

By Email

Our Ref: 24-218.01L

FAO Sam Buswell
Countryside Partnerships (Yorkshire)
1 Red Hall Avenue
Paragon Business Village
Wakefield
WF1 2UL

30th September 2024

Dear Sam,

RE: Verification of Hazardous Ground Gas Protection Measures at Plots 13, 24 and 25, Land at Hollin Bank, Hollingworth Road, Littleborough

As requested by Countryside Partnerships, site visits were conducted on 5th August and 5th September 2024 by a suitably qualified and experienced geo-environmental engineer from Arc Environmental Ltd. in order to independently validate the implementation of hazardous ground gas protective measures within Plots 13, 24 and 25 on a proposed residential development at Hollingworth Road, Littleborough.

From the results of the hazardous ground gas risk assessment completed by Arc Environmental Ltd, it was determined that the installation of gas protective measures to meet BS8485:2015+A1:2019 – CS2 classification were required, in order to negate any potential risks to the proposed end users.

In order to ensure that the gas protective measures were properly implemented validation works have been undertaken comprising the inspection of the construction and installation of the gas membrane, in general accordance with BS8485:2015 & A1:2019 - Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings, and CIRIA C735:2014 - 'Good Practice on the Testing and Verification of Protection Systems for Buildings Against Hazardous Ground Gas'.

The inspection details are summarised in Table 1 below and continued on the following page. Photographic record sheets for the inspections are also attached with this report.

Table 1

1. Development Summary		
1.1	Type of development and building/blocks inspected	Residential development comprising 126 no. dwellings (1 no. block of 3 terraced houses, 25 no. blocks of semi-detached houses and 73 no. detached houses). Plots 13, 24 and 25 inspected, which are detached houses.
1.2	Foundation type	Majority of plots utilise strip foundations with a suspended block & beam floor and sub floor void. Plots 62-68 alone utilised raft foundations.
1.3	Gas protection type	Majority of plots utilise passive vented sub-floor void and installation of hazardous ground gas barrier membrane. Plots 62-68 alone utilise a cast in-situ reinforced concrete raft with integral retaining wall and fully tanked basement, along with hazardous ground gas barrier membrane.



Arc Environmental Ltd
Solum House
Unit 1 Elliott Court
St John's Road
Meadowfield
Durham
DH7 8PN

RE: Verification of Hazardous Ground Gas Protection Measures at Plots 13, 24 and 25, Land at Hollin Bank, Hollingworth Road, Littleborough (Cont'd)

Table 1 (Cont'd)

2. Passive Venting		
2.1	Sub-floor void	A c.150mm minimum sub-floor void has been constructed below the block and beam floor and this was noted to be vented by way of telescopic swan neck vents (see photographic record sheets). Excluding plots 62-68 which utilise a raft foundation and tanked basement.
2.2	External wall airbricks	c.210mm x c70mm airbricks with double telescopic swan neck vents to sub-floor void at regular intervals / spacings.
3. Gas Barrier Membrane		
3.1	Condition of sub-grade and underside of gas membrane	No sub-grade present – block & beam and cavity wall construction in plots 13, 24 and 25. Floor cleaned before laying gas barrier membrane and noted to be free of significant debris.
3.2	Gas membrane type	Juta GP5 Gas Barrier Membrane (blue) is an extremely robust and high-performance ground gas resistant membrane and also provides protection against moisture. The membrane was laid across all the individual floor areas, and joints between sections of membrane were heat welded. Juta GP DPC is a high specification multi-layer damp proof course (DPC) designed to be sufficiently durable to build into perimeter cavity and load bearing walls as part of a gas barrier membrane system to resist moisture and ground gasses. Where the DPC is joined to the GP5 Gas Barrier Membrane, the joint was heat welded. Juta Gas Resistant Self Adhesive Membrane (GR SAM) was used to seal all service entries and repair any damage to the membrane.
3.3	Extent of coverage	The extent of the Gas Barrier Membrane coverage was confirmed over all floor areas and was lapped over the perimeter GAS DPC. The laps were sealed with by heat welding.
3.4	Slab / membrane condition	The condition of the Gas Barrier Membrane was confirmed as being in good condition, and any holes or tears were repaired using GR SAM.
3.5	Joining details	The Juta GP5 Gas Barrier Membrane sheets across the floor areas were jointed to each other utilising heat welding.
3.6	Damp proof membrane	Juta GP DPC was used as a DPM across all floor areas (in accordance with manufacturers specifications). Confirm all laps and joints were heat welded to the Gas Barrier Membrane.
3.7	Service entries and seals	GR SAM was used to seal the Gas Barrier Membrane to every service entry point in the floor slab.
3.8	Service ducts	Service ducts will require appropriate sealing using a closed cell sealant such as FiloSeal or FiloForm. It remains the responsibility of the main contractor to provide photographic evidence of service duct sealings to the Local Authority once services have been pulled through the ducts, if required.

Based on the inspection carried out by Arc Environmental Ltd., this validation letter confirms that the hazardous ground gas protective measures within Plots 13, 24 and 25 of the residential development have been satisfactorily installed and as such have PASSED inspection.

RE: Verification of Hazardous Ground Gas Protection Measures at Plots 13, 24 and 25, Land at Hollin Bank, Hollingworth Road, Littleborough (Cont'd)

We trust the information we have provided to you is to your satisfaction. However, if you require any further information or clarification, please do not hesitate to contact us.

Yours sincerely

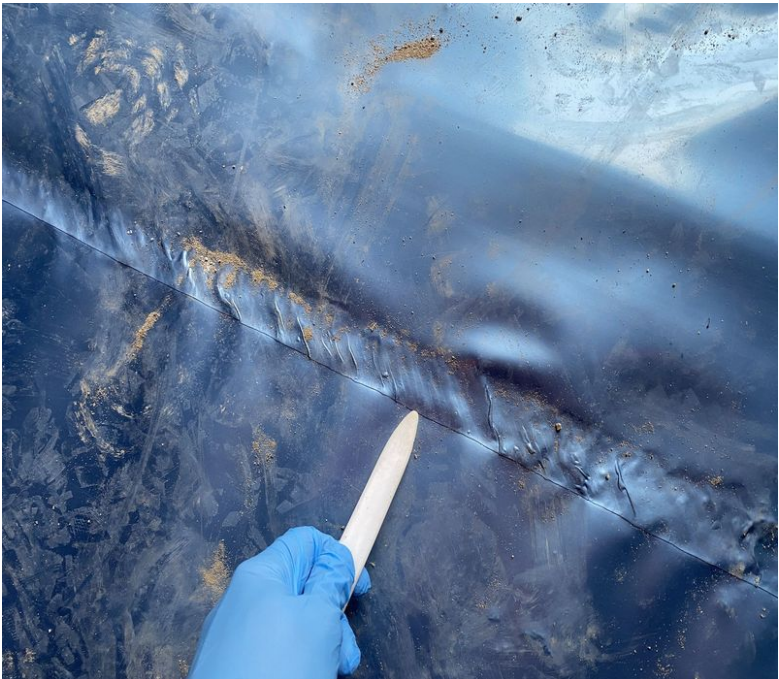
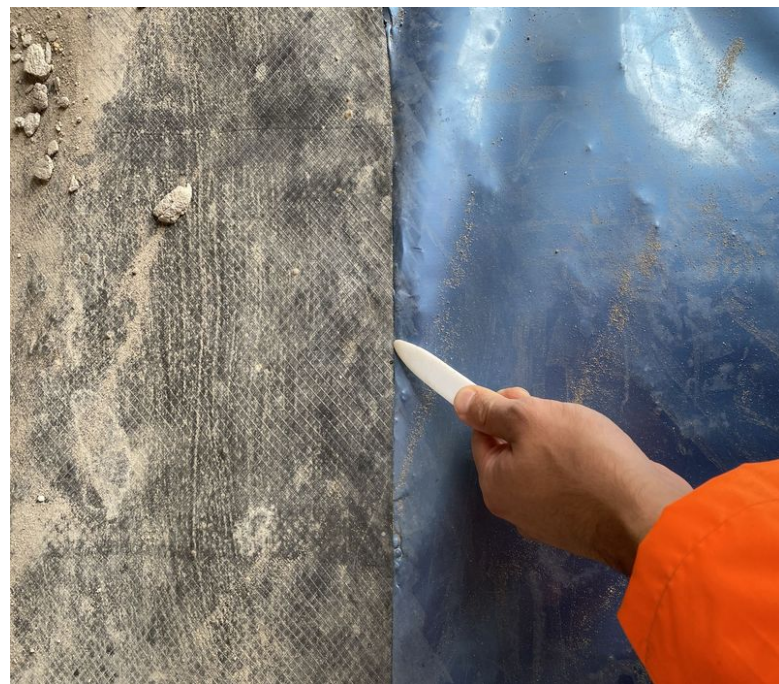


