

7217 HYDE - MIDDLEMARCH ROAD, MIDDLEMARCH

DESIGN FEATURES REPORT

JOB NUMBER WFM31209

Report Prepared by:

Rodney Stokes Principal Structural Engineer

Date:29/07/2019



EQ STRUC Limited

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1 GENERAL

1.1 Objective

The Design Features Report (DFR) is a detailed document defining the structure's design criteria and recording key decisions or outcomes. It outlines design loading, material properties, design standards used, design assumptions and other relevant considerations. The DFR also defines the calculation procedure and checking principles to be followed, providing a clear explanation of the full design.

1.2 Scope

The scope of the project is to design the steel and light gauge steel (LGS) components for the structure The building is located at 7217 Hyde - Middlemarch Road, Middlemarch



(a) Subject building

1.3 Means of Compliance

The design of the structure is in compliance with the New Zealand Building Code

The following standards have been used:

- AS/NZS1170
- NZS3101:2006
- AS/NZS4600
- AS4100
- NASH

2 DESIGN LOADS

2.1 General

For the purposes of consideration of loading, this structure Importance Level 2 in accordance with AS/NZS 1170.0:2002.

2.2 Imposed Loads

2.2.1 Vertical loads

The table below summarizes all vertical loads including both superimposed dead and live loads. In all cases, a minimum superimposed dead load of 0.5 kPa is applied to floors.

Table 1. Imposed Gravity loads								
Level/Area	Use	Live Load	Superimposed					
			Dead Load					
Ground floor	Residential	1.5kPa	0.5 kPa					
First Floor	Residential	1.5kPa	0.5 kPa					
Roof, Light Weight	No access	0.25 kPa	0.26 kPa					

Table 1: Imposed Gravity loads

2.3 Wind Loads

Very High wind demand = 65m/s

2.4 Snow and Ice Loads

Snow load = 2.9 kPa

2.5 Seismic Loads

2.5.1 Site Parameters

Earthquake Zone: Proximity to fault:

1 >20km.

3 DURABILITY

Alternative Solutions

• Structural Steel: There is no acceptable solution available for structural steel and protection is provided through surface treatment in accordance with NZS/AS 2312:2002.

4 CONSTRUCTION MONITORING

The design is based on the verification of specific design aspects of the construction as agreed by owner/developer

4.1 Soil Testing and verification

All geotechnical values are based on the assumption of good ground.

4.2 Materials Testing

Refer to the structural specification by FRAMECAD.

5 SOFTWARE

The following computer applications have been used:

- Framecad Structure
- Memdes
- RISA

6 CALCULATIONS

Table 2: Calculations

Section	Name	Revision	Reviewed by
1.0	Stamped Drawings	A	RTS
2.0	Calculations	А	RTS
3.0	PS1	А	RTS



62a Awamoa Road,
Holmes Hill Oamaru 9401
Ph. 434 9067 or 027 442 3730
don-builder@xtra.co.nz

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SHEET No.





Existing Windows Reused Refer OTMC Drawings For More Details



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d DJH	FINISH DATE	25/3/19	1.55, 1.15	REF. 2019/46



Existing Bench, Bunks, Etc. Reused Refer OTMC Drawings For More Details



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Existing Foundations, Floor Structure and Deck Reused Refer OTMC Drawings For More Details



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All Framing:	90LC75 Stud 90LC75 Purlin 90LC75 Plate and Nog
All Fixings:	10-16x16 Needle Point Screws in pre punched dimples 10-16x16 Tek Screws for frame connection Type 17 Tek Screws for plate hold down
Stud Spacing:	600mm max cts
Purlin spacing:	900mm max cts
Nog Spacing:	1350mm cts



