar mix for both single and double storey homes shall be 6 sand, 1 cement
Mortar must be thoroughly mixed prior to use and comply with AS 3700 or part 3 3 1 BCA 04 housing provisions Joints shall be in accordance with AS 3700

6.3 METER BOX

Provide where indicated on working drawings standard electric meter box

6.4 WINDOW SILLS

Window sills shall be face brickwork on edge unless otherwise specified

6.5 BRICK CLEANER

All face brickwork is to be cleaned with diluted hydrochloric acid and washed with clean water

6.6 LINTELS

Brickwork where shown on working drawings over external openings shall be laid on galvanised steel bars or angles with end bearings to manufacturers recommendations as to comply with Australian Standards

6.7 STEEL BEAMS – COLUMNS

Structural steel work where required in works shall be supplied to comply with engineers computations and details as to comply with Australian Standards

6.8 SUB-FLOOR VENTS

Provide sub-floor ventilation in accordance with the Building Code of Australia

6.9 SLEEPER PIERS

Sleeper piers up to a height of 1800mm shall be 230mm x 230mm brick Over 1800mm high to a maximum of 2700mm the lower portion pier shall be 350mm x 350mm

6.10 FOUNDATION ACCESS

Provide an opening for sub-floor access in brick wall to either side of rear elevations
Brickwork carried above opening to be carried on a galvanised steel arch bar.

Provide a door and frame to opening

7.0 CARPENTER & JOINER

7.1 GENERAL

Pre-Fabricated walls and trusses used in the works shall be certified by the manufacturer

Steel Framing – Pre fabricated wall frames and trusses are to be manufacturer AS 3623 and certified by the manufacturer

Timber Framing – All wall and roof frames shall be constructed in accordance with AS 1684 or part 3 4 3 BCA 04

7.2 ON SITE CONSTRUCTION

Any roof or wall framing cut on site generally shall be as follows

7.3 BEARERS

Bearers shall be 100mm x 75mm placed on top of piers at spacings as shown on working drawings or otherwise in accordance with AS 1684 2

7.4 FLOOR JOISTS

Floor joists shall be either 100mm x 50mm at 600mm centres secured to bearers

Floor joists to 1st and 2nd storey work shall be in accordance with Building Code of Australia at maximum centres as noted on the working drawings

Where joists run parallel within internal walls provide and fix double joists under bottom plate Otherwise to be in accordance with AS 1684 2

7.5 TOP & BOTTOM PLATES

Plates are to be in long lengths, halved and or butted at joints and intersections Provide gang nail plates where top plates are butted

7.6 STUDS

Wall studs are to be at a maximum 600 centres Studs are to be checked to receive heads over openings and trimmers under windows

7.7 HEADS OVER OPENINGS

All heads over openings shall comply with AS 1684 2

7.8 BRACING

Bracing shall be in accordance with AS 1684 2 and designed in accordance with AS 4055-1992 wind loads for housing.

7.9 NOGGING

Each wall panel shall be stiffened by means of solid timber noggings fixed between studs and finished flush with surface of studs

7.10 ROOF MEMBERS

Roofs are to be pitched to the slope as shown on the plans. All rafters, hips, rdges, valleys, purlins, struts, collar ties and wind bracing as well as stress grades are to comply with AS 1684-1992

7.11 CEILING JOISTS

Ceiling joists to be maximum 600mm centres and where possible be laid in the same direction as the roof rafters. Fix ceiling joists to rafters and where lapped over partition walls spike together

7.12 COLLAR TIES

Collar ties to comply with AS 1684.2 and fixed to alternative pairs of rafters

7.13 STRUTS

Struts are to be 75mm x 75mm minimum up to a length of 2100mm and spaced at maximum 2100mm

7.14 VALLEY BOARDS

Valley Boards shall be 19mm thick and sufficiently wide enough to support valley gutters

7.15 ROOF TRUSSES

Roof trusses where used shall be fabricated in a proper factory and each truss shall be suitably marked to identify the manufacturer. Roof trusses shall be erected fixed and braced in accordance with the fabricators written instructions

7.16 MAN HOLE

Provide a manhole in ceiling trimmed between ceiling joist to a minimum size of 600mm x 450mm. Provide a suitable cover. Man hole to be positioned between bottom chords of roof trusses near nominated position as indicated on working drawings

7.17 VERANDAH POSTS

To be located as shown on plan and where fixed to concrete the base of the post is to be supported on a galvanised metal base with a metal dowel set in concrete or dynabolted

7.18 GABLES

Provide gables as shown on drawings and provide cover as specified. Where a pre-formed metal verge system is used it is to be fixed in accordance with the manufacturers specification

7.19 EAVES

Top Chords are to overhang the external walls as per the measurement shown on the drawings. Top Chords to be plumb cut and fitted with the fascia as specified. Where a pre-formed metal fascia system is used it is to be fixed in accordance with the manufacturers specification.

Line eaves soffit with 4.5mm thick fibre cement sheets and plastic moulds at joints

7.20 FLOORING

Floor joists are to be covered with either strip or sheet flooring as specified. Sheet flooring is to be installed in accordance with manufacturers instructions and to comply with AS 1684.2 or part 3.4.3. BCA 04

Owner's Initials

Builder's initials

8. FITOUT

8.1 SKIRTINGS & ARCHITRAVES

Provide and fix architraves and skirtings to all designated areas neatly mitred or scribed at corner.

8.2 DOOR JAMBS & DOORS

Provide and fix rebated door jambs to suit thickness of the finished wall Hang front and rear doors with three (3) 85mm steel butt hinges Hang internal doors with two (2) 85mm steel butt hinges.

Doors to be as specified and furnished with selected lock and furniture

8.3 WINDOWS

Windows shall be manufactured and glazed in accordance with AS 1288 and/or AS 2047-1999 fixed in the position as shown on the working drawings

8.4 KITCHEN CUPBOARDS

Provide kitchen cupboards to floor and walls of kitchen as shown on working drawings
Provide doors and benchtops as selected

8.5 WARDROBES

Provide built-in wardrobes as shown on working drawings finished with one shelf and one hanging rail Provide door furniture as specified

8.6 LINEN CUPBOARD

Provide linen cupboard as shown working drawings

9.0 ROOF COVER

Provide the roof of the dwelling with either concrete or terra-cotta roof tiles as specified to comply with AS 2049 and be installed in accordance with AS 2050 Tiles are to be fixed to approved battens appropriate to the spacing of the roof timbers in accordance with manufacturers specification All capping tiles are to be well bedded and neatly pointed with coloured cement mortar

10.0 FASCIA & GUTTER

10.1 GENERAL

All work must comply with the requirements of the relevant authority and all work is to be carried out by a licensed tradesperson in accordance with AS 2179 1-1994, AS/NZS 3500 3.2 and/or AS/NZS 3500.5.

10.2 GUTTERS

Provide selected guttering to all eaves set in position with fall to downpipes and secured with the appropriate brackets

10.3 DOWNPIPES

Provide downpipes as required connected to gutter and roof water drains Downpipes to be secured to external walls and with all approved fixing method.

10.4 VALLEY GUTTERS

Fix valley gutters to valley boards lapped in the direction of water flow

Owner's Initials..

Builder's initials

10.5 FLASHINGS

Flashings to be provided at the intersection of the roof and brick walls. Flash around chimney stacks and exhaust flues. All flashing to be dressed down onto roof slope.

11.0 PLUMBER

11.1 GENERAL

All work shall comply with the requirements of the relevant local authority and with AS/NZS 3500

11.2 WATER SUPPLY

Provide and lay water supply line from the meter to the house. Provide extensions (Rehau or copper or other approved material as the Builder selects) to the hot water service, kitchen sink, bath, basin(s), shower(s), W C cistern(s), laundry trough, and washing machine, dishwasher (if applicable) as well as front and rear taps

11.3 HOT WATER UNIT

Install hot water system in a position as shown on the working drawings. The hot water service shall be connected to the kitchen sink, basin(s), shower(s), laundry trough and washing machine point

11.4 GAS PLUMBER (WHERE APPLICABLE)

Provide gas service from existing main at front of residence to meter position and extend service to nominated gas appliance positions

11.5 GAS APPLIANCES

If nominated provide gas service for the connection of hot water unit, hot plate and room heater

12.0 ELECTRICIAN

12.1 GENERAL

Provide all labour and materials suitable for the installation of the electrical service in accordance with AS/NZS 3000 2000. All work to be carried out by a licensed electrician and in accordance with the local supply authority

12.2 CONSUMER MAIN

Provide and install consumer mains from the main supply line located in the front of the block to the meter and switchboard.

12.3 LIGHTING

Connect all light points in positions as shown on the working drawings

12.4 POWER

Connect all power points in positions as shown on working drawings

12.5 ACCESSORIES

All accessories are to be quality plastic fittings

12.6 APPLIANCES

Provide power to all electrical appliances as shown on the working drawings

Owner's Initials .

Builder's initials

12.7 TELEPHONE

Telephone points as shown on the working drawings. Telephone connection shall be the responsibility of the owner

12.8 SMOKE DETECTORS

Smoke detection units are to be placed in accordance with 3 7.2 BCA 04 housing provisions and be manufactured in accordance with AS 3786

13.0 INTERNAL LININGS

13.1 GENERAL

Line all walls and ceilings with gypsum plasterboard Wet areas are to be lined with approved water-resistant sheets in accordance with the Building Code of Australia

13.2 WALL LININGS

Wall linings shall be 10mm thick plasterboard sheets fixed to studs by adhesive and clouts Sheets are to have recessed edges and be fixed in accordance with the manufacturers recommendations

13.3 CEILING LINING

Ceiling linings shall be either 10mm thick or 13mm thick plasterboard sheets fixed to ceiling timbers by clouts Sheets to have recessed edges and fixed in accordance with manufacturers recommendations

13.4 CORNICE

Provide cornice to ceiling as required Cornices to be installed where possible in full wall lengths properly fixed and set at all angles

14.0 WET AREAS

All internal wet areas are to be waterproofed and flashed using an approved waterproofing method and comply with AS 3740-2004 and part 3 8.1 BCA 04 housing provisions

Where sheet flooring is used in a wet area the whole of the floor area should be waterproofed (except under bath) An approved shower tray may be used in lieu of waterproof membrane in shower compartments

15.0 CERAMIC TILING

15.1 WALLS

Cover specified wall faces with selected tiles Tiles are to be fixed directly to wall sheeting with approved adhesive and neatly grouted on completion

15.2 FLOORS

Lay specified floor tiles to bathroom, ensuite, laundry and W C in sand and cement mortar or approved adhesive where specified Provide even fall to floor wastes where necessary

Owner's Initials

. . Builder's initials

16.0 GLAZIER

All windows and doors to be glazed shall be done so in accordance with AS 1288 Use only best quality glass and clean down on completion

17.0 PAINTER

External woodwork to be given -

- (a) Two (2) coats of acrylic finish or
- (b) Two (2) coats of stain

17.1 METALWORK

Downpipes, service pipes, wrought iron and lintels etc are to be cleaned primed and painted in accordance with the manufacturers specification

17.2 FIBRE-CEMENT

Clean surfaces and finish with two (2) coats of acrylic paint

Exterior brickwork (where applicable) to be finished with two (2) coats of acrylic paint

17.3 INTERNAL WOODWORK

Internal woodwork is to be given two (2) coats of stain or one (1) coat of undercoat stopped and sanded and completed with one (1) finish coat

17.4 CEILINGS (INTERNAL)

To be cleaned and finished with two (2) coats of ceiling white

17.5 WALLS (INTERNAL)

To be cleaned and finished with two (2) coats of washable low sheen or equivalent

17.6 GENERAL

All paints, stains, sealers etc are to be of approved brands as selected Paint finish is to be free of dust, hair, paint skins, etc

Owner's Initials ..

Builder's initials

DAVIES GEOTECHNICAL

CONSULTING ENGINEERS

21 October 2008

08-062 A

Eden Brae Homes
Level 2, 4 Columbia Circuit
BAULKHAM HILLS NSW 2153

Attention Sara Laudet

Dear Sara

re **GEOTECHNICAL ASSESSMENT, SITE ABSORPTION CAPABILITY
DRAINAGE DISPOSAL, PROPOSED RESIDENTIAL DEVELOPMENT
NO 53 ARNOTT CRESCENT WARRIEWOOD, NSW**

Further to your request, we are pleased to confirm our advice in regard to site disposal of drainage for the proposed residential re-development of the above property

Hydraulic design for the drainage disposal system is yet to be prepared by others. Information from the geotechnical assessment is required for the hydraulic design, for disposal of roof water and surface drainage from the property

The proposed footprint for the development was provided to us for the purposes of the field assessment

Scope of Work

The work undertaken for the geotechnical assessment comprised the following -

- site inspection carried out by an engineering geologist on 14 October 2008,
- determine a characteristic soil profile and assess bedrock levels by a hand-augered borehole and dynamic cone penetrometer (DCP) probes in the area considered appropriate for the proposed absorption system,
- percolation testing in the hand augered borehole in general accordance with procedure B4.1 in Appendix B of AS1547-1994 (reference 1),
- estimation of a design insitu permeability/absorption capacity for the proposed disposal system, based on percolation testing and assessed soil properties,
- preparation of the following report including comments on factors affecting performance of the proposed drainage disposal

Site Conditions

No 53 is a developed residential property, located on the southern side of Arnett Crescent, backing onto the North Narrabeen Reserve. The general slope gradient is from front to rear of the property. At the rear of No 53, the slope is quite flat, grading across the rear yard at less than 2° towards the south-western corner, continuing beyond within the Reserve.

The rear yard (proposed disposal area) is grassed. Beyond the rear fence, the adjoining Public Reserve is open and grassed. A sewer line crosses the rear yard, as indicated on the site plan.

No rock outcrop was evident on the subject property or the adjoining properties.

A plan of the property is provided in Figure 1 and a plan of the rear yard with test locations indicated is provided in Figure 2. Survey details (other than those indicated on the site plan) were not supplied.

Davies Geotechnical Pty Ltd ABN 44 070 628 787
PO Box 732 Pennant Hills NSW 1715 --- telephone & fax (02) 9481 8912
Email daviesgeotek@b:gpnd.com

Local Geology

Published information indicates that the site is located within the Narrabeen Group Newport Formation geological unit (reference 2), bordering on an extensive area of alluvial soil deposits with man-made fill to the south (comprising the Public Reserve area), and is within the mapped extent of the Watagan colluvial soil landscape (reference 3)

Local Drainage Conditions

The proposed disposal area at the rear of No 53 will not be affected by run-off from the street. Run-off from adjoining properties is not anticipated.

Existing and future surface drainage within the rear of No 53 will flow to the southwest towards the adjoining property and onto the Public Reserve. This would present minimal to negligible nuisance to the adjoining development and public land.

Changes to the site runoff as a result of the re-development of No 53 could arise from either of the following -

- increased sealed surface areas (roof area and paved house surrounds)
- concentration of drainage runoff where this does not occur at present

Soil Profile in Proposed Disposal Area

The proposed disposal area for drainage from No 53 is located at the rear of the proposed development, in the rear yard of the property, as indicated on the site plan provided in Figure 2 herewith.

The natural soil profile down to the inferred bedrock surface was assessed within the likely absorption disposal area, by excavation of a hand augered borehole, and dynamic cone penetrometer (DCP) probes, at the locations shown on the site plan in Figure 2. The soil profile from the hand-augered borehole at the test location comprised the following strata -

0.0 – 0.55m	Fill	SAND (SM), fine to medium grained, dark brown (topsoil) becoming light brown, moist, loose, with shell fragments and sandstone gravels
0.55 – 1.10m	Topsoil	Clayey/silty SAND (SC/SM) fine grained, dark grey/brown, moist, loose, becoming
1.10 – 1.18	“Residual”	CLAY (CL) mottled brown/grey, low plasticity, moist (>PL), soft
Borehole discontinued at 1.18m		

The soil profile encountered is recognisable as man-made fill placed over the natural soil profile associated with the underlying geology. The fill may be the fringe of the extensively filled area immediately to the south within the Public Reserve.

DCP refusal was not encountered within 1.6m of the present surface levels at the three test locations (DCP1 – DCP3). DCP1 was continued to 3m depth, encountering inferred stiff becoming very stiff clay below about 1.3m depth to the limit of the test.

Absorption Capacity/Disposal System Design

The percolation test was carried out in the sand fill, with the base of the test at 450mm depth and a 250mm head of water. A permeability of 12m/day (0.3 minutes for a fall of 25mm) was determined from the result of the simple field test carried out.

Selection of a suitable design absorption rate for stormwater infiltration should reflect the characteristic soil conditions for the life of the disposal system. A lower-bound infiltration rate is normally assessed from the soil permeability under saturated conditions. Our recommendations in Table 1 below, for lower-bound design conditions, take into account -

- ❑ the limitations of the field permeability test undertaken,
- ❑ representative values for the soil profile conditions at this site, for example as provided in AS/NZ 1547 2000 (reference 4) for typical soil classifications, and
- ❑ the soil stratigraphy within and below the depth of the test

Normal operating conditions for the infiltration disposal system (ie, for rainfall events of less intensity or duration than the hydraulic design requires) may well be characterised by a significantly higher absorption rate than that recommended in Table 1. The designer may choose to adopt a higher value.

Other general factors that should also be taken into account in the design of the disposal system include -

- ❑ Bedrock, if present at or close to the base of the disposal trenches or beds, would have a significantly reduced short-term infiltration rate. In this case, the net surface area available for infiltration should be taken conservatively as the sides and ends of the trenches/beds only.
- ❑ Depending on the design storm event and duration adopted for the design of the infiltration system, overflow from the disposal trenches/beds may occur. The disposal design must acknowledge the possibility of the absorption trench being surcharged, resulting in overland flow occurring from the trench, at some time over the design life of the system. The frequency of such occurrences is dependent on rainfall patterns.
- ❑ Buffer detention or storage upstream from the disposal area, or built into the disposal trenches/beds, will increase the efficiency of the disposal system and reduce overflow frequency or severity.
- ❑ The disposal system designer should assess the hydrology and hydraulic components of the stormwater system to determine the likely frequency of overflow events.

Argue and Pezzaniti, 2003 (reference 5) provide useful guidance for design of infiltration disposal systems for stormwater and drainage.

TABLE 1 Recommended Design Absorption Rate

Stratum (and equivalent textural classification)	Typical depth	K _{sat} (m/day)	Recommended design absorption rate	
			(l/m ² /day)	(l/m ² /sec)
<u>Fill</u> Sand (SP) Equivalent to massive (structure-less) sand	0 – 0.55m	>3.0	2600	0.03
<u>Old Topsoil</u> Clayey/silty Sand (SC/SM) Equivalent to weakly structured loam	0.55 – 1.1m	1.5	1300	0.015
<u>"Residual"</u> Clay (CL) Equivalent to light clay	>1.1m	0.1	86	0.001

The field testing confirms that the depth available for absorption disposal is not limited by the presence of bedrock. However, a practical limit of about 1m depth suitable for disposal appears reasonable from the soil stratigraphy inferred from the test results.

Site Constraints Affecting Design Capacity and Performance of Absorption Trench

- 1 The disposal capacity of the trench will be limited by the depth at which rock (if present) is encountered along its length. Clearly if the trench intersects rock, the disposal capacity will be reduced. For No 53, adequate depth is available for normal trench construction.
- 2 The sewer line present at the rear of the property may capture downhill seepage from the absorption area.

It is recommended that the disposal trench construction be inspected by the hydraulic designer, and possibly by a geotechnical engineer, to assess the suitability of the design assumptions, once the final ground contours in the disposal area have been constructed.

Closure

The above report provides our recommendations for infiltration capacity of the ground, and an assessment of the slope features relevant to site drainage disposal, at the rear of No 53 Arnot Crescent Warneewood. The geotechnical assessment is limited to these aspects of the design for on-site disposal of drainage.

Hydrological and hydraulic design assessment and detailing of the disposal for the proposed development are to be undertaken by others. Some recommendations are provided in the above report that may assist with selection and design of the disposal system.

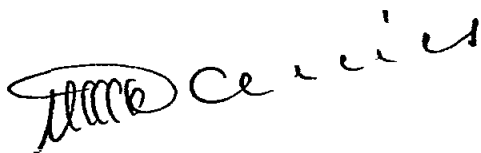
The existing slope and soil conditions within No 53 are considered suitable for limited site disposal, and are not constrained by shallow bedrock.

Appendix A – Limitations of This Report – is provided for further understanding of the context of the investigation undertaken, and the limits of the recommendations provided in the report.

We trust the above report is adequate for your needs at this time, and will be pleased to assist if you require further advice on geotechnical issues associated with the proposed development. Please contact the undersigned if you require further assistance.

