C5 OLDER CCC TRACKING SHEET

CONSENT N° - BC-2006-1192/1		
APPLICANT NAME:	Michael Shane Cameron	Date: 14-Aug-2012
PROJECT DESCRIPTION:	New Dwelling	
LEGAL DESCRIPTION:	LOT 29 DP 61764 BLK VII HOKIANGA SD, 3327853	
PROJECT LOCATION:	, 25 Taumatawiwi Street, Opononi 0473	
NEW LOT / DP NUMBER:		

BUILDING SUPPORT OFFICER

• Inspection letter sent		✓
• Update workflow, details		✓
• Collation and creation of file		✓
DATE: 14-8-12	Signature -	

BCAPP

INITIAL TECHNICAL REVIEW COMPLETED

DATE: 16/08/12	Signature -

INSPECTION REQUESTED	Y	N

DATE:	INSPECTION CARRIED OUT BY:

TECHNICAL REASSESSMENT CARRIED OUT

RFI ISSUED:	RFI INFO RECEIVED:	NA
RFI ISSUED:	RFI INFO RECEIVED:	NA
RFI ISSUED:	RFI INFO RECEIVED:	NA
RFI ISSUED:	RFI INFO RECEIVED:	NA

DECISION – *To be completed and signed by* ***Building Officer***

OK TO ISSUE CCC	CCC REFUSED
☐	✓

☐ With modification

DATE: ~~13/08~~ 13/09	Signature -

PROCESS CCC – *To be completed and signed by* ***Building Support Officer***

1. Review and tidy up file documents		5. Front screen – remove dates, complete first inspection	
2. Enter C5 inspection (if applicable)		6. Form 6 – check owner/postal details are correct	
3. Tidy up 'Inspection' screen		7. Update Misc Data / Names / References	
4. Reconcile fees		8. Check debtor is current	
5. Tidy up popup memo's		9. Generate CCC documents	

DATE:	ASSESSED BY: Initials -	Signature -

Admin – refer Building Officers assessment notes for these details:

Inspections nominated (as identified under BC original assessment)	
Actual Inspections carried out	
Inspections paid for	
Refund due?	**Yes / No -**

C5 Older CCC Assessment

APPLICANT NAME:	Michael Shane Cameron
PROJECT DESCRIPTION:	New Dwelling
PROJECT LOCATION:	, 25 Taumatawiwi Street, Opononi 0473

ADMINISTRATION REVIEW:

Aspect	Y	N	NA	Comment
Has Owner changed from original BC?		✓		
Development contributions paid – email Debt management if unpaid		✓		DCF#: 2634 Status: $5469.88 unpaid
Application and Inspection fees paid in full?	✓			$1872.65
Date BC consent granted	✓			22 Mar 06
Project value	✓			$108,3000
Form 6 application received		✓		If NO, add note to Inspection Form ☐
List of Tradesmen received		✓		If NO, add note to Inspection Form ☐
'Inspection' printout attached	✓			
Date of last recorded inspection	✓			8 Nov 07
'Applications on location' printout attached	✓			
'Extension of Time' records attached			✓	
'Gems' printout attached (if applicable)			✓	
'Property file' attached	✓			
Complete time sheet	✓			

Print Name: Rae Signature: [signature] Date: 14-8-12.

INITIAL TECHNICAL REVIEW:

Category (use transition document to identify category)	1 (2) 3 Other_____		
Risk level (definition identified in Policy & Procedure)	**Low**	**Medium**	**High**

		Yes	No	NA	Comments
1.	☐ Form 6 supplied		✓		
	☐ List of consultants / Tradespersons complete in full		✓		
	☐ Energy works certificate		✓		
	☐ Gas certificate		✓		
	☐ As laid drainage plans		✓		
	☐ As builts (minor variations certified on site)			✓	
1.	All building consent conditions fulfilled			✓	
	☐ Section 67 wavers and Modifications			✓	
	☐ Section 72 natural hazards			✓	
	☐ Section 75 two or more allotments			✓	
	☐ Section 90 inspections			✓	
	☐ Section 113 Specified intended life			✓	
2.	Important and Imperative Information received			✓	
	☐ Survey certificate			✓	
	☐ Producer Statement (PS4) engineer			✓	
	☐ Producer Statement (PS3) constructor	✓			May be required.
	☐ CPENG / geotech reports referenced in PS(check)			✓	
3.	Construction complies with approved building consent documentation			✓	
	☐ Amended plans necessary?			✓	
	☐ Verify project description is accurate			✓	
4.	Amendment application reviewed (note BC no.)			✓	
5.	Nominated site inspections verified (instruct admin total chargeable with reason)				Nominated: Actual Visits:
6.	Swimming pool / spa on site			✓	
	☐ Blue final inspection check completed			✓	
	☐ Forward to admin or attached			✓	SPL no:
	Commercial only			✓	
	☐ Specified Systems Identified			✓	
	☐ Certification or commissioning statements for S/S (FPIS CERT etc)			✓	
	☐ Draft C/S verified (further information?)			✓	
	☐ IQP / LPB Identified			✓	
	☐ CPU			✓	

Print Name: MALCOLM Signature: ML Ross Date: 16/05/12

******* AWAIT DECISION FROM CUSTOMER WHETHER INSPECTION REQUIRED OR NOT *******

(Once your Initial Assessment is completed, give file to admin to update Pathways workflow)

INSPECTIONS

Previous inspection records	Check notes and identify any further charges or refunds
Foundation type ☑ Nominated ☑ Completed	Date :- 25/05/06 Construction type :- Inspection result :- PASS
Drainage ☑ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Subfloor ☑ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Slab/bond beam ☑ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Preline ☑ Nominated ☑ Completed	Date :- 08/11/07 Construction type :- Inspection result :- PASS
Framing ☑ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Flashing /wrap ☐ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Post line ☑ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Cavity/ cladding ☐ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Effluent disposal ☑ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Swimming pool ☐ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Other ☐ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
Final ☑ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-
C5 Inspection ☐ Nominated ☐ Completed	Date :- Construction type :- Inspection result :-

Totals: Nominated - 10 **Actual Completed -** 2

HAS A C5 INSPECTION BEEN CARRIED OUT?

YES add inspection to above chart and complete totals

NO move to next question

IS FURTHER INFORMATION REQUIRED?

YES complete yellow RFI form

NO complete 'Technical Decision' section

ANY COMMENTS:

Form 6 + Tradsman
Electrical Cert
As built Drainage
Gas Cert
Final inspection
DFC

TECHNICAL DECISION:

ISSUE CCC **Or** **ISSUE CCC with modification**	I have checked the information and am "**satisfied on reasonable grounds**" a code compliance certificate can be issued . This may be subject to fees etc prior to issuing (admin to verify below).
Print Name:	**Signature:** **Date:**
REFUSE CCC	Reasons for Refusal: (C) (D) Letter sent on 14/08/12. Council have not received any response to the above letter.
Print Name:	**Signature:** **Date:**

General / Follow up Comments (Change of Decision):

Call for final inspection
Paper work to be supplied.

Far North
District Council

Private Bag 752, Memorial Ave
Kaikohe 0440, New Zealand
Freephone: 0800 920 029
Phone: (09) 401 5200
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

14 August 2012

Te Kaunihera o Tai Tokerau Ki Te Raki

Michael Shane Cameron
1202 Scenic Drive North
Swanson
Auckland 0614

Dear Sir,

Building consent number: BC-2006-1192/1
Property ID: 3327853
Address: 25 Taumatawiwi Street, Opononi 0473
Description: New Dwelling

Older Code Compliance Certificate (CCC) Review – Inspection Required

The Council records confirm that it has been more than two years since your building consent was granted. The two year period expired on 22-Mar-2008 and/or the approved extension of time expired on 22-Mar-2008.

Following the final inspection of your project by the Building Officer, Section 92(1) of The Building Act 2004 provides that it is the responsibility of the owner to make application for a Code of Compliance when the work is complete.

On receipt of that application, Section 93 of The Building Act 2004 states that the Council must make a decision whether to issue a Code Compliance Certificate (CCC) to which a building consent relates.

To address this you may:-

- Contact the Council within 10 working days to arrange a suitable time for an inspection so that the Council can ascertain the status of your building consent. Please note that this inspection will incur a charge. **When booking your inspection, please contact Council by email ccc@fndc.govt.nz or phone 0800 920029 or (09) 401 5200 and ask to book an 'OVERDUE CCC INSPECTION'.**

OR

- Inform the Council in writing that the project is not complete and / or not proceeding.

Please remember to quote your contact details and building consent number, referenced at the top of this letter.

If no response is received within 10 working days from the date of this letter, Council will formally refuse the issue of a Code Compliance Certificate and update records accordingly.

Note: If you wish to apply for a Code Compliance Certificate in the future, a new application will need to be submitted with the appropriate fee. This will be subject to all reasons for refusal being addressed.

Fees and Charges
Please note: If you wish to proceed with your Code Compliance Certificate, the following fees and charges may apply and an invoice will be issued with your Code Compliance Certificate. (Refer to attached Fees and Charges schedule for current rates).

- *CCC Application Fee*
- *Initial Building Officer Review*
- *Initial Inspection Review*
- *Administration Processing*
- *Re-inspections (if applicable)*

The attached Fees and Charges Schedule is a **guide only**. Council is unable to quote on this particular service as every application is different and specific to the design proposed. There may be additional fees or charges for services provided and these will need to be paid in accordance with Council Standard Terms and Conditions.

If you have any further queries regarding this matter, please contact Council on 0800 920 029 quoting the above building consent number.

Yours sincerely

pp

Rodney Spooner
Building Officer
Environmental Management

FAR NORTH DISTRICT COUNCIL

Private Bag 752, Memorial Ave, Kaikohe
Free Phone: 0800 920 029
Phone: 09 405 2750
Fax: 09 401 0987
www.fndc.govt.nz

Field Advice Notice - Building 1 00618-09900

BC# 20061192 **Date:** 08/11/07

Applicant: Cameron
Builder:

Site Address: 25 Taumatawiwi St Opononi

Inspection Completed: Yes / No (No circled)

Reinspection Required: Yes / No (Yes circled)

№ 482

VAL#

Travelling Time: 30

Inspection Time: 3.45

Officer: MM

Signature: M [signature]

ENTERED

225 EXTERIOR CLADDING Inspection		OK	Not	N/A	Comments.................If further inspection needed please indicate
1	Plaster: Reinforcing, flashings, sealants, construction				
2	Texture coating				
3	EPS (polystyrene), nailing, flashings etc				
4	Sheet Systems: Layout, nailing, flashing, construction				
5	Weatherboard: Grading, type, fixing, flashing				
6	Bricks/Blocks: Fixings, control joints, flashing				
7	Other				
229	**PRELINE BUILDING Inspection**	**OK**	**Not**	**N/A**	
1	Trusses: Fixing, spacing, bracing, support			✓	
2	Pitched Roof: Fixing, spacing, bracing, strutting, span	✓			Amroc Panels
3	Ceiling: Joists/Batten: Fixing, spacing, support	✓			
4	Bottom-Top Plate: Fixing, size, D.P.C.			✓	
5	Bracing: Strapping, bolts, check plan	✓			
6	Moisture content	✓			
7	Frame: Stud size, space, lintel fixings, grade	✓			
8	Recheck Cladding: Flashing, nog spacings (480mm - Board/Batten)			✓	
9	Insulation: Type, thickness		✓		Not on site Reinspection
10	Glazing: Safety glass, thickness	✓			
11	Fire & Sound Walls: Sealer, staggered laps, fire collars			✓	
12	Other				
233	**PRELINE PLUMBING Inspection**	**OK**	**Not**	**N/A**	
1	Pressure test	✓			
2	Pipe material, size, support, insulation	✓			
3	Stacks	✓			
4	Wastes	✓			
5	Supply tank			✓	
6	Other			✓	
237	**POST LINING Inspection**	**OK**	**Not**	**N/A**	
	Sheet brace nailing				
1	Fire & Sound Walls: Sealer, staggered laps, fire collars				
2	Other				
241	**DRAINAGE Inspection**	**OK**	**Not**	**N/A**	
1	Accurate "As built" plan provided		✓		At CCC
2	Depth of drain	✓			
3	Bedding	✓			
4	Gradient Line: Inspections, diameter correct	✓			
5	Water test - connection to main	✓			
6	Gullys: Max 600mm depth, finish 25mm above protected or 100mm above unprotected ground	✓			
7	Drains within boundaries, too close to foundations				
8	Other				
245	**SEPTIC TANKS Inspection**	**OK**	**Not**	**N/A**	
1	TP58 on site - is it per design?				
2	Depth of beds, length, scoria, matting, cut off drain				
3	Tank installed properly on level				
4	Ventilation provided-distribution box				
5	Aerated mechanical systems installed to manufacturers specifications				
6	Access for tank maintenance (no vertical air loading)				
7	Other				

An inspection of the above mentioned premises has been undertaken and the matters as listed above must be completed within..days or otherwise stated

Action to be taken:

Issued By: MM **Designation:** BC

This Notice Received By: **Next Inspection:**

March

FAR NORTH DISTRICT COUNCIL

Private Bag 752, Memorial Ave, Kaikohe
Free Phone: 0800 920 029
Phone: 09 405 2750
Fax: 09 401 0987
www.fndc.govt.nz

Field Advice Notice - Building 1

ENTERED

№ 1921

BC# 2006-1192 **Date:** 25/5/06

Applicant:
Builder: Camera

Site Address: 25 Tamatawini St

VAL# 618-099-00

Travelling Time:

Inspection Completed: Yes / No

Reinspection Required: Yes / No

Inspection Time:

Officer: Bryn Mellor

Signature:

209	FOUNDATION Inspection	OK	Not	N/A	Comments.....If further inspection needed please indicate
1	Boundary pegs sited	✓			
1	Correct site & building siting	✓			
2	Ground bearing, fill, expansive clay	✓			Piles all through fill
3	Reinforcing: Spacing, size, clearance etc				
4	Excavation: Depth, width				
5	Pile/Pole holes: Depth, diameter	✓			Engineer design bigger + deeper than plan and design required
6	Pile/Pole: Correct grade, diameter	✓			clean out holes
7	Driven Piles: Engineers Certification				
8	Retaining Wall: Polythene underneath				Retaining wall foundation to do.
9	Other				

213	SLAB/UNDER SLAB PLUMBING Inspection	OK	Not	N/A
1	Slab Thickness: D.P.M., tape, rebates			
2	Slab Reinforcing: Thickenings, tying cover etc			
3	Fill: Compaction, depth, binding			
4	Pipes: Gradient, protection, sizing, tested			
5	Other			

217	SUBFLOOR Inspection	OK	Not	N/A
1	Sub floor brace connectors			
2	Bracing: Washers, timber size etc			
3	Bearer/Joist: Size, spacing, joist hangers			
4	Notching/Holes/Blocking for lines of horizontal supports			
5	Ventilation & Insulation			
6	Other			

221	BOND BEAM - SUSPENDED SLAB Inspection	OK	Not	N/A
1	Block size			
2	Reinforcing: Size, grade, laps, tied			
3	Washouts: If pour exceed 1.2m in height			
4	Design calculation on site			
5	Retaining Wall: D.P.M. & protection			
6	Adequate propping			
7	Service Installation (Fire Collars)			
8	Identify proprietary pre-stress components			
9	Other			

225	FRAMING Inspection	OK	Not	N/A
1	Flashings			
2	Battening (air cavity)			
3	Wrap			
4	Vermin protection			
5	Framing Timber Treatment			
6	Brick Ties SS / Galv			
7	Other			

249	MISCELLANEOUS Inspection	OK	Not	N/A
1	Solid fuel heating, chimney check, setback fixing, flue flashing, mantel shelf, hearth construction			
2	Swimming Pool: Backwash, fencing, registration			
3	Other			

An inspection of the above mentioned premises has been undertaken and the matters as listed above must be completed within.....days or otherwise stated

Action to be taken:

Issued By: Bryn Mellor **Designation:** Acting Team Leader

This Notice Received By: M H Engo **Next Inspection:**

Far North
District Council

Private Bag 752, Memorial Ave
Kaikohe 0400, New Zealand
Freephone: 0800 920 029
Phone: (09) 405 2750
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

Development Contribution Notice

Section 36, Building Act 2004

Ref: BC-2006-1192

Michael Shane Cameron
135 Meadowbank Rd
Meadowbank
Auckland 1005

A Code of Compliance Certificate for the building work referred to in the attached Project Information Memorandum will not be issued until the following development contribution fees are paid:-

Stormwater	$**2029.63**(incl. GST)
Community Infrastructure	$**1687.50**(incl. GST)
Car Parking	$**1752.75**(incl. GST)

If the development contribution is not paid:

1. The Council may, under section 208(b) of The Local Government Act 2002, withhold the Code Compliance Certificate that would be issued under section 95 of The Building Act 2004
2. The building consent authority, under section 94(4) of The Building Act 2004, must refuse to issue a Code Compliance Certificate for the building work until it has received:
   - Evidence that the development contributions has been paid or made by the owner to the Council: or
   - A copy of a written agreement between the owner and the Council that the Code Compliance Certificate may be issued.
3. The Council may, under section 208(d) of The Local Government Act 2002, register the development contribution under the Statutory Land Charges Registration Act 1928, as a charge on the land in respect of which the development contribution was required.

If the value of the dwelling is less than $120,000 upon completion, an abatement may be given. You will need to provide evidence of the cost, to enable a reassessment to be made. The development contribution invoice will be generated and forwarded to you in due course.

Marius Gabriels
Roading and Drainage Dept

Tanya Nowell
Development Technical Officer

On behalf of The Far North District Council
13 March 2006

Far North
District Council

Private Bag 752, Memorial Ave
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Marius Gabriels
Roading and Drainage Dept

Tanya Nowell
Development Technical Officer

On behalf of The Far North District Council
13 March 2006

TRACKING SHEET **Combined BC/PIM**

BUILDING CONSENT No. BC-2006-1192

NAME:		**Michael Shane Cameron**
DATE:		**22 December 2005**
PROJECT DESCRIPTION:		**New Dwelling**
PROPERTY ID:	3327853	
LEGAL DESCRIPTION:	LOT 29 DP 61764 BLK VII HOKIANGA SD	
PROJECT LOCATION:	25 Taumatawiwi Street, Opononi 0452	

RESOURCE PLANNER

DATE: 3/3/06 **SIGNED:** [signature]

CONDITIONS: Form 4a, Env Permit Reqd
No works to commence until Env Permit is granted by Council

DEVELOPMENT ENGINEER

DATE: **SIGNED:**

CONDITIONS:

PLUMBING AND DRAINAGE

DATE: 21 FEB. 06. **SIGNED:** [signature]

CONDITIONS:

BUILDING INSPECTOR

DATE: 3 MARCH 06 **SIGNED:** [signature]

CONDITIONS:

OTHER:

DATE: **SIGNED:**

CONDITIONS:

Enter Swimming Pool Register	BWOF / Compliance Schedule Required	NRC Septic Tank Booklet	NRC (Consent on behalf)	NUMBER OF INSPECTIONS PREPAID	CHARGE
					12

PLANNING CHECKLIST

PRIORITY:- TO BE PROCESSED UNDER BOTH TDP AND PDP PLANS

Application No:- BC-2006-1192

Transitional District Plan (TDP)	**Revised Proposed District Plan (RPDP)**
Zoning: RES 1	Zoning: Coastal Residential
Check CT (i.e. Consent Notices, Building line restrictions):	*Resources:* OL
	CT: Reqd
District Wide Issues:	District Wide Issues:
Use: PREV	*Earthworks:* Permit reqd. *Traffic:* OL
	Parking:
	Access:
	TP 58: To be corrected
Rules of Zone (i.e. Setback, Sunlight etc):	Rules of Zone (i.e. Setback, Sunlight etc):
Setback:	*Setback:* *Scale:*
Coverage:	*Sunlight:* *Buildings:*
Height: OL	*Height:* OL *Visual Amenity:*
H/Bdy:	*Imp. Surf:*
	Res. Int:
	Traf. Int:

Type of Activity under the Resource Management Act 1991?

RERL CONTROLLED

Does the project require a resource consent under either Plan?

No ☑	No ☐
Yes ☐	Yes ☑

Resource Consent granted?

No ☑
Yes ☐
RC# _____ Date granted: _____

through retaining height 71.5m, ENL permit should cover it

17/02/06

Conditions appropriate to this project?

No ☐
Yes ☐ Attached

Licenses that may be required to operate:

☐ Liquor License
☐ Health License
☐ Dangerous Goods License
☐ Other License _____

Note: This listing is not intended to contain all licenses, permits or other legal requirements relevant to the proposed project.

Property Location: 25 Taumatawiwi Street Opononi

Property Area: 0.068ha.

