

**Peter Howman**  
Managing Director



15 April 2014

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**Submission No 01.5**  
DHA Tindal  
Date: 15/04/2014

Mrs Karen Andrews MP  
Chairperson  
Parliamentary Standing Committee on Public Works  
Parliament House  
Canberra ACT 2600

Dear Mrs Andrews

**PROPOSED DEVELOPMENT OF HOUSING FOR DEFENCE at  
RAAF BASE TINDAL, NT – AMENDED PROPOSAL**

We refer your advice dated 20 March 2014 requesting an additional hearing in this matter and advise that we have amended the original proposal submitted to PWC on 3 December 2013 to reflect issues raised during and subsequent to the first hearing held in Katherine.

Defence and DHA have revised the housing product to be provided at RAAF Base Tindal and now intend provisioning the 50 dwellings using the DHA Business as Usual (BAU) 'design and construct' delivery model in lieu of bespoke architecturally-designed houses. These proposed houses are our standard tropical-design dwellings, based on the 'DHA Construction Specification', which we are constructing across northern Australia. This revision of housing product has resulted in the total project cost reducing to \$47,143,115.

We look forward to briefing you and the committee on this amended proposal at the upcoming hearing.

Yours sincerely

**Peter Howman**  
**Managing Director**

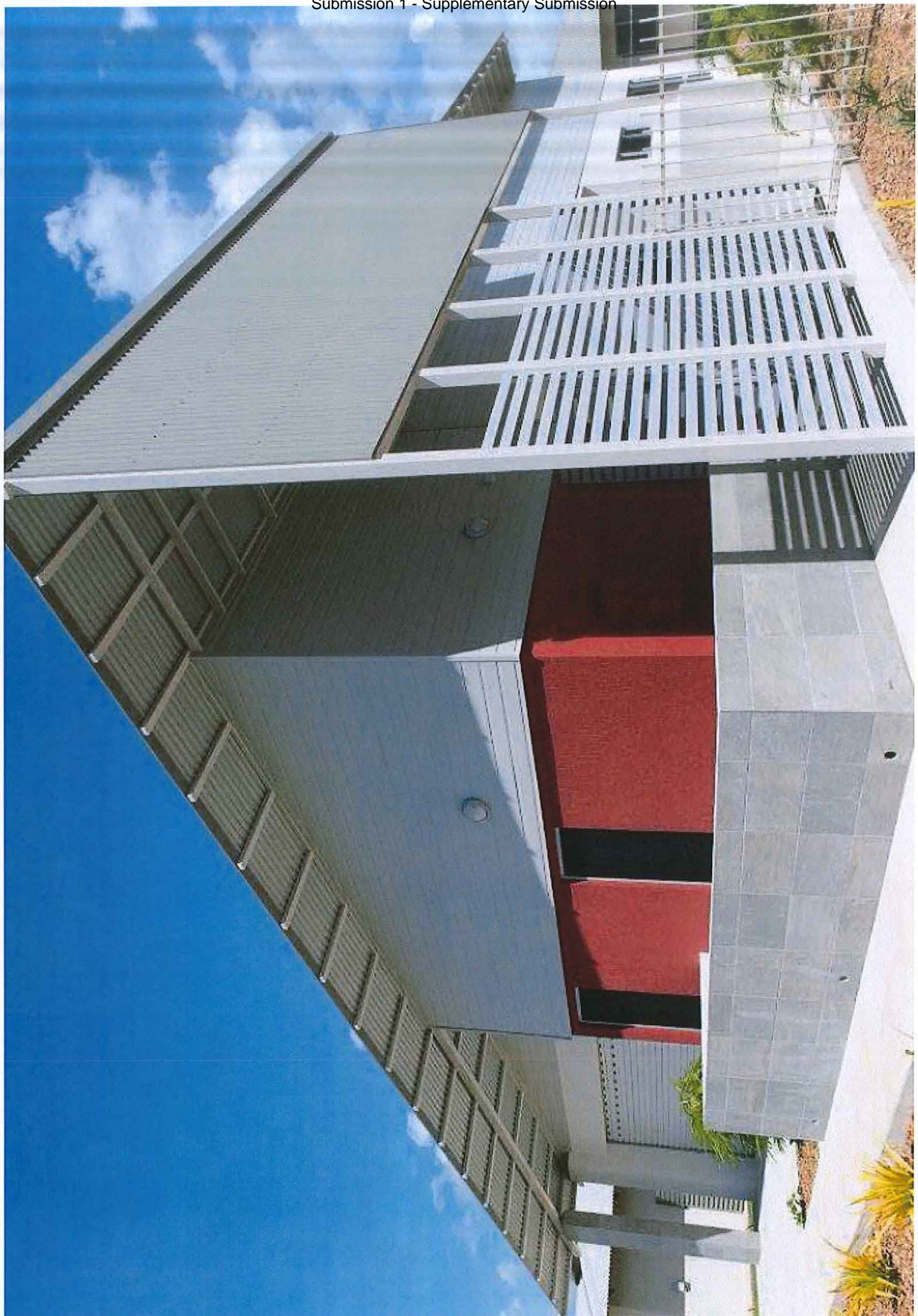
**Attachments:**

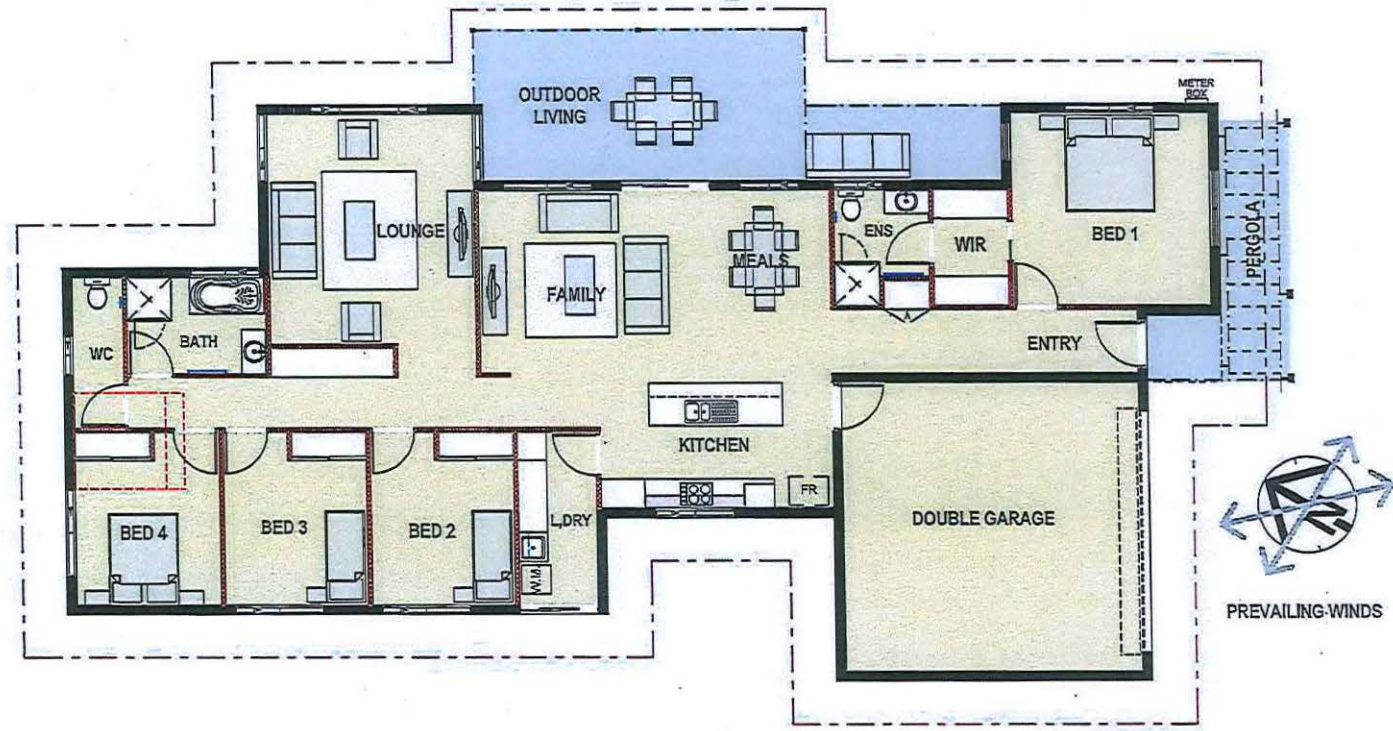
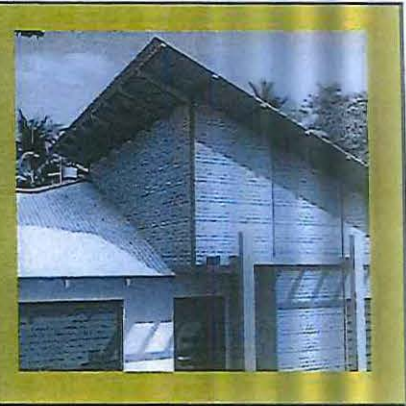
1. Floor plans and elevations of typical BAU houses
2. Proposed Layout Plan
3. Confidential Information
  - I. Revised breakdown of cost estimates
  - II. Detailed cost breakdown











### highlights

- 1 Breezeway
- 2 Crossflow
- 3 Island kitchen
- 4 Vented garage door
- 5 Separate living area
- 6 Meals area close to external living
- 7 Skillion roof, ventilated & insulated
- 8 Tropical entry statement
- 9 Large overhangs, shade to walls & tropical feel with exposed rafters
- 10 Front pergola



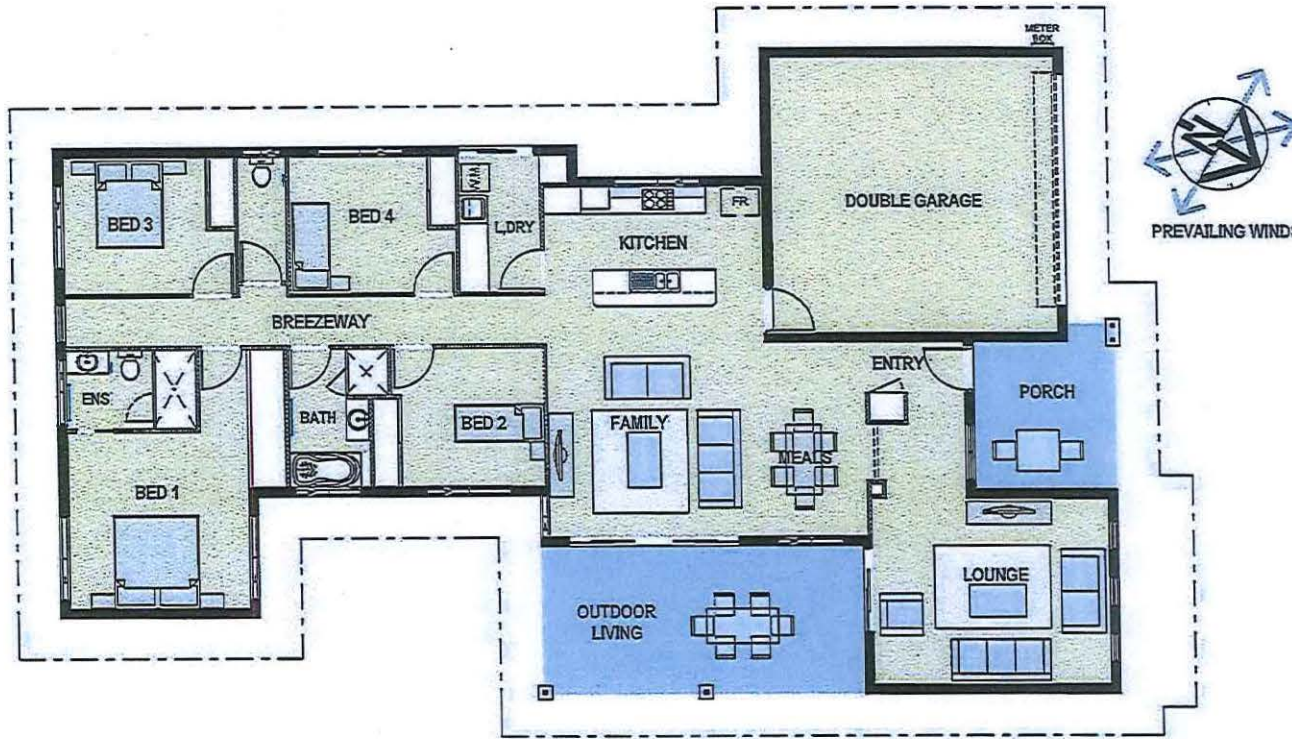
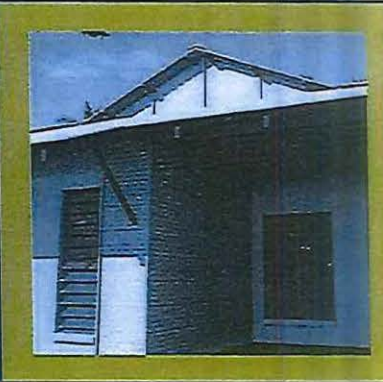
25 (A) House Tender  
 Muirhead, N.T.

