

XLAM CLT - BUILDING ENVELOPE GUIDE

Panel use: **Detail Reference:** **Detail Description:** **Issue Date:**

Floor assembly

BE 1.1	Xlam wall + concrete floor slab	08.05.2013
BE 1.2	Xlam + perimeter foundation	08.05.2013
BE 1.3	Xlam + perimeter foundation	08.05.2013
BE 1.4	Xlam + timber sub-floor	08.05.2013
BE 1.5	Xlam + pole sub-floor	08.05.2013
BE 1.6	Xlam floor + support beam	08.05.2013
BE 1.7	Interior Xlam wall to floor	08.05.2013
BE 1.8	Interior Xlam wall to concrete floor	08.05.2013

Mid - floor assembly

BE 2.1	Xlam mid floor - balloon construction	08.05.2013
BE 2.2	Xlam mid floor - platform construction - CLT wall	08.05.2013
BE 2.3	Xlam mid floor - platform construction - frame wall	08.05.2013

Roof assembly

BE 3.1	Xlam roof - soffit	08.05.2013
BE 3.2	Xlam roof - ridge	08.05.2013
BE 3.3	Xlam roof - barge	08.05.2013

Plan details

BE 4.1	Internal corner - plan detail	08.05.2013
BE 4.2	External corner - plan detail	08.05.2013
BE 4.3	Xlam wall 'T' junction - plan detail	08.05.2013

Window details

BE 5.1	Window head	08.05.2013
BE 5.2	Window jamb	08.05.2013
BE 5.3	Window sill	08.05.2013

Acoustic construction

BE 6.1	Xlam Acoustic floor	08.05.2013
BE 6.2	Xlam Acoustic wall	08.05.2013
BE 6.3	Xlam Acoustic ceiling	08.05.2013
BE 6.4	Xlam Acoustic inter-tenancy wall	08.05.2013
BE 6.5	Xlam Acoustic inter-tenancy wall	08.05.2013

Wet area construction

BE 7.1	Xlam wet area floor	08.05.2013
BE 7.2	Xlam shower floor	08.05.2013
BE 7.3	Xlam wet area wall	08.05.2013

Thermal resistance calculations

BE 8.1	Guide to calculating thermal resistance for a CLT envelope	08.05.2013
--------	--	------------

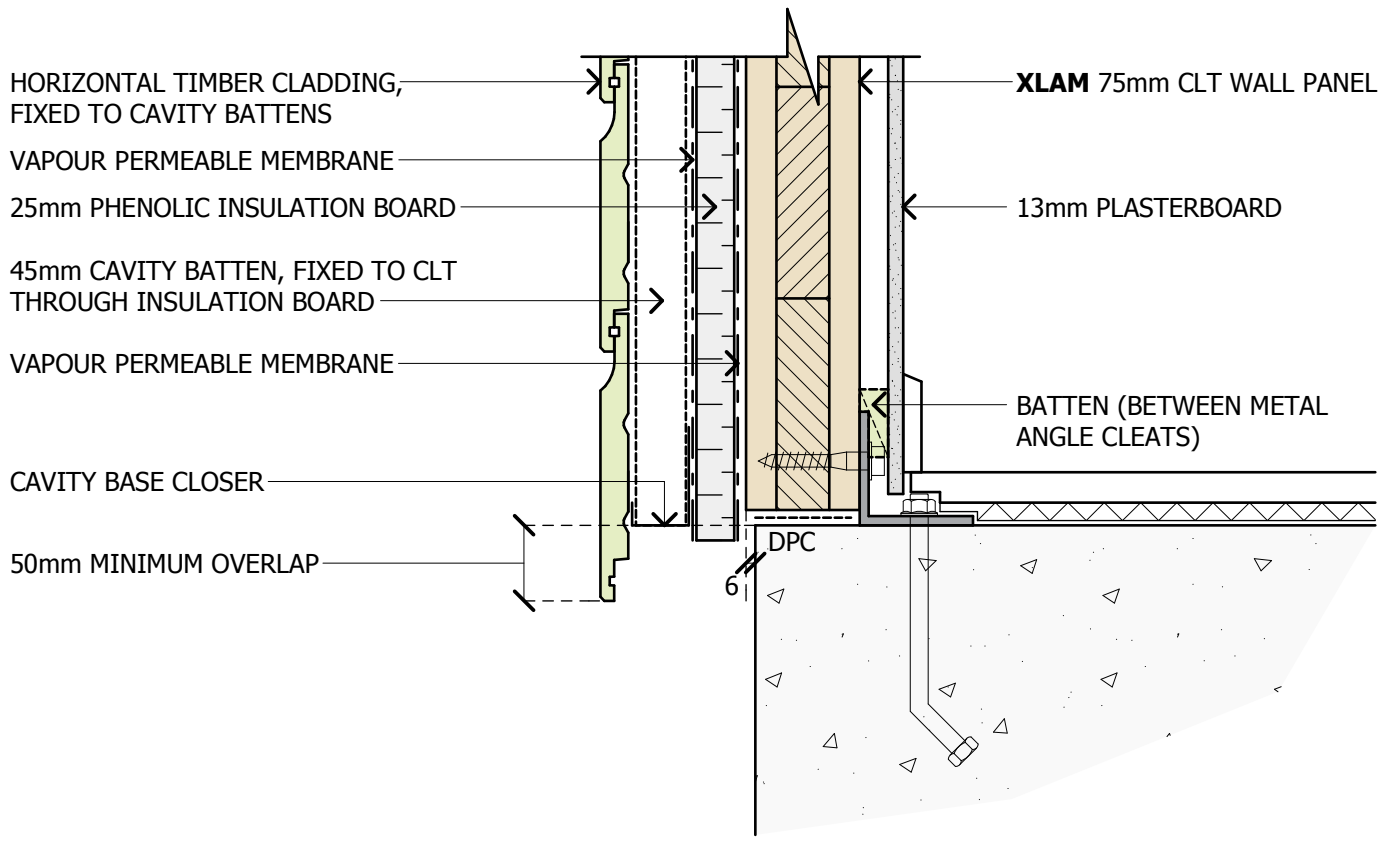
Details shown are indicative only and subject to project-specific design



XLAM CLT - BUILDING ENVELOPE GUIDE - INDEX


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

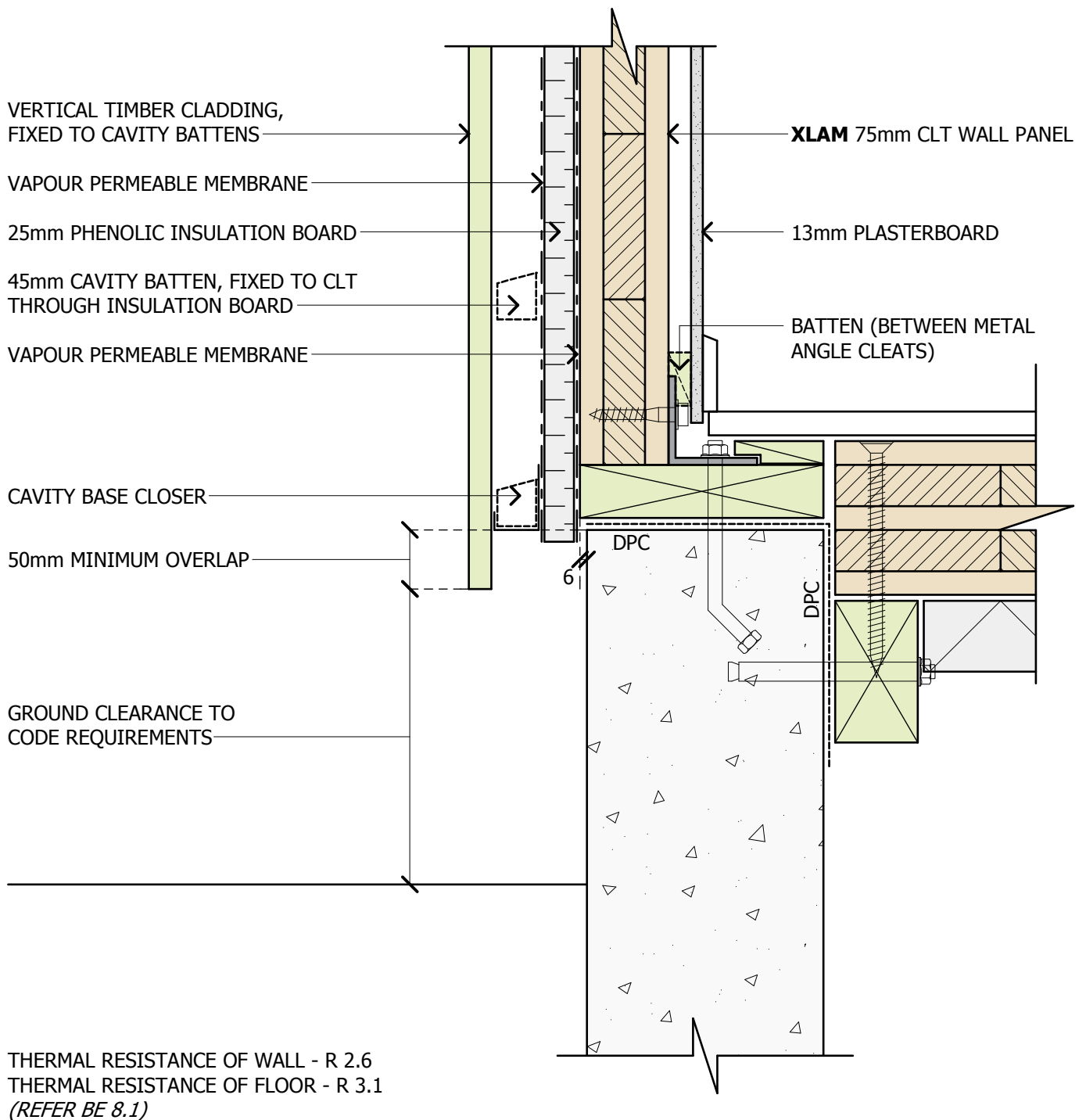
V 1.1
Date. 08.05.13
Scale. 1:5 at A4



THERMAL RESISTANCE OF WALL - R 3.1
 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

	XLAM WALL + CONCRETE FLOOR		
	Telephone: +64 (0) 3 538 0930	V 1.1	BE 1.1
	Email: enquiries@xlam.co.nz	Date: 08.05.13	
	Web: www.xlam.co.nz	Scale: 1:5 at A4	
57 Beatty St, Tahunanui, Nelson 7041, New Zealand			



