Approved Building Consent Documents

Please Note: A copy of the stamped approved documents must be available on site for all inspections.

Inspection booking timeframes

Call received	before 3pm inspection will be done	after 3pm inspection will be done
Monday	Wednesday	Thursday
Tuesday	Thursday	Friday
Wednesday	Friday	Monday
Thursday	Monday	Tuesday
Friday	Tuesday	Wednesday

Building inspections and enquiries phone: 03 347 2839

Please ensure all work for inspection is ready the day before. Incomplete work requiring re-inspection will incur an additional inspection fee.

Layout ID	Layout Name
dwg 01	Site Plan
dwg 02	Floor Plan
dwg 03	Elevations
dwg 04	Foundation Plan
dwg 05	Wall Setout Plan
dwg 06	Door/Window Schedule
dwg 07	Roof Plan
dwg 08	Bracing Plan
dwg 09	Bracing Documentation
dwg 10	Drainage Plan
dwg 11	Drainage Notes
dwg 12	Cross Sections and Notes
dwg 13	Details Ribraft/Floor
dwg 14	Details Linea Weatherboard
dwg 15	Details Linea Weatherboard
dwg 16	Details Brick
dwg 17	Details Roofing
dwg 18	Details Roofing
dwg 19	Wet Area Details
dwg 20	Wet Area Details
dwg 21	Wet Area Details
dwg 22	Wet Area Details
dwg 23	Hot Water Supply
dwg 24	Landscaping Plan

ecad
Design & Draughting
85 Lombard Street, PO Box 652, Palmerston North
P: 06 353 0217 E: office@emerge-arch.co.nz

Proposed New Residence

GH CHRISTCHURCH SOUTH LTD

Lot 27 - DP S/D of Lot 1000 DP 559349

64 Brook Street, Bellfield
Southbridge

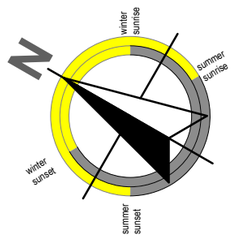
generation HOMES
19 Holmes Hanover Lane, Halswell. P.O. Box 37163, Halswell, Christchurch
E: evanb@generation.co.nz E: nadjab@generation.co.nz
M: 021 840 088 M: 021 216 2198

Job no: EC877

ADNZ Architectural Designers New Zealand
Licensed Building Practitioner www.dbh.govt.nz Building Confidence
New Zealand Certified Builders Association NZCB

Planning Approved

18/07/2022 bigsbr



SPECIFIC PROJECT NOTES

LEGAL DESCRIPTION:	
LOT	27
DP	S/D of Lot 1000 DP 559349
SITE AREA	677.00 sqm
STREET #	64 Brook Street
AREAS:	
SITE AREA	677.00 sqm
AREA OVER CLADDING	152.55 sq m
AREA OVER FRAMING	144.30 sq m
SITE COVERAGE ACHIEVED	22.53 %
SITE COVERAGE ALLOWABLE	40.0 %
ZONES:	
WIND	A (High)
EARTHQUAKE	2
CORROSION	C
SNOW LOADING	N4
ENVIRONMENTAL ZONE	Living 1
GROUND CATEGORY	TC2

NZBC F5 - CONSTRUCTION AND DEMOLITION HAZARD COMPLIANCE
Acceptable Solution F5/AS1 states no site barrier requirement for domestic dwellings up to 2 storeys above ground unless specific hazards exist.

GENERATION HOMES SITE SAFETY MANAGEMENT
All Generation Homes construction sites will provide a 2.0m high galvanised security chainlink netting fencing with maximum grid size of 50 x 50mm with posts at 2m spacings to all open unfenced boundary lines, including existing fencing under 1.8m high, to restrict pedestrian access and unauthorised entry by children. A securable chainlink gate will be present for access of contractors, vehicles and staff ONLY. It is expected that Generation Homes construction sites will be in close proximity to other demolition and construction sites with similar security standards or to neighbouring properties. It is also expected that the site be kept clean of rubbish and minimal damage done to the existing ground to form any ponding areas. Where ponding takes place; water run-off and absorption into the earthworks/ground would be planned by building up the site as required.

CONSTRUCTION & DEMOLITIONS NOTE:
All construction hazards shall be managed by the main contractor "GH CHRISTCHURCH SOUTH LTD" with their Site safety System "CSM". (Complete Safety Management) This approved system consists of Site Safety Induction, Hazard Identification, Task Analysis then moves on to Isolate, Eliminate or Minimise *it* solutions. This management system is administered and audited independently from the maincontractor. There are no demolition works within this project.

Stabilised construction entranceway
A stabilised construction entranceway should be built using crushed rock aggregate before construction vehicles enter the site to prevent tracking of dirt onto the road and into the stormwater network. Minimum 3m wide and 100mm deep.

EROSION & SEDIMENT CONTROL:
Ensure Sediment control onsite by way of restricting run off of soil from building site. Ensure stockpiling of soil away from site falls or street and if needed block flow of sediment movement by sandbagging or similar action.

Install private stormwater reticulation
Install private stormwater reticulation to enable clean stormwater to be discharged to the council stormwater network or soak holes.

Temporary downpipes and surface drains
Temporary downpipes should be fitted as soon as the roof is installed and directed to the clean water system to further reduce nuisance.

VEHICLE CROSSING UPDATE	18/07/2022
BUILDING CONSENT ISSUE	31/05/2022

Site Plan

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE JUL' 22	*SCALES:* 1:100	EC877 - dwg 01

BUILDING SPECIFICATION

WALL FRAMING:
All wall framing = 2.462m/2.605m/2.750m
All ceiling heights = 2.410m/2.550m/2.705m
Construction Drawings to specify stud size, spacing & treatment to comply with NZS3604.

WALL CLADDINGS:
Primary Cladding:
selected 70mm Brick over 60mm cavity
Feature Cladding:
James Hardie Linea weatherboard fixed to framing over 20mm cavity
Buildings Pre-Cladding:
7.5mm James Hardies HomeRAB board continuous around building envelope

ROOFING:
Metrotile Shake pressed metal tile roofing with satin finish over 50 x 40 SG8 battens at c/c to suit tile profile

SPOUTING/FACIA:
Continuous colorsteel spouting / fascia system

JOINERY & GLAZING:
Double glazed aluminium framed windows and exterior doors as scheduled with selected powdercoated finish .
All glazing to be in accordance with NZS 4223 parts 3 & 4. Refer to Door and Window schedule for Obscure glazing and single glazed units

INTERIOR DOOR HEIGHTS:
All doors throughout shall be standard 2.0m doorways, or otherwise Selected doors as noted on plans as OH shall be 2.2m overheight doors.

SERVICES NOTES

SMOKE ALARMS:
Electrical contractors are to ensure working smoke alarms are fitted within min 3.0m of any sleeping space

DOWNLIGHTS:
All downlights are to comply with Electrical Safety Regulations 2010 - CA80, CA135, IC or C-F models only.
Insulation clearances to downlights are to comply with Pink Batts' recommendations.

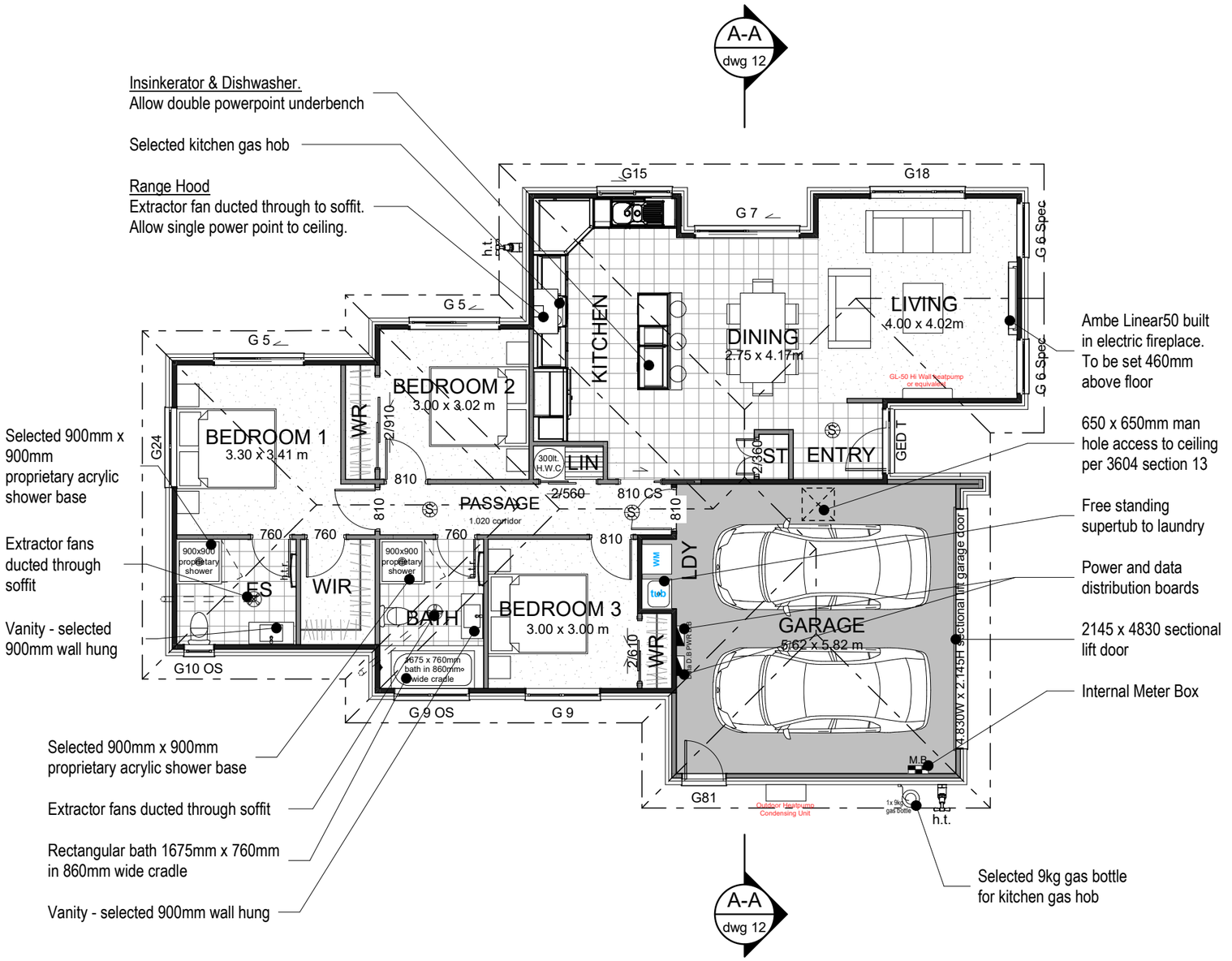
KITCHEN ISLAND:
Provide double outlet under bench for dishwasher and wastemaster along with a single outlet in ceiling for rangehood.

ELECTRICAL FIT-OUT:
Refer to GH Electrical specification for standards allowance of powerpoints, lights & switches, etc

CONSTRUCTION:
Ensure any Meter box or Distribution board penetrations of linings/ claddings are kept clear of bracing elements.
Ensure also bottom plate penetrations for these services entry do not occur within bracing element locations.
Ensure bracing elements are kept min 40mm clear of garage door openings to allow fitting of aluminium jamb extrusions.

NZBC G10 &G11:
All provisions of all piped services inclusive of gas shall be installed so as to meet the performance standards as required in G10.2 and G11.2

Gas installation & materials to comply with NZS5601.1:2013



FLOOR PLAN LEGEND

- Wall Framing w/ R2.6 Pink Batts insulation: 90 x 45 SG8 H1.2 treated wall framing, - Studs at 600 c/c, 2 rows of dwangs, with doubled SG8 top plate & LVL bottom plate
- Wall Framing w/ NO insulation: 90 x 45 SG8 H1.2 treated wall framing, - Studs at 600 c/c, 2 rows of dwangs, with doubled SG8 top plate & LVL bottom plate
- Carpet flooring — Type as per client selection
- Neptune flooring — Type as per client selection
- Tile flooring — Type as per client selection
- Garage flooring — Type as per client selection
- M.B — Internal Meter Board
- PWR D.B — Power Distribution Board
- Data D.B — Data Distribution Board
- Smoke alarm
- h.t.r. — Heated towel rail
- h.t. — Exterior hose tap
- Outdoor Heatpump Condensing Unit — Air Conditioning Outdoor Condensing unit
- Indoor Heatpump Unit — Air Conditioning Indoor Air handling Unit
- Ceiling extractor fan
- 1x 9kg gas bottle — 1 / 9kg LPG gas bottle
- Gas Water heater — Continuous gas water heater

ELEVATIONS REFERENCE

FLOOR AREAS
Area over Cladding - 152.55 sq m
Area over Framing - 144.30 sq m

BUILDING CONSENT ISSUE 31/05/2022

Floor Plan

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

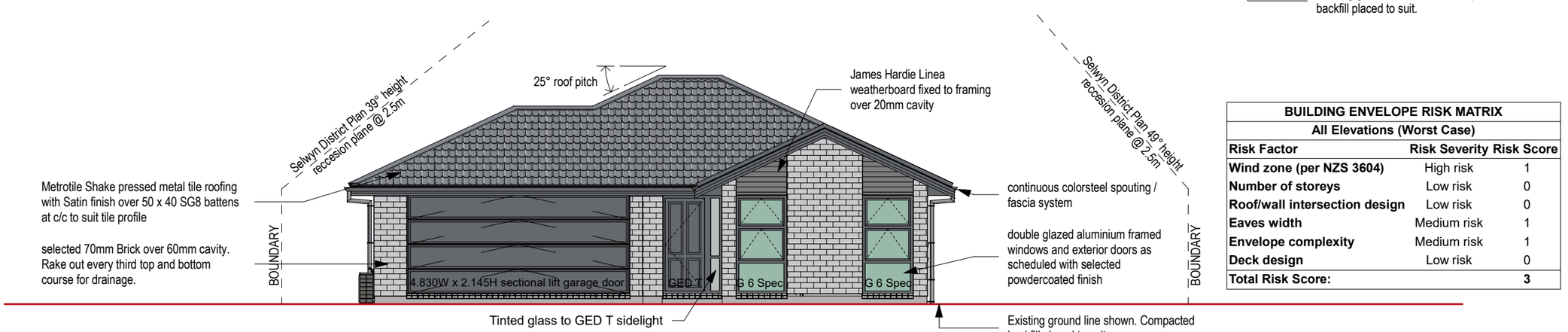
DATE MAY' 22	SCALES: 1:100	EC877 - dwg 02

Elevation 1

scale 1:100

Elevation 2

scale 1:100



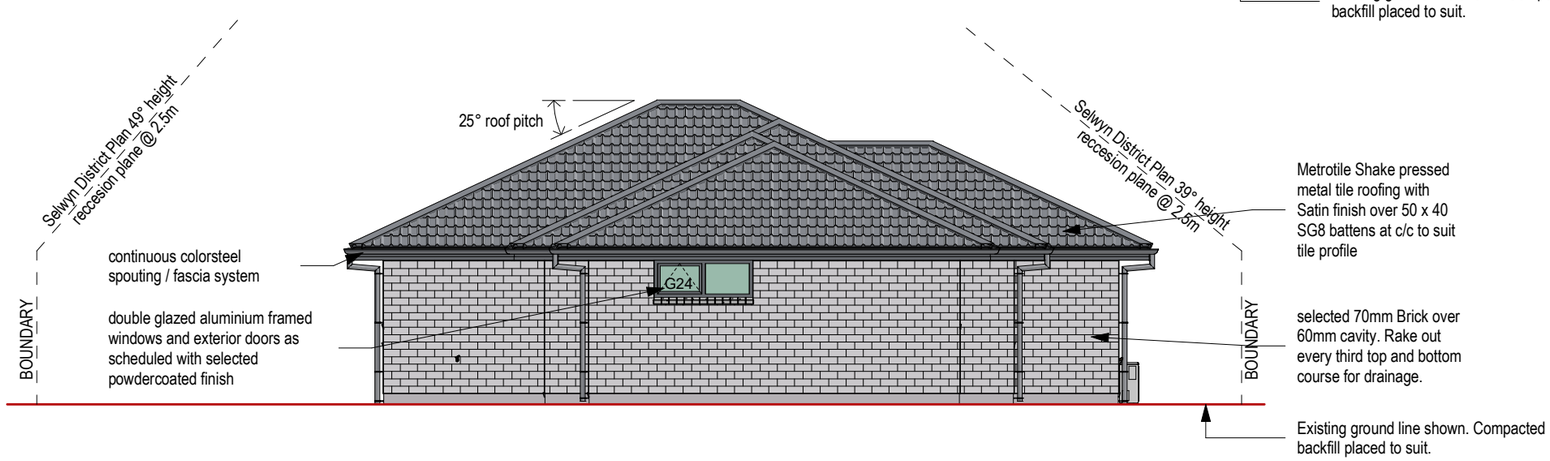
BUILDING ENVELOPE RISK MATRIX		
All Elevations (Worst Case)		
Risk Factor	**Risk Severity**	**Risk Score**
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low risk	0
Eaves width	Medium risk	1
Envelope complexity	Medium risk	1
Deck design	Low risk	0
Total Risk Score:		**3**

Elevation 3

scale 1:100

Elevation 4

scale 1:100



BUILDING CONSENT ISSUE 31/05/2022

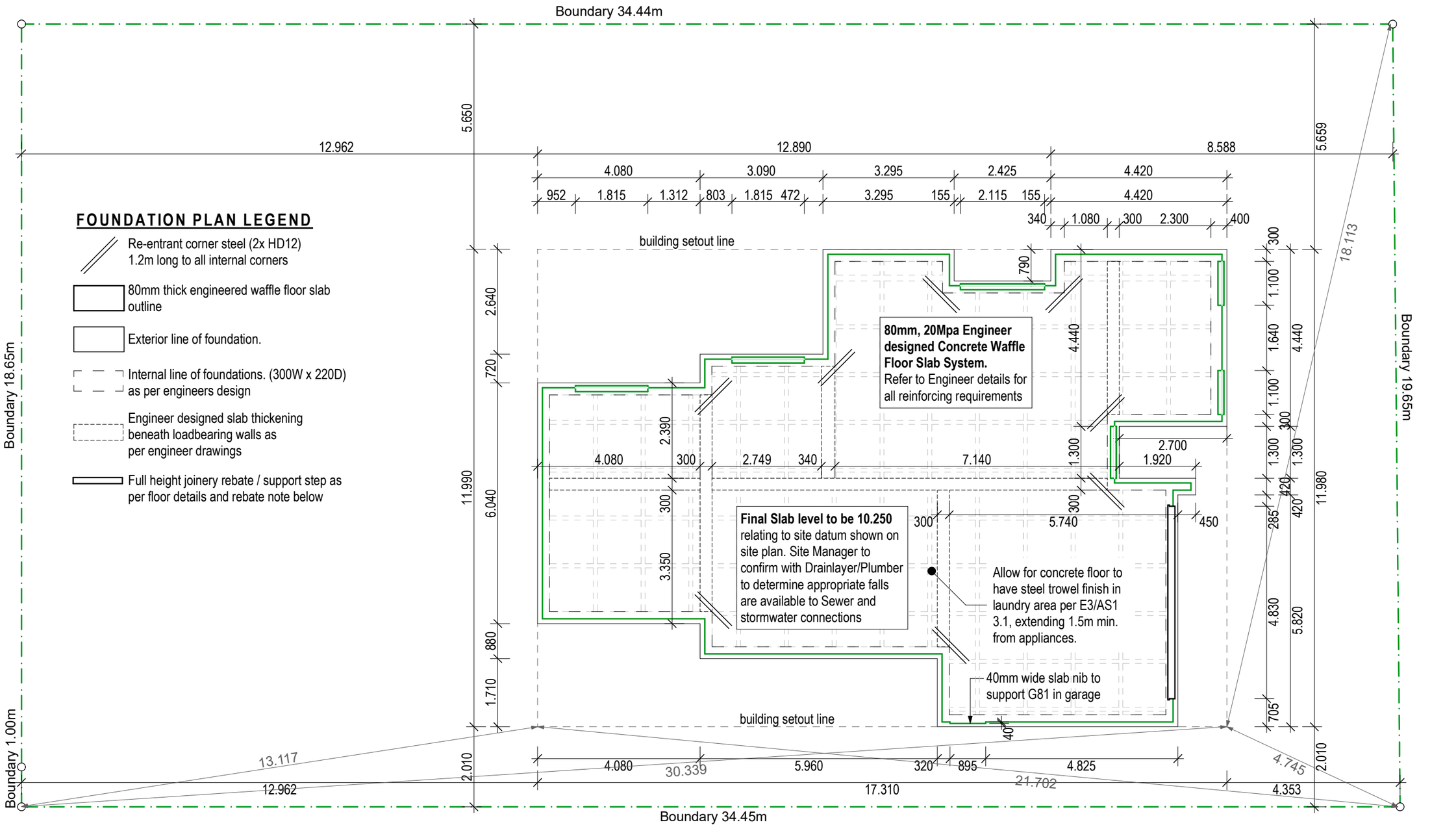
Elevations

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE **MAY' 22** | *SCALES:* **1:100** | **EC877 - dwg 03**



FOUNDATION PLAN LEGEND

- Re-entrant corner steel (2x HD12) 1.2m long to all internal corners
- 80mm thick engineered waffle floor slab outline
- Exterior line of foundation.
- Internal line of foundations. (300W x 220D) as per engineers design
- Engineer designed slab thickening beneath loadbearing walls as per engineer drawings
- Full height joinery rebate / support step as per floor details and rebate note below

80mm, 20Mpa Engineer designed Concrete Waffle Floor Slab System.
Refer to Engineer details for all reinforcing requirements

Final Slab level to be 10.250
relating to site datum shown on site plan. Site Manager to confirm with Drainlayer/Plumber to determine appropriate falls are available to Sewer and stormwater connections

Allow for concrete floor to have steel trowel finish in laundry area per E3/AS1 3.1, extending 1.5m min. from appliances.

40mm wide slab nib to support G81 in garage

GENERAL NOTE FOR BRICK:
Opening dimensions always referenced to outer edge of Foundation line. Allow 120mm Rebate to Framing Line. Brick Rebate depth shall be 50mm

ENGINEERS WAFFLE SLAB DESIGN
Plans to be read in conjunction with engineer design drawings, specification and calculations. As/if required, refer to geotechnical report for site preparation details, bearing depth & capacities.