HO-14-39

Glenferrie 2 Facade 2  
 © Copyright

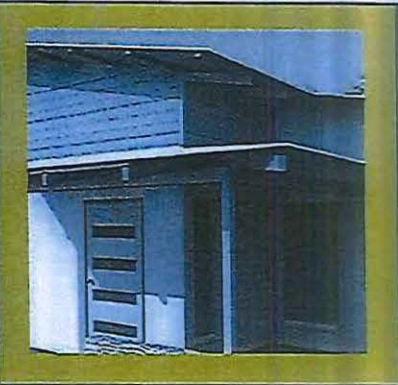
11248 Dreier Street, Muirhead. N.T.





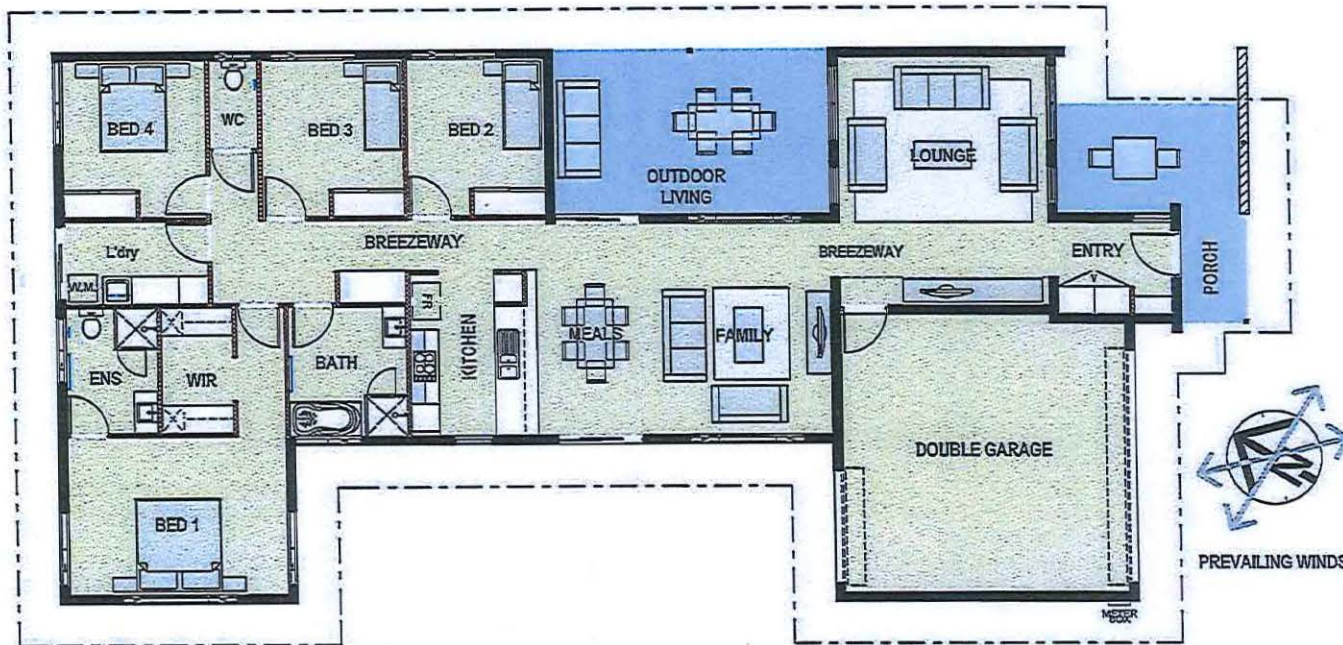
### highlites

- 1 Breezeway
- 2 Crossflow
- 3 Island kitchen
- 4 Screening
- 5 Ventilation slots to garage door
- 6 Seperate living area
- 7 Meals area close to external living
- 8 Hip Roof, high pitch insulated & ventilated
- 9 Deep front porch with maximum protection
- 10 Large overhangs, shade to walls & tropical feel with exposed rafters