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89S41-075-550 1	2041mm 89S41-075-550	1 2054mm 89S41-075-550	1 2083mm	89S41-075-550	2 2089mm	89S41-075-550	2 2709mm	89S41-075-550	3 599mm
Assembly Weight	20kg W	orking Sheet: WfP		FRAMECAD 10g-10	6mm Flathead	20	FRAMECAD 10g	-19mm XDrive	24
Powered by FRA	MECAD Structure ®							Diago	onal = 3426
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System Name: Panel RL:	FC_LGSC Wall Type: 0 Envelope:	Non Load Bearing 2715h x 2089w	Design Wind Speed: Direction:	Vł S-1	H Design Code: N	AS/NZS	4600:2005 Loadir	ng Code:	NASH NZ 2010
LGSC	Dwg 4319	10 bunk hut	View 5 of	6	Client :10	Bunk Hut			J/No. 4319

89S41-075-550	1 2173mm	89S41-075-550		2 2179mm	n 89S41-075-550	6 2709mm
Assembly Weight	26kg	Working Sheet: WfP			FRAMECAD 10g-19mm XDrive	36
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LGSC	Dwg 4319_10 bunk h	nut	View 6 of 6	Client :10	Bunk Hut	J/No. 4319



Building Code Clause(s).....

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.ipenz.nz)

ISSUED BY:	onian Firm)		
(D			
(Owr	er/Developer)		
TO BE SUPPLIED TO:			
(Building	Consent Authority)		
IN RESPECT OF: (Description	n of Building Work)		
AT:			
	Address)		
Town/City: LOT		. DP	. SO
We have been engaged by the owner/developer referred	o above to provide:		
(Extent	of Engagement)		
services in respect of the requirements of Clause(s)	of t	the Building Code fo	r:
\square All or \square Part only (as specified in the attachment to t	nis statement), of the pro	oposed building wor	k.
The design carried out by us has been prepared in accord	ance with:		
Compliance Documents issued by the Ministry of Busin	ess, Innovation & Empl	oyment (verification met	hod/acceptable solution)
Alternative solution as per the attached schedule			
The proposed building work covered by this producer state	ement is described on th	ne drawings titled:	
	and numbe	red	
together with the specification, and other documents set of	ut in the schedule attacl	hed to this statemen	it.
On behalf of the Design Firm, and subject to: (i) Site verification of the following design assumptions (ii) All proprietary products meeting their performance spe	cification requirements;		
I believe on reasonable grounds that a) the building, if of other documents provided or listed in the attached schedu and that b), the persons who have undertaken the design following level of construction monitoring/observation:	onstructed in accordanc le, will comply with the r nave the necessary con	ce with the drawings relevant provisions c npetency to do so. I	, specifications, and of the Building Code also recommend the
CM1 CM2 CM3 CM4 CM5 (Engineering	Categories) Or 🗌 as per a	greement with owner/	developer (Architectural)
I,	am: 🗌 CPEng	# 🗌 Re	g Arch #
I am a Member of: IPENZ INZIA and hold the follow The Design Firm issuing this statement holds a current poli The Design Firm is a member of ACENZ:	ving qualifications: y of Professional Indem	nity Insurance no es	ss than \$200,000*
SIGNED BY(Name of Design Professional)	(Sig	nature)	hy gen
ON BEHALF OF(Design Firm)			// Date

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000*.

This form is to accompany Form 2 of the Building (Forms) Regulations 2004 for the application of a Building Consent. THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, IPENZ AND NZIA



4 November 2019 Dunedin City Council

RE: B2 compliance – Leaning Lodge Shelter

To whom it may concern,

You have requested a Producer Statement/other means of compliance for Design for Clause B2 of the Building Code – Durability. We are not able to provide a Producer Statement for durability because compliance needs to be shown on a material-by-material basis using a variety of compliance methods, and not all materials used have a clear compliance path. We can confirm that for the structural elements shown in our documentation under Clause B1:

Timber

Timber treatment has been selected in accordance with Table 1A of B2/AS1

Concrete

Concrete covers have been selected in accordance with NZS 3101, Part 1, Section 3

Mild Steel

Steel production has been specified in accordance with the "Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings" AS/NZS 2312. We note this is on a first time to maintenance basis.

We trust this provides the information you are seeking

Yours faithfully,

boby that

Rodney Stokes *BE, NZCE, CPEng, IntPE, MIPENZ, MIEAust, CPEng Aust, RPEQ, NER, RPeng, VBA* Principal Engineer/Director E: rod@eqstruc.co.nz



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