.....
Thomas White

Associate

For and on behalf of Arc Environmental Limited

Photographic Record Sheets



ARC ENVIRONMENTAL LTD

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The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.
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rev.	date	amendments		drawn	chkd

Client:

Countryside Partnerships

Project Title:

Proposed Residential Development,
JLand at Hollin Bank,
Hollingworth Road
Littleborough

Drawing Title:

Photographic Record Sheet
Plots 13, 24 and 25
Gas Protection Measures

Scale at A3: | Date: 30.09.24 | Drawn by: TAW | Approved by:

Job Ref: 24-218 | Drg no: | Rev:

Product Specifications



GP®5

GP®5 gas barrier is a multi-layer composite of virgin polyethylene (PE) giving exceptional resistance to the passage of ground gas and organic vapours. It also acts as a high performance DPM.

Thickness	0.4 mm
Width	Various m
Length	Various m
Weight	400 g/m ²

TITANTECH®

For developers of brownfield and contaminated sites the TITANTECH® family of products represent a major step forward in safeguarding projects against gaseous and chemical contamination.

GP®5 is suitable for the following applications:

- Carbon dioxide and methane affected sites in accordance with BS 8485:2015 + A1:2019 & NHBC
- Radon affected sites in accordance with BRE211:2015
- Damp protection in accordance with Building Regulations Part C
- Low level VOC contaminated sites (site specific assessment required)

Handling

Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling.

Installation

GP®5 should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015.

Certifications



Please
Scan



Rev 2024



Feature	Characteristics	Test Method	GP [®] 5
Physical Properties	Thickness	EN 1849-2	0.4 mm
	Width	EN 1849-2	Various m
	Length	EN 1849-2	Various m
	Weight	EN 1849-2	400 g/m ²
Hydraulic Press	Resistance to Water Penetration	EN 1928 (A)	Pass
Mechanical Properties	Resistance to Static Load	EN 12730	> 20 kg
	Tensile Strength (MD)	EN 12311-2 (A)	> 300 N/50mm
	Tensile Strength (CMD)	EN 12311-2 (A)	> 300 N/50mm
	Resistance to Tearing (Nail Shank) MD	EN 12310-1	> 230 N
	Resistance to Tearing (Nail Shank) CMD	EN 12310-1	> 230 N
	Impact Resistance	EN 12691-B	500 mm
	Puncture Resistance	ASTM D 4833	> 160 N
	Puncture Resistance	EN 12236	1.60 kN
	Reaction to Fire	EN 13501-1	E
Vapour Permeability	Methane Permeability	BS EN ISO 15105-1	0.12 ml/m ² /day/atm
	Carbon Dioxide Permeability	BS EN ISO 15105-1	1.53 ml/m ² /day/atm
	Hydrogen Permeability	BS EN ISO 15105-1	68.7 ml/m ² /day/atm
	Benzene Permeability	BS EN ISO 15105-2	0.41 ml/m ² /day
	Oxygen Permeability	BS EN ISO 15105-2	<3 ml/m ² /day
	Radon Permeability	K124/02/95	1.0 x 10 ⁻¹² m ² /s
	Hydrogen Sulphide Permeability	BS EN ISO 15105-1	<0.68 ml/m ² /day/atm
Fuel Vapour Permeability	Petrol	BS EN ISO 15105-2	(ave.) 3.4 x 10 ⁻¹³ /mol/(m ² .s.Pa)
	Diesel	BS EN ISO 15105-2	(ave.) 3.4 x 10 ⁻¹³ /mol/(m ² .s.Pa)
Durability	Durability Watertightness After Artificial Ageing	EN 1928	Pass
	Durability Watertightness Against Chemicals	EN 1928	Pass
Compliance and Certification	CE Mark - EN 13967:2012		
	NHBC Standards Compliant		
	BS 8485:2015 + A1 2019 Accordant		

JUTA UK

Please contact JUTA UK Directly for more information on GP[®]5

Storage

Rolls of GP[®]5 should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.



JUTA UK

Please contact JUTA
UK Directly for more
information on GP[®]5

Jointing and Sealing

It is recommended GP[®]5 can be heat welded where possible, with welding carried out by competent personnel with suitable qualifications in accordance with best practice, and guidance contained within BS 8485:2015. GP[®]5 should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or self adhesive gas membrane are available for sealing around protuberances.

Accessory Products

- GP[®] DPC
- GP[®] Tape
- GP[®] Self Adhesive Membrane (SAM)
- GP[®] Primer
- GP[®] Top Hats and Preformed Corners
- GP[®] Protection Fleece
- GP[®] Void Vent (24/40mm)

Design Drawings

External Door Schedule (Block 01)						
Door Ref	Type Mark	STRUCTURAL		Door Panel - Colour	Required Clear Width	Comments
		Width	Height			
B01-ED01	EDT-04	1023	2110	Dark Grey		

Window Schedule (Block 1)							
Mark	Type	STRUCTURE		Gross	Safety	Closing	Comments
		Width	Height				
150 - Ground Floor							
W01	W01	1247	2130	No	No	No	
W02	W1	1505	1510	No	No	No	
W03	W1	1505	1510	No	No	No	
W04	W1	1245	1260	No	No	No	
150 - First Floor							
W05	W07	1585	1360	Yes	No	No	
W06	W07	1265	1135	No	No	Yes	
W07	W08	1510	1665	Yes	No	No	
W08	W09	1510	1360	Yes	No	No	
W09	W10	1510	1585	Yes	No	No	
W10	W11	1510	1585	Yes	No	No	
W11	W12	1265	1210	No	No	Yes	
W12	W13	1245	1240	No	No	Yes	
W13	W14	1245	1240	Yes	No	No	
W14	W15	1245	1240	No	No	Yes	
W15	W16	1245	1210	No	No	Yes	
W16	W17	1245	1210	No	No	Yes	