## highlights

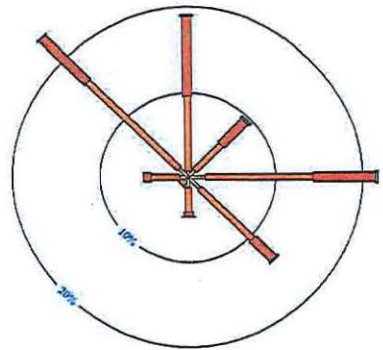
- 1 Breezeway
- 2 Crossflow
- 3 Island kitchen
- 4 Screening
- 5 Vented garage door
- 6 Seperate living area
- 7 Meals area close to external living
- 8 Skillion roof, ventilated & insulated
- 9 Shady front porch
- 10 Large overhangs, shade to walls & tropical feel with exposed rafters



WIND FREQUENCY ANALYSIS (in km/h)  
 DARWIN AIRPORT STATION NUMBER 014015  
 Latitude: -12.42 ° Longitude: 130.59 °

3 pm May to Sep  
 7580 Total Observations (1954 to 2003)

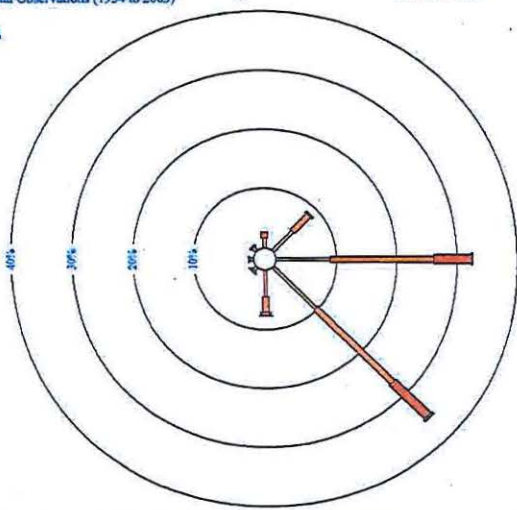
Calm 1%



WIND FREQUENCY ANALYSIS (in km/h)  
 DARWIN AIRPORT STATION NUMBER 014015  
 Latitude: -12.42 ° Longitude: 130.59 °

9 am May to Sep  
 7581 Total Observations (1954 to 2003)

Calm 9%



DRY SEASON

WET SEASON

Wind directions are divided into eight compass directions. Calm has no direction.  
 An asterisk (\*) indicates that calm is less than 1%.  
 An observed wind speed which falls precisely on the boundary between two divisions (eg 10 km/h) will be included in the lower range (eg 1-10 km/h). Only quality controlled data have been used.

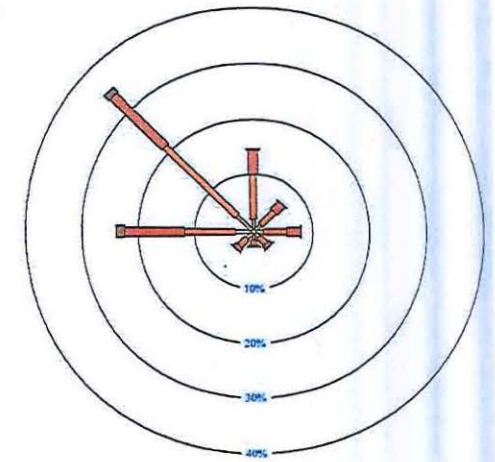


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 email at webclim@bom.gov.au . We have taken all due care but cannot  
 provide any warranty nor accept any liability for this information.

WIND FREQUENCY ANALYSIS (in km/h)  
 DARWIN AIRPORT STATION NUMBER 014015  
 Latitude: -12.42 ° Longitude: 130.59 °

3 pm Oct to Apr  
 10847 Total Observations (1942 to 2004)

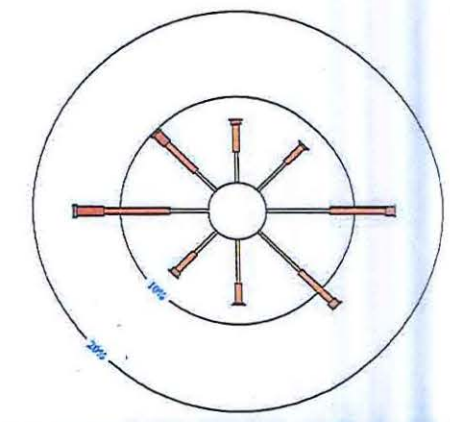
Calm 2%



WIND FREQUENCY ANALYSIS (in km/h)  
 DARWIN AIRPORT STATION NUMBER 014015  
 Latitude: -12.42 ° Longitude: 130.59 °

9 am Oct to Apr  
 10830 Total Observations (1942 to 2004)