See engineers drawings for set out of internal footings for positioning under loadbearing walls

PIPE PENETRATIONS TO SLAB
To protect from lateral movement, all pipes penetrating vertically into the slab shall be sleeved/ wrapped in 25mm min thick compressible material

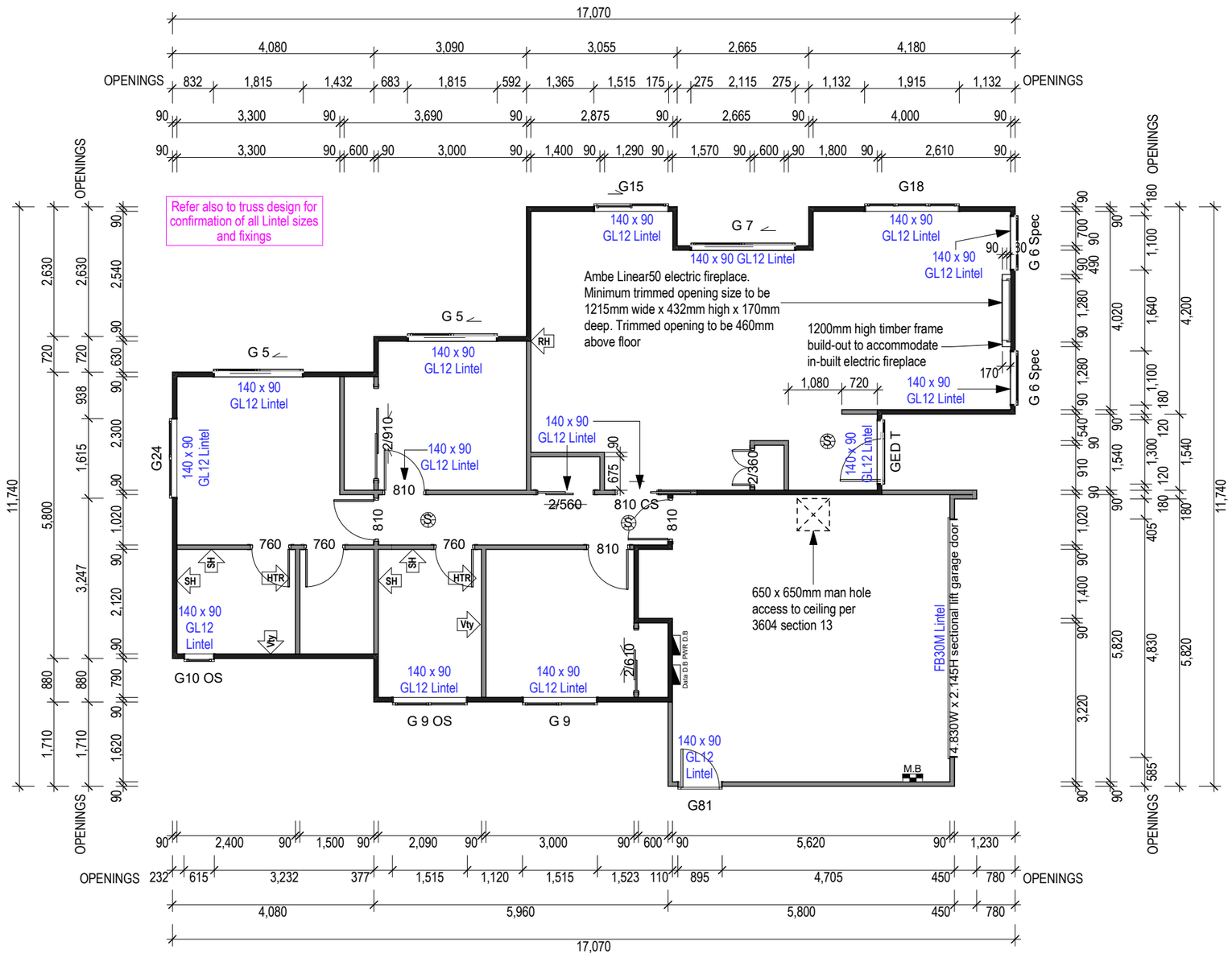
IMPORTANT
Any and All discrepancies or additional dimensions required, shall be provided and verified by designer

SETOUT VERIFICATION
The Waffle Floor and Foundation contractor and site manager is to verify all setout and site location dimensions prior t ofinalising formwork and concrete pouring. Verification of all slab edges, cladding rebates and all door sill rebates shall occur against Wall Setout Plan - DWG 05.

DOOR/WINDOW REBATE NOTE - BRICK CLADDING:
Where brick cladding is present to full height windows/doors, the foundation rebate is to be 150mm Wide x 15mm deep to all joinery, except where noted 190mm W x 15mm D specifically for stacker sliding doors. Rebates are to be constructed as per Floor Details - DWG 14.

BUILDING CONSENT ISSUE 31/05/2022

Foundation Plan		
Jagmeet & Mandeep Brar		
Lot 27 Bellfield, Southbridge		
GH CHRISTCHURCH SOUTH LTD		
DATE **MAY' 22**	*SCALES:* **1:100**	**EC877 - dwg 04**



WALL SETOUT LEGEND

90 x 45 SG8 H1.2 treated wall framing w/ R2.6 Pink Batts insulation:
- Studs at 600 c/c, 2 rows of dwangs, with doubled SG8 top plate & LVL bottom plate

90 x 45 SG8 H1.2 treated wall framing, w/ NO insulation:
- Studs at 600 c/c, 2 rows of dwangs, with doubled SG8 top plate & LVL bottom plate

1200mm high, 90 x 45 SG8 H1.2 treated wall framing for fireplace build-out, w/ NO insulation

2.462m wall height
2.415m Ceiling height

SH RH Vty HTR

FIXTURES BLOCKING
Allow to place extra nogs 800mm above floor for vanity fixing at all vanity / handbasin locations. Allow also to provide nogging as required for **shower enclosure** fixing, **heated towel rails, Range hoods, Dryers** where indicated

All framing & lintels to be SG8 unless noted. Refer to Truss Designers plans for Lintel & Beam sizes, hold-downs and fixing requirements

TOP PLATE CONSTRUCTION:
Exterior Wall: 90 x 45 SG8 H1.2 top plate with: 140 x 35 ribbon board over
Interior Wall: 90 x 45 SG8 H1.2 top plate with: 190 x 35 ribbon board over

BOTTOM PLATE CONSTRUCTION:
All bottom plates shall be LVL grade timber
Fixing of Bottom Plates:
Bottom plates of walls shall be fixed to slab-on-ground floors by proprietary post fixed anchors in accordance with 7.5.12.2. Durability of all anchors shall be in accordance with table 4.1, "all zones, "all other structural fixings", a "closed" environment. (mild-steel, uncoated and non-galv.)
For external walls:
Use Tru-bolt proprietary anchors at 900 c/c.
Proprietary anchors providing end fixings of bracing elements shall be within 150mm of each end of the bottom plate and be spaced at a maximum of 900mm centres, As required by Bracing Elements or Lintel Hold-downs
As per requirements of NZS3604 clause 7.5.12
For internal walls:
Use fixing as required by NZS3604 clause 7.5.12.4, or: - 75 x 3.8mm shot-fired fasteners with 16mm discs, 150mm and 300mm from each end of the bracing element and at 600mm thereafter. OR,
- Ramset Tru-bolt proprietary anchors
As required by Bracing Elements or Lintel Hold-downs

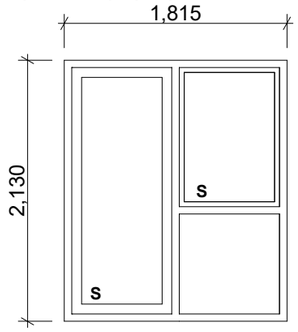
Interior Door Heights:
All interior lintel heights to suit 1980mm door leaf and timber door frames

Truss Location Note:
Ensure trusses are positioned to avoid range hood flue location and bathroom/Ensuite walls where "T.Vs" (terminal vents) need to pass through top plates (refer to drainage plan). Nogging required at 1.750 for range hood mounting C.O.S with supplier

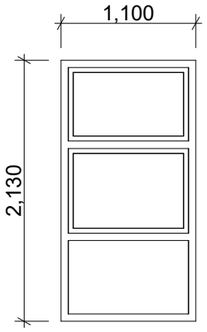
CHECK ALL DIMENSIONS ON SITE PRIOR TO MANUFACTURE. ANY DISCREPANCIES TO BE VERIFIED BY DESIGNER

BUILDING CONSENT ISSUE 31/05/2022

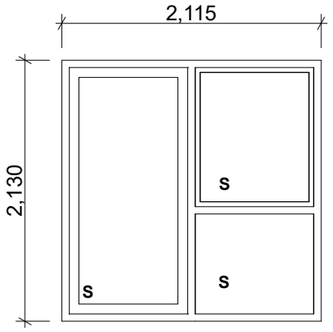
Wall Setout Plan		
Jagmeet & Mandeep Brar		
Lot 27 Bellfield, Southbridge		
GH CHRISTCHURCH SOUTH LTD		
DATE **MAY' 22**	*SCALES:* **1:100**	**EC877 - dwg 05**



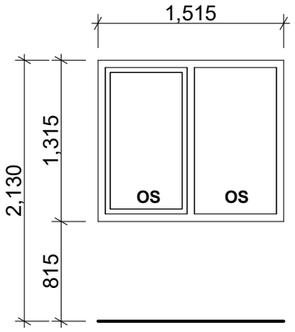
G 5x2



G 6 Specx2

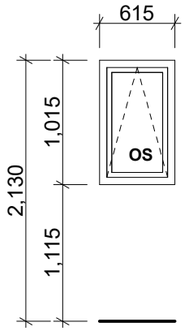


G 7

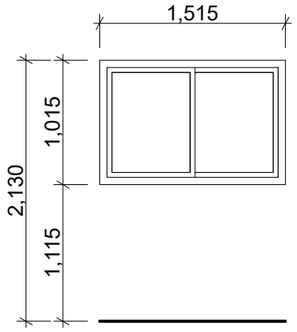


G 9, G 9 OS

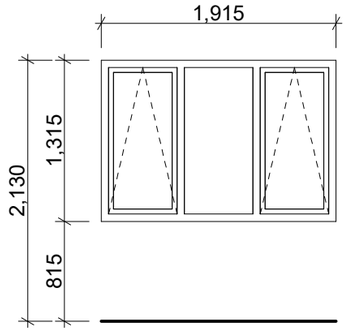
OS to G9 OS only



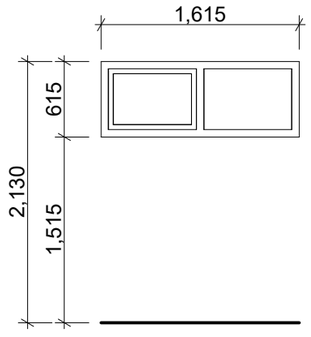
G10 OS



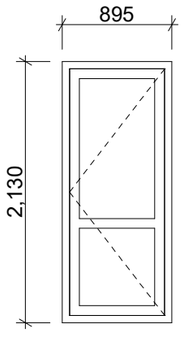
G15



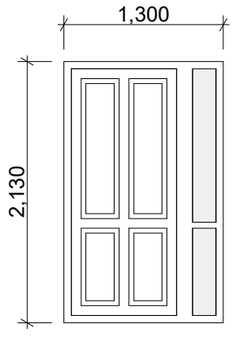
G18



G24



G81



GED T

Tint to sidelight glazing in GED T

DOOR & WINDOW NOTES:

NOTES:
Joinery to be Fairview Architectural Linear Suite (AL35)
All Glazing excluding garage to be Double Glazed
All joinery powder coated aluminium
All glazing to NZS 4223 part 1: 2008 and part 3:2016
All glazing to bathroom / WC to be selected obscure
All Jambs clear finger jointed 18mm pine
O - denotes window as drawn with obscure glass
S - denotes window as drawn with safety glass
DIMENSIONS SHOWN ARE TRIM SIZE

NOTE:
FULL HEIGHT WINDOWS/DOORS TO BE INSTALLED IN 15mm DEEP SILL REBATE IN FLOOR SLAB, EXCEPT FOR JOINERY LOCATED IN THE GARAGE AS NOTED ON FOUNDATION PLAN

CONFIRM ALL SIZES ON SITE PRIOR TO MANUFACTURE

PLEASE NOTE: ALL MEASUREMENTS REFER TO THE TIMBER FRAME TRIMMED OPENING SIZE

GROUND FLOOR VENTILATION

Room name	Floor Area	Openable area	% ratio	Complies
Bedroom 1	11.25	2.91	26%	NZBC G4/AS1
Bedroom 2	9.06	2.57	28%	NZBC G4/AS1
Bedroom 3	9	0.79	9%	NZBC G4/AS1
Bath	6.27	0.79	13%	NZBC G4/AS1
Ensuite	5.08	0.44	9%	NZBC G4/AS1
Kitchen/Dining/Living	43.84	7.88	18%	NZBC G4/AS1
note floor to *openable* window ratio of no less than 5% NZBC G4 AS1 Natural ventilation				

GROUND FLOOR NATURAL LIGHT

Room name	Floor Area	Glazed area	% ratio	Complies
Bedroom 1	11.25	3.27	29%	NZBC G7/AS1
Bedroom 2	9.06	2.65	29%	NZBC G7/AS1
Bedroom 3	9	1.45	16%	NZBC G7/AS1
Bath	6.27	1.45	23%	NZBC G7/AS1
Ensuite*	5.08	0.33	6%	NZBC G7/AS1
Kitchen/Dining/Living	43.84	9.31	21%	NZBC G7/AS1
note floor to *glazed* window ratio of no less than 10% NZBC G7 AS1 Natural Light				
note * denotes room to have artificial light to provide a minimum illuminance of 20 lux				

NZBC H1/AS1 COMPLIANCE - SCHEDULE METHOD				SCHEDULE METHOD NZS4218 "NON SOLID CONSTRUCTION"			
WALL FACE	WALL AREA	GLAZING AREA	% GLAZING		NZS4218 R-Values	R Values Provided	Compliance
	m^2	m^2	%				
Elevation 4 (North)	25.33	0.98	3.87%	Roof	R 3.3	R3.6	NZBC H1/AS1
Elevation 2 (South)	25.33	9.21	36.36%	Wall	R 2.0	R 2.6	NZBC H1/AS1
Elevation 3 (East)	42.67	16.41	38.46%	Floor	R 1.3	R 2.41	NZBC H1/AS1
Elevation 1 (West)	42.67	4.59	10.76%	Glazing	R 0.26	R 0.26	NZBC H1/AS1
TOTALS	**110.67**	**30.21**	27.30%	Skylights	R 0.31	R 0.31	NZBC H1/AS1

Note: - Total glazing areas for East, West and South facing walls are demonstrated above to be < 30 % allowing the use of the "Schedule Method" under H1/AS1 as means of compliance. Northern wall values shown above are for reference only and are not considered in the formula as is allowed in this method. Garage walls,glazing and openings are excluded from the formula

BUILDING CONSENT ISSUE 31/05/2022

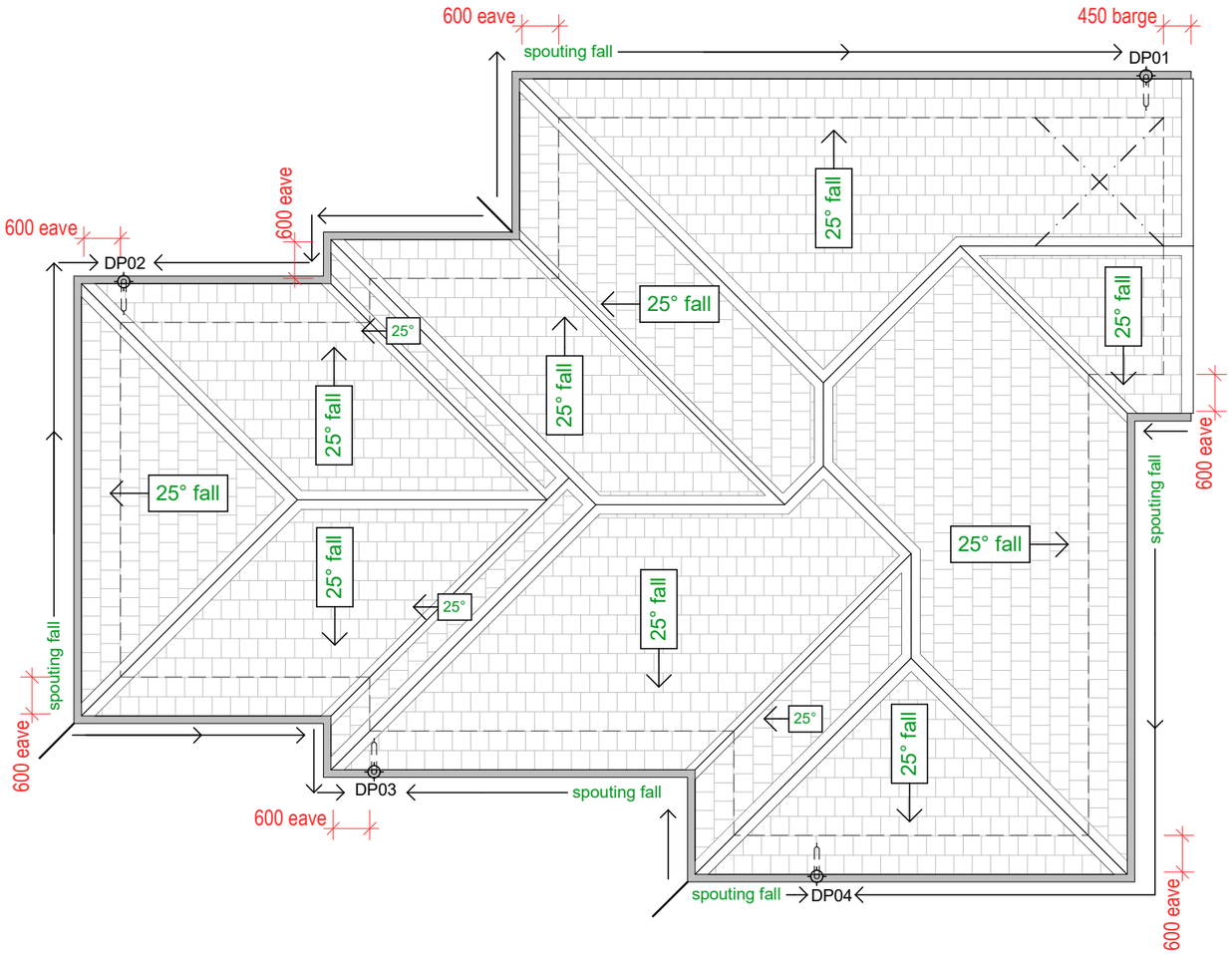
Door/Window Schedule

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE **MAY' 22** | *SCALES:* **1:50, 1:100** | **EC877 - dwg 06**



LEGEND - ROOF PLAN

Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile

Standard tile flashings to roof as indicated, as per standard/architectural details

continuous colorsteel spouting / fascia system
with direction of 1:100 fall shown
ensure selected colorsteel spouting has minimum cross sectional area for compliance with NZBC E1/AS1

Diagonal galv. Steel roof strap brace - 1 per 50m² of roof

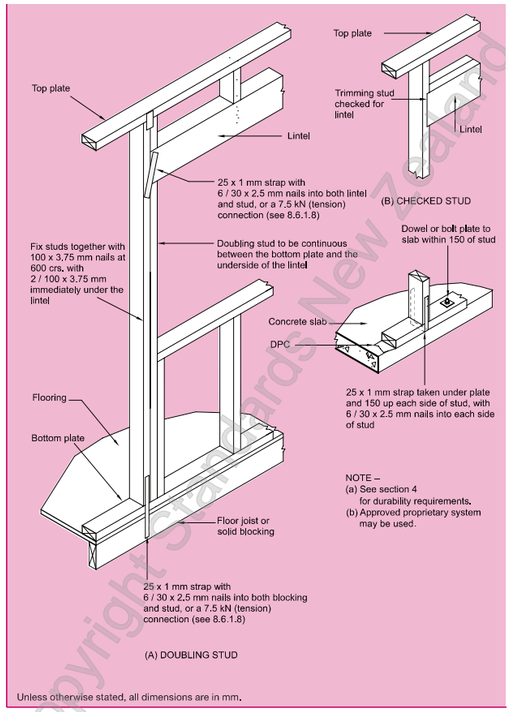


Figure 8.12 – Lintel fixing to prevent uplift (see 8.6.1.8 and table 8.14 (a) and (b))

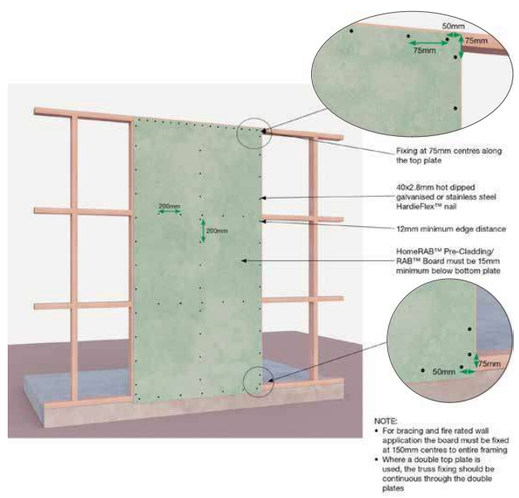
DOWNPIPE WATER DISCHARGE SCHEDULE

determined by NZBC E1/AS1 section 4.0 downpipes - table 5

DP Name	roof area serviced by DP in plan	average roof angle	intended DP size for use (min. internal dia)	max. allowable roof area by DP size	gains compliance
DP01	43.49m²	25-35°	74mm	70 m²	E1/AS1
DP02	42.60m²	25-35°	74mm	70 m²	E1/AS1
DP03	49.12m²	25-35°	74mm	70 m²	E1/AS1
DP04	48.57m²	25-35°	74mm	70 m²	E1/AS1

Cross sectional calculation of Continuous Colorsteel Spouting
- Quarter Round Spouting (6300mm²):
Flow Capacity= 49.12m² (Roof Area) x 0.83 (flow load factor)= 40.77 l/min
Minimum Gutter Area in m² = (40.77 (FC) / 0.0016)$^{0.8}$ = 3349.47mm²

Figure 16: Stud to top plate connection



Roof Bracing Options

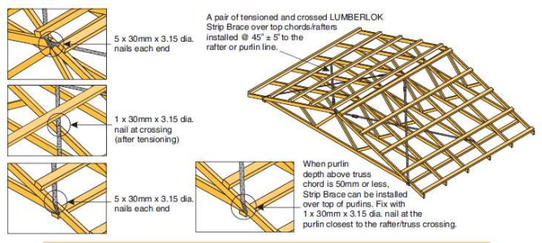
i) ROOF PLANE BRACE

LUMBERLOK®

Each roof plane brace can be:
- A hip or valley rafter running continuously from ridge to the top plate in accordance with NZS 3604:2011 Clauses 10.2.1.3.2 or 10.2.1.3.3

OR

- A pair of tensioned and crossed LUMBERLOK Strip Brace running continuously from ridge to top plate installed as detailed below.



FLASHING COVER DIMENSIONS

Wind Zone:	High
Roof Pitch:	25°
Situation type:	2
Roofing type:	Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile
Ridge:	
Transverse over roofing:	200 mm
Barge:	
Parallel over Roofing:	2 crests, finish in next trough
Overlap to barge board:	50 mm
Apron:	
Parallel over roofing:	2 crests, finish in next trough
Transverse over roofing:	200 mm
Upstand:	110mm

Tile Batten Fixing

SG8 50x40mm H1.2 purlins at 370mm crs. (max. span 900mm) fixed with 2/90 x 3.15 gun nails. Ensure purlins end span (bottom and top purlins) at 600mm and intermediate span at 900mm crs.

Gable Verge Construction

90 x 45 SG8 H1.2 outriggers on their edge @ 600mm c/c, backspanning to next truss. Fix to top cord of gable end truss and next truss using min. 2/90 x 3/15mm nails. With blocking at 900c/c to support purlins.

NZS 3604:2011 - Section 10 - Roof Framing
Table 10.18 Nailing schedule for power-driven nails

* Outrigger to rafter with 3 / 90 x 3.15 (end nailed).
* Flying rafter to outrigger with 3 / 90 x 3.15.
* Outrigger blocking to top plate with 4 / 90 x 3.15 (skewed).
* Blocking between rafters, joists or truss chords 90 x 45mm with 2 / 90 x 3.15 (end nailed).

