

LOT 55

BELLFIELD

718m²

BUILD AREA OVER FOUNDATION: 198.0m²

TOTAL SITE COVERAGE = 27.9%

Planning Zone = Residential New Neighbourhood

Wind Zone = High

EQ Zone = 2

Snow Zone = N4 (0.9KPa)

Corrosion Zone = C

IMPORTANT:

- All Framing to Load Bearing Walls H1.2 90 x 45
- SG8 Studs @ 600 CRS, Dwiangs @ 800 CRS Unless otherwise shown
- All Framing to Non-Load Bearing Walls: H1.2 90 x 45
- SG8 Studs @ 600 CRS, Dwiangs @ 800 CRS Unless otherwise shown
- Allow to Install 10mm Gib Aqualine to Wet Wall Areas
- All Gib Finishing to Level 4
- Allow to Extract Rangohead to Soffit
- Allow to Install Frameless Safety Glass Splash Back to Kitchen Hob Extending to Range Hood Level
- All Wall Surfaces to Kitchen Area and All Wet Areas to be Finished with Washable Acrylic Enamel Paints
- Weiss FV110 Extractor / Ventilation Fan Walk In Pantry
- All Hot Water Supply to Taps (Except Kitchen Sink) to be Tempered to 55 Deg C Max.
- 300L HWC to Comply with NZS4305 Energy Efficiency Standards. Allow to Fix with Seismic Straps in Compliance with NZBC

NOTE: Interior and Exterior Walking Surfaces to Comply with Table 2. Clause D1, NZBC

SD © DENOTES SMOKE DETECTOR

DENOTES SELECTED CERAMIC TILES. UPSTANDS TO WALLS 120mm

job title

drawing title

XXX

NOTES:
Subject to Council Approval
All measurements to be confirmed on site by Contractor prior to the commencement of work
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page

scale

1: 100

designer: T.J.G

drawn: T.J.G

amendment

date:

6/12/2022

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job #

Sheet 5 of 49

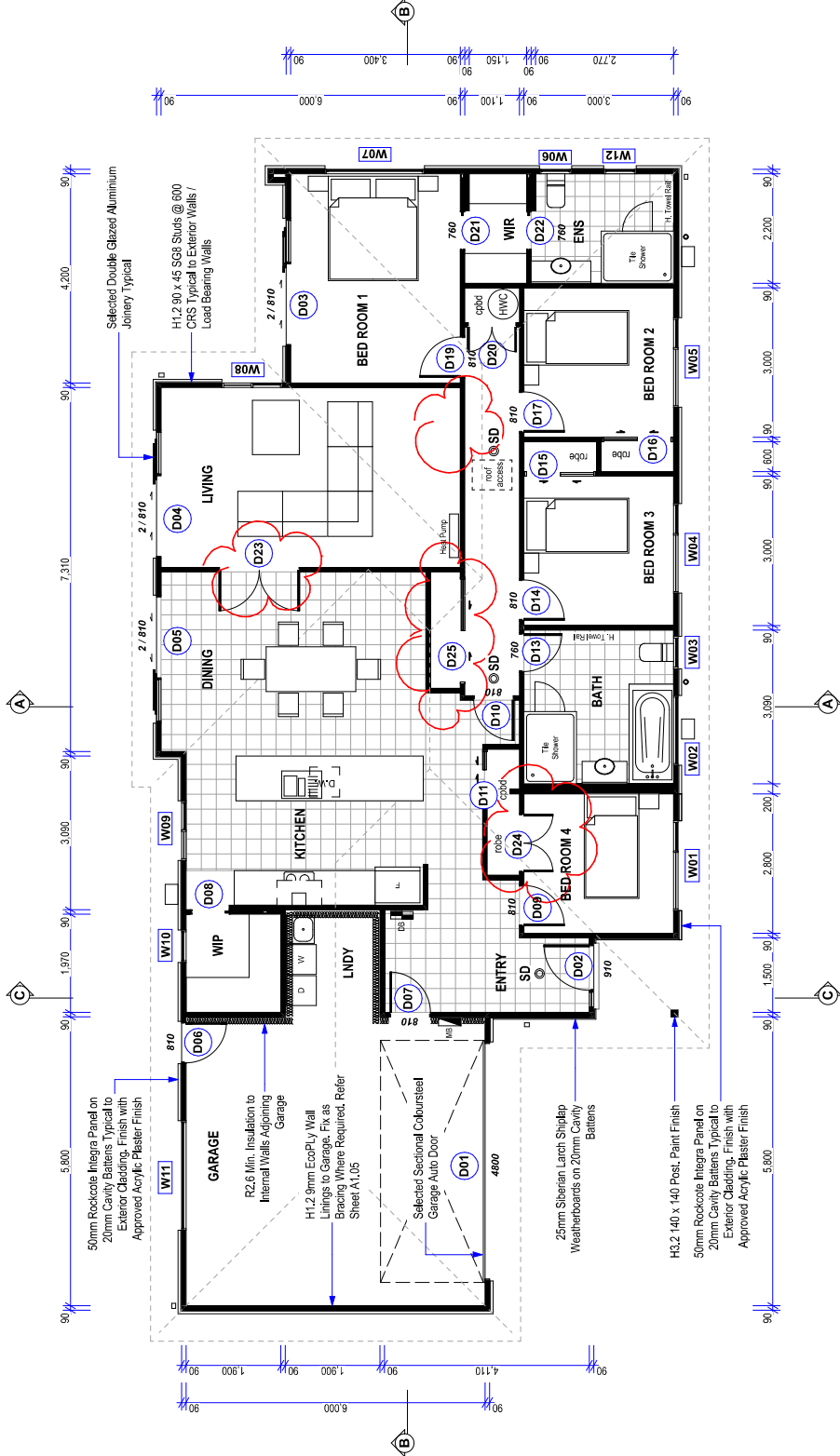
Rev J

A1.01

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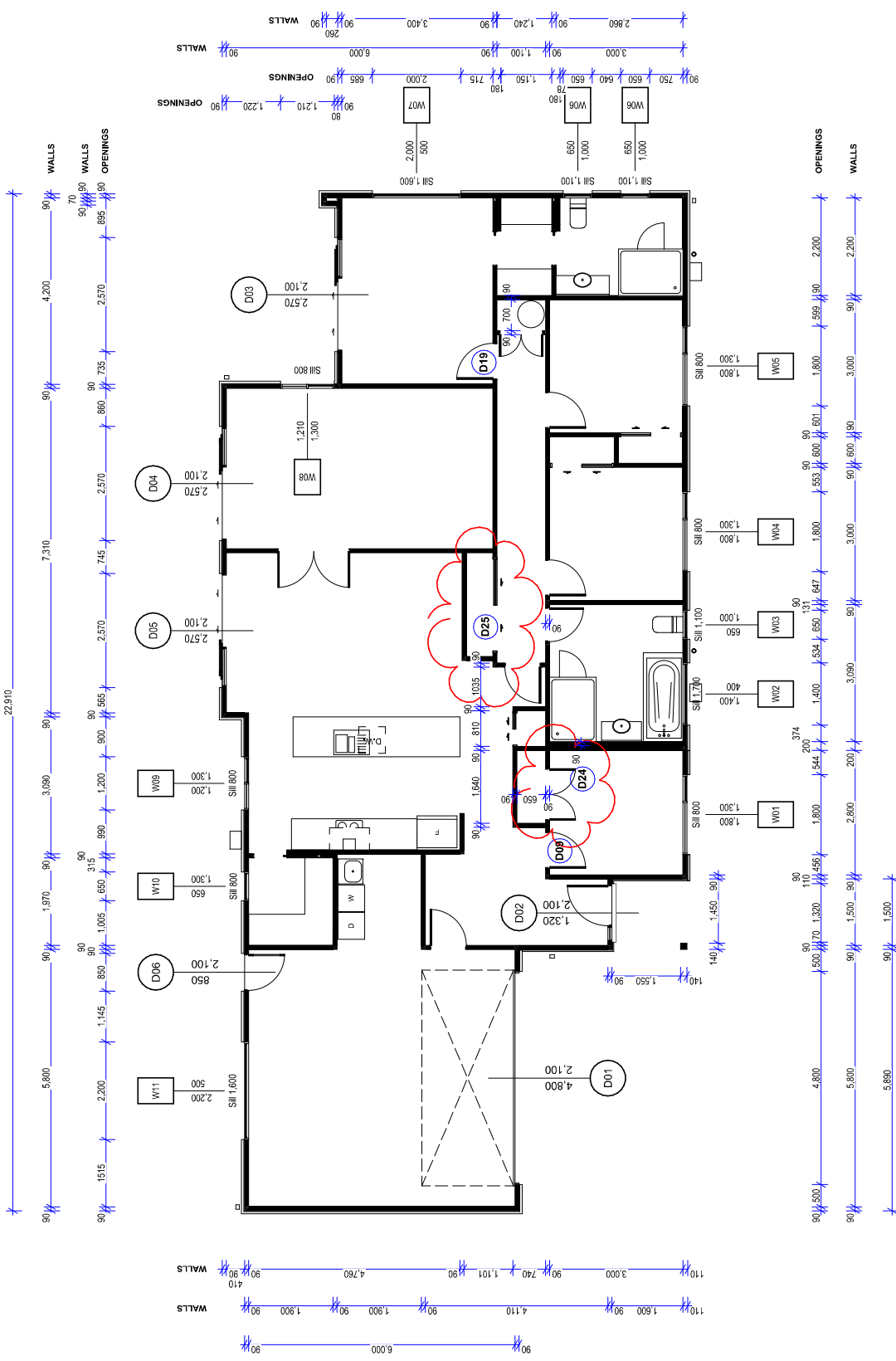
Lot 55 BELLFIELD