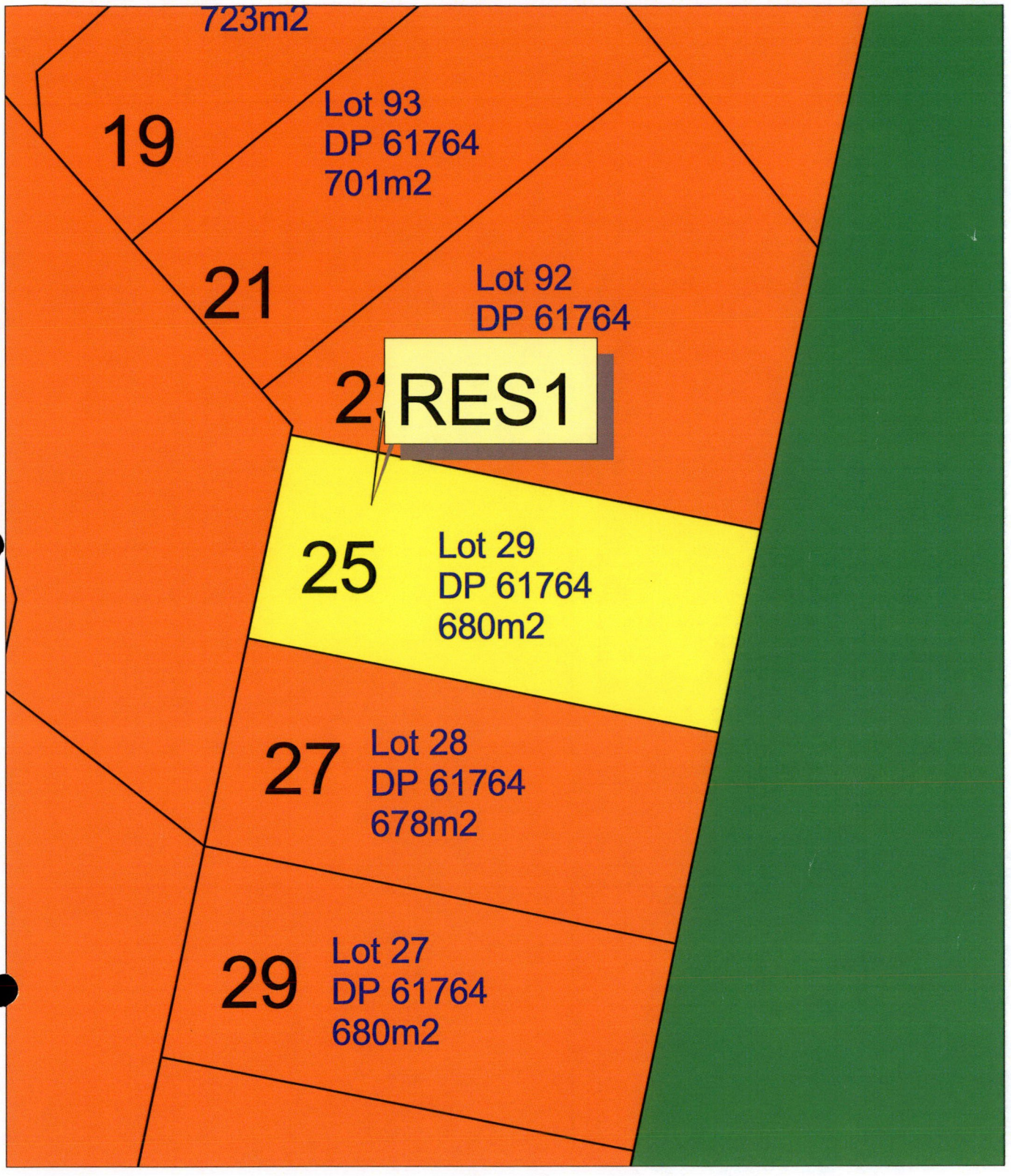
00618-099-00

LOT 29 DP 61764 BLK VII HOKIANGA SD

Far North District Council

PROPERTY INQUIRY

Date: 4/1/6



Property Location: 25 Taumatawiwi Street Opononi

Property Area: 0.068ha.

00618-099-00
LOT 29 DP 61764 BLK VII HOKIANGA SD

Far North District Council

PROPERTY INQUIRY

Date: 4/1/6

PIM PROCESSING CHECKLIST

ABA N° : BC-2006-1192 **Name of Applicant: Michael Shane Cameron**

Date Received in CPU : **Date Application Accepted :**

RESPONSIBILITY - CPU TECH SUPPORT OFFICER(S)			
Tick the appropriate check box to ensure application complete.			
The following information must be present before the application can be accepted.		YES	NO
1	Fees appropriate to the application. (**PAYMENT**)		
2	Signed Application **(SIGNATURE)**		
3	Provisions for disposing of stormwater and wastewater. **(SITE PLAN).**		
4	Provisions for vehicular access, including parking. **(SITE PLAN).**		
5	Connections to utilities i.e. water supply, storm/wastewater system.**(Connection Form, OR)**		
6	TP58 or Application to connect to reticulated service **(TP58)**		
7	Certificate of Title		
8	Three Sets of Plans **(SITE PLAN;ELEVATIONS;FLOOR PLAN ETC.,)**		
9	Application included for Vehicle Crossing (If required)		
10	Application for RAPID number (If not already allocated and required (Rural))		

The following information must be provided with some applications – Check with **Building Officer (LIM Duty Officer)** if in doubt		YES	NO	N/A
11	Precautions to be taken where building work is to take place over existing drains or sewers or in close proximity to wells or water mains.			
12	Need for Memorandum from NZ Fire Service			
13	Provisions to be made if building over or adjacent to any road or public place.			
14	Provisions to be made in any demolition work for the protection of the public, suppression of dust, suppression of noise, disposal of debris and disconnection from public utilities.			

'YES' required and provided	**'NO'** required, but not provided	**'N/A'** not required

The following information should be provided by the applicant, however can often be more easily obtained from records held by Council, by the Planning Technical Officer.		YES	**NO**
15	Details of any cultural or heritage significance of the building or building site, including whether it is on a marae or wahi tapu. **(HPT)**		
16	Copy of/or reference to, any resource consent or planning approval (including subdivision) for this project.		

Application complete and accepted	**YES** (Clock Starts)	**NO**	If **'NO'**, Standard Letter **'PIM 1'** to be sent.

Notes :

Checked by : (print initials and sign) **Date :**

Once accepted, immediately book site inspection in Outlook

Additional information as requested provided	YES	**NO**	If **'NO'** Return application to applicant.

Checked by : (print initials and sign) **Date :**

Notes :

Once accepted, immediately book site inspection in Outlook

Standard letter **'PIM 1'**	**Date :**	Standard letter **'PIM 2'**	**Date :**

Application Returned to Applicant : Standard letter **'PIM 3'** **Date :**

Comments :

Attachments etc.,

GIS Maps

Property File ordered

RESPONSIBILITY – TECHNICAL PLANNING OFFICER

	The issues below have been checked	YES	NO
1	Site inspection sheet attached		
2	Historic Places Trust :		
	▪ Registered Historic Place/Recorded Site		
	▪ Historic Area/Heritage Precinct		
	▪ Wahi Tapu		
	▪ Wahi Tapu Area		
	Application to be sent to HPT within 5 working days — **Date sent** (if applicable) :		
3	Zoning Identified as : RES 1/COASTAL RES		
4	Resource Map Identified as : nil		
	Coastal Hazard / Outstanding Landscape / Outstanding Landscape Feature		
	Registered Archaeological site / Site of significance to Maori / Outstanding Natural Feature		
5	**a)** Are there any Resource Consents? Or Earthworks Permits(list the RC number of all Consents below)		
	b) Any other Statutory Authority Notification(s)? (give details below)		
	Are there any conditions relevant to this application from a) and b) above? (If so, photocopy and attach to checklist)		
6	The following have been checked and are not an issue for this project, (circle any areas that are an issue).		
	Certificate of Title / District Plan Rules		
7	Project across boundary (Sec 75 of The Building Act 2004)		
	COMMENTS :		
	FOR PERMIT REEDS		
	Checked By: (print initials and sign) VAA — **Date :** 17/02/16		

RESPONSIBILITY – BUILDING OFFICER – LIM/PIM DUTY

					YES	NO
8	Sea Spray Zone?					
9	Memorandum from NZFS required					
10	Wind Zone? (Delete N/A)	**LOW**	**MEDIUM**	**HIGH**	**VERY HIGH**	
11	**Certificate for Public Use Required (Circle if applicable)**				**YES**	**NO**
	COMMENTS :					
	Checked By: (print initials and sign) — **Date :**					

RESPONSIBILITY – ENGINEER		YES	NO
10	Natural Hazards affect site?		
	▪ Erosion (including coastal erosion)		
	▪ Falling debris (including soil, rock, snow and ice)		
	▪ Subsidence		
	▪ Inundation (including flooding, overland flow, storm surge, tidal effects and ponding)		
	▪ Slippage		
11	Engineer designed foundations required?		
12	Should this consent be issued under Sec 73 of The Building Act 2004?		
	Comments :		
	Checked By: (print initials and sign)	**Date :**	

RESPONSIBILITY – Utilities Tech Officer				
	Development Contribution(s) payable			
	Amount of Development Contributions Payable		Water	$
			Sewerage	$
	Effluent Disposal : (Delete N/A)	On Site		Reticulated Sewer
	Potable Water Supply (Delete N/A)	On Site Water Tank		Reticulated Supply
	Stormwater (Delete N/A)	On Site	To Kerb	Reticulated S/Water
	Location of building in relation to utilities OK?			
	Requirement to build over sewer line ?			
RESPONSIBILITY – Roading/Drainage Tech Officer				
	Amount of Development Contribution Payable		Roading	**$**
			Reserves	**$**
	Needs to be reviewed by Roading/Drainage (circle appropriate box)			**YES** **NO**
	COMMENTS :			
	Checked By: (print initials and sign)			**Date :**
	TOTAL AMOUNT OF DEVELOPMENT CONTRIBUTIONS			**$**
RESPONSIBILITY – Development Engineer Roading/Drainage				
	Comments :			
	Checked By: (print initials and sign)			**Date :**

RESPONSIBILITY – CPU SUPPORT OFFICERS : The Following Attachments are included with the PIM :			
		YES	NO
1	Copy of zone rules for the property		
2	As built plans showing existing stormwater/wastewater utilities that relate to the site		
3	Any other relevant information applicable to this specific site		
4	Development Contribution Notice (if applicable)		
5	Details of Resource Consent and Conditions (where applicable)		
6	Details of any other Statutory Authorisations		
6	GIS Maps etc, for :		
	Zoning		
	Resources		
	HPT		

GARAGE - CPU CHECKLIST

ABA N° :	**BC-2006-1192**
Name of Applicant :	**Michael Shane Cameron**

	The issues below have been checked	YES	NO
1	**SITE PLAN :** If within 1metre of boundary, walls to be fire rated		
2	**PLANS ELEVATIONS AND DETAILS, FOUNDATIONS, FLOORS, BRACING & CALCS, STRUCTURE, FIXINGS, CLADDINGS TRUSSES**		
3	**LINED :** Construction (or part) to dwelling standards		
	Insulation; Building Paper; Ground Clearances		
4	**SEPARATION :** Slab to exterior		
	Unlined : 150/100		
	Lined : 225/150		
5	**PLUMBING AND DRAINAGE :**		
	New TP 58 included		
	Existing effluent system		
	Stormwater Disposal		
6	**FIREWALL: Rating & Construction Details**		

Checklist Completed By (Print Name) :

Dated :	**Signature :**

CONDITIONS :

Far North
District Council

Private Bag 752, Memorial Ave
Kaikohe 0400, New Zealand
Freephone: 0800 920 029
Phone: (09) 405 2750
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

ABA: BC-2006-1192

13 March 2006

Michael Shane Cameron
135 Meadowbank Rd
Meadowbank
Auckland 1005

Dear Sir / Madam

RE: New Dwelling, 25 Taumatawiwi Street, Opononi 0452

Thank you for lodging your building application with the Far North District Council.

Planning Aspect

According to District Wide Provisions under the Revised Proposed Plan, any excavation and/or filling carried out within 20m of any road, private road or adjoining property requires Earthworks Permit under Council's Bylaws.

Earthworks volume associated with this project is within 20m of the boundary; please fill the application form and enclose a fee of $175.00

Yours faithfully

V Araba
PLANNING OFFICER

Far North
District Council

SCHEDULE A
APPLICATION FOR EARTHWORKS PERMIT

Name of Applicant: _____

Address of Applicant: _____

Address of Proposed _____
Earthworks: _____
_____

Legal Description: _____
Valuation Number: _____

Name of Contractor _____
or Plant operator: _____

Address of Contractor _____
or Plant operator: _____

Nature of Earthworks _____
[Plan to be attached] _____
_____

And Purpose: _____
_____
_____
_____
_____
_____
_____
_____

Applicant's Signature: _____ **Date:** _____
Fee $175.00

Please Note: Additional information may be required if that supplied with this application is not adequate to fully assess the impacts of the proposed works.

06/01/06 1.30pm

SITE INSPECTION SHEET

Applicant:	**Michael Shane Cameron**	Application No.	**BC-2006-1192**
Site Address:	25 Taumatawiwi Street, Opononi 0452	Date:	22 December 2005
Contact Person:	Jimmy Parker	Contact Phone:	09 5212137

What is the group topography:
- ☐ Gentle
- ☑ Moderate
- ☐ Steep

Wind Zone:
- ☐ High
- ☑ Very High
- ☑ Specific Engineering Design
- ☑ Sea Spray Zone

Vehicle Crossing:
- ☐ Required
- ☐ Is there Footpath Damage
- ☐ Is a Deposit Required

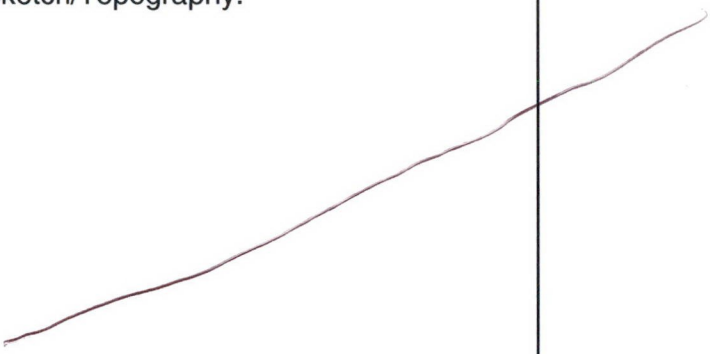
Council Service:
- ☑ Is sewerage available
- ☑ Is water reticulation available

On-site Effluent Disposal:
- ☐ Is the area suitable
- ☐ Is there room for a reserve area
- ☐ If there local knowledge of poor soakage
- ☐ Engineering Design required

Engineering Required and Section 36 Items:
- ☐ Signs of slippage
- ☐ Poor soils
- ☐ Fill on site
- ☐ Un-natural profiles
- ☐ Flooding
- ☑ Foundations

Council or Private Easements:
- ☐ Man hole covers
- ☐ Overland flow path
- ☑ Overhead wires

Sketch/Topography:



New Dwelling

Other Comments:

Note: Enter ☑ or ☒ in each box to indicate yes or no.

Inspector: B2 Date of Inspection: 6/1/06

ENTERED

Far North District Council

Private Bag 752, Memorial Ave
Kaikohe 0400, New Zealand
Freephone: 0800 920 029
Phone: (09) 405 2750
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

ABA: BC-2006-1192

23 February 2006

FAXED

Michael Shane Cameron
135 Meadowbank Rd
Meadowbank
Auckland 1005

Dear Sir / Madam

RE: New Dwelling, 25 Taumatawiwi Street, Opononi 0452

Thank you for lodging your building application with the Far North District Council.

Initial vetting of your application has highlighted the need for further information to be provided to enable the process of issuing your consent to continue. The time period for processing your application has been suspended under Section 48 (2) of The Building Act 2004, however this will be resumed as soon as the necessary information as listed below is received.

3/3/06

Planning Aspect
Please supply a copy of a current Certificate of Title not more than 6months old.

Building Aspect

1. Three copies of the fireplace manufacturer's installation instructions are to be supplied.
2. Show means of water proofing block work.
3. Show type & R value of ceiling insulation.
4. Show type & R value of wall insulation.
5. Show type of under floor insulation.
6. Connections of RSH portals to concrete piles on page 2 of plans.

It would assist considerably if you would include your consent number BC-2006-1192 when responding. This will ensure the information provided is included with your application and that processing continues with the minimum of delay

Yours faithfully

V Araba
PLANNING OFFICER

J Kaio
BUILDING OFFICER

Residential

TECHNICAL PROCESSING REVIEW

Application: MICHEAL SHANE CAMERON BC No: 2006-1192

Site Address: 25 TAUMATAWIWI - OPONONPfficer: JOE

Description/Use: RESIDENCE Date: 21 FEB. 06.

KEYS:	Compliance (blue)	✓	Non-Compliance	×
	Not Applicable (red)	—	Required Autotext Clause (red)	○

COMPLETE THE ENTIRE CHECKLIST MARK ACCORDINGLY

Application
- ☑ Description & intended use
- ☑ Value
- ☑ Signed
- ☑ Form Completed

PIM
- ☐ Land use consent – condition
- ☐ Building clear US lines
- ☐ Natural hazard type

1 (Type of Hazard)

_____

_____

_____

Sec 72 ☐ Yes ☐ No

2 ☐ Standard of Plans

Site Plan
- ☑ Drawn to scale
- ☑ Distance to boundary
- ☑ Building within boundary
- ☑ Retaining Walls
- ☑ Cut to fill
- ☐ Contours

3 ☐ Ground soils check eff design (TP58)

B1 Structure

7 or 6 ☑ Specific design
- ☑ Ground condition
- ☑ Footings
- ☑ Walls
- ☑ Bracing
- ☐ Beams
- ☐ Lintels
- ☑ Roof Structure
- ☐ Fill over 600
- ☐ Effluent

5 ☑ Producer Statement (Original)

4 ☑ Plans endorsed

8 ☑ Specification relative to plan
- ☑ Foundation size & depth
- ☑ Pile spacing
- ☑ Anchor piles
- ☑ Brace piles
- ☑ Ordinary piles
- ☑ Sub-floor bracing, fixing calculation
- ☑ Bearer size
- ☑ Joist size
- ☐ Joist blocking

10 ☑ Base Cladding & Venting
- ☐ Boundary / Double joists

11 ☑ Concrete floor
- ☑ Foundations / walls
- ☑ Designed retaining walls

11a ☐ Hard fill specification
- ☐ Fill depth > 600mm (Engineered)
- ☑ Slab reinforcing
- ☑ Slab thickness

13 ☐ Slab thickenings

12 ☐ Shrinkage control – Free Joint

14 ☑ Bottom plate fixing
- ☐ Suspended concrete flooring system

No Design
- ☐ Pod Floor system (Design Calc's & PS1)

15 ☑ Wind Zone
- ☑ Stud size & spacing
- ☐ Lintel sizes & spacing
- ☑ Light or heavy roof type

17a ☑ Truss specification & PS1

21 ☑ Rafter size / centres / ridge fixing

17 ☒ Rafter / truss tie down

19 ☐ Top plate tie downs to studs

20 or 18 ☑ Purlin size & spacing & fixings
- ☐ Ceiling diaphragm / dragon tie

22 ☑ Wall bracing calculations
- ☑ Wall bracing

23 ☐ Roof bracing
- ☐ Beam sizes

☐ Posts
24 ☐ Post to beam fixings

B2 Durability
☑ Elevations
26 ☑ Fixings
☐ External brace sheets
25 ☐ External brace sheets ply painted
☐ Hidden services 50 years
27 ☑ Coastal (500m) Inlet (100m)
28 ☐ Timber treatment walls, roof, decks, parapets
29 ☐ Timber treatment internal wet areas

C1 Outbreak of fire
16 ☐ Free standing fire place
16 ☐ Manufacturer's instructions
☐ Insert fire place/zero clearance in timber framed chimneys
☐ Gas or solid fuel

C2 Means of escape
31 ☑ Smoke alarms

C3 Spread of fire
☐ 1m or < from relevant boundary
☐ Fire rate walls No details

D1 Access
☐ Stairs rise / going
33 ☐ Handrails
☐ Landings
☑ Sub floor
☐ Ramps
☑ Slip Resistance

E1 Surface water
34 ☑ Storm water disposal
58 ☑ U.S Connection
35 ☑ Floor height above finished ground
☐ Internal Gutters, Rain Head & Overflow
☑ Down pipe Size & Number

E2 External Moisture
36 ☑ Matrix E2/ASI
☐ E2/ASI or alternative
☐ Cavities required
☑ Specific design/approval certificate for alternate to E2/ASI
☑ Exterior cladding
☑ Manufacturer's No flashings details
☑ Roof pitch
37 ☑ Joinery flashings, head, sill No jamb details
38 ☐ Solid barriers behind weather boards
☑ Sheathing under deck connection details
39 ☐ Block work water proofing system – GARAGE
40 ☑ Drainage / filters behind walls to cesspits
41 ☑ Building wrap – roof
42 ☑ Building wrap – walls
44 ☐ Cavity
45 ☑ Roof wall junctions
48 ☐ Wall parapet junction
30 ☐ Brick Cavity Width
☑ Under floor DPC type
46 ☑ Deck wall step down detail
47 ☐ Deck membrane system & tech info
☑ Flashings to floor to full height joinery
☐ Treatment window reveals – H3.1

E3 Internal Moisture
☑ Service rooms sealed
49 ☐ Wet are showers/spec No details
29 ☐ Floor treatment
49 ☐ Shower over bath specifications & details
49a ☐ Water proofing membrane (tech info)

F2 Hazardous Building Materials
50 ☐ Glazing, wet area, stairwell

F4 Safety From Falling
51 ☐ Deck barriers
52 ☐ Stair & Internal landings
☐ Swimming pool fencing
☐ Protected banks

G1 Personal Hygiene
☑ Location of sanitary fixture
☐ Disable facilities
☑ Basin for WC

G2 Laundering
☐ Location & provision of facilities
☐ Ventilation

G3 Food Preparation
☑ Appliances & facilities
☑ Doors to WC area

G4 Ventilation
53 ☑ Natural ventilation
☐ Mechanical ventilation
54 ☐ Range hoods
☐ Sub floor

G6 Airborne & Impact Sound
☐ STC rating - walls
☐ STC rating – floor / ceiling

G7 Natural Light
☑ Windows in external walls
☑ Outside environment awareness

G8 Artificial Light
☑ Luminance

G12 Water Supplies
55 ☑ Supply system
☐ Back flow prevention

61 ☑ US connection / meter installed

G13 Foul Water

☑ Outfall
☑ AS/NZ 3500
☑ Acceptable solution G13
☑ Pipe size
☑ Vents
☑ Gully trap / ORG
☐ Drains under building
☑ Inspection within 2.0m
☑ General layout
60 ☐ Existing drains
59 ☑ US connection waste water
67 ☐ Septic Tank Tech Info

G14 Effluent Disposal

57 ☐ Bore log
66 ☐ Design guide TP58
☐ Loadings
☐ Outfall design - LTAR
☐ Water table clearance
☐ Building clearance
☐ Boundary clearance
☐ Outfall clearance to bores / springs
☐ Waterway clearance
56 ☐ Existing system extra loading

H1 Energy Efficiency

62 ☐ Ceiling insulation
63 ☐ Wall insulation
64 ☐ Under floor insulation
☑ ENPC Guidance document

Technical Review Complete – Compliance has been achieved

Building Officer: JOE KAIO (Name (Please Print)) JK (Initial) 21 FEB. 06 (Date)

Additional Information Required: CONNECTIONS OF RHS PORTALS TO CONCRETE PILES ON PAGE 2. OF PLANS

CONDITIONS.