Yours faithfully

DAVIES GEOTECHNICAL Pty Ltd



Warwick N Davies MIEAust CPEng NPER
Principal Geotechnical Engineer

ac8062L.doc

Attachments

- Figure 1 Site Plan – Proposed Development
- Figure 2 Site Plan – Test Locations
- Appendix A – Limitations of this report

REFERENCES

- 1 AS1547-1994 *Disposal Systems for Effluent from Domestic Premises*
- 2 Geol Sur NSW, Dept Min Resources (1983) *Geological Series Sheet 9130 (Sydney) 1 100,000*
- 3 Chapman, G.A and Murphy, C L (1989), *Soil Landscapes of the Sydney 1 100,000 sheet* Soil Conservation Service of NSW, Sydney
- 4 AS/NZS 1547 2000 *On-Site Domestic Wastewater Management*
- 5 Argue, J R, & Pezzaniti, D *Australian Runoff Quality – Chapter 10 Infiltration Systems* Engineers Australia, National Committee on Water Engineering, Draft June 2003

Project No 08-062	Scale as shown	SITE PLAN – PROPOSED DEVELOPMENT NO 53 ARNOTT CRESCENT WARRIEWOOD, NSW (Mr & Mrs S & R Williams)	Figure
Drawn wnd	Date 21 Oct 08		1

Project No 08-062	Scale as shown	SITE PLAN – TEST LOCATIONS NO 53 ARNOTT CRESCENT WARRIEWOOD, NSW (Mr & Mrs S & R Williams)	Figure
Drawn wnd	Date 21 Oct 08		2

APPENDIX A

LIMITATIONS OF THIS REPORT

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

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

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

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

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

SPECIAL ORDER TANK
3500L long x
650W wide x 1405H

MIN 3000 LITRE - RAINWATER TANK
WITH PUMPS TO SUPPLY GARDEN
TAPS AND INTERNAL RE-USE TO BE
CONNECTED AS PER ARCHITURAL
DETAILS, BASIC ASSESSMENT AND
SYDNEY WATER GUIDELINES
OVERFLOW PIPE TO PIT P1 LOCATION
SHOWN DIAGRAMATIC ONLY
Max Overflow RL 9.985m
Outlet to be mosquito proofed All
exposed pipework to be painted to
withstand external elements

LOT 92

ABSORPTION TRENCH SYSTEM
ATLANTIS SYSTEM
6 X 7 (Total 42) Single Modules
AS PER DETAIL

PERIMETER GROUND
LEVELS TO REMAIN
UNALTERED TO ENSURE NO
CONCENTRATION OF FLOWS

LOT 93

APPROX
LOCATION OF
RETAINING WALL
BY CLIENT

PROPOSED
RESIDENCE
FFL RL 8.74

DP 9 from Roof Areas
Nominated only to Rainwater
Tank ALL JOINTS SOLVENT
WELDED

2 STOREY
RENDERED
RESIDENCE
METAL ROOF
No.55

LOT 91

BRICK
RESIDENCE
TILE ROOF
No.51

APPROX
LOCATION OF
RETAINING WALL
BY CLIENT

GROUND FLOOR LAYOUT

REFER TO SHEET 2 FOR RAINWATER TANK DETAILS
LEAF GUTTER GUARDS OR SIMILAR SCREENING
RECOMMENDED TO ALL GUTTERS

LOCAL CERTIFICATION

PROFESSIONAL

5 0 0 3 0 1 7

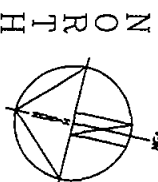
Issued by Andrew Dean (02) 9936 5711
Building Professionals Board (BPB0087)

PIPE SCHEDULE

TAG	PIPE DIA	MIN GRADE
B1	100	CHARGED
B2	100	7%
C1	150	1%
C2	150	3%

LEGEND

RL 0.00 NEW REDUCED LEVEL (NEW FINISHED GROUND LEVEL)
RL 0.00 EXISTING LEVEL
SL 0.00 SURFACE LEVEL
TL 0.00 TOP OF WALL LEVEL
GL 0.00 GARAGE FLOOR LEVEL
FL 0.00 FINISHED FLOOR LEVEL
AL 0.00 SEE PIPE SCHEDULE
PIT P1 SURFACE INLET PIT
PIT P2 OVERLAND FLOW PIT
ODP DOWNPIPE-SIZE
REFER TO NOTES FOR DP SIZE
GGP GULLY PIT
GGP OVERFLOW-200x100
GGH RAIN WATER HEAD
GGP DP WITH SPREADER
GGC BALCONY GULLY PIT
GGC CLEANING EYE
GGC GROUND FALL
GGC 100 HIGH EARTH MOUNDING



REVISIONS
A

STORMWATER LAYOUT NOTES

-PITS UP TO 600 DEEP TO BE 450 x 450 U.N.O., PITS UP TO 900 DEEP TO BE 600 x 600 U.N.O. PITS UP TO 1200 DEEP TO BE 900 x 600 U.N.O. PITS EXCEEDING 1200 DEEP TO BE 900 x 600 U.N.O. PITS TO BE PRECAST CONCRETE OR RENDERED BRICK WITH CONCRETE HEAVY DUTY GRATES U.N.O. LIGHT TRAFFIC AREAS U.N.O. ALL PITS TO BE BENCH TO DISCHARGE PIPES U.N.O. GAL STEPS IRONS TO ALL PITS EXCEEDING 900 DEPTH COVER AND SUMP GRATES SHALL COMPLY WITH AS2733 & AS4198

-DOWNPIPES TO BE 90 DIA IF CHARGED AND 100 x 50 BOX IF GRADIENT U.N.O. D.P.S SHALL BE INSTALLED IN ACCORDANCE WITH AS3500 3.2.4.11 & AS4198 MAX ROOF AREA PER DOWNPIPE IS 3050M WITH A QUAD 115 HI-FRONT GUTTER U.N.O. PIPES TO HAVE 1% MIN GRADE U.N.O. BY PIT INVERTS PIPES TO BE V.C CLASS 'X' OR U.P.V.C CLASS STORMWATER PIPE TO AS1254, 1260 1273 1477 2179.2 AND WHERE EXPOSED TO DIRECT SUNLIGHT TO HAVE ADEQUATE PROTECTION TO U.V. RADIATION IN ACCORDANCE WITH AS2032 SEWER GRADE/GAL PIPES TO BE USED WHERE COUNCIL POLICY OR CONSENT REQUIRE SUCH -GUTTER OUTLETS SHALL BE FITTED VERTICALLY TO THE SOLE OF THE FAVE GUTTERS RAINHEADS TO HAVE AN OVERFLOW DUCT OR WEIR 500mm BELOW THEIR CREST

-PROVIDE OVERFLOW SPITTERS TO ALL COVERED BALCONIES/ TERRACES NOT TO BE DIRECTED ON TO ROOF SURFACES -RISING MAINS (PRESSURE PIPE) TO BE IN ACCORDANCE WITH AS3500 1.2 -SUBSOIL DRAINS TO BE IN ACCORDANCE WITH AS2439 1 CLASS 100 TO BE USED ONLY IN SINGLE DWELLINGS -ALL PIPE JOINTS TO BE IN ACCORDANCE WITH AS3500 3.2.2.7 -ALL VALVES TO BE IN ACCORDANCE WITH AS3500 3.2 -EXPANSION JOINTS SHALL COMPLY WITH AS3500 3.2 TABLE 4.1 PVC JOINTS AND ACCESSORIES TO COMPLY WITH AS2179.2 & AS4198

-ALL TRENCHES TO BE IN ACCORDANCE WITH AS3500 3.2.7.2.8-14 EMBEDMENT MATERIAL AND TRENCH FILL TO ALL PIPES & SUBSOIL DRAINS TO BE IN ACCORDANCE WITH AS3500 3.2.7 ALL WORKS TO BE IN ACCORDANCE WITH AS1254, 1741 2032 2733 2865 3996 1260 1477, 2179.1 & 2.2566 6367 8301 8697 & BCA

-IT IS THE BUILDER'S RESPONSIBILITY TO CONFIRM THAT LEVELS AND SURVEYS ARE IN ACCORDANCE WITH LEVELS ON SITE & ARE APPROVED BY COUNCIL & ARCHITECT BEFORE COMMENCING WORK -NO SEWER VENTS GULLY PITS OR SIMILAR TO BE LOCATED BELOW THE MAXIMUM WATER SURFACE LEVEL IN DETENTION BASINS ALL BASIN WALLS TO BE WATER TIGHT & STRUCTURALLY DESIGNED BY A STRUCTURAL ENGINEER -ALL FENCES WHICH MAY DIVERT FLOW FROM PROPOSED DIRECTION TO BE RAISED 100mm

-BUILDER TO ENSURE ALL DRAINAGE AREAS INCLUDING EXPOSED BALCONIES TO HAVE OVERFLOW MECHANISM IN PLACE IN THE EVENT OF BLOCKAGE WITH ADEQUATE OVERFLOW SECTION THROUGH EXTERIOR FINISHED GROUND LEVELS TO BE SLOPING AWAY FROM PERIMETER WALLS IN ALL CASES -ALL HEADROOM CLEARANCES TO BE COORDINATED BETWEEN BUILDER & ARCHITECT NOTIFY ENGINEER FOR APPROVAL IF ANY CHANGES OCCUR

-ALL GULLY POSITIONS ARE DIAGRAMATIC ONLY -BUILDER SHOULD CONSULT ARCHITECTURALS FOR DIMENSIONS TO LOCATE STORMWATER ELEMENTS U.N.O. -FIRE RATING TO ARCHITECT'S SPECIFICATION

-ALL FINISHED FLOOR LEVELS ARE NOMINATED BY ARCHITECT PREPARED BY BUILDER/SUB-CONTRACTORS ARE TO BE IMPLEMENTED DURING CONSTRUCTION NO WORK IS TO COMMENCE UNTIL ALL WORKERS CARRY OUT SITE INDUCTION PREPARED AND REPORTED IMMEDIATELY TO SITE SUPERVISOR TO CARRY OUT NECESSARY PROCEDURES TO ELIMINATE HAZARD PRIOR TO PROCEEDING WITH WORK STRUCTURAL AND GEOTECHNICAL ADVICE SHOULD BE SOUGHT IN ALL CASES -CONFINED SPACES SIGNAGE TO BE INSTALLED IN ACCESSIBLE UNDERGROUND TANKS TO WORK COVER SPECIFICATIONS ALL PITS EXCEEDING 600mm DEPTH TO HAVE J BOLTS INSTALLED TO GRATES

-MAINTENANCE DEVICES RED D BY AUTHORITIES ARE NOT TO BE ASSUMED SHOWN ON DRAWINGS -EARTH MOUNDING SHOWN AS TEMPORARY MEASURE UNTIL LANDSCAPING COMPLETED TO DIRECT FLOWS AS SHOWN

THIS DRAWING IS DIAGRAMATIC ONLY & NOT TO BE SCALE
RE: R.R. TO ARCHITECT'S DRAWINGS FOR DIMENSIONS COPYRIGHT IN THIS DRAWING IS THE PROPERTY OF IBRAHIM STORMWATER CONSULTANTS AND THE DRAWING SHALL NOT BE REPRODUCED OR COPIED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN APPROVAL OF IBRAHIM STORMWATER CONSULTANTS

IBRAHIM STORMWATER CONSULTANTS

CONSULTING CIVIL ENGINEERS

P.O. BOX 400 CHERRYBROOK NSW 2138
TELEPHONE (02) 9960 5515 FAX (02) 9960 6114
www.stormwater.net.au

PROJECT
PROPOSED RESIDENCE
AT 53 ARNOTT CRESCENT
WARRIEWOOD
FOR MR & MRS WILLIAMS

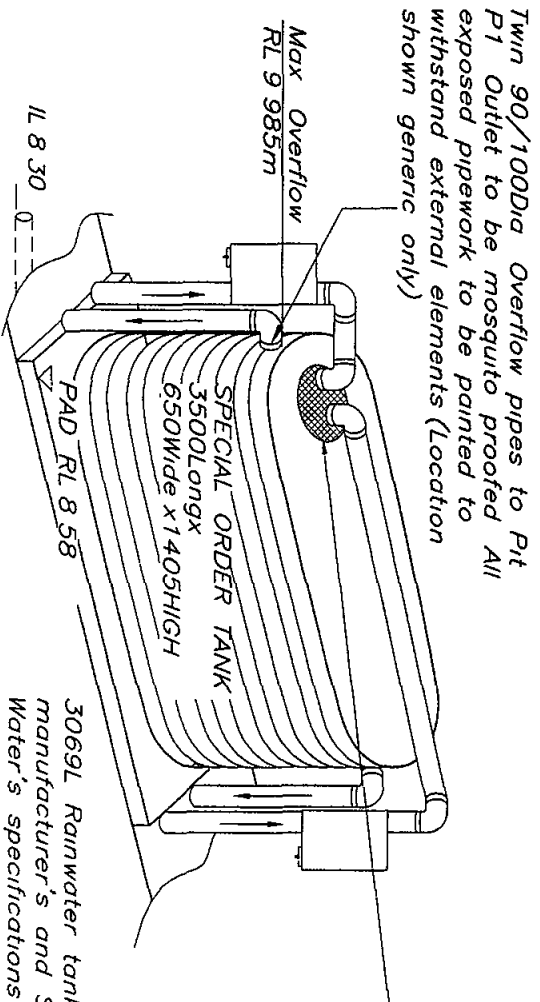
THIS DRAWING
STORMWATER
LAYOUT SH.1
JOB NUMBER
E1631-12199
SHEET NO
1 of 2
REVISION
A

SCALE(S) 1:200 1:100 U.N.O.
SCALE BAR - 1m INTERVALS

DATE OCT 2008
DRAWN M.I.
DESIGNED M.I.
APPROVED

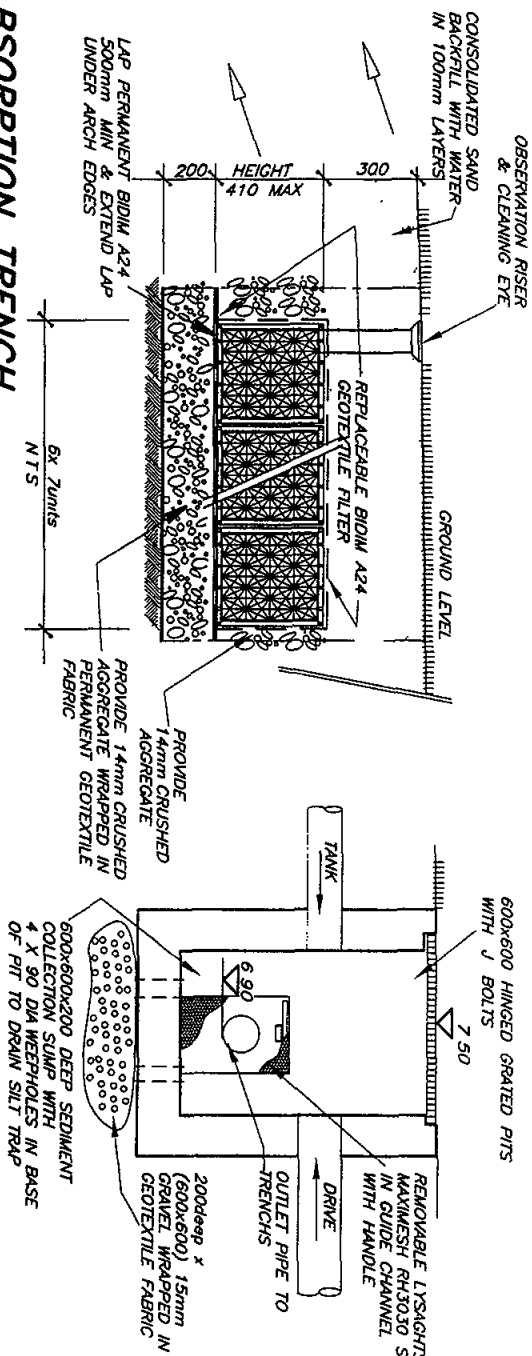
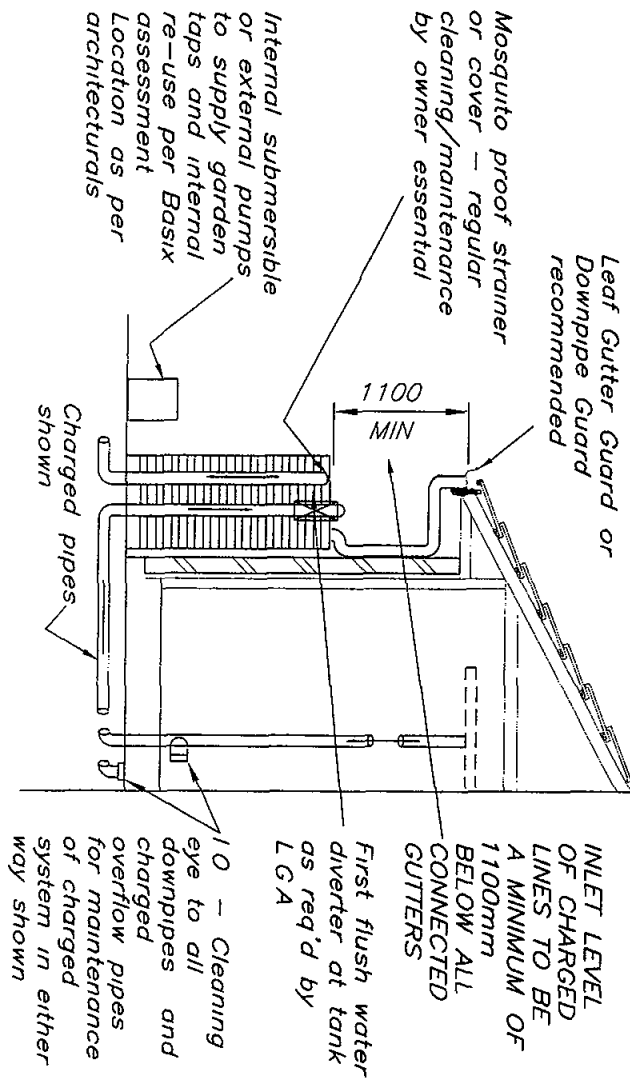


ISSUE	PRINTS	ISSUED TO	DATE
1	EMAIL	BUILDER/CLIENT	31-10-08
2	EMAIL	BUILDER/CLIENT	27-3-09



RAINWATER TANK

TANK DETAILS SHOWN ARE A SUGGESTED CONFIGURATION ONLY. ANY MODIFICATIONS TO TANK VOLUME OR INLET AND OUTLET LEVELS MUST BE APPROVED BY ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION. TANK SHAPE, & DEVICES SHOWN ARE DIAGRAMMATIC ONLY. MINIMUM OF 450 CLEARANCE (UNLESS L.G.A. REQUIRES LARGER SETBACK) TO SIDE BOUNDARIES MUST BE MAINTAINED. CLIENT IS RESPONSIBLE TO ENSURE COMPLIANCE WITH THIS IN THE INSTALLED STATE. CHARGED stormwater lines from Roof Areas ONLY to rainwater tank. All joints to be solvent welded. All exposed pipework to be painted to withstand external elements. First flush water diverter at tank to comply with Sydney Water and council DCP's. An approved switch system similar to 'Rainbank' to be used via mains. Rain Tank to be installed and maintained to manufacturers specifications and to comply with all Sydney Water Guidelines. Client to be responsible for charged pipelines system of charged pipelines. Debris accumulation significantly affects systems performance. Maintenance program essential. Structural details for tank base by manufacturer or others.



ABSORPTION TRENCH

TRENCHES TO BE LOCATED PARALLEL TO NATURAL CONTOURS OF SITE. STRICTLY NO PAVING OR HARD SURFACES TO BE CONSTRUCTED OVER TRENCHES. Geotech Engineers Recommendation for construction of the trench to incorporate roughening of the base and sides of the trench to reduce smearing that may be caused during excavation. Roughening could be achieved by turning the base of the trench and vertical grooving the sides. Trafficking of the base of the trench should be avoided during construction of the absorption trench. Trench design and construction should incorporate suitable geotextile lining to the base, sides and top of the trench.

BUILDER/CLIENT TO ENSURE THAT ALL SAFETY MEASURES ARE TAKEN DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO SAFETY BARRIERS, SIGNAGE, OBSTACLES, STRUCTURAL AND GEOTECHNICAL ADVISE WHERE NECESSARY. ARE NOT STRUCTURES OR SERVICES SAFETY MEASURES RECOMMENDED BY PRODUCT SUPPLIERS ETC.