FLOOR PLAN



TIMBER LINTEL SIZES		
Window & Door	Size	Timber Treatment
W01	150 x 90	Hy90 H1.2
W02	150 x 90	Hy90 H1.2
W03	150 x 90	Hy90 H1.2
W04	150 x 90	Hy90 H1.2
W05	150 x 90	Hy90 H1.2
W06	150 x 90	Hy90 H1.2
W07	150 x 90	Hy90 H1.2
W08	150 x 90	Hy90 H1.2
W09	150 x 90	Hy90 H1.2
W10	150 x 90	Hy90 H1.2
W11	150 x 90	Hy90 H1.2
W12	2-190 x 45	SG8 H1.2
D01	300 x 90	Hy90 H1.2
D02	150 x 90	Hy90 H1.2
D03	200 x 90	Hy90 H1.2
D04	200 x 90	Hy90 H1.2
D05	200 x 90	Hy90 H1.2
D06	150 x 90	Hy90 H1.2
D07	NLB	
D08	NLB	
D09	150 x 90	Hy90 H1.2
D10	NLB	
D11	NLB	
D12	NLB	
D13	NLB	
D14	NLB	
D15	NLB	
D16	NLB	
D17	NLB	
D18	DELETED	
D19	NLB	
D20	NLB	
D21	NLB	
D22	NLB	
D23	NLB	
D24	150 x 90	Hy90 H1.2
D25	200 x 90	Hy90 H1.2
D25 (OPT)	2-240 x 45	SG8 H1.2

This Table MUST be Read In Conjunction with the Truss Designer's Documents



job title

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designer: T.J.G

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6/12/2022

Rev G

Sheet 6 of 49

A1.02

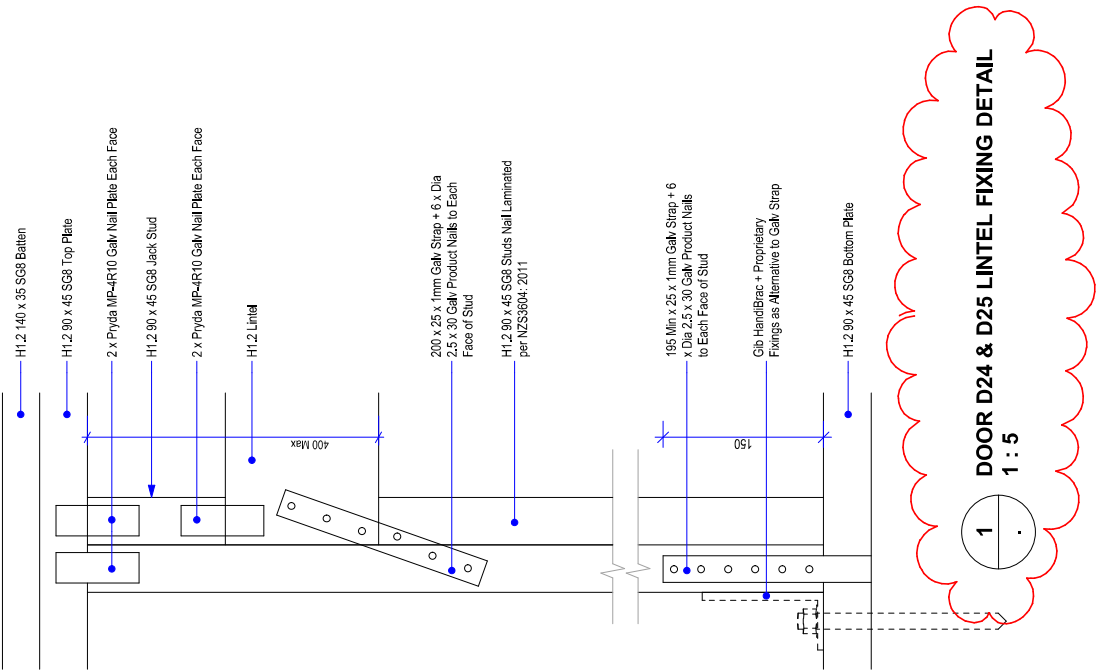
SET OUT PLAN

XXX

Southbridge

Lot 55 DP XXXX

Canterbury



job title drawing title

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Lot 55 BELLFIELD

DETAILS

XXX
Southbridge
Lot 55 DP XXXX
Canterbury

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designer: T.J.G
drawn: T.J.G
scale 1: 5
amendment job #
date: 5/12/2022 #Ph