REQUEST FOR INFORMATION (S 30)

NAME:	**Michael Shane Cameron**
PIM/BC:	**BC-2006-1192**
DATE:	**22 December 2005**
BUILDING:	**New Dwelling**
LOCATION:	**25 Taumatawiwi Street, Opononi 0452**
LEGAL DESCRIPTION:	**LOT 29 DP 61764 BLK VII HOKIANGA SD**

Resource Planner: _____ Date: 17/02/06

- Current CA not more than 6 months old required.

Engineer: _____ Date: _____

Plumbing & Drainage Inspector: _____ Date: _____

Building Inspector: _____ Date: _____

BUILDING CONSENT APPLICATION

For Structures Requiring Consent in the Northland Region

Far North District Council

Private Bag 752, Memorial Ave
Kaikohe 0400, New Zealand
Freephone: 0800 920 029
Phone: (09) 405 2750
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

ENVIRONMENTAL
22 DEC 2005
RECEIVED

This form should be used to make application for :

- **Project Information Memorandum (PIM)** (Section 33 of The Building Act 2004)
- **Building Consent (BC)** (Section 45 of The Building Act 2004)
- **Certificate of Acceptance (COA)** (Section 97 of The Building Act 2004)

Consent N° : 2006-1192 Office Use Only | **Property ID :** ..... Office Use Only

PART A - General (See Guidance Notes prior to Completing)

1. THE OWNER

Name of Owner : FRANCES GWENDOLIN & CAMERON & MICHAEL SHANE CAMERON

Contact Person : JIMMY PARKER

Postal Address : 135 MEADOWBANK RD MEADOWBANK AUCKLAND 1005

Street Address/Registered Office : 135 MEADOWBANK RD MEADOWBANK AUCKLAND 1005

Phone N° : 09 5212137 Mobile N° : .....

Website : ..... Fax N° : 09 5212137

Email Address : ~~Gmap~~ gmac@xtra.co.nz

The following evidence of ownership is attached to this application : *(If property has been recently sold a copy of Sale and Purchase Agreement is required.*

Certificate of Title

2. THE AGENT

Name of Agent : .....

Contact Person : .....

Postal Address : .....

.....

Street Address/Registered Office : .....

.....

Phone N° : ..... Mobile N° : .....

Website : ..... Fax N° : .....

Email Address : .....

Relationship to Owner : .....

First Point of Contact for Communications/Fees/Refunds to :

☐ The Owner
☐ The Agent

3. LOCATION OF PROPOSED BUILDING WORK /RAPID N° : (If rural and already allocated) :

Street Address of Building : 25 TAUMATAWINI ST OPONONI

4. LEGAL DESCRIPTION

Valuation Roll N° : .....

Lot(s) or Section N° : 29 DP N° : 617164

BLK N° : TAUMATAWINI SD : HOKIANGA

AREA OF SITE (m²/ha) : 680 m2 | Certificate of Title N° : 19C/786 (current).

Current, lawfully established use (if applicable) : N/A

Year first constructed (if applicable) : N/A

PART A - General Cont.

5. THIS APPLICATION IS IN RELATION TO : (Tick appropriate box).

- [x] **Domestic**
- [ ] **Commercial**
- [ ] **Industrial**
- [ ] **Multi-storey - Number of Levels :** .....
- [ ] **Structure in Coastal Marine area *(SEE NOTES for this section)***

If your project is Commercial or Industrial you must list all specified systems for the building, on this form where indicated. **See Part 'E' of This Form and also clause 14, (Fire Service Design).**

Tick box A to D below, as appropriate :

- [ ] **A** Application is for a Project Information Memorandum (PIM)
- [ ] **B** Application is for Building Consent (BC) only, in accordance with PIM N° : .....
- [x] **C** Application is for Building Consent (BC) and Project Information Memorandum (PIM)
- [ ] **D** Application is for a Certificate of Acceptance (COA)

6. NATURE OF CONSENT :

- [x] New Building – (exclude domestic garages and domestic outbuildings)
- [ ] Foundations only
- [ ] Alterations, repairs, extensions, conversions, re-siting, installation of heating appliances and plumbing and drainage only
- [ ] Other new construction and demolition
- [ ] Domestic garages and domestic outbuildings
- [ ] Plumbing & Drainage only (includes on-site effluent disposal)

7. INTENDED PROJECT LIFE

- [ ] **NOT** less than 50 years

OR ;

- [x] **LESS** than 50 years

Specified as 25 years

8. DESCRIPTION OF WORK : New residential dwelling as per attached plans

INTENDED USE (S) Residential Use

Ground floor area of project : 70m²

Upper floor areas of project : —

Total floor area of project : 70m² + (Garage 37.2m²) = 107m²

Market Value of project (incl GST) : $108,300-00

N° of dwelling units : ONE + Garage

9. STAGED PROJECT (Note: under The Building Act 2004, separate building applications maybe required)

Is this a staged project ? YES/(NO) If 'Yes', this is stage ..... of an intended .....stages.

10. CONFIDENTIALITY – Plans and Specifications :

I/We require the following to be treated as confidential (proof of reasons for confidentiality will be required and will only be accepted if legally valid)

- [ ] Plans (please specify which plans i.e. Floor Plans etc.,) : .....
- [ ] Specifications
- [ ] I/We require that *all details* of this application remain confidential as required by a Council directive applied for, or already issued, in relation to a protection order currently in force under The Domestic Violence Act 1995.

11. VEHICLE CROSSING REQUIRED

Is this application linked to a vehicle crossing application? YES/(NO) If 'YES', Application N° : .....

(If 'YES' please include Vehicle Crossing Application)

12. PUBLIC UTILITY CONNECTIONS REQUIRED

Is this application subject to a utility connection application? (Drainage, Water Connection or Water Meter Installation).

- [ ] YES - Application N° : .....
- [x] NO - Existing connections in place.

13. HISTORIC PLACES TRUST

- [ ] The property is a registered historic place, historic area or wāhi tapu area.
- [ ] A PIM has already been issued for this project - PIM N° : .....

If your property is in an historic area, in the Council's District Plan, you will need to consult with Historic Places Trust in regard to your project for review and approval prior to your project commencing.

14. FIRE SERVICE DESIGN UNIT (Commercial, Industrial, Multi-storey and Domestic (as required by fire service).

N/A

Section 47 of The Building Act 2004, requires all commercial, industrial, multi-storey and some domestic projects to be reviewed by the New Zealand Fire Service, which may require a Memorandum, setting out advice on issues such as 'means of escape from fire' and 'water supply for fire fighting'. The NZ Fire Service charges for this work.

15. COMPLIANCE SCHEDULE (Commercial, Industrial, Multi-storey – Complete Part E

A Compliance Schedule is required for Commercial, Industrial and Multi-storey buildings with specified systems. This does **NOT** apply to single storey, residential property apart from when serviced by a cable car (lift).

16. DEVELOPMENT CONTRIBUTIONS – (Section 198 of The Building Act 2004) **PLEASE NOTE**

Development Contributions are payable on most developments under section 198 of The Local Government Act 2002. Any contributions relevant to this project must be paid prior to Council issuing a Code Compliance Certificate (Section 208(b) of The Local Government Act 2002) at the satisfactory conclusion of the work.

17. CERTIFICATE OF ACCEPTANCE (section 96 The Building Act 2004)

Is this application in relation to obtaining a Certificate of Acceptance (Section 96 The Building Act 2004) **YES/NO**

If 'YES' Please provide the details below :

Description of the building work : .....

Date building work carried out : ..... N/A

Name(s) of personnel who carried out the work are as follows :

Name :..... Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

Name :..... Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

I have read the guidance notes and the information I have supplied with this application is true and complete to the best of my knowledge :

Signed by / for and on behalf of / the owner.

NOTE : If acting for and on behalf of, please read the following declaration prior to signing :

"I hereby declare that I am authorised to act as Agent of the Applicant"

Signature : P Skinner ..... **Name :** Patricia Skinner .....

Date : 19.12.05

Please Note :

Council is unable to accept your application as being lodged, until all details and relevant information is provided, including completed ***Check List*** and the application is signed and the processing fee paid. For Full details of the fee structure, see the schedule of fees for the District Council in which your project is to be carried out.

PART B : PROJECT DETAILS

Property Information Memorandum (Complete this part only when applying for a PIM)
The project involves the following matters. Tick each applicable box and attach relevant information in **triplicate** for residential and **four copies** for Commercial Industrial or Multi-Storey. **Always include one set A3 size.**

- ☑ (a) Location, in relation to legal boundaries, and external dimensions of new, relocated, or altered buildings (Site Plan with elevations, Topography, drawn to scale).
- ☑ (b) Details of any known or potential erosion, avulsion, falling debris, filled ground, subsidence, slippage, alluvion, inundations, hazardous contaminants on or near the site, land contours.
- ☑ (c) Provisions to be made for vehicular access, including parking. (To be shown on site plan).
- ☐ (d) Provisions to be made in building over or adjacent to any road or public place.
- ☐ (e) Provisions to be made for disposing of stormwater and wastewater. (To be shown on site plan).
- ☐ (f) Precautions to be taken where building work is to take place over existing drains or sewers or in close proximity to wells or water mains.
- ☐ (g) New connections to public utilities i.e. water supply, stormwater system, wastewater system.
- ☐ (h) Provisions to be made in any demolition work for the protection of the public, suppression of dust, suppression of noise, disposal of debris and disconnection from public utilities.
- ☐ (i) Details of any cultural or heritage significance of the building or building site, including whether it is on a marae or wahi tapu.
- ☐ (j) Copy of/or reference to, any resource consent or planning approval (including subdivision) for this project.
- ☐ (k) Details of volume of proposed excavations; include volumes for site preparation, basement and driveway.

PART C : BUILDING DETAILS

Complete this part only when applying for a Building Consent
This application is accompanied by : (tick each applicable box, attach relevant documents in **triplicate** (one of which must be A3 size) for residential and **four copies** (one of which must be A3 size) for Commercial, Industrial or Multi-Storey).

- ☑ 1. The drawings, specifications and other documents according to which the building is proposed to be constructed to comply with the provisions of the New Zealand Building Code, with supporting documents, if any, including :
- ☐ 2. Building Certificates.
- ☑ 3. Producer Statements (including TP 58 Effluent Design), and any alternative solutions.
- ☐ 4. References to product certification issued by the Department of Building and Housing (DBH).
- ☐ 5. References to determinations issued by the Department of Building and Housing (DBH).

For details on drawings and specifications etc., see checklist form. If applying for PIM and Building Consent together, then plans for PART B (a) can be included in PART C (1).
If a PIM has already been applied for then include a copy of any relevant authorisations (e.g. Resource Consents) with this application.

Establishing the Weathertightness Risk
For all complex designs a risk assessment of the proposed design shall be carried out using a building envelope risk matrix contained in the Approved Documents, Acceptable Solutions E2/AS1.

Risk Matrix Included ? (If your initial risk assessment score is over six)
- ☑ **YES**
- ☐ **NO**

See attachment in this pack for details of Risk Matrix Table

PART D : KEY PERSONNEL

From the 30 November 2009, The Building Act 2004 requires all restricted building work to be carried out or supervised by Licensed Building Practitioners. After this date, applications for consent can only be accepted where a Licensed Building Practitioner has been engaged and the registration number shown in the appropriate area below.

DESIGNER

Name : Parker Garages Reg N° : ..... Email Address : jimmy@parkergarages.co.nz

Address : 135 Meadowbank Rd, Meadowbank, Auckland

Phone N° : 09 521 2137 Mobile N° : ..... Website address : .....

BUILDER (LICENSED BUILDING PRACTITIONER FROM 30/11/2009)

Name : To be confirmed Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

REGISTERED DRAINLAYER

Name : To be confirmed Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

REGISTERED PLUMBER

Name : To be confirmed Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

REGISTERED ELECTRICIAN

Name : To be confirmed Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

REGISTERED GAS FITTER

Name : ~~To be~~ Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

OTHER

Name : N/A Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

OTHER

Name : Reg N° : ..... Email Address : :.....

Address : .....

Phone N° : ..... Mobile N° : ..... Website address : .....

PART E : COMPLIANCE SCHEDULE DETAILS

E1 : SYSTEMS NECESSITATING A COMPLIANCE SCHEDULE :

The building will contain the following (tick each box and attach proposed inspection, maintenance and reporting procedures).

NOTE : The building consent cannot be issued unless *all* specified systems are included.

- ☐ Automatic sprinkler systems or other systems of automatic fire protection.
- ☐ Automatic doors which form part of any fire wall and which are designed to close shut and remain shut on an alarm of fire.
- ☐ Emergency warning systems for fire or other dangers.
- ☐ Emergency lighting systems.
- ☐ Riser mains for fire service use.
- ☐ Any automatic back-flow preventer connected to a potable water supply.
- ☐ Lifts, escalators, or travelators or other similar systems.
- ☐ Mechanical ventilation or air conditioning system serving all or a major part of the building.
- ☐ Any other mechanical units for providing access to the exterior and interior walls of buildings.
- ☐ Building maintenance units for providing access to the exterior and interior walls of buildings.
- ☐ Such signs as are required by the building code in respect of the above mentioned systems.
- ☑ None of the above.

E2 : OTHER SYSTEMS AND FEATURES TO BE INCLUDED IN THE COMPLIANCE SCHEDULE.

The building will contain the following : (Tick each applicable box and attach proposed inspection, maintenance and reporting procedures).

- ☐ Means of escape from fire.
- ☐ Safety Barriers.
- ☐ Means of access and facilities for use by persons with disabilities which meet the requirements of Schedule 2 of The Building Act 2004.
- ☐ Hand held hoses for fire fighting.
- ☐ Such signs as are required by the New Zealand Building Code or Schedule 2 of The Building Act 2004.

N/A

CHECK LIST FOR APPLICATIONS

- **RETURN THIS CHECKLIST WITH YOUR APPLICATION**
- **INCLUDE ALL THE INFORMATION AND DOCUMENTS REQUESTED**
- **MARK EACH CHECKBOX AS FOLLOWS :**

√ *Item Included*	X *Item Not Included*	N/A *Item Not Applicable*	Office Use Only

☑ **APPLICATION FORM**
☑ All items relevant to your application are to be completed on the application form. Include accurate 'Values' of the work to be undertaken (GST incl.)
☑ Include the correct legal description (Can be obtained from your rates notice, Certificate of Title or from Council's Customer Liaison Team).
☑ Name, address and phone numbers of all personnel relevant to your project, including person to receive accounts.
☑ Copy of recent Certificate of Title (this must be current – and can be obtained from Land Information NZ) or proof of purchase from solicitor.

☑ **SPECIFICATIONS (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3)**
☑ Written specifications, adequately describing all building work, components, materials and fixings including their size and type. Show compliance with the functionality and performance requirements of the Building Code i.e. NZS 3604 1999 or **SPECIFIC DESIGN** (see next page)

☑ **SITE PLAN (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3)**
☑ Show the floor area of the proposed building project and of all existing buildings to a minimum scale of 1:200. Use metric measurements.
☑ Show the distance of the proposed and existing buildings from all legal boundaries. These measurements are to be to the walls or nearest part of the building and show any easements, overland flowpaths and/or any Council stormwater and drainage services.
☑ Show the layout of existing and proposed sanitary and stormwater drains and mains, septic tanks and stormwater disposal.
☑ Show the source of the water supply.
☑ Show the location of vehicle entrance.

☑ **FLOOR PLAN (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3)**
☑ A floor plan of each floor level to a minimum scale of 1:100. Plan to include floor layout and use of each section and show the location of all plumbing, gas and electrical fittings. Show all waste and vent pipes (can be on separate plans).

☑ **ELEVATIONS (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3)**
☑ An elevation of 1:100, each external wall showing heights and finished ground level at each external corner (see above for smaller scale allowances).
☐ Location of wall and roof bracing to be shown on elevations. Refer Engineer calcs, drawings
☐ Scaled elevations indicating height from ground level to top of roofline.

☑ **FOUNDATION PLAN (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3)** Refer Engineer drawings & architectural
☐ For timber floors show location of all piles and sub-floor timber braces, foundation perimeter walls and internal piling system. For concrete floors, a detailed cross-section is required.
☐ Wind zone calculations.
☐ Sub-floor bracing calculations.

☑ **CROSS SECTION DETAILS (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3)**
☑ Sufficient cross sections through the building to show foundation details, floor systems, wall construction, roof construction, location of wall claddings and roof covering.
☑ Show construction Details of terraces, steps, balustrades and any unusual items.

☑ **WALL AND FLOOR BRACING CALCULATIONS (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3)** Refer Engineer Calcs included
☑ Submit wall and sub-floor bracing calculations and plans, detailing location of bracing elements.
☐ **Note :** One room additions – Locate requirements and their respective values on the elevations.

☐ **EFFLUENT DESIGN (TP 58 from Chartered Professional Engineer or Approved Designer)**
N/A ☐ 3 Copies of TP 58, including producer statement and maintenance requirements

√ *Item Included*	X *Item Not Included*	N/A *Item Not Applicable*	Office Use Only

SPECIFIC DESIGN ☐

To facilitate processing of specific design applications, provide the following information :

- ☑ Full engineering calculations and drawings
- ☑ Design Certificate/Producer Statement.
- ☑ Soil report or geotechnical report (where applicable)
- ☑ A written description of the building model and techniques used in construction.
- ☑ Name and address of Chartered Professional Engineer.

PLUMBING DESIGN PLAN (3 copies residential - 4 copies commercial/Industrial - in all cases one set must be A3) ☐

- ☐ Plumbing Plan drawn to the AS/NZ Standards.

Please tick the boxes below where appropriate : ☐

- ☐ Vehicle Crossing Application Required
- ☐ Historic Places review needed
- ☐ Fire Service design unit Memorandum required. **The applicant is responsible for the fees charged by the Fire Service for the Memorandum, this remains the situation once the work has been carried out, even if you later decide to withdraw your application.**
- ☐ Compliance Schedule application needed

☐ **Vehicle Crossing Application Form** ☐

☐ **Risk Matrix Calculations** ☐

☐ **Compliance schedule, (detailed design)** ☐

NOTES :

Refer to Northland guidelines if building a garage or auxiliary building for details to be supplied with this type of application.

Application Fees :

Check with the District Council for the area in which you are planning to build for processing and other fees that will be payable and are specific to each District.

Specialist staff are available by appointment only : Dialling 0800 920029 will contact you with your nearest Service Centre, where a customer liaison officer can assist in making an appointment with the appropriate officer. The first half hour of this service is provided without charge.

For Office Use Only

Received at ..... Service Centre

Date :..... Rec N° : .....

Fees Rec : $.....

VAL N° : .....

BC N° : .....

Owner ID N° :.....

Agent ID N° : .....

This application was received by :

Name of CLO : .....

I have completed the checklist to ensure that basic information required to process the application has been provided.