REVISIONS		
1	Reinbank relocated - 27-3-09	

ISSUE	PRINTS	ISSUED TO	DATE
1	EMAIL	BUILDER/CLIENT	31-10-08
2	EMAIL	BUILDER/CLIENT	27-3-09

SCALE(S) 1:200 100 u n o
SCALE BAR - 1m INTERVALS
DATE OCT 2008
DRAWN M/I
DESIGNED M/I
APPROVED



IBRAHIM STORMWATER CONSULTANTS
CONSULTING CIVIL ENGINEERS
P.O. BOX 400, CHERTPOOK NSW 2126
TELEPHONE (02) 9980 5515 FAX (02) 9980 6114
www.stormwater.net.au

PROJECT
PROPOSED RESIDENCE
AT 53 ARNOTT CRESCENT
WARREWOOD
FOR MR & MRS WILLIAMS

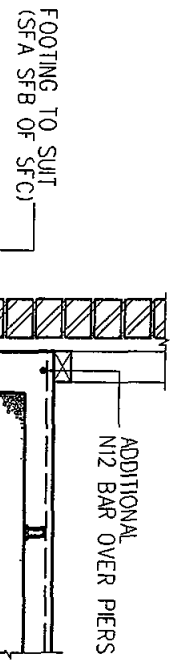
THIS DRAWING
STORMWATER
DETAILS SH.1
BUILDER
EDEN BRAE HOMES

JOB NUMBER
E1631-12199
SHEET No
2 of 2
REVISION
A

THIS DRAWING IS DIAGRAMMATIC ONLY AND NOT TO BE SCALE.
REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS. CO-ORDINATE IN THIS DRAWING IS THE
PROPERTY OF IBRAHIM STORMWATER CONSULTANTS AND THE DRAWING SHALL NOT BE
REPRODUCED OR COPIED IN ANY FORM WITHOUT THE PRIOR
WRITTEN APPROVAL OF IBRAHIM STORMWATER CONSULTANTS

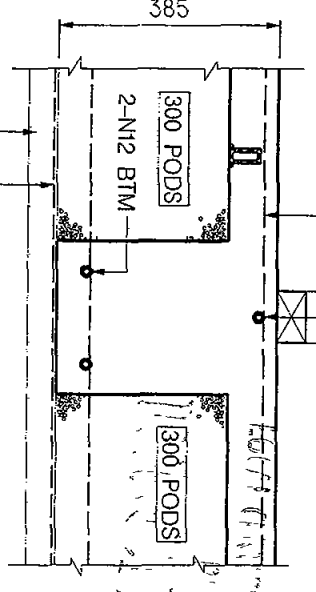
WAFLE PODS CUT TO FORM
600 SQUARE x 400 DEEP
MASS CONCRETE PAD TYPICAL

-REFER TO ARCHITECTURAL'S
FOR LOCATIONS OF RW TANK,
AG, HWS AND LPG UNITS
-REFER TO STRUCTURAL
ENGINEERS DETAILS FOR SIZE
OF PADS, PAD REINFORCEMENT
AND PIER REQUIREMENTS



STRIP FOOTING &
EDGE BEAM
CONNECTION

TOP FABRIC
ADDITIONAL 1-N12 TOP
OVER PIERS



INTERNAL LOAD BEARING

RIB RAFT SLAB PLAN

2-N12 BARS 1500 LONG, TYPICAL
TIED TO UNDERSIDE OF FABRIC

STRIP FOOTING
400 WIDE 400 DEEP
3-11 TM TOP & BTM
R6 TIES @ 900 CTS
WIDEN AS REQUIRED
TO 450 WIDE x 900 LONG

CONSTRUCTION NOTES (UNLESS NOTED OTHERWISE)

GENERAL

THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS. REFER TO ARCHITECT'S FINAL DRAWINGS.

BUILDER TO CHECK ALL RELEVANT DIMENSIONS ON SITE.

ALL WORKMANSHIP AND MATERIALS TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF RELEVANT AUSTRALIAN STANDARD CODES AND THE REGULATIONS OF THE RELEVANT BUILDING AUTHORITY.

DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART BE SHALL BE OVER STRESSED.

THE BUILDER BE RESPONSIBLE FOR ANY DAMAGE TO THE WORKS DURING CONSTRUCTION.

CONCRETE

CONCRETE SPECIFICATION (F C 28 DAYS) TO BE AS FOLLOWS

LOCATION	CEMENT	F C	MAX AGG SIZE	SUMP
PIERS	TYPE A	15 MPa	20	80
SLAB	TYPE A	20 MPa	20	80
STRIP FOOTINGS	TYPE A	25 MPa	20	80

CLEAR COVER TO REINFORCEMENT TO BE AS FOLLOW

LOCATION	FORMED & SHELTERED	FORMED & EXPOSED	POURED ON GROUND
SLABS & WALLS	20	30	65
BEAMS	25	40	65
COLUMNS	40	50	-

REINFORCEMENT SYMBOLS ARE AS FOLLOWS
(N) STRUCTURAL GRADE ROUND BARS (250 N)
(N) HOT ROLLED DEFORMED BARS (400 N)
(SL) - HARD DRAWN WIRE REINFORCING FABRIC (450 SL)
(S) STRUCTURAL GRADE DEFORMED BARS

NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS TO BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.

BEAM DEPTHS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.

ALL REINFORCEMENT TO BE ADEQUATELY SUPPORTED IN ITS REQUIRED POSITION AND COVER DURING PLACEMENT OF CONCRETE.

PIERS OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.

ALL CONCRETE TO BE MECHANICALLY VIBRATED AND SHALL BE CAREFULLY WORKED AROUND THE REINFORCEMENT AND INTO THE CORNERS OF FORMWORK.

ALL CONCRETE SHALL BE CURED BY MOIST CURING BY CONTINUAL WETTING FOR AT LEAST 7 DAYS OR THE USE OF AN APPROVED CURING COMPOUND.

FOUNDATIONS

FOOTINGS ARE DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 100KPa.

PIER HOLES ARE DESIGNED FOR ALLOWABLE BEARING PRESSURE OF 200KPa.

FOUNDATION MATERIAL SHALL BE APPROVED PRIOR TO CONSTRUCTION.

ADDITIONAL

SITE TO BE STRIPPED OF ALL ORGANIC MATTER AND ASSOCIATED TOPSOIL.

ALL SITE FILLING PLACED BENEATH RAFT SLAB TO BE TREATED IN ACCORDANCE WITH CLAUSE 6.4. OF AS 2870.2 1996.

A 1 METRE WIDE APRON WITH 25 CROSS FALL AWAY FROM SLAB EDGE IS TO BE PROVIDED ALL AROUND THE RAFT SLAB WHERE APPLICABLE.

RAFT SLAB TO BE LAID ON 50MM THICKNESS OF CONSOLIDATED SAND COVERED WHERE PLATFORM IS NOT LEVEL. (UNLESS NOTED OTHERWISE).

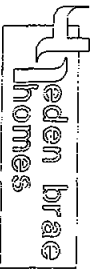
WITH 0.2M THICK POLYTHENE VAPOUR BARRIER WITH ALL JOINTS PROPERLY LAPPED AND TAPED AT PENETRATIONS.

ADDITIONAL CONCRETE PIERS MAY BE REQUIRED UNDER SLAB TO EVEN DEFLECTION SYSTEM OR BELOW GROUND RAINWATER TANK. THE BUILDER IS TO ADVISE ENGINEER IN ORDER TO ENSURE THE CONCRETE PIERS ARE DRILLED 500MM BELOW INVERT LEVEL OF TANK OR THE FOOTING OF THE SUPPORTING WALL FOR AN ABOVE GROUND DEFLECTION SYSTEM.

DESIGNED TO AS 2870

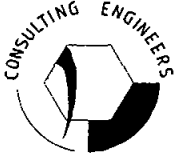
CONCRETE SLAB DETAIL PLAN

CLIENT	WILLIAMS
LOCATION	53, ARNOTT CRES WARREWOOD
DRAWN BY	EY
SCALE	1:100
DATE	26/09/08
ISSUE	A
JOB NO	FB3054.9



RAFFLETTOS

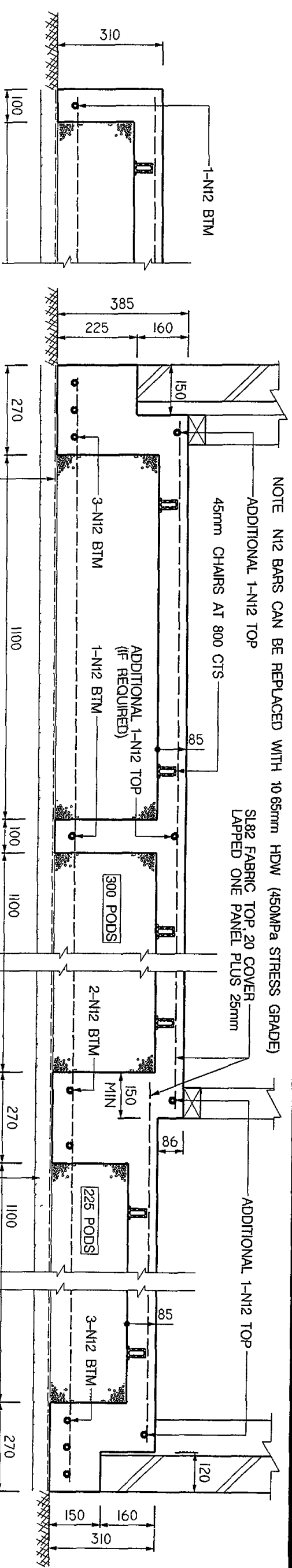
ACN 079347166
LEVEL 2 103 VANESSA STREET
KINGS GROVE NSW 2208
PO BOX 161 KINGS GROVE NSW 2208



ZANUTINI

PTY LTD
TEL: PHONE (02) 9554 9511
FAX: (02) 9554 9764
DX 1352 JUBA VILLAGE NSW

B.C.MIT AUSTR



PATIO EDGE

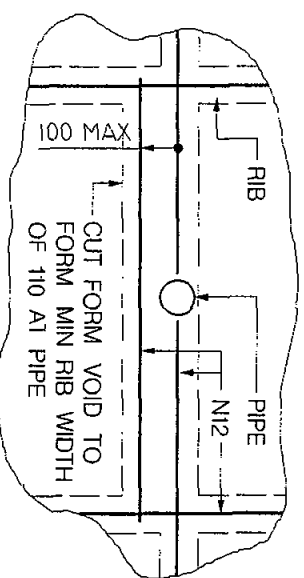
EDGE BEAM

INTERNAL RIB

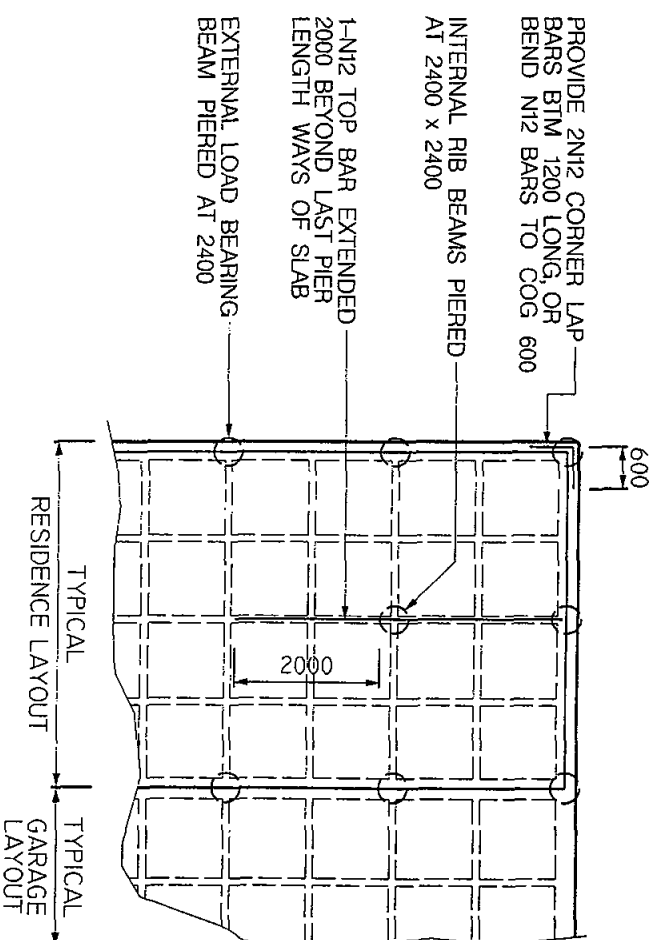
STEP DOWN DETAIL

GARAGE EDGE BEAM

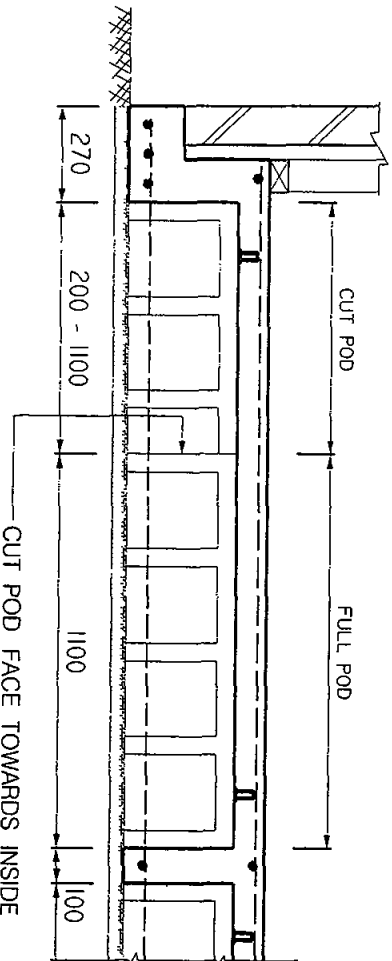
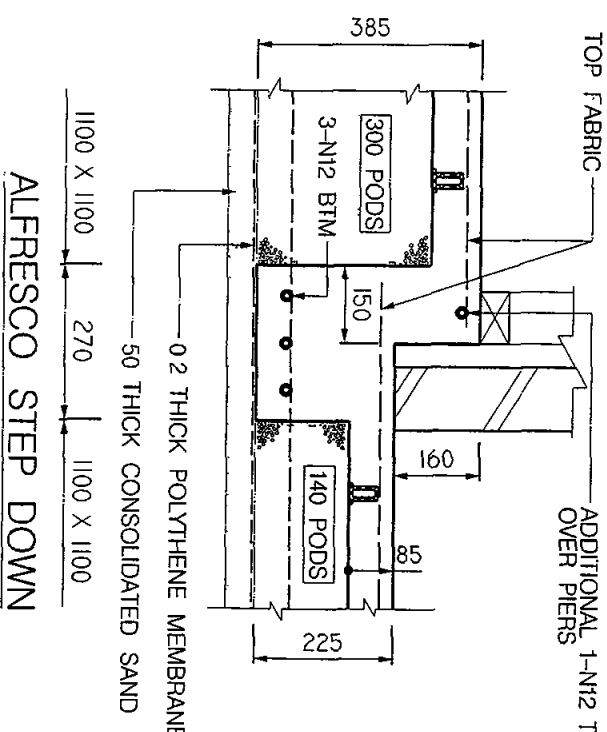
- PIERING NOTES**
- BEAMS TO BE PIERED TO AN EVEN BEARING
 - SPACE PIERS AT 2400 CTS AS SHOWN EXTERNALLY, 400 DIA TO CLAY & SAND OR 300 DIA TO ROCK OR SHALE
 - PIERS REQUIRED UNDER INTERNAL RIB BEAMS WHEN CONSTRUCTED ON MORE THAN 300mm OF UNCONTROLLED/NON-COMPACTED MATERIAL AS SHOWN
 - PROVIDE ADDITIONAL 1-N12 BAR TOP OVER PIERED INTERNAL BEAMS AND RIBS IN LONG DIRECTION OF SLAB



PIPE PENETRATION THROUGH RIB



REINFORCEMENT FOR RIBS AND BEAMS			
WIDTH	TOP STEEL	BTM STEEL	
271-330	1-N12	3-N12	
331-440	2-N12	4-N12	
441-550	3-N12	5-N12	
551-660	4-N12	6-N12	

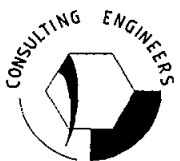


STRUCTURAL DETAIL PLAN

Rafeltos

Zanuttini

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LEVEL 2, 103 VANESSA STREET
KINGSGROVE NSW 2208
PO BOX 161 KINGSGROVE NSW 2208



TELEPHONE (02) 9554 9311
FAX (02) 9554 9764
DX 11392 HURSTVILLE NSW

Meden brae Homes

CLIENT WILLIAMS

LOCATION 53, ARNOTT CRES WARREWOOD

CLASSIFICATION H

SCALE 1:20

SHEET NO 2

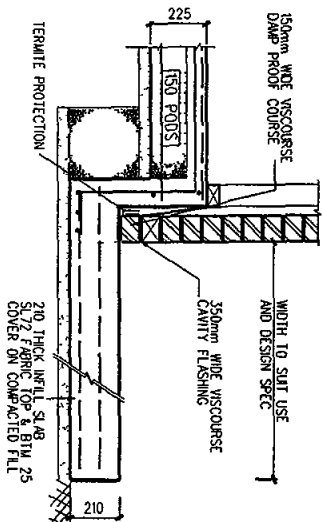
ISSUE A

DATE 26/09/08

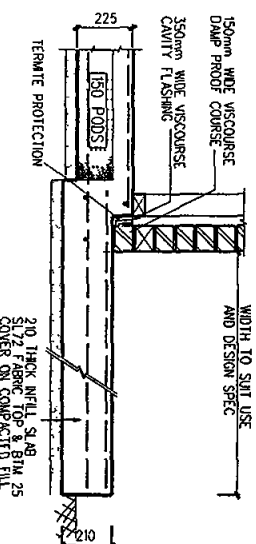
JOB NO EB30549

DATE 26/09/08

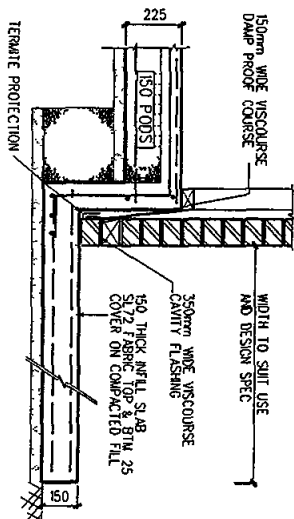
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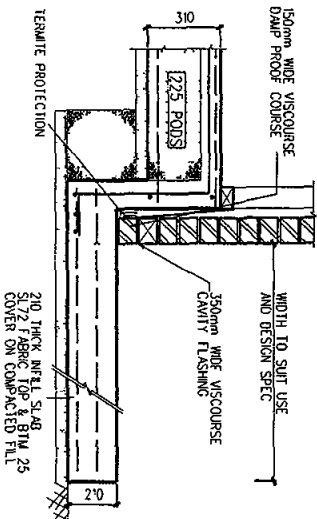
HOT WATER PAD DETAIL
150 PODS (DEEP BEAMS)



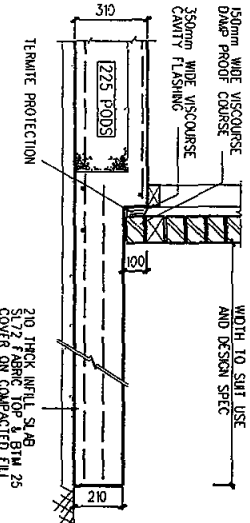
HOT WATER PAD DETAIL
150 PODS (NO DEEP BEAMS)



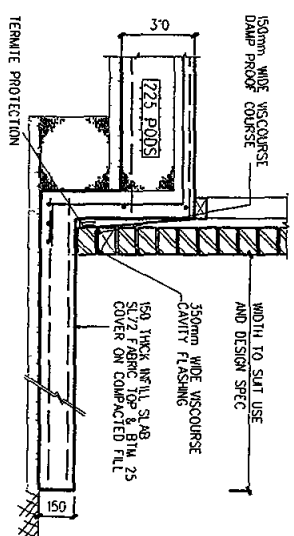
R/W TANK AND A/C UNIT PAD DETAIL
150 PODS (DEEP BEAM)



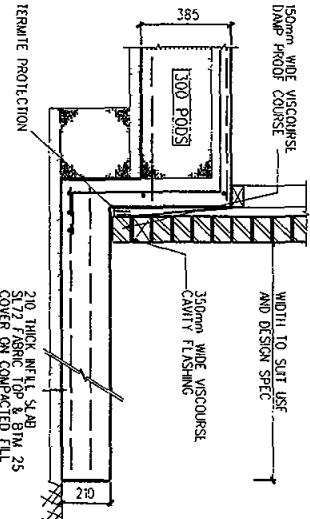
HOT WATER PAD DETAIL
225 PODS (DEEP BEAMS)



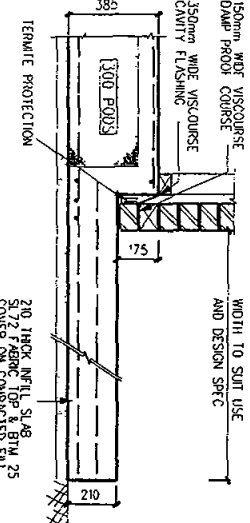
HOT WATER PAD DETAIL
225 PODS (NO DEEP BEAMS)



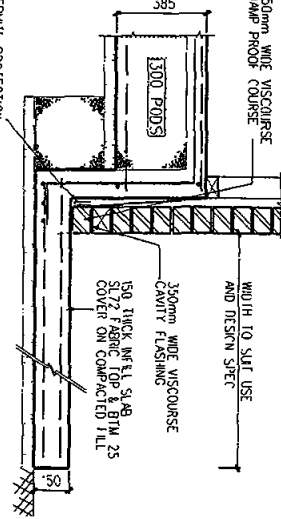
R/W TANK AND A/C UNIT PAD DETAIL
225 PODS (DEEP BEAM)