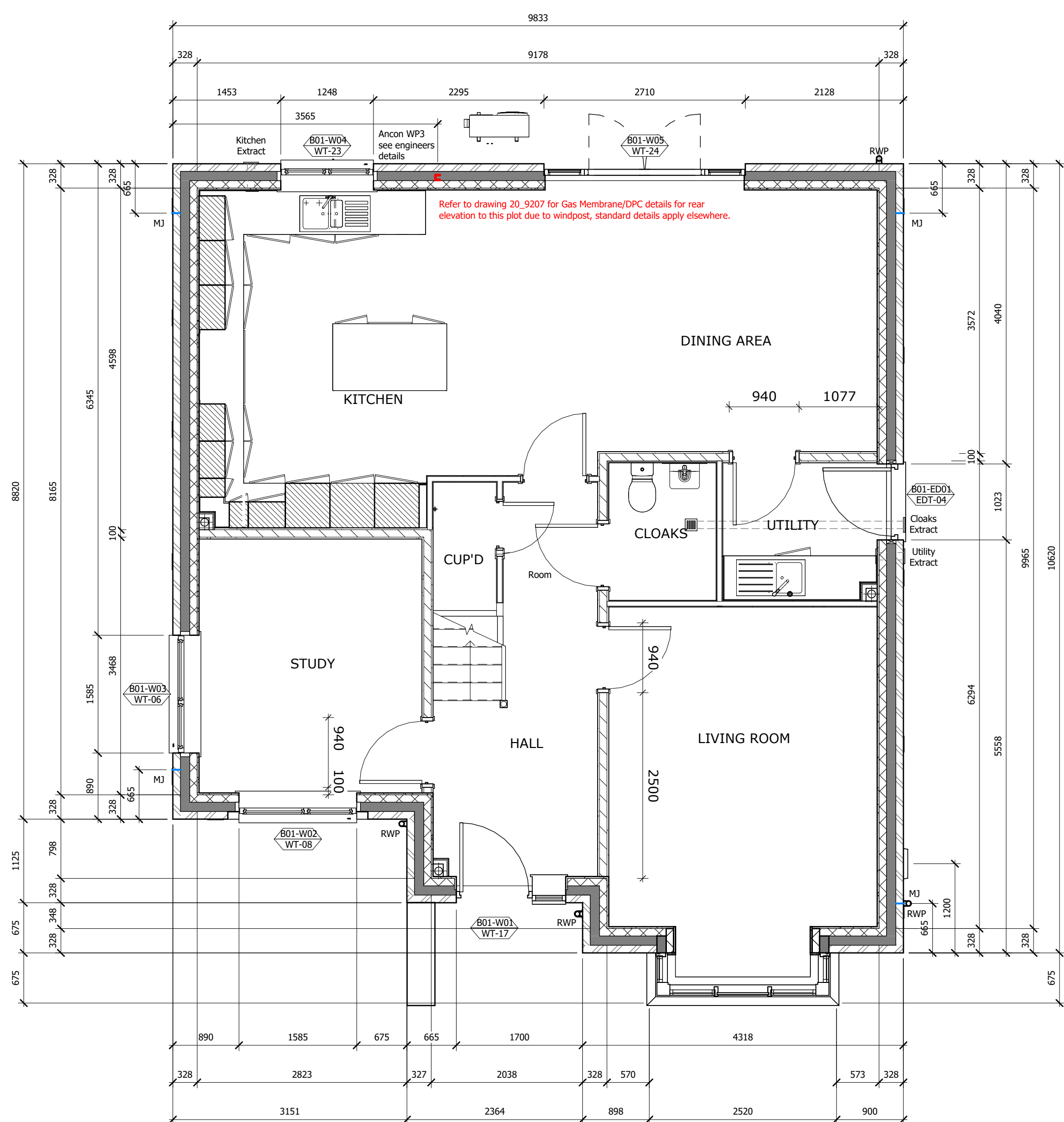
Glazing and Trickle Vent Requirements

Ground Floor
28Bd R(w+Ctr) Glazing & 32Bd D(n, e, w) Trickle or Wall Vent (to habitable rooms only)

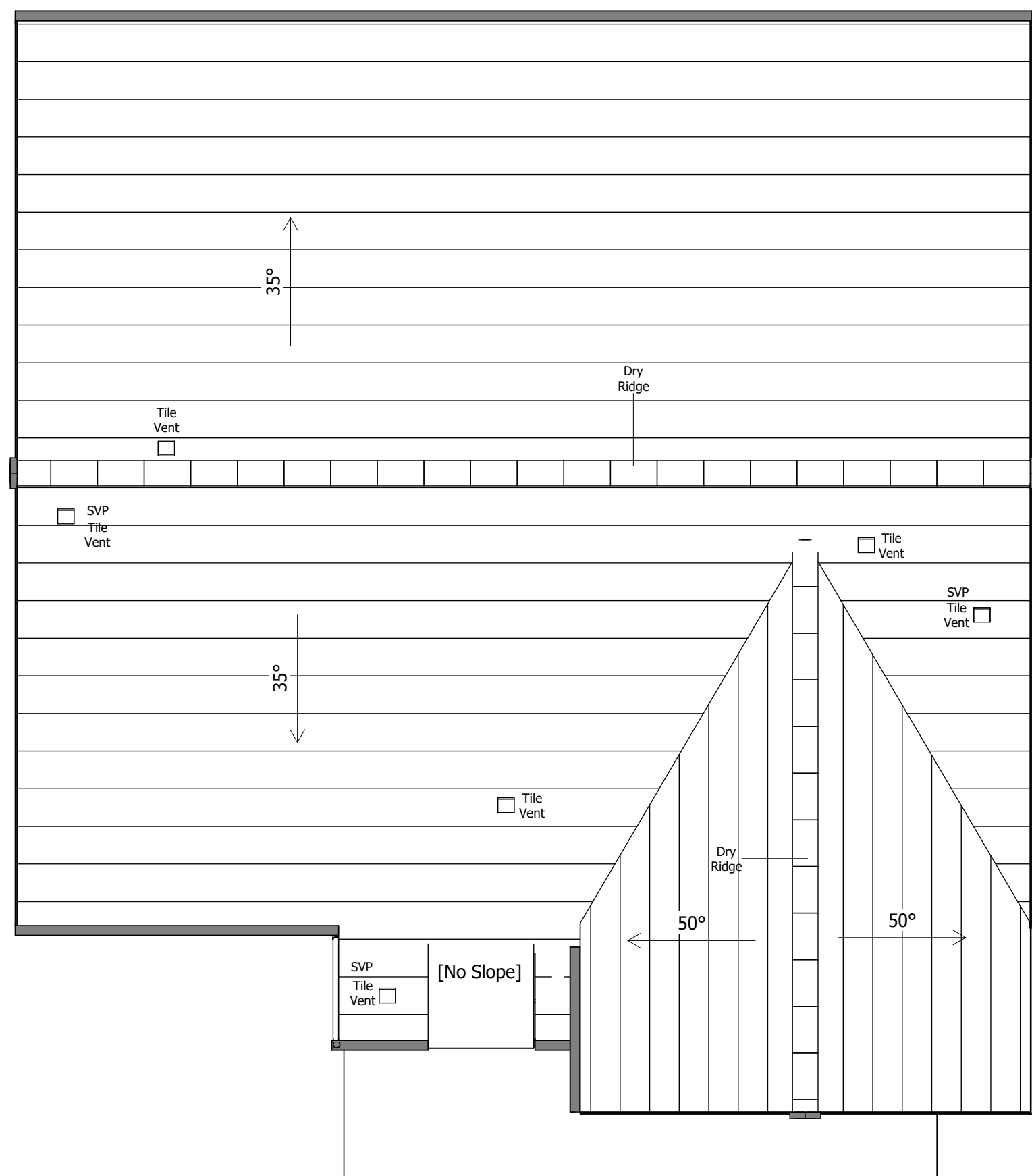
First Floor
28Bd R(w+Ctr) Glazing & 32Bd D(n, e, w) Trickle or Wall Vent (to habitable rooms only)