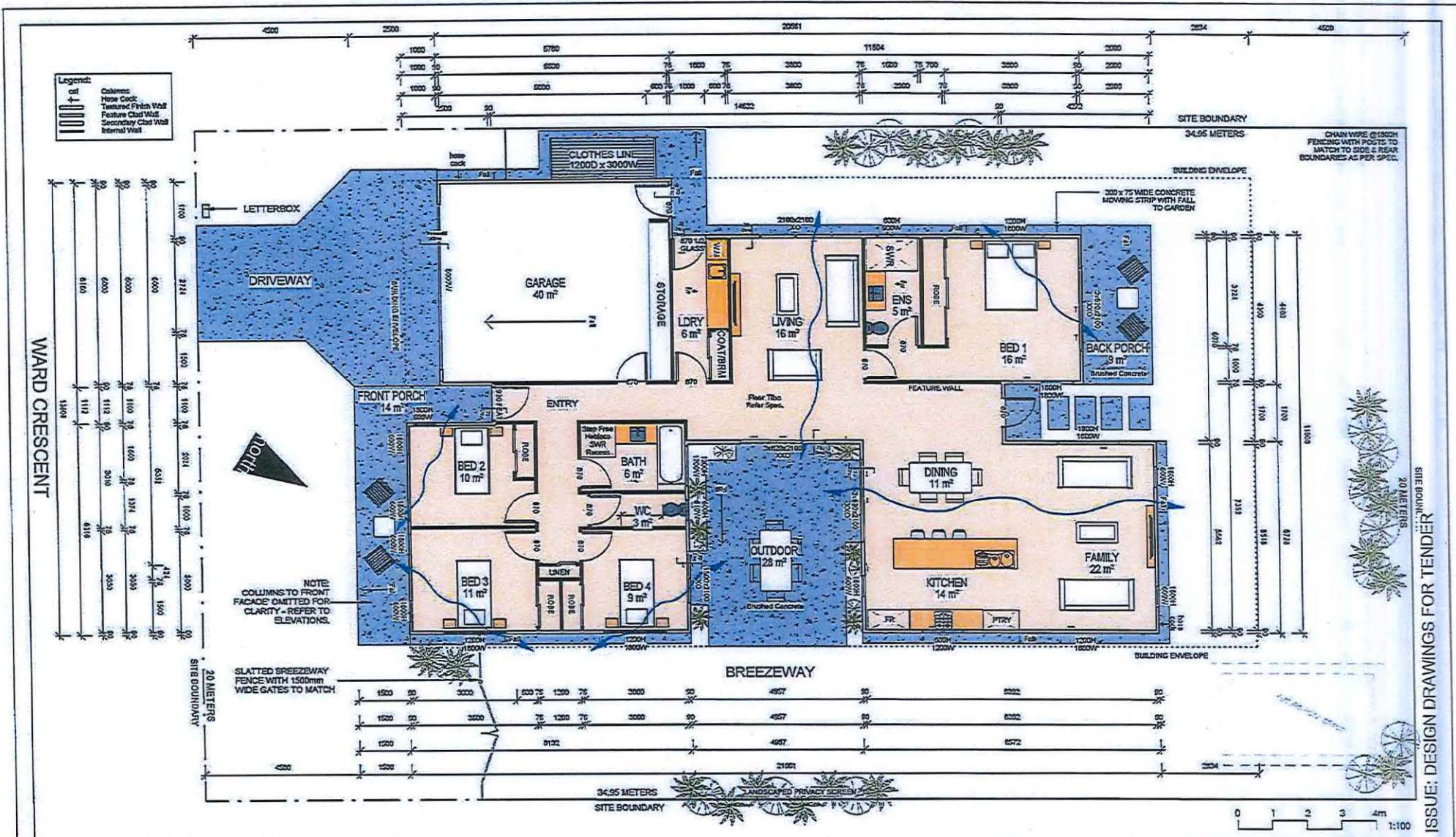
Calm 17%



# DARWIN ANNUAL WIND DIRECTIONS







ISSUE: DESIGN DRAWINGS FOR TENDER

5/ Design  
 PO Box 230  
 Papanora Beach QLD 4573  
  
 SSA No. 1066003  
 Contact: Michael Broeren  
 T: 07 5471 2721  
 F: 0422 969 645

  
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**GENERAL NOTES TO BUILDER**

1. All dimensions are to face unless otherwise stated.  
 2. All work to be completed in accordance with the specifications and standards of the relevant authorities.  
 3. All work to be completed in accordance with the specifications and standards of the relevant authorities.  
 4. All work to be completed in accordance with the specifications and standards of the relevant authorities.  
 5. All work to be completed in accordance with the specifications and standards of the relevant authorities.

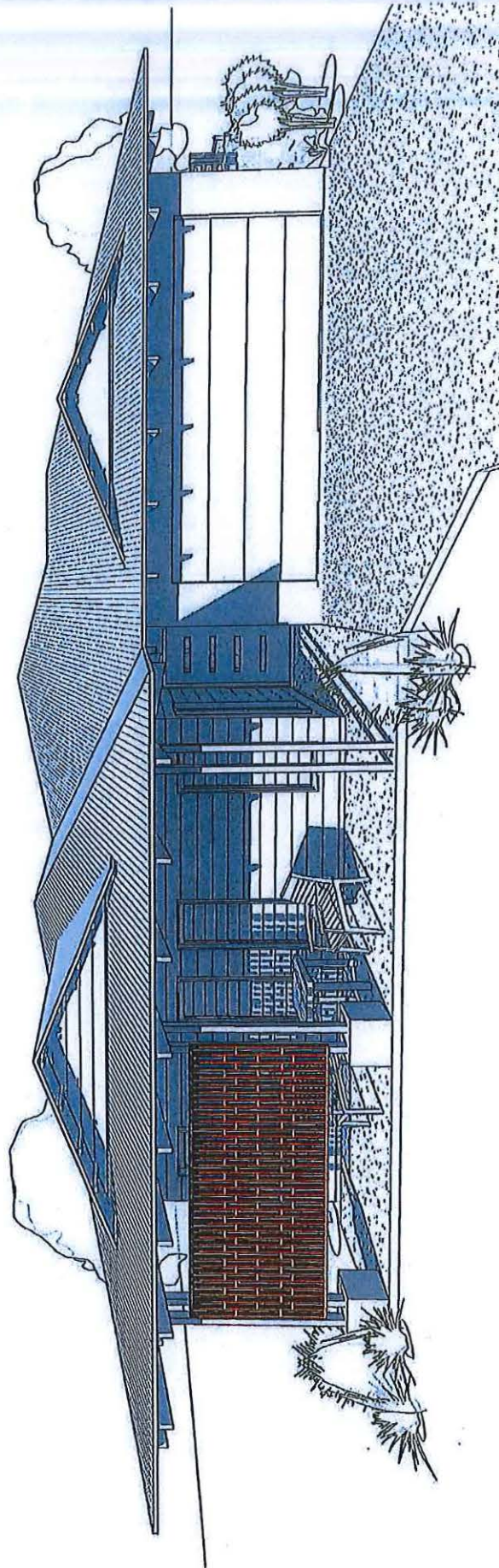
**Proposed New Housing:**  
 For:  
**DEFENCE HOUSING AUSTRALIA**  
 Project Address:  
**"BREEZES ESTATE" MUIRHEAD,  
 DARWIN, NT**