page
A4.24
Sheet 39 of 49
Rev A

DESIGN CERTIFICATE

Technical basis for structural design methodology contained in designIT for houses - New Zealand.

designIT for houses, New Zealand has been developed by experienced timber engineers to assist designers in selecting appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey LVL Limited (including hySPAN, hy90, hyONE and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings that fall within the scope of NZS 3604.

The design methodology used for the software complies with the loading and general design requirements contained within AS/NZS 1170 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

designIT relies on the accurate input of span and loading information by the user. Where accurate inputs are submitted the product and/or stress grade and the size given will comply with the structural requirements of the New Zealand Building Code (NZBC), provided the installation is in accordance with the installation requirements provided by designIT and/or in product literature and/or NZS 3604, or specific engineering design, as appropriate.

Futurebuild LVL and SG8 components, when used and treated to the required treatment levels prescribed in NZS 3602 and NZS 3604, as modified by Acceptable Solution B2/AS1, will comply with the requirements of the NZBC (Acceptable Solution B2/AS1, 3.2).

References:

1. NZS 3603:1993 Timber Structures Standard.
2. NZS 3604:2011 Timber-framed buildings.
3. AS/NZS 1170:2002 Structural design actions, Parts 0 and 1.
4. AS/NZS 1170:2011 Structural design actions, Part 2: Wind actions.
5. AS/NZS 1170:2003 Structural design actions, Part 3: Snow and ice actions.
6. AS 1720.1:2010 Timber structures. Part 1: Design methods.
7. AS 1720.3:2016 Timber structures. Part 3: Design criteria for timber-framed residential buildings.

This Design Certificate, and any associated warranty/certification, is void where there has been substitution of alternate products not detailed within the Member Specification.

Version date: 29 September, 2022

For further information or advice contact:

Carter Holt Harvey LVL Limited,
173 Captain Springs Road, Onehunga. Auckland
Telephone: 0800 808 131
Email: designit@futurebuild.co.nz
Web: <https://futurebuild.co.nz/>

Specifier details:

Specifier:	Trevor Grenon
Business name:	De Grenon Architectural Ltd
Address:	10 Earl Street Christchurch
Email:	trevor@dgarchitectural.co.nz
Contact:	Mobile: 021 062 3305

Project & site details:

Project:	Norton HUse
Site address:	54 Brook Street Southbridge
Design wind zone	High
Snow loading	Design snow zone: N4, Altitude: 100 m (sub-alpine), Ground snow load, $S_g^{1,2} = 0.9$ kPa

designIT does not include any allowance for the effects of drifting and sliding of snow.

Snow loads are applied to roofed over structures only, the design of exposed floors/decks are not covered by designIT.

MEMBER DESIGN DETAILS

Member 1

- 1) Member code and description L3 - Lintels - In single or upper storey load bearing walls
- 2) Date prepared 05 December 2022

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	2.1 m
Roof load width 'RLW'	6.4 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm
Roof snow load	0.6 kPa, snow overhang 0.1 kN/m ($\mu_i=0.7$, $C_e=1.0$, $k=0.5$)

5) Member specification

Size, stress grade/product	Use 2/240 x 45 SG8
Material type	Dry softwood, machine stress graded and verified (NZS 3622)
Assumed design density	< 480 kg/m ³

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	7.0 mm	2.2 mm (long term)	3.3
Live load - $\Psi_S Q$	8.4 mm	0.6 mm	13.1
Wind load - W_s	10.5 mm	1.9 mm	5.4
Snow load - S_s	7.0 mm	1.3 mm	5.3

* Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1 ¹	Limit States Design Reaction ^{2,3} End kN ⁴
0.35G	0.60	-4.6
0.20G + 1.5Q	0.80	-7.3
0.20G + $S_u + \Psi_c Q$	0.80	-9.5
0.20G + $W_u + \Psi_c Q$	1.00	-10.2
0.90G + W_u	1.00	6.6

8) Installation requirements

- Provide at least 30 mm bearing at end supports
- Vertical lamination required - refer AS 1684