Details shown are indicative only and subject to project-specific design

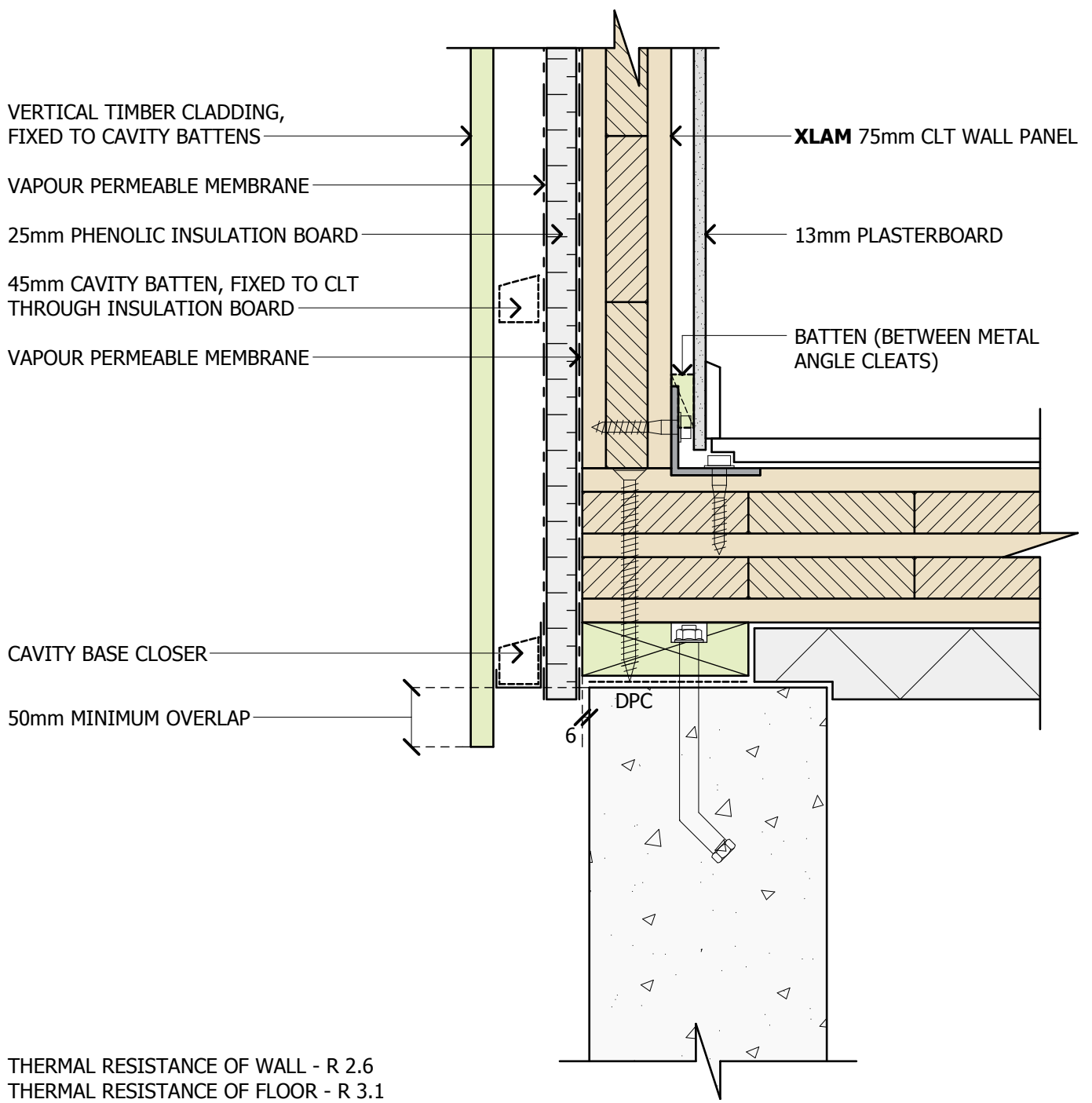
XLAM + PERIMETER FOUNDATION



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 1.2



Details shown are indicative only and subject to project-specific design

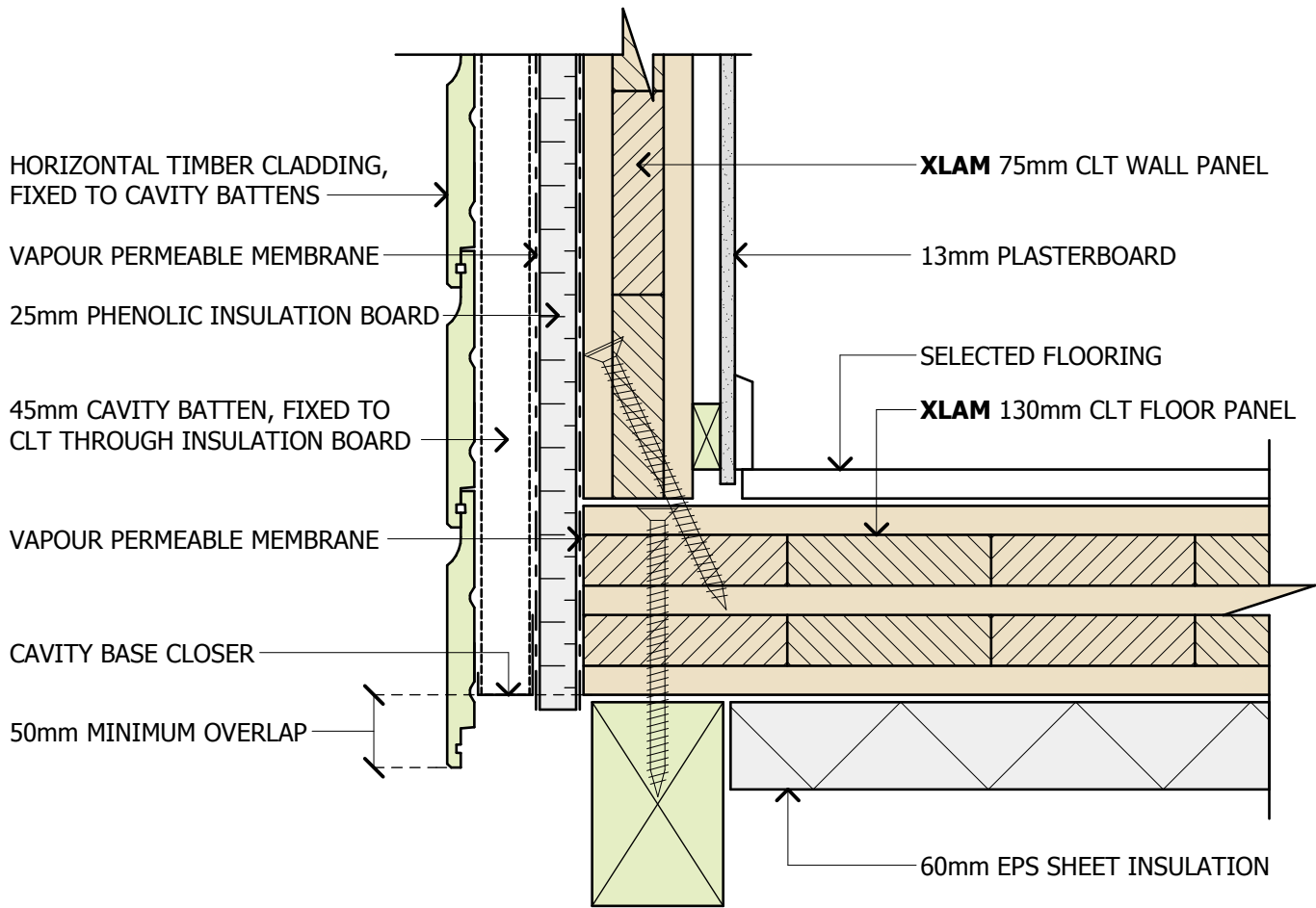
XLAM + PERIMETER FOUNDATION



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand


V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

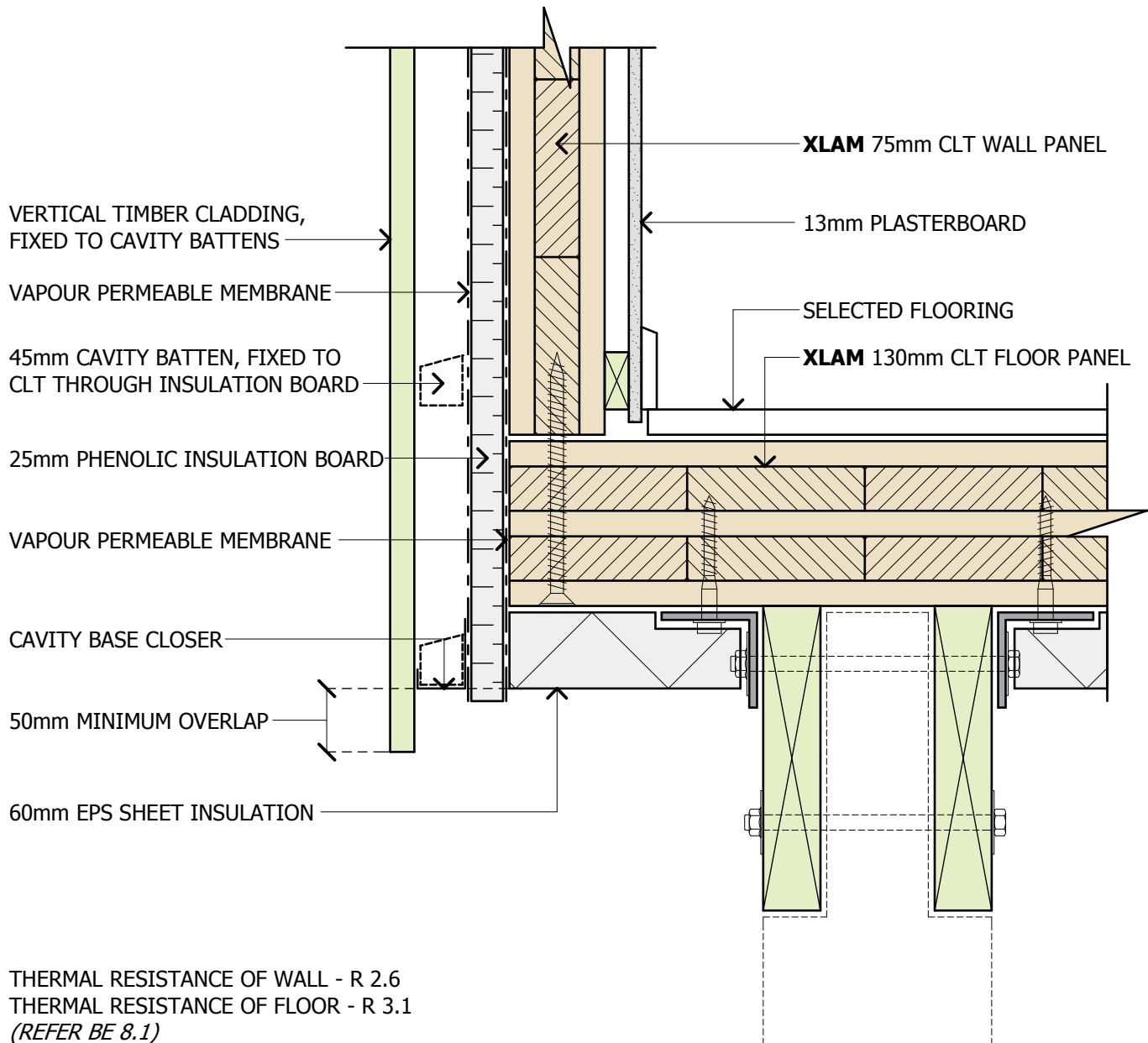
BE 1.3



THERMAL RESISTANCE OF WALL - R 2.6
 THERMAL RESISTANCE OF FLOOR - R 3.1
 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

	XLAM + TIMBER SUB-FLOOR		
	Telephone: +64 (0) 3 538 0930	V 1.1	BE 1.4
	Email: enquiries@xlam.co.nz	Date: 08.05.13	
	Web: www.xlam.co.nz	Scale: 1:5 at A4	
57 Beatty St, Tahunanui, Nelson 7041, New Zealand			



Details shown are indicative only and subject to project-specific design

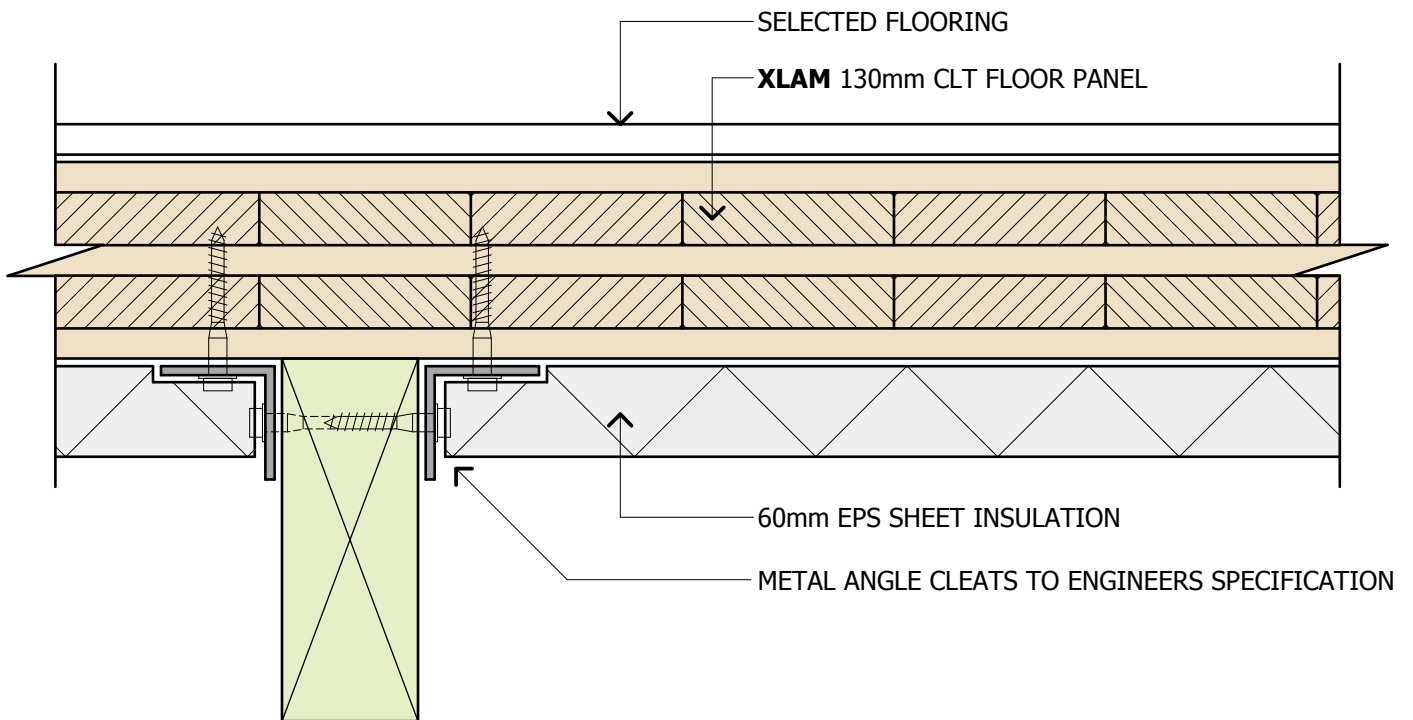


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM + POLE SUB-FLOOR

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 1.5



THERMAL RESISTANCE OF FLOOR - R 3.1
 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