Local Offices Here to Help

Kaikohe Service Centre
Memorial Avenue
KAIKOHE

Kaeo Service Centre
Main Road
KAEO

Kawakawa Service Centre
Gillies Avenue
KAWAKAWA

Kaitaia Service Centre
Redan Road
KAITAIA

Kerikeri Service Centre
Cobham Road
KERIKERI

Rawene Service Centre
Parnell Street
RAWENE

www.fndc.govt.nz

Private Bag 752, Memorial Ave
Kaikohe 0400, New Zealand
Freephone : 0800 920 029
Phone : (09) 405 2750
Fax :(09) 401 0987(building office)
Email : ask.us@fndc.govt.nz
Website : www.fndc.govt.nz

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**NA19C/786**
Land Registration District	**North Auckland**
Date Issued	21 September 1970

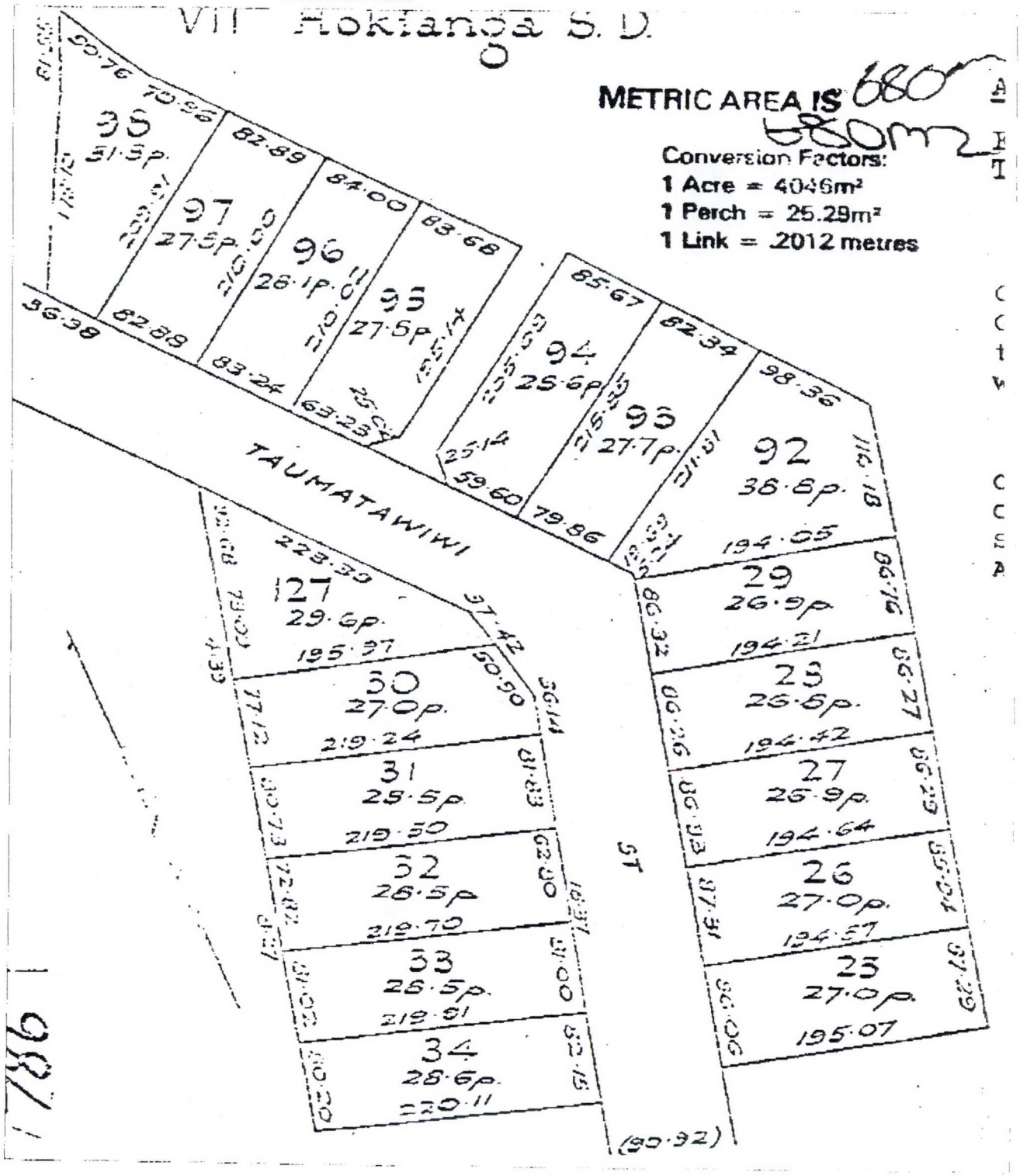
Prior References
NA4B/646

Estate	Fee Simple
Area	680 square metres more or less
Legal Description	Lot 29 Deposited Plan 61764

Proprietors
Frances Gwendoline Cameron and Michael Shane Cameron

Interests
Fencing Provision in Transfer A497782 - 21.9.1970

Identifier NA19C/786



Risk Matrix Assessment

WALL NUMBER: N	Risk severity								Subtotals for each risk factor
Risk factor	LOW	score	MEDUIM	score	HIGH	score	VERY HIGH	score	
Wind zone (per NZS 3604)	0		0		1	✓	2		1
Number of storeys	0	✓	1		2		4		0
Roof / wall junctions	0		1	✓	3		5		1
Eave width	0		1		2	✓	5		2
Envelope complexity	0	✓	1		3		6		0
Decks	0	✓	2		4		6		0
							Total risk score:		4

WALL NUMBER: W	Risk severity								Subtotals for each risk factor
Risk factor	LOW	score	MEDUIM	score	HIGH	score	VERY HIGH	score	
Wind zone (per NZS 3604)	0		0		1	✓	2		1
Number of storeys	0	✓	1		2		4		0
Roof / wall junctions	0		1	✓	3		5		1
Eave width	0		1		2	✓	5		2
Envelope complexity	0	✓	1		3		6		0
Decks	0	✓	2		4		6		0
							Total risk score:		4

WALL NUMBER: S	Risk severity								Subtotals for each risk factor
Risk factor	LOW	score	MEDUIM	score	HIGH	score	VERY HIGH	score	
Wind zone (per NZS 3604)	0		0		1	✓	2		1
Number of storeys	0	✓	1		2		4		0
Roof / wall junctions	0		1	✓	3		5		1
Eave width	0		1		2	✓	5		2
Envelope complexity	0	✓	1		3		6		0
Decks	0	✓	2		4		6		0
							Total risk score:		4

WALL NUMBER: E	Risk severity								Subtotals for each risk factor
Risk factor	LOW	score	MEDUIM	score	HIGH	score	VERY HIGH	score	
Wind zone (per NZS 3604)	0		0		1	✓	2		1
Number of storeys	0	✓	1		2		4		0
Roof / wall junctions	0		1	✓	3		5		1
Eave width	0		1		2	✓	5		2
Envelope complexity	0	✓	1		3		6		0
Decks	0	✓	2		4		6		0
							Total risk score:		4

BUILDING SPECIFICATION

FOR

Site Address: 25 Taumatawiwi St Opononi

Between

Owner: Frances Gwendoline Cameron and Michael Shane Cameron

And

Parker Garages Ltd

Job Number: 20051204

INDEX	

Parker Garages Ltd

Specification

OWNER: **Frances Gwendoline Cameron and Michael Shane Cameron**

SITE ADDRESS: **25 Taumatawiwi St Opononi**

TERRITORIAL AUTHORITY: **Far North District Council**

PLEASE READ CAREFULLY BEFORE COMPLETING THE SCHEDULE

INTERPRETATION AND USE OF SCHEDULE

1. Where multiple choices are available, only one choice is permitted. If choice/s are not clarified by the Owner at the time of signing the choice/s are to be at the Builder's sole discretion.

2. All items are to be selected within the range as determined by the Builder as allowable for this style of building.

ITEM **DESCRIPTION**

---

1. GENERAL

(a) Unless otherwise specified, the works shall be constructed in accordance with the Building Act 1991 (as amended) in conjunction with the New Zealand Building Code.

(b) Unless otherwise specified, the Owner is responsible to provide a house site clear of any obstructions to building including removal of long grass, shrubs and trees where necessary.

(c) The Owner acknowledges that it is their responsibility to provide all weather access suitable to allow vehicles and machinery, as normally used in the building industry, to drive in and out of the property, unless allowed for by the Builder as a Variation.

(d) Unless otherwise specified, the Contract Sum allows that town water supply will be available from an existing main connection rate of the Territorial Authority prior to commencement of construction. Where no such water supply exists, the Owner is to arrange at their expense, a temporary fresh water supply for building purposes by means satisfactory to the Builder, and to be available prior to commencement of construction.

(e) This contract allows for 240 Volt single phase power being available prior to and during construction, provided the connection is within 6 metres of the dwelling. When it is over 6 metres an extra charge will (if applicable) be made by way of a variation of contract provided it has not already been included in the Contract Sum.

NOTE: **All power used is at the Owner's expense and will be charged directly by the power supply company to the Owner.**

(f) Wind Zone:
Thermal Rating (Wall): **R 2.5.** Thermal Rating (Ceiling): **R 1.8.**

(g) Complying with statutory obligations and any notices and obtaining relevant approvals is the responsibility of the Builder.

(h) Unless otherwise specified all Building Consent Fees and Street Damage Bonds are paid for by the Owner. Any other Bonds called for or development application fees requested by any Territorial or Other Authority or statutory body are to be arranged and paid for by the Owner.

ITEM	DESCRIPTION

NOTE: **It is the responsibility of the Owner to obtain any necessary approvals from the relevant developer or land corporation where a covenant applies. A copy of this approval should be forwarded to the Builder as soon as possible.**

(i) An Engineer's soil report, specific footing and slab designs (if considered necessary by the Builder) are to be provided by the Builder at the Owner's expense.

(j) The Builder takes no responsibility for any colour variation in the finishes between those shown in displays or brochures to those delivered by the manufacturer. These products may vary slightly in colour from time to time and any discrepancy is the responsibility of the manufacturer.

(k) The Owner acknowledges that reference to the Working Drawings to finished floor level (FFL) is approximate only and may be adjusted on site at the Builder's discretion within a range of +/- 300mm.

2. EXCAVATION

The Owner acknowledges that after breaking the surface of the ground, if Variations are required by the Engineer, or Territorial or Other Authorities, or due to the nature of site access or due to extra excavations or footings required if rock or other obstacles are encountered, then the Builder will notify the Owner and the cost of such Variation together with a reasonable allowance for overheads and profits shall be adjusted against the Contract Sum.

(a) The Builder shall as necessary undertake an equal cut, compact & fill to form a platform to the value of the Provisional Sum allowed for on the Contract. This may include importation of additional hardfill or clay as required to complete a satisfactory building platform.

(b) Excavated material, soil, etc., to be stockpiled on site by Builder, maximum 6m from dwelling.

(c) Trees etc., to be removed by owner.

3. CONCRETOR

(a) Footings and Slab are designed for Soil with a minimum bearing of 100 `K.P.A, or will be specifically designed by an engineer.

(b) Extra piers, beams, steel etc, if required by Engineer or Territorial Authority after Territorial Authority approval are at the Owner's expense.

(c) Concrete pumping is not included. If required then the owner is required to pay all costs.

(d) Driveway is not included.

(e) There is no paving, patio or paths.

ITEM	DECRIPTION

4. DRAINLAYER

(a) Sewerage installation to be in accordance with Territorial Authority Approved Plan, total run of sewerage as per plan to Owner's cost.
(b) Septic System is not applicable.
(c) Water is on town supply.
(d) Stormwater is to be piped in accordance with the Territorial Approved plan as per plan to Owner's cost.

---

5. BRICKLAYER

Builder shall supply and lay all bricks

(a) Joints to be pointed
(b) Mortar colour to be standard grey. Other colours are available for additional cost.
(c) Bricks to be from builder's selection.

---

6. CARPENTER/JOINER

(a) External and Internal Timber to be stress graded, kiln dried, to Manufacturer's design or NZS3604.
(b) Floors to be 18mm Amroc, sealed both sides.
(c) Roof trusses to be to manufacturer's design.

---

7. INTERNAL LININGS

(a) All walls are sheeted with 12mm Amroc panel. All walls finished to F4 grade.
(b) All ceilings are sheeted with 8mm Amroc finished to F4 grade.
(c) Cornice to be negative detailed aluminium.

---

8. EXTERNAL WALL CLADDING

(a) Exterior cladding to be 12mm Amroc panel, sealed both sides with Resene Aquapel.
(b) Soffits are exposed.

---

9. DOORS (including type, finish, furniture)

(a) Entrance doors to be H4 glazed french doors.
(b) Exterior side door/s to be swing aluminium glass door.

ITEM	DESCRIPTION

(c) Garages Doors are to be Pre-finished Sectional Door(s) as per plan.
(d) Electric opener with Remote Control is an optional extra at Owner's cost.
(e) Internal doors to be Flush Hollow Core paint finish.
(f) Internal door handles to be from Builder's selection.
(g) External door handles to be from Builder's selection.

10. INTERNAL FINISHING TIMBERS

(a) Architraves to be 8mm Amroc sealed with Resene Aquapel
(b) Jambs to be ex 30mm rebated, paint quality
(c) Profile to be chamfered.

11. ALUMINIUM WINDOWS AND DOORS

(a) Frame finish to be powder coated aluminium (from standard range)
(b) Reveals to be pre-primed finger-jointed Pine.
(c) Flashings to exterior to be Aluminium.

12. SCREENS

(a) Insect screens are not included
(b) Safety screens are not included

13. ROOF COVERING

(a) Roof covering to be zincalume from Builder's selection and fixed to Manufacturer's specification.
(b) Self-supporting Building Paper is included.

14. PLUMBER OPERATOR

(a) Gutters to be PVC
(b) Downpipes to be 80mm round PVC.
(c) Floor waste as required by Territorial Authority
(d) The material to be installed will be:
  (i) UPVC under slab – to have a minimum life of 50 years
  (ii) Butaline in the walls – to have a minimum life of 15 years
  (iii) Polyethylene in the ground outside building line, for water supply – to have a minimum life of 15 years.

ITEM	DESCRIPTION

15. FIXTURES AND FITTINGS

(a) Bath to be nominal 1525 from Builder's selection
(b) Kitchen sink to be 1 bowl, single drainer with single hole for mixer.
(c) Shower bases to be white acrylic.
(d) Vanity basins to be raised basin
(e) W.C. to be dual flush acrylic cistern from Builder's selection
(f) Hot water cylinder to be mains pressure 160 litre from Builder's selection.
(g) One hose tap to front of house positioned by the Builder.

16. TAPWARE

(a) Kitchen sink taps/mixer to be from Builder's selection
(b) Bathroom, Ensuite taps/mixer to be from Builder's selection.

17. GAS SERVICE

Gas service is not applicable

18. ELECTRICIAN

(a) Single Phase connection to be provided by the Builder.
(b) One light point is allowed to bedrooms and service rooms. Living areas supplied according to size, unless otherwise specified.
(c) One external light is allowed (bulkhead and bulb) unless otherwise specified.
(d) One double power point is allowed to each room, except kitchen, W.C., lounge and hallway unless otherwise specified.
(e) Three double power points are allowed to kitchen unless otherwise specified.
(f) Two double power points are allowed to Lounge unless otherwise specified.
(g) Power point for Garbage disposal is not included
(h) Power point for Dishwasher not included unless otherwise specified.
(i) One TV point is included. TV Booster and antenna and associated power points are not included.
(j) Exhaust fans are not included
(k) Telephone point is not included
(l) Light Fittings are included from Builder's selection.

19. WHITE GOODS

(a) Under Bench oven to be Stainless steel
(b) Hot Plates to be Stainless steel 4 hob.
(c) Rangehood to be stainless steel recirculating unless otherwise specified
(d) Microwave is not included

ITEM	DESCRIPTION

(e) Dishwasher not included.
(f) Garbage disposal is not included
(g) Upright stove is not included.

20. CABINETMAKER

(a) Kitchen and Vanity cupboards are as per plan with Granite Bench-tops. Layout as per kitchen plan.

21. CERAMIC TILING

Bathroom

(a) Wall tiles from Builder's selection.
(b) Floor tiles to all of room from Builder's selection.

Ensuite

(a) Wall tiles from Builder's selection
(b) Floor tiles to all of room from Builder's selection.

W.C.

(a) Wall tiles from Builder's selection
(b) Floor tiles to all of room from Builder's selection.

Kitchen

(a) Wall tiles from Builder's selection, to splashback, if applicable.
(b) Floor tiles to all of room from Builder's selection.

Fixtures Included

(a) Towel rails supplied as per plan
(b) W.C. roll holder – one to each W.C. are included from the Builder's selection.

22. PAINTING

Owner to do painting.

(a) External sheeting two coats of acrylic paint.
(b) Any external metal one coat primer, one coat enamel
(c) Other external surfaces according to Manufacturer's specification.
(d) Ceilings to be one coat sealer and two coats acrylic paint to Manufacturer's specification.

ITEM	DESCRIPTION

(e) Walls to be one coat sealer and two coats acrylic paint to Manufacturer's specification.
(f) Inside cupboards to be wall colour.
(g) Doors. Door jambs, architraves, reveals and skirtings to be painted in low sheen enamel in one colour.

23. MISCELLANEOUS

(a) Shower screen(s) to be glass in aluminium frame with fixed panel and pivot door.
(b) Mirrors are included from Builder's selection.
(c) Telephone prewire and cable installation is the responsibility of the Owner.

24. ALLOWANCES

(a) Carpets & Vinyl are not included.
(b) Landscaping is not included.
(c) Turf in not included.
(d) Fencing is not included.
(e) Clothes line is not included.
(f) TV antenna is not included.
(g) Curtains are not included.
(h) Retaining walls are not included.
(i) Air Conditioning is not included.

HARRISON GRIERSON

PARKER GARAGES

3 Bedroom unit

Structural Calculations

[redacted]

November 2005
Reference 1011.017670.01

HARRISON GRIERSON

Job Name	Standard 3 bedroom unit	Job No. 1011767001
Client	Barker Georges	
Page No.	i	Prepared By AJT
Date	9/05	Checked By

Work Sheet:

PROJECT FEATURES REPORT

This building has been designed as a standard pre-fabricated shell consisting of a steel frame with steel rafters & floor joists, longrun roofing and AMROC compressed sheet wall panels and floor sheeting

The building has been designed for very high wind loads, (Northland, cat 3) on the edge of a hill or ridge which will suit most sites in NZ (except top of hill or very open site).

The building has portal frames to take lateral forces across the building and utilises the sheet material as bracing to resist forces along the building

Foundations are piled, generally 600mm b.g.l except for specific design cases

CODES

NZS 4203

NZS 3404

NZS 3101

NZS 3603

HARRISON GRIERSON

Job Name	3 bedroom	Page No.
Client		51
Job No.	1011 017670.01	Prepared By MJT
Date	11/05	Checked By

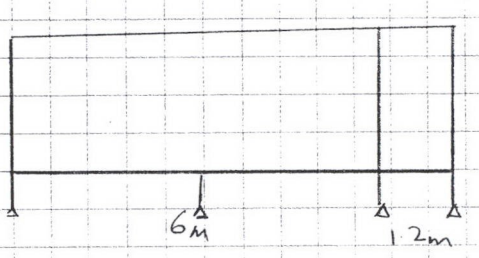
Work Sheet:

Portal frames

3 bedroom unit is 10.8m x 7.8m x 3.4m high

Portal frames (x4) 3.2m high, trib width 8 1/2

Consider portal frames taking gravity loads only with lateral loads taken by wall bracing



All Posts 89 x 5 SHS

Rafter 89 x 5 SHS with 2 - 150 x 50 x 3 (1 either side)

Loads

$G = 0.35 \times 8.7/2 + 0.3 = 1.8$

$Q = 0.25 \times 8.7/2 = 1.1$

$W = 0.83 \times (-0.9 + 0.3) \times 8.7/2 = -2.2$ kN/m

or $0.83 \times (-0.9) \times 8.7/2 = -3.25$ kN/m

See microstran analysis sheet

Rafter $M_h^* = 12.4$ kNm

$M_s^* = 7.3$ kNm

Consider 89 x 5 SHS portal with 150 x 50 x 3 RHS either side

for 150 x 50 x 3 RHS $\phi M_s = 24$ kNm OK!