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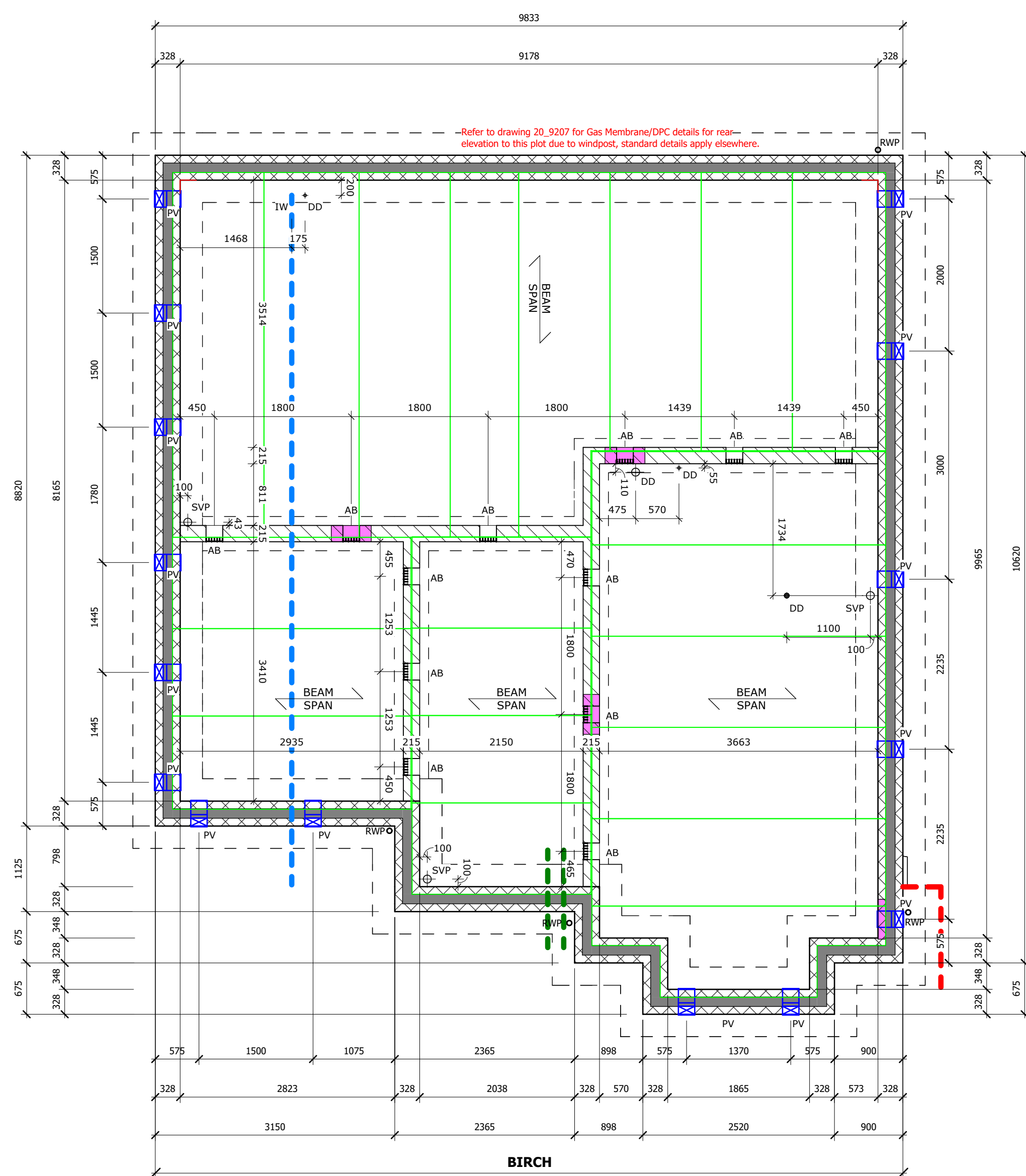
Risks			
•	Lifting Hazard	•	Risk of Falling
		•	Risk of Collapse
•	Risk of Falling Object	•	Consideration for High Level Access
		•	Risk of Explosion