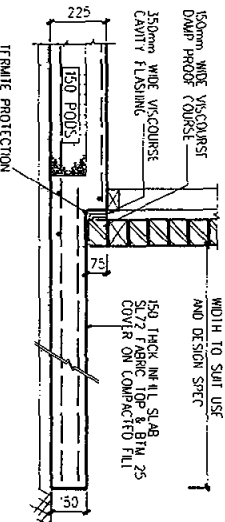
HOT WATER PAD DETAIL
300 PODS (DEEP BEAMS)



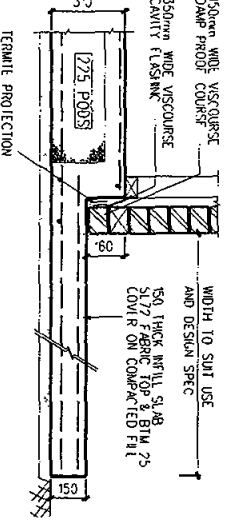
HOT WATER PAD DETAIL
300 PODS (NO DEEP BEAMS)



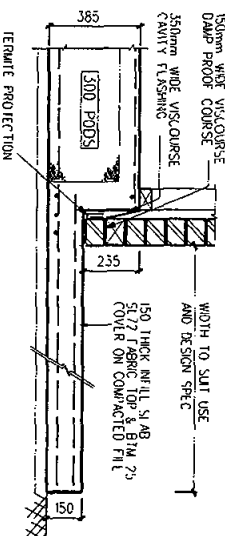
R/W TANK AND A/C UNIT PAD DETAIL
300 PODS (DEEP BEAM)



R/W TANK AND A/C UNIT PAD DETAIL
150 PODS (NO DEEP BEAMS)

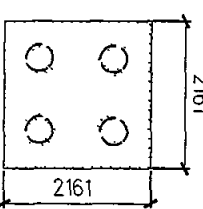
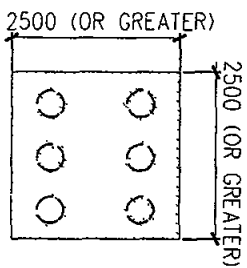


R/W TANK AND A/C UNIT PAD DETAIL
225 PODS (NO DEEP BEAMS)

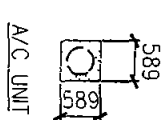
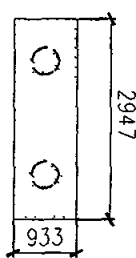


R/W TANK AND A/C UNIT PAD DETAIL
300 PODS (NO DEEP BEAMS)

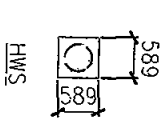
TYPICAL RAINWATER TANKS, A/C UNITS AND HOT WATER UNITS (PIER REQUIREMENTS)



RAINWATER TANKS



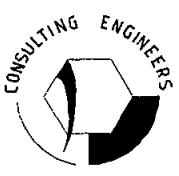
A/C UNIT



HWS

RAFFLETTOS

ACN 079047466
LEVEL 2 103 VANESSA STREET
KINGSGROVE NSW 2208
PO BOX 161 KINGSGROVE NSW 2208



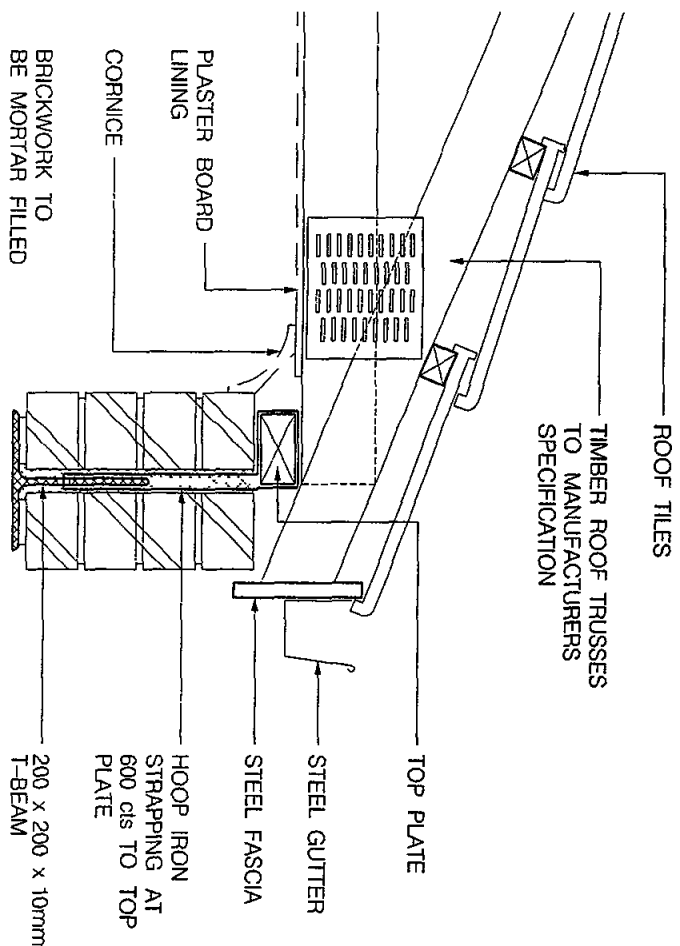
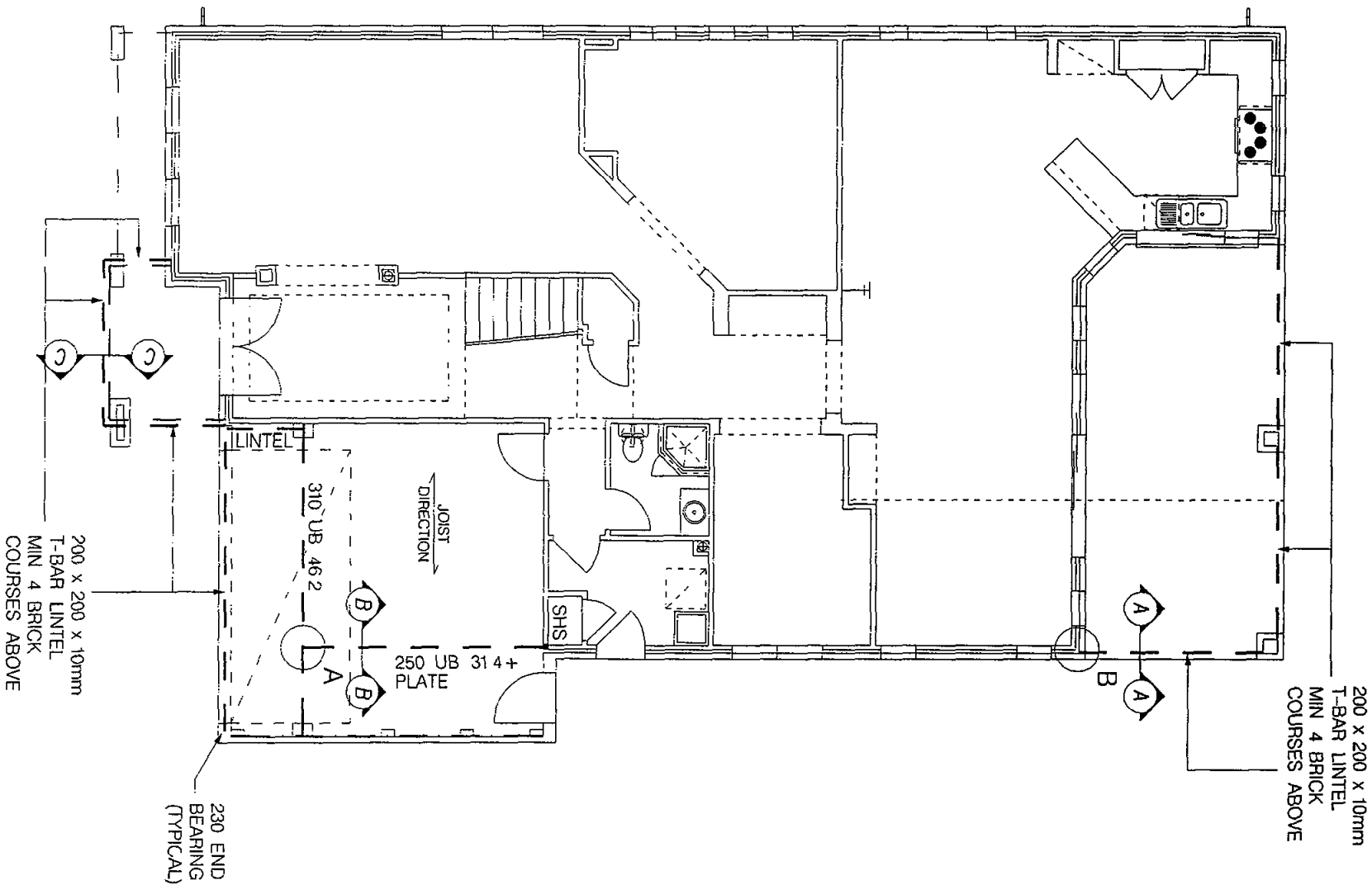
ZANUTTINI

PTY LTD
TELEPHONE (02) 9554 9311
FAX (02) 9554 9764
DX 11392 HUNTSVILLE NSW

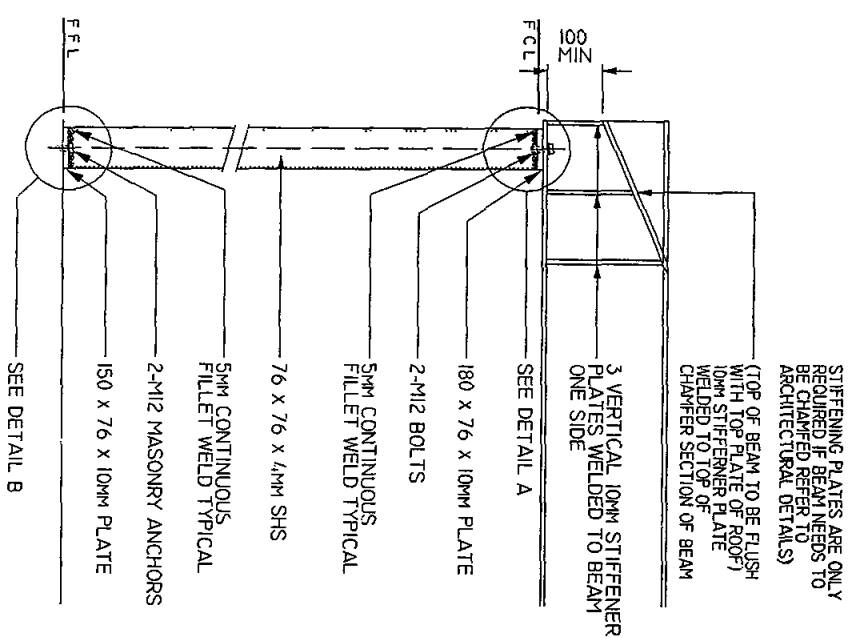
Shedden & Co

TYPICAL R/W, A/C UNITS AND HWS PAD DETAILS

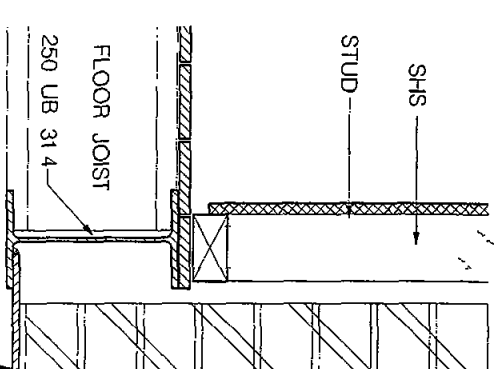
CLIENT	WILLIAMS
LOCATION	53, ARNOTT CRES WARREWOOD
ISSUE	A
SCALE	1:20
DATE	26/09/08
JOB NO	EB30549



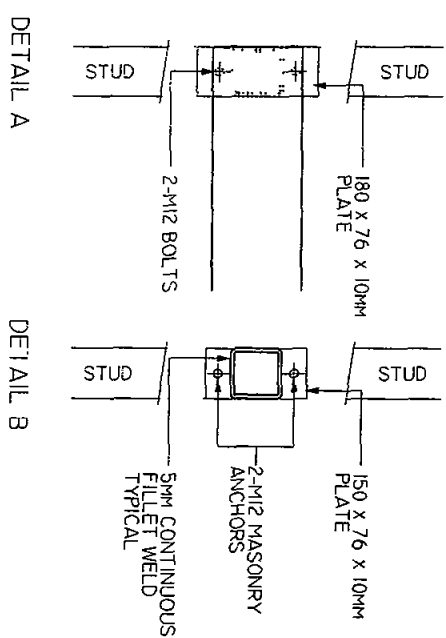
SECTION A-A



TYPICAL SECTION



SECTION B-B

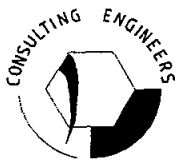


NOTE

- ALL STEELWORK TO BE PAINTED WITH AN APPROVED CORROSIVE RESISTANT PRIMER
- NOTE: IF BUILDING IS LOCATED WITHIN 1.0 KM OF THE COAST, ENGINEER IS BE NOTIFIED AND STEEL BEAMS ARE TO BE GALVANISED
- SHS DENOTES SQUARE HOLLOW SECTION OR STEEL POST, ALL POST TO BE 76 x 76 x 4mm SHS BUILT INTO STUD FRAMEWORK
- DS DENOTES 2/ 90X5 F17 HWD STUDS

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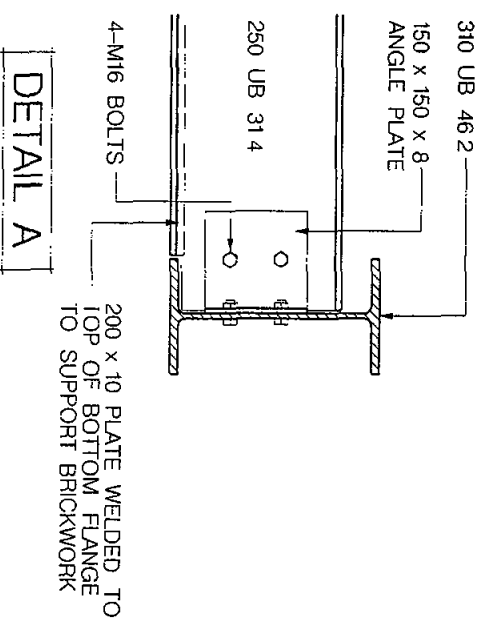
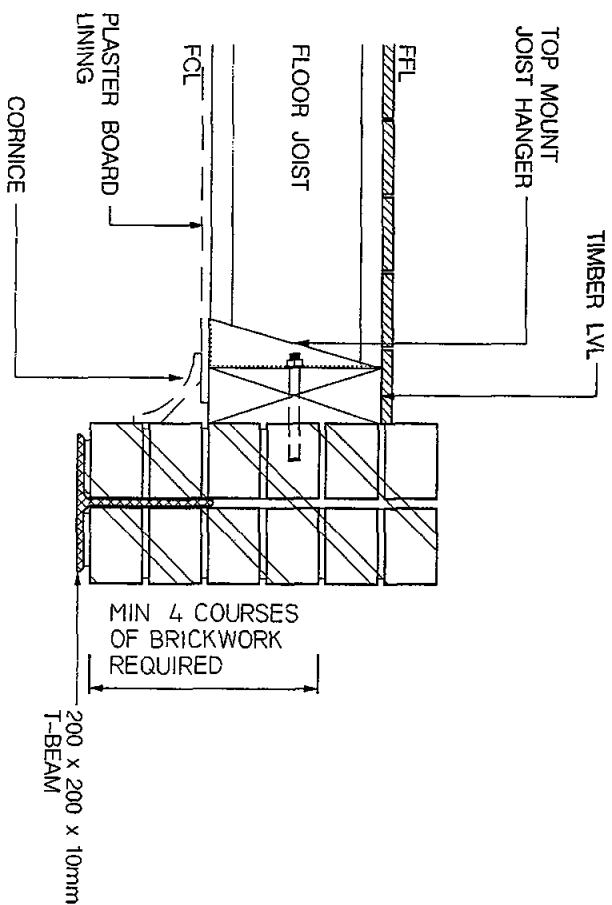
PTY LTD
TELEPHONE (02) 9554 8311
FACSIMILE (02) 9554 6761
DX 11597 HURSTVILLE NSW



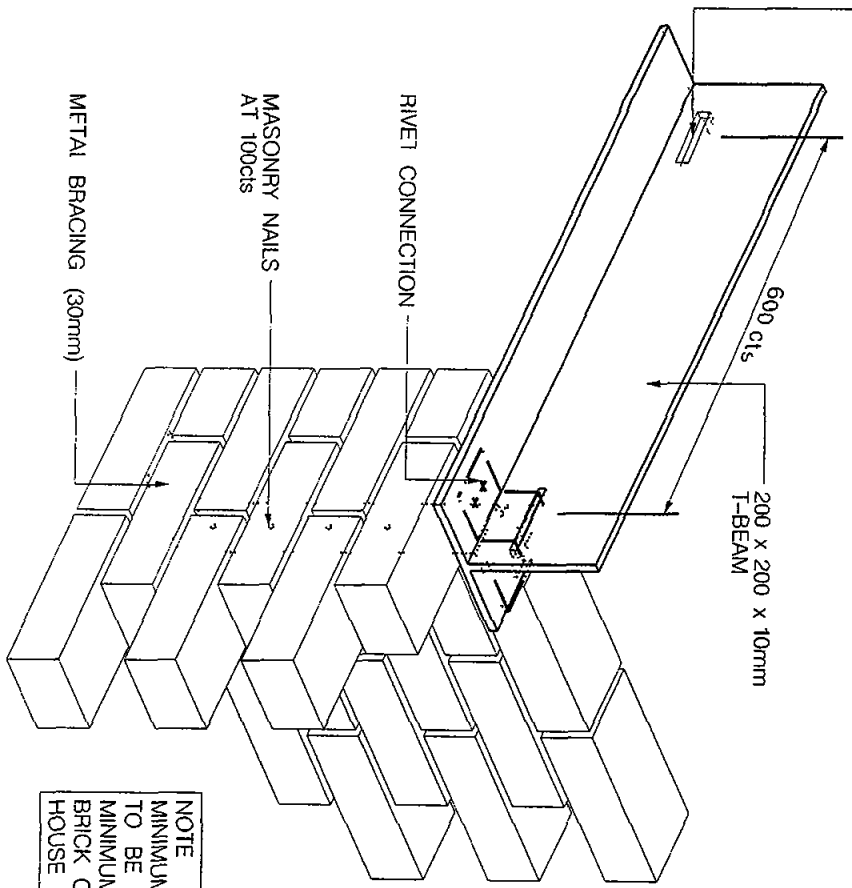
STRUCTURAL STEEL DETAIL PLAN

CLIENT	WILLIAMS
LOCATION	53, ARNOTT CRES WARREWOOD
DRAWN BY	EY
SCALE	1:100
SHEET NO	4
ISSUE	A
DATE	26/09/08
JOB NO	EB3054.9

B E M I E AUST



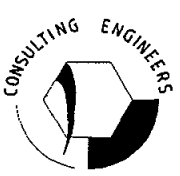
SLOTS BLOWN INTO T-BAR
FOR STRAPPING TO HOLD
ROOF TRUSSES DOWN AT 600 cts
SLOT 100mm x 20mm