Deflection $\delta_{G+Q^{\downarrow 0}} = 8.5$mm span/706

$\delta_{W_s} = 10$mm span/600 ok

Use 89 x 5 SHS + 2-150 x 50 x 3 RHS

HARRISON GRIERSON

Job Name	3 bedroom	Page No. 52
Client		
Job No.	1011-17670 01	Prepared By AJT
Date	11/05	Checked By

Work Sheet:

Portal legs $M^* = 7$ kNm

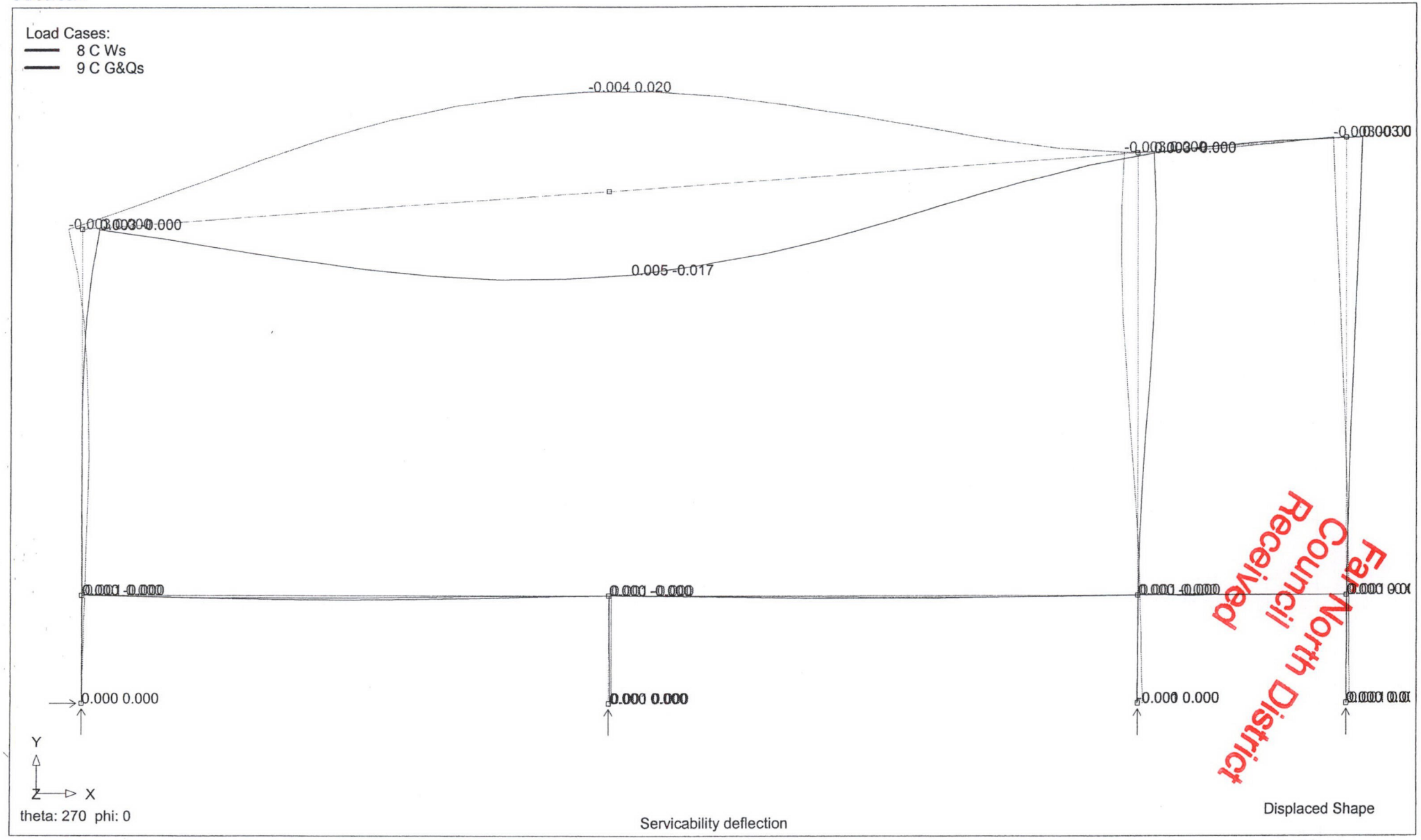
$\phi M_b = 15$ kNm for 89x5 SHS

Deflection $\delta = 3.4$ mm OK

Use 89x5 SHS Portal

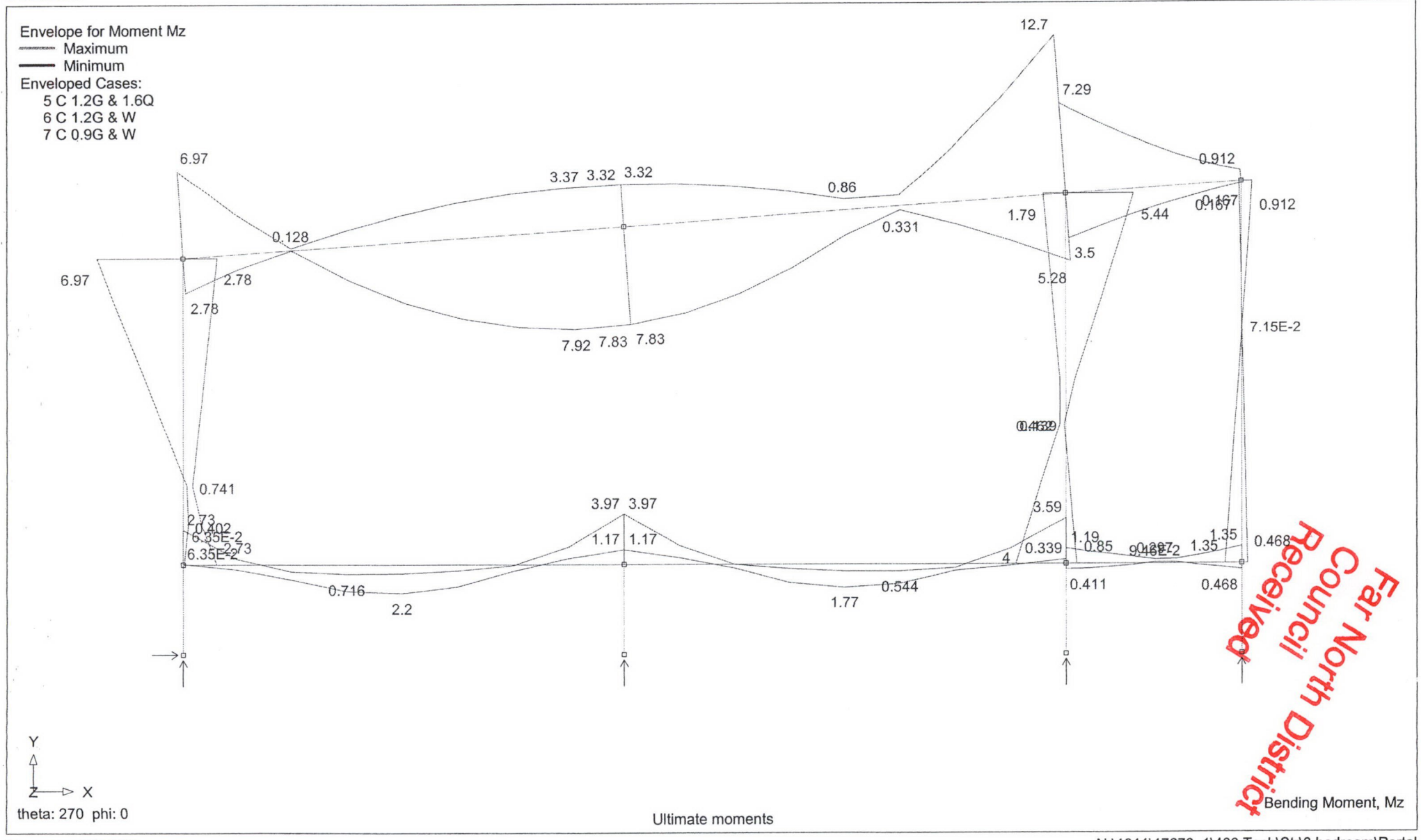
Harrison Grierson Consultants
Job: Portal
Parker Garages
3 Bedroom

23 Nov 2005
04:42 p.m.



Harrison Grierson Consultants
Job: Portal
Parker Garages
3 Bedroom

23 Nov 2005
04:42 p.m.



Microstran [V8.03k]

N:\1011\17670_1\400 Tech\Str\3 bedroom\Portal

HARRISON GRIERSON

Job Name	3 bedroom	Page No. 17670
Client		
Job No.	Prepared By AJT	
Date	Checked By	

Work Sheet:

Floor Joists

Internal

$G = 0.5$ kPa

$Q = 1.5$ kPa

$1.2G + 1.6Q = 3.0$ kPa

1) try 2700 span, 600 crs

$M^* = 3.0 \times 0.6 \times 2.7^2/8$

$= 1.64$ kNm

75 x 50 x 3 RHS $\phi M_b = 5.2$ kNm

Deflection

$\delta_{G+Q_s} = 6.2$mm span/438 OK

75 x 50 x 3 RHS @ 600 crs OK

2) try 3000 span, 600 crs

$M^* = 2.02$ kNm $< \phi M_b$ OK

Deflection

$\delta_{G+Q_s} = 9.4$mm span/319 OK

75 x 50 x 3 RHS joists @ 600 crs OK

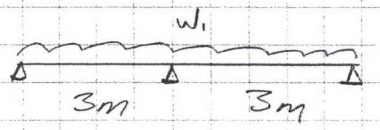
HARRISON GRIERSON

Job Name	3 bedroom		Page No. 56
Client	Barber G.		
Job No.	1011.017670	Prepared By	AJT
Date		Checked By	

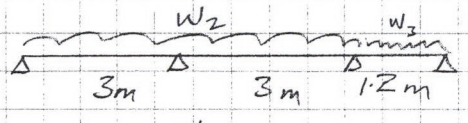
Work Sheet:

Bearers

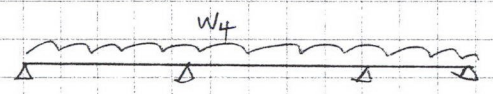
1) line A & D



2) line B & C



3) line B/C



W_1 $G = 3/2 \times 0.5 + 0.6 = 1.35$
$Q = 3/2 \times 1.5 = 2.25$
$1.2G + 1.6Q = 5.2$ kN/m

W_2 $G = 5.7/2 \times 0.5 + 0.1 = 1.52$
$Q = 5.7/2 \times 1.5 = 4.28$
$1.2G + 1.6Q$

W_3 $G = 2.7/2 \times 0.5 + 0.1 = 0.78$
$Q = 2.7/2 \times 1.5 = 2.03$

W_4 $G = 5.4/2 \times 0.5 + 0.1 = 1.45$
$Q = 5.4/2 \times 1.5 = 4.05$

1) $M^*_f = wl^2/8 = 5.87$ kNm
$M^*_s = 3.27$ kNm

2) $M^*_f = 4.37$ kNm (on single 89 studs)
$M^*_s = 2.96$ kNm

3) similar to above

$\phi M_b = 15$ kNm $> M^*$ ok $\quad l_e = 1.3$m

Deflection

$\delta_G + \delta_Q = 3$mm span/1000 ok

Use single 89 x 5 studs bearer to outside
double " " to internal span

HARRISON GRIERSON

Job Name	3 bedroom		Page No. 57
Client	Parker garages		
Job No.	1011-017670-01	Prepared By	AJT
Date	September-05	Checked By	

Work Sheet

Roof - Purlins Span= 5400 Worst Case

G= 0.35 kPa
Q= 0.25 kPa

1.2G & 1.6Q= 0.82 kPa

try purlins at 600 crs, therefore w= 0.49 kN/m

M*= $wl^2/8$
= 1.79 kNm

try 150x50x3 RHS I= 2.99E+06 mm^4

OMb= 5.1 kNm with le= 4 m
OK

Check deflection
W= -0.75 kPa

Ws= -0.29 kN/m

Defl = 5wl4/384EI
= -5.42 mm Span/250= 21.60 mm

OK

Use 150x50x3 RHS purlins at 600 crs

HARRISON GRIERSON

Job Name	3 bedroom	Page No.
Client	Parker garages	S8
Job No.		Prepared By
Date		Checked By

Work Sheet:

BRACING

Using specific design to NZS4203.

Use non-directional, Northland, cat 3, site on small hill

$V(z) = V M_{fs} M_{z,cat} M_s M_t M_r$

$= 49 \times 0.93 \times 0.77 \times 1.06$

$= 37.2$ m/s

$q(z) = 0.83$ kPa

Walls

take $C_{pe} = 0.8$ $C_{pi} = -0.3$ or 0

$\Rightarrow C_p = 1.1$

$F = q(z) C_p A = 0.91 A$

WALLS ALONG

$A = 16.8 \times 2.0 = 33.6 m^2$ $F = 30.7$ kN $\equiv$ 620 BU

ACROSS

$A = 7.2 \times 2.0 = 14.4 m^2$ $F = 13.1$ kN $\equiv$ 230 BU

SUB-FLOOR ALONG

$A = 10.8 \times 3.6 = 38.9 m^2$ $F = 35.5$ kN $\equiv$ 710 BU

(excludes garage on concrete foundations)

ACROSS

- all portal frame rules - subfloor bracing taken by portal frames

HARRISON GRIERSON

Job Name		Page No. 59
Client		
Job No.	Prepared By	
Date	Checked By	

Work Sheet:

All walls are clad in Amroc 12mm, external + 8mm panel & internal ×2

1) Consider short panel grid 1 – 1500

take shear capacity of panel as 4 nails

with 100mm wide of rib panel

$\phi N_c = 12 + 8 \times 100 \times 4 = 8.0\,kN$

⇒ max force in 1.5m wide panel

$F_{max} = 8.0 \times 1.5/2.8 = 4.3\,kN$

Transfer of forces - ~~tony~~ M12 bolts @ 1000 crs

shear capacity of M12 $\phi V = 15\,kN$

⇒ use M12 bolts @ 1m crs

hold down - use M12 bolt to hold down ends of wall

2) Consider 2m wall

$F_{max} = 5.7\,kN$

3) Consider 2.8m wall (internal wall) $\phi N_c = 9.6\,kN$

$F_{max} = 9.6\,kN$

4) " 3.2m wall internal & external

$F_{max} = 11\,kN$ $F_{max} = 9.1\,kN$

HARRISON GRIERSON

Job Name		Page No.
Client		S10
Job No. B3	Prepared By	
Date	Checked By	

Work Sheet:

Along

A1	EX	3.2m	9.1 kN
B1	IN	3.2m	11.0 kN
C1	IN	2.8m	9.6 kN
D1	IN	2.0m	5.7 kN
D2	IN	2.0m	5.7 kN
E1	EX	3.2m	9.1 kN

50 kN > 30.7 kN OK

Across

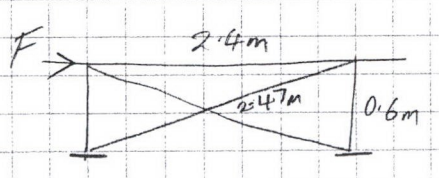
M1	EX	2.0m	5.7 kN
M2	EX	1.5m	4.3 kN
N1	IN	3.2m	11.0 kN
N2	IN	2.8m	9.6 kN
O1	EX	1.5m	4.3 kN
O2	EX	2.0m	5.7 kN

40.6 kN > 13.1 kN OK

Side Frame

try 5 cross braces

F = 35.5/5 = 7.1 kN



force in diagonal

F_d = 6.9 kN

try 12mm rod bracing

$\phi N_t = 0.9 \times 0.75 \times \pi \times 12^2/4$

= 254 kN

> Fd OK

Use 5 - 12mm rod cross braces.

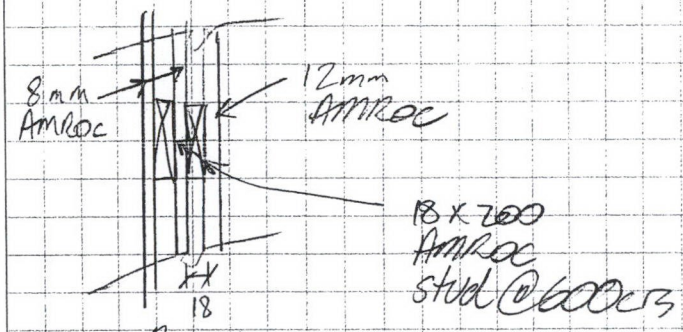
HARRISON GRIERSON

Job Name		Job No.
Client		17670
Page No. 513	Prepared By	
Date	Checked By	

Work Sheet:

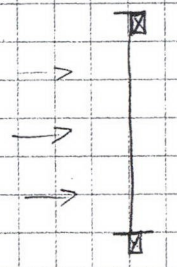
AMROC WALL SYSTEM

Amroc sheet is to be used as exterior cladding fixed from inside to a 18mm Amroc stud as a ventilated cavity



PLAN

Amroc studs are required to transfer wind face forces to steel members at top & bottom of frame - span 2.8m



$w = 0.6 \times 2.83 \times 1.0$

$= 0.49$ kN/m

$M^* = 0.49 \times 2.8^2/8$

$M^* = 0.48$ kNm

shared by 2 studs $M^*_{stud} = 0.24$ kNm

try 200w x 18d section $Z_x = 43.2e^3$ mm^3

from Amroc literature take $\sigma_b = 9$ N/mm^2

$\Rightarrow \quad \phi M_b = 0.8 \times 1.0 \times 9 \times 43.2e^3$

$= 0.311$ kNm

No Good

try 100 x 50 $\phi M_b = 0.8 \times 1.0 \times 17.7 \times 47 \times 97^2/6$

$= 1.04$ kNm OK

HARRISON GRIERSON

Job Name		Job No. 17670
Client		
Page No. 514	Prepared By	
Date	Checked By	

Work Sheet:

100x50 on flat $\phi M_b = 0.51$ kNm

< 0.59 N.G.

try 200 x 35 amroc (x 2) $Z_x = 163e^3 mm^3$

$\phi M_b = 1.176$ kNm ok/

check deflection

Amroc $\delta_w = 8.5mm$ span/379 N.G.

for amroc 200 x 36mm (x 2) $I_x = 5.71e^6 mm^4$

100x40 $\delta_w = 10.9mm$ span/257 ok/

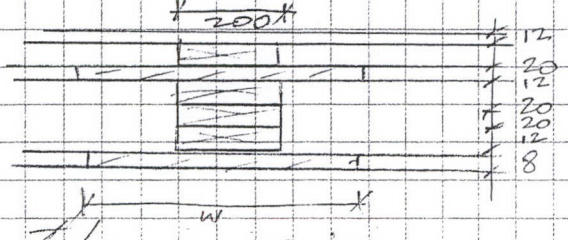
Use 100x50 studs @ 600crs

try 3 - 200 x 20 + 1 - 200 x 12 amroc

$Z_x = 232e^3 mm^3$

$\phi M_b \simeq 1.67$ kNm $< M^*$ ok/

Consider whole wall system working as one structural member - ignore outer panel which is screwed on



$Z_x = 282e^3 mm^3$

Take $w = 200$

$\phi M_b = 2.03$ kNm ok/

HARRISON GRIERSON

Job Name		Job No. 7670
Client		
Page No. S15	Prepared By	
Date	Checked By	

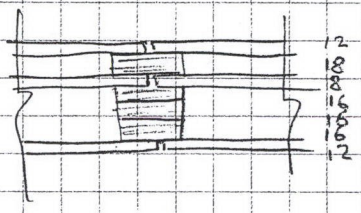
Work Sheet:

Deflection $\Delta_{ws} = 2.18\,mm$ span/1285

OK/

Use 104 thick cavity wall system

-Also consider 98mm wall system



see spreadsheet over

Page S166

$\phi M_b = 1.8\,kNm$ > M* OK

Deflection $\Delta_{ws} = 2.67\,mm$ span/1048 OK/

Use 98mm wall system

HARRISON GRIERSON

Job Name	Standard building		Page No. 516a
Client	Parker Garages		
Job No.	1011.17670.01	Prepared By	AJT
Date	September-05	Checked By	

Work Sheet

SECTION PROPERTIES Amroc wall 104mm total depth

	b	d	y	bd	y*bd	bd^3/12
Section 1	200	20	82	4000	328000	133333
Section 2	200	12	66	2400	158400	28800
Section 3	200	20	50	4000	200000	133333
Section 4	200	20	30	4000	120000	133333
Section 5	200	12	14	2400	33600	28800
Section 6	200	8	4	1600	6400	8533.33
Totals		92		18400	846400	

ybar= 46.00 mm

w= 0.49 kN/m
Span= 2800 mm

Ix= 1.3E+07 mm4
Zx= 282133 mm3

AMROC WALL
OMb= 2.03136 kNm

Deflection= 2.18 mm Span/ 1283

HARRISON GRIERSON

Job Name	Standard building		Page No. 16
Client	Parker Garages		
Job No.	1011.17670.01	Prepared By	AJT
Date	September-05	Checked By	

Work Sheet

SECTION PROPERTIES Amroc wall 104mm total depth

	b	d	y	bd	y*bd	bd^3/12
Section 1	200	18	77	3600	277200	97200
Section 2	200	8	64	1600	102400	8533.33
Section 3	200	16	52	3200	166400	68266.7
Section 4	200	16	36	3200	115200	68266.7
Section 5	200	16	20	3200	64000	68266.7
Section 6	200	12	6	2400	14400	28800
Totals			86	17200	739600	

ybar= 43.00 mm

Ix= 1.1E+07 mm4

Zx= 246533 mm3

w= 0.49 kN/m

Span= 2800 mm

AMROC WALL

OMb= 1.8 kNm

Deflection= 2.67 mm Span/ 1048

HARRISON GRIERSON

Job Name	3 bedroom - Garage	Page No. G1
Client	Parker Garages	
Job No. 1011-17670-01	Prepared By ABT	
Date	Checked By	

Work Sheet:

Garage

Purlins span from side to side of building

span = 6m - see calc over

Lintel to front - carries self weight only

use 89x5 RHS by inspection

Side walls - use Umrex wall system

for axial & wind loads to transfer

forces to concrete floor or bearer

Bracing - see house calcs

braced by 8mm + 12mm Umrex wall system.

M12 holding down bolts @ 1200crs.

HARRISON GRIERSON

Job Name	3 bedroom		Page No. G2
Client	Parker garages		
Job No.	1011-017670-01	Prepared By	AJT
Date	September-05	Checked By	

Work Sheet

Roof - Purlins Span= 6000 Worst Case

G= 0.35 kPa

Q= 0.25 kPa

1.2G & 1.6Q= 0.82 kPa

try purlins at 600 crs, therefore w= 0.49 kN/m

M*= $wl^2/8$

= 2.21 kNm

try 75x50x3 RHS I= 5.22E+05 mm^4

OMb= 5.1 kNm with le= 4 m

OK

Check deflection

W= -0.38 kPa

Ws= -0.15 kN/m

Defl = 5wl4/384EI

= -23.95 mm Span/250= 24.00 mm

OK

Use 75x50x3 RHS purlins at 600 crs

COMMISSIONING AND OPERATING SUBMERGED MEMBRANE BIOREACTOR - A DESIGNER'S PERSPECTIVE

I Ho, J Glyn and K Scott. Harrison Grierson Consultants Limited

Submerged Membrane Bioreactor (MBR) applications for wastewater treatment have taken off in recent years in New Zealand. Membrane bioreactors have been viewed as the mature, state of the art technology for sewage treatment that achieve excellent organic, nutrient and pathogens removal. There are currently five plants in operation and other two under construction, plus a few more in detailed design phase.

From a designer and owner's perspective, the membrane modules replace the conventional secondary clarifier thus eliminates issues such as solids settling and large footprint size. Operating at higher mixed liquor suspended solids (MLSS) and long sludge age (SRT) has its advantages and disadvantages for this technology.

Although MBR has been viewed as the latest generation of wastewater treatment technology due to its far superior treatment performance, it undoubtedly has its challenges in terms of design, commission and operation. This paper discusses the recent experiences of Harrison Grierson Consultants Limited designing and commissioning several municipal wastewater treatment plants using MBR technology as well as summarising the feedback from the operational staff around Australasia.

Membrane Bioreactor (MBR) is in no doubt a more advanced technology than many common technology in terms of its design, operation and commissioning, yet more research and development, including ideas sharing such as this paper, will promote, enhance and foster the knowledge for developing this process technology further.