Member 2

1) Member code and description

L1 - Lintels - In single or upper storey load bearing walls

2) Date prepared

05 December 2022

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span	1.2 m
Roof load width 'RLW'	6.4 m
Roof type and mass	Light roof and ceiling - 40 kg/m ²
Nominal wall thickness	90 mm

Roof snow load 0.6 kPa, snow overhang 0.1 kN/m ($\mu_i=0.7$, $C_e=1.0$, $k=0.5$)

5) Member specification

Size, stress grade/product Use 150 x 90 hy90
Material type Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	4.0 mm	0.9 mm (long term)	4.5
Live load - $\Psi_S Q$	4.8 mm	0.3 mm	17.4
Wind load - W_s	6.0 mm	0.8 mm	7.2
Snow load - S_s	4.0 mm	0.6 mm	7.0

*Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7) Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3} End kN ⁴
1.35 G	0.60	-3.4
1.20 + 1.5Q	0.80	-5.4
1.20 + $S_u + \Psi_c Q$	0.80	-7.1
1.20 + $W_u + \Psi_c Q$	1.00	-7.6
0.90 + W_u	1.00	5.0

8) Installation requirements

Provide at least 30 mm bearing at end supports

Member 3

1) Member code and description

L2 - Lintels - In single or upper storey load bearing walls

2) Date prepared

05 December 2022

3) Serviceability criteria

AS 1720.1: 2010 and AS 1720.3: 2016

4) Design inputs

Span 2.1 m
Roof load width 'RLW' 6.4 m
Roof type and mass Light roof and ceiling - 40 kg/m²
Nominal wall thickness 90 mm
Roof snow load 0.6 kPa, snow overhang 0.1 kN/m ($\mu_i=0.7$, $C_e=1.0$, $k=0.5$)

5) Member specification

Size, stress grade/product Use 200 x 90 hy90
Material type Structural Laminated Veneer Lumber to AS/NZS 4357

6) Serviceability

Load case	Limit ³ on average deflection ²	Estimated average deflection ²	Rigidity ratio ⁴
Long term load - $G + \Psi_L Q^*$	7.0 mm	2.2 mm (long term)	3.2

DC - Approved Building Consent Document - BG 21699A2 - Pg 6 of 8 - 06 Dec 22 - zhangt

Live load - $\Psi_s Q$	8.4 mm	0.6 mm	13.0
Wind load - W_s	10.5 mm	2.0 mm	5.4
Snow load - S_s	7.0 mm	1.3 mm	5.2

* Critical serviceability load case

See 'Notes for interpretation of serviceability data' at the end of this report

7 Reactions

Load case	k_1^1	Limit States Design Reaction ^{2,3}
		End kN ⁴
1.35G	0.60	-4.9
1.20G + 1.5Q	0.80	-7.6
1.20G + S_u + $\Psi_c Q$	0.80	-10.0
1.20G + W_u + $\Psi_c Q$	1.00	-10.8
0.90G + W_u	1.00	6.9

8 Installation requirements

Provide at least 30 mm bearing at end supports

Notes for interpretation of serviceability data

1 'Average deflection' is an engineering concept based upon a notional estimated load, notional member rigidity and, in some cases, an approximate model of material response to environmental conditions. These parameters are, 'standardised' in AS 1170 and AS 1720.

2 Deflection is the flexural response to load 'out-of-level' measurements of installations are not necessarily deflections and can incorporate 'initial out-of-straightness', whether intended or not. Furthermore, loads can be higher/lower than the notional estimate and in any comparison with measured levels, material variability needs to also be considered. AS 1720 gives the following basis for estimation of upper bound deflections for various materials.

No 1 Framing – visually graded to NZS 3631	Average + 100%
SG grades – mechanically graded to AS/NZS 1748	Average + 43%
GL grades for glulam to AS 1328	Average + 33%
LVL to AS/NZS 4357 (includes hySPAN and hyJOIST)	Average + 18%

As can be seen, comparison of the 'average deflection' for different materials, even if calculated on the same basis, does not give the whole picture!

3 The limits referred are those specified in AS 1720.3 for the stated load case.

4 'Rigidity ratio' expresses the rigidity of the specified beam relative to the rigidity of a notional beam just meeting the serviceability requirements detailed.

Notes for interpretation of reaction data

1 Duration of load factor ' k_1 ' for strength as per NZS 3603:1993

2 Negative (-) reactions relate to the 'gravity' or 'downwards' force on the support

3 Positive reactions relate to the 'upwards' forces or 'tie-down' requirement on the support

4 End reaction includes allowance for overhang/cantilever where one has been designed