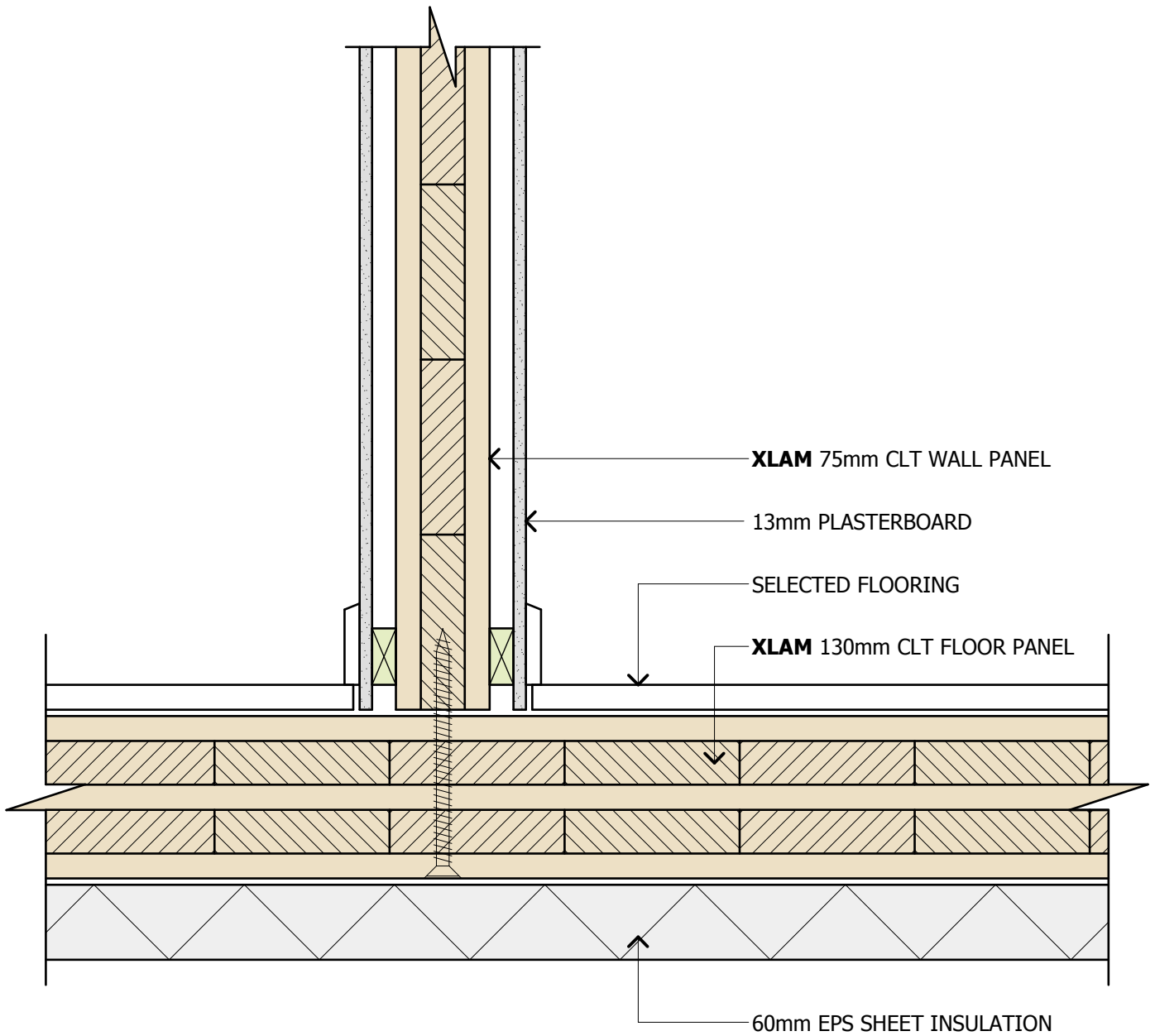
XLAM FLOOR + SUPPORT BEAM



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 1.6



THERMAL RESISTANCE OF FLOOR - R 3.1
 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

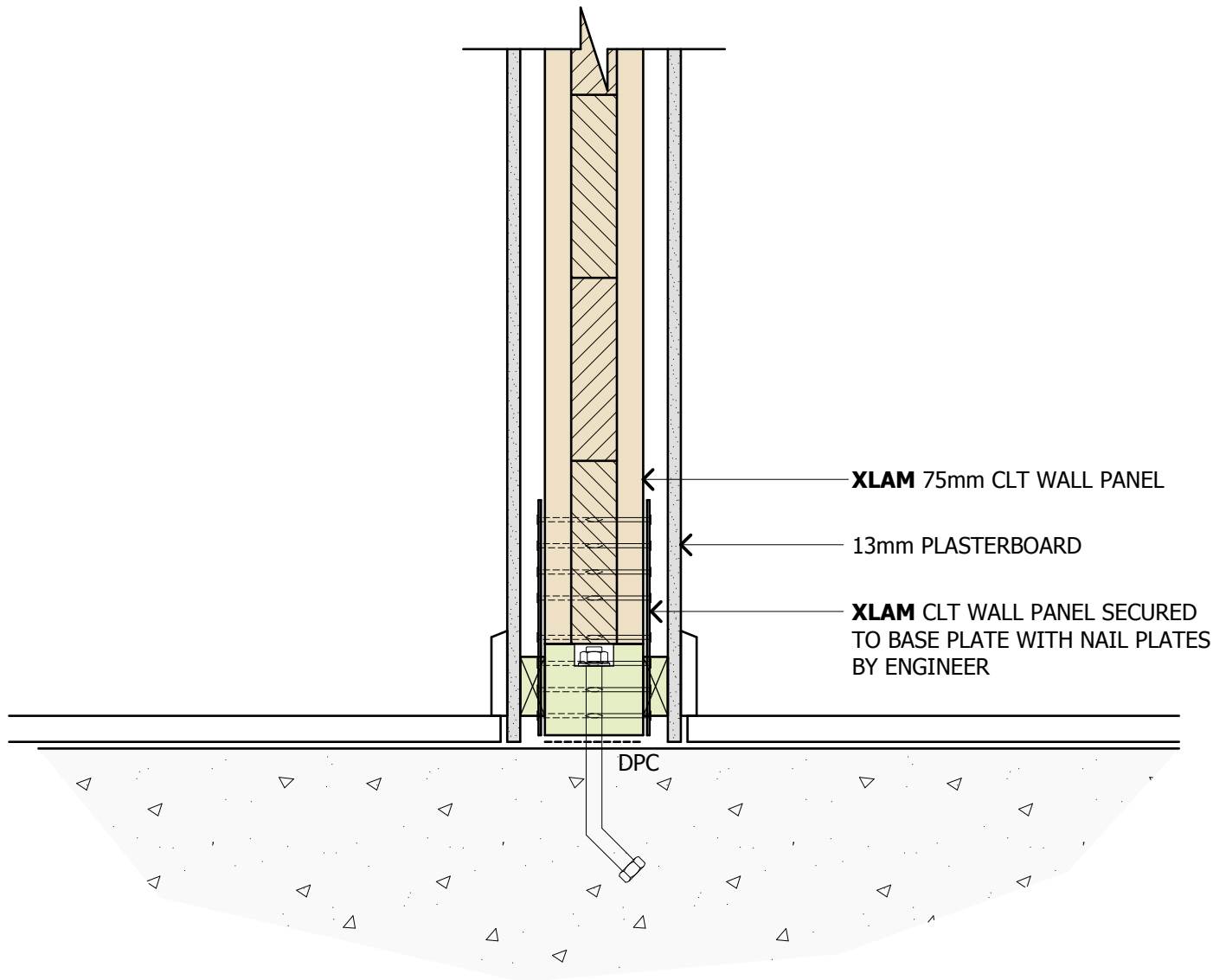
INTERIOR XLAM WALL TO FLOOR



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 1.7



Details shown are indicative only and subject to project-specific design

INTERIOR XLAM WALL TO CONCRETE FLOOR



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 1.8

HORIZONTAL TIMBER CLADDING,
FIXED TO CAVITY BATTENS

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

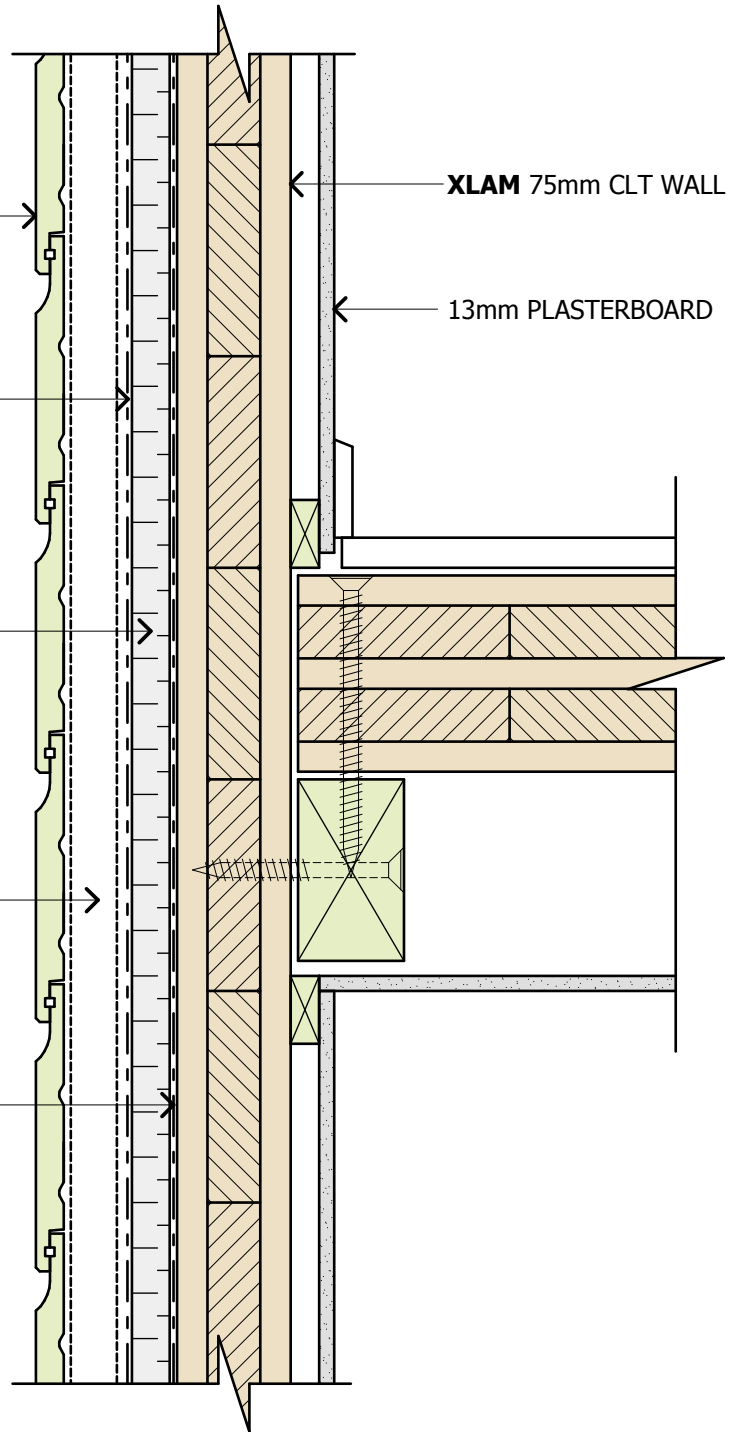
45mm CAVITY BATTEN, FIXED TO CLT
THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)

XLAM 75mm CLT WALL PANEL

13mm PLASTERBOARD



Details shown are indicative only and subject to project-specific design



XLAM MID FLOOR - BALLOON CONSTRUCTION

Telephone: +64 (0) 3 538 0930

Email: enquiries@xlam.co.nz

Web: www.xlam.co.nz

57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1

Date. 08.05.13

Scale. 1:5 at A4

BE 2.1

VERTICAL TIMBER CLADDING,
FIXED TO CAVITY BATTENS

VAPOUR PERMEABLE MEMBRANE

45mm CAVITY BATTEN, FIXED TO CLT
THROUGH INSULATION BOARD

25mm PHENOLIC INSULATION BOARD

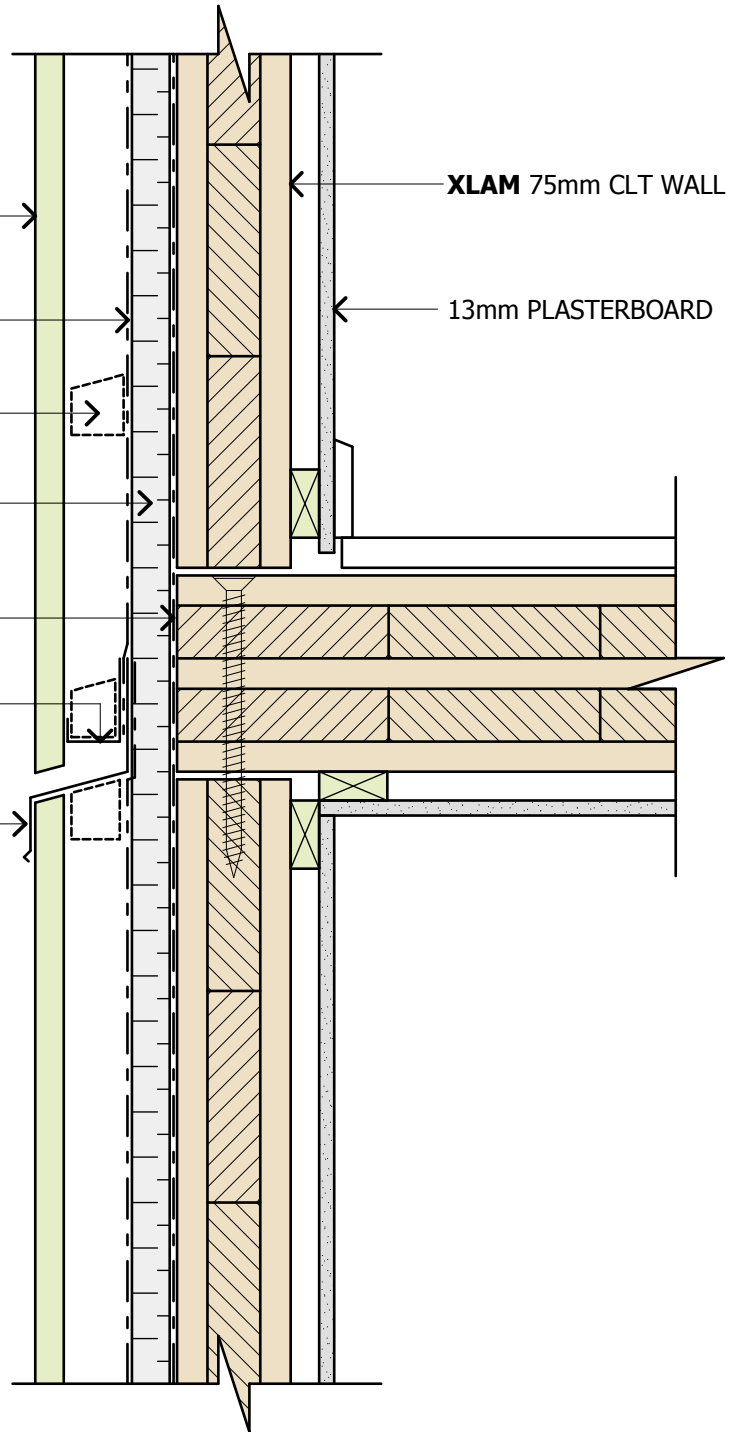
VAPOUR PERMEABLE MEMBRANE

CAVITY BASE CLOSER

FLASHING TO CODE REQUIREMENTS

XLAM 75mm CLT WALL PANEL

13mm PLASTERBOARD



THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)