Type the text of your abstract here. It should be left and right justified and starts with indented paragraph. It must not exceed 300 words including title, authors, affiliations and references (1). Do not change the margins of this template. When completed save as a Word file using the presenting authors name as the file name (e.g. Author et al.doc). e-mail the Abstract and completed Abstract submission form to the conference organisers at mary.niumata@auckland.ac.nz. Abstracts will be printed as received. It is the authors responsibility to ensure it is print ready (2).

1. Arneson ML & Louis CF (1998) Experimental Eye Research 66:495-509.

2. Gonen T, Donaldson PJ & Kistler J (2000) Investigative Ophthalmology and Visual Science 41:199-203.

All of the studies described were approved by the University of Auckland Animal Ethics Committe. Supported by the HRC, the Marsden Fund and the University of Auckland Research Committee

Association Consulting Engineers of New Zealand	New Zealand Institute of Architects	Institution Professional Engineers of New Zealand	P.I.M. No.
			Building Regulation Clause(s)
			HGCL Project No. **1011-017670-01**

PRODUCER STATEMENT - DESIGN

Issued by **HARRISON GRIERSON CONSULTANTS LIMITED**

To: **Parker Garages**

In Respect of **New Zealand non specific location**

At **New 3 bedroom standard building** Taumatawiwi st

Lot: 29 DP: 61764 SO: **SO NO.** Opononi

Harrison Grierson Consultants Limited has been engaged by **Parker Garages** to provide **Structural Design Services for structural frame and foundations as presented on Harrison Grierson Consultants Limited calculation**, in respect of the requirements of Clause **B1** of the Building Regulations 1992 for

☐ **All** ☑ **Part Only** as specified of the building work.

The design has been prepared in accordance with **B1/VM1 and B1/VM4** (respectively) of the approved documents issued by the Building Industry Authority and the work is described on **STRUCTURAL CALCULATIONS - PAGES S1-20S16b PROJECT NO. 1011-017670-01** and the specification and other documents accordingly to which the building is proposed to be constructed.

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of $200,000, **I BELIEVE ON REASONABLE GROUNDS** that subject to:

i) **Good ground in accordance with NZS 3604; Site with maximum ultimate wind speed of 37.2m/s.**

and

ii) All proprietary products meeting the performance specification requirements, the drawings, specifications and other documents according to which the building is proposed to be constructed comply with the relevant provisions of the Building Code.

Signature: _____ Date **20 December 2005**

(Signature Suitably Qualified Design Professional)

Name **Andrew j Thompson**

Professional Qualifications **BE(Civil) MIPENZ CPeng** CPENG. No. **149819**

Member **ACENZ** ☑ **IPENZ** ☑ **NZIA** ☐

Harrison Grierson Consultants Limited
PO Box 5760
Wellesley Street
AUCKLAND

This form to accompany Form 9 of the Building Regulations 1992 for the application of a Building Consent

Parker Garages Ltd
135 Meadowbank Road
Meadowbank
Auckland 1005
Phone: 09-521 2137
Fax: 09-521 2137
www.parkergarages.co.nz

PGL

01 March 2006

J Kaio
Building Officer
Far North District Council
Private Bag 752
Kaikohe 0400

Fax: 09-401 2137

Re: Building Consent Application BC-2006-1192 New Dwelling 25 Taumatawiwi St Opoponi 0452

Dear Sir / Madam

Thank you for your letter dated 23 February 2006 requesting more information.

With regards to this, I would like to answer as follows:

Planning Aspect
Please find enclosed a current certificate of title for this address.

Building Aspect
1. We are not installing a fireplace to this dwelling. What we have done is create and architectural feature, which looks like a fireplace, but is solely there for the purposes to house a built-in 42" television.
2. The means of waterproofing the block wall to the garage, will have a 75mm overflow pipe, scoria backfill, against a waterproof matting, and the blocks will have three coats of tanking.
3. The R value for the ceiling is 2.7. This is done by way of building paper and batts.
4. The type of insulation for the walls is Amroc cavity system, R Rating 2.5.
5. The type of insulation for the floor is Amroc.
6. Connections for the RSH Portal flange to the concrete pile is two M16 bolts. Minimum 125mm into the concrete pile.

Please find enclosed a copy of Osbourne Consultants calculation for insulation barriers.

Yours faithfully

Jimmy Parker
ANZIA

Osborne Consultants 2000 Ltd.
Structural Engineers
21 Mayi Grove•Newmarket•Auckland•New Zealand
tel.: +649-522 0697, 524-6096•Fax.: +649-522 0697•
E-mail:OC2000@xtra.co.nz

OUR REF: A02-001-R2

Amroc New Zealand Ltd
135 Meadowbank Road
Meadowbank
Auckland 1005

Attention: James Parker

Date: 28 February 2006

Dear Sir

Re: Product Appraisal – Assemblies utilising Amroc Panels

1. Introduction.

Osborne Consultants Ltd have been asked to express a professional opinion on the utilisation of Amroc panels and assemblies built with such panels for residential and light commercial projects. This assessment has been prepared within the context to outline an alternative solution in terms of NZBC 2004 as part of the documentation suitable for lodgement for building consent.

2. Product.

Amroc panels are cement bonded particleboard panels manufactured under pressure from pine particles, Portland cement, mineral compounds and water.

Typical Amroc panel assembly comprises a cold formed steel frame with Amroc sheeting either side.

This appraisal is prepared for use in residential and light commercial building. The assemblies can be used for load bearing walls, partitions, floor structures and roof panels in specifically designed buildings. Fire and sound barriers (walls) can also be constructed using such panels.

2...
2...

Architectural design, Engineering and Construction are carried out by Amroc NZ Ltd or under their technical supervision and quality control. Construction process is carried out by accredited building contractors under franchise agreement.

3. Building Regulations.

In our opinion Amroc Panels and assemblies incorporating Amroc Panels if used, installed, and maintained in accordance with the statements and conditions of this appraisal will meet or contribute to meeting the following provisions of the NZBC 2004.

- Clause C3 – Spread of Fire
- Clause H1 – Energy efficiency.
- Clause C6 – Airborne and Impact Sound.

These provisions are discussed below:

C3 – Spread of Fire.

From the technical literature provided by AMROC and comparison with similar assemblies using GIB Fireline it can be concluded that the Amroc panels exhibit similar or better fire resistance compared to Gib Fireline. Thermal analyses of sample walls with Amroc panels and GIB Fireline panels with identical thickness produced similar results.

It is therefore concluded that the standard wall construction with 12mm Amroc panels would have a fire rating in excess of 30/30/30 generally required for individual residential dwellings.

H1 – Energy Efficiency

Parallel Method Thermal Anasis was carried out. The details are outlined below:

- Thermal envelope as per NZS4218:2001
- Roof with steel purlins – Conventional insulation has to be used. In this case Amroc Panels are used as ceiling lining only. Target R-value - 1.9. Achieved R-Value – 1.9.
- Floor with 18-100-8 configuration. Target R-value -1.3. Achieved R-value accounting for thermal bridges with carpet - 1.34.

C6 – Airborne and Impact Sound

The acoustic properties of Amrock Panels for Airborne Sound are listed in the literature. Based on these the following STC rating were determined:

- External wall with 12-18-8-48-12 configuration. Target STC rating 35. Achiever STC rating through voids – 41
- Floor with 18-100-8 configuration. Target STC rating 36. Achiever STC rating through voids – 43.

3...

I trust this information is adequate for its purpose. Should you require further inforamtion please do not hesitate to contact us directly.

Yours Faithfully,

Mike Osborne
M IPENZ, CPEng, - Principal

Apendices: - 8 Pages with Notes and Calculations

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 3		3.12
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

4.1. Energy Efficiency.

4.1.1. Thermal Envelopes

Consider Thermal Envelope with folowing parameters (NZS 4218; 2001)

Structure Element	Min R Value
Non Solid Walls	1.5
Floor	1.3
Roof	1.9
Glazing (Less than 30%)	0.13

4.1.2. Thermal Resistance

4.1.2.1 Roof

Required R-Value - 1.9
Use Pink Bats R = 2.2 - OK!

4.1.2.2. Walls

Component

1	Outdoor Air Film		- 0.04
2	12mm Amroc Panel	0.012/0.35	- 0.04
3	Reflected Air Space - Vent. - 16mm		0.36
4	8mm Amroc Panel	0.008/0.35	- 0.03
5	Reflected Airspace - Non V. 48mm		-1.92
6	12mm Amroc Panel		- 0.04
7	Indoor Air Film		- 0.12
			2.55

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 3		3.13
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

Consider Amrock Studs - External:

$R_{cavity} = 1/[P/Stud/R_{stud} + Pair/R_{air}]$

$R_{stud} = 0.018/0.35 = 0.051$

$R_{cavity} = 1/[0.33/0.051 + 0.66/0.36]$

$= 1/(6.41 + 1.83) = 0.121$

Consider Amrock Studs - Internal:

$R_{stud} = 0.048/0.35 = 0.137$

Stud Area:

For 1 m^2 — 6/0.6 = 10 Blocks

Each Block — 50 x 50 mm

10 Blocks — A = 0.05 x 0.05 x 10 = 0.025 = 2.5%

$R_{cavity} = 1/[0.025/0.137 + 0.975/1.92] =$

$= 1/[0.18 + 0.507] = 1.45$

Revised Thermal Resistance considering studs using Parallel Method:

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 3		3.14
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

Component:

1. Outdoor Air Film	- 0.04
2. 12mm Amroc Panel	- 0.04
3. External Cavity	- 0.121
4. 6mm Amroc Panel	- 0.03
5. Internal Cavity	- 1.45
6. 12mm Amroc Panel	- 0.04
7. Indoor Air Film	- 0.12
ΣR =	1.84

4.1.2.3 Floor

Component

1. Indoor Air Film	- 0.12
2. 16mm Amroc Panel	- 0.05
3. 100mm Reflected Air Space - N.V.	- 4.00
4. 6mm Amroc Panel	- 0.03
5. Outdoor Air Film	- 0.04
ΣR =	4.24

Consider Box Section Steel Studs: 100x50x3
R stud = 0.121 (Recommended by Branz)

For 1 m $- \frac{1000}{400} \times 0.05 \times 1 = 0.125$

$R_{cavity} = 1/(0.125/0.121 + 0.875/4.00)$

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 3		3.15
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

$R_{cavity} = 1/(1.03 + 0.22) = 0.80$

Component	
1 Indoor Air Film	- 0.12
2 18mm Amroc Panel	- 0.05
3 Cavity - Non Ventilated	- 0.80
4 8mm Amroc Panel	- 0.03
5 Outdoor Air Film	- 0.04
	$\Sigma R = 1.00$

Add Flooring

6. Carpet Underlay	- 0.17
7. Carpet	- 0.17
	Total R = 1.34

Summary:

	Required	Actual
Roof -	1.9	1.9
Walls -	1.5	1.84
Floor -	1.3	1.34
Glazing	0.13	0.13

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No: 3.16
SECTION :	Regulations - Section # 3		
Thermal Resistance of Amroc Panel			
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

Roof:

Components

1. Outdoor Air Film	— 0.04
2. Metal Roof	— 0.00
3. Cavity	— 1.10
4. 12mm AMRoc	— 0.04
5. Indoor Air Film	— 0.12
	1.30

Can not use single framing.

Cavity:

$R = 1/(0.08/0.121 + 0.917/2.2) =$

$= 1/(0.686 + 0.417) = 0.906$

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 4		4.02
	Fire Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

A.1. Fire Resistance of Amroc Panels

A.1.1. Material Specifications

Refer Amroc Manual - Page 26.

90' Rating Out 30' Rating In

Wall Construction:

Layer 1 – BlueCAD 10mm - Finish Layer
Layer 2 – AMRoc 16mm
Layer 3 - Framing - 90x45
Layer 4 – Kronoply - 12mm
Layer 5 - Standard GIB 10mm Finish Layer

30' Rating

Compare with GIB Solutions

GBTL90

Layer 1 - 16mm GIB Fireline
Layer 2 - Framing 90x45
Layer 3 - 16mm GIB Fireline

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No.
SECTION :	Regulations - Section # 4		4.03
	Fire Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

From Wall Configurations above:

AMroc panels exhibit similar property as GIB Fireline.

Standard Amroc Panel: (External)

12 mm Amroc Panel
48mm Amrock Studs
6 mm Amrock Panel
48 mm Amroc Studs
12 mm Amroc Panel

Expected FRR is 60/60/60;

Osborne Consultants 2000 Ltd. Structural Engineers	JOB NAME: Amroc NZ Ltd		PAGE No:
CALCULATION SHEET	SECTION: Regulations - Section # 5		5.02
	Acoustic Resistance of Amroc Panel		
	JOB No: A02-001	DESIGNED:	MO
	DATE: Feb-06	CHECKED:	MO

5.1. Acoustic Resistance

Literature Parameters:

Airborne Sound:

8 mm Board – 30 dB
12 mm Board – 32 dB
16 mm Board – 33 dB
18 mm Board – 34 dB

Wall Construction

12 mm Board
90 mm Framing = $32(1+\lg 2) = 41$ dB
12 mm Board

Floor Construction

18 mm Board
100 mm Joists = $34(1+\lg 1.88) = 43$ dB
8 mm Board

HARRISON GRIERSON

10 November 2005

CERTIFICATION OF AMROC Panel B1 FOR AMROC NEW ZEALAND LIMITED

This is to certify that Harrison Grierson Consultants Limited has been engaged by Parker Garages Ltd to conduct an independent literature review on AMROC B1 Panel, which is imported from Germany and distributed in New Zealand by Amroc New Zealand Ltd. Our review is to determine the suitability of the sheet panel material for floor and wall cladding for residential and commercial projects in New Zealand.

The technical documents we have reviewed include the technical information supplied by Amroc New Zealand called the Amroc Panel catalogue, and additional literature sourced from the Amroc Germany website along with the BRANZ test review.

Product

Amroc Panel Type B1 is a cement and resin bonded wood fibre board produced in Germany for over 80years and has been widely used in the European countries as wall cladding and flooring. It has also been used in the USA and Australia as cladding and flooring. The thickness of the Amroc panels varies from 8mm to 40mm thick in increments of 2mm.

Certification

Following our review of the technical literatures, we conclude that Amroc Panel Type B1 is suitable to be used in New Zealand on the following provisions:

1.1 INTERNAL APPLICATION

a) Both 18mm and 20mm sealed Amroc panel Type B1 can be used for domestic internal flooring, supported on floor joists at 600mm maximum spacing for maximum loading of 1.5kPa as tested by BRANZ.

b) Unsealed Amroc panels are not recommended for flooring. Amroc Rustikal or Resene Aquapel is recommended by the manufacturer to seal all panels.

c) Fixing of the panels to the supporting structure shall comply with the AMROC manual as attached. We recommend that screwing the board to the supporting structure is the most suitable method using a minimum of 4 x 35mm screws or 5.5 x 35 countersunk screws.

1.2 EXTERIOR APPLICATION

a) Amroc sealed panels can be used as a substrate board to balconies, deck flooring and any wet areas when special edge, surface treatment and handling are undertaken. We recommend that an appropriate waterproofing membrane is used over all panels for wet areas.

b) Amroc Panel B1 can be used as an exterior façade as a ventilated cavity system subject to the following.

- When used as an exterior façade, 10mm wide expansion joints with a suitable durable elastic alkali resistant material must be applied. Refer manufacturers manual for expansion joint details.

Harrison Grierson Consultants Limited
71 Great South Road, Newmarket
PO Box 5760, Wellesley Street
Auckland, New Zealand
Ph 09 917 5000 Fax 09 917 5001
Email auckland@harrisongrierson.com
www.harrisongrierson.com
ISO9001 Quality Assured

c) It is recommended that Amroc panels to be used in New Zealand are primed on both sides in the factory due to our climatic conditions. Unprimed Amroc panels are not recommended. Any cut edges and penetrations shall be coated with an on site applied primer as recommended by the manufacturer. Amroc Rustikal or Resene Aquapel are the recommended primers and can be sourced from the Amroc New Zealand or Resene paints.

d) It is recommended that the wall system is painted to provide the weather protection against moisture absorption. The coating is therefore a very crucial part of the exterior wall cladding system.

e) It is recommended that panels for ventilated cavities use a two sided coating with all edges primed. No other coatings are recommended.

f) On site handling is very important to ensure that the panel is not exposed to weather, particularly the edges of the panel. All panels shall be kept covered with suitable waterproof coverings until application on site.

g) Amroc panel is not recommended for cement stucco but is suitable for light textured paint coatings with allowance for expansion.

h) Fixing of the panels to the supporting structure shall comply with the AMROC manual as attached. We recommend that screwing the board to the supporting structure is the most suitable method using a minimum of 4 x 35mm screws or 5.5 x 35 countersunk screws. All fixings are to comply with NZBC for exterior use.

Prepared By

K S Tan
Senior Structural Engineer
Harrison Grierson Consultants Limited

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BRANZ
THE RESOURCE CENTRE FOR BUILDING EXCELLENCE
BUILDING RESEARCH ASSOCIATION OF NEW ZEALAND
Moonshine Road, Judgeford,
Private Bag 50908, Porirua, New Zealand.
Telephone (04) 235-7600, Fax (04) 235-6070

Reference No ST0360/GJB/1

2 June 1998

RE: SUMMARY OF RESULTS OF TESTS ON 20mm AMROC PANEL

	Initial Test	Tests after 3 months exposure to weather	Tests after 6 months exposure to weather	Standard Required *
Bending strength				
Modulus of rupture(MPa)	11.5	10.7	10.1	10.0
Modulus of Elasticity (GPa)	8.6	9.2	9.6	4.5
Concentrated Load Strength				
Failure Load (kN)	6.5	7.4	8.6	N/A
Strength (N/mm thickness)	326	372	434	N/A

* BS 5669 Part 4:1989

All the unweathered, three month and six month weathered panel specimens satisfy the bending and modulus of elasticity requirements of BS 5669: Part 4: 1989, Specification for Cement Bonded Particleboard.

There are no longer any concentrated load strength criteria in the joint Australian/New Zealand standard, AS?NZS 1859.1:1997 but the peak loadings recorded in the initial test result are similar to what would be expected from particle board flooring. Beyond that, the concentrated load results appear to improve further with weathering (as shown in the table above) although the reason for this is unclear.

At your request, we have calculated potential spans for various loads for the Amroc Panel based on the limited tests we have undertaken. The indications are that both the 20mm and 18mm thick boards would span 600mm in domestic dwellings (where the design live load is 1.5 kPa). It may be possible for the product to carry greater uniformly distributed loads but point loads may govern the performance.

In this regard and as per your request, we will be in due course, conducting further tests according to AS 1859:1980 Appendix J (Ultimate Panel Strength and Service Deflection) to better determine the concentrated load performance of full size panels of 18 and 20 mm board.

Yours sincerely

Graeme J Beattie
Senior Structural Research Engineer

AMROC® Baustoffe GmbH

Attachment of AMROC-PANELS

In principle (except for **AMROC-PANEL A2**) the fasteners used on common wood fiber boards are suitable.
For nailing and stapling, the boards should rest tightly on the underlying structure.
When applied outdoors or in moist rooms, corrosion-resistant fasteners should be used.
The ends of the boards should never be located between supporting beams.

Nailing

For nailed industrial connections the boards should be pre-drilled with 0.8 x the nail diameter. The board thickness should be at least 4 x the nail diameter. For nails, round wire nails Type B according to DIN 1151 with a diameter of ≥ 2.2 mm x the nail diameter as well as special nails according to DIN 1052-2 may be used.

Stapling

The very economical fixed method of stapling is not just used for simple fastening.
Stapling is frequently applied in factory assembly. For durable fastening, the staples should be driven in at 30° angles and leveled to the surface of the board, using electrical or pneumatic tools. Thickness limits are 10 - 20 mm (3/8″-7/8″).
Particularly suitable are resin-coated staples. Staples according to DIN 1052-2 with a wire diameter of ≥ 1.8 mm may be used.
AMROC-PANEL A2 is not suitable for fastening with staples.

Screwing

Screws according to DIN 1052-2 with pre-drilled holes of 0.8 x screw diameter may be used.
For screwing with electrical power-tools, no pre-drilling is necessary, if the self-tapping screws are permitted for use in construction work.
Recommendation: Particle board screws of 4 x 35, 4 x 45 and 4 x 55.

The use of screws with countersunk heads (and similarly nail and staple fixing) depending on the underlying construction, allows the boards only a very limited movement due to moisture changes. Fastening with flat-head façade screws combined with pre-drilling (holes larger than the screw shaft) enables a pressure-free assembly and enables the boards to absorb the movements of swelling and shrinking.
Recommendation: 5.5 x 35 and 5.5 x 45.

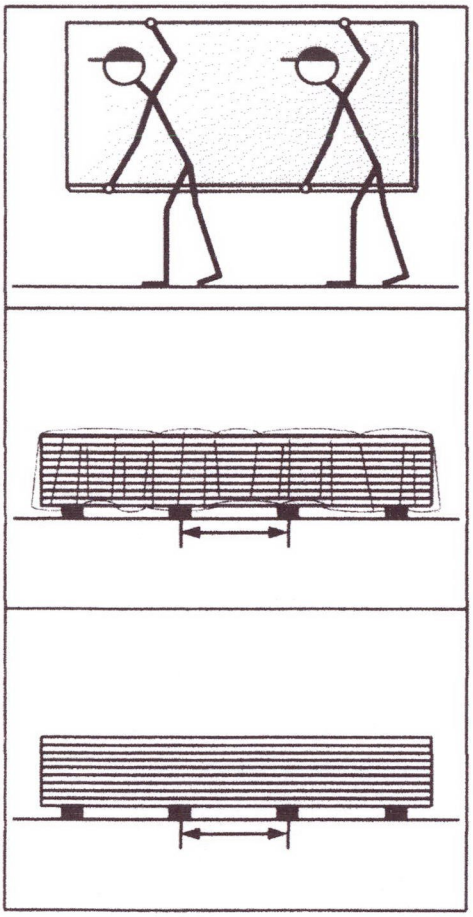
For façades higher than 8 m (26′ 0″) the stability of the connections must be individually proven.