NOTE
MINIMUM END BEARING
TO BE 200mm.
MINIMUM TIED INTO 5
BRICK COARSE'S INTO
HOUSE BRICKWORK

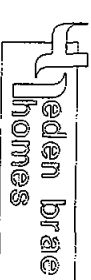
Rafelitos

ACN 079047166
LEVEL 2 103 VANESSA STREET
KINGSGROVE NSW 2208
PO BOX 161 KINGSGROVE NSW 2208



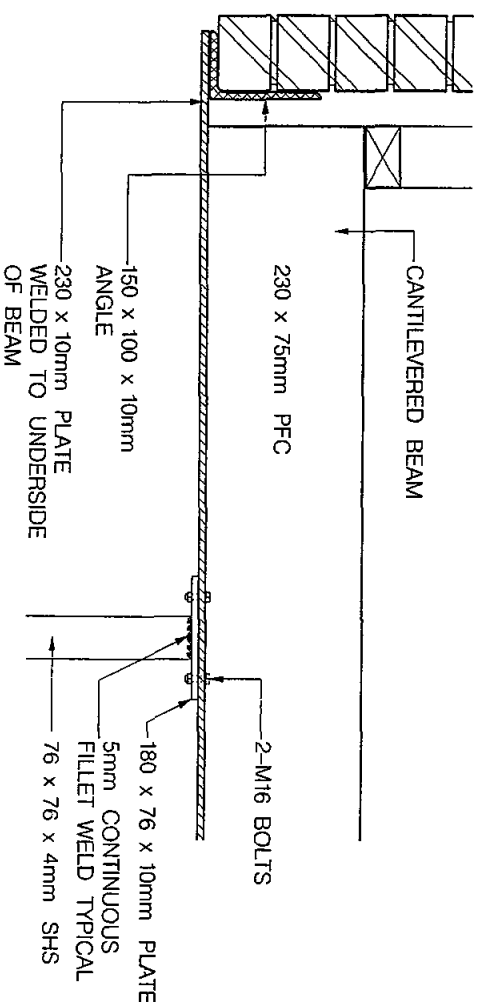
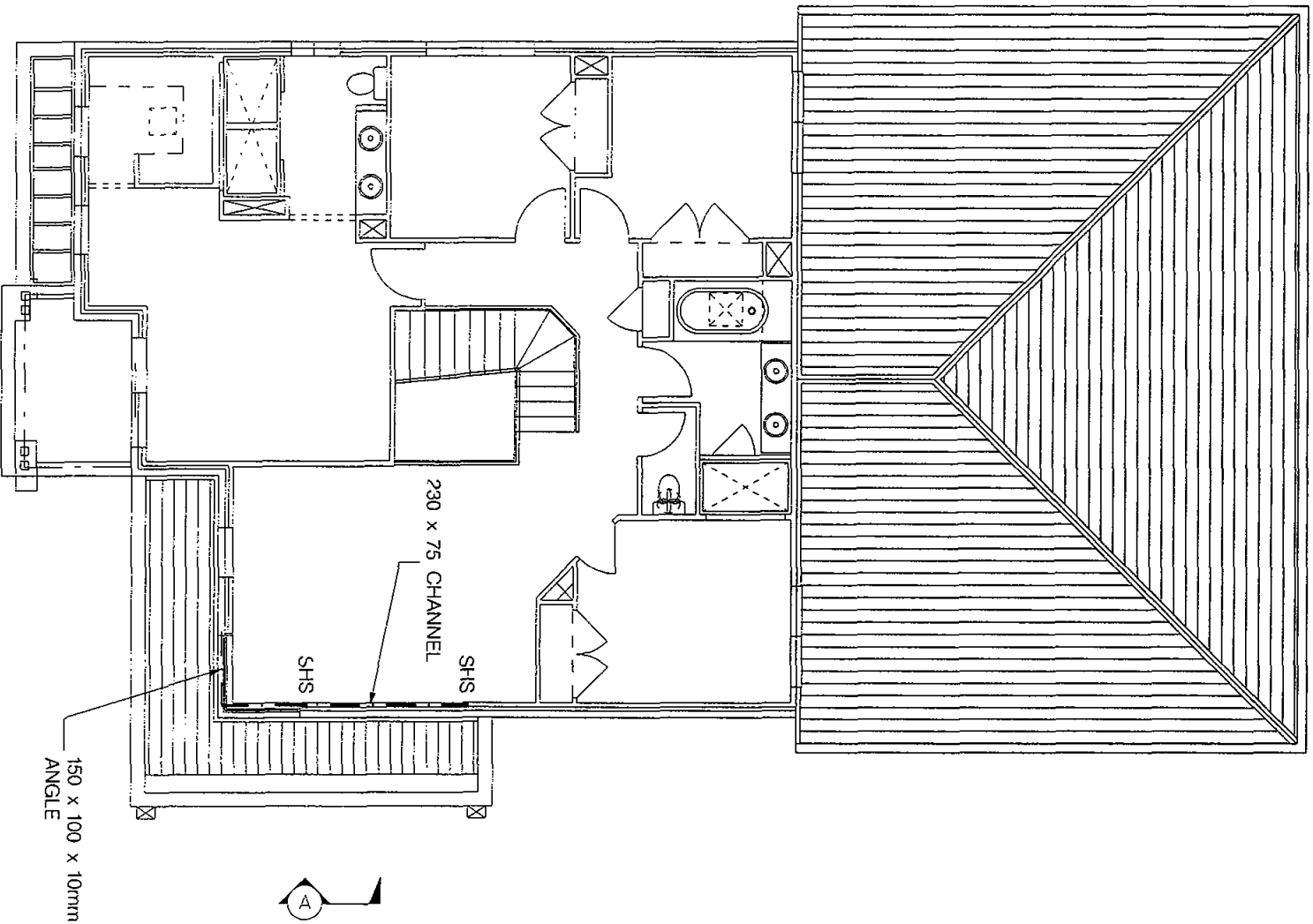
Zanuttini

PTY. LTD.
TELEPHONE (02) 9554 9311
FACSIMILE (02) 9554 9764
DX 11392 MURSTVILLE NSW



STRUCTURAL STEEL DETAIL PLAN

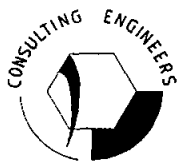
CLIENT	WILLIAMS		
LOCATION	53, ARNOTT CRES WARRIEWOOD		
DRAWN BY	EY	SCALE	1:100
ISSUE	A	DATE	26/09/08
		SHEET NO	5
		JOB NO	EB30549



ELEVATION A

RAFFLETTOS

ACN 079047466
LEVEL 2 103 VANESSA STREET
KINGSGROVE NSW 2208
PO BOX 161 KINGSGROVE NSW 2208



ZANUTTINI

PTY LTD
TELEPHONE (02) 9554 9311
FACSIMILE (02) 9554 9704
DX 11392 HURSTVILLE NSW

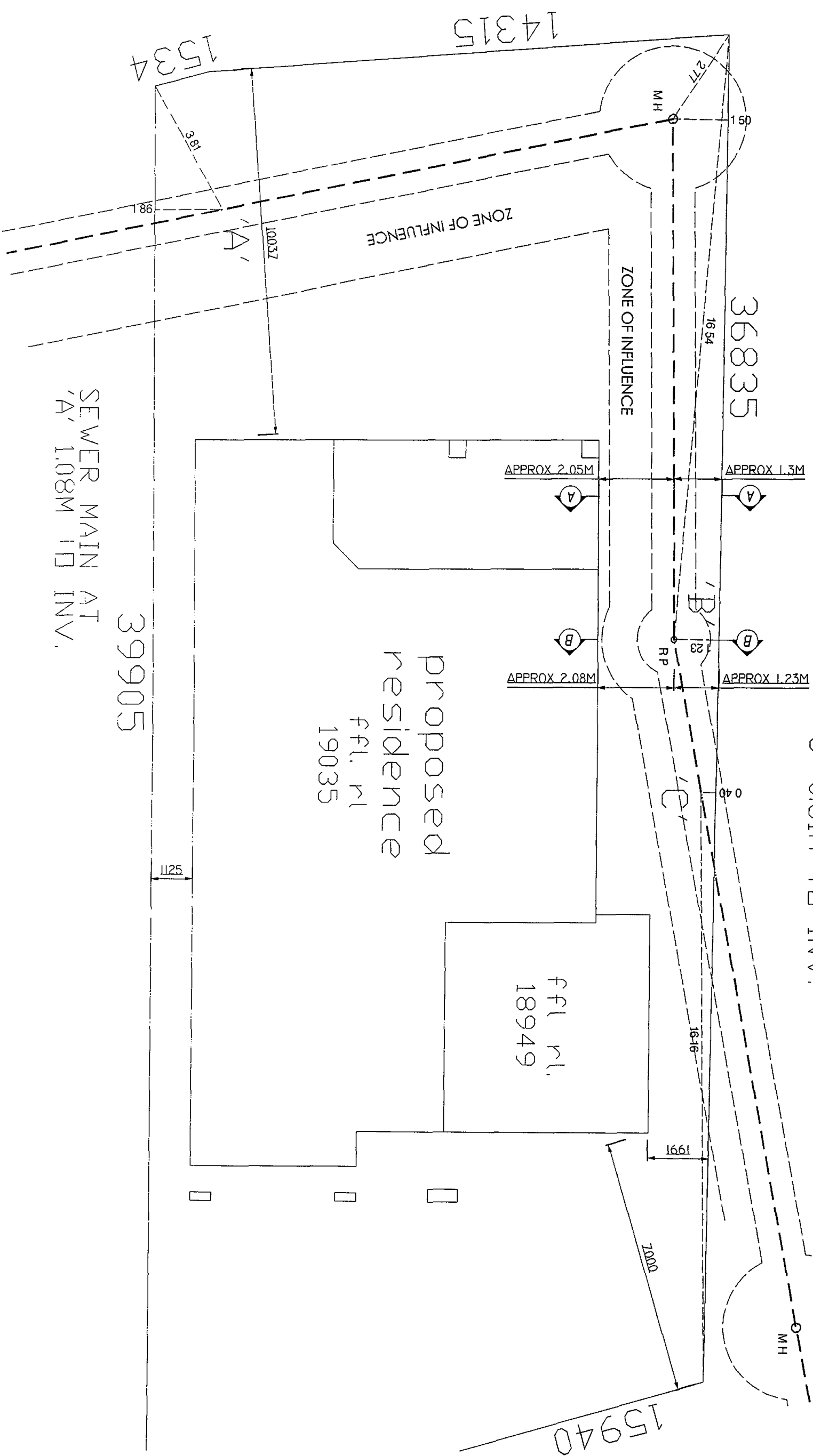


STRUCTURAL STEEL DETAIL PLAN

CLIENT	WILLIAMS
LOCATION	53, ARNOTT CRES WARRIEWOOD
DRAWN BY	EY
SCALE	1:100
SHEET NO	6
ISSUE	A
DATE	26/09/08
JOB NO	EB3054.9

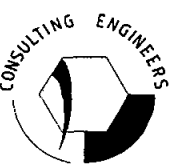
SEWER MAIN AT
'B' 0.8M TD INV.

SEWER MAIN AT
'C' 0.61M TD INV.



Rafeltos

ACN 079047466
LEVEL 2 103 VANESSA STREET
KINGSGROVE NSW 2208
PO BOX 161 KINGSGROVE NSW 2208



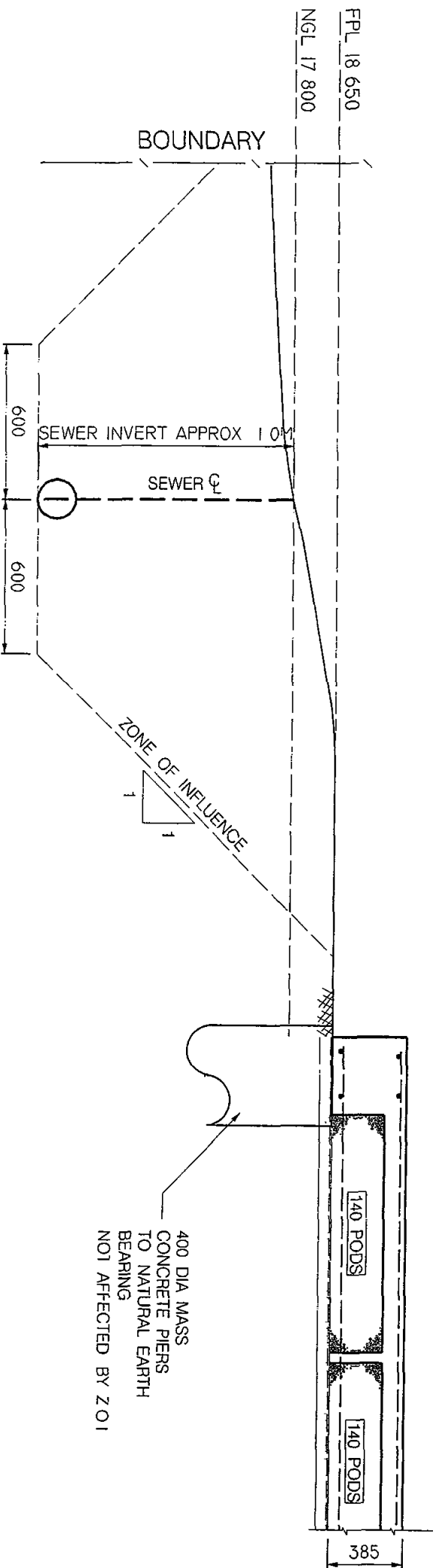
Zanuttini

PTY LTD
TELEPHONE (02) 9554 9311
FASCILMILE (02) 9554 6764
DX 11392 HURSTVILLE NSW



SEWER DETAIL PLAN

CLIENT		WILLIAMS	
LOCATION		53, ARNOTT CRES WARRIWOOD	
DRAWN BY	EY	SCALE	1:100
ISSUE	A	DATE	26/09/08
		SHEET NO	7
		JOB NO	EB30549



NOTES

POSITION OF SEWER IS ONLY APPROXIMATE
POSITION AND DEPTH OF SEWER TO BE VERIFIED
ON SITE PRIOR TO COMMENCEMENT OF ANY WORK

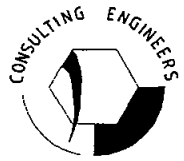
PIER DEPTHS AS SHOWN ARE FOR ZONE OF
INFLUENCE REQUIREMENTS ONLY
PIERS ARE TO BE FOUNDED ON NATURAL
BEARING AS PER ENGINEERING REQUIREMENTS
WHERE NECESSARY

SECTION A-A

Rafletios

ALN 07901/7466

LEVEL 2 103 VANESSA STREET
KINGSGROVE NSW 2208
PO BOX 161 KINGSGROVE NSW 2208



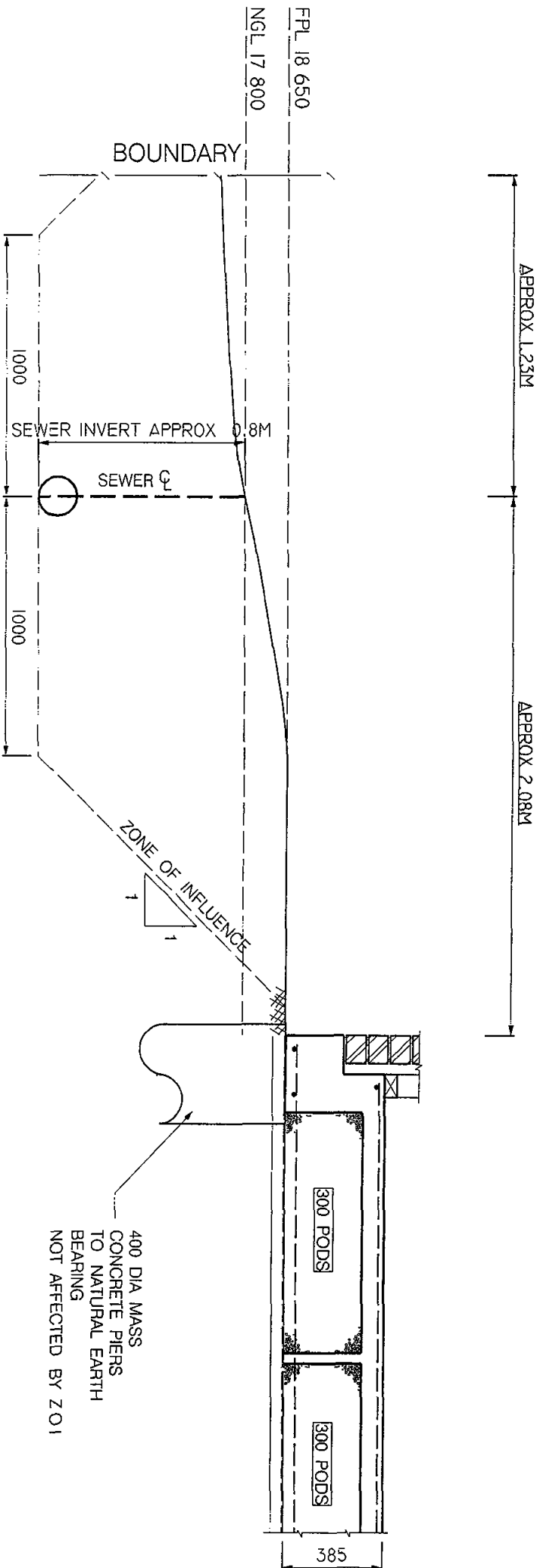
Zanuttini

PTY LTD

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FASCILLIMILE (02) 9554 9764
DX 11392 HURSTVILLE NSW



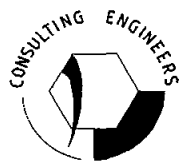
SEWER DETAIL PLAN					
CLIENT		WILLIAMS			
LOCATION		53, ARNOTT CRTS WARRIEWOOD			
DRAWN BY		EY	SCALE	1:100	SHEET NO
ISSUE		A	DATE	26/09/08	8
				JOB NO	FB30549



SECTION B-B

Rafletios

ACN 379047466
LEVEL 2 103 VANESSA STREET
KINGS GROVE NSW 2208
PO BOX 1611 KINGS GROVE NSW 2208



Zanuttini

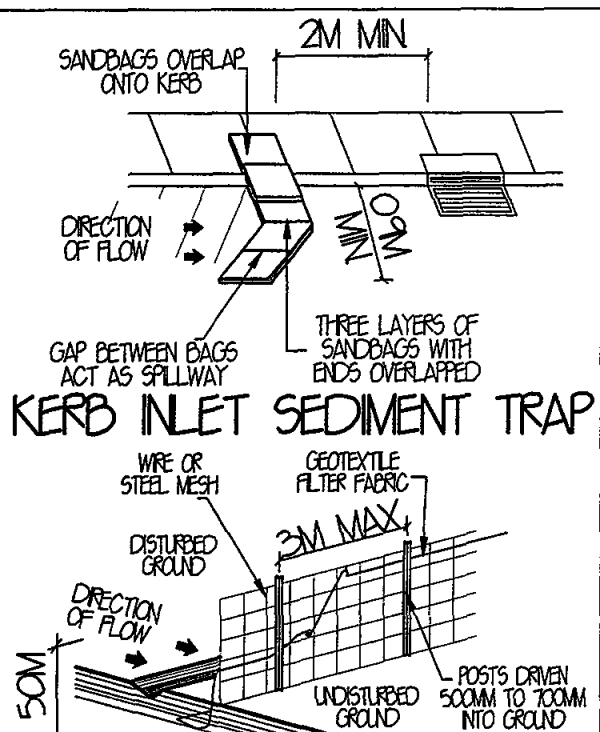
PTY LTD
TELEPHONE (02) 9354 9311
FAX (02) 9354 9311
DX 1392 MURSTVILLE NSW



SEWER DETAIL PLAN

CLIENT	WILLIAMS
LOCATION	53, ARNOITT CRES WARRIEWOOD
DRAWN BY	EY
SCALE	1:100
SHEET NO	9
ISSUE	A
DATE	26/09/08
JOB NO	1830549

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SILT FENCE DETAIL

SEDIMENT CONTROL NOTES

ALL EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL SHALL BE IMPLEMENTED TO THE STANDARDS OF THE SOIL CONSERVATION OF NSW

ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AROUND AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT

SEDIMENT TRAPS SHALL BE CONSTRUCTED AROUND ALL INLET FITS CONSISTING OF 300MM WIDE X 300MM DEEP TRENCH

ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM OF 60% FULL OF MATERIALS, INCLUDING THE MAINTENANCE PERIOD

ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED

SOIL AND TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREA WHERE WATER MAY CONCENTRATE

FILTER SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR APPROVED EQUIVALENT BETWEEN POST AT 2M CENTRES) FABRIC SHALL BE BURIED 150MM ALONG ITS LOWER EDGE

GENERAL NOTES

- STORMWATER TO DISCHARGE INTO DESIGNATED DISCHARGE POINT TO PCA REQUIREMENTS
- SEWER TO LOCAL AUTHORITIES REQUIREMENTS
- ALL GROUND LINES ARE TO BE VERIFIED ON-SITE BY THE BUILDER
- FINAL LOCATION OF BUILDINGS TO BE VERIFIED ON-SITE BY A REGISTERED SURVEYOR
- WRITTEN DIMENSIONS TO TAKE PRECEDENCE OVER SCALING
- SITE CLASSIFICATION H
- CUT AND FILL HOUSE PLATFORM APPROXIMATELY TO RL8-35 GARAGE TO RL8-35
- HOUSE FLOOR LEVEL RL8-735 385MM ABOVE PLATFORM LEVEL. GARAGE FLOOR LEVEL APPROX RL8-649 299MM ABOVE PLATFORM LEVEL

SITE DATA

SITE AREA = 597 M²

PRIVATE OPEN SPACE

REQUIRED = 80 M²

PROVIDED = 202-2 M²

BUILT UPON AREA

PERMISSIBLE = 50% OR 298-5 M²

PROVIDED = 45-3% OR 270-4 M²

LANDSCAPED AREA

REQUIRED = 50% OR 298-5 M²

PROVIDED = 54-7% OR 326-6 M²

FLOOR AREAS

GROUND FLOOR AREA = 165-4 M²

(EXCLUDING GARAGE)