Details shown are indicative only and subject to project-specific design



XLAM MID FLOOR - PLATFORM CONSTRUCTION - CLT WALL

Telephone: +64 (0) 3 538 0930

Email: enquiries@xlam.co.nz

Web: www.xlam.co.nz

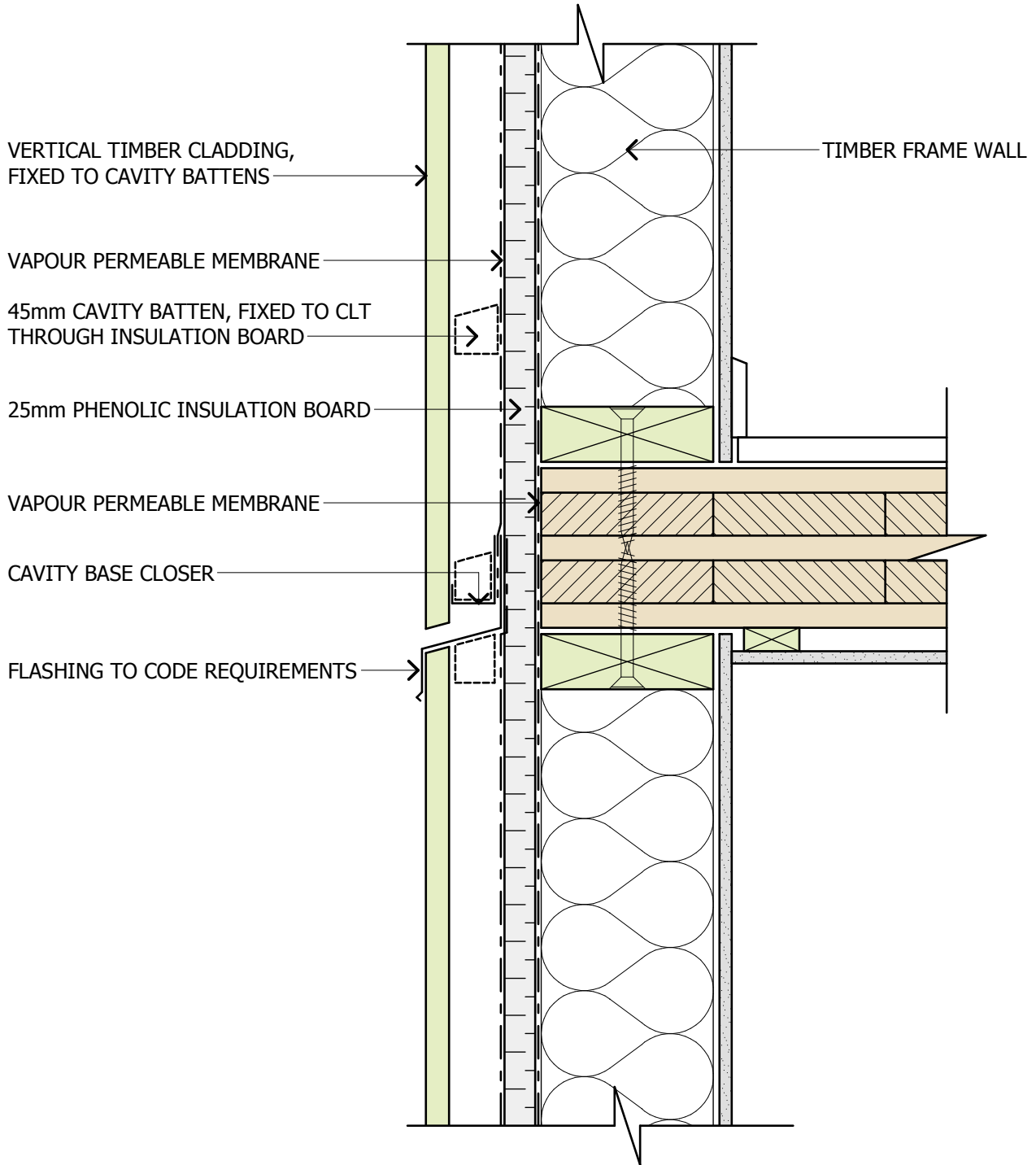
57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1

Date. 08.05.13

Scale. 1:5 at A4

BE 2.2



Details shown are indicative only and subject to project-specific design



XLAM MID FLOOR - PLATFORM CONSTRUCTION - FRAME WALL

Telephone: +64 (0) 3 538 0930

Email: enquiries@xlam.co.nz

Web: www.xlam.co.nz

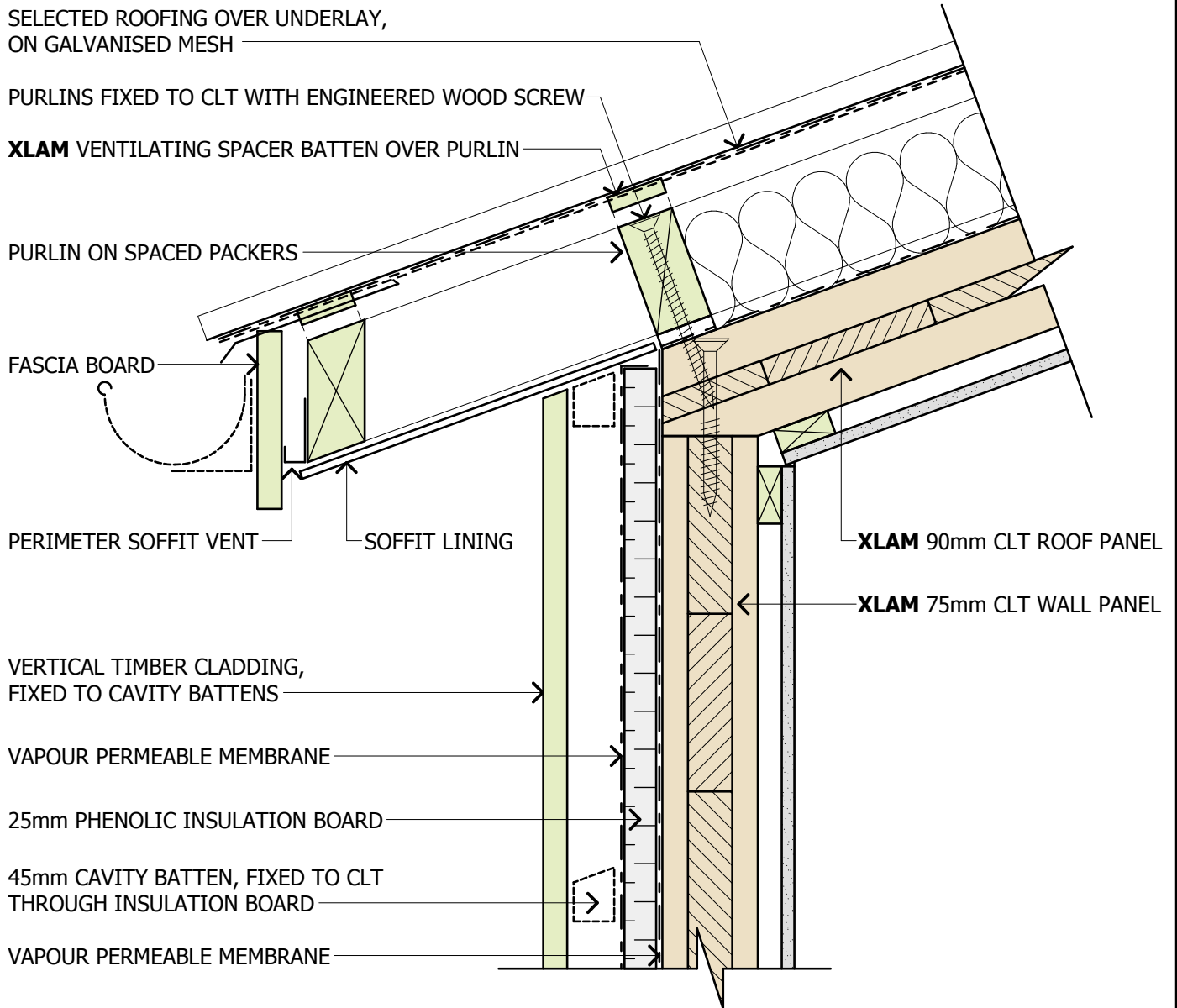
57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1

Date. 08.05.13

Scale. 1:5 at A4

BE 2.3



THERMAL RESISTANCE OF WALL - R 2.6
 THERMAL RESISTANCE OF ROOF - R 3.8
 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

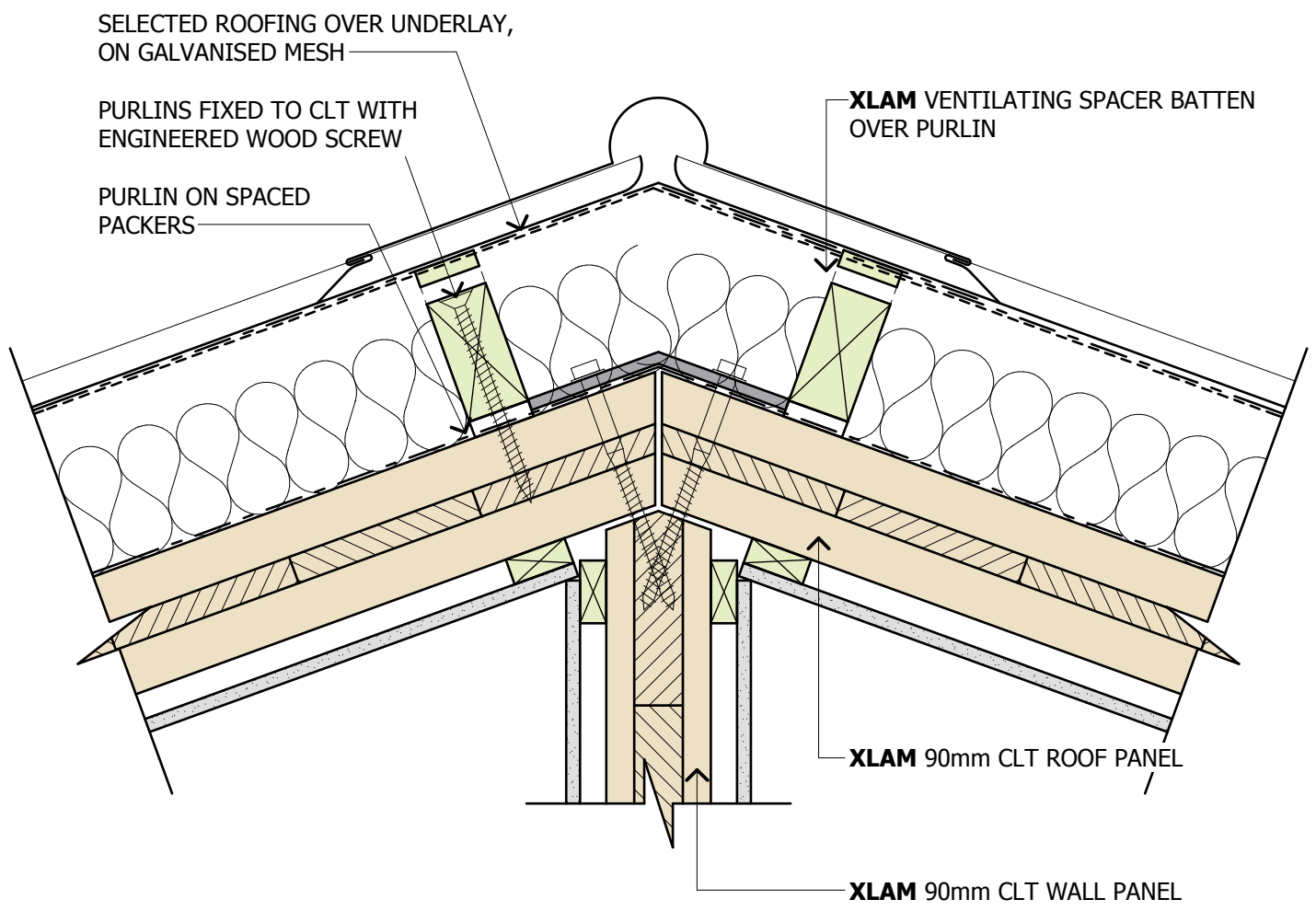


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM ROOF - SOFFIT


V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 3.1



THERMAL RESISTANCE OF ROOF - R 3.8
 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

	XLAM ROOF - RIDGE		
	Telephone: +64 (0) 3 538 0930	V 1.1	BE 3.2
	Email: enquiries@xlam.co.nz	Date: 08.05.13	
	Web: www.xlam.co.nz	Scale: 1:5 at A4	
57 Beatty St, Tahunanui, Nelson 7041, New Zealand			