BUILDING CONSENT ISSUE 31/05/2022

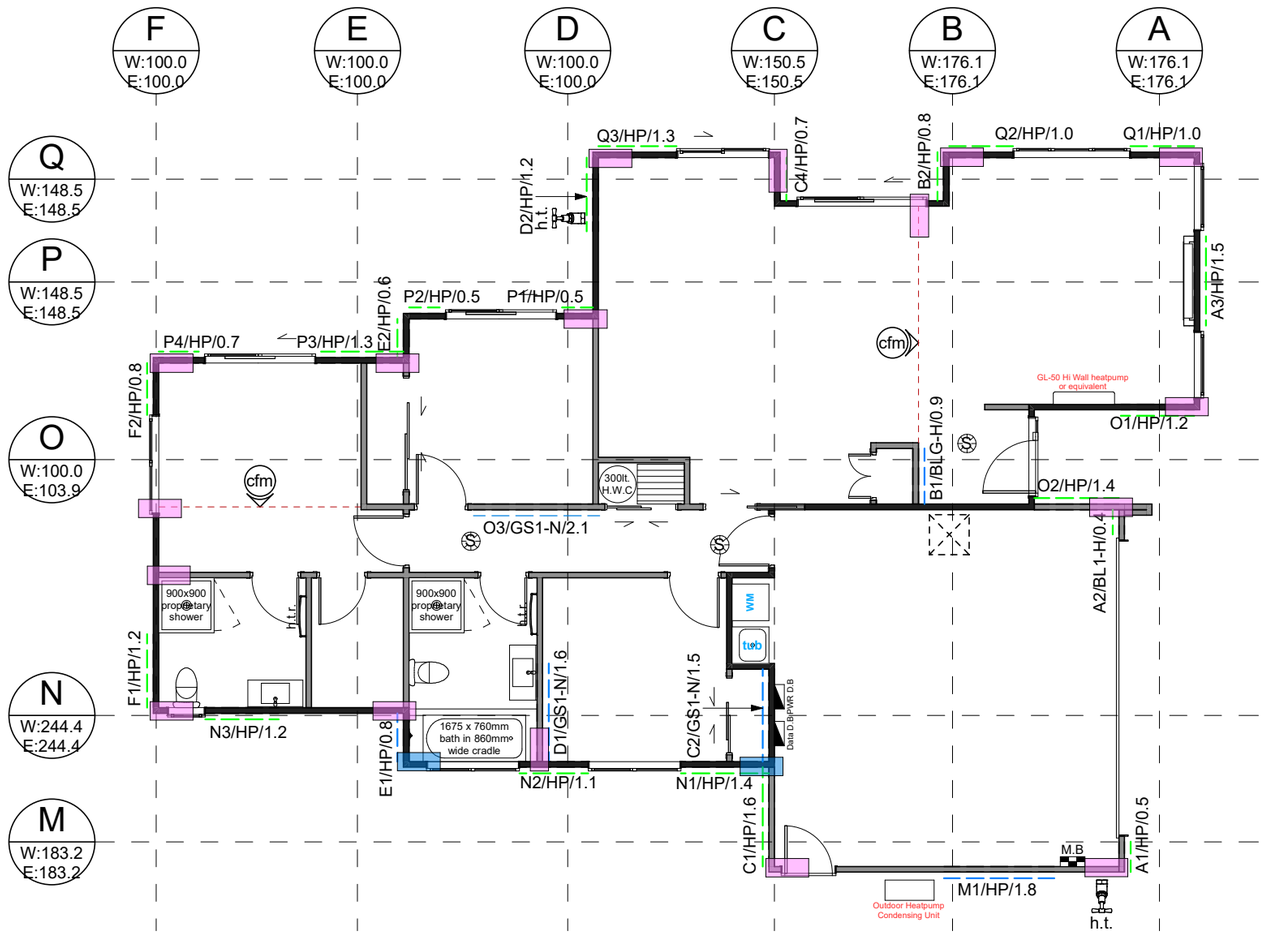
Roof Plan

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE **MAY' 22** | SCALES: **1:100** | **EC877 - dwg 07**



LEGEND - BRACING PLAN

cfm — Connecting Framing Members (CFM)
- to provide continuous connection at top plate level allowing transfer of bracing capacity in tension and compression to exterior walls as required by NZS3604 8.7.3.4 (see adjacent tables and figures).
- Connections are shown only where connecting members meet exterior walls, other connections along the continuous line of connection shall be of the same kN capacity

6kN to 6kN Fixing Top Plate Connection diagram (NZS3604 or Alternative Mitek option).
Orientation of coloured fill depicts orientation of fixing plate on top of Ribbon plate.
refer to next page for NZS3604 and Alternative connection details.

6kN to 12kN Fixing Top Plate Connection diagram (NZS3604 or Alternative Mitek option).
Orientation of coloured fill depicts orientation of fixing plate on top of Ribbon plate.
refer to next page for NZS3604 and Alternative connection details.

Bracing Plan Notes:
Top Plate connections and joints shall be constructed to comply with the requirements of NZS 3604 clauses 8.7.3.2 - 8.7.3.3 and 8.7.3.4 and Figures 8.14, 8.15 & 8.16. Alternative connections where required to comply with clause 8.7.3.4 are shown here.
- Ensure any meter box or distribution board penetrations of interior linings are kept clear of bracing elements.
- Ensure also bottom plate penetrations for services entry do not occur within bracing elements.
- Ensure also bracing elements are trimmed to openings to ensure clearance requirements of openings to allow fitting of tapes, fastenings and hold-downs.
- Refer to all specific product manufacturer specifications for fixing of hold-downs and sheet fixing requirements.

BRACING CALCULATIONS

Location of Storey	*Single*	Wind Zone	*High*
Room in Roof Space	*No*	Earthquake Zone	*2*
Building Width (BW)	*17.1m*	Soil Class	*E - Very Soft*
Building Length (BL)	*11.7m*		
Gross Floor Area (GFA)	*144.30m²*	W along	*55.0BU/m*
Floor Height to Apex	*5m*	W along x BW	*938.9BU*
Roof Height Above Eaves	*3m*	W across	*60.0BU/m*
Roof Pitch	*0 - 25°*	W across x BL	*704.4BU*
Roof Style	*Gable*		
Double Top Plate	*Yes*	EQ	*7.2BU/m²*
Floor Load	*2kPa*	EQ x GFA	*1,039.0BU*
Cladding Weights:			
- Subfloor	*Concrete Floor*		
- Wall	*Heavy*		
- Roof	*Light*		

TABLE: Default

Calculations based on *NZS3604:2011*

BRACING ALONG

Required Line	W BU	EQ BU	Provided Brace	Type	W BU/m	EQ BU/m	Length m	Height m	Angle	Achieved W BU	Achieved EQ BU
A	176.1	176.1	*A-1*	*HP*	*85.0*	*91.0*	*0.5*	*2.4*	-	*42.1*	*45.0*
			A-2	*BL1-H*	*90.0*	*100.0*	*0.4*	*2.4*	-	*36.5*	*40.5*
			A-3	*HP*	*133.0*	*104.0*	*1.5*	*2.4*	-	*194.2*	*151.8*
										272.7	237.4
B	176.1	176.1	*B-1*	*BLG-H*	*110.0*	*115.0*	*0.9*	*2.4*	-	*100.1*	*104.6*
			B-2	*HP*	*99.0*	*103.0*	*0.8*	*2.4*	-	*78.2*	*81.4*
										178.3	186.0
C	150.5	150.5	*C-1*	*HP*	*133.0*	*104.0*	*1.6*	*2.4*	-	*215.5*	*168.5*
			C-2	*GS1-N*	*70.0*	*60.0*	*1.5*	*2.4*	-	*105.7*	*90.6*
			C-4	*HP*	*99.0*	*103.0*	*0.7*	*2.4*	-	*69.3*	*72.1*
										390.5	331.2
D	100.0	100.0	*D-1*	*GS1-N*	*70.0*	*60.0*	*1.6*	*2.4*	-	*112.0*	*96.0*
			D-2	*HP*	*133.0*	*104.0*	*1.2*	*2.4*	-	*159.6*	*124.8*
										271.6	220.8
E	100.0	100.0	*E-1*	*HP*	*99.0*	*103.0*	*0.8*	*2.4*	-	*78.2*	*81.4*
			E-2	*HP*	*99.0*	*103.0*	*0.6*	*2.4*	-	*62.4*	*64.9*
										140.6	146.3
F	100.0	100.0	*F-1*	*HP*	*133.0*	*104.0*	*1.2*	*2.4*	-	*159.6*	*124.8*
			F-2	*HP*	*99.0*	*103.0*	*0.8*	*2.4*	-	*83.9*	*87.3*
										243.5	212.1
Total									**Achieved**	**1,497.2**	**1,333.7**
									Required	**938.9**	**1,039.0**

BRACING ACROSS

Required Line	W BU	EQ BU	Provided Brace	Type	W BU/m	EQ BU/m	Length m	Height m	Angle	Achieved W BU	Achieved EQ BU
M	183.2	183.2	*M-1*	*HP*	*133.0*	*104.0*	*1.8*	*2.4*	-	*239.4*	*187.2*
										239.4	187.2
N	244.4	244.4	*N-1*	*HP*	*133.0*	*104.0*	*1.4*	*2.4*	-	*190.5*	*149.0*
			N-2	*HP*	*99.0*	*103.0*	*1.1*	*2.4*	-	*110.9*	*115.4*
			N-3	*HP*	*133.0*	*104.0*	*1.2*	*2.4*	-	*159.6*	*124.8*
										461.0	389.1
O	100.0	103.9	*O-1*	*HP*	*133.0*	*104.0*	*1.2*	*2.4*	-	*159.6*	*124.8*
			O-2	*HP*	*133.0*	*104.0*	*1.4*	*2.4*	-	*183.5*	*143.5*
			O-3	*GS1-N*	*70.0*	*60.0*	*2.1*	*2.4*	-	*144.2*	*123.6*
										487.3	391.9
P	148.5	148.5	*P-1*	*HP*	*85.0*	*91.0*	*0.5*	*2.4*	-	*42.7*	*45.7*
			P-2	*HP*	*85.0*	*91.0*	*0.5*	*2.4*	-	*42.7*	*45.7*
			P-3	*HP*	*133.0*	*104.0*	*1.3*	*2.4*	-	*178.6*	*139.6*
			P-4	*HP*	*99.0*	*103.0*	*0.7*	*2.4*	-	*64.6*	*67.2*
										328.6	298.3
Q	148.5	148.5	*Q-1*	*HP*	*99.0*	*103.0*	*1.0*	*2.4*	-	*103.2*	*107.4*
			Q-2	*HP*	*99.0*	*103.0*	*1.0*	*2.4*	-	*103.2*	*107.4*
			Q-3	*HP*	*133.0*	*104.0*	*1.3*	*2.4*	-	*169.6*	*132.6*
										376.0	347.4
Total									**Achieved**	**1,892.3**	**1,613.9**
									Required	**704.4**	**1,039.0**

BUILDING CONSENT ISSUE 31/05/2022

Bracing Plan

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE **MAY' 22** | *SCALES:* **1:100** | **EC877 - dwg 08**

TOP PLATE CONNECTIONS AND JOINS, as indicated on Bracing Plan, as per NZS3604 Clause 8.7.3.2, 8.7.3.3 & 8.7.3.4

8.7.3.2

Joints in the *top plate* of a *wall* that does not contain any *wall bracing elements* (either in line or at *wall* intersections), shall be halved and nailed at the joints, see figure 8.14 (A), or be butted over *blocking* and nailed, see figure 8.14 (B), or be provided with an alternative fixing, having a *capacity* in tension or compression of 3 kN.

8.7.3.3

For single-*storey* buildings the connection in line of the *top plate* of a *wall* that contains one or more *wall bracing elements* shall be jointed according to the *bracing capacity* of the highest-rated individual *wall bracing elements* as follows:

(a) *Bracing capacity* not exceeding 100 *bracing units*: A 3 kN connection as shown in figure 8.15 or by an alternative fixing of 3 kN *capacity* tension and compression along the *plate*;

(b) *Bracing capacity* exceeding 100 *bracing units*: A 6 kN connection as shown in figure 8.15 or by an alternative fixing of 6 kN *capacity* tension and compression along the *plate*.

(c) *Wall top plates* to which ceiling *diaphragms* are attached: A 6 kN connection as shown in figure 8.15 or by an alternative fixing of 6 kN *capacity* in tension and compression along the *plate*.

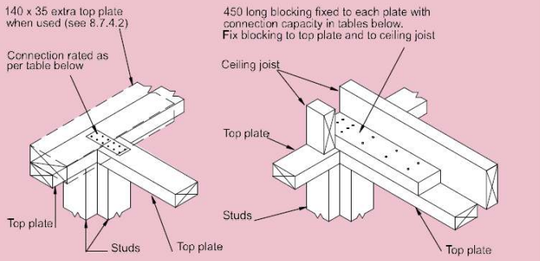
8.7.3.4

Each *wall* that contains one or more *wall bracing elements* shall be connected at the *top plate* level, either directly, or through a *framing* member in the line of the *wall*, to *external walls* at right angles to it. *Top plate* fixing(s) of the *capacity* in tension or compression along the line of the *wall bracing element* are given as follows:

(a) For each *wall* containing *wall bracing elements* with a total *bracing capacity* of not more than 125 *bracing units*: to at least one such *external wall* by a fixing as shown in figure 8.16 of 6 kN *capacity*;

(b) For each *wall* containing *wall bracing elements* with a total *bracing capacity* of not more than 250 *bracing units*: to at least 2 *external walls* by fixings as shown in figure 8.16 each of 6 kN *capacity*;

(c) For each *wall* containing *wall bracing elements* with a total *bracing capacity* of more than 250 *bracing units*: to at least 2 *external walls* by fixings as shown in figure 8.16 each having a rating of not less than 2.4 kN per 100 *bracing units*.



Capacities of metal plate joints	
Up to 3 kN	3 / 30 x 3.15 mm nails per side
Up to 6 kN	6 / 30 x 3.15 mm nails per side

Capacities of nailed joints	
Up to 3 kN	3 / 100 x 3.75 mm nails per side
Up to 6 kN	6 / 100 x 3.75 mm nails per side

NOTE – See section 4 for durability requirements.

Unless otherwise stated, all dimensions are in mm.

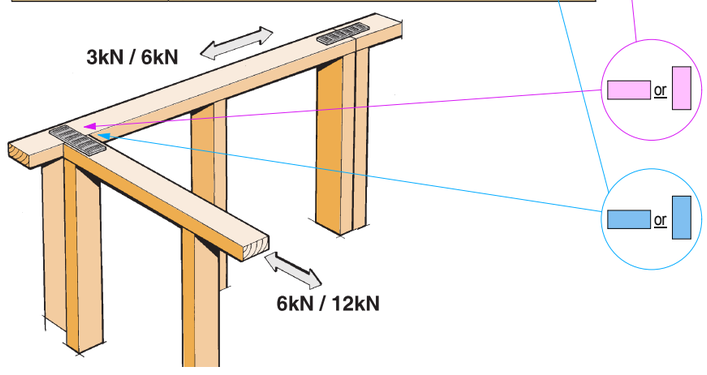
ALTERNATE TOP PLATE CONNECTIONS AND JOINS, as indicated on Bracing Plan, as an Alternative to Corner and Join fixings as stated above:

Top Plates at Right Angles

Connection capacity	LUMBERLOK Connector
6kN	Tylok 6T10 **OR** PLATE-LOK
12kN	2 x Sheet Brace Straps fixed with 6 x LUMBERLOK Product Nails 30mm x 3.15 dia. per end per strap (24 nails total)

Top Plates in Line

Connection capacity	LUMBERLOK Connector
3kN	Tylok 6T5 **OR** Strap Nail
6kN	Tylok 6T10 **OR** PLATE-LOK



BUILDING CONSENT ISSUE 31/05/2022

Bracing Documentation

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE **MAY' 22** | *SCALES:* **1:100** | **EC877 - dwg 09**

Boundary 34.44m

Boundary 18.65m

Boundary 19.65m

Boundary 1.00m

Boundary 34.45m

BROOK STREET

5,000

4,000

SOAKPIT

Refer to calculation on next page for soakpit size. Ensure drainage contractor to undertake soak testing to confirm final soak pit size.

100mm Ø Storm Water Drain

100mm Ø Main Vented Sewer Drain

100mm Ø Storm Water Drain

100mm Ø Main Vented Sewer Drain

100mm Ø Storm Water Drain

100mm Ø Main Vented Sewer Drain

GT

TV

50 Ø

h.t.

Falls

DP01

DP02

DP03

DP04

Hot water cylinder to be installed with a safe tray fabricated from materials not inferior to 0.60mm thick galvanised sheet complying with AS1397

40mmØ UPVC safe tray discharging over sump.

300lt. H.W.C.

GL-50 Hi Wall heatpump or equivalent

900x900 proprietary shower

40 Ø

1675 x 760mm bath in 860mm wide cradle

20mmØ copper expansion drain from HWC valve train discharging to sump

65 Ø Direct connect to 100 Ø @slab edge

WM

Data D.B PWR D.B

4.830W x 2.145H sectional lift garage door

M.B

Outdoor Heatpump Condensing Unit

0.72 m²

3.21 m²

SwS

S

Strip Drain

Falls

new proposed vehicle crossing

Inspection opening to be located at connection point

SEWER CONNECTION

LOCATION OF LATERAL CONNECTIONS TO BE FINALISED WHEN AS-BUILTS ARE ISSUED

LEGEND - DRAINAGE
(AS/NZS3500 - Part 2&3)

- 100mm Ø Storm Water Drain, 1 in 90 minimum fall
- 100mm Ø Main Vented Drain, 1 in 60 minimum fall
- 65/40mm Ø Fixture Waste Drain, 1 in 40 minimum fall
- TV — 50mm Ø Terminal Vent
- IJ — Inspection Junction
- IB — Inspection Bend
- GT — Gully Trap. Lowest acts as ORG
- Strip drain — to collect run off from Driveway
- SwS — Type one surface water sump, recieving run off from strip drain and discharging to stormwater line as per NZBC E1 3.6 & Fig 8 shown
- S — HWC discharge ground draining sump

VEHICLE CROSSING UPDATE	18/07/2022
BUILDING CONSENT ISSUE	31/05/2022

Drainage Plan

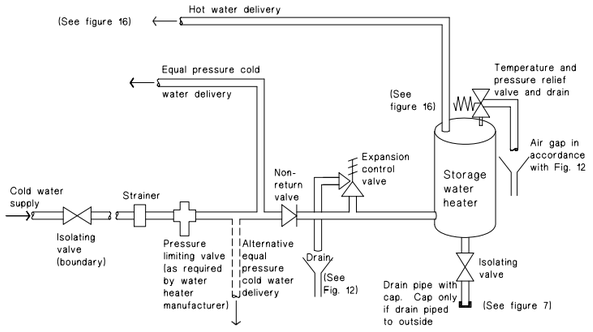
Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

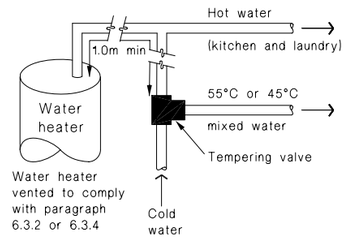
DATE JUL' 22	SCALES: 1:100	EC877 - dwg 10

Figure 8: Mains Pressure Storage Water Heater System (unvented)
Paragraphs 6.1.2 and 6.2.1 b)

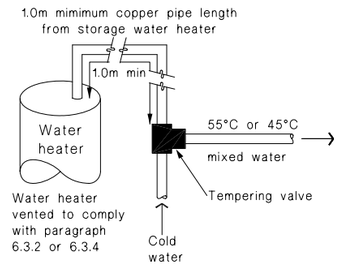


NOTE:
Hot water cylinder will be fitted with a thermostat that is programmed to heat the stored water to 60°C min. to comply with NZBC G13 clause 6.14.3

Figure 16: Tempering Valve Installation
Paragraph 6.14.2 a)



(a) With untempered water to laundry and kitchen fixtures and appliances



(b) Where all hot water is tempered

Note:
1. For optimum system efficiency the tempering valve, for other than a mains pressure system, may be located as low as practicable to achieve the manufacturer's recommended head, at the tempering valve.
2. 1.0m minimum copper pipe length from storage water heater.

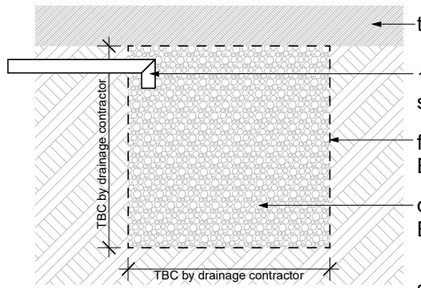
SOAKPIT CALCULATION LOT 27 BELLFIELD

RC	Coefficient	Rainfall index	Area of runoff
11.556	0.9	60.0	0.0214
Vsk	**Area of soakpit**	**Soakage rate***	
0	22.50	0.0	
Vst (open hole)			
11.556			
Vst (rock filled) (calculated min requirement m3)			
30.403836			
Excavate soakpit to	**width (m)**	**length (m)**	**depth (m)**
	4.5	5	1.5
Proposed soakpit volume provided m3			
33.75			

* As site specific soakage testing has not been carried out, a soakage rate of zero has been used in this calculation. Final soakage rate testing and soak pit dimensions will be determined on site by drainage contractor.

STORMWATER SOAKHOLE NOTE:

ALL CONSTRUCTION, DEPTH AND SIZE TO BE DETERMINED BY THE DRAINAGE CONTRACTOR TO COMPLY WITH DESIGN REQUIREMENTS OF NZBC E1/VM1. REFER TO TABLE OF CATCHMENT AREAS FOR SOAKHOLE AS REQUIRED. DRAINAGE CONTRACTOR TO SUPPLY SOAK HOLE DESIGN CERTIFICATE AND CALCULATIONS



100mmØ uPVC stormwater drain

filter cloth with mass per E1/VM1

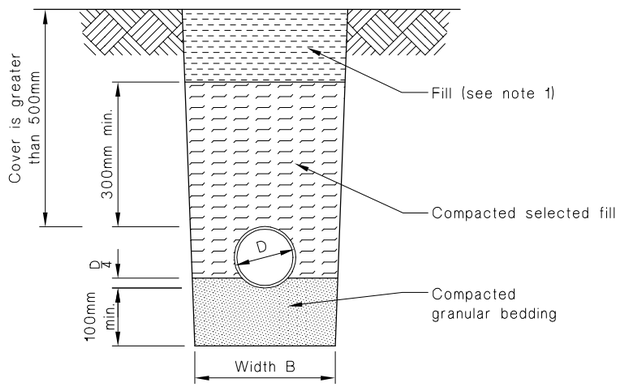
drainage metal per E1/VM1

soakpit base and depth TBC by drainage contractor

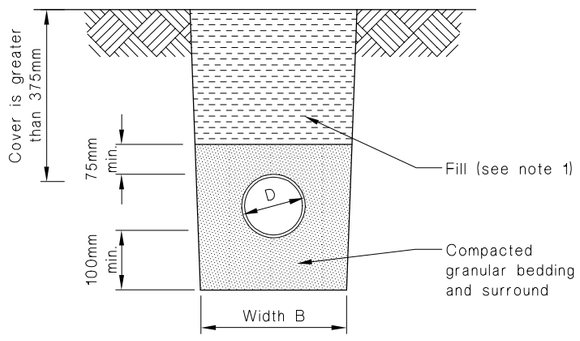
SOAKPIT CROSS SECTION

BEDDING & BACKFILLING DETAILS FOR SW & SS

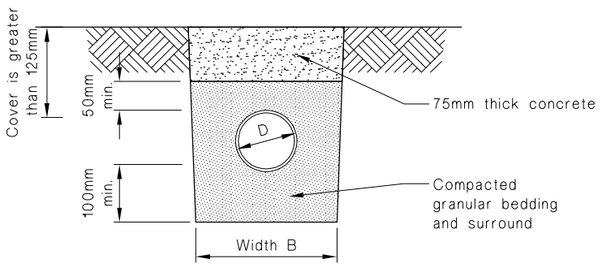
NOTE:
1. Fill shall be:
-Ordinary fill where drains are located below gardens and open country.
-Compacted selected hardfill where the drains are located below residential driveways and similar areas subjected to light traffic.