According to the General Manufacturing Permit Z-9.1-285 and Z-9.1-490 by the German Institute for Building Technology **AMROC-PANELS** may be used as supporting and stiffening cladding of wooden walls in accordance with DIN 1051-1 to – 3: 1988-04 – for wooden constructions.
The application of supporting and consolidating cladding always requires engineered calculations.

AMROC®-PANELS

AMROC® Baustoffe GmbH

the correct way



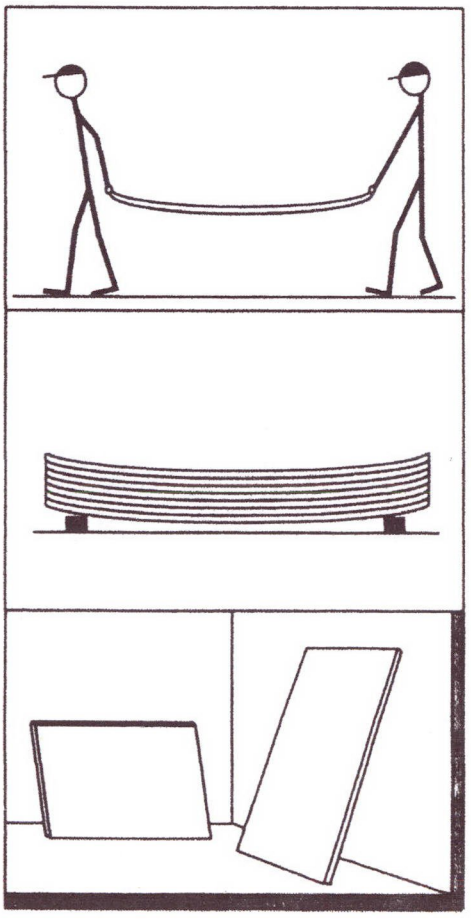
Handling and Storage Instructions

1. Pallets with **AMROC-PANELS** should only be moved by fork lift trucks.
2. When using trucks for transporting pallets with boards, use canvas to cover the boards.
3. When lifting with a crane, a fabric strap should be used.
4. **AMROC-PANELS** leave the factory with a moisture content of 9% respectively 11% ± 3. Before they are used at the building site, they must be stored dry.
5. **AMROC-PANELS** must always be covered during transport and storage.
6. Always store **AMROC-PANELS** dry and in a flat position.
7. Place supports at least every 80 cm under the **AMROC-PANELS** and store in a flat position.
8. Always carry **AMROC-PANELS** in an upright position.

never

... use chains when lifting **AMROC-PANELS** by crane, for not to damage the edges.
... stack pallets with **AMROC-PANELS** more than 5 high.
... store **AMROC-PANELS** flat with supports more than 80 cm apart.
... store **AMROC-PANELS** in damp or wet locations.
... store **AMROC-PANELS** without protective cover to prevent moisture penetration.
... lean **AMROC-PANELS** against walls.
... store **AMROC-PANELS** on surfaces which are not flat and horizontal.
... use the surface of **AMROC-PANELS** for supporting heavy objects.
... carry **AMROC-PANELS** with the flat surface parallel to the floor.

incorrect way !



AMROC® - PANELS

Permits - Tests

AMROC® Baustoffe GmbH

AMROC Magdeburg Z-9.1-285 HFB

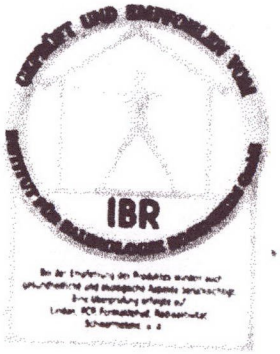
Independent quality assurance of the manufacturing process and the finished products for the general manufacturing permit of the *German Institute for Building Technology*

AMROC-PANEL B1 Z-9.1-285
AMROC-PANEL A2 Z-9.1-490

HFB Engineering GmbH
Zschortauer Straße 42
D-04129 Leipzig

AMROC Magdeburg Z-9.1-490 HFB

Based on the excellent test results,
AMROC Baustoffe GmbH's product
AMROC-PANEL B1
has been awarded the following quality mark
by the Rosenheim Institute for Building Biology GmbH.



CFI98
6711

JUN 05

Resene Aquapel

Waterborne Water Repellent

Resene Aquapel is a water repellent treatment formulated to help control efflorescence and give a long-term water-beading effect to deter water penetration. May be used on its own or as a primer under waterborne coatings, especially Resene AquaShield mineral effect.

Exterior

Typical Uses

Most porous building materials. May be used in multiple coats to keep concrete in its natural state looking good for longer by minimising the opportunity for moss, mould and lichen growths.

- Brick
- Concrete Block
- Fibrous Cement
- Poured Concrete
- Tilt Slab
- Timber

Physical Properties

Vehicle Type	Oligomeric Siloxane
Pigmentation	None
Thinner	Water
Finish	None - fully penetrating
Colour	Clear
Dry Time	Penetrates - up to 48 hours
Recoat	6 hours
Primer Required	No
Theoretical Coverage	Dependent on surface porosity
Usual No. of Coats	Usually one to achieve saturation
Abrasion Resistance	N/A
Chemical Resistance	Excellent
Heat Resistance	Good
Solvent Resistance	Good
Durability	Excellent
Thinning	Supplied ready to use – do not thin.
Clean Up	Water when wet, Mineral Turps when dry.
Pack Size	4L, 10L
VOC	< 10gm/L

Performance & Limitations

Performance

1. Can be applied over a wide range of temperatures.
2. Imparts hydrophobicity.
3. Improves fungal resistance of coated surface.
4. Improves water resistance.
5. Can be used under paint systems.
6. Allows the substrate to breathe.

Limitations

1. Curing is slowed by low humidity.
2. Will not waterproof against driving rain or water under hydrostatic pressure.
3. Maximum hydrophobicity (or water repellency) develops after a few days weathering.

Information contained in this Data Sheet is re-validated every two years following issue date. Please ensure the current Data Sheet and Material Safety Data Sheet are consulted prior to specification or application of product. If in doubt contact Resene.

Aquapel Waterborne Water Repellent

Surface Preparation

Ensure surface is clean and dry, free from dirt, dust and loose material, oil, grease and mould. Waterblasting is the best exterior surface preparation method prior to painting.

If moss and mould are present, treat with Resene Moss & Mould Killer (Data Sheet D80).

Sanding dust from old lead or chromate based paints or old building materials containing asbestos may be injurious to the health if inhaled or ingested. Seek expert advice if the presence of these materials is suspected.

Application

Stir thoroughly before use. Low pressure spray is recommended though can be applied by brush or roller. Recoat if required after 6 hours under normal conditions.

Precautions

1. Maintain good ventilation throughout the drying and curing period to ensure the treatment is properly cured.
2. Poor ventilation may inhibit curing and performance.
3. Remove any Resene Aquapel that gets onto glass to avoid the risk of staining.
4. If it starts to rain, immediately cease application and cover all treated areas that have yet to dry out.
5. Product ingredients will settle on storage. Shake well to reincorporate before application.

AMROC® - PANELS

Technical Data

AMROC-PANEL B1

The following technical data are to the full extent also valid for: **AMROC-PANELS AMROC-RUSTIKAL, AMROC-COLOR** and **AMROC-PANEL F.**

Thickness mm	**Weight** kg/m²	**Length** 2600 mm kg/board	**Length** 3100 mm kg/board	**Thickness** mm	**Weight** kg/m²	**Length** 2600 mm kg/board	**Length** 3100 mm kg/board
8	10.0	32.5	38.8	26	32.5	105.6	125.9
10	12.5	40.6	48.4	28	35.0	113.8	135.6
12	15.0	48.8	58.1	30	37.5	121.9	145.3
14	17.5	56.9	67.8	32	40.0	130.8	155.0
16	20.0	65.0	77.5	34	42.5	138.1	164.7
18	22.5	73.1	87.2	36	45.0	146.3	174.4
20	25.0	81.3	96.9	38	47.5	154.4	184.1
22	27.5	89.4	106.6	40	50.0	162.5	193.8
24	30.0	97.5	116.3				

Permit	General Manufacturing Permit Nr. Z-9.1-285
Class of Material:	B1 according to DIN 4102 (highly fire resistant)
Density:	approx. 1250 kg/m³ min. (434 pcf)
Moisture Content (ex factory):	9 % ± 3
Bending Strength (load perpendicular to the surface of the board):	11.0 N/mm², average value
Bending Strength (load perpendicular to the surface of the board):	9.0 N/mm², 95 % value
Modulus of Elasticity[1] (load perpendicular to the surface of the board):	7000 N/mm²
Transverse Tensile Strength[1]**:**	0.5 N/mm²
Tensile Strength[1] (parallel to surface of the board):	4.0 N/mm²
Compression Strength[1] (parallel to surface of the board):	16.5 N/mm²
Thickness Swelling (after 24-hrs water immersion):	< 1 %
Change in Length and Width due to Expansion and Contraction: (calculated values per standard procedure)	
- at 1% change in board moisture content	0.03 %
- at 30% change of relative humidity of air	0.15 %
Thermal Conductivity: (calculated value per standard procedure)	λ_R = 0.35 W/m·K
Vapor Diffusion Resistance Coefficient: According to DIN 4108	μ = 20/50
Sound Transmission Loss (airborne noise):	
8 mm board thickness	R_w = 30 dB (A)
12 mm board thickness	R_w = 32 dB (A)
16 mm board thickness	R_w = 33 dB (A)
18 mm board thickness	R_w = 34 dB (A)
24 mm board thickness	R_w = 36 dB (A)
28 mm board thickness	R_w = 37 dB (A)
Surface Alkalinity:	pH value 11-13

[1] 95 % value

Conversion factors (approx)
1 mm = 0.04 in
1 m = 3.3 ft = 3′ 3-3/8″
1 kg = 2.2 lbs
1 N/mm² = 0.7 ksi
1 kg/m³ = 0.06 pcf

Note: The above in metric dimensions listed standard size boards can also be supplied in standard sizes in inches and feet.

AMROC® - PANELS

Delivery specifications

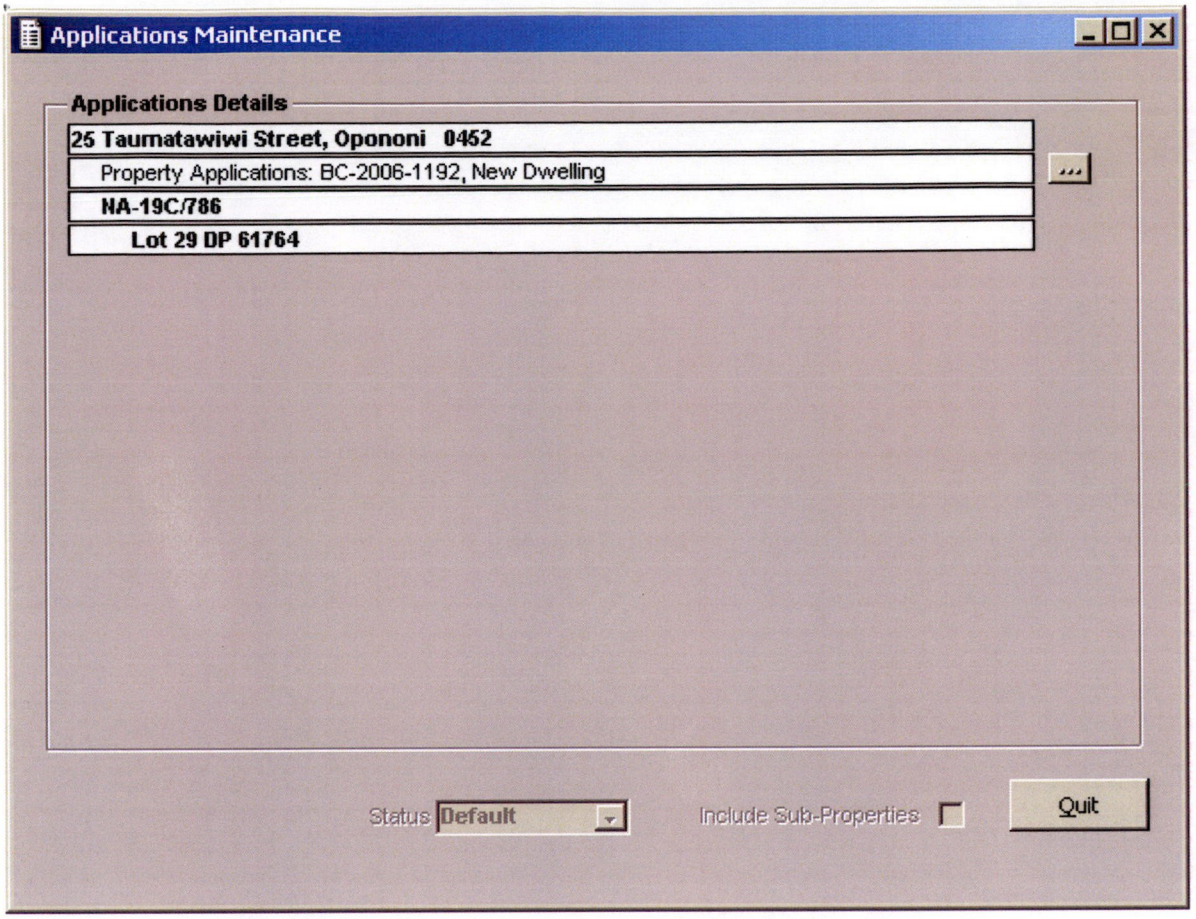
	AMROC-PANEL B1	AMROC-PANEL A2
Board thickness – unsanded	8-40 mm in increments of 2 mm	12-24 mm in increments of 2 mm
Board thickness – sanded	8-38 mm in increments of 2 mm	12-24 mm in increments of 2 mm
Thickness tolerances **– unsanded**	8-12 mm ± 0.6 mm 14-18 mm ± 0.8 mm 20-24 mm ± 1.0 mm 26-40 mm ± 1.5 mm	12-16 mm ± 0.8 mm 18-24 mm ± 1.0 mm
– sanded	8-38 mm ± 0.3 mm	12-24 mm ± 0.3 mm
Standard dimensions	2600 x 1250 mm and 3100 x 1250 mm maximum size 3200 x 1250 mm (on request)	
Other dimensions	- any rectangular cutting to size (on request) - order related variable length between 2600 - 3200 mm (depending on quantity ordered)	
Tolerances of length and width	± 5.0 mm (in accordance with DIN)	
Rectangular accuracy	1.0 mm across width of board (in accordance with DIN)	
Edges provided	beveled ship-lapped tongue and groove groove only (for separate tongue)	

Boards are palletised on wooden battens (with metal strips and plastic foil).
All pallets contain information as to size, quantity, finishing and production run identification of the boards.
The weight per standard pallet is approximately 2000 kg (4400 lbs).

BUILDING COST SHEET

Building Consent

Date	Initial	Description	Time	Rate	Cost
13/04/12	MAL	CS	15		
16/05/12	MAL	CS	30		
				TOTAL	



Form: LPAG1530
Entity: LPAXLAP
Field: DETAIL
Date/Time: 29-Dec-2005 15:31:33
Release: 02.19.000 (0005) With Fixes
Customer: FARN
User: KHARRIS
Stage: prod
Platform: WN1

ABA 20061192

According to District Wide Provisions under the Revised Proposed Plan, any excavation and/or filling carried out within 20m of any road, private road or adjoining property requires Earthworks Permit under Council's Bylaws.

Earthworks volume associated with this project is within 20m of the boundary; please fill the application form and enclose a fee of $175.00

BUILDING CONSENT
REQUEST FOR INFORMATION (S 30)

NAME:_____ DATE:_____ PIM/BC: 2006/1192

VALUATION No:_____ LEGAL Desc: _____

BUILDING:_____ LOCATION:_____

Re: PIM / BC / BOTH

In order to process your application for a project information memorandum, the following information is requested. The time period for processing is hereby suspended as provided for under S30 and will not be issued until the information is received.

Resource Planner: _____ Date: 13/03/06

Engineer: _____ Date : _____

Plumbing & Drainage
Inspector: _____ Date : _____

Building Inspector : _____ Date:_____

Far North District Council

Private Bag 752, Memorial Ave
Kaikohe 0400, New Zealand
Freephone: 0800 920 029
Phone: (09) 405 2750
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

G.S.T. REG No. 52-004-926

TAX INVOICE

Michael Shane Cameron
135 Meadowbank Rd
Meadowbank
Auckland 1005

DEBTOR NO: 50048172
INVOICE DATE: 13-Mar-2006
PAYMENT REF: 234166
APPLICATION NO: BC-2006-1192

BUILDING CONSENT APPLICATION CHARGES	
Details:	New Dwelling
Site Address:	25 Taumatawiwi Street, Opononi 0452

Description	Amount
Standard Building Inspection Fee	1,056.00

This Invoice Total is inclusive of GST except for any BRANZ Levy	**TOTAL**	**$1056.00**

Please note that no Consent will be issued until all scheduled fees have been paid. Please note that if more inspections are carried out than specified on this account, then a further charge of $88.00 per inspection will apply and may be paid prior to issue of a Code of Compliance Certificate.

12 inspections have been invoiced for this application.

Please return with payment

.....

NAME OF A/C:
Michael Shane Cameron
135 Meadowbank Rd
Meadowbank
Auckland 1005

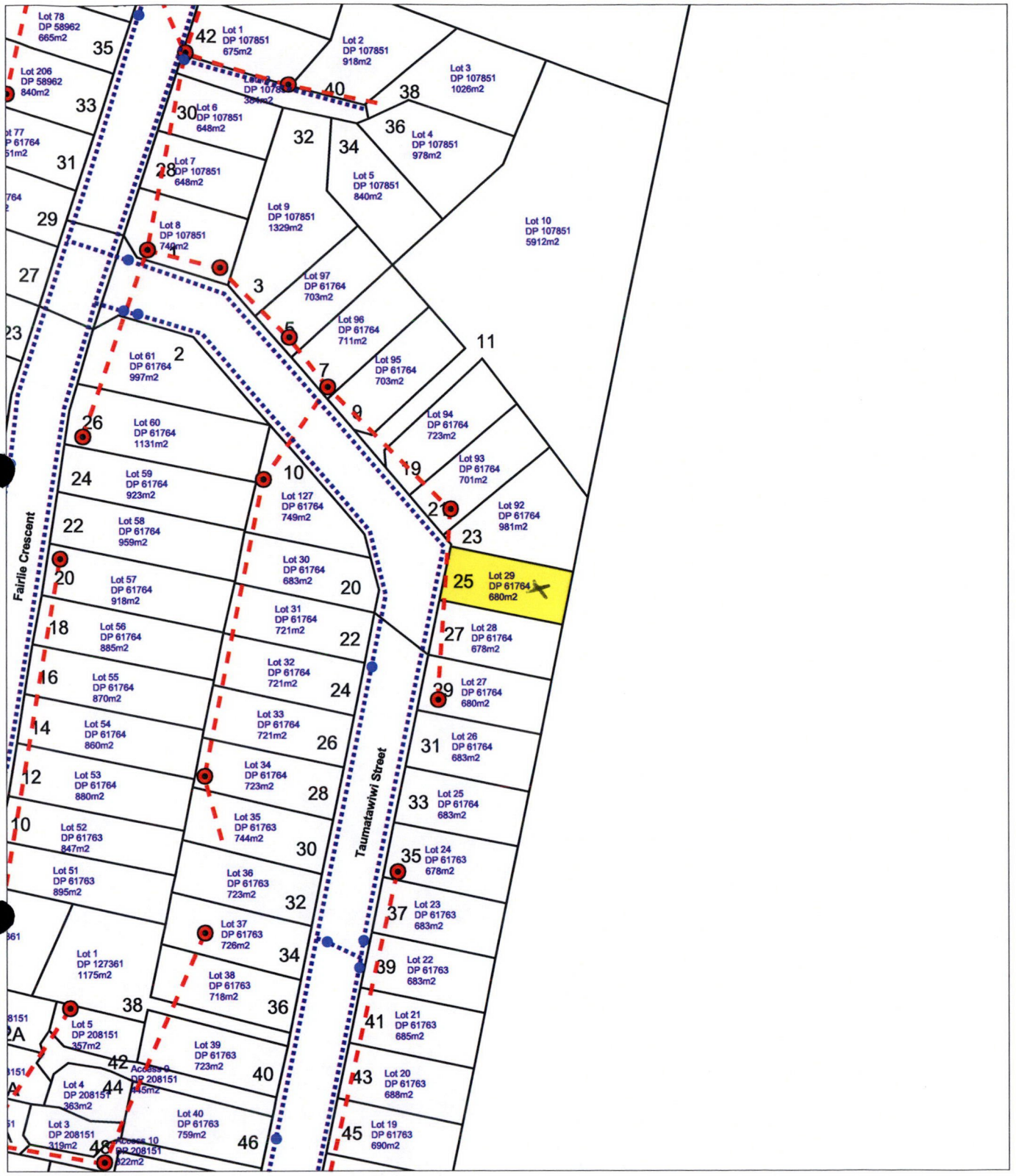
DEBTOR NO: 50048172
INVOICE DATE: 13-Mar-2006
PAYMENT REF: 234166
APPLICATION NO: BC-2006-1192
TOTAL: $1056.00

22/12
COPY

DEVELOPMENT PROCESSES

Engineering Comments & Assessment of Development Contributions

FROM:	ROADING & DRAINAGE DEVELOPMENT ENGINEER WATER & WASTEWATER TECHNICAL OFFICER		
ABA #	2006-1192.	DCF# 2634	AMOUNT$
ROADING			N/A
STORMWATER	IN AOB (Reduced amount based on value)		$2029.63
COMMUNITY INFRASTRUCTURE			$1687.50
CAR PARKING			$1752.75
WATER	No issues		Nil
WASTEWATER	No issues		Nil



Property Location: 25 Taumatawiwi Street Opononi

Property Area: 0.068ha.