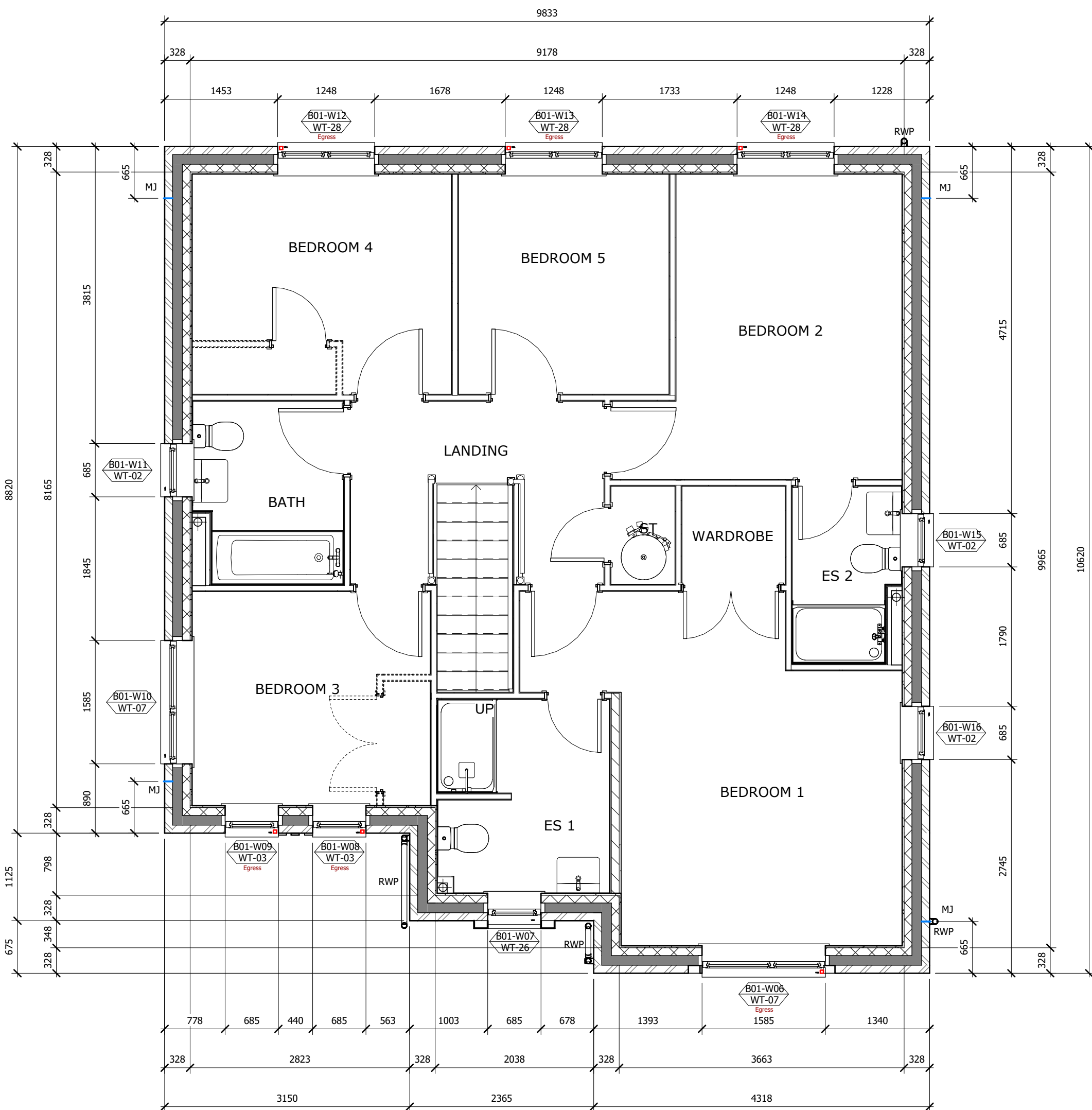
Ground Floor Plan
1 : 50



Roof Plan



Substructure Plan



First Floor Plan
1 : 50

P7	14.06.24	DW	AH	Substructure Updated
P6	13.05.24	DW	AH	Dirms added to internal masonry to set out openings
P5	02.05.24	DW	AH	Dirms to internal blockwork added.
P4	25.04.24	DW	AH	Drawings coordinated with 3rd party and engineers information.
P3	10.10.23	KK	DW	Wall Legend and spec of mDev updated.
P2	01.09.23	KK	DW	Updated to suit client comments.
P1	02.06.23	MI	DW	Floor plans added to sheets. Additional information added to substructure plan.

Ref	Date	Drawn	Checked	Description
Subsidiary				
S0				Work In Progress

Hollin Gate, Littleborough

GA Block Plans - Plot 1

Block 1

Location:
Hollingworth Road
Littleborough

Client: Countryside Partnerships							
UPRN	Originator	Zone	Level	Type	Role	Series/Number	Revision:
HOLL-WBA-XX-XX-DR-A-20 ₂₀₀₁							P7
Date:	Drawn:	Checked:	Scale:	Int Job No:			
Nov 22	MI	DW	1 : 50	4046-001			

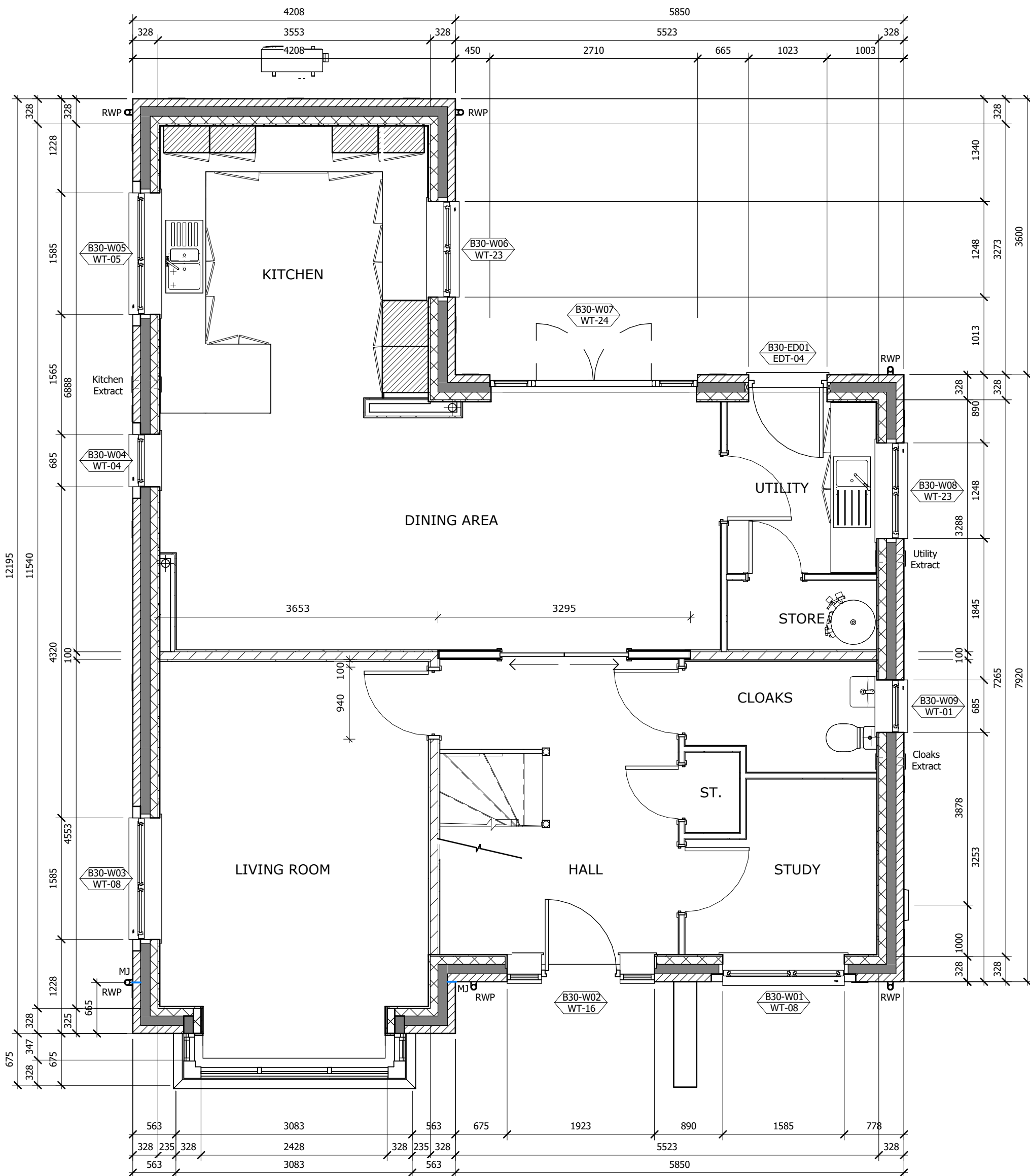
**WATSON BATTY
ARCHITECTS**

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Guiseley, Leeds LS20 8EU
Leeds | Loughborough