(a) Cover greater than 500 mm
Bedding type 'B' of NZS 4452 for SW & NZS 7643 for SS



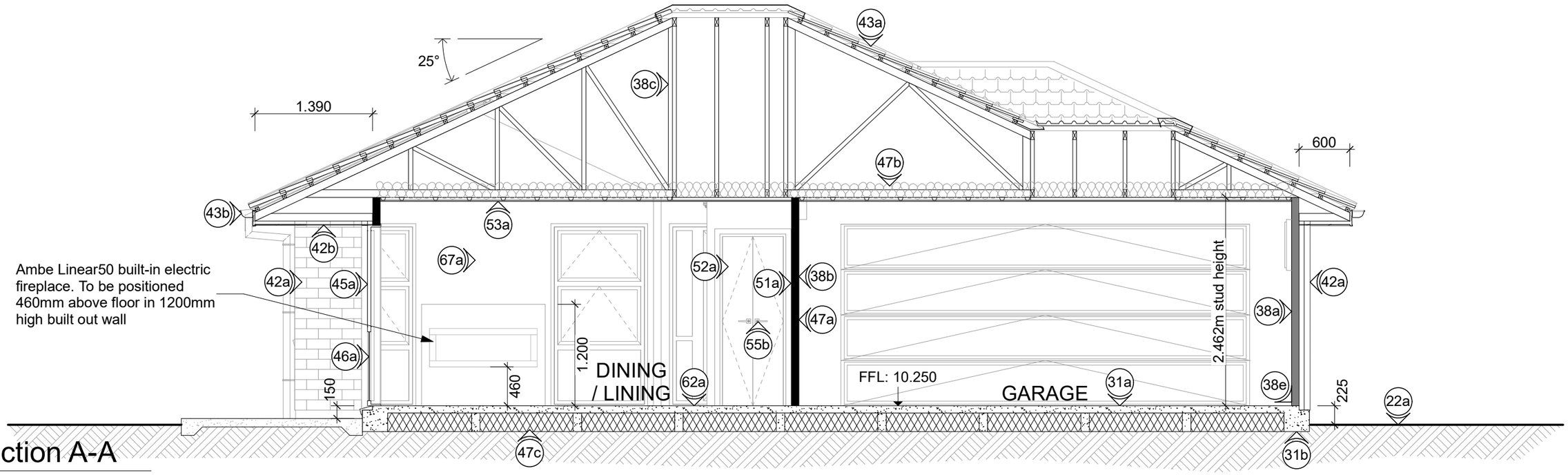
(b) Cover greater than 375 mm
Bedding type 'D' of NZS 4452 for SW & NZS 7643 for SS



(c) Cover greater than 125 mm

BUILDING CONSENT ISSUE 31/05/2022

Drainage Notes
Jagmeet & Mandeep Brar
Lot 27 Bellfield, Southbridge
GH CHRISTCHURCH SOUTH LTD
DATE **MAY' 22** *SCALES:* **1:100** **EC877 - dwg 11**



Section A-A

scale 1:50

CONSTRUCTION NOTES -LOT 27 DP S/D of Lot 1000 DP 559349 - GH CHRISTCHURCH SOUTH LTD

2 SITE

22 Preparation & Groundwork

22a Building Platform - form a level platform allowing a minimum of 1m between any edge of the building and a slope, to comply with the engineers design.

23 Foundations

23a Concrete footing size and strength per engineer design and to posts and buttresses

3 STRUCTURE

31 Concrete

31a **Engineered waffle concrete slab** with grade SE62 reinforcing mesh over 1100 x 1100 x 220mm deep Polystyrene PODS at 1.2m c/c as per Engineered design and specification
Refer to engineer design for concrete strength requirements, size and placement of all reinforcing, additional footings, and construction details.
Refer to Architectural drawings & details for size and placement of joinery rebates to slab edges

31b **Concrete ring footing**.
Refer to Engineer's design for concrete strength requirements, size and placement of all reinforcing, localised deepening of footings for exiting drains , and construction details.

38 Timber

38a 90 x 45 SG8 H1.2 exterior wall framing, studs at 600 c/c & 2 row of dwangs. Ensure 90 x 45 top plate and 140 x 35 ribbon board

38b 90 x 45 SG8 H1.2 interior wall framing with studs at 600 c/c & 2 row of dwangs. Ensure 90 x 45 top plate and 190 x 35 ribbon board

38c Pre-fabricated SG8 H1.2 treated trusses at 900 c/c as per truss design.

38d Timber Beams as noted on Floor Plan and as detailed

38e All bottom plates shall be LVL grade timber

4 ENCLOSURE

42 Cladding

42a **selected 70mm Brick over 60mm cavity** wall cladding over 4.5mm James Hardies HomeRAB board continuous around building envelope

42b 4.5mm HardieSoffit™ lining with PVC jointers at sheet joints and blocking as required.

42c **James Hardie Linea weatherboard fixed to framing over 20mm cavity.**

43 Roofing

43a **Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile** with standard flashings as selected - over **Thermakraft 215 roofing underlay** Also with galv. strap brace to roof plane to comply with Miitek manual.

43b Continuous Colorsteel quarter Round Spouting with 180mm colorsteel fascia system and 80mmØ Round Colorsteel downpipes.

45 Doors, Windows

45a double glazed aluminium framed windows and exterior doors as scheduled with selected powdercoated finish , architraves as detailed.

46 Glazing

46a Double glazing with safety glazing as required to comply with NZS4223

47 Insulation

47a R2.6 Pink Batts 90mm wall thermal insulation

47b R3.6 Pink Batts 180mm ceiling thermal insulation

47c R2.41 220mm polystyrene underfloor insulation system

5 INTERIOR

51 Wall Linings

51a 10mm standard GIB wall linings generally

51b 10mm Aqualine GIB wall lining to wet areas

52 Partitions & Doors

52a All int. doors shall be ex150 x 30 pine FJP framed with architraves, door leaves to be hollowcore flush panel PQ MDF

53 Ceilings

53a 13mm GIB ceiling linings throughout over Rondo metal battens at 600 c/c direct fixed to truss bottom chord with GIB grabber screw fastenings. Level 4 stopped finish to ceilings with selected cornice finish

55 Joinery Fixtures & Hardware

55a Kitchen Joinery and all fixtures, hardware etc as per Generation Homes specific kitchen plans - confirm all measurements on site prior to any manufacturing

55b Door hardware as selected by owner

55c All bathroom, laundry, and other joinery that is supplied under contract to be constructed shall be confirmed in accordance with signed GH contract.

57 Furniture & Appliances

57a Kitchen appliances as covered by GH contract shall be supplied and installed

57 Furniture & Appliances

57a Kitchen appliances as covered by GH contract shall be supplied and installed

6 FINISH

62 Tiling

62a Floor tile selection to Bathroom, Ensuite, Kitchen, Dining and Entry as per clients selections. Contractor to lay tiles

65 Carpeting

65a Selected carpet as per project specification and as per GH contract

67 Painting, Decorating & Coating

67a Paint and coatings as selected and specified in GH Contract

7 SERVICES

71 Liquid

71a Refer to drainage plan for water supply to all fixtures

74 Drainage

74a Refer to drainage plan for waste pipe size, selections and type

77 Electrical

77a Refer to Floor Plan for locations of critical electrical components. Ensure site walk-through to determine locations of all power points, switching, lighting and other components.

8 EXTERNAL

82 Roads & Paving

82a Concrete driveway formed as per indicated layout on site plan

83 Landscaping

83a Exterior paving & driveways, formed as indicated on Landscaping Plan

BUILDING CONSENT ISSUE 31/05/2022

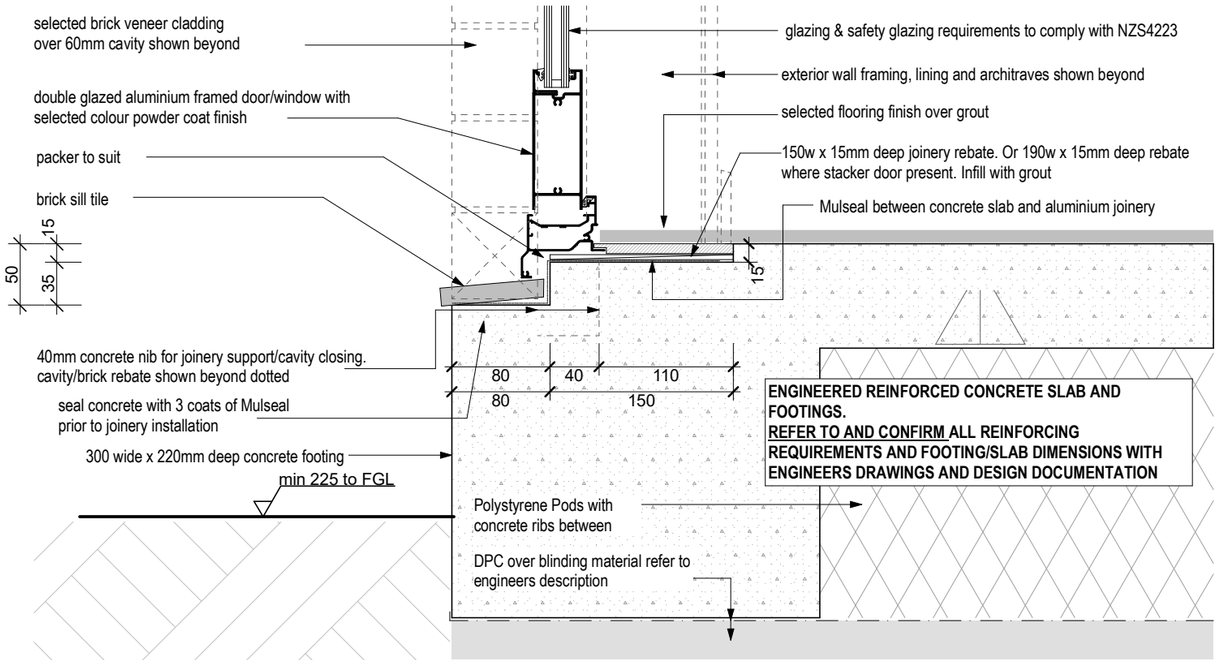
Cross Sections and Notes

Jagmeet & Mandeep Brar

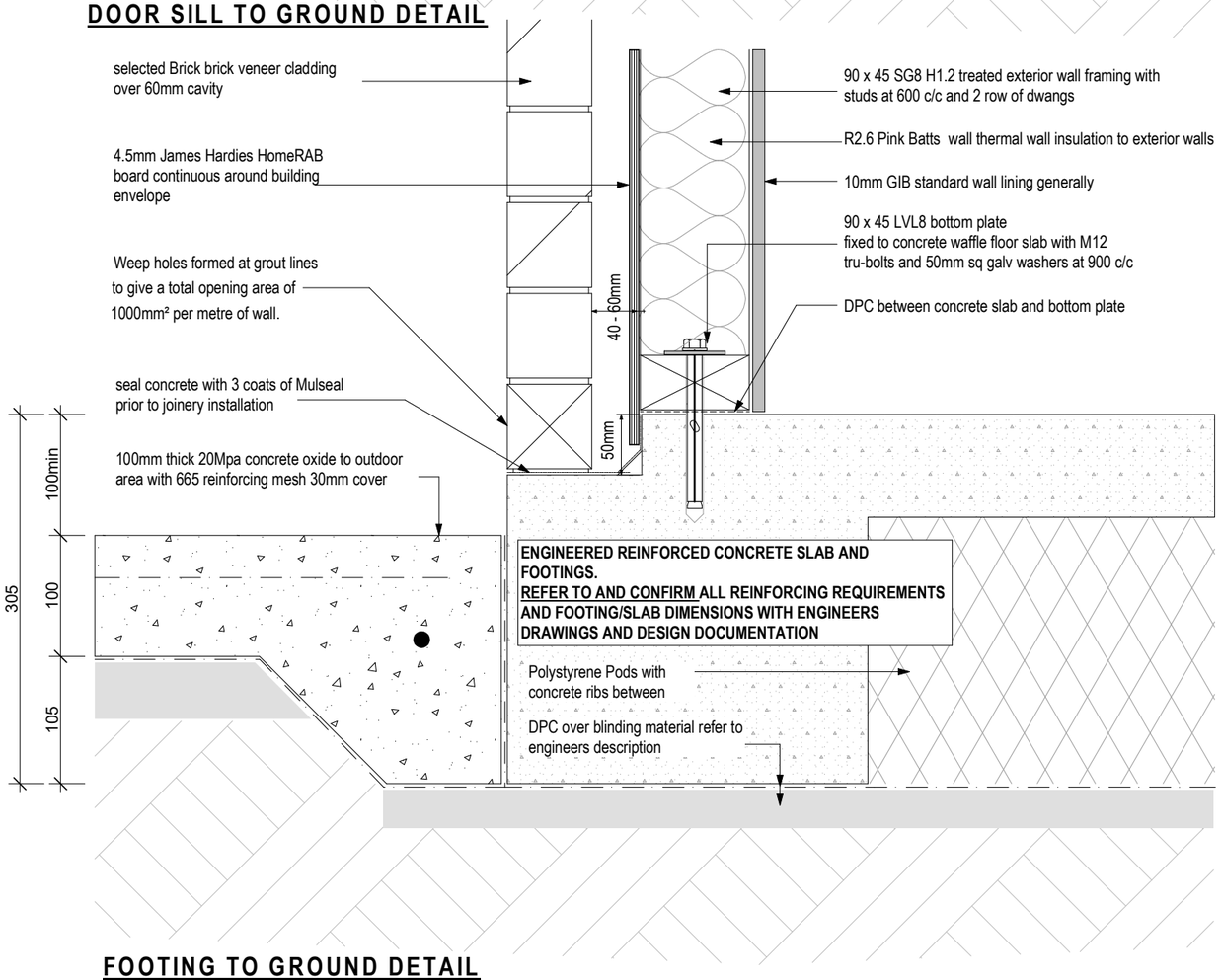
Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

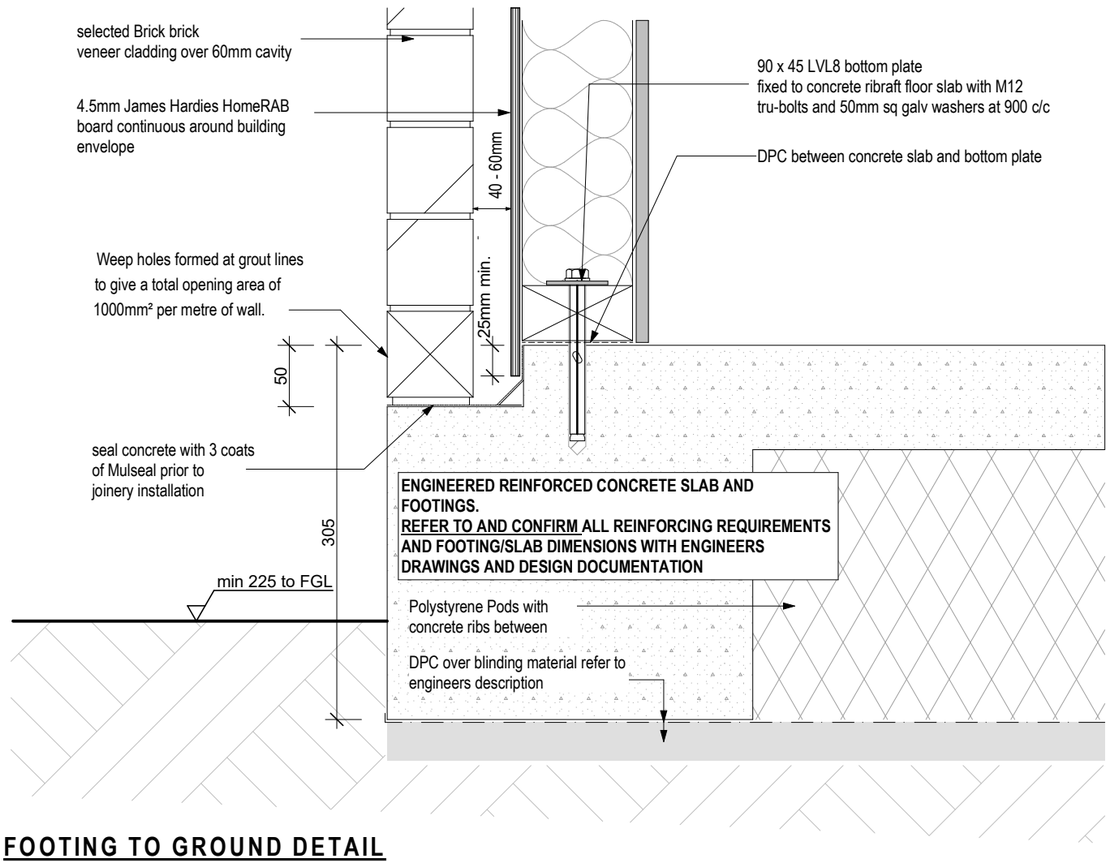
DATE **MAY' 22** | SCALES: **1:100, 1:50** | **EC877 - dwg 12**



DOOR SILL TO GROUND DETAIL



FOOTING TO GROUND DETAIL



FOOTING TO GROUND DETAIL

BUILDING CONSENT ISSUE 31/05/2022

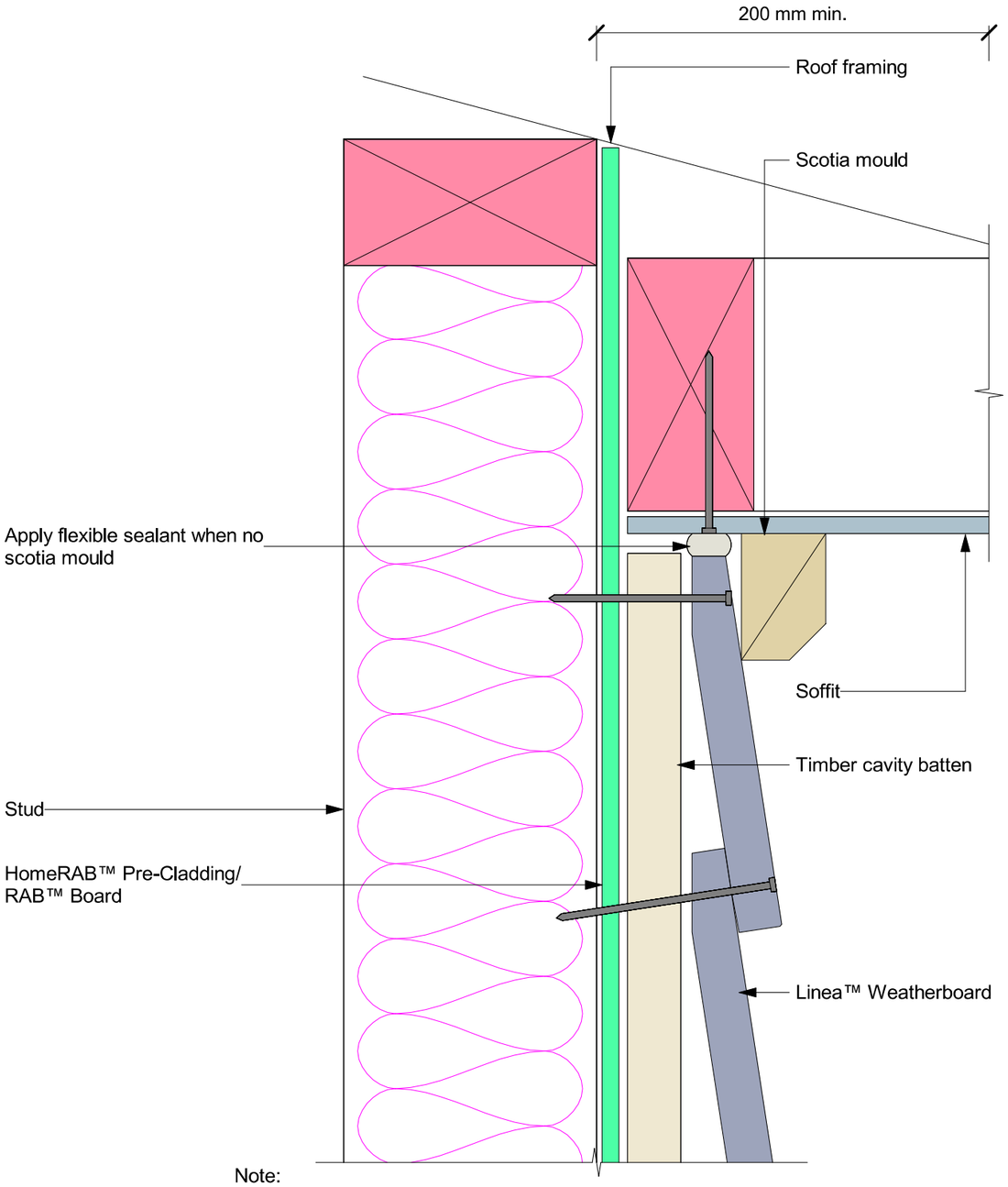
Details Ribraft/Floor

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE MAY' 22	SCALES: 1:5	EC877 - dwg 13



Note:
Alternatively the scotia can be scribed and sealed to Linea™ Weatherboard and the soffit lining

For soffits more than 200mm the Linea™ Weatherboard can be neat cut and silicone sealed to angle of soffit

jhl_lnea_r_014 jhl_lnea_billy9JEJT.rvt

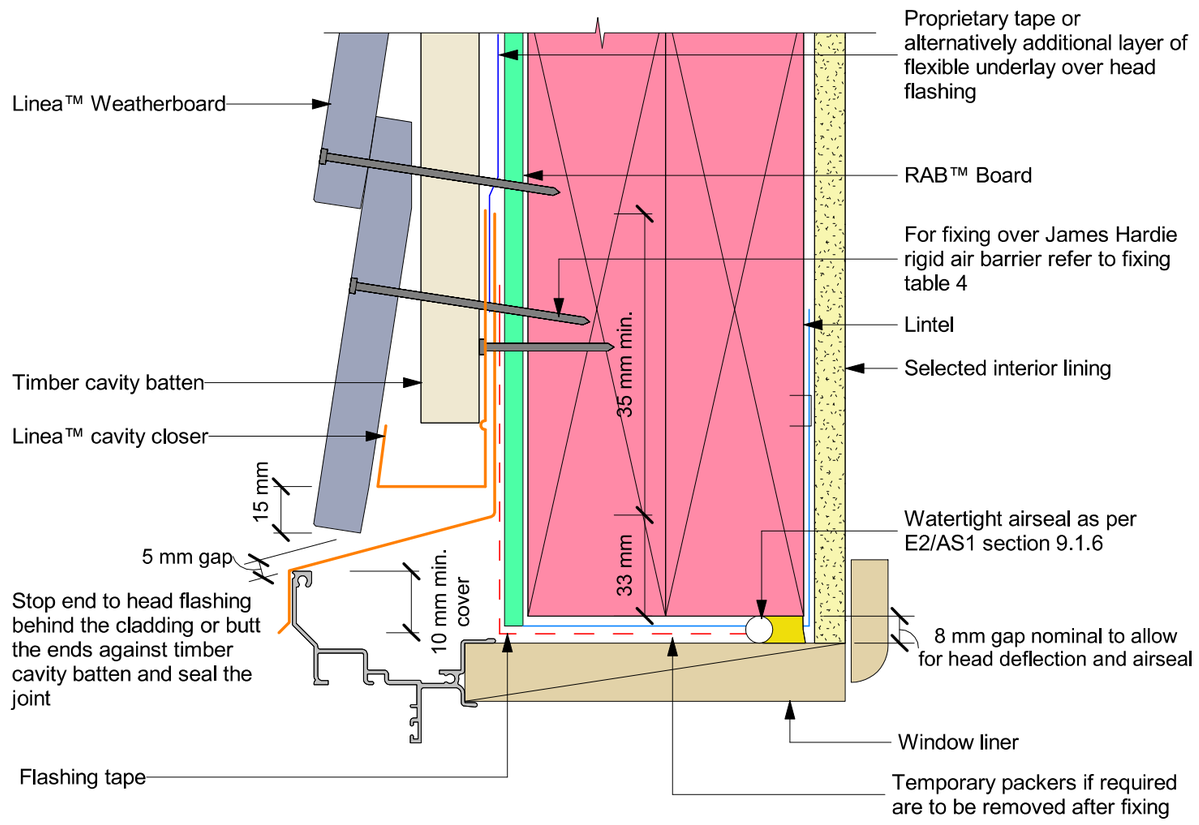
JamesHardie™ www.jameshardie.co.nz

Linea™ Weatherboard

On Timber Cavity Batten with RAB™ Board
WALL TO SOFFIT JUNCTION 'X'