GARAGE FLOOR AREA = 32-7 M²

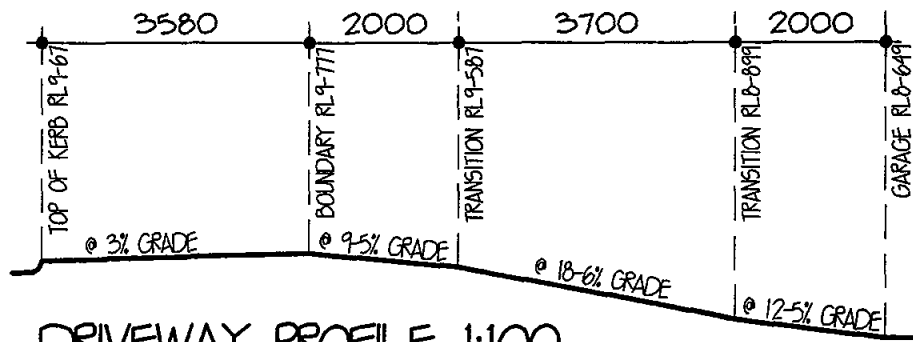
PORCH FLOOR AREA = 5-8 M²

ALFRESCO FLOOR AREA = 25-3 M²

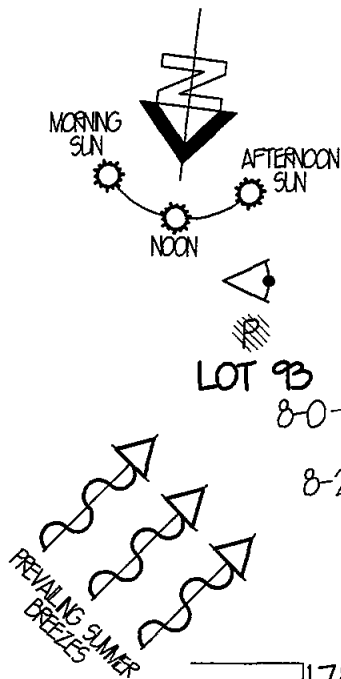
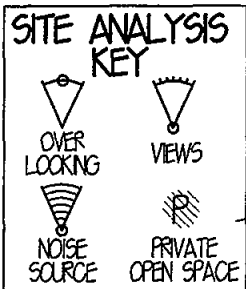
FIRST FLOOR AREA = 122-1 M²

BALCONY FLOOR AREA = 5-8 M²

TOTAL FLOOR AREA = 357-1 M² OR 38-4 SQS



DRIVEWAY PROFILE 1:100



DENOTES STORM WATER DIRECTED TO WATER TANK OVERFLOW DIRECTED TO DESIGNATED DISCHARGE AREA REFER TO HYDRAULIC ENGS DETAILS

DENOTES EXISTING TREES TO BE REMOVED

PRIVATE OPEN SPACE AREA

DENOTES RETAINING WALL BY OWNER

DENOTES SILT FENCE BARRIER

DENOTES DROPPED EDGE BEAM

DENOTES LINE OF BATTER TO CUT OR FILL

DENOTES GREAT SPACE SALE

ARNOTT CRESCENT

SITE ANALYSIS & SITE PLAN 1:200

This information relates to Construction/Complying Development Certificate

5003017

Issued by Andrew Dean (02) 9836 5711
Building Professionals Board (BPP0037)



LEVEL 2 NEXUS BUILDING
4 COLUMBIA COURT
NORWEST BUSINESS PARK
BALLKHAM HILLS NSW 2153
TEL: (02) 8860 9238
FAX: (02) 8860 9233

ISSUE	DATE	REVISION	DRAWN	FOR
A	25-7-08	SITING PLAN	DT	MR & MRS WILLIAMS
B	7-8-08	RE-SITING	DT	LOT 92 NO53 ARNOTT CRESCENT WARREWOOD
C	26-8-08	CO-PLANS	PF	DATE JULY 2008
D	7-10-08	AMENDMENTS, BASIX & AHD	FM	DWG NO A13463
E	10-02-09	AMENDMENTS	SK	PAGE NO 1 OF 9

MR & MRS WILLIAMS
LOT 92 NO53 ARNOTT CRESCENT WARREWOOD
DATE JULY 2008
DWG NO A13463
PAGE NO 1 OF 9

TYPE ENTERTAINER 35
FACADE BOULEVARD
JOB NO 0012199
HAND RH

UNIT 39/5 INGLEWOOD PLACE,
NORWEST BUSINESS PARK,
BALLKHAM HILLS NSW 2153
PO BOX 6410 BALLKHAM HILLS
BUSINESS CENTRE NSW 2153
PHONE (02) 8824 3533
FAX: (02) 8824 3544
EMAIL: INFO@ANDDESIGNSYDNEY.COM.AU

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TEMPORARY SET KIT WINDOWS BEHIND KIT SINK AT 920MM ABOVE FFL REFER TO SCD WAL 003 AND WAL 004

TEMPORARY SET KIT WINDOWS EITHER SIDE OF COOK TOP AT 920MM ABOVE FFL REFER TO SCD WAL 001 AND WAL 002

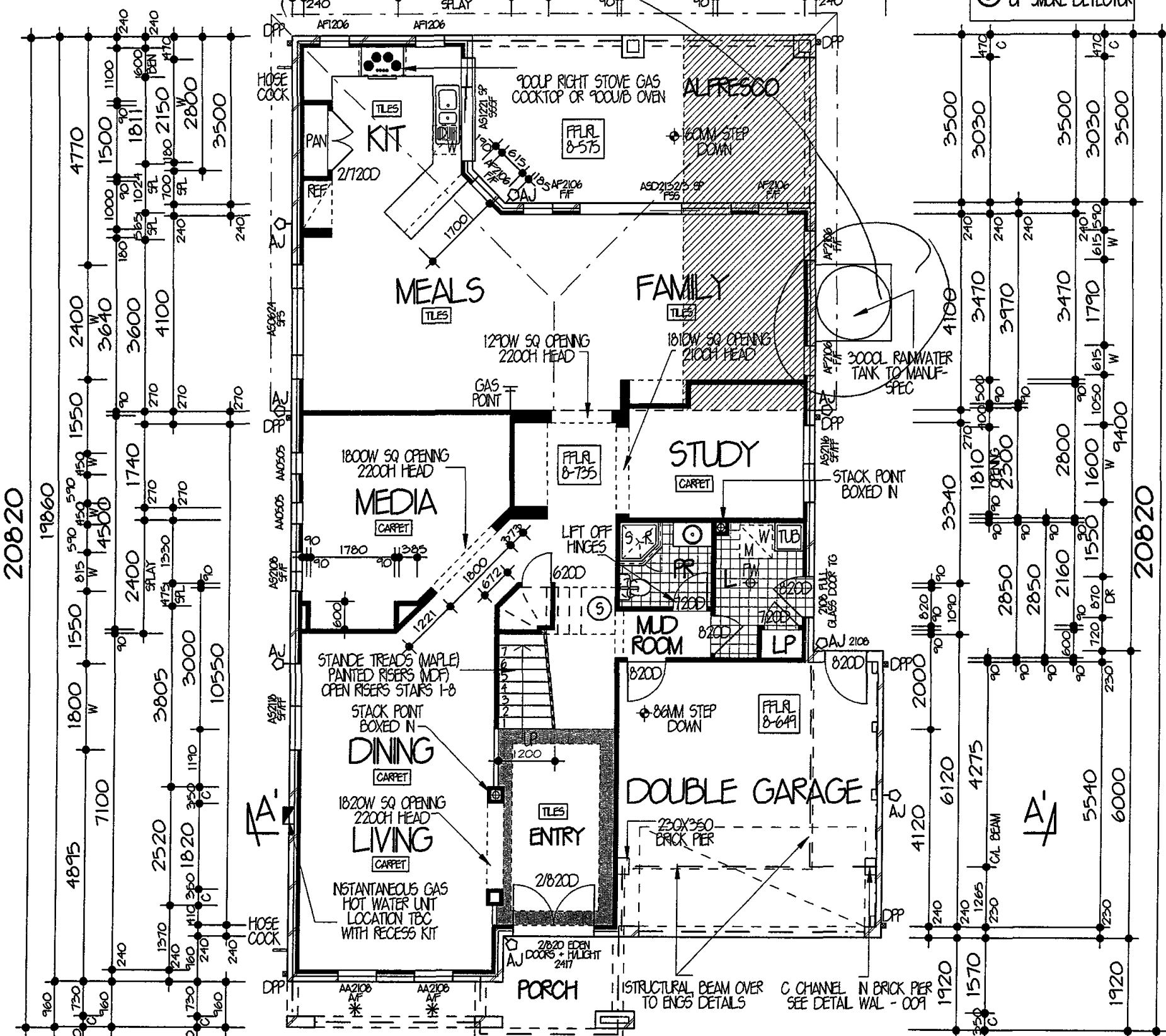
⊕ DENOTES ARTICULATION JOINT IN BRICK WORK FINAL LOCATION TO BE VERIFIED ON SITE BY THE BUILDER IN ACCORDANCE WITH CLAUSE 3-3-1-8 OF THE BCA

■ DENOTES COFFERED CEILING 270MM WIDE 150MM DEEP

⊕ DENOTES EXHAUST FAN OVER CONNECTED TO LIGHT SWITCH DUCTED TO EXTERNAL WALL

ALL WET AREAS TO BE PROVIDED WITH FLOOR WASTE

Ⓢ DENOTES LOCATION OF SMOKE DETECTOR



■ DENOTES GREAT SPACE SALE
* 6-38MM COMFORT PLUS GLAZING (GREY TINT)

NOTE
STEEL & HWY TIMBER POSTS TO ENDS DETAILS TO SUPPORT STEEL BEAMS OVER TO BE LOCATED WITHIN TIMBER STUD WALL FRAMES
REFER TO STRUCTURAL ENGINEERS PLANS FOR POST TYPE & LOCATIONS

This information relates to Construction/Complying Development Certificate

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Issued by Andrew Dean (02) 9955 5774
Building Professionals Board (BPPB00047)

GROUND FLOOR PLAN 1:100

LEVEL 2 NEXUS BUILDING
4 COLUMBIA COURT
NORWEST BUSINESS PARK
BALLKHAM HILLS NSW 2153
TEL: (02) 8860 9238
FAX: (02) 8860 9233

ISSUE	DATE	REVISION	DRAWN	FOR	MR & MRS WILLIAMS	UBD AREA: SYD	TYPE
A	25-7-08	SITING PLAN	DT	AT	LOT 92 N053 ARNOTT	REVISION 44	ENTERTAINER 35
B	7-8-08	RE-SITING	DT		CRESSENT WARREWOOD	MAP 130 REF J11	FACADE
C	26-8-08	CC-PLANS	PF				BOULEVARD
D	7-10-08	AMENDMENTS, BASIX & AHD	FM	DATE	DWG NO	PAGE NO	JOB NO
E	10-02-09	AMENDMENTS	SK	JULY 2008	A13463	2 OF 9	0012199

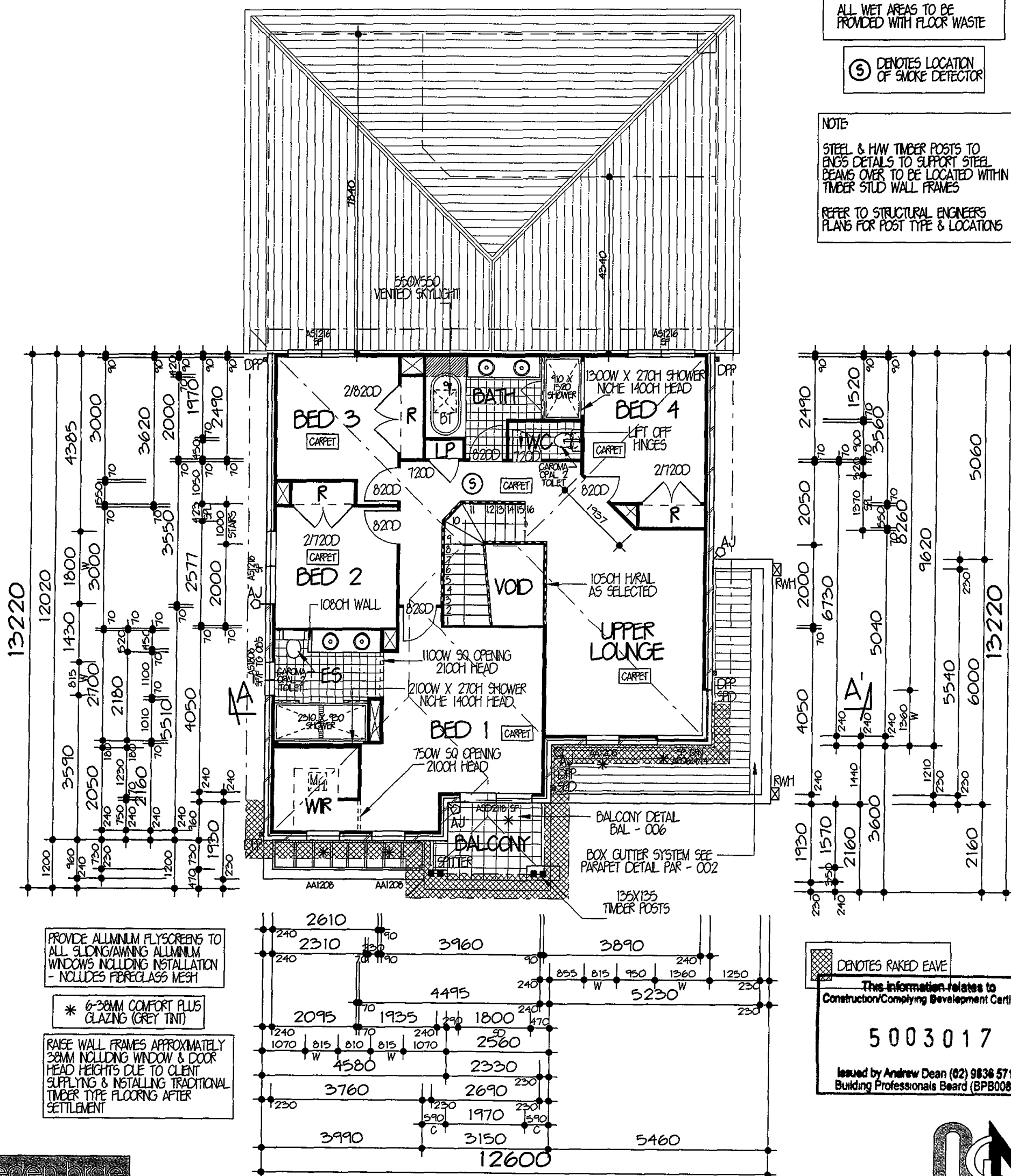
UNIT 39/5 INGLEWOOD PLACE,
NORWEST BUSINESS PARK,
BALLKHAM HILLS NSW 2153
PO BOX 6410 BALLKHAM HILLS
BUSINESS CENTRE NSW 2153
PHONE (02) 8824 3533
FAX: (02) 8824 3544
EMAIL: INFO@ANDDESIGNSYDNEY.COM.AU

AND DESIGN
SYDNEY

[illegible]

⑤ DENOTES LOCATION OF SMOKE DETECTOR

REFER TO STRUCTURAL ENGINEERS
PLANS FOR POST TYPE & LOCATIONS



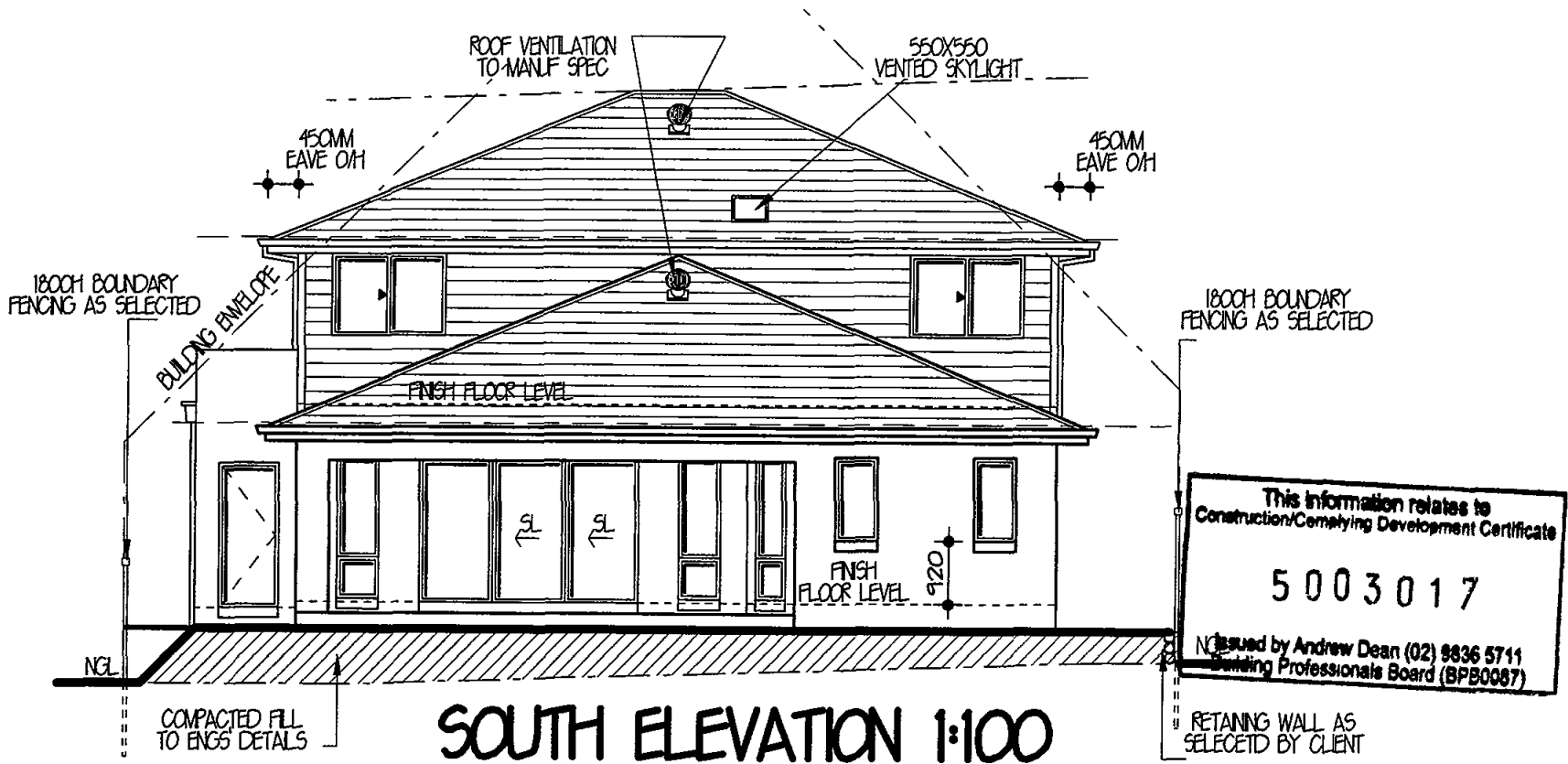
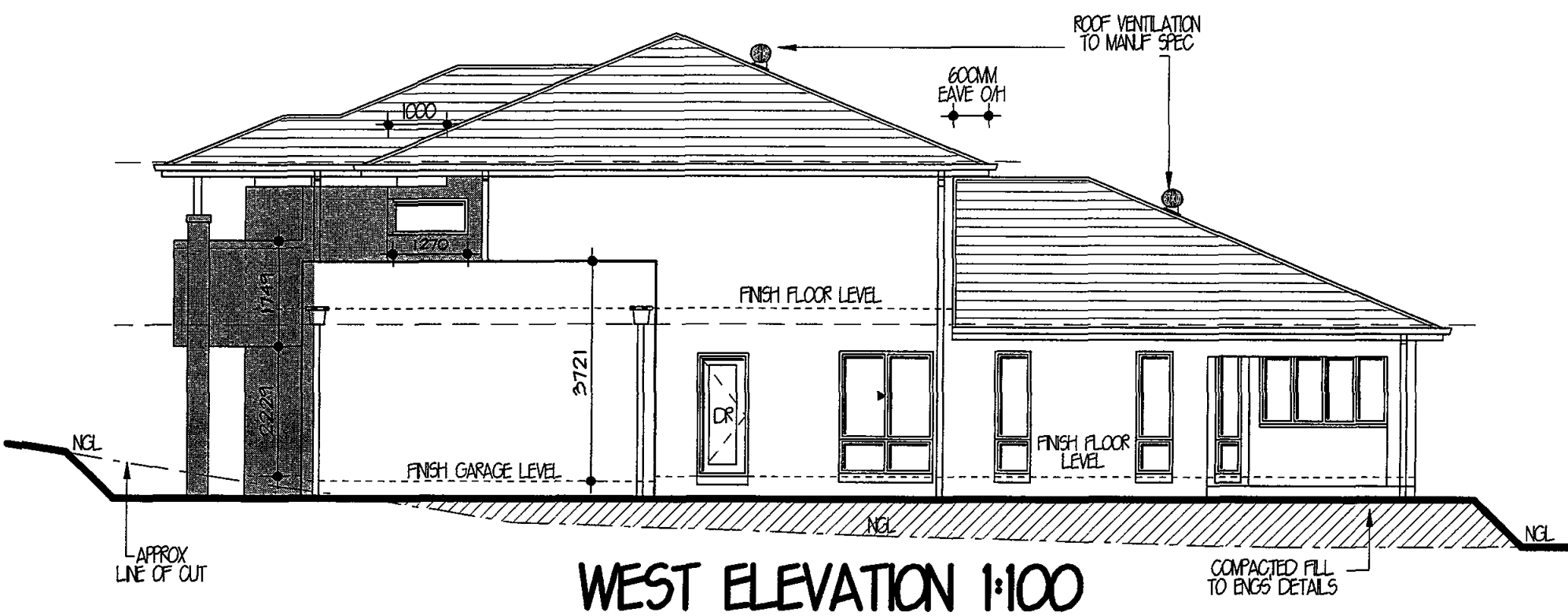
RAISE WALL FRAMES APPROXIMATELY
38MM INCLUDING WINDOW & DOOR
HEAD HEIGHTS DUE TO CLIENT
SUPPLYING & INSTALLING TRADITIONAL
TIMBER TYPE FLOORING AFTER
SETTLEMENT