SELECTED ROOFING OVER UNDERLAY,
ON GALVANISED MESH

XLAM VENTILATING SPACER
BATTEN OVER PURLIN

BARGE BOARD

PERIMETER SOFFIT VENT

SOFFIT LINING

HORIZONTAL TIMBER CLADDING,
FIXED TO CAVITY BATTENS

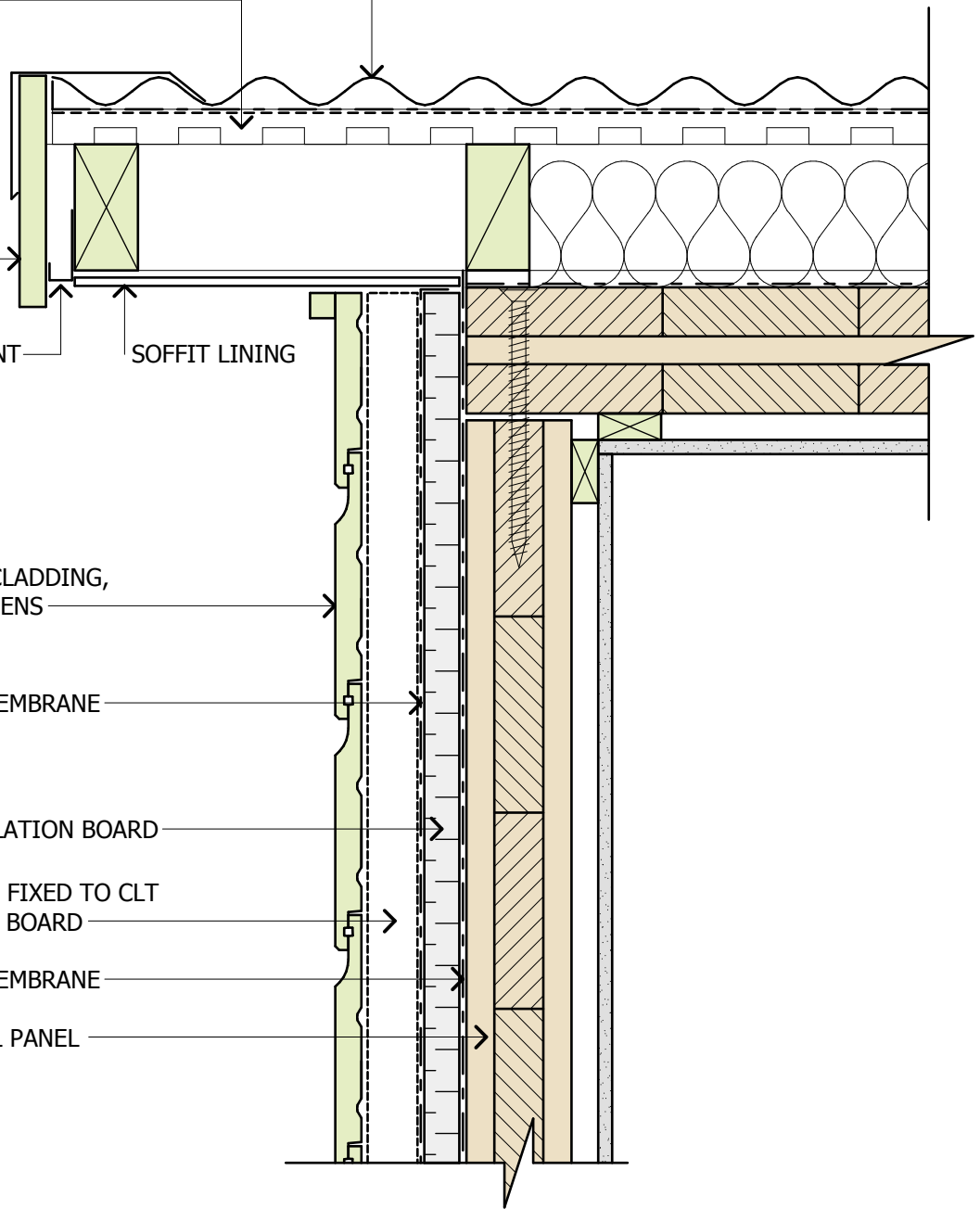
VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

45mm CAVITY BATTEN, FIXED TO CLT
THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

XLAM 75mm CLT WALL PANEL



THERMAL RESISTANCE OF WALL - R 2.6
THERMAL RESISTANCE OF ROOF - R 3.8
(REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

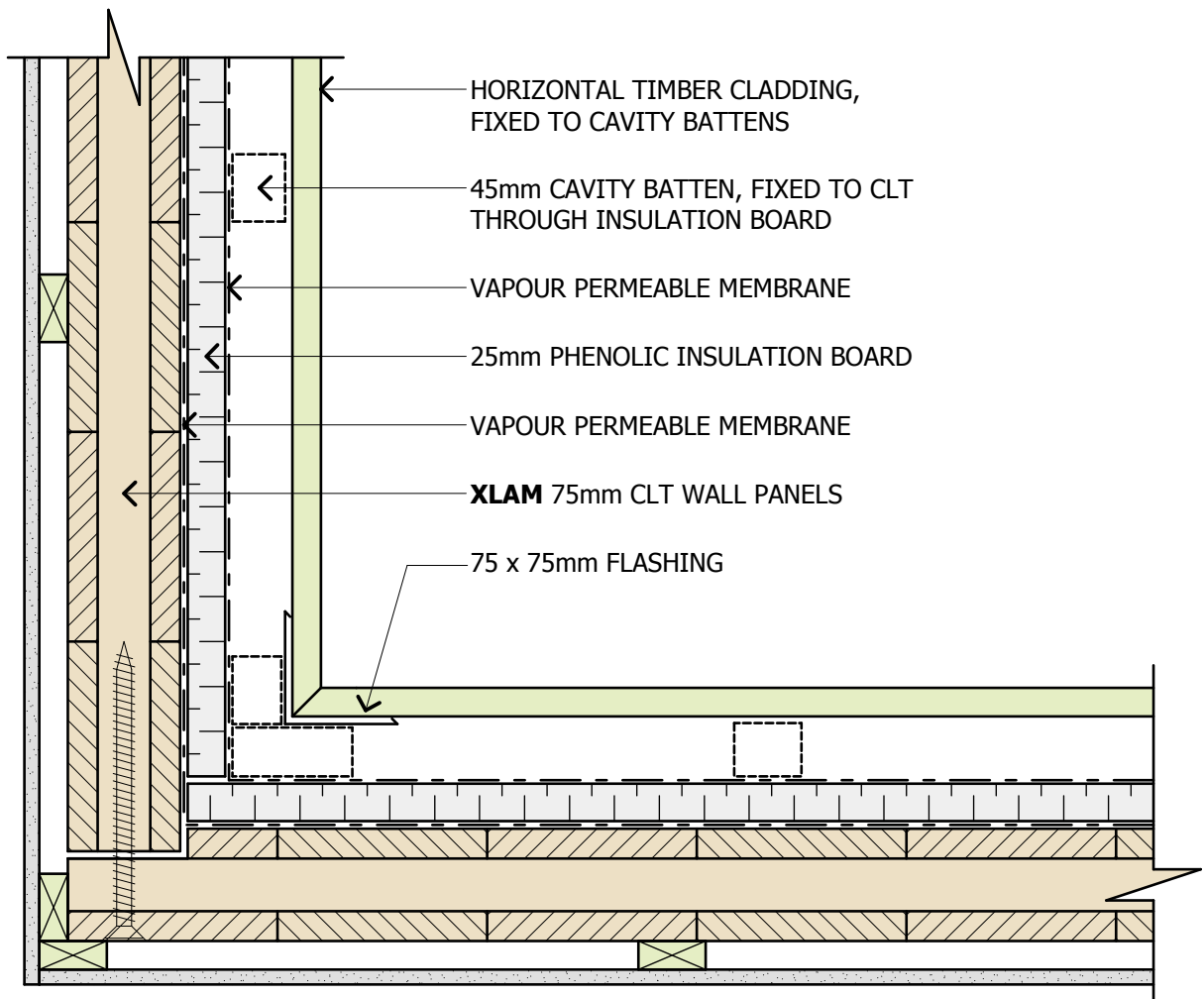


Telephone: +64 (0) 3 538 0930
Email: enquiries@xlam.co.nz
Web: www.xlam.co.nz
57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM ROOF BARGE

V 1.1
Date. 08.05.13
Scale. 1:5 at A4

BE 3.3



THERMAL RESISTANCE OF WALL - R 2.6
 (REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

INTERNAL CORNER - PLAN DETAIL



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 4.1

HORIZONTAL TIMBER CLADDING,
FIXED TO CAVITY BATTENS

45mm CAVITY BATTEN, FIXED TO CLT
THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

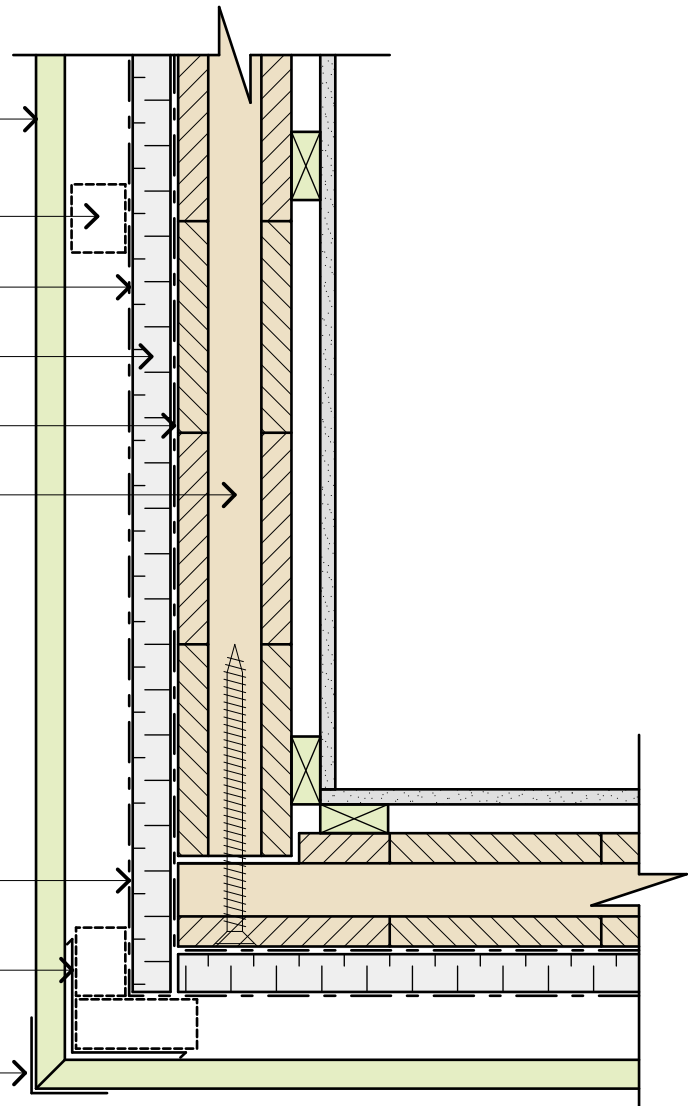
VAPOUR PERMEABLE MEMBRANE

XLAM 75mm CLT WALL PANELS

VAPOUR PERMEABLE MEMBRANE
CONTINUOUS AROUND CORNER

75 x 75mm FLASHING

SOAKER FLASHING



THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

EXTERNAL CORNER - PLAN DETAIL



Telephone: +64 (0) 3 538 0930

Email: enquiries@xlam.co.nz

Web: www.xlam.co.nz

57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1

Date. 08.05.13

Scale. 1:5 at A4

BE 4.2

VERTICAL TIMBER CLADDING,
FIXED TO CAVITY BATTENS

45mm CAVITY BATTEN, FIXED TO CLT
THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

25mm PHENOLIC INSULATION BOARD

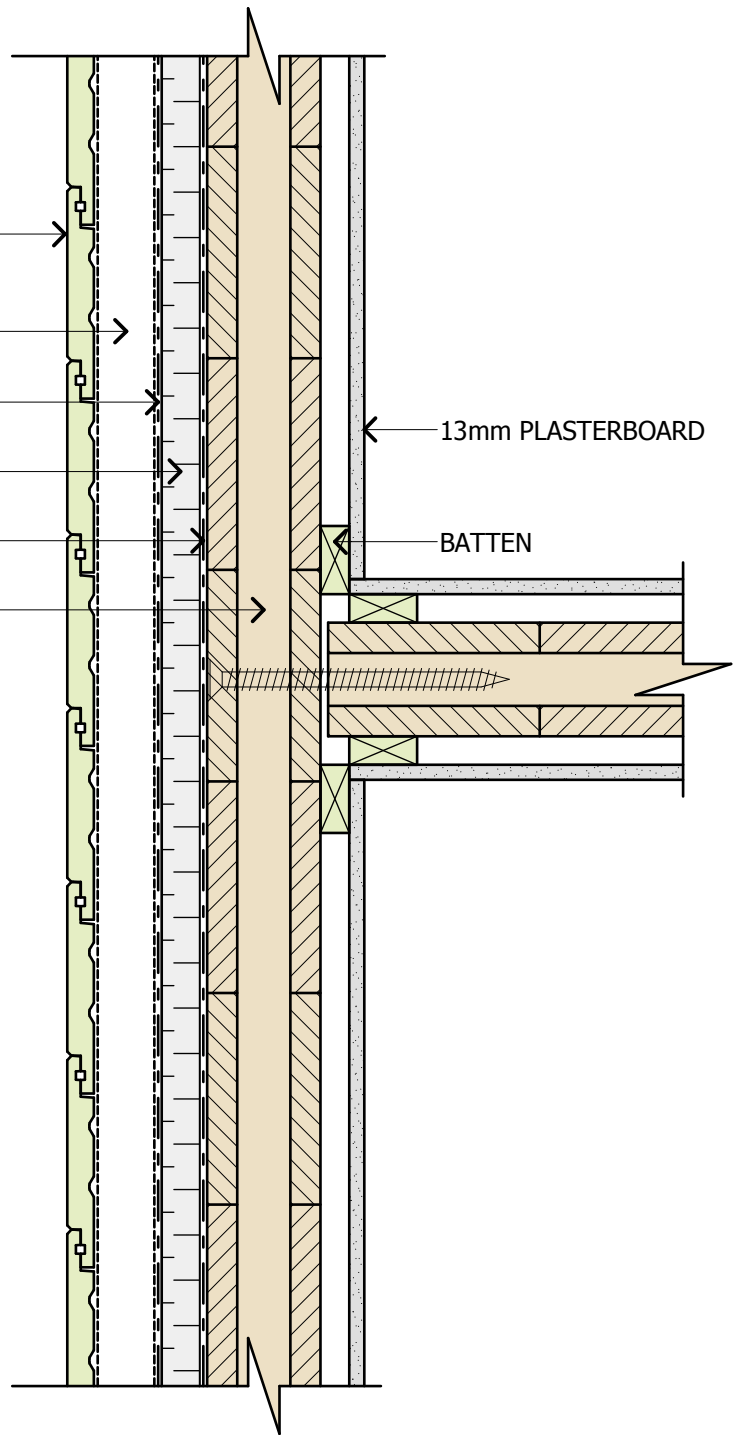
VAPOUR PERMEABLE MEMBRANE

XLAM 75mm CLT WALL PANELS

13mm PLASTERBOARD

BATTEN

THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)