May 2020
Scale: 1 : 2

Figure 14



Note:
- Sealant must be installed between head flashing and window flange in VH and EH wind zones and SED pressures
- Alternatively, the head flashings can be formed with stop ends as per E2/AS1
- Refer to Figure 22 for sealing end battens to head flashing
- Site cut edges to be primed

jhl_lnea_r_020 jhl_lnea_billy9JEJT.rvt

JamesHardie™ www.jameshardie.co.nz

Linea™ Weatherboard

On Timber Cavity Batten with RAB™ Board
WINDOW HEAD

May 2020
Scale: 1 : 2

Figure 20

BUILDING CONSENT ISSUE 31/05/2022

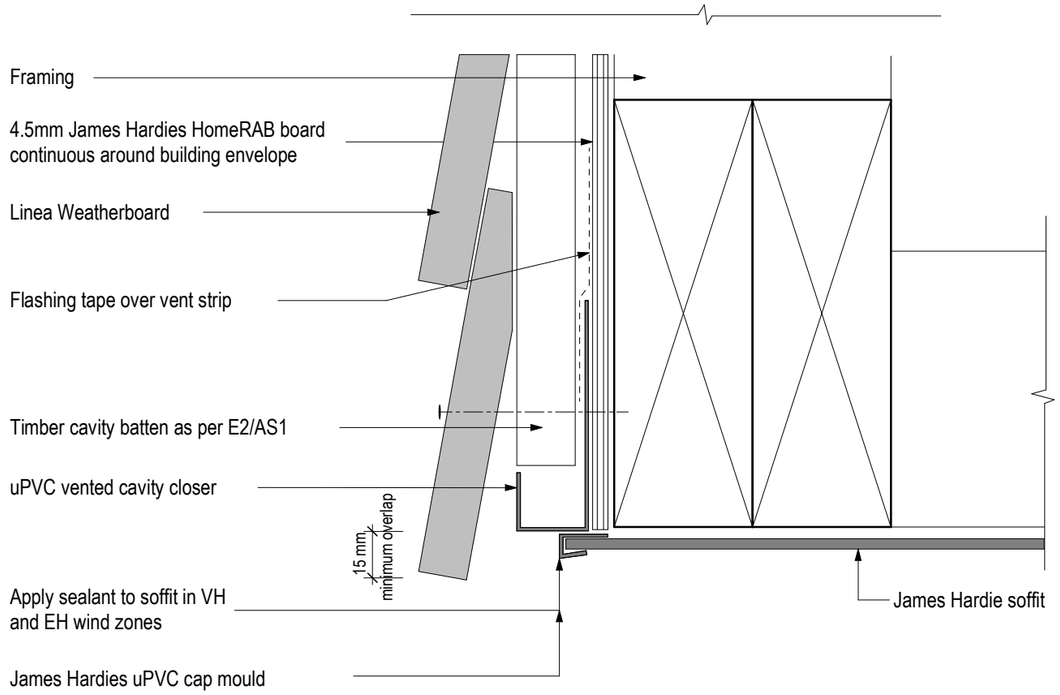
Details Linea Weatherboard

Jagmeet & Mandeep Brar

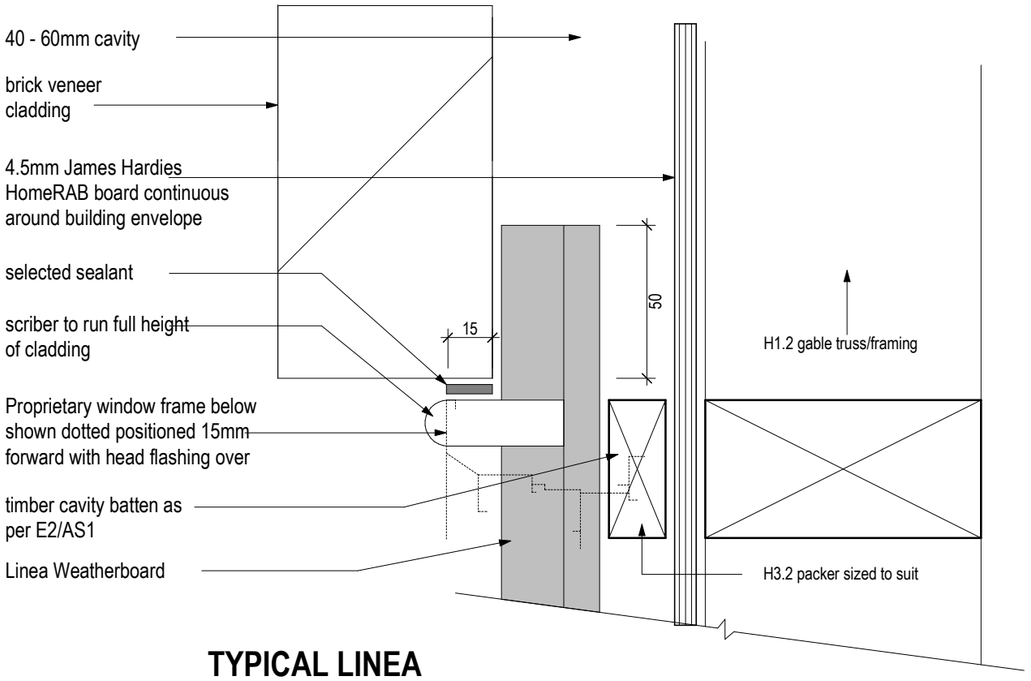
Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE MAY' 22	SCALES: 1:2	EC877 - dwg 14



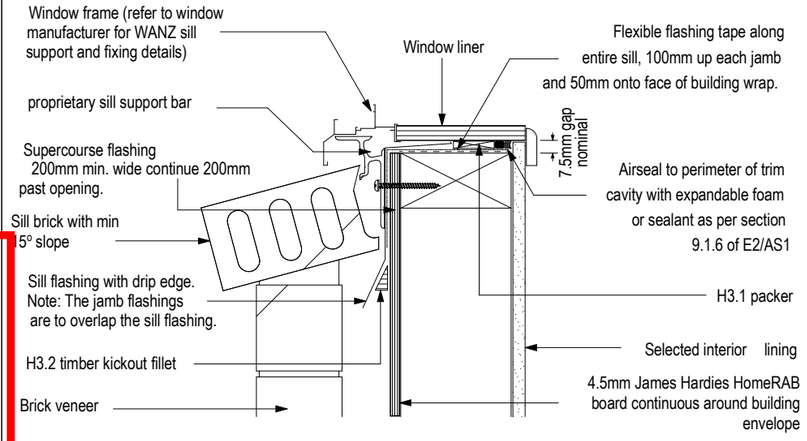
TYPICAL LINEA TO SOFFIT EXTERNAL CORNER DETAIL



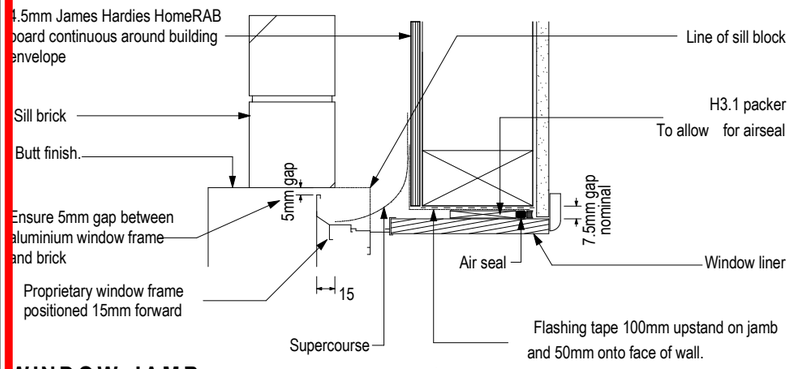
TYPICAL LINEA
plan view above window in Gable (RAB)

BUILDING CONSENT ISSUE 31/05/2022

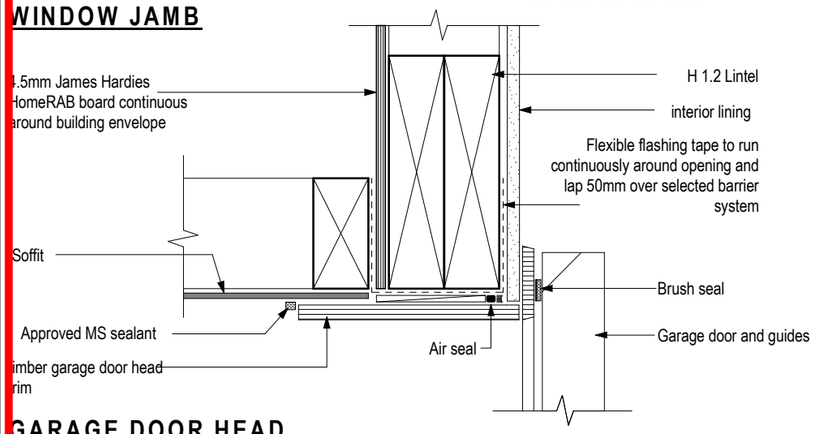
Details Linea Weatherboard		
Jagmeet & Mandeep Brar **Lot 27 Bellfield, Southbridge**		
GH CHRISTCHURCH SOUTH LTD		
DATE **MAY' 22**	*SCALES:* **1:2**	**EC877 - dwg 15**



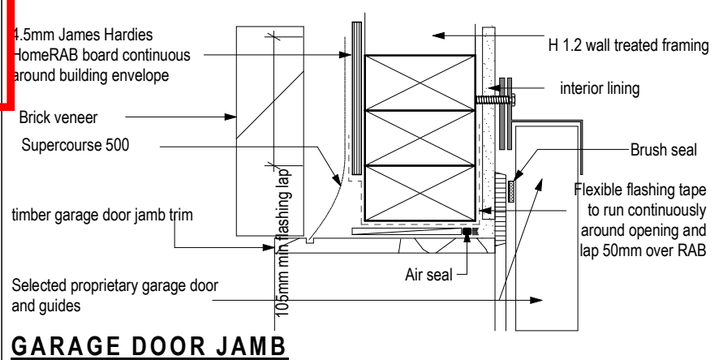
WINDOW SILL



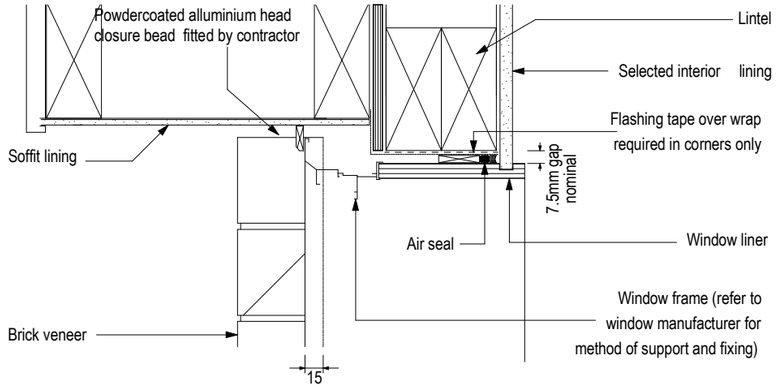
WINDOW JAMB



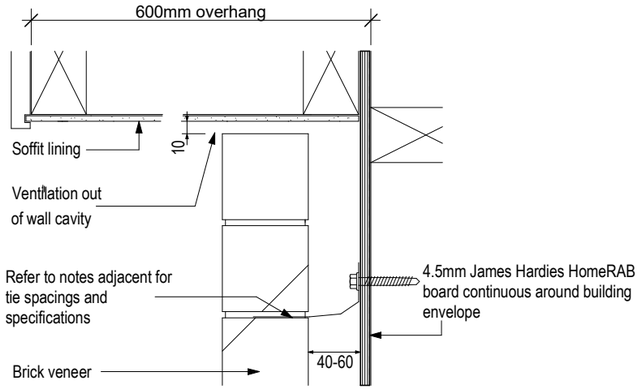
GARAGE DOOR HEAD



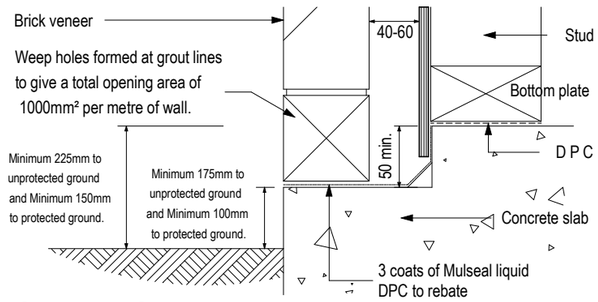
GARAGE DOOR JAMB



ALTERNATIVE WINDOW HEAD DETAIL



SOFFIT DETAIL



FOUNDATION DETAIL

STANDARD BRICK CLADDING DETAILS NOTES:

1) Specific materials for use. Refer to details for construction;
- Brick Veneer: selected 70mm Brick over 60mm cavity with 10mm selected colour mortar.
- Brick Ties: Galvanised Steel. To be spaced at max. 600mm horizontally and max. 400mm vertically. See table below for more info.
- Building Wrap: 4.5mm James Hardies HomeRAB board continuous around building envelope.
- Cavity Zone: 40 - 60mm cavity between brick and framing.
- Flashing Tape: Super-Stick Building Tape.
- Soffit Lining: 4.5mm Hardiesoffit lining with PVC jointers at sheet joints and blocking as required.
- Wall Framing: 90 x 45 SG8 H1.2 exterior wall framing with studs at 600 c/c & 2 rows of dwangs.
  90 x 45 SG8 H1.2 interior wall framing with studs at 600 c/c & 2 rows of dwangs.
- Window Liner: H3.1 FJP PQ window liner.

2) Refer to other construction details for roof construction and floor construction

INSTALLING BRICK TIES (as per NZBC clause E2 section 9.2)

Location	Placement of ties
Unsupported panel sides and edges of openings	Within 300mm of panel side or edge
Top of veneer panels and top of panels under openings	Within 300mm or two courses (whichever is smaller) of top of veneer
Bottom of veneer panel in masonry rebate sealed with liquid applied damp-proof course	Within 300mm or two courses (whichever is smaller) of bottom of veneer
Bottom of veneer panel supported on steel angle lintel	Within 300mm or two courses (whichever is smaller) of bottom of veneer

NOTE:
Brick ties are to be screw fixed to wall framing using min. 12 gauge, 35mm long hex washer face, galv. screws

BUILDING CONSENT ISSUE 31/05/2022

Details Brick

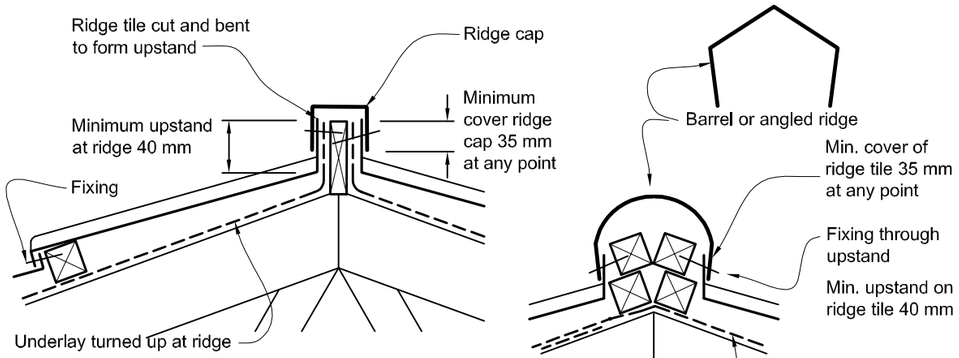
Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

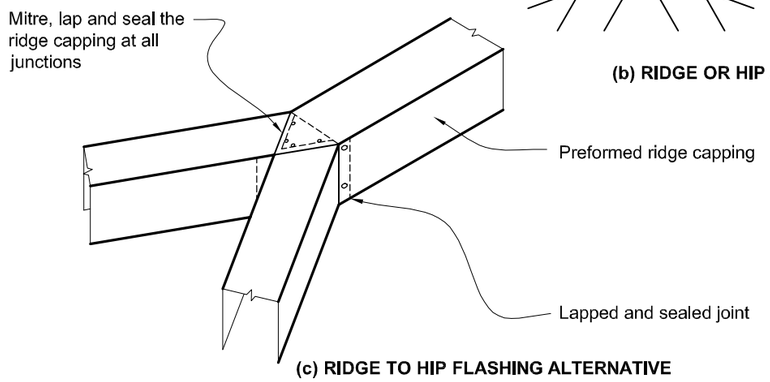
DATE **MAY' 22** | SCALES: **1:5** | **EC877 - dwg 16**

Figure 34: Ridge or hip flashings for metal tile
Paragraphs 8.3.3 and 8.3.8



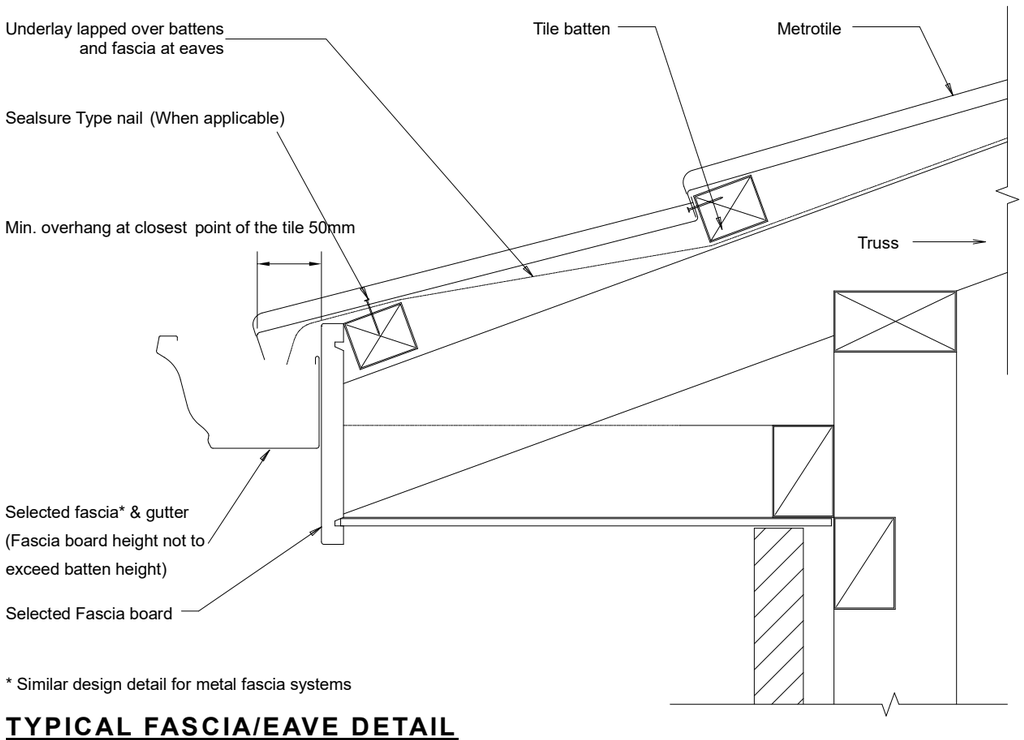
(a) RIDGE OR HIP

(b) RIDGE OR HIP ALTERNATIVE



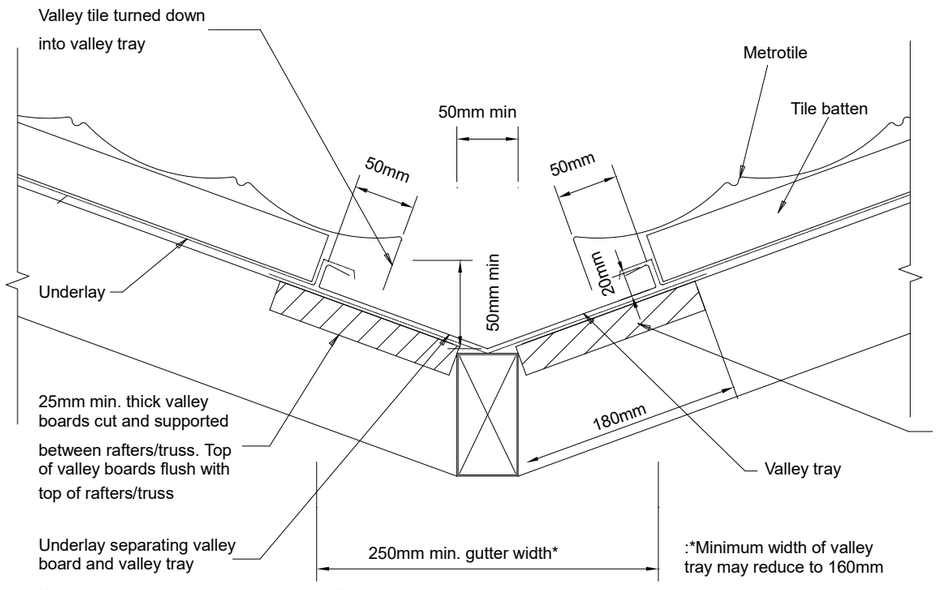
(c) RIDGE TO HIP FLASHING ALTERNATIVE

NOTE: For alternative ridge profiles, ridge to hip *capping* must be preformed to suit profile.



* Similar design detail for metal fascia systems

TYPICAL FASCIA/EAVE DETAIL



Note providing roof catchment area is 16m² or less

TYPICAL VALLEY DETAIL

Metrotile ROOFING SYSTEMS

STANDARD ROOFING DETAILS

NOTES:

1). All details shown are standard details attained from the Metro Roofing technical information website.

2). Specific materials for use. Refer to details for construction;
- Insulation: R2.6 Pink Batts thermal wall insulation
  R3.6 Pink Batts thermal ceiling insulation
- Roofing: Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile
- Roof Structure: 90 x 45 SG8 trusses at 900 c/c as per registered manufacturers design and specification
- Roofing Underlay: **Thermakraft 215 roofing underlay**
- Soffit Lining: 4.5mm Hardies Soffit lining with PVC jointers at sheet joints and blocking as required
- Spouting & Fascia: Continuous colorsteel spouting / fascia system
- Wall Framing: 90 x 45 SG8 H1.2 exterior wall framing with studs at 600 c/c & 2 row of dwangs.
  90 x 45 SG8 H1.2 interior wall framing with studs at 600 c/c & 2 row of dwangs
- Valley Boards: All timber valley boards to be SG8 H3.1 treated
- Valley Tray: Custom folded colorsteel valley flashing with colour to match roofing selection

3). Refer to other drawings for typical/standard details for claddings and foundations.