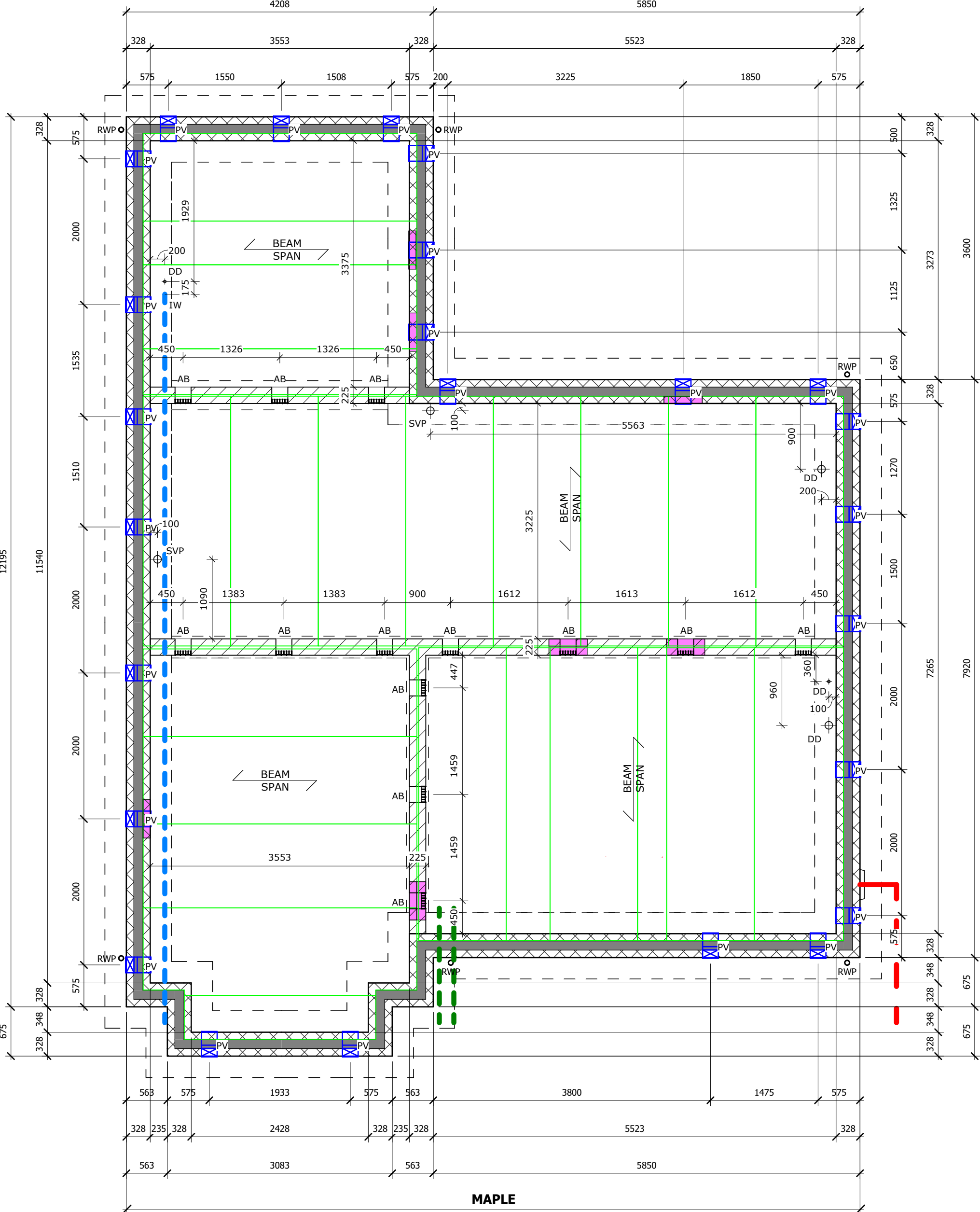
T: 01943 876 665
E: enquiries@watsonbatty.com
W: www.watsonbatty.com



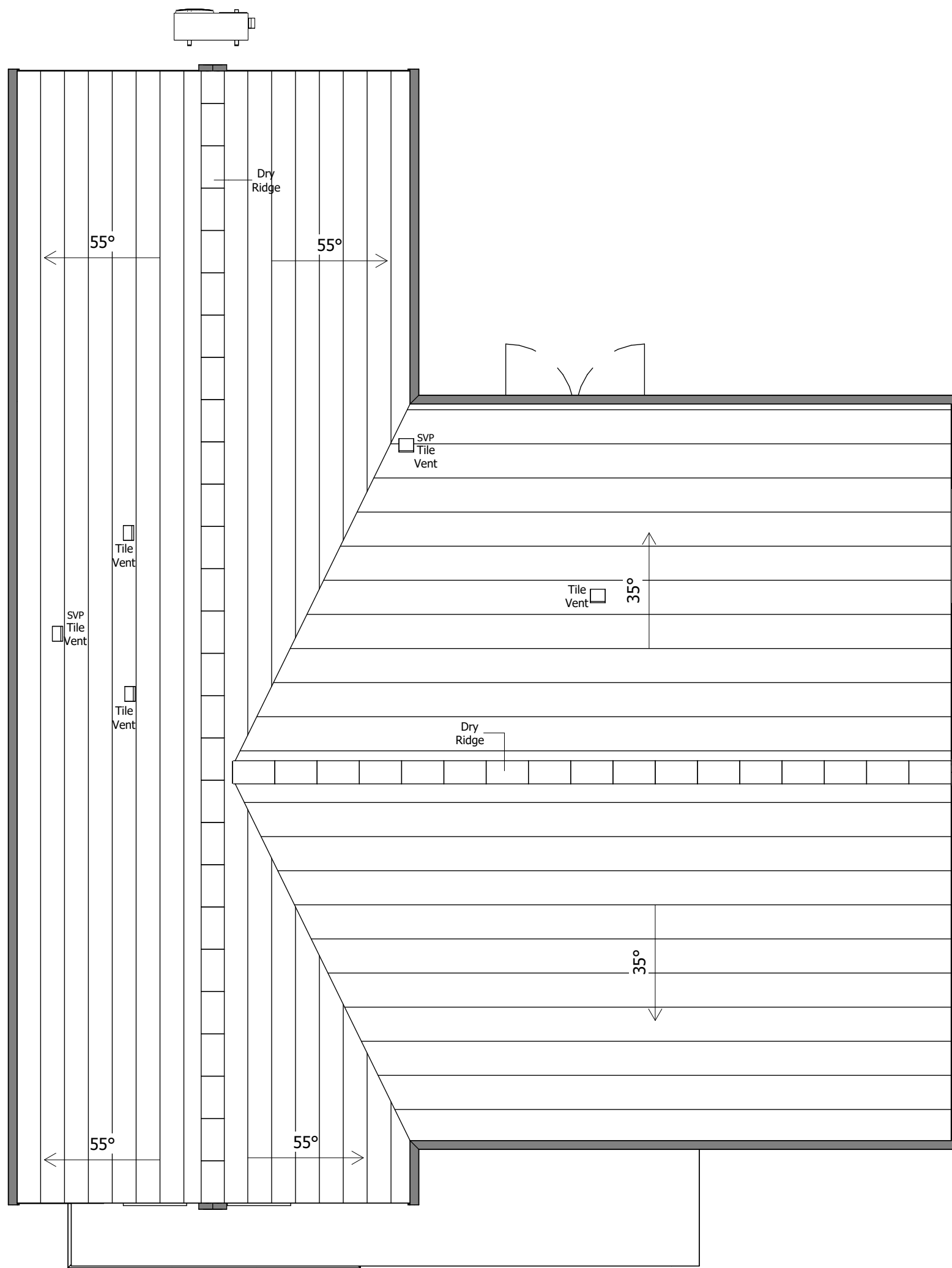
Note: Do not Scale from this drawing. All dimensions to be checked on site