Details shown are indicative only and subject to project-specific design



Telephone: +64 (0) 3 538 0930
Email: enquiries@xlam.co.nz
Web: www.xlam.co.nz
57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM WALL 'T' JUNCTION - PLAN DETAIL

V 1.1
Date. 08.05.13
Scale. 1:5 at A4

BE 4.3

VERTICAL TIMBER CLADDING,
FIXED TO CAVITY BATTENS

45mm CAVITY BATTEN, FIXED TO CLT
THROUGH INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

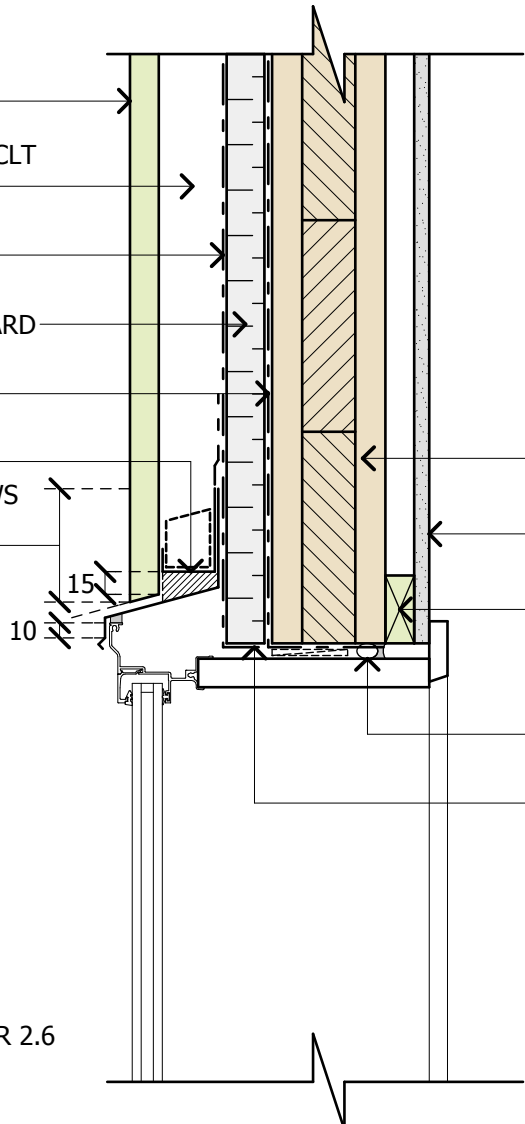
25mm PHENOLIC INSULATION BOARD

VAPOUR PERMEABLE MEMBRANE

CAVITY BASE CLOSER,
15mm DRIP EDGE ABOVE WINDOWS

75mm COVER TO FLASHING

HEAD FLASHING TO 15° SLOPE,
5 GAP TO U/SIDE OF CLADDING,
STOP ENDS E/END OF FLASHING



XLAM 75mm CLT WALL PANEL

13mm PLASTERBOARD

BATTEN

CONTINUOUS AIR SEAL

RETURN VAPOUR PERMEABLE
MEMBRANE INTO OPENING

THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

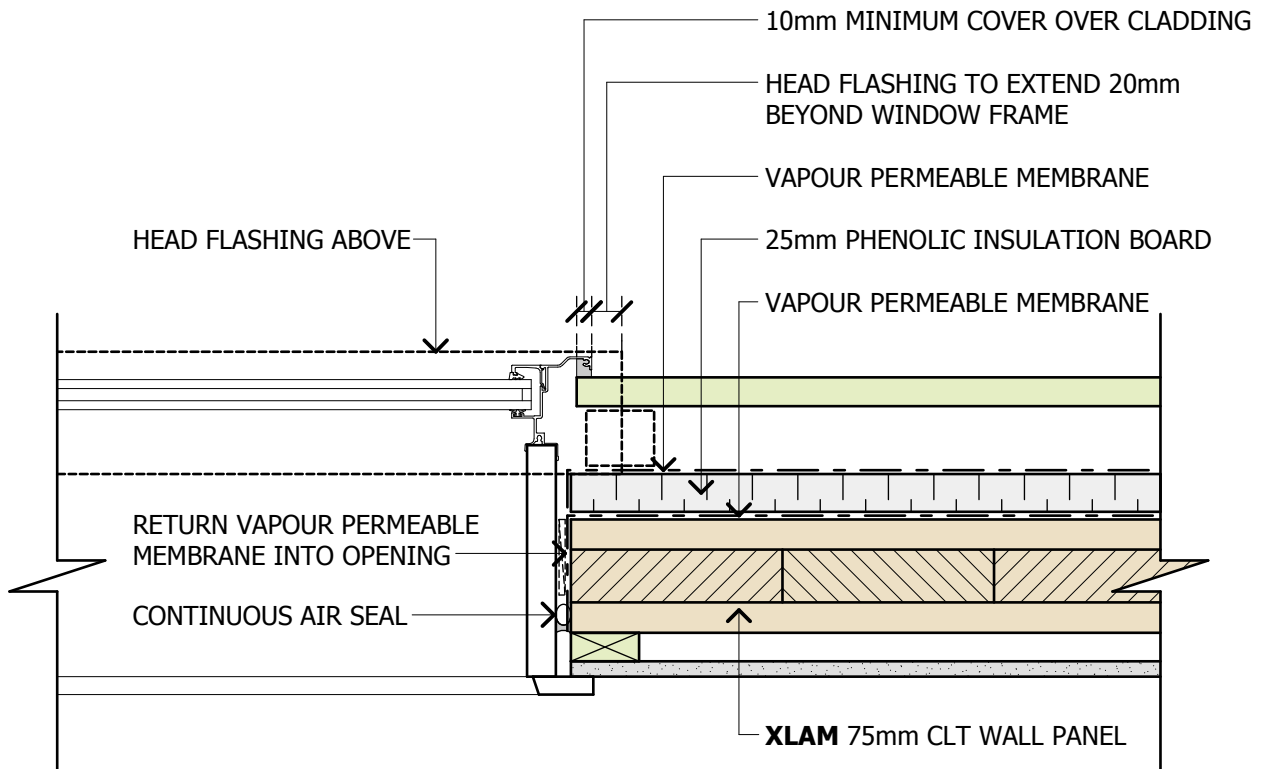


Telephone: +64 (0) 3 538 0930
Email: enquiries@xlam.co.nz
Web: www.xlam.co.nz
57 Beatty St, Tahunanui, Nelson 7041, New Zealand

WINDOW HEAD

V 1.1
Date. 08.05.13
Scale. 1:5 at A4

BE 5.1



THERMAL RESISTANCE OF WALL - R 2.6
(REFER BE 8.1)