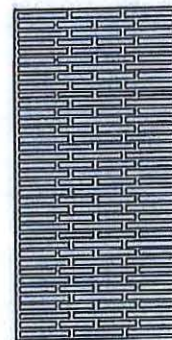
**LOT 11181**  
**4 BED**  
**TYPE 3**  
 AREAS:  
 LIVING: 176 sqm  
 GARAGE: 40 sqm  
 OUTDOOR: 28 sqm  
 BACK PORCH: 9 sqm  
 FRONT PORCH: 15 sqm

sheet title: <b>FLOOR PLAN LOT 11181</b>	
job no: <b>1351</b>	drawn by: <b>JM</b>
date: <b>05.12.13</b>	
scale (A3): <b>1:100</b>	drawing no: <b>04</b>

ISSUE: DESIGN DRAWINGS FOR TENDER



**FACADE TYPE: HIP A**  
 ARTISTS IMPRESSION ONLY



EXAMPLE OF SCREENING PATTERN



11 Dufferin  
 PO Box 200  
 Pungah Beach QLD 475  
 building  
 design  
 michael  
 broeren  
 BSA No. 1032623  
 Contact: Michael Broeren  
 t 07 5571 2724  
 f 0422 383 145



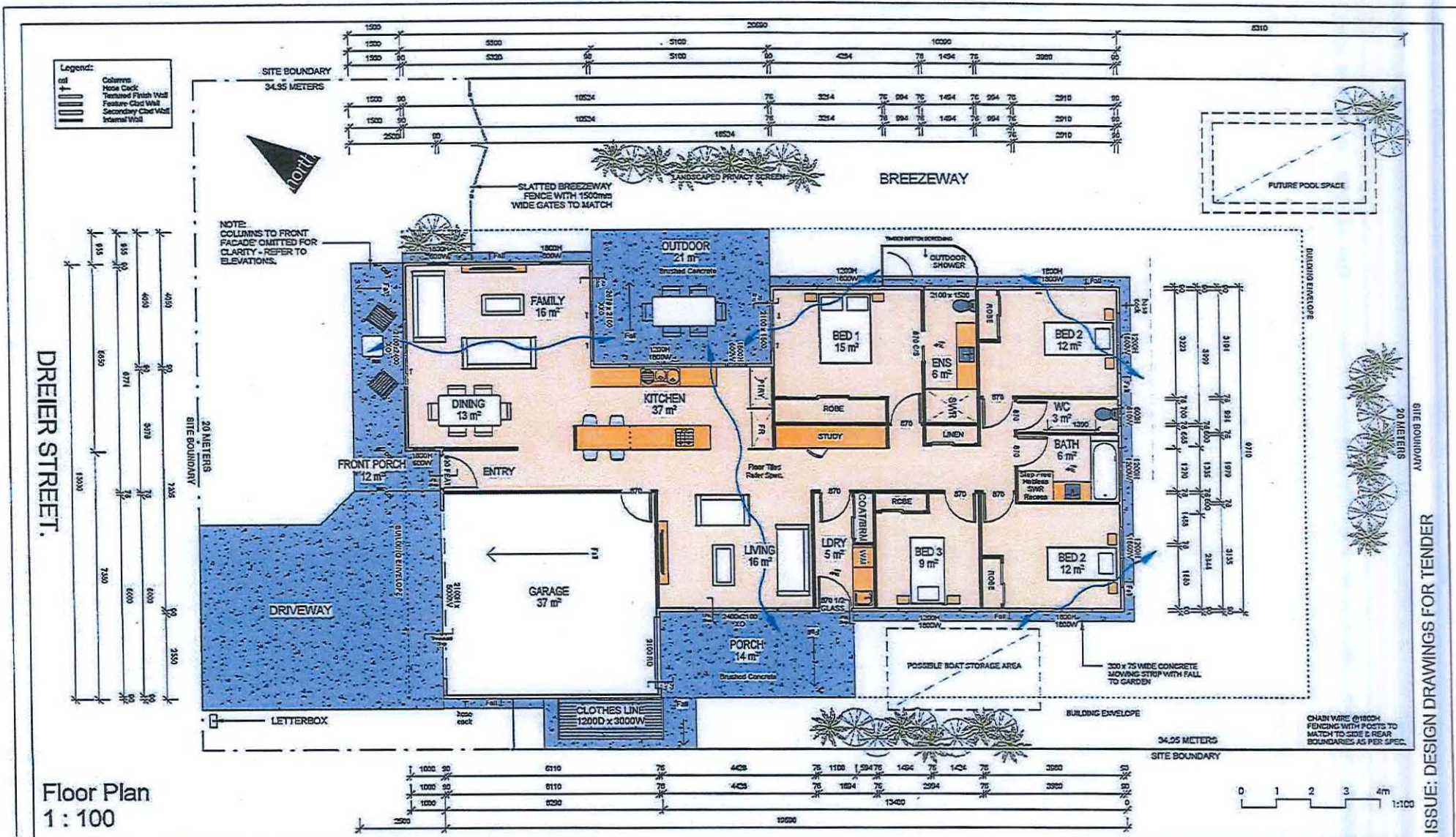
CONCRETEWORK AS SUPPLIER  
 OF RIBBON REINFORCING FOR  
 STRUCTURAL AND NON-STRUCTURAL  
 CONCRETEWORK IN ALL FORMS OF  
 CONSTRUCTION. CONTACT US FOR  
 MORE INFORMATION ON OUR PRODUCTS  
 FROM THE LEADING MANUFACTURER OF RIBBON.