Issued by Andrew Dean (02) 9836 5711
Building Professionals Board (BPB0087)



UNIT 39/5 NGLEWOOD PLACE,
NORTHWEST BUSINESS PARK,
BULLHAKHAM HILLS NSW 2153
P.O. BOX 6410 BULLHAKHAM HILLS
BUSINESS CENTRE NSW 2153
PHONE (02) 8824 3533
FAX: (02) 8824 3544
EMAIL: info@andesignstudio.com.au

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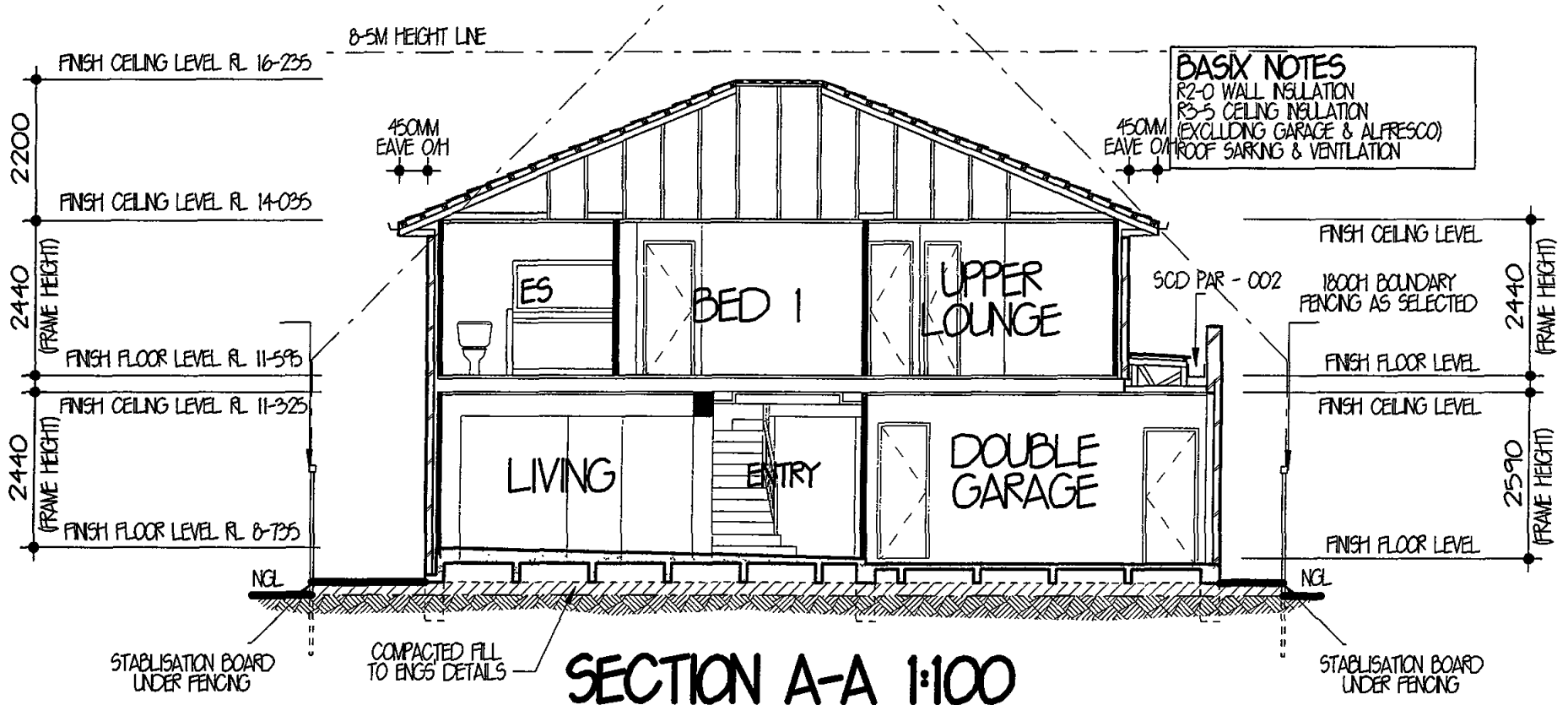
Issued by Andrew Dean (02) 8836 5711
Building Professionals Board (BPB0087)

RETAINING WALL AS
SELECTED BY CLIENT



LEVEL 2 NEXUS BUILDING 4 COLUMBIA COURT NORWEST BUSINESS PARK BALKHAM HILLS NSW 2153 TEL: (02) 8860 9238 FAX: (02) 8860 9233	ISSUE	DATE	REVISION	DRAWN	FOR	MR & MRS WILLIAMS	UD AREA: SYD	TYPE	UNIT 39/5 INGLEWOOD PLACE, NORWEST BUSINESS PARK, BALKHAM HILLS NSW 2153 PO BOX 6410 BALKHAM HILLS BUSINESS CENTRE NSW 2153 PHONE (02) 8824 3533 FAX: (02) 8824 3544 EMAIL: INFO@ANDDESIGNSYDNEY.COM.AU
	A	25-7-08	SITING PLAN	DT	AT	LOT 92 NO53 ARNOTT	REVISION 44	ENTERTAINER 35	
	B	7-8-08	RE-SITING	DT		CRESSENT WARREWOOD	MAP 138 REF J11	FACADE	
	C	26-8-08	CC-PLANS	PF			DP30836	BOULEVARD	
	D	7-10-08	AMENDMENTS, BASIX & AHD	FM	DATE	DWG NO	PAGE NO	JOB NO	
	E	10-02-09	AMENDMENTS	SK	JULY 2008	A13463	4 OF 9	0012199	
								HAND	R1

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SUMMARY OF MATERIALS

- 22-5° ROOF PITCH CONCRETE ROOF TILES UPPER ROOF
- 22-5° ROOF PITCH CONCRETE ROOF TILES LOWER ROOF
- 3° ROOF PITCH METAL DECK ROOF SHEETING TO GARAGE
- COLORBOND GUTTER & FASCIA
- CHARGED PVC DOWNPIPES TO BE PAINTED
- PRE-FABRICATED FRAMES & ROOF TRUSSES TO MANUFACTURE SPECIFICATIONS
- RENDER & PAINTED FINIS FRONT FACADE ONLY
- MOROKA FINISH
- SELECTED CLADDING
- PAINTED TIMBER POSTS
- ALUMINIUM WINDOWS & DOORS
- FRONT ENTRY DOORS TO BE PAINT GRADE
- PANEL-LIFT DOOR TIMBER LOOK

This information relates to
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Building Professionals Board (BPP0087)

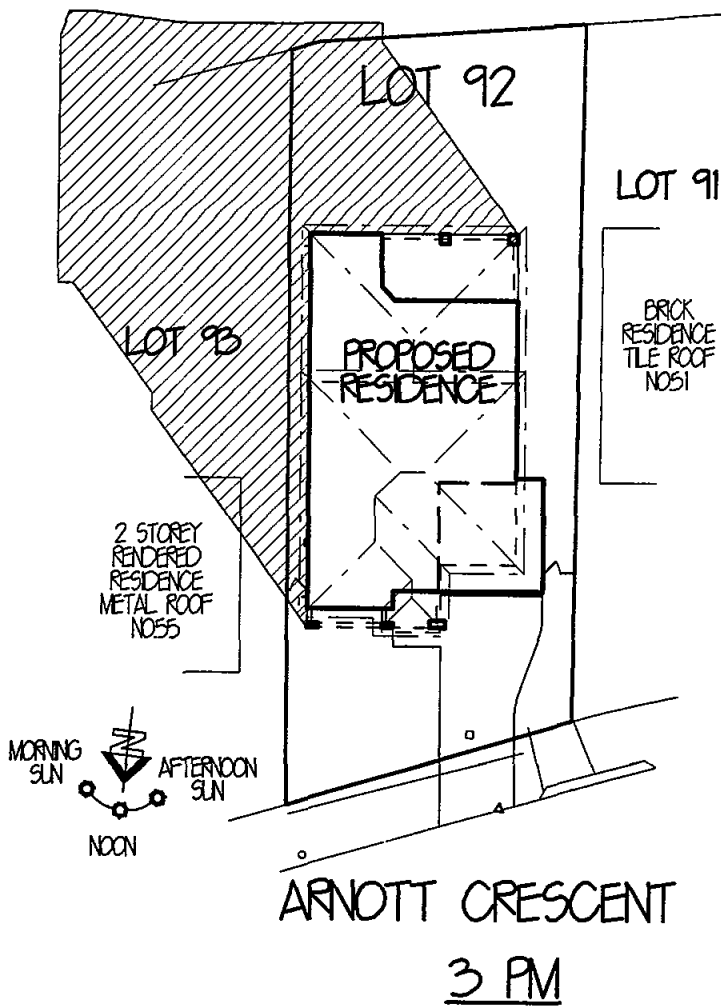
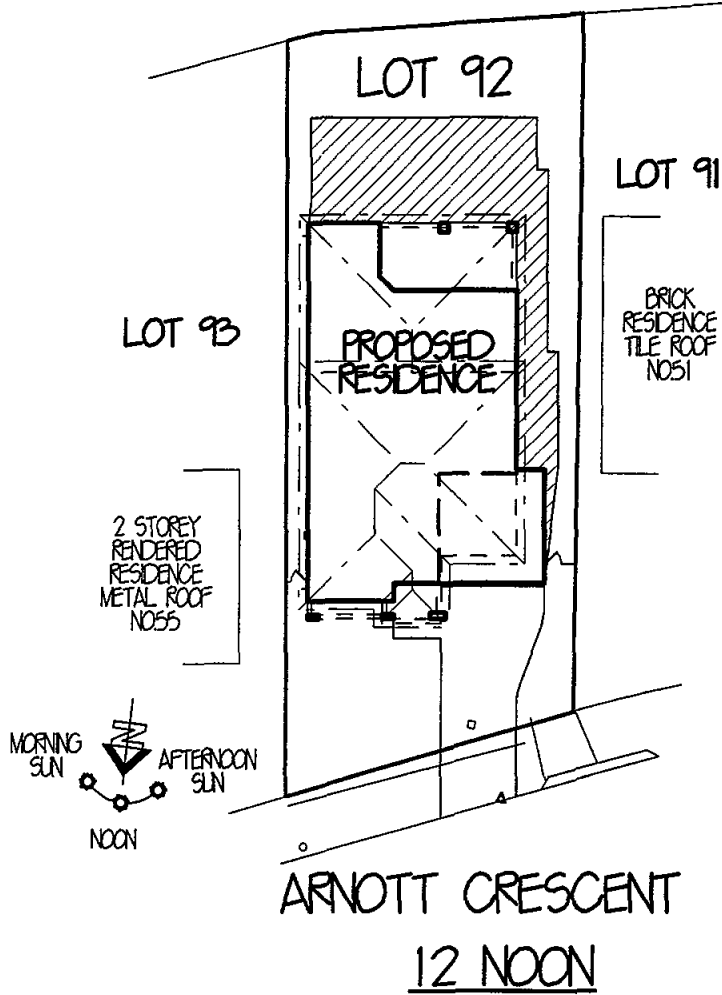
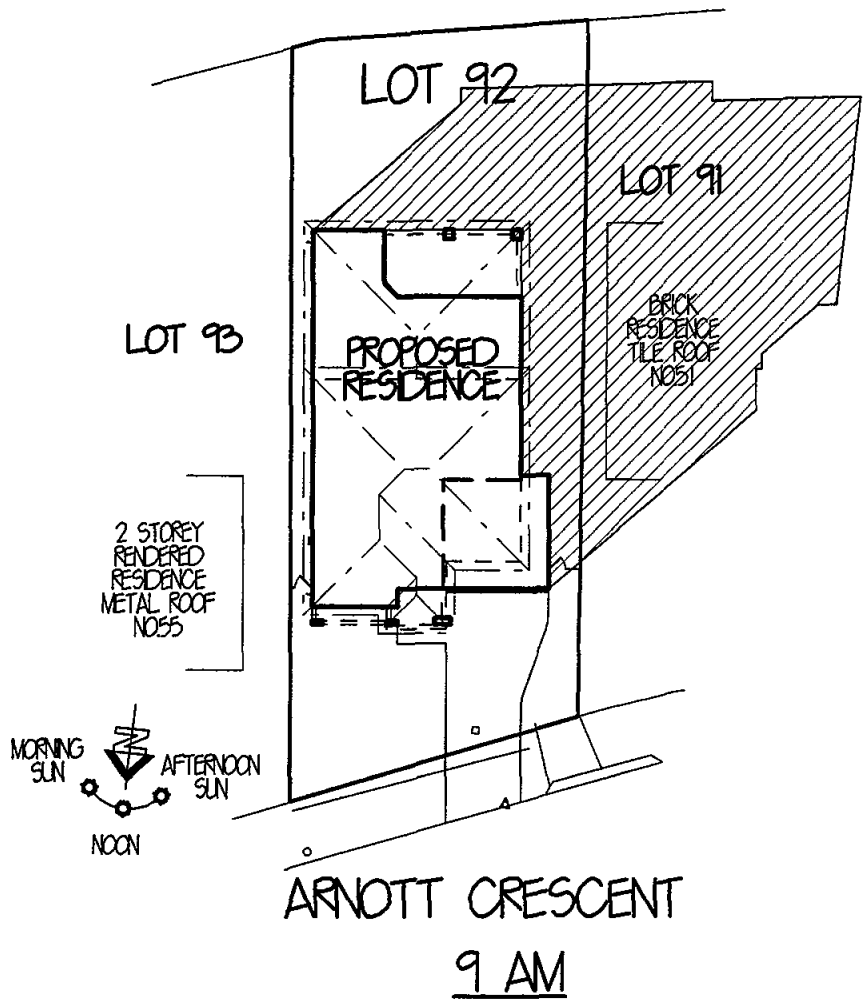
ANDERSON
DESIGN
SYDNEY

eden brae
homes
"It's where you want to live"

LEVEL 2 NEXUS BUILDING
4 COLUMBIA COURT
NORWEST BUSINESS PARK
BALLKHAM HILLS NSW 2153
TEL: (02) 8860 9238
FAX: (02) 8860 9233

ISSUE	DATE	REVISION	DRAWN	FOR	MR & MRS WILLIAMS	UBD AREA: SYD	TYPE	ENTERTAINER 35	UNIT 39/5 INGLEWOOD PLACE, NORWEST BUSINESS PARK, BALLKHAM HILLS NSW 2153 PO BOX 6410 BALLKHAM HILLS BUSINESS CENTRE NSW 2153 PHONE (02) 8824 3533 FAX: (02) 8824 3544 EMAIL: INFO@ANDESIGNSYDNEY.COM.AU
A	25-7-08	SITING PLAN	DT	AT	LOT 92 N053 ARNOTT CRESENT WARREWOOD	REVISION 44 MAP 130 REF J11	FACADE	BOULEVARD	
B	7-8-08	RE-SITING	DT	DATE	JULY 2008	DWG NO	PAGE NO	JOB NO	HAND
C	26-8-08	CC-PLANS	PF			A13463	5 OF 9	0012199	R1
D	7-10-08	AMENDMENTS, BASIX & AHD	FM						
E	10-02-09	AMENDMENTS	SK						

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SHADOW DIAGRAMS JUNE 21ST MID-WINTER 1:400

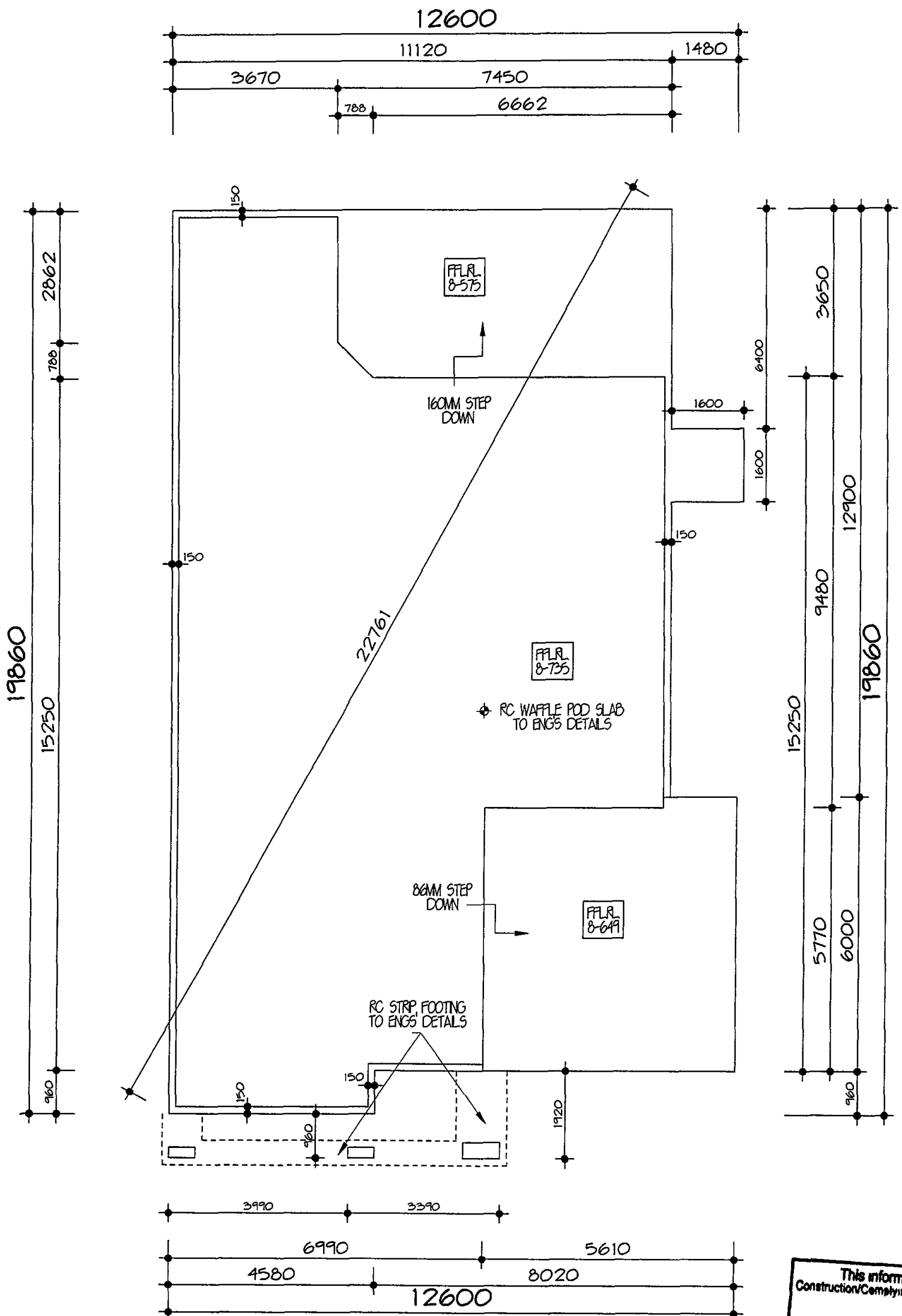
SHADOW DIAGRAMS TO BE USED AS A GUIDE ONLY SITE CONDITIONS MAY CAUSE VARIATIONS

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Building Professionals Board (BP00087)



LEVEL 2 NEXUS BUILDING 4 COLUMBIA COURT NORWEST BUSINESS PARK BALLKHAM HILLS NSW 2153 TEL: (02) 8860 9238 FAX: (02) 8860 9233	ISSUE	DATE	REVISION	DRAWN	FOR	MR & MRS WILLIAMS	UBD AREA: SYD REVISION 44 MAP 136 REF J11	TYPE	ENTERTAINER 35	UNIT 39/5 INGLEWOOD PLACE, NORWEST BUSINESS PARK, BALLKHAM HILLS NSW 2153 PO BOX 6410 BALLKHAM HILLS BUSINESS CENTRE NSW 2153 PHONE (02) 8824 3533 FAX: (02) 8824 3544 EMAIL: INFO@ANDESIGNSYDNEY.COM.AU
	A	25-7-08	SITING PLAN	DT	AT	LOT 92 N053 ARNOTT CRESENT WARREWOOD	DP30826	FACADE	BOULEVARD	
	B	7-8-08	RE-SITING	DT	DATE	JULY 2008	DWG NO	PAGE NO	JOB NO	
	C	26-8-08	CC-PLANS	PF		A13463	6 OF 9	0012199	HAND	
	D	7-10-08	AMENDMENTS, BASIX & AHD	FM					R1	
	E	10-02-09	AMENDMENTS	SK						