Details shown are indicative only and subject to project-specific design

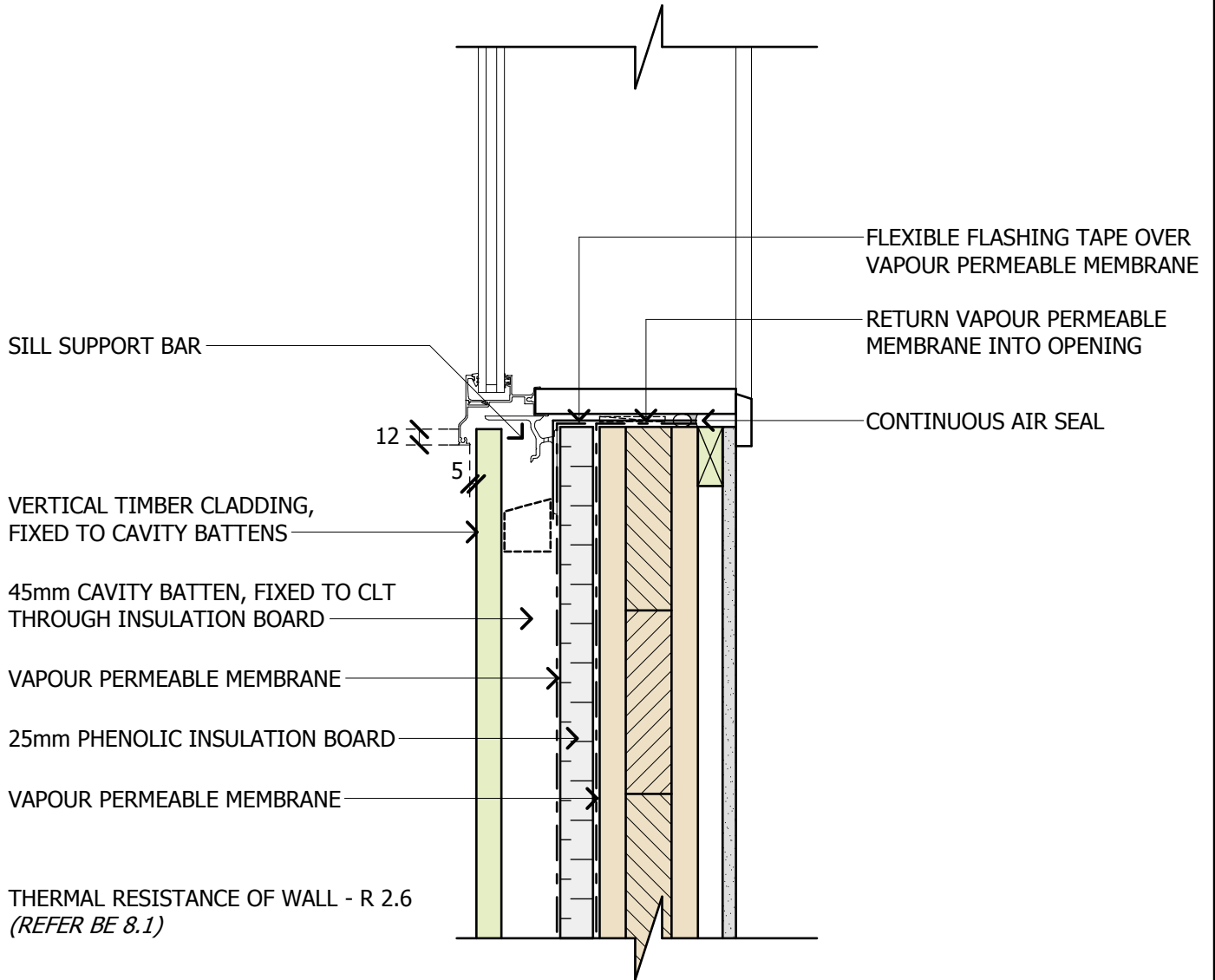


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

WINDOW JAMB

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 5.2



Details shown are indicative only and subject to project-specific design

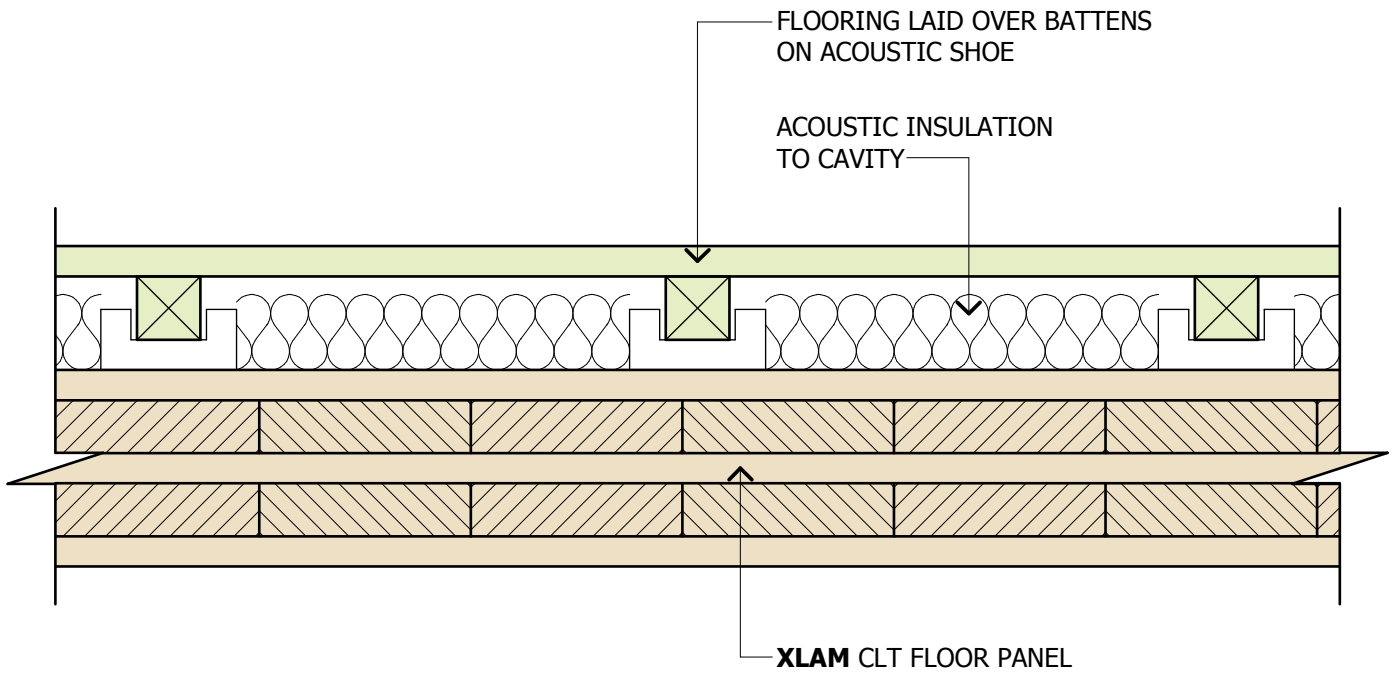


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

WINDOW SILL

V 1.1
 Date. 08.05.13
 Scale. 1:5 at A4

BE 5.3



Details shown are indicative only and subject to project-specific design

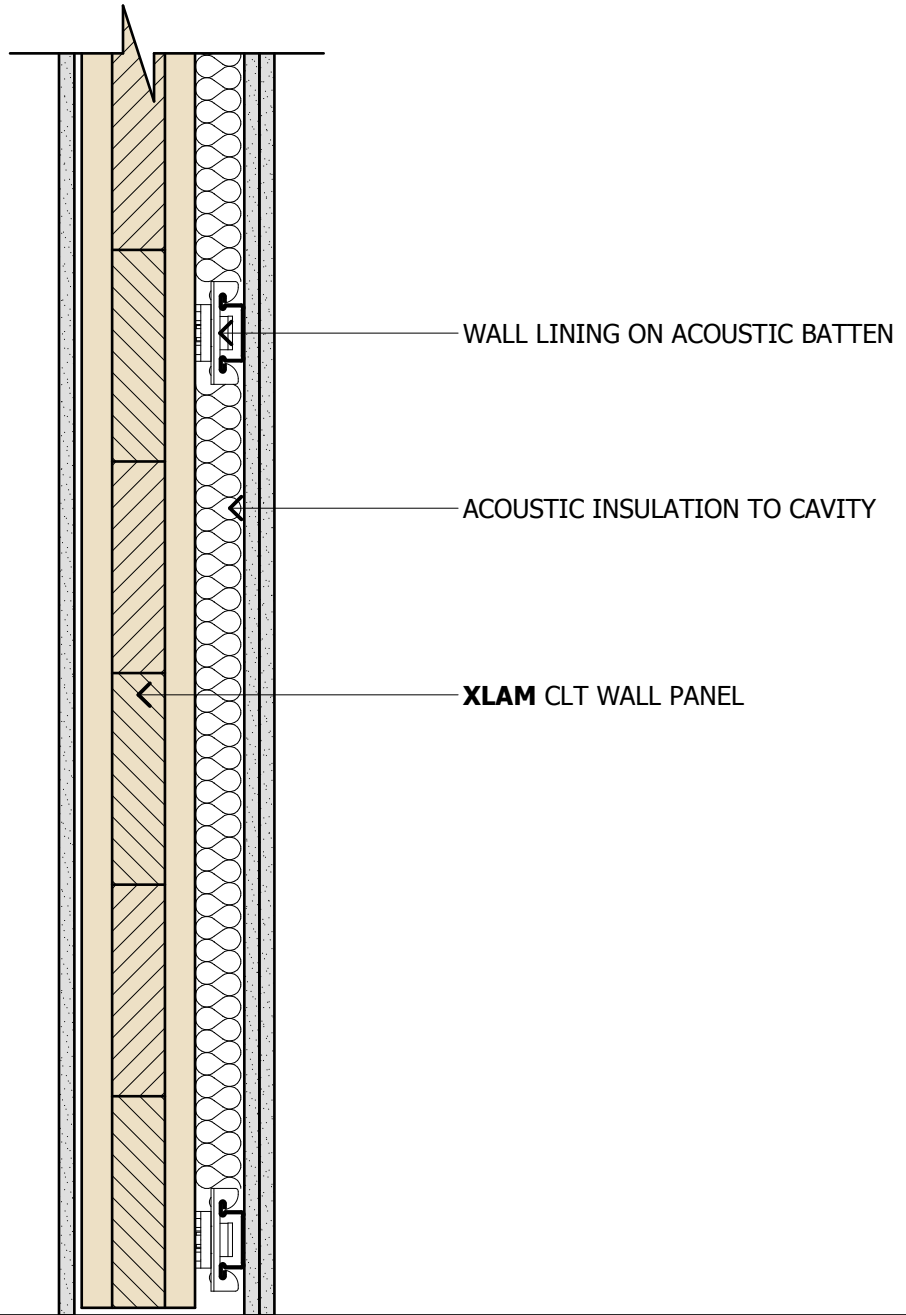


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM ACOUSTIC FLOOR

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 6.1



Details shown are indicative only and subject to project-specific design

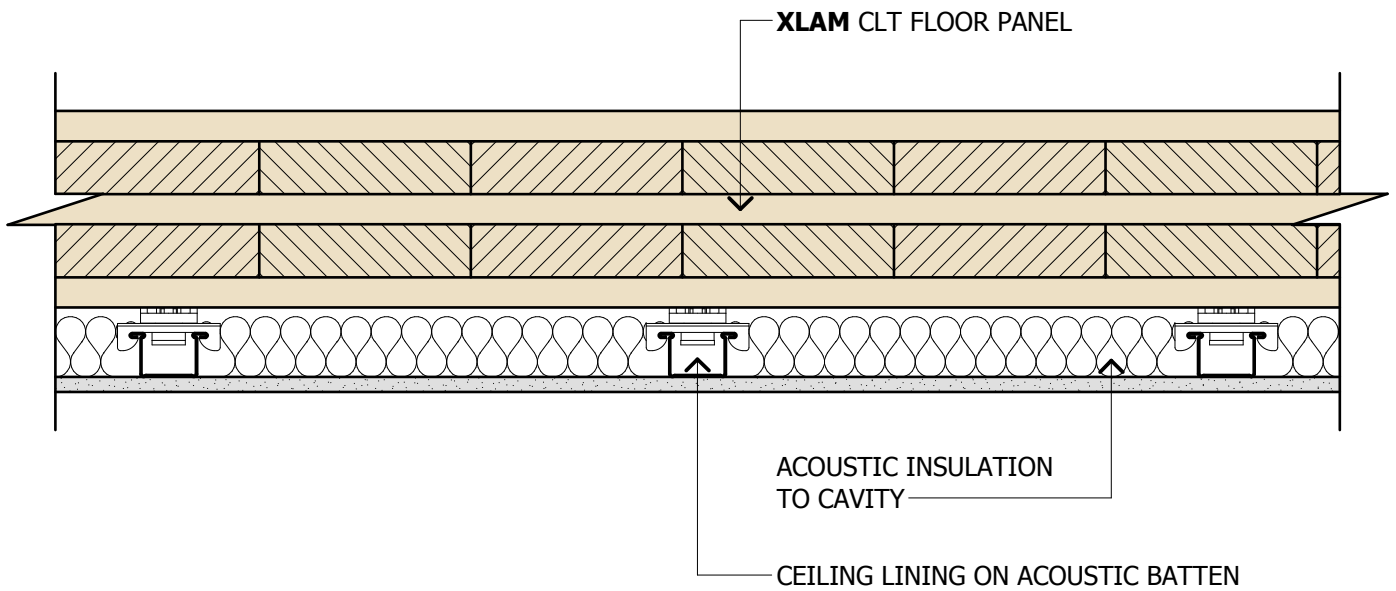


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM ACOUSTIC WALL

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 6.2



Details shown are indicative only and subject to project-specific design

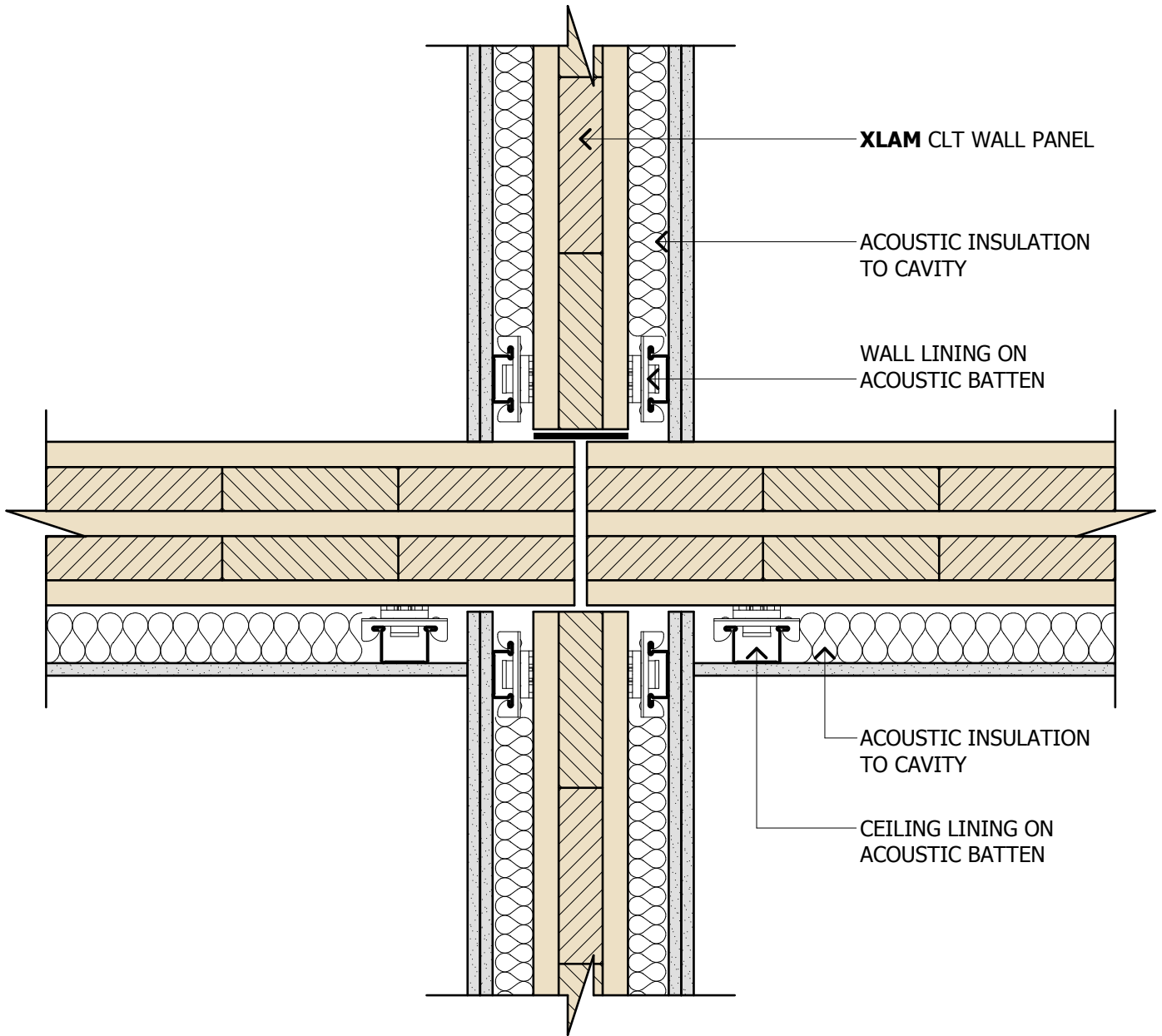


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM ACOUSTIC CEILING

V 1.1
 Date. 08.05.13
 Scale. 1:5 at A4

BE 6.3



Details shown are indicative only and subject to project-specific design

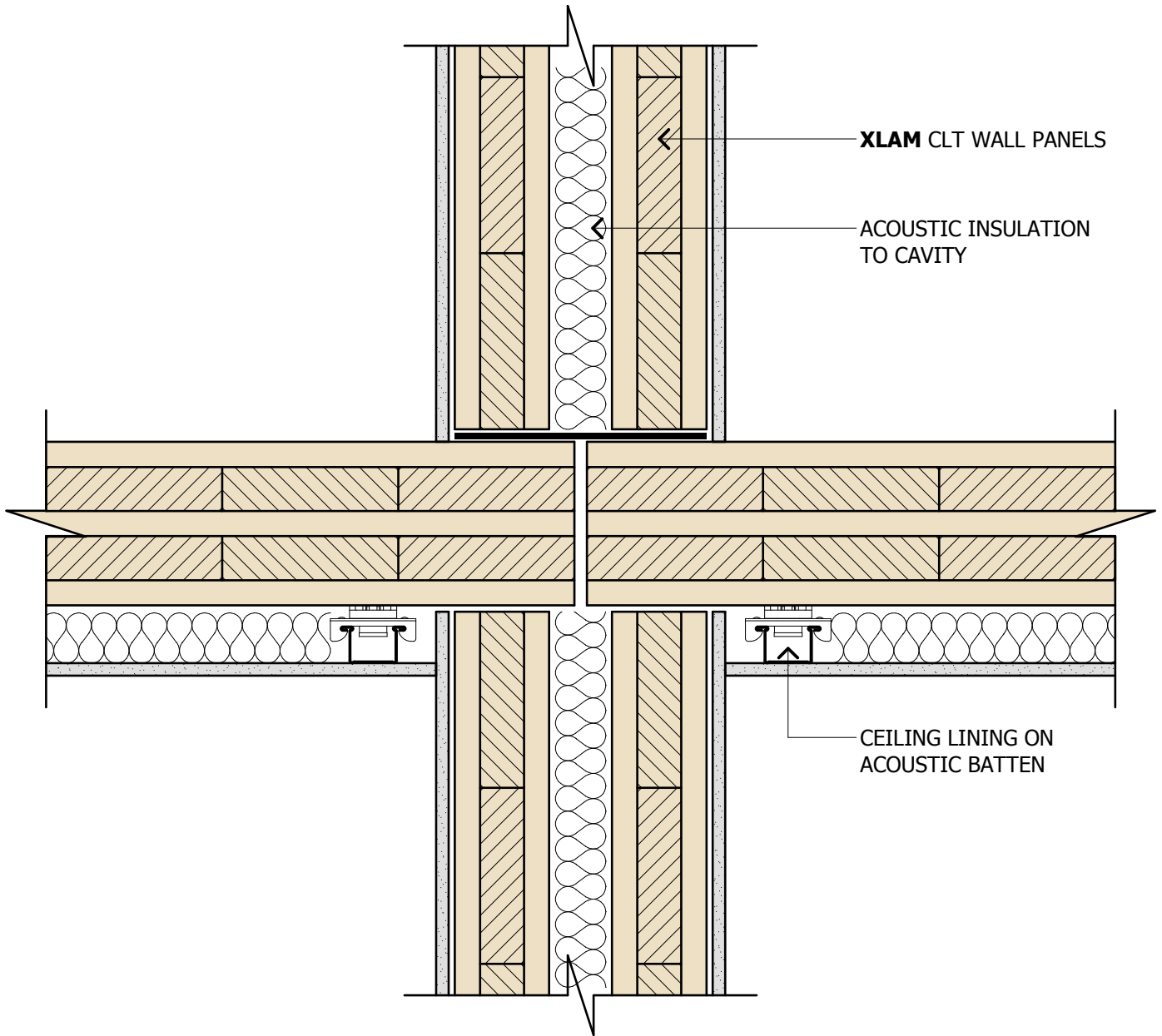


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM ACOUSTIC INTER-TENANCY WALL

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 6.4



Details shown are indicative only and subject to project-specific design

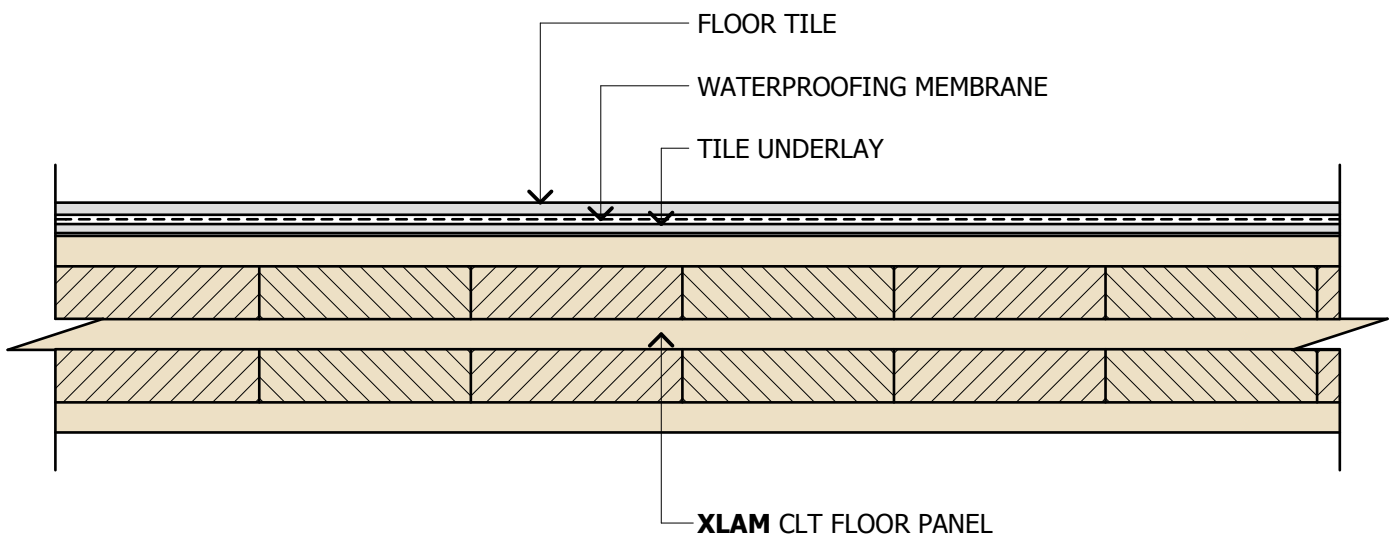
XLAM ACOUSTIC INTER-TENANCY WALL



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 6.5



Details shown are indicative only and subject to project-specific design

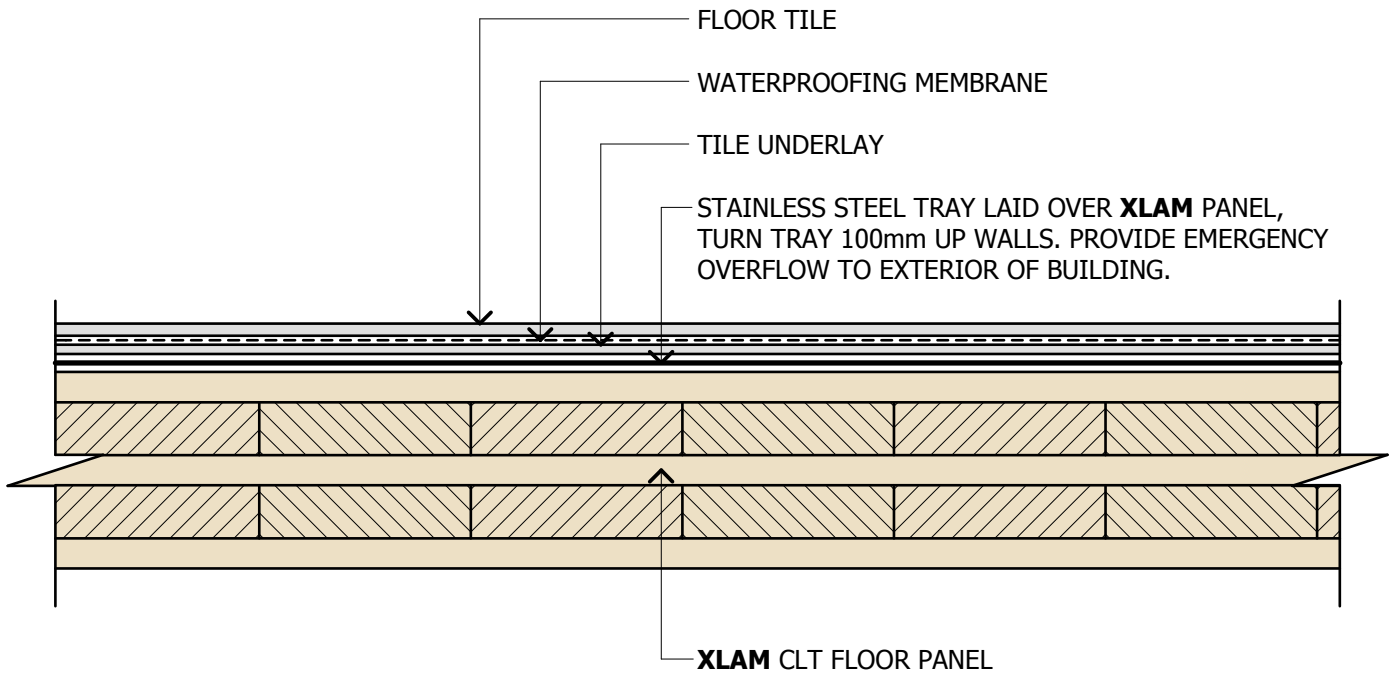