BUILDING CONSENT ISSUE 31/05/2022

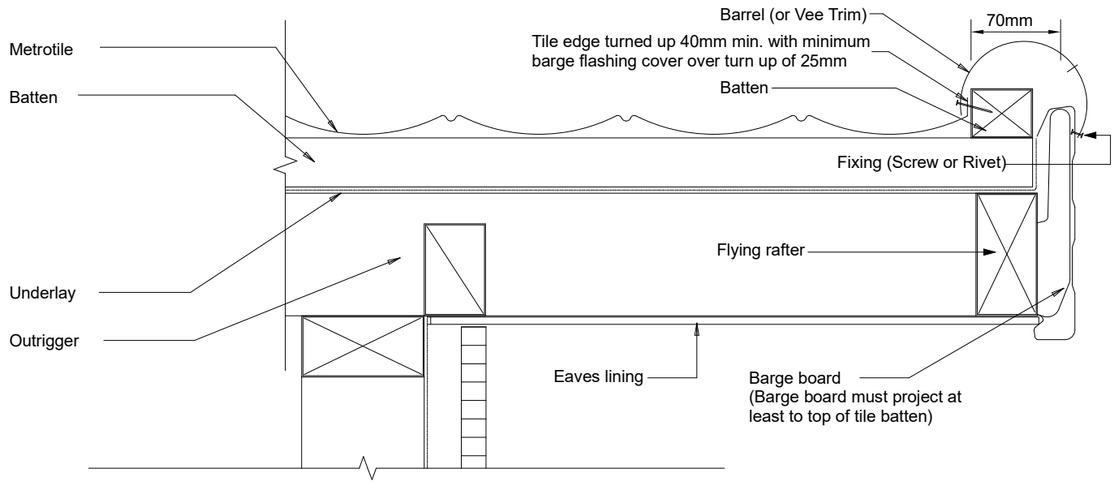
Details Roofing

Jagmeet & Mandeep Brar

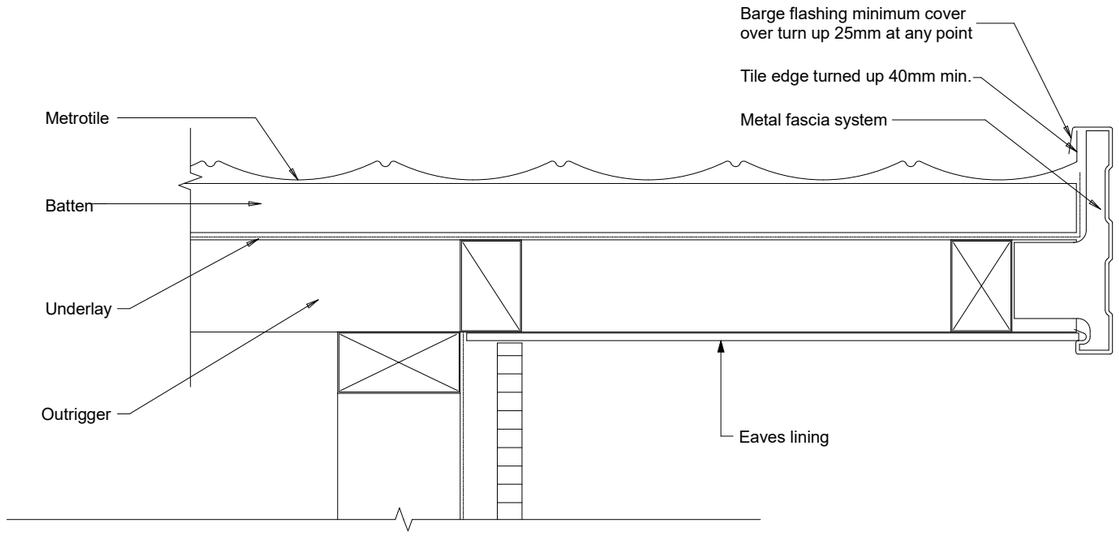
Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

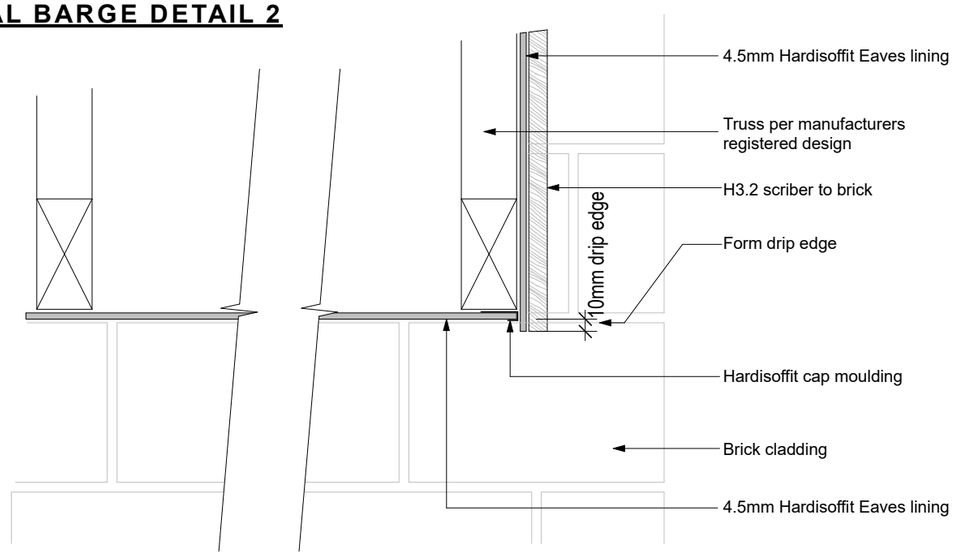
DATE **MAY' 22** | SCALES: **1:5** | **EC877 - dwg 17**



TYPICAL BARGE DETAIL 1



TYPICAL BARGE DETAIL 2



TYPICAL GABLE SOFFIT CLOSURE DETAIL

Dektite Aluminium

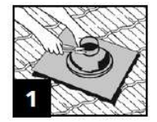
The best solution for stone chip and pressed metal tiles

- The base is 99.9% pure grade aluminium making it strong, malleable and easy to install.
- Environmentally friendly, ideal where potable water is collected.
- The best solution for stone chip and pressed metal tiles.
- EPDM withstands temperatures from -50ºC - 115ºC and up to 150ºC intermittently.

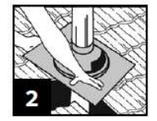
Code	Base (mm)	Pipe (mm)	Pitch	Colour
TFA 12-70	500 x 600	12-70	0-45°	BLACK (EPDM)
TFA 50-170	600 x 600	50-170	0-45°	
TFA 110-220	764 x 764	110-200	0-45°	
TFA 160-300	764 x 764	160-300	0-45°	
TFA 300-450	965 x 965	300-450	0-45°	

Page 10

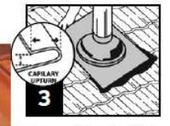
Installation Instructions:



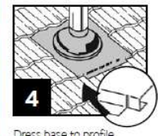
Trim Dektite cone to suit pipe size using sharp tin snips.



After lubricating the flue with water, slide Dektite down to the tile level.



Form an anti-capillary fold then place upper edge of base under up-stream tiles.



Dress base to profile, cut tabs on the bottom corners and fold under to stop wind lift .

Metrotile ROOFING SYSTEMS

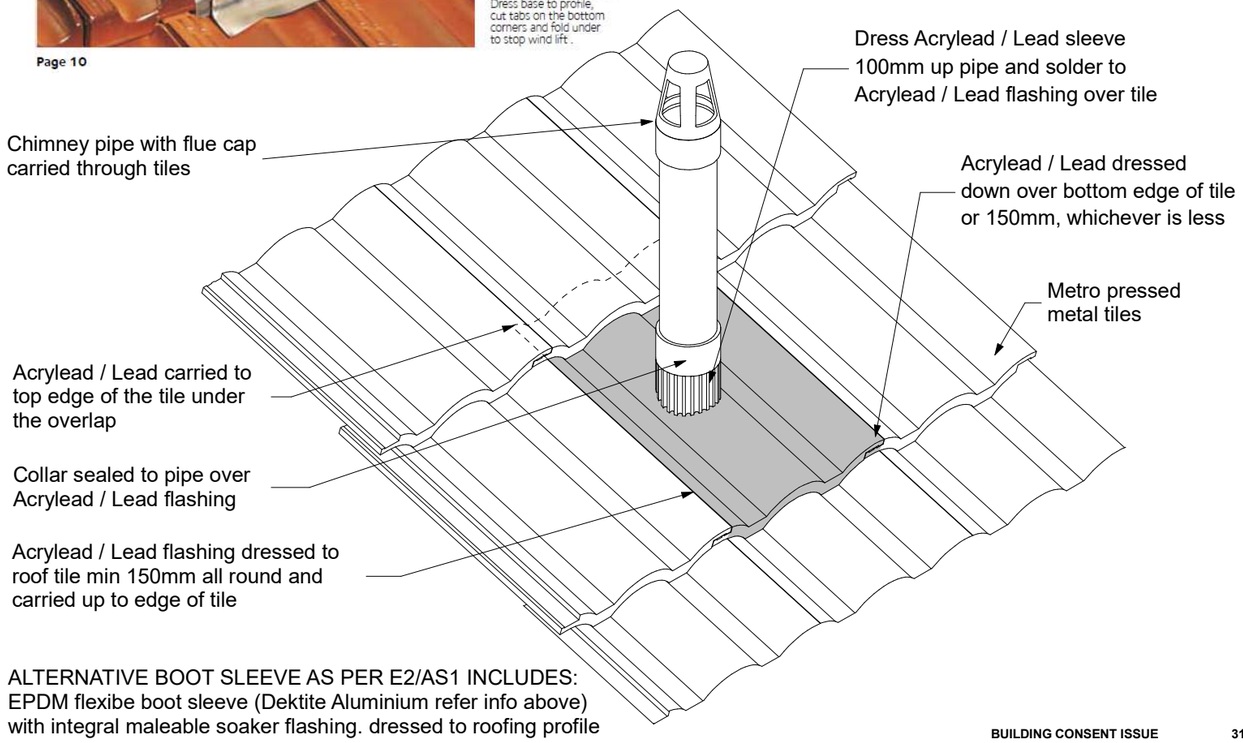
STANDARD ROOFING DETAILS

NOTES:

1). All details shown are standard details attained from the Metro Roofing technical information website.

2). Specific materials for use. Refer to details for construction;
- Insulation: R2.6 Pink Batts thermal wall insulation
  R3.6 Pink Batts thermal ceiling insulation
- Roofing: Metrotile Shake pressed metal tile roofing with Satin finish over 50 x 40 SG8 battens at c/c to suit tile profile
- Roof Structure: 90 x 45 SG8 trusses at 900 c/c as per registered manufacturers design and specification
- Roofing Underlay: **Thermakraft 215 roofing underlay**
- Soffit Lining: 4.5mm Hardies Soffit lining with PVC jointers at sheet joints and blocking as required
- Spouting & Fascia: Continuous colorsteel spouting / fascia system
- Wall Framing: 90 x 45 SG8 H1.2 exterior wall framing with studs at 600 c/c & 2 row of dwangs.
  90 x 45 SG8 H1.2 interior wall framing with studs at 600 c/c & 2 row of dwangs
- Valley Boards: All timber valley boards to be SG8 H3.1 treated
- Valley Tray: Custom folded colorsteel valley flashing with colour to match roofing selection

3). Refer to other drawings for typical/standard details for claddings and foundations.



ALTERNATIVE BOOT SLEEVE AS PER E2/AS1 INCLUDES:
EPDM flexibe boot sleeve (Dektite Aluminium refer info above) with integral maleable soaker flashing. dressed to roofing profile

TYPICAL ROOF PENETRATION DETAIL

BUILDING CONSENT ISSUE 31/05/2022

Details Roofing		
Jagmeet & Mandeep Brar		
Lot 27 Bellfield, Southbridge		
GH CHRISTCHURCH SOUTH LTD		
DATE **MAY' 22**	*SCALES:* **1:5**	**EC877 - dwg 18**

WALL AND FLOORING FINISHES NOTE: E3/AS1 COMPLIANCE

TILE FLOORING TO "WET" ROOMS
All selected Tile Flooring to Bathrooms, ES, WC, Kitchens and Laundries, as shown on floor plan shall be laid consistently with the requirements of E1/AS1 where as per E3/AS1 clause E3.3.1 being Ceramic or Stone Tiles having 6% maximum water absorption with waterproof grouted joints. Tiles shall be bedded with an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use. Edges of the tiled areas shall be 75mm high tiled skirting as detailed. All tiles in these "wet" areas must be laid over Sika Aquablok SBR continuous membrane as detailed.

TILE FLOORING TO "DRY" ROOMS
Any selected Tile Flooring to "dry areas" i.e Entryways, Dining/Living spaces, Hallways, WR/ST etc, as shown on floor plan shall be as selected by the client. Tiles shall be bedded in an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use. Edges of the tiled areas are to be made good to paint finished pine skirting trims.

NEPTUNE STRIP FLOORING TO "WET" ROOMS
Any selected Neptune Strip Flooring to Bathrooms, ES, WC, Kitchens and Laundries, as shown on floor plan shall be laid as per the manufacturers installation requirements for Wet Areas to achieve E3/AS1 clause 3.3.1 compliance. All Neptune flooring to "wet" areas to be laid with tested waterproof joint system, over Sika Aquablok SBR continuous membrane. All edges to these rooms areas shall be sealed to Wet Room suitable paint finished pine skirting trims. Ensure waterproofing membrane lapping 75mm min up wall.

NEPTUNE STRIP FLOORING TO "DRY" ROOMS
Any selected Neptune Strip Flooring to "dry areas" i.e Entryways, Dining/Living spaces, Hallways, WR/ST etc, as shown on floor plan shall belaid as per the manufacturers installation instructions.
Edges of the tiled areas are to be made good beneath paint finished pine skirting trims as per installtion instructions as a "floating" flooring system.

CARPET FLOORING TO "DRY" ROOMS / AREAS
Selected Carpet Flooring over selected underlay shall be laid to "dry areas" only i.e Entryways, Dining/Living spaces, Hallways, WR/ST, Bedrooms etc, as shown on floor plan and laid as per the manufacturers installation instructions with edge trims to junctions to other flooring.

TILE WALL FINISHES TO "WET" ROOMS
All selected Tiles to Tiled showers and to Bath Tub cradles and Walls shall be laid consistently with the requirements of E1/AS1 where as per E3/AS1, being Ceramic or Stone Tiles having 6% maximum water absorption with waterproof grouted joints (refer to selections made by client). Tiles shall be bedded with an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use.
Tiled Shower Walls must extend 1.8m min above the shower floor and/or 50mm above shower rose (can extend to ceiling if desired). All edges of the tiled areas shall be sealed to Wet Room suitable paint finished surfaces (pine skirting trims or aluminium angle trims).
All penetrations to be waterproofed with proprietary flange systems or approved sealants.
All tiles in these "wet" areas must be laid over Sika Aquablok SBR continuous liquid applied membrane.

TILE WALL FINISHES TO "DRY" AREAS
Any selected Tile to "dry areas" walls outside of tiled showers, bath surrounds or to WC's and other rooms i.e Entryways, Dining/Living spaces etc, as shown on floor plan shall be as selected by the client with the selected colour grout joints.
Tiles shall be bedded in an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use.
Edges of the tiled areas are to be made good to paint finished pine skirting trims or to aluminium angle trim

PAINT QUALITY FINISHES TO "WET" ROOMS
All paint finishes to Bathrooms, ES, WC, Kitchens and Laundries shall include Wet Room suitable undercoating system and top coat paint system applied to plaster/stopped finish over GIB Aqualine (10mm or 13mm) substrate. Ensure selected paint colour used as per client selection.

PAINT QUALITY FINISHES TO "DRY" ROOMS
All paint finishes to Dry Rooms i.e, Entryways, Dining/Living Spaces, Hallways, WR, ST etc shall include suitable undercoating system and top coat paint system applied to plaster/stopped finish over GIB Standard (10mm or 13mm) substrate. Ensure selected paint colour used as per client selection.

NZBC E3 ALTERNATIVE SOLUTION
E3/AS1 clause 3.1.1 states finishes to floors are to satisfy the performance for impervious and easily cleaned surfaces in spaces containing sanitary fixtures or sanitary appliances. This shall apply to rooms or areas where watersplash can occur from a sanitary fixture. i.e Bathroom, WC, Kitchen, Laundry, ES. Where works undertaken by the contractor and home builder that differ from the method of installation described above, the primary E3/AS1 building code requirement of providing an impervious and easily cleaned surface must be provided for. Where an Alternative Solution is provided, the tiling contractor will describe the extent of the works carried out for acceptance by council.

In support of any Alternative Solution, the contractor will provide:
- A Written Waiver declaration from the Owner has been sought to declare the non-compliance of the porous carpet flooring within 1.5m of the kitchen sanitary fixtures. This Prepared and obtained by Generation Homes Christchurch South.
- PS3 for workmanship will be provided to BCA from tiling and waterproofing contractor, undertaking work as described above and/or as agreed with Generation Homes, the contractor and their client on site, and as noted in the owners declaration waiver supplied.
- selected kitchen sink shall an inbuilt overflow drain in the sink, to restrict ability to overflow.
- guidance to owners is to select kitchen tapware with rotation restrictions, to limit movement of the tap to supply water only over the sink.
- While impervious flooring provides for a level of protection against modest watersplash, it is the occupiers responsibility to act in a way to avoid accumulation of water on these surfaces or other porous surfaces. The responsibility of use/cleaning remains with the occupier to protect the flooring where possible. The use of chemical cleaners, fans or heaters in catastrophic watersplash events shall be undertaken by the owner to avoid unnecessary absorption into any floor surface.
- Regular maintenance and cleaning shall to be undertaken as described in manufacturer/installer requirements

MAINTENANCE
It is the owners responsibility to undertake regular maintenance and visual inspection of all of the floor surfaces. Ensure to follow all manufacturers/installers instructions for maintenance and ensure to use approved cleaners and methods of care for the products.

SELECTED WATERPROOFING MEMBRANE: MANUFACTURER LITERATURE

Sika® Aqua Blok® SBR

Aqua Blok is a waterborne flexible waterproof membrane designed for use under tiled finishes that is capable of accommodating expected structural movement.

SURFACE PREPARATION
All surfaces to be waterproofed must be firm, clean, dry, sound and smooth.
All Grease, oil, wax, curing compounds, dust, droppings, loose material, paint and any other contaminants must be removed. Fibrous cement sheeting, water resistant plasterboard, marine ply and level 3 treated ply must be fixed in accordance with the manufacturer's installation directions. Concrete must be allowed to cure for 28 days and cement render and sand / cement screeds must be allowed to cure for 7 days prior to the application of Aqua Blok.
Porous substrates must first be primed using an appropriate water based primer.
Damp or moist substrates and dense non – porous substrates must be primed using "Aqua Blok Epoxy Seal". Apply an appropriate neutral cure silicone as a bond breaker to the wall/wall joints, the wall/floor joints, and wherever there is a change in the direction of the substrate. All sheet joints and fixings must also be filled with neutral cure silicone before applying a coat of Aqua Blok over all sheet joints, extending 100mm either side of the joints.

Static crack treatment
For cracks less than 1mm, clean thoroughly before filling with an appropriate neutral cure silicone. AquaBlok cannot span gaps. For dynamic cracks/expansion joints and control joints contact the CTA Technical Department for further advice.

APPLICATION - Internal Wet Areas
Aqua Blok must be applied using a brush or roller.
A minimum thickness of 1mm dried film thickness of Aqua Blok is required for optimum waterproofing properties. The surface onto which Aqua Blok is applied must be continuous. Aqua Blok cannot span gaps. A minimum of two coats of Aqua Blok is required.

Shower Recesses
Apply Aqua Blok to the internal vertical corners of the shower using a brush extending at least 100mm either side of the joint. Ensure the corner is well coated. This must extend past the height of the shower rose. It is important to coat around the tap protrusions in the wall. The wall/floor joint must be coated with AquaBlok. The membrane must extend onto the floor at least 100mm and onto the wall 100mm. Aqua Blok must extend a minimum of 25mm above the height of the hob. The walls should then be coated. Once the wall/wall junctions, wall/floor junctions, tap protrusions and walls are coated, then the shower fl oor must be coated.
When coating the floor, the Aqua Blok must be dressed down into the floor waste a minimum of 50mm. The floor must be coated with the Aqua Blok ensuring a minimum dry film thickness of 1mm is achieved. Apply a final coat to ensure there are no imperfections in the membrane. Aqua Blok must be applied at 0.5 litre per M2 per coat. The minimum dry film thickness must be a minimum of 0.5mm.

Floors of Wet Areas
Apply Aqua Blok to the wall/floor joints and sheet fl ooring joints and fixings using a brush, extending at least 100mm either side of the joints. Once these areas are dry, the entire fl oor area can be coated. Sufficient Aqua Blok must be applied onto the surface to achieve a 1mm dried film thickness. Aqua Blok must be applied at 1 litre per M2 per coat. Two coats are required.

Roofs
Aqua Blok is recommended as a waterproofing membrane for non-traffi cable areas. Application is recommended as for "Floors of Wet Areas". There must be sufficient falls for effective drainage to eliminate ponding.

DRYING
Allow 4 - 6 hours between coats. Allow 48 hours to dry prior to tiling. Allow longer in adverse weather conditions.

CLEAN UP
Clean tools and equipment with warm water and detergent while the membrane is still wet.

PACKAGING
15 litre plastic pails

COVERAGE
Floors - 2 litres per M2 at 1mm dry fi lm thickness
Walls - 1 litre per M2 at 0.5mm dry fi lm thickness

TILING
Use an appropriate CTA Pty Ltd recommended tile adhesive

SHELF LIFE
Unopened pails can be stored for up to 12 months in a cool, dry and weatherproof environment. Bags must be stored off the floor.

SAFETY DIRECTIONS
CTA supports best practice in material handling: gloves, mask, safety goggles and protective clothing should be worn. If the product comes into contact with the skin, wash off with warm soapy water. Avoid inhaling the dust by wearing a suitable dust mask and provide adequate ventilation. If swallowed drink plenty of water and seek medical advice. In case of contact with the eyes, rinse with an eye wash or wash away with plenty of water.

FIRST AID
If poisoning occurs, contact a Doctor or Poisons Information Centre
Phone NZ: 0800 764 766.