**GENERAL NOTES TO BUILDER:**  
 1. All materials to be supplied by the builder.  
 2. All materials to be supplied by the builder.  
 3. All materials to be supplied by the builder.  
 4. All materials to be supplied by the builder.  
 5. All materials to be supplied by the builder.  
 6. All materials to be supplied by the builder.  
 7. All materials to be supplied by the builder.  
 8. All materials to be supplied by the builder.  
 9. All materials to be supplied by the builder.  
 10. All materials to be supplied by the builder.

Proposed New Housing:  
 For:  
**DEFENCE HOUSING AUSTRALIA**  
 Project Address:  
**"BREEZES ESTATE" MUIRHEAD,  
 DARWIN, NT**



sheet (of):	FACADES
job no:	1351
drawn by:	JM
date:	05.12.13
scale (A3):	drawing no: 00



Floor Plan  
1 : 100

ISSUE: DESIGN DRAWINGS FOR TENDER

M Design  
PO Box 290  
Perth Beach QLD 485

**building design by michael broeren**

BSA No. 1066053  
Contact: Michael Broeren  
1. 07 5471 2721  
1. 0422 359 645

**Ri-con**

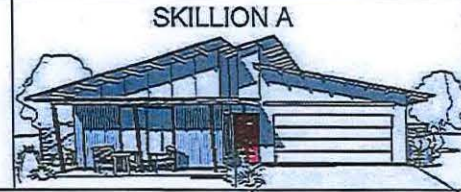
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**GENERAL NOTES TO BUILDER**

1. All dimensions are to the face of the work unless otherwise stated.  
 2. All work to be done in accordance with the Australian Standards and relevant codes of practice.  
 3. All work to be done in accordance with the relevant Australian Standards and relevant codes of practice.  
 4. All work to be done in accordance with the relevant Australian Standards and relevant codes of practice.  
 5. All work to be done in accordance with the relevant Australian Standards and relevant codes of practice.

Proposed New Housing:  
For:  
**DEFENCE HOUSING AUSTRALIA**

Project Address:  
**"BREEZES ESTATE" MUIRHEAD,  
DARWIN, NT.**

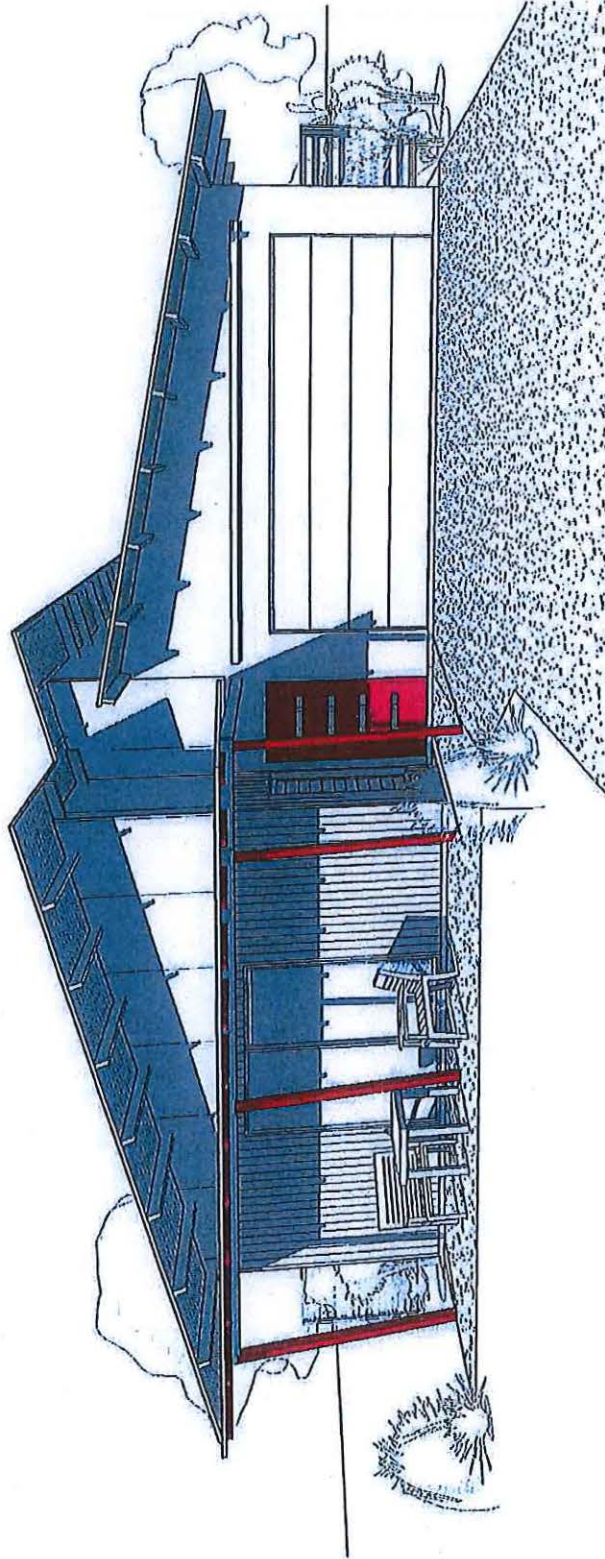


**LOT 11246**  
4 BED  
TYPE 1

AREAS:  
LIVING: 170.5 sqm  
GARAGE: 37 sqm  
OUTDOOR: 20 sqm  
PORCH: 14 sqm  
FRONT PORCH: 12 sqm

sheet title: <b>FLOOR PLAN LOT 11246</b>	
job no: 1351	drawn by: JM
date: 06.12.13	
scale (A3): 1:100	drawing no: 03

ISSUE: DESIGN DRAWINGS FOR TENDER



**FACADE TYPE: SKILLION A**

ARTISTS IMPRESSION ONLY

sheet title: <b>FACADES</b>	
job no: 1351	drawn by: JM
date: 06.12.13	
scale (A3):	drawing no: 00