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM WET AREA FLOOR

V 1.1
 Date. 08.05.13
 Scale. 1:5 at A4

BE 7.1



Details shown are indicative only and subject to project-specific design

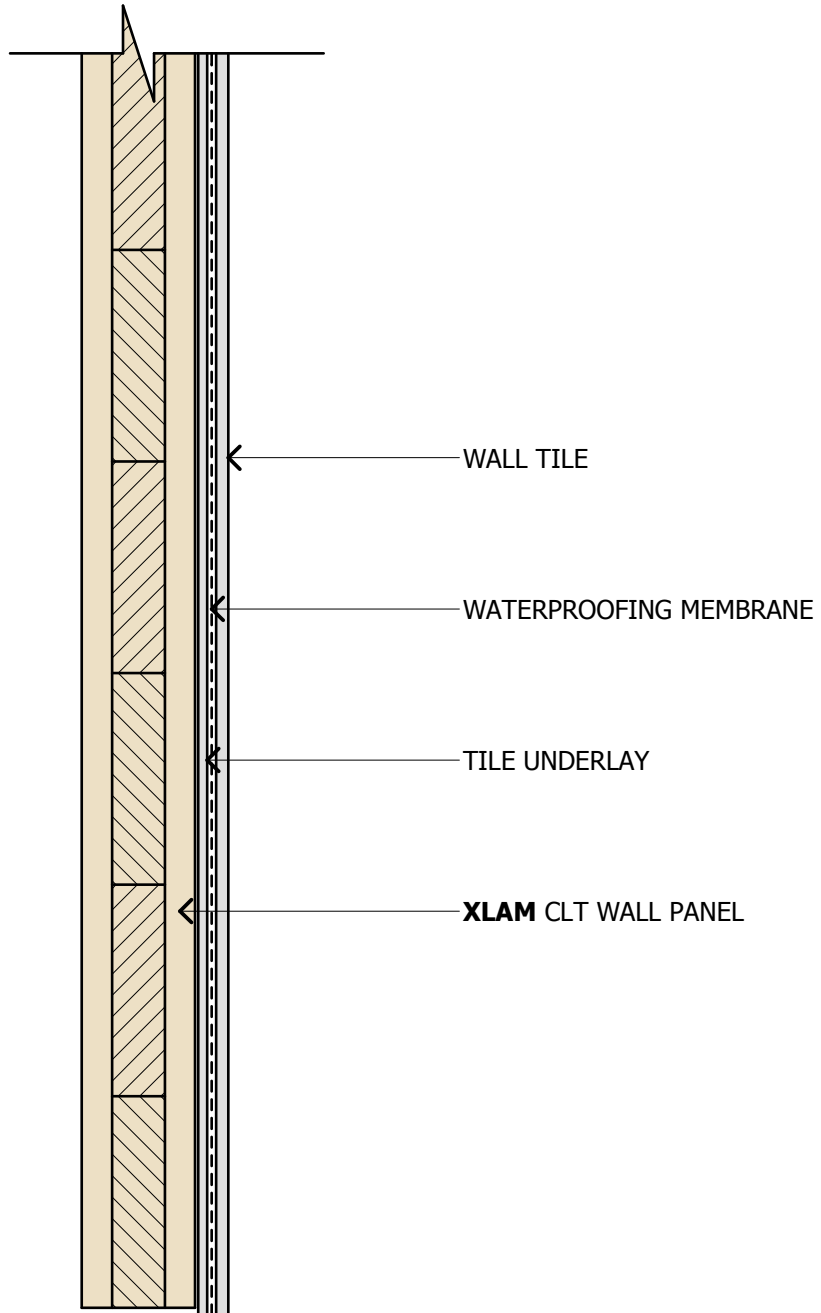


Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM SHOWER FLOOR

V 1.1
 Date. 08.05.13
 Scale. 1:5 at A4

BE 7.2



Details shown are indicative only and subject to project-specific design



Telephone: +64 (0) 3 538 0930
 Email: enquiries@xlam.co.nz
 Web: www.xlam.co.nz
 57 Beatty St, Tahunanui, Nelson 7041, New Zealand

XLAM WET AREA WALL

V 1.1
 Date: 08.05.13
 Scale: 1:5 at A4

BE 7.3

GUIDE TO CALCULATING THERMAL RESISTANCE FOR A CLT BUILDING ENVELOPE

BUILDING ELEMENT	R-Value	FLOOR	WALL	ROOF
Internal surface resistance	0.09	0.09	0.09	0.09
Interior lining 13mm plaster board	0.06		0.06	0.06
20mm still air gap	0.16		0.16	0.16
60mm CLT panel	0.5			
75mm CLT panel	0.625		0.625	
90mm CLT panel	0.75			0.75
105mm CLT panel	0.875			
130mm CLT panel	1.08	1.08		
145mm CLT panel	1.22			
175mm CLT panel	1.46			
60mm EPS sheet insulation	1.88	1.88		
25mm phenolic insulation board	1.4		1.4	
90mm fibreglass batt insulation	2.6			2.6
Ventilated cavity	0.07		0.07	0.07
19mm wood cladding	0.16		0.16	
Metal roofing	0			0
Exterior surface resistance	0.03	0.03	0.03	0.03
Total Construction R-Value		3.08	2.595	3.76

NOTE: IN PRACTICE THE TOTAL CONSTRUCTION R-VALUES WILL VARY FROM THE ABOVE TO TAKE ACCOUNT OF FACTORS SUCH AS THERMAL BRIDGING THROUGH PURLINS AND BATTENS, PENETRATIONS ETC.

Details shown are indicative only and subject to project-specific design

	THERMAL RESISTANCE CALCULATIONS		
	Telephone: +64 (0) 3 538 0930 Email: enquiries@xlam.co.nz Web: www.xlam.co.nz 57 Beatty St, Tahunanui, Nelson 7041, New Zealand	V 1.1	BE 8.1
		Date. 08.05.13	
	Scale. 1:5 at A4		