00618-099-00
LOT 29 DP 61764 BLK VII HOKIANGA SD

Far North District Council

PROPERTY INQUIRY

This map is for illustration purposes only and is not necessarily accurate to surveying, engineering or ortho-photographic standards. While every effort has been made to ensure correctness and timeliness of the information presented, Far North District Council assumes no responsibility for errors or omissions.

Date: 4/1/6

Transfer No. A497782
N/C. Order No.

786

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 21st day of SEPTEMBER one thousand nine hundred and SEVENTY under the seal of the District Land Registrar of the Land Registration District of NORTH AUCKLAND

WITNESSETH that THE CHAIRMAN COUNCILLORS AND INHABITANTS OF THE COUNTY OF HOKIANGA are

seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be several admeasurements a little more or less, that is to say: All that parcel of land containing 26.9 Perches more or less being Lot 29 on Deposited Plan 61764 and being parts Taumatawiwi Block.

Assistant Land Registrar.

Fencing provision in Transfer A497782.

A.L.R.

MPR

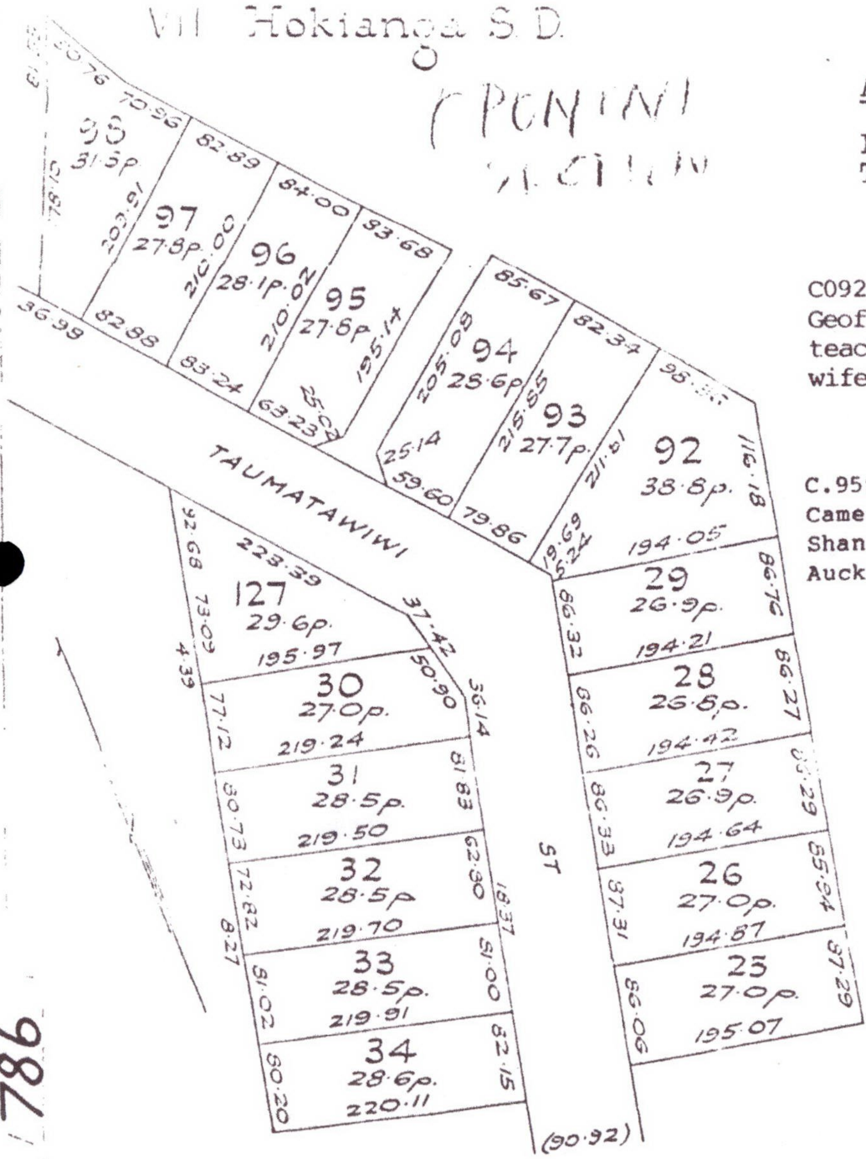
10543

C092622.1 Transfer to Gerald Gilmore Geoffrey Griffiths of Auckland school teacher and Heather Gwen Griffiths his wife - 22.1.1990 at 9.06 o'c

A.L.R.

C.959392.1 Transfer to Frances Gwendoline Cameron sales representative and Michael Shane Cameron cartage contractor both of Auckland - 26.2.1996 at 3.05 o'c

A.L.R.



Scale: 1 inch = 150 links
DELT: CTR

No. 19C/786

10,000/7/66—22549 W.

Parker Garages Ltd
135 Meadowbank Road
Meadowbank
Auckland 1005
Phone: 09-521 2137
Fax: 09-521 2137
www.parkergarages.co.nz

PGL

01 March 2006

J Kaio
Building Officer
Far North District Council
Private Bag 752
Kaikohe 0400

Fax: 09-401 2137

Re: Building Consent Application BC-2006-1192 New Dwelling 25 Taumatawiwi St Opoponi 0452

Dear Sir / Madam

Thank you for your letter dated 23 February 2006 requesting more information.

With regards to this, I would like to answer as follows:

Planning Aspect
Please find enclosed a current certificate of title for this address.

Building Aspect
1. We are not installing a fireplace to this dwelling. What we have done is create and architectural feature, which looks like a fireplace, but is solely there for the purposes to house a built-in 42" television.
2. The means of waterproofing the block wall to the garage, will have a 75mm overflow pipe, scoria backfill, against a waterproof matting, and the blocks will have three coats of tanking.
3. The R value for the ceiling is 2.7. This is done by way of building paper and batts.
4. The type of insulation for the walls is Amroc cavity system, R Rating 2.5.
5. The type of insulation for the floor is Amroc.
6. Connections for the RSH Portal flange to the concrete pile is two M16 bolts. Minimum 125mm into the concrete pile.

Please find enclosed a copy of Osbourne Consultants calculation for insulation barriers.

Yours faithfully

Jimmy Parker
ANZIA

Osborne Consultants 2000 Ltd.
Structural Engineers

21 Maui Grove•Newmarket•Auckland•New Zealand
Tel: +649-522 0697, 524-6096•Fax: +649-522 0697•
E-mail:OC2000@xtra.co.nz

OUR REF: **A02-001-R2**

Amroc New Zealand Ltd
135 Meadowbank Road
Meadowbank
Auckland 1005

Attention: James Parker

Date: 28 February 2006

Dear Sir

Re: Product Appraisal – Assemblies utilising Amroc Panels

1. Introduction.

Osborne Consultants Ltd have been asked to express a professional opinion on the utilisation of Amroc panels and assemblies built with such panels for residential and light commercial projects. This assessment has been prepared within the context to outline an alternative solution in terms of NZBC 2004 as part of the documentation suitable for lodgement for building consent.

2. Product.

Amroc panels are cement bonded particleboard panels manufactured under pressure from pine particles, Portland cement, mineral compounds and water.

Typical Amroc panel assembly comprises a cold formed steel frame with Amroc sheeting either side.

This appraisal is prepared for use in residential and light commercial building. The assemblies can be used for load bearing walls, partitions, floor structures and roof panels in specifically designed buildings. Fire and sound barriers (walls) can also be constructed using such panels.

Architectural design, Engineering and Construction are carried out by Amroc NZ Ltd or under their technical supervision and quality control. Construction process is carried out by accredited building contractors under franchise agreement.

3. Building Regulations.

In our opinion Amroc Panels and assemblies incorporating Amroc Panels if used, installed, and maintained in accordance with the statements and conditions of this appraisal will meet or contribute to meeting the following provisions of the NZBC 2004.

- Clause C3 – Spread of Fire
- Clause H1 – Energy efficiency.
- Clause C6 – Airborne and Impact Sound.

These provisions are discussed below:

C3 – Spread of Fire.

From the technical literature provided by AMROC and comparison with similar assemblies using GIB Fireline it can be concluded that the Amroc panels exhibit similar or better fire resistance compared to Gib Fireline. Thermal analyses of sample walls with Amroc panels and GIB Fireline panels with identical thickness produced similar results.

It is therefore concluded that the standard wall construction with 12mm Amroc panels would have a fire rating in excess of 30/30/30 generally required for individual residential dwellings.

H1 – Energy Efficiency

Parallel Method Thermal Anasis was carried out. The details are outlined below:

- Thermal envelope as per NZS4218.2001
- Roof with steel purlins – Conventional insulation has to be used. In this case Amroc Panels are used as ceiling lining only. Target R-value - 1.9. Achieved R-Value – 1.9.
- Floor with 18-100-8 configuration. Target R-value -1.3. Achieved R-value accounting for thermal bridges with carpet - 1.34.

C6 – Airborne and Impact Sound

The acoustic properties of Amrock Panels for Airborne Sound are listed in the literature. Based on these the following STC rating were determined:

- External wall with 12-18-8-48-12 configuration. Target STC rating 35. Achieve STC rating through voids – 41
- Floor with 18-100-8 configuration. Target STC rating 36. Achieve STC rating through voids – 43.

3...

I trust this information is adequate for its purpose. Should you require further inforamtion please do not hesitate to contact us directly.

Yours Faithfully,

Mike Osborne
M IPENZ, CPEng, - Principal

Apendices: - 8 Pages with Notes and Calculations

Osborne Consultants 2000 Ltd. Structural Engineers	JOB NAME : Amroc NZ Ltd		PAGE No:
	SECTION : Regulations - Section # 3		3.12
	Thermal Resistance of Amroc Panel		
CALCULATION SHEET	JOB No. A02-001	DESIGNED:	MO
	DATE: Feb-06	CHECKED :	MO

4.1. Energy Efficiency.

4.1.1. Thermal Envelopes

Consider Thermal Envelope with following parameters (NZS 4218; 2001)

Structure Element	Min R Value
Non ~~Solid~~ Walls	1.5
Floor	1.3
Roof	1.9
Glazing (Less than 30%)	0.13

4.1.2. Thermal Resistance

4.1.2.1 Roof

Required R-Value - 1.9

Use Pink Bats R = 2.2 - OK!

4.1.2.2. Walls

Component

1	Outdoor Air Film	- 0.04
2	12mm Amroc Panel 0.012/0.35	- 0.04
3	Reflected Air Space - Vent. - 16mm	0.36
4	8mm Amroc Panel 0.008/0.35	- 0.03
5	Reflected Airspace - Non V. 48mm	- 1.92
6	12mm Amroc Panel	- 0.04
7	Indoor Air Film	- 0.12
		2.55

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME:	Amroc NZ Ltd		PAGE No:
SECTION:	Regulations - Section # 3		3.13
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
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Consider Amrock Studs - External:

$R_{cavity} = 1/[P/Stud/R_{stud} + P_{air}/R_{air}]$

$R_{stud} = 0.018/0.35 = 0.051$

$R_{cavity} = 1/[0.33/0.051 + 0.66/0.36]$

$= 1/(6.41 + 1.83) = 0.121$

Consider Amrock Studs - Internal:

$R_{stud} = 0.048/0.35 = 0.137$

Stud Area:

For 1 m^2 — $6/0.6 = 10$ Blocks

Each Block — 50 x 50 mm

10 Blocks — $A = 0.05 \times 0.05 \times 10 = 0.025$

$= 2.5\%$

$R_{cavity} = 1/[0.025/0.137 + 0.975/1.92] =$

$= 1/[0.18 + 0.507] = 1.45$

Revised Thermal Resistance considering studs using Parallel Method:

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 3		3.14
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED	MO
DATE	Feb-06	CHECKED	MO

Component:

1. Outdoor Air Film	- 0.04
2. 12mm Amroc Panel	- 0.04
3. External Cavity	- 0.121
4. 8mm Amroc Panel	- 0.03
5. Internal Cavity	- 1.45
6. 12mm Amroc Panel	- 0.04
7. Indoor Air Film	- 0.12
	ΣR = 1.84

4.1.2.3 Floor

Component

1. Indoor Air Film	- 0.12
2. 16mm Amroc Panel	- 0.05
3. 100mm Reflected Air-Space N.V.	- 4.00
4. 8mm Amroc Panel	- 0.03
5. Outdoor Air Film	- 0.04
	ΣR = 4.24

Consider Box Section Steel Studs: 100x50x3
R stud = 0.121 (Recommended by Branz)

For 1 m $= \frac{1000}{400} \times 0.05 \times 1 = 0.125$

$R_{cavity} = 1/(0.125/0.121 + 0.875/4.00)$

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 3		3.15
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

$R_{cavity} = 1/(1.03 + 0.22) = 0.80$

Component	
1 Indoor Air Film	- 0.12
2 18mm Amroc Panel	- 0.05
3 Cavity - Non Ventilated	- 0.80
4 8mm Amroc Panel	- 0.03
5 Outdoor Air Film	- 0.04
	$\Sigma R =$ 1.00

Add Flooring

6. Carpet Underlay	- 0.17
7. Carpet	- 0.17
	Total R = 1.34

Summary:

	Required	Actual
Roof -	1.9	1.9
Walls -	1.5	1.84
Floor -	1.3	1.34
Glazing	0.13	0.13

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No:
SECTION :	Regulations - Section # 3		3.16
	Thermal Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

Roof:

Components

1. Outdoor Air Film	— 0.04
2. Metal Roof	— 0.00
3. Cavity	— 1.10
4. 12mm AMROC	— 0.04
5. Indoor Air Film	— 0.12
	1.30

Can not use single framing.

Cavity:

$R = 1/(0.08/0.121 + 0.917/2.2) =$

$= 1/(0.686 + 0.417) = 0.906$

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No: 4.02
SECTION :	Regulations - Section # 4		
	Fire Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED	MO

A.1. Fire Resistance of Amroc Panels

A.1.1. Material Specifications

Refer Amroc Manual - Page 26.

90' Rating Out 30' Rating In

Wall Construction:

Layer 1 – BluCAD 10mm - Finish Layer
Layer 2 – AMROC 16mm
Layer 3 – Framing – 90x45
Layer 4 – Kronoply – 12mm
Layer 5 – Standard GIB 10mm Finish Layer

30' Rating

Compare with GIB Solutions

GBTL90

Layer 1 – 16mm GIB Fireline
Layer 2 – Framing 90x45
Layer 3 – 16mm GIB Fireline

Osborne Consultants 2000 Ltd.
Structural Engineers

CALCULATION SHEET

JOB NAME :	Amroc NZ Ltd		PAGE No.
SECTION :	Regulations - Section # 4		4.03
	Fire Resistance of Amroc Panel		
JOB No:	A02-001	DESIGNED:	MO
DATE:	Feb-06	CHECKED :	MO

From Wall configurations above:

Amroc panels exhibit similar property as GIB Fireline.

Standard Amroc Panel: (External)

12 mm Amroc Panel
48mm Amrock Studs
6 mm Amrock Panel
'6 mm Amroc Studs
12 mm Amroc Panel

Expected FRR is 60/60/60;

Osborne Consultants 2000 Ltd. Structural Engineers	JOB NAME: Amroc NZ Ltd		PAGE No:
CALCULATION SHEET	SECTION: Regulations - Section # 5 Acoustic Resistance of Amroc Panel		5.02
	JOB No: A02-001	DESIGNED: MO	
	DATE: Feb-06	CHECKED: MO	

5.1. Acoustic Resistance

Literature Parameters:

Airborne Sound:

8 mm	Board	– 30 dB
12 mm	Board	– 32 dB
16 mm	Board	– 33 dB
18 mm	Board	– 34 dB

Wall Construction

12 mm Board
90 mm Framing = $32(1 + \log 2) = 41$ dB
12 mm Board

Floor Construction

18 mm Board
100 mm Joists = $34(1 + \log 1.88) = 43$ dB
8 mm Board

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**NA19C/786**
Land Registration District	**North Auckland**
Date Issued	21 September 1970

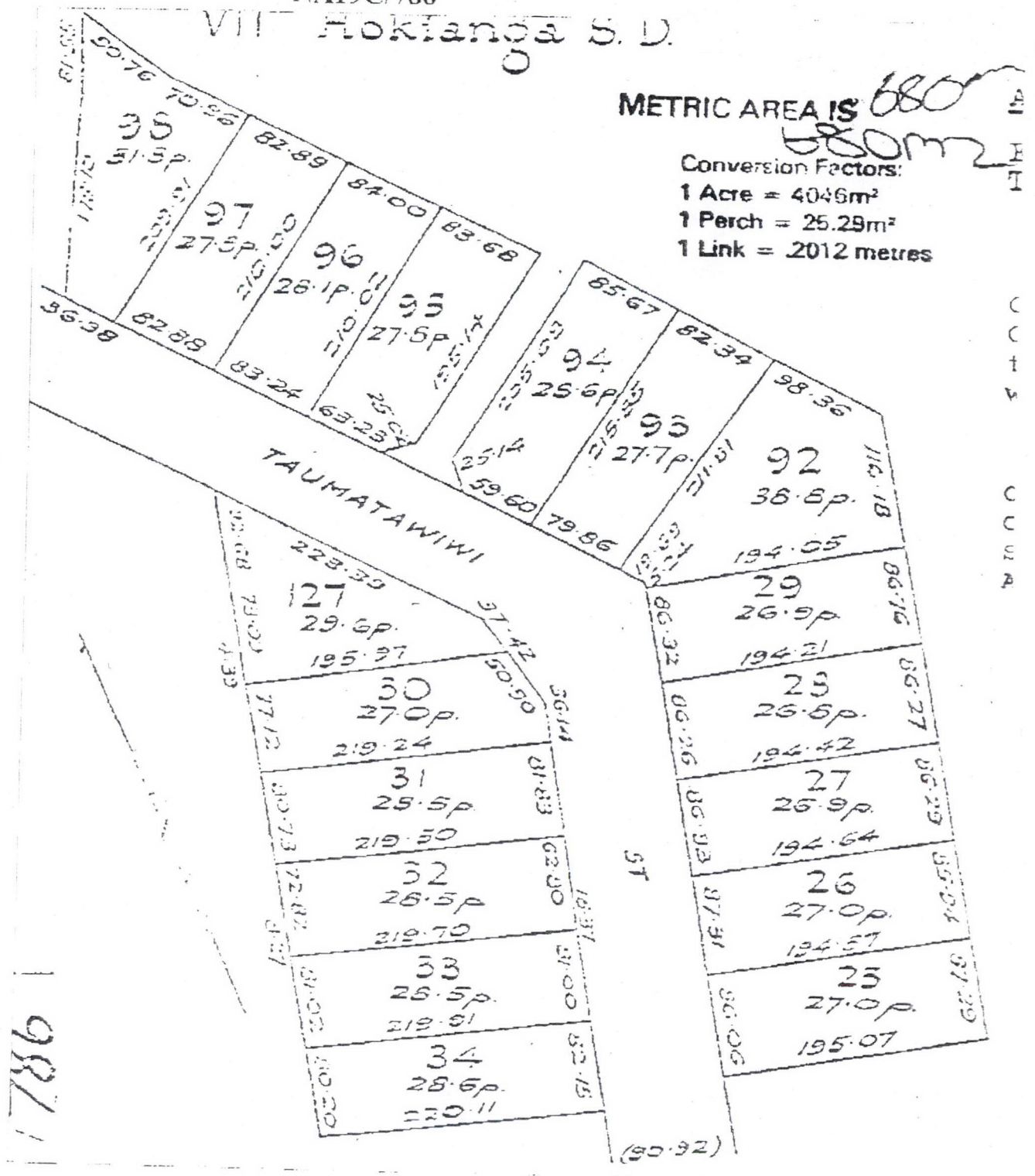
Prior References
NA4B/646

Estate	Fee Simple
Area	680 square metres more or less
Legal Description	Lot 29 Deposited Plan 61764

Proprietors
Frances Gwendoline Cameron and Michael Shane Cameron

Interests
Fencing Provision in Transfer A497782 - 21.9.1970

Identifier NA19C/786



ABA TYPE: com **ABA NO:** 2006-1192

NAME OF APPLICANT: G & H ~~CAMERONS~~ Cameron.

DATE RECEIVED: 22/12/05

DATE APPLICATION ACCEPTED: 22/12/05

	CPU CHECKLIST	YES
1	Payment	✓
2	Certificate Of Title (and / or Maori occupation order, Sale & Purchase agreement, Coastal permit etc.)	✓
3	Signature	✓
4	Site Plan of proposed project (showing distances to boundaries and to all other existing buildings)	✓
5	3 sets of plans (4 if Commercial)	✓
6	TP58 or Connection form	✓
7	HPT	n/a
8	Fire Service	n/a
9	GIS Maps Attached	
10	Prop File Ordered 618-099-00	✓

NOTES:

New Dwelling