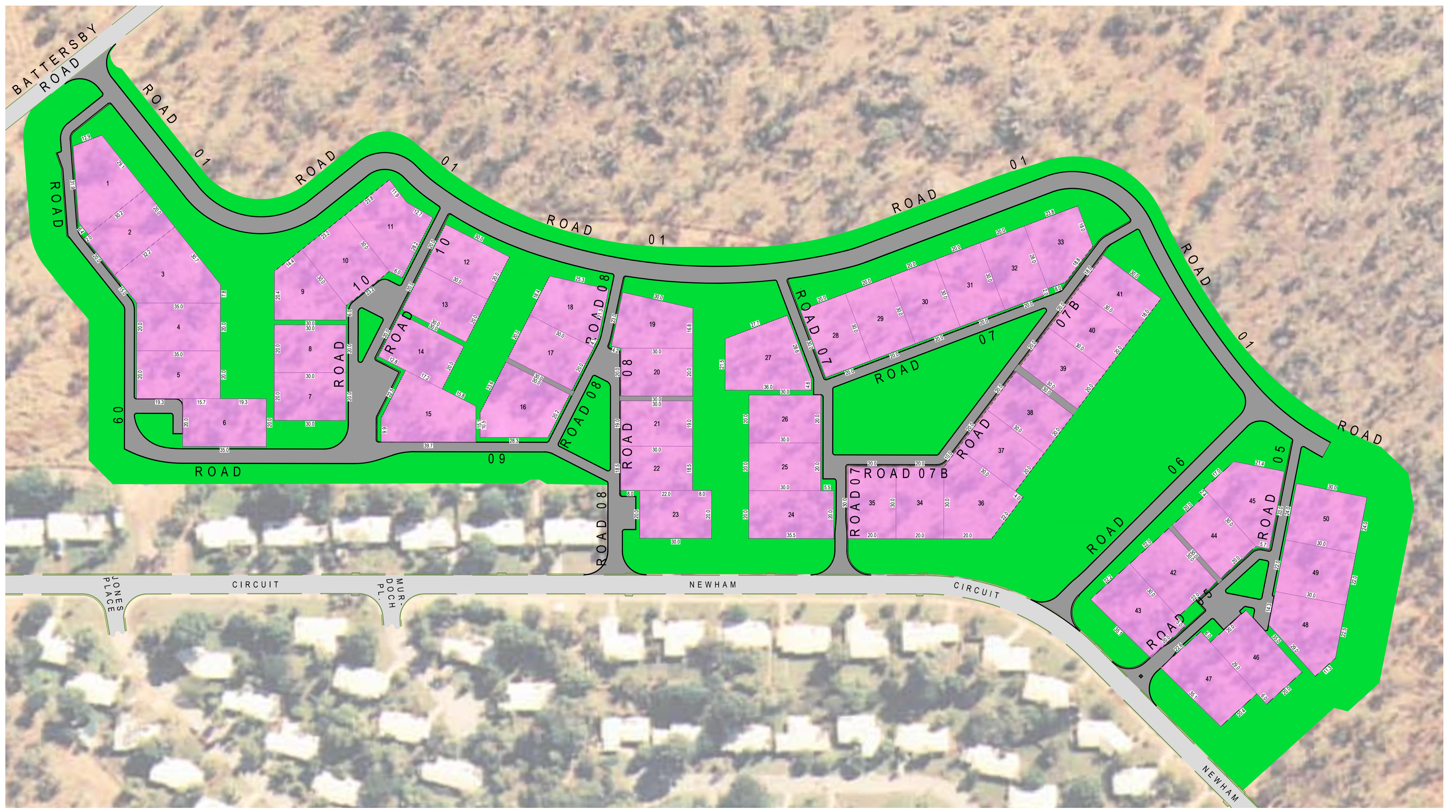
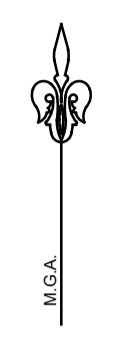


Proposed New Housing:  
 For  
**DEFENCE HOUSING AUSTRALIA**  
 Project Address:  
**"BREEZES ESTATE" MUIRHEAD,  
 DARWIN, NT.**

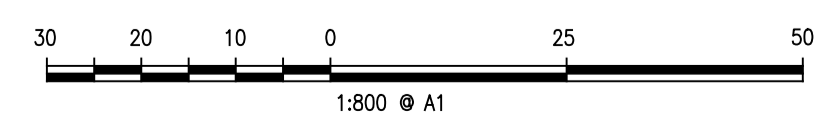
**GENERAL NOTES TO BUILDER:**  
 1. All dimensions are to face unless otherwise stated.  
 2. All materials to be supplied and installed by the contractor.  
 3. All work to be completed in accordance with the contract documents.  
 4. All work to be completed in accordance with the contract documents.  
 5. All work to be completed in accordance with the contract documents.  
 6. All work to be completed in accordance with the contract documents.



**building design michael broeren**  
 PO Box 250  
 Pongson Beach QLD 4872  
 Email: info@buildingdesign.com.au  
 Phone: (07) 567 1729  
 Fax: (07) 567 1728



- LEGEND**
- PROPOSED PUBLIC OPEN SPACE
- PROPOSED ROADWAY
- PROPOSED RESIDENTIAL ALLOTMENTS



Project: <b>PROPOSED SERVICE RESIDENCES MARRIED QUARTERS PRECINCT RAAF BASE TINDAL NORTHERN TERRITORY</b>	Principal: <b>DEFENCE HOUSING AUSTRALIA</b>			ABN 77 050 209 991 Level 4, Suite 400 16-18 Cambridge St EPPING NSW 2121 PO Box 233 reception@craigandrhodes.com.au www.craigandrhodes.com.au © Craig & Rhodes			Our Ref. <b>255-11</b> Dwg File Ref. [Rev] - Sheet Ref. <b>255-11E_S1_MP01</b>
	Scale: 1:1500	Date: 26.03.2014					
	Cal's: A.G.	Drawn: S.K.	Proj.Man: A.H.	Client Ref.			