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SLAB FLOOR PLAN 1:100

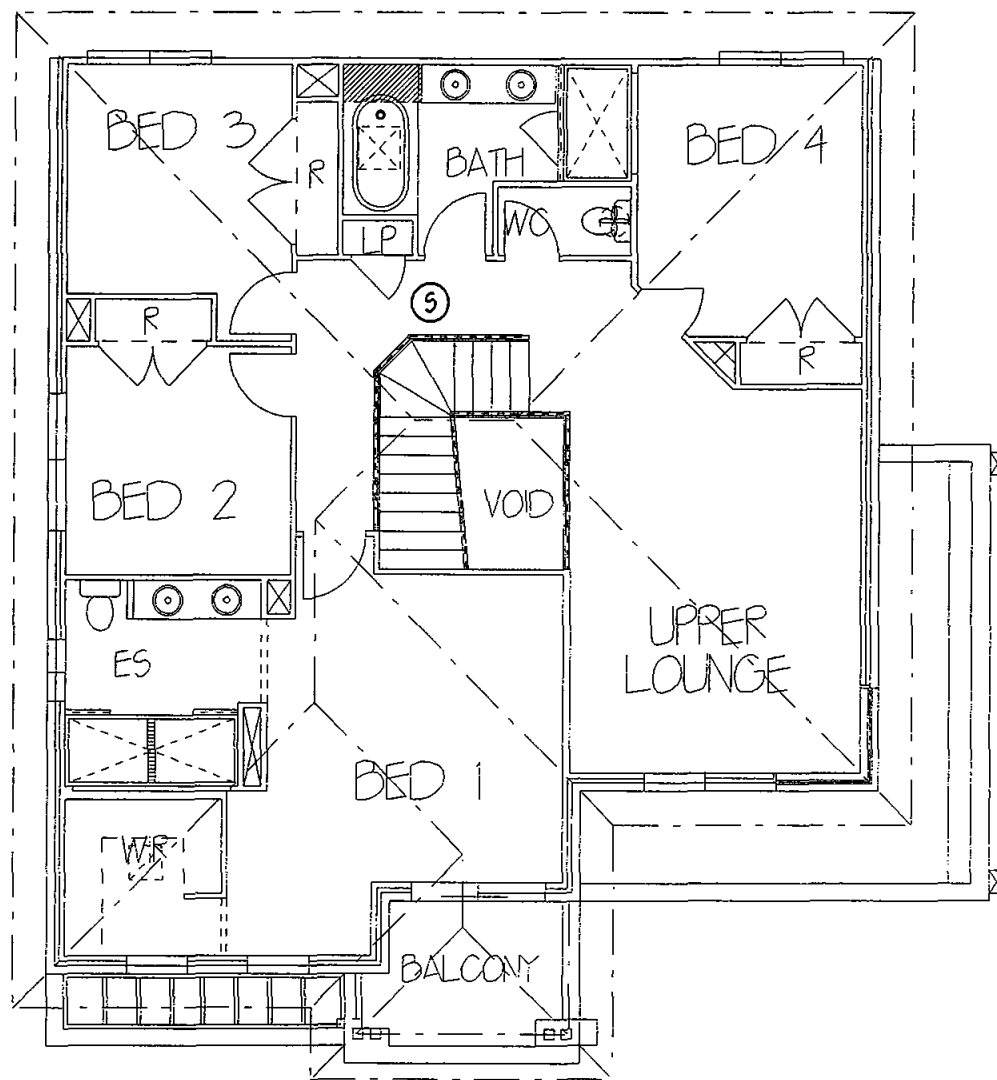
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Construction/Complying Development Certificate

5003017

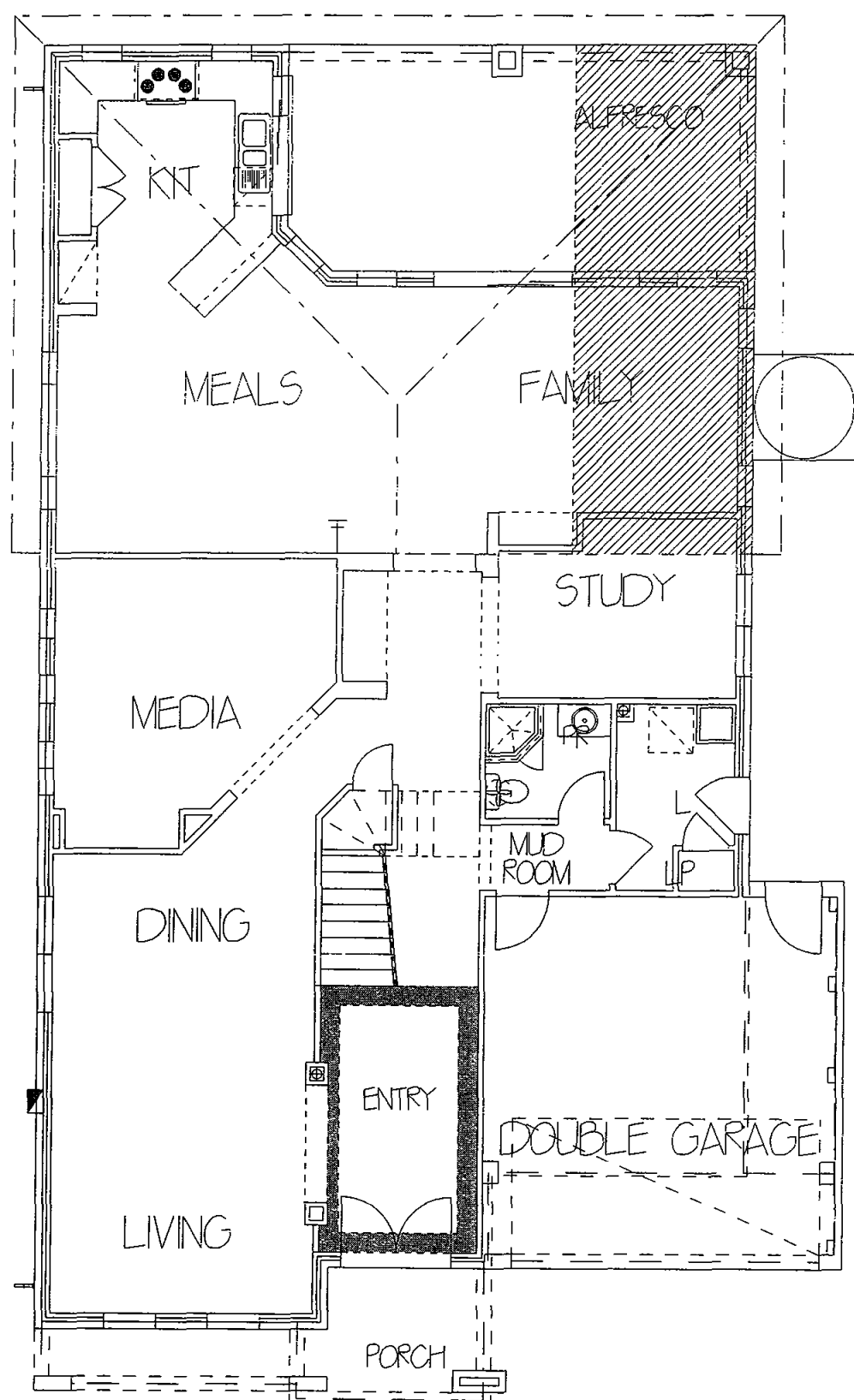
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Building Professionals Board (BPB0087)



LEVEL 2 NEXUS BUILDING 4 COLUMBIA COURT NORWEST BUSINESS PARK BALUKHAM HILLS NSW 2153 TEL: (02) 8860 9238 FAX: (02) 8860 9233	ISSUE	DATE	REVISION	DRAWN	FOR	MR & MRS WILLIAMS	LED AREA SYD	TYPE	ENTERTAINER 35	UNIT 39/5 INGLEWOOD PLACE, NORWEST BUSINESS PARK, BALUKHAM HILLS NSW 2153 PO BOX 6410 BALUKHAM HILLS BUSINESS CENTRE NSW 2153 PHONE: (02) 8824 3533 FAX: (02) 8824 3544 EMAIL: NFO@ANDESIGNSYDNEY.COM.AU
	A	25-7-08	SITING PLAN	DT	AT	LOT 92 NO53 ARNOTT	REVISION 44	FACADE		
	B	7-8-08	RE-SITING	DT		CRESNET WARREWOOD	MAP 138 REF J11			
	C	26-8-08	CC-PLANS	PF			DP30836			
	D	7-10-08	AMENDMENTS, BASIX & AHD	FM	DATE	JULY 2008	DWG NO	PAGE NO	JOB NO	
	E	10-02-09	AMENDMENTS	SK			A13463	7 OF 9	0012199	R1



FIRST FLOOR ELECTRICAL PLAN 1:100



GROUND FLOOR ELECTRICAL PLAN 1:100

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ENERGY

HOT WATER
THE APPLICANT MUST INSTALL THE FOLLOWING HOT WATER SYSTEM IN THE DEVELOPMENT:
GAS INSTANTANEOUS - 5 STARS (OR ONE WITH A HIGHER STAR RATING)

ACTIVE COOLING
THE APPLICANT MUST INSTALL THE FOLLOWING COOLING SYSTEM OR A SYSTEM WITH A HIGHER
ENERGY RATING, N AT LEAST 1 LIVING AREA: AIR-CONDITIONING DUCTING ONLY: ENERGY RATING: N/A

THE BEDROOMS MUST NOT INCORPORATE ANY COOLING SYSTEM OR ANY DUCTING
WHICH IS DESIGNED TO ACCOMMODATE A COOLING SYSTEM

ACTIVE HEATING
THE APPLICANT MUST INSTALL THE FOLLOWING HEATING SYSTEM OR A SYSTEM WITH A HIGHER
ENERGY RATING, N AT LEAST 1 LIVING AREA: AIR-CONDITIONING DUCTING ONLY: ENERGY RATING: N/A

THE BEDROOMS MUST NOT INCORPORATE ANY HEATING SYSTEM OR ANY DUCTING
WHICH IS DESIGNED TO ACCOMMODATE A HEATING SYSTEM

VENTILATION
THE APPLICANT MUST INSTALL THE FOLLOWING EXHAUST SYSTEMS IN THE DEVELOPMENT:
BATHROOMS: INDIVIDUAL FAN DUCTED TO FACADE OR ROOF: OPERATION CONTROL:
MANUAL SWITCH ON/OFF

KITCHEN: INDIVIDUAL FAN DUCTED TO FACADE OR ROOF: OPERATION CONTROL:
MANUAL SWITCH ON/OFF

LAUNDRY: NO MECHANICAL VENTILATION (IE. NATURAL): OPERATION CONTROL: N/A

ARTIFICIAL LIGHTING
THE APPLICANT MUST INSURE THAT THE PRIMARY TYPE OF ARTIFICIAL LIGHTING IS FLUORESCENT
OR LED LIGHTING IN THE FOLLOWING ROOMS

- AT LEAST 3 OF THE BEDROOMS/STUDY

- AT LEAST 2 OF THE LIVING/DINING - ALL HALLWAYS

AS WELL AS THESE ROOMS THE APPLICANT MUST ALSO ENSURE THAT THE PRINCIPLES APPLY
TO ANYWHERE THE WORD 'DEDICATED' APPEARS

FITTINGS FOR THESE LIGHTS MUST ONLY BE CAPABLE
OF ACCEPTING FLUORESCENT OR LED LAMPS

LIGHTING
THE APPLICANT MUST INSTALL A WINDOW AND/OR SKYLIGHT IN THE KITCHEN OF THE
DWELLING FOR NATURAL LIGHTING

THE APPLICANT MUST INSTALL A WINDOW AND/OR SKYLIGHT IN 2 BATHROOM(S)/TOILET(S)
IN THE DEVELOPMENT FOR NATURAL LIGHTING

COOKING
THE APPLICANT MUST INSTALL A GAS COOKTOP & ELECTRIC OVEN IN THE KITCHEN
OF THE DWELLING

OTHER
THE APPLICANT MUST INSTALL A FIXED OUTDOOR CLOTHES DRYING LINE AS PART OF THE
DEVELOPMENT

THERMAL COMFORT

THE APPLICANT MUST CONSTRUCT THE DEVELOPMENT IN ACCORDANCE WITH THE REQUIREMENTS
SET OUT IN THE ASSESSOR CERTIFICATE N° 56853105 AND IN ACCORDANCE WITH THOSE ASPECTS OF
THE DEVELOPMENT APPLICATION OR APPLICATION FOR COMPLYING DEVELOPMENT CERTIFICATE WHICH
WERE USED TO CALCULATE THE VALUES SHOWN IN THE ASSESSOR CERTIFICATE N° 56853105

STORMWATER / WATER

COLLECTION OF RAINWATER & STORMWATER
THE APPLICANT MUST INSTALL A RAINWATER TANK ON THE SITE. THE RAINWATER TANK MUST MEET, AND
BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL APPLICABLE REGULATORY AUTHORITIES

RAINWATER TANK:
THE APPLICANT MUST CONFIGURE THE RAINWATER TANK TO COLLECT RUNOFF FROM AT LEAST 118 SQM
OF THE ROOF AREA OF THE DWELLING

THE APPLICANT MUST CONNECT THE RAINWATER TANK TO ALL THE TOILETS IN THE DEVELOPMENT,
SO THAT RAINWATER CAN BE USED FOR TOILET FLUSHING

THE APPLICANT MUST CONNECT THE RAINWATER TANK TO THE COLD WATER TAP THAT SUPPLIES
EACH CLOTHES WASHING MACHINE IN THE DEVELOPMENT, SO THAT RAINWATER CAN BE USED
FOR CLOTHES WASHING

THE APPLICANT MUST CONNECT THE RAINWATER TANK TO A LEAST ONE OUTDOOR TAP IN
THE DEVELOPMENT SO THAT RAINWATER CAN BE USED TO IRRIGATE VEGETATED AREAS OF THE SITE

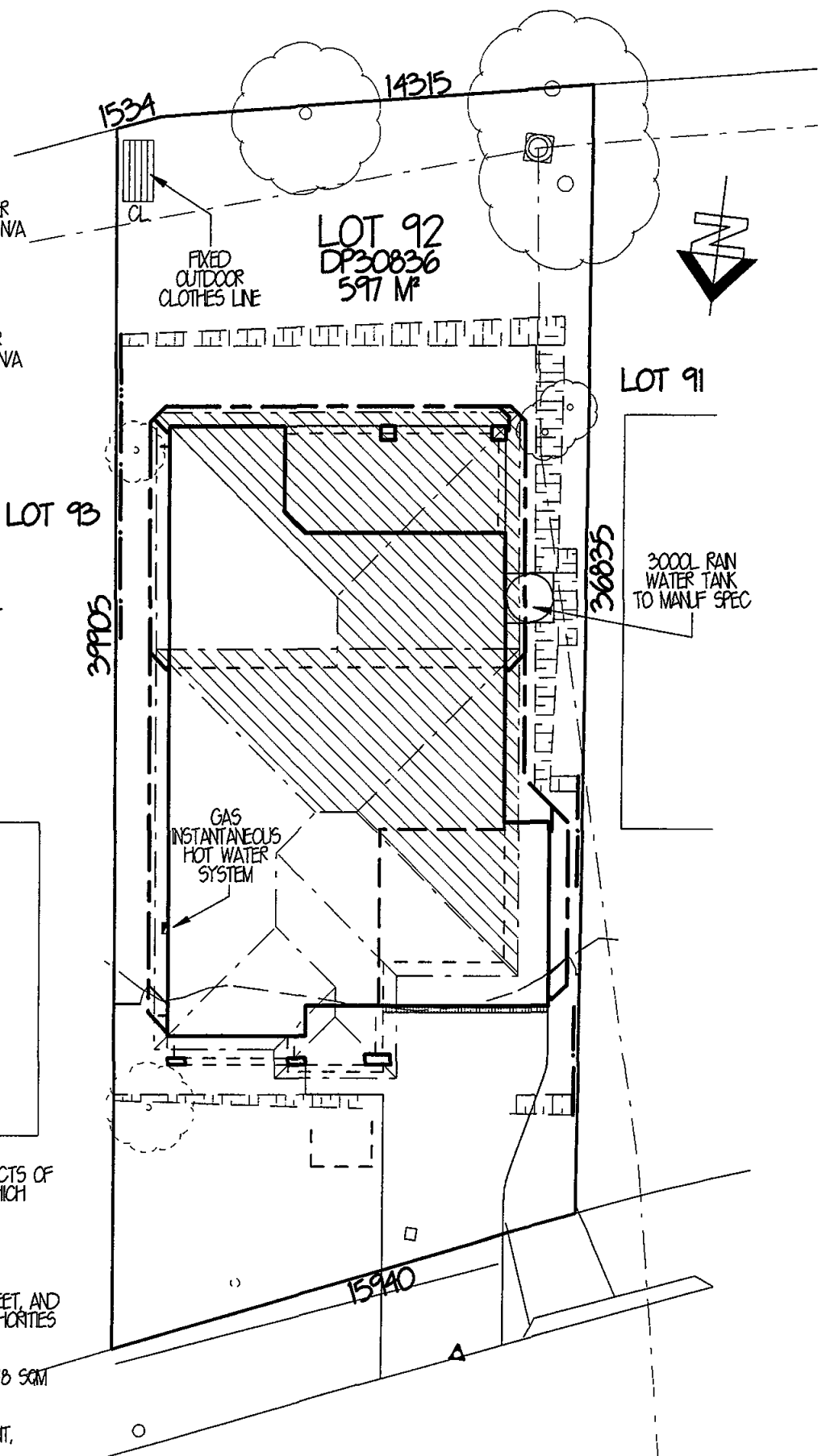
THE RAINWATER TANK MUST HAVE A CAPACITY OF AT LEAST 3000 LITRES

SHOWERHEADS
THE APPLICANT MUST INSTALL SHOWERHEADS WITH A MINIMUM RATING OF 3 STAR IN ALL SHOWERS
IN THE DEVELOPMENT

TOILETS
THE APPLICANT MUST INSTALL A TOILET FLUSHING SYSTEM WITH A MINIMUM RATING OF 3 STAR IN
EACH TOILET IN THE DEVELOPMENT

TAP FITTINGS
THE APPLICANT MUST INSTALL TAPS WITH A MINIMUM FLOW RATE OF 3 STAR IN THE KITCHEN IN
THE DEVELOPMENT

THE APPLICANT MUST INSTALL BATHROOM TAPS (OTHER THAN SHOWERHEADS) WITH A MINIMUM
FLOW RATE OF 3 STAR IN EACH BATHROOM IN THE DEVELOPMENT



ARNOTT CRESCENT BASIX PLAN 1:200

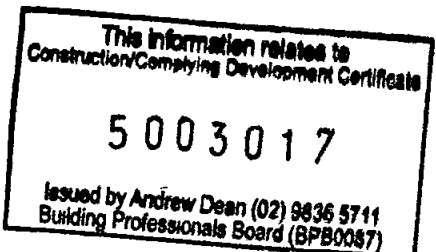
INSULATION

R20 WALL INSULATION
R35 CEILING INSULATION
FOL (SIGILATION)
FOL + R10 BATTS
ROOF VENTILATORS

BASIX SCORE

WATER - 40% (TARGET 40%)
THERMAL COMFORT - PASS (TARGET PASS)
ENERGY - 40% (TARGET 40%)

□ DENOTES 118M² OF ROOF TO BE COLLECTED



LEVEL 2 NEXUS BUILDING 4 COLUMBIA COURT NORWEST BUSINESS PARK BALLKHAM HILLS NSW 2153 TEL: (02) 8860 9238 FAX: (02) 8860 9233	ISSUE	DATE	REVISION	DRAWN	FOR	MR & MRS WILLIAMS	UBD AREA: SYD REVISION 44 MAP 130 REF. J11	TYPE	ENTERTAINER 35	UNIT 39/5 INGLEWOOD PLACE, NORWEST BUSINESS PARK, BALLKHAM HILLS NSW 2153 PO BOX 6410 BALLKHAM HILLS BUSINESS CENTRE NSW 2153 PHONE: (02) 8824 3533 FAX: (02) 8824 3544 EMAIL: INFO@ANDDESIGNSYDNEY.COM.AU
	A	25-7-08	SITING PLAN	DT	AT	LOT 92 NO53 ARNOTT CRESENT WARREWOOD	DP30836	FACADE	BOULEVARD	
	B	7-8-08	RE-SITING	DT	DATE	JULY 2008	DWG NO	PAGE NO	JOB NO	
	C	26-8-08	CC-PLANS	PF			A13463	9 OF 9	0012199	
	D	7-10-08	AMENDMENTS, BASIX & AHD	FM					R1	
	E	10-02-09	AMENDMENTS	SK						