SEE THE MATERIAL SAFETY DATA SHEET FOR ADDITIONAL INFORMATION.
LIMITATIONS
- Aqua Blok is not designed to stop a hydrostatic head of water pressure
- Aqua Blok must not be used over damp, wet or contaminated substrates
- Aqua Blok must not be applied if it is raining or if rain is imminent
- Aqua Blok must not be applied directly over protective coatings
- Aqua Blok must not be applied over the recommended coverage of 1 litre per m2
- To eliminate possible surface contamination or damage, it is recommended that tiling be carried out as soon as the membrane has cured
- Timber and particleboard fl ooring must be overlaid with fi brous cement sheeting
- Aqua Blok must not be used as a wearing surface for foot or vehicle traffi c
- Aqua Blok must only be used as recommended
- Do not apply where the surface temperature is below 10°C or greater than 35°C

BEST FOR:
- Shower recesses
- Bathroom floor areas
- Laundries
- Kitchens
- Balconies
- Patios
- Steel (suitably primed)
- Concrete, cement render, plaster
- Wet area wall lining board
- Hardie/CSR sheet flooring
- Brick
- Light weight aggregate block
- Plasterboard, MDF
- Plywood sheet flooring

BUILDING CONSENT ISSUE 31/05/2022

Wet Area Details

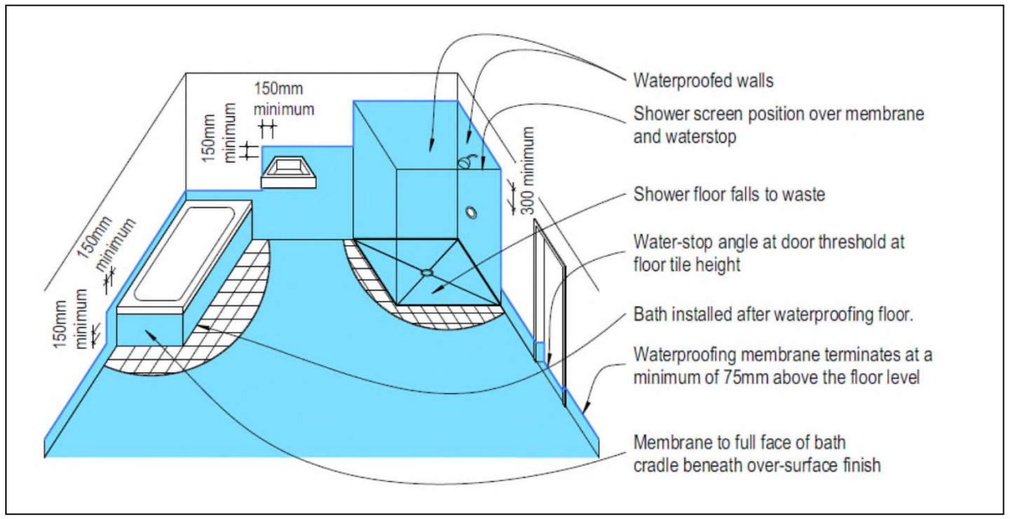
Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE MAY' 22	SCALES: 1:5	EC877 - dwg 19

Code of Practice for Internal Wet Area Membranes
Waterproofing Membrane Association NZ Inc, www.wmai.org.nz



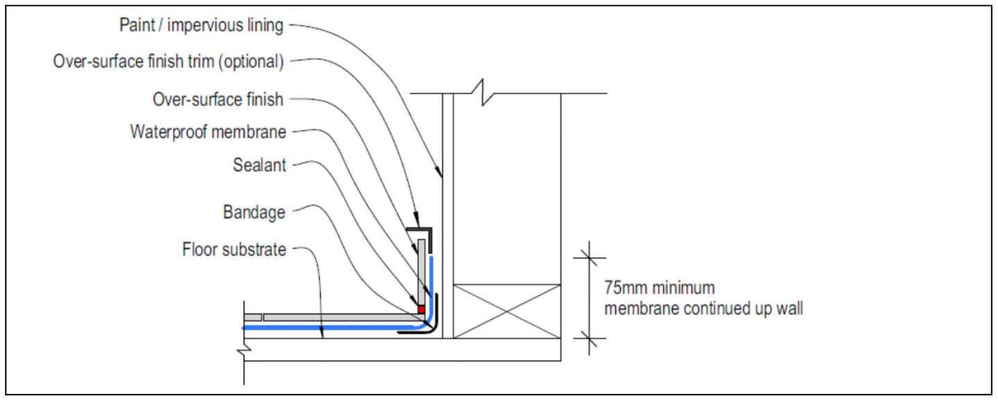
Typical extent of membrane in bathroom with hobless shower area

Notes:

1. Shower area shown with waterproof membrane system to provide waterproofing to floor and walls, and with rigid screen and door. Refer to Fig 10 (p33) for other options which affect the extent of membrane to shower floor, and to walls around and adjacent to the shower area.
2. Built-in bath shown. For both built-in and freestanding baths, the waterproof membrane system must extend under bath and up the wall(s) behind.
3. Refer to Fig 13 (p36) for extent of membrane if the bath has a shower over.
4. Wall-mounted wash hand basin shown. The waterproof membrane system must extend across the floor underneath all fixtures with water supplies (such as wash hand basins and plumbed vanities, whether floor- or wall-mounted), and up the wall behind.
5. Full-height membrane must be applied to all exposed faces of bath cradle, beneath any over-surface finish.
6. There is no need to apply waterproof membrane under an impervious lining.

Floor-to-wall Junctions

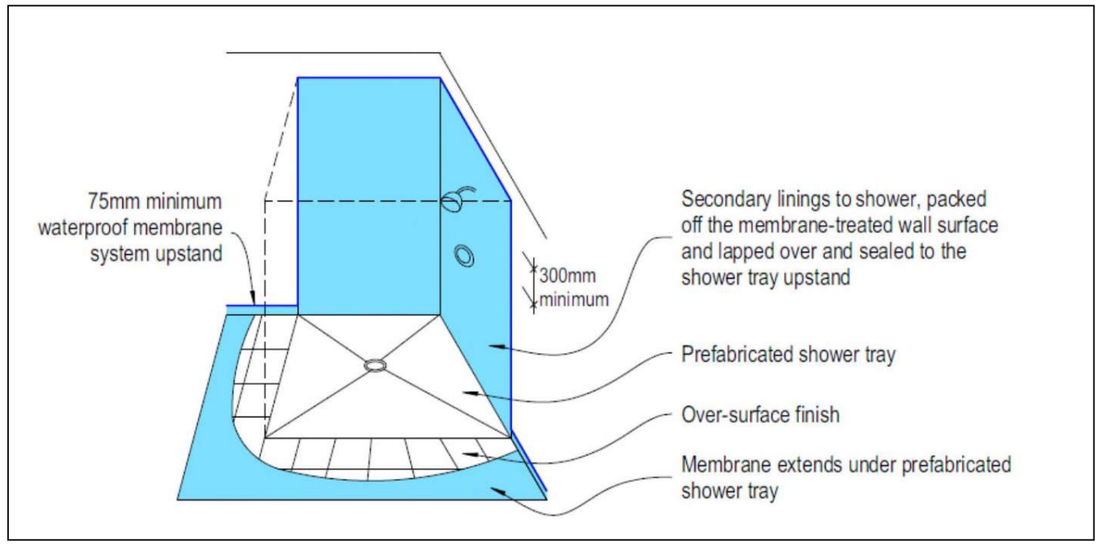
At the perimeter of the room, the waterproof membrane system must form an upstand of at least 75 mm above floor level, as shown in Fig 21 below. Where a membrane will also be provided to the wall face, this must be continuous with the membrane to the floor as shown in Fig 22 (p52).



Waterproof membrane system behind skirting

Notes:

1. Provide a 20 x 20mm timber fillet (CCA-treated to H3.2) or a 10mm sealant fillet, where required by the Supplier's handling/installation instructions.
2. For waterproof membrane systems with a self-finish, the over-surface finish to the floor, the sealant bead, and the skirting are not required.
3. If the membrane will not also be provided to the wall face, then it must be applied to a minimum 75mm above floor level.



Extent of waterproof membrane system for shower areas

Notes:

1. Secondary linings, eg acrylic liner, self-finished sheet linings or sheet linings with secondary wet area membrane and any over-surface finish such as tiles, must be packed off the membrane-treated wall surface, and overlap and be sealed to the shower tray upstand. The waterproof membrane system must extend under the prefabricated shower tray and up the shower area walls (and the face of any hob) behind the secondary shower linings.
2. Alternatively, the waterproof membrane system (with over-surface finish as appropriate) could be used for the shower floor and walls, with the floor substrate constructed to falls.
3. Horizontal extent of waterproof membrane system extends to line of rigid shower screen and door, or 300mm past line of shower curtain, or 1500mm horizontally from shower rose for open shower areas, or 600mm beyond the maximum reach of the shower pick for a hand-held shower rose in an open shower area.
4. Minimum height of waterproofing to shower area walls is 1800mm above the surface of the shower floor or tray.
5. There is no need to apply waterproof membrane under an impervious lining.

BUILDING CONSENT ISSUE 31/05/2022

Wet Area Details
Jagmeet & Mandeep Brar
Lot 27 Bellfield, Southbridge
GH CHRISTCHURCH SOUTH LTD
DATE **MAY' 22** *SCALES:* **1:5** **EC877 - dwg 20**

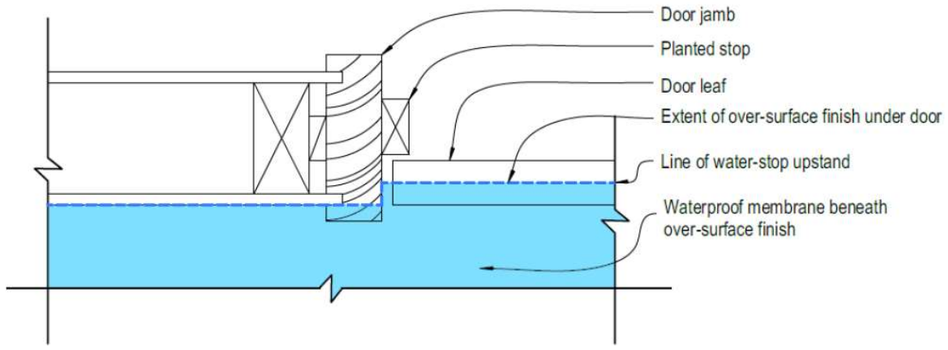


Figure 18: Plan view of water-stop under door jamb

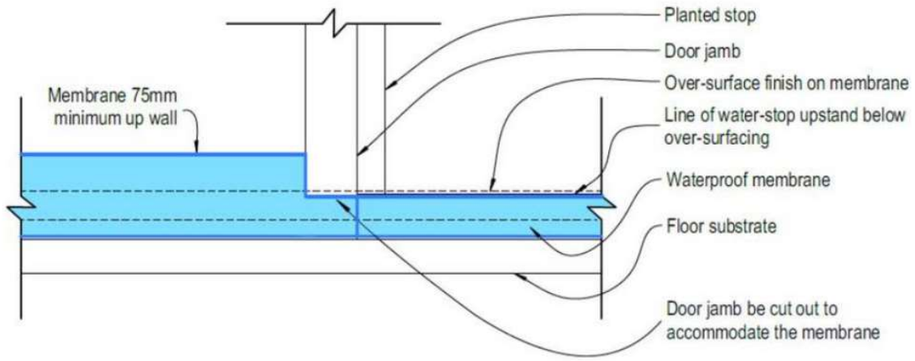


Figure 19: Elevation/edge of door jamb with water-stop under door

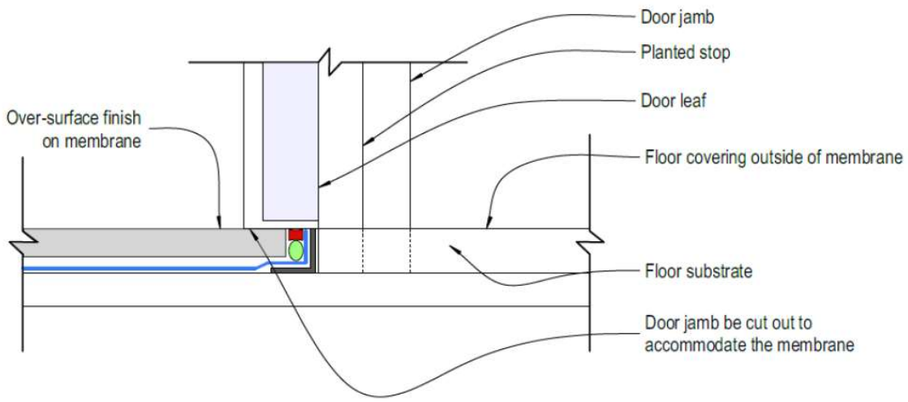


Figure 20: Face of door jamb with water-stop under door

Notes:
1. Where architraves will be used, these must be fitted after the waterproof membrane and the base of the architrave must align with the top of the cut-out in the door jamb. The architrave will obscure part of the upstand of the waterproof membrane.
2. Refer to Figure 14 (p45) for detailing of the water-stop.

4.5.1 Water-stops

Water-stops must be constructed as shown in Figure 14 below.

At door thresholds, the membrane must be dressed to the base of the door jamb as shown in Figures 18-20 (p47).

Water-stops are required by Section 4.0, Design (p20) at edges of a wet-area waterproof membrane system where an upstand against a wall cannot be formed.

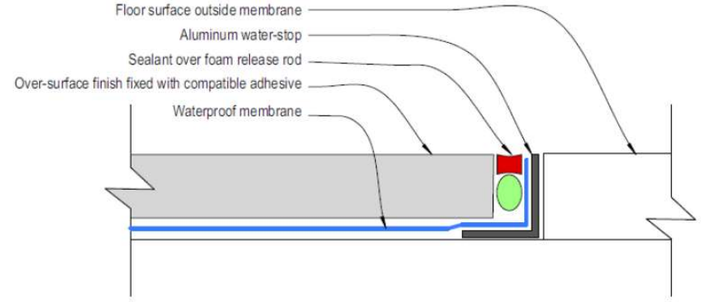
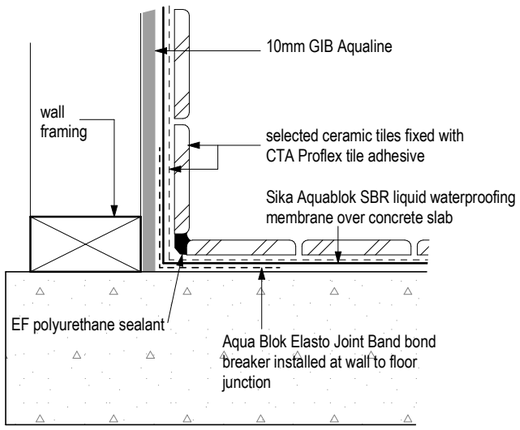


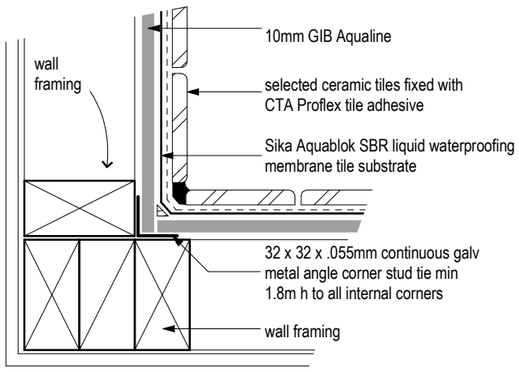
Figure 14: Water-stop at termination of waterproof membrane system

BUILDING CONSENT ISSUE 31/05/2022

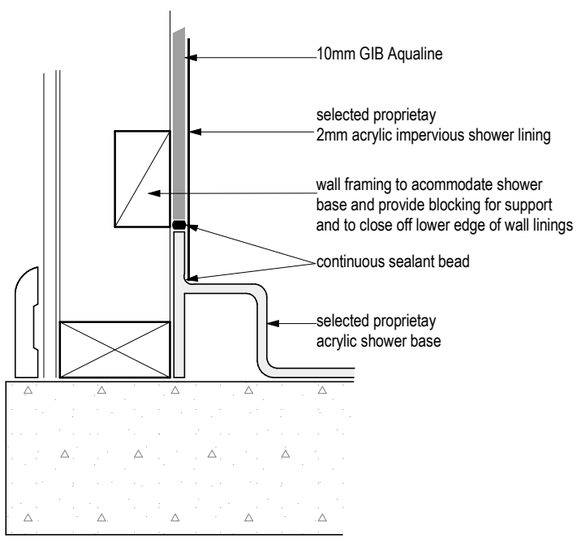
Wet Area Details		
Jagmeet & Mandeep Brar **Lot 27 Bellfield, Southbridge**		
GH CHRISTCHURCH SOUTH LTD		
DATE **MAY' 22**	*SCALES:* **1:5**	**EC877 - dwg 21**



TYPICAL HORIZONTAL / VERTICAL TILE AND WATER-PROOFING JUNCTION



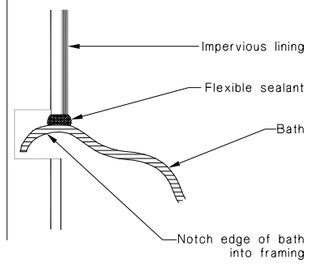
TYPICAL WATER-PROOFING INTERNAL CORNER DETAIL (PLAN VIEW)



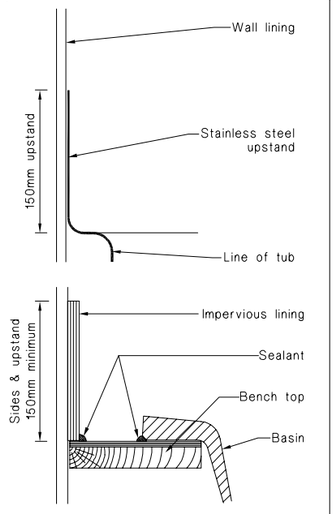
TYPICAL SHOWERBASE DETAIL

WATERSPLASH PREVENTATIVE CONSTRUCTION METHODS E3 AS1

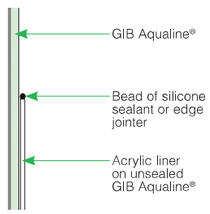
Figure 3: **Baths, Basins, Tubs and Sinks, Joints against Wall Linings**
Paragraph 3.2.2



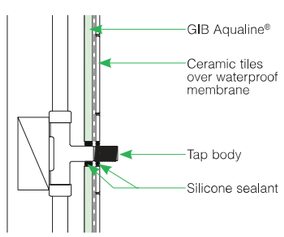
(a) Junctions of bath and wall



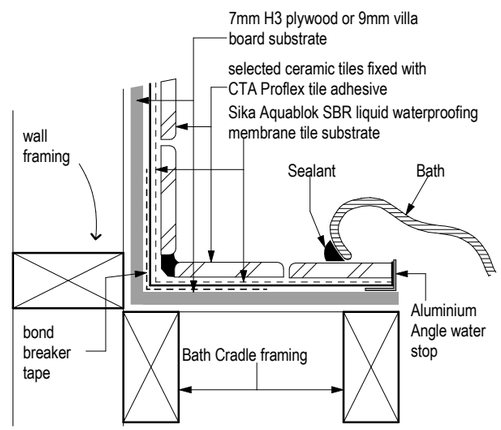
(b) Tub, sink and basin



DETAIL AT TOP OF IMPERVIOUS LINER



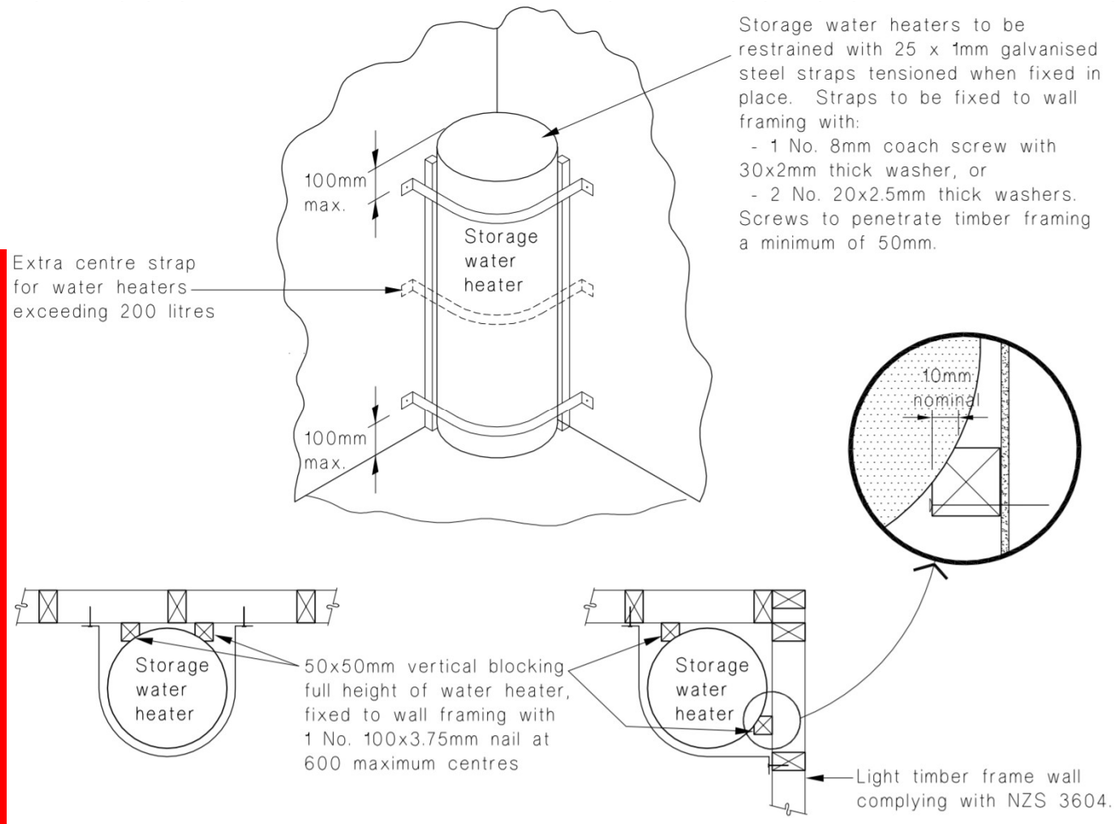
DETAIL AT SHOWER PENETRATIONS



TYPICAL BATH/CRADLE DETAIL

BUILDING CONSENT ISSUE 31/05/2022

Wet Area Details		
Jagmeet & Mandeep Brar		
Lot 27 Bellfield, Southbridge		
GH CHRISTCHURCH SOUTH LTD		
DATE **MAY' 22**	*SCALES:* **1:5**	**EC877 - dwg 22**



3.12 WATER HEATER INSTALLATION

3.12.1 General

This Clause sets out the requirements for the installation of water heaters their location, support, cold water service valves and the vent or drain lines. It does not apply to solar water heaters.

3.12.2 Water heaters

Water heaters shall be installed in accordance with the manufacturer's instructions and shall comply with the requirements of AS 1056.1 or NZS 4602, NZS 4603, NZS 4606.1, NZS 4607, AS 1361, AS 3142 or AS 4552(AG 102), as appropriate. Oil-fired water heaters shall comply with AS 1690.

3.12.3 Selection of anode

If a replacement anode is required, reference shall be made to the appropriate manufacturer.

3.12.4 Working Pressure

Water heaters shall be installed so that the maximum rated working pressure is not exceeded during normal operation. Reference shall be made to the heater label for the relevant information.

3.12.5 Auxiliary controls

Auxiliary controls shall be mounted in accordance with the manufacturer's instructions and shall be adjusted as required.

3.4 WATER TEMPERATURE

3.4.1 Storage temperature

Hot water shall be stored at a minimum of 60°C so as to inhibit the growth of legionella bacteria.

3.4.2 Sanitary fixtures delivery temperature

All new hot water installations shall, at the outlet of all sanitary fixtures, used primarily for personal hygiene purposes, deliver hot water not exceeding 50°C.

NOTE: Compliance with these temperature limits is not mandatory for kitchen sinks and laundry tubs which should be set at preferably 60°C.

3.5 REFERENCED DOCUMENTS

The documents referenced in this Section are listed in Section 1, Clause 1.2.

3.6 LIMITATIONS ON THE USE OF PIPES AND FITTINGS

3.6.1 General

Limitations on the use of pipes and fittings shall also comply with the manufacturer's installations specifications.