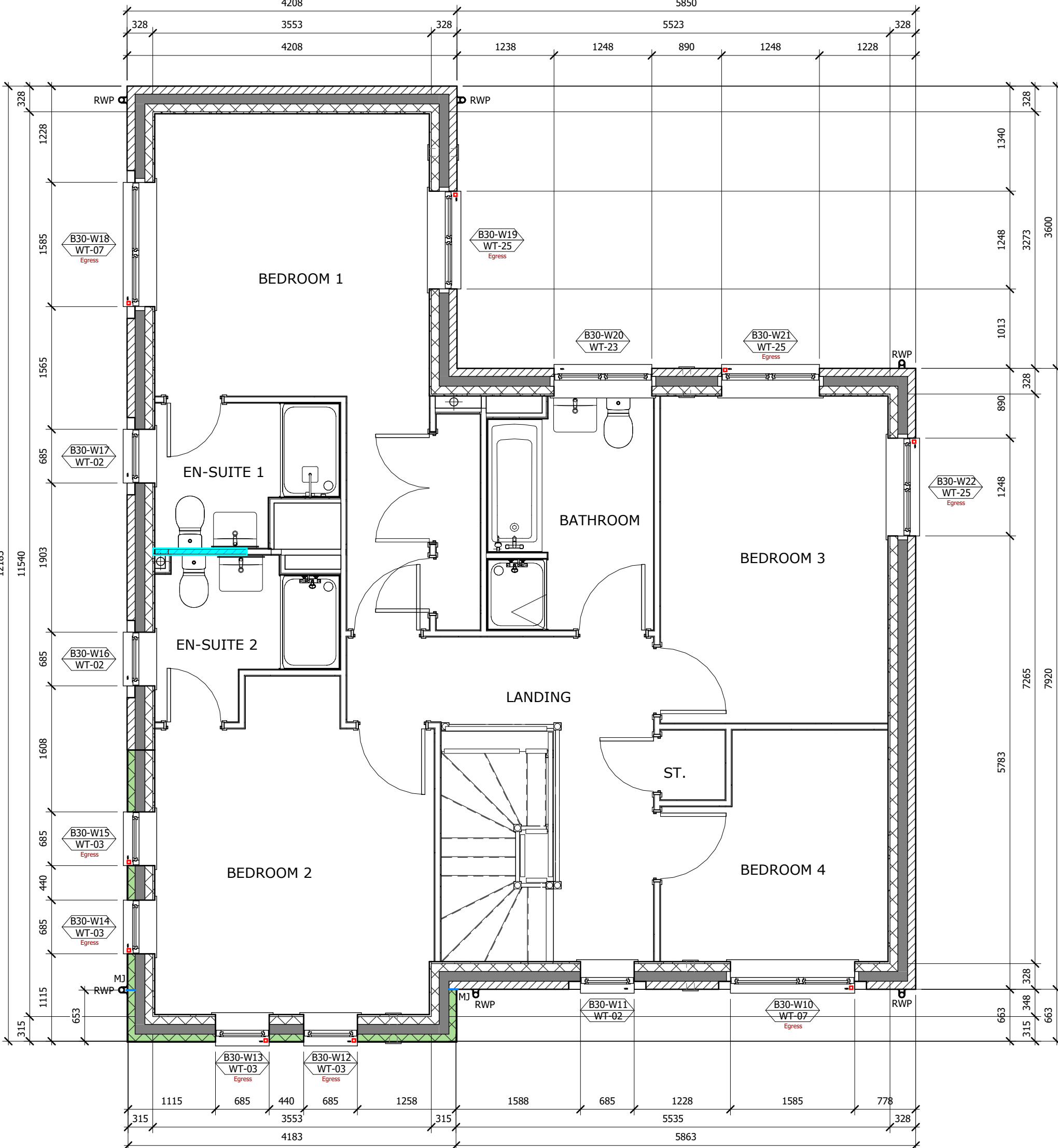
Ground Floor Plan
1 : 50



Substructure Plan
1 : 50



Roof Plan
1 : 50



First Floor Plan
1 : 50

External Door Schedule (Block 30)					
Door Ref	Type Mark	STRUCTURAL	Width	Height	Door Panel - Colour
B30-ED01	EDT-04	1023	1210	Dark Grey	

Window Schedule (Block 30)					
Mark	Type Mark	STRUCTURAL	Egress	Safety	Comments
U00 - Ground Floor					
B30-W01	WT-08	1585	1510	No	Yes
B30-W02	WT-16	1512	2110	No	Yes
B30-W03	WT-08	1585	1510	No	Yes
B30-W04	WT-04	685	1510	No	Yes
B30-W05	WT-05	1585	1960	No	No
B30-W06	WT-23	1248	1210	No	No
B30-W07	WT-24	2710	2110	No	No
B30-W08	WT-23	1248	1210	No	No
B30-W09	WT-01	685	1960	No	Yes
U01 - First Floor					
B30-W10	WT-07	1585	1360	Yes	No
B30-W11	WT-02	685	1210	No	No
B30-W12	WT-03	685	1360	Yes	No
B30-W13	WT-03	685	1360	Yes	No
B30-W14	WT-03	685	1360	Yes	No
B30-W15	WT-03	685	1360	Yes	No
B30-W16	WT-02	685	1210	No	Yes
B30-W17	WT-02	685	1210	No	Yes
B30-W18	WT-07	1585	1360	Yes	No
B30-W19	WT-25	1248	1360	Yes	No
B30-W20	WT-23	1248	1210	No	Yes
B30-W21	WT-25	1248	1360	Yes	No
B30-W22	WT-25	1248	1360	Yes	No

Glazing and Trickle Vent Requirements

Ground Floor
28dB R(w+Cr) Glazing & 32dB D(n, e, w) Trickle or Wall Vent. (to habitable rooms only)

First Floor
28dB R(w+Cr) Glazing & 32dB D(n, e, w) Trickle or Wall Vent. (to habitable rooms only)

Plot Mechanical Ventilation Requirements - Vent Axia Cool Box System

BED 1 - 20 l/s
BED 2 - 20 l/s
BED 3 - 20 l/s
BED 4 - 20 l/s

For detail system design refer to VENT AXIA.