3.6.3 Copper pipes

The following limitations apply to the use of copper pipes and fittings (see AS 1432 or NZS 3501):

(a) AS 1432 Type D shall only be used in the as-drawn condition except that local annealing, incidental to the making of joints, is permitted.

(b) AS 1432 Type D shall not be bent nor shall it be used to form compression joints.

(c) Bends in AS 1432 Types A, B and C shall be of uniform radii and free from wrinkling and flattening.

(d) Where installed below the ground in corrosive situations, pipes shall be protected in accordance with Clause 2.12.

TABLE 3.2

MINIMUM THICKNESSES FOR THERMAL INSULATION TO PREVENT FREEZING OF WATER IN PIPES

Pipe size	Thermal conductivity of insulating material, W/m.K				
	0.03	0.04	0.05	0.06	0.07
DN	Minimum thickness required, mm				
15	9	14	20	29	40
18	6	9	12	15	20
20	4	6	8	10	12
25	3	4	5	6	8
32	2	3	4	5	6

NOTE: The insulation thicknesses were calculated using the equations given in BS 5422 to just prevent freezing of water initially at 15°C if exposed to an ambient temperature of –5°C for a period of 8 h.

3.6.7 Polybutylene (PB)

The following limitations apply to the use of polybutylene pipes and fittings:

(a) Pipes and fittings shall not be less than Class 16.

(b) Pipes and fittings shall not be used within 1 m of the inlet to, or outlet from, a water heater.

(c) Pipes and fittings shall not be used where subject to direct sunlight.

(d) Pipes and fittings shall not be used in areas subject to contamination by petroleum products.

(e) Pipes and fittings shall not be used in continuously circulating hot water loops operating above 60°C. or for branch lines within 1 m of such loops, unless specified by the manufacturer as being suitable for this application.

(f) Pipes and fittings shall not be used for temperature pressure relief valve (TPR) drain lines.

(g) Pipes and fittings shall not be used downstream of an instantaneous water heater without a protection device to control maximum hot water temperature.

NOTE: Classes and temperature ratings for different working pressures are given in AS/NZS 2642.2.

3.6.8 Polyethylene (PE)

NOTE: Polyethylene pipes and fittings should not be used in hot water reticulation systems or within 1 m of the inlet to, or outlet from, a water heater. The inclusion of metallic isolating or control or safety valves within the nominated zone should not alter this requirement. Plastics valves or devices should not be permitted to be installed in the nominated zone.

BUILDING CONSENT ISSUE 31/05/2022

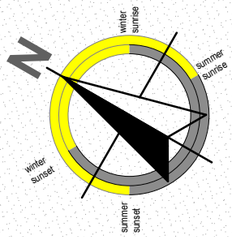
Hot Water Supply

Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE MAY' 22 | SCALES: 1:5 | EC877 - dwg 23



Boundary 34.44m

Boundary 18.65m

Boundary 19.65m

Boundary 1.00m

Boundary 34.45m

BROOK STREET

new proposed vehicle crossing

Hydroseed Grassed Site Area
- By Owner
455.10 m²

Planted Barked Garden - **By Owner**
10.69 m²

Plain Grey Concrete patio
G15
7.62 m²
G 7

Plain Grey Concrete patio
8.44 m²
G 5

G18

G 6 Spec

G24

G10 OS

G 9 OS

G 9

GED

LB

Plain grey reinforced Concrete Driveway
37.38 m²

4.830W x 2.145H sectional lift garage door

Strip of pebbles beneath AC unit

G81
3.21 m²

0.72 m²

Plain Grey Concrete patio

Planted Barked Garden 4.77 m² **- By Owner**

LANDSCAPING LEGEND

Plain Grey Reinforced Concrete Driveway
37.38 m² used
By GH

Plain Grey Concrete Patio
19.99 m² used
By GH

Prepared and Hydroseeded Grassed Site Area
455.10 m² used
By Owner

Prepared and Planted Bark Garden area
15.46 m² used **By Owner**
1 plant per m² std allowance with wooden garden edging as required

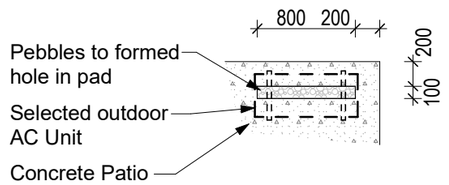
LB — Letter box - brick with numbers

Driveway strip drain/silt trap and/ or sump including connection as required by council
TO ALL EXCEPT WHERE NO FOOTPATH

PAVING FALLS
Form paved areas with falls directed away from building

PAVING SLIP RESISTANCE
All exterior plain concrete paved areas to have a broomed or wood float finish to an average friction co-efficient of 0.65 - 0.85 and all exterior exposed aggregate finish to have an average friction co-efficient of 0.60 - 0.90 in accordance with TABLE 2 D1/AS1

FENCING
All boundary fencing to be confirmed and completed by owners and comply with subdivision covenants and Local Territorial Authorities rules.



AC Pad Detail
scale 1:50

Boundary fencing, internal fencing, gates and vehicle crossings are not included in standard landscaping packages.

VEHICLE CROSSING UPDATE	18/07/2022
BUILDING CONSENT ISSUE	31/05/2022

Landscaping Plan

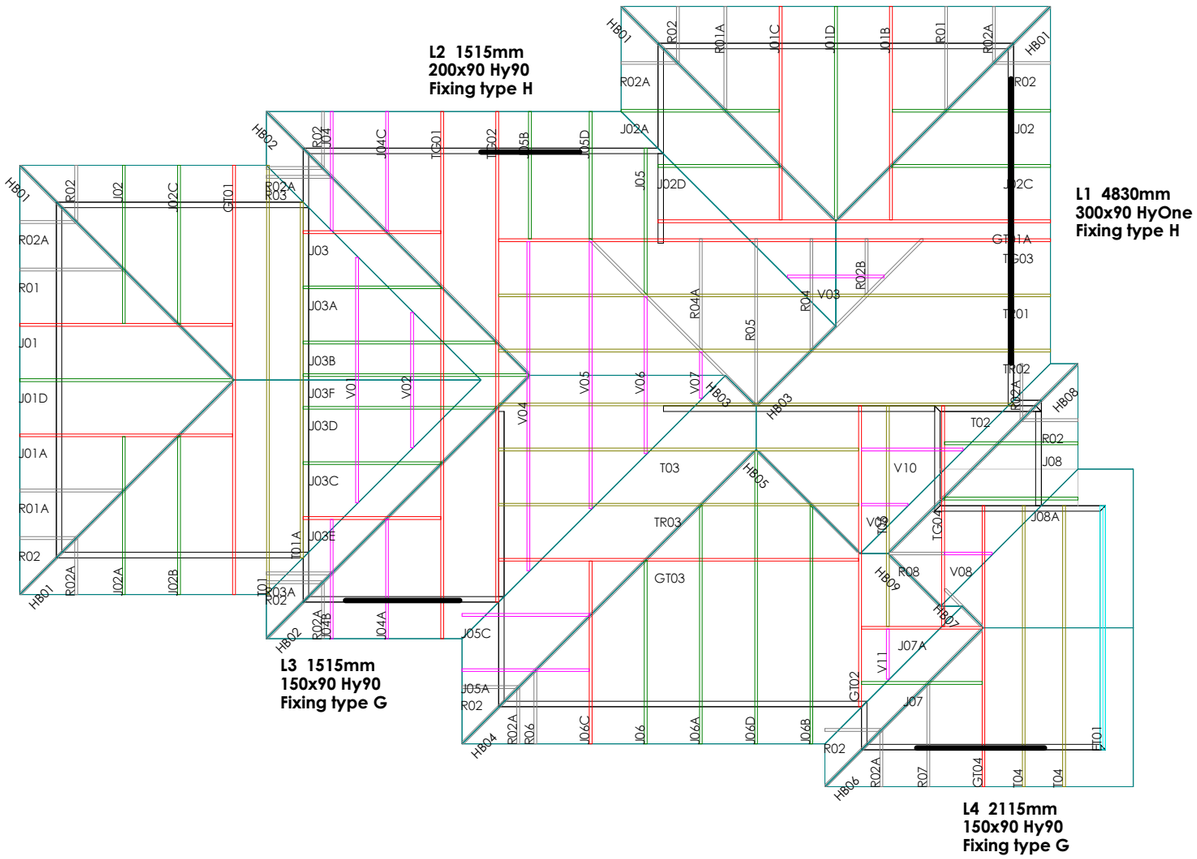
Jagmeet & Mandeep Brar

Lot 27 Bellfield, Southbridge

GH CHRISTCHURCH SOUTH LTD

DATE **JUL' 22** | SCALES: **1:100, 1:5** | **EC877 - dwg 24**

Layout is null and void if trusses not supplied by PlaceMakers



PrimeCad v4.7.346

PlaceMakers® Know how. Can do.

Site Address :
Residence
Lot 28 Bellfield
Southbridge

Sheet Title :
For Building Consent
Buildable Truss Layout

Date : 22 Nov,2021
Drawn : Brian Mee
Scale : 1: 100
System : MiTek 20/20

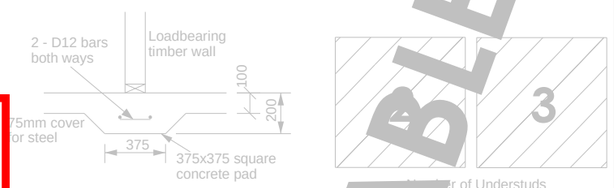
Job Details:

Roof Pitch	: 25.000 Deg	Truss Centres	: 900	mm
Roof Material	: Light	Roof Live Load	: 0.250	kPa
Ceiling Material	: Gib Board 13mm	Floor Live Load	:	kPa
Wind Zone	: High	Wind Speed	: 44.0	m/s
Roof Snow Load	: 0.441 kPa			

MiTek™

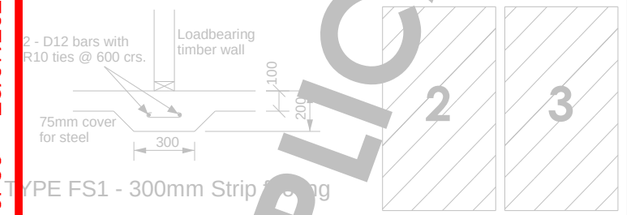
Job Title : 216951
Sheet : 1
Revision Number :

Slab Thickening Details



TYPE FP1 - 375x375mm Pad

Number of Understuds

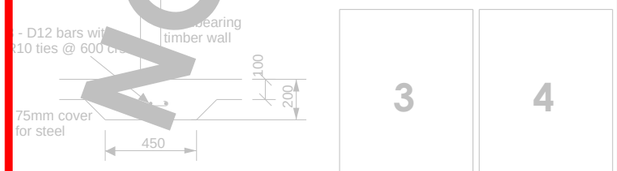


TYPE FS1 - 300mm Strip footing

Number of Understuds

TYPE FP2 - 450x450mm Pad

Number of Understuds



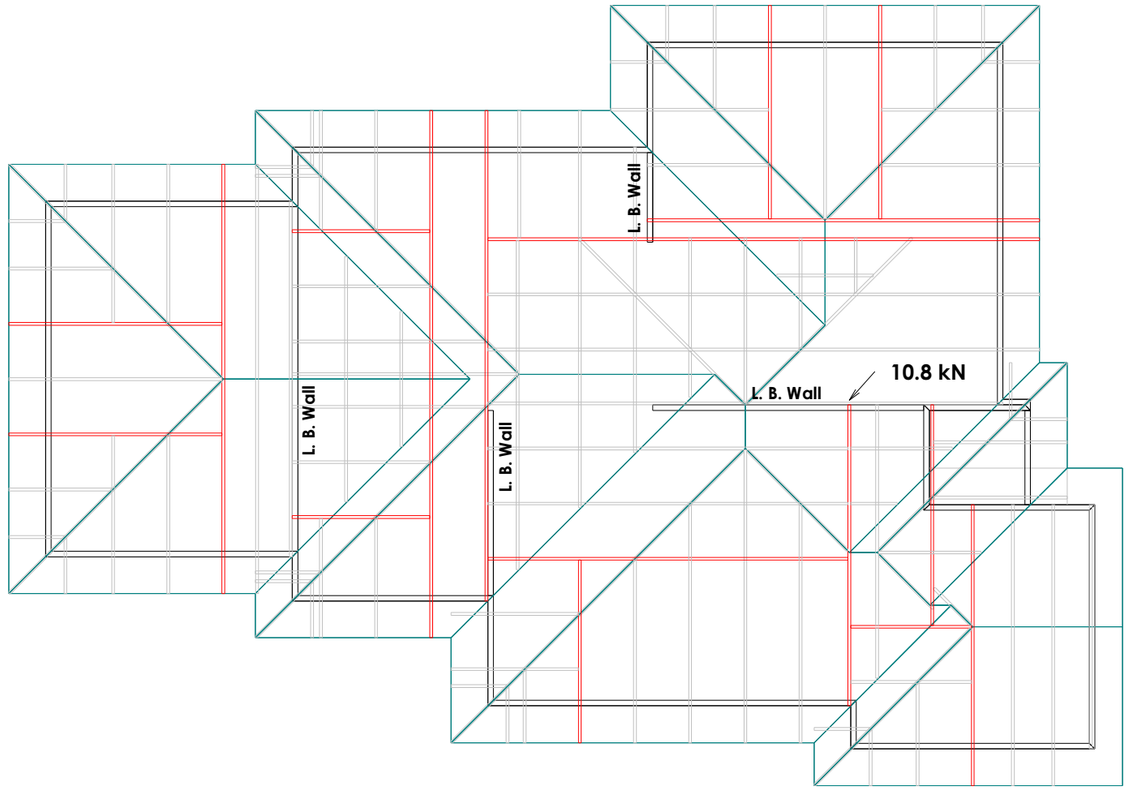
TYPE FS2 - 450mm Strip footing

Number of Understuds

NOTES:

- All point loads exceeding 8.0kN are indicated.
- All walls shown to be considered load bearing.
- Refer to Rib-raft floor design for slab thickening.

Layout is null and void if trusses not supplied by PlaceMakers



PrimeCad v4.7.346

PlaceMakers® Know how. Can do.

Site Address :
Residence
Lot 28 Bellfield
Southbridge

Sheet Title :
For Building Consent
Slab Thickening

Date : 22 Nov,2021 | Drawn : Brian Mee
Scale : 1: 100 | System : MiTek 20/20

Job Details:

Roof Pitch	: 25.000 Deg		Truss Centres	: 900	mm
Roof Material	: Light		Roof Live Load	: 0.250	kPa
Ceiling Material	: Gib Board 13mm		Floor Live Load	:	kPa
Wind Zone	: High		Wind Speed	: 44.0	m/s
Roof Snow Load	: 0.441 kPa				

MiTek™

Job Title : 216951
Sheet : 2
Revision Number :

Lintel Fixing Details

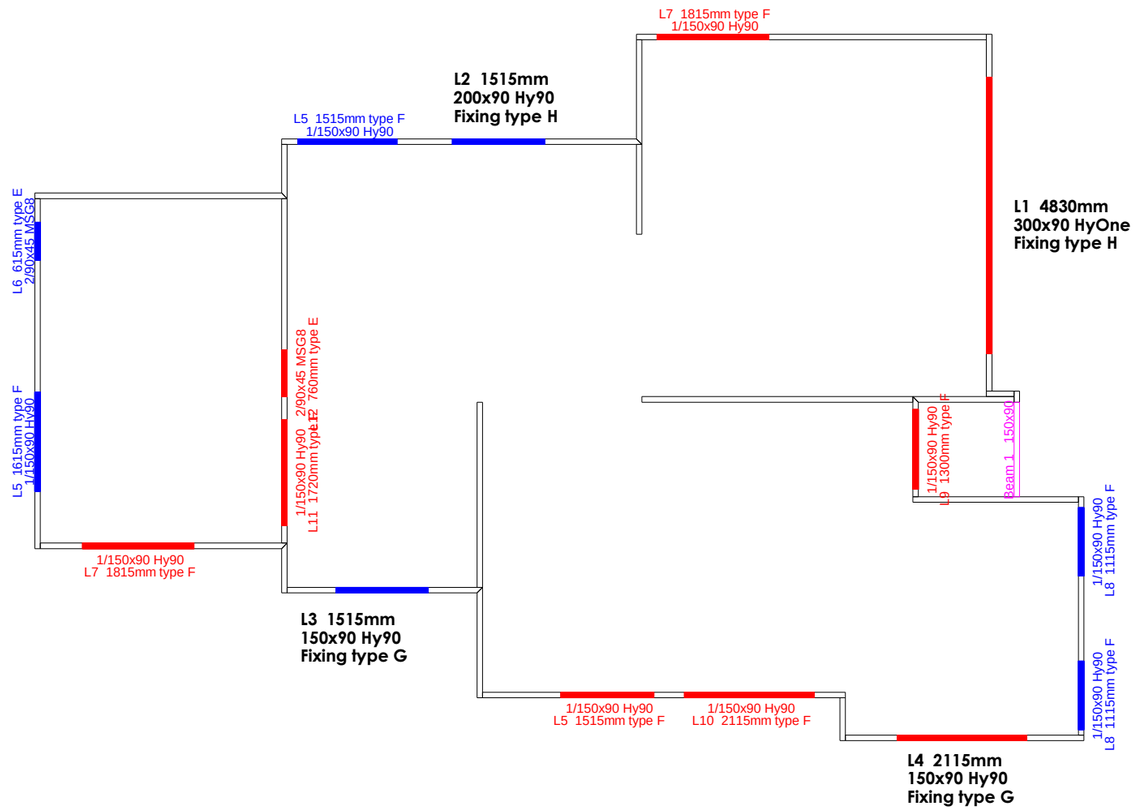
TYPE E
1.4kN

TYPE F
4.0kN

TYPE G
7.5kN

TYPE H
13.5kN

Layout is null and void if trusses not supplied by PlaceMakers



NOTES:

Refer to:
Lintel Fixing Schedule 01/2018
- pages 73 & 74, Structrual Fixings
- On-site Guide for Buildng Code Compliance 2018 Edition

(Alternative to NZS 3604:2011 Table 8.14 & Figure 8.12)

PrimeCad v4.7.346

PlaceMakers® Know how. Can do.

Site Address :
Residence
Lot 28 Bellfield
Southbridge

Sheet Title :
For Building Consent
Lintel Fixing

Date : 22 Nov,2021
Drawn : Brian Mee
Scale : 1: 100
System : MiTek 20/20

Job Details:

Roof Pitch	: 25.000 Deg		Truss Centres	: 900	mm
Roof Material	: Light		Roof Live Load	: 0.250	kPa
Ceiling Material	: Gib Board 13mm		Floor Live Load	:	kPa
Wind Zone	: High		Wind Speed	: 44.0	m/s
Roof Snow Load	: 0.441 kPa				

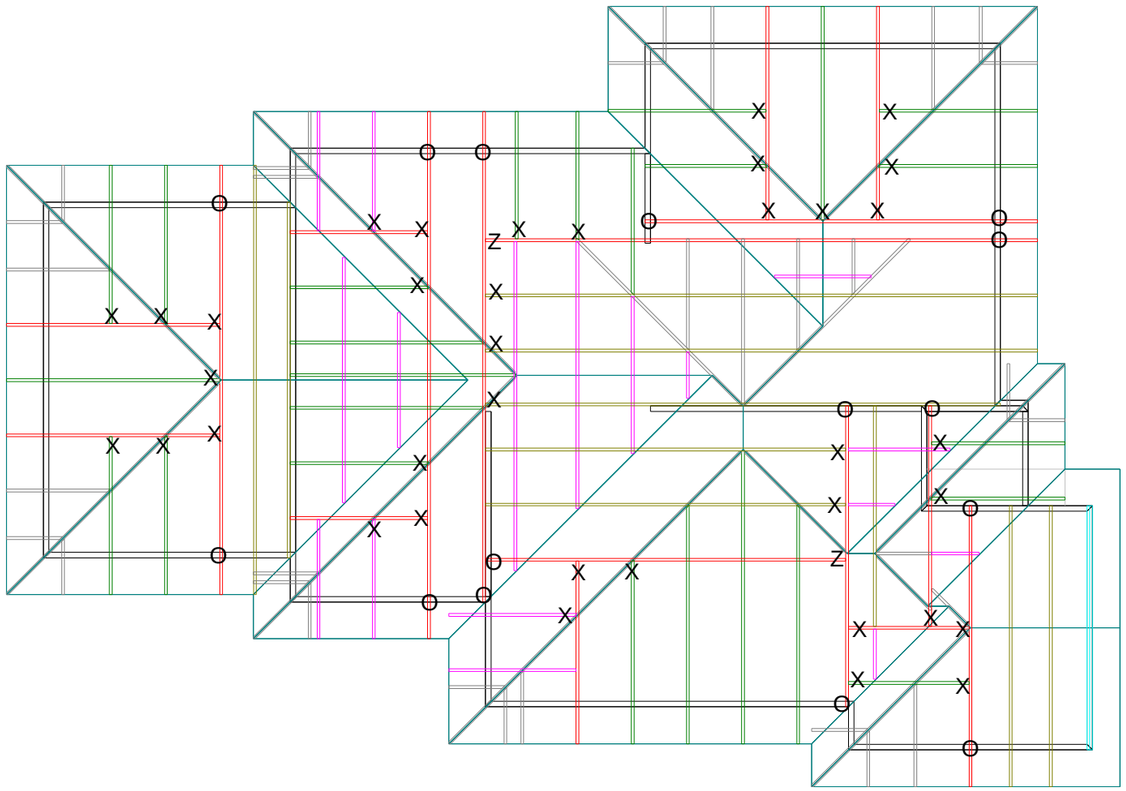
MiTek™

Job Title :
216951
Sheet :
3
Revision Number :

Truss Fixings

- X - LUMBERLOK JH47x90 Joist Hanger
- Z - LUMBERLOK JH47x120 Joist Hanger
- P - LUMBERLOK JH47x190 Joist Hanger
- E - LUMBERLOK JH95x165 Joist Hanger
- O - Pair of LUMBERLOK CT200 Ceiling Ties
- H - LUMBERLOK CT400 Cyclone Tie
- B - LUMBERLOK CT600 Cyclone Tie
- M - Pair of LUMBERLOK Multi Grips
- NP - LUMBERLOK Nailon Plate
- N - LUMBERLOK N21 Diagonal Cleat
- W - Pair of LUMBERLOK CPC40 Cleats
- K - LUMBERLOK TTP 16kN Truss to Top Plate set
- G - LUMBERLOK TTP 9kN Truss to Top Plate set

Layout is null and void if trusses not supplied by PlaceMakers



NOTES:

All other areas must have at the minimum
2/ 90x3.15mm skew nails + 2 wire dogs (4.7kN)
for truss to top plate connections.

Refer to:
LUMBERLOK Timber Connectors Characteristic Loadings Data brochure 03/4

PlaceMakers® Know how. Can do.

Site Address :
Residence
Lot 28 Bellfield
Southbridge

Sheet Title :
For Building Consent
Truss Fixings

Date : 22 Nov,2021 | Drawn : Brian Mee
Scale : 1: 100 | System : MiTek 20/20

Job Details:

Roof Pitch	: 25.000 Deg	Truss Centres	: 900	mm
Roof Material	: Light	Roof Live Load	: 0.250	kPa
Ceiling Material	: Gib Board 13mm	Floor Live Load	:	kPa
Wind Zone	: High	Wind Speed	: 44.0	m/s
Roof Snow Load	: 0.441 kPa			

PrimeCad v4.7.346

MiTek™

Job Title : 216951
Sheet : 4
Revision Number :