Wall Legend	
	Below FFL External Cavity Wall: - 100mm stone outer leaf - 125mm cavity fully filled with insulation - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork
	Above FFL External Cavity Wall: - 20mm render - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork - 125mm cavity fully filled with insulation - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork - 12.5mm plasterboard on dabs with skim finish
	Below FFL Supporting Cavity Wall - Robust Detail: E-W05-20 - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork - 100mm cavity fully filled with insulation - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork
	Above FFL Supporting Cavity Wall - Robust Detail: E-W05-20 - 12.5mm plasterboard on dabs with skim finish - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork - 100mm cavity fully filled with insulation - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork - 12.5mm plasterboard on dabs with skim finish
	Sloped Wall: - 125mm thick 2.30mm Standard Plaster Aglite Ultra blockwork
	Load Bearing Internal Wall: - 12.5mm plasterboard on dabs with skim finish - 100mm thick 2.30mm Standard Plaster Aglite Ultra blockwork - 12.5mm plasterboard on dabs with skim finish

Key	
	Air Brick
	Vent Axia Lo-Carbon Carbon Wall
	Rain Water Downpipe
	Electric Meter Box Location
	Movement Joint Location (Engineers drawings takes precedence)
	ASHP Heat Exchanger (to be located a minimum 1m from plot boundary)
	Incoming Water
	Telecoms
	Electricity
	RC lintel over adjacent to Nuisance corner joint
	Vent Axia Lo-Carbon Wall with right ducts within floor and right ducts within roof void to roof (see note)
	SVP & Direct to Drain Connections
	Incoming Water Entry Point
	Floor Span Direction (subject to sub-structure design drawings)
	30 minute Integrity & 15 minutes Insulation Vertical Masonry Wall Core Barrier
	Structure Schedule, refer to engineers drawings and specification (Engineers drawings take precedence)

General Notes

- (to be read in conjunction with the structural engineering information):
- All masonry below DPC to be in accordance with BS EN 771.
- Refer to the durability designation F1, F2 to BS EN 998-2:2018.
- Specification for mortar for masonry, Part 2: Masonry mortar.
- As substructure blockwork to be in accordance with BS EN 998-2:2018.
- Part 6 - Design of masonry structures - Part 2: Design considerations, selection of materials and execution of masonry and brickwork standards.
- Blockwork to be Plaster Aglite Ultra.
- Minimum requirements of below FFL blockwork to not be less than 1500kg/m³ or 7.30mm.
- Minimum requirements of above FFL blockwork to not be less than 1500kg/m³ or 7.30mm.
- Lean mix mfr to be used in accordance with standards at least 225mm below DPC level.
- For details of suspended floor see structural engineers design / specialist design.
- Refer to structural engineers drawing for foundation information. Provide underground ducts as required for water, electric & gas services.
- Foundation walls / type are indicated only. Refer to Structural Engineers foundation design for detailed information.
- Movement joints are structural items and details / placing to be provided by structural engineer.
- All substructure lintels to be 100 x 75mm pre-stressed concrete lintels. Location to be co-ordinated with individual plot drainage.
- Ensure a full block is used under the lintel bearing in accordance with the NHBC guidance (Clause 6.1.1) along with a minimum bearing for the lintel of 300mm up to 1.2m spans and 150mm over 1.2m spans.
- Refer to Structural Engineer's Foundation design for detailed information.
- NHBC standards state: Chapter 5.2.10 (3) Ventilation under floor voids: Voids should be ventilated by openings providing not less than 1500mm² per metre run of external wall or 500mm² per m² of floor area, which ever gives the greater opening area. Ventilation openings should be provided on at least two opposite sides, where this is not possible, effective cross-ventilation from opposite sides should be provided by a combination of opening and air ducts. Ventilation should be spaced at not more than 2m centres and within 100mm of each end of any wall.
- 1200mm void access space at max. 1220 up to 900x200mm level landing with a min. slope of 1:4 fall from floor level minimum.
- All extract fans to be system 3 dPmax fans.

Risks	
Lifting Hazard	Risk of Falling
Risk of Falling Object	Consideration for High Level Access
	Risk of Collapse
	Risk of Explosion

P8 14.06.24 DW AH	Substructure Updated
P7 13.05.24 DW AH	Drawings added to internal masonry to set out openings
P6 12.05.24 DW AH	Drawings to internal blockwork added
P5 25.04.24 DW AH	Drawings coordinated with 3rd party and engineers information
P4 17.01.24 DW JT	Vent Axia Cool Box System schedule
P3 18.03.23 KH DW	Wall Legend and spec of other updated
P2 01.09.23 KH DW	Updated to suit client comments
P1 02.06.23 PH DW	Floor plans added to sheets. Additional information added to substructure plans

Rev.	Date	Drawn	Checked	Description
S0				Work In Progress

Hollin Gate, Littleborough

GA Block Plans - Plot 11
Block 30

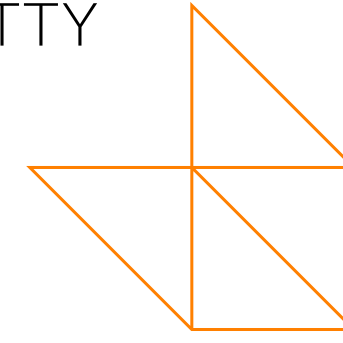
Location:
Hollingworth Road
Littleborough

Client:

Countryside Partnerships

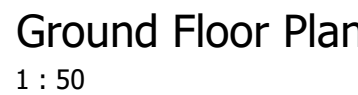
UPRS	Originator	Zone	Level	Type	Role	Scale/Number	Revision
HOLL-WBA-XX-XX-DR-A-20_2011							P8
Date:	Drawn:	Checked:	Scale:	BAID	Int Job No:		
Nov 22	MI	DW	1 : 50		4046-001		

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FUTURE BUILT

Note: Do not Scale from this drawing. All dimensions to be checked on site

[illegible]

Note: Do not Scale from this drawing. All dimensions to be checked on site

Wall Legend

Below FF, External Cavity Wall

- 10mm stone outer leaf
- 125mm cavity fully filled with insulation.
- 10mm brick inner leaf
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.

Below FF, Internal Cavity Wall

- 10mm stone outer leaf
- 10mm internal cavity
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.

Below FF, Separating Cavity Wall - Robert Detail E-WH 26

- 10mm stone outer leaf
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.

Above FF, Separating Cavity Wall - Robert Detail E-WH 26

- 10mm stone outer leaf
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.

Sleeper Wall

- 215mm 7.5mm³ Standard Panner Aglite Utrac Block.

Load Bearing Internal Wall

- 12.5mm plasterboard on dabs with skim finish.
- 10mm 7.5mm³ Standard Panner Aglite Utrac Block.
- 12.5mm plasterboard on dabs with skim finish.

Key

- Air Bricks
- Vent Air Lo-Carbon NBR dPVC C with rigid ducts
- Rain Water Downpipe
- Periscope Cavity Wall Vents
- Vent Air Lo-Carbon NBR dPVC C (with rigid ducts within floor void)
- SWP & Direct to Drain Connections
- RC Inlet over Airbricks adjacent to Nupan corner joint
- Vent Air Lo-Carbon NBR dPVC C (with rigid ducts within roof void to roof tie level)
- Incoming Water Entry
- Electric Meter Box Location
- Movement Joint Locations - (Engineers drawings take precedence)
- ASHP Heat Exchanger, to be located a minimum 1m from plant boundary
- 30 minute Integrity & 15 minute Insulation Vertical Masonry Wall Fire Barrier Structure, Refer to Engineering and Specification (Engineers drawings take precedence)
- Floor Span Divider (subject to sub-contractor design drawings)

Legend:

- Incoming Water
- Telecoms
- Electricity

[illegible][illegible]

Diagram illustrating a roof structure with a gable end and a side elevation. The gable end shows a 50° pitch and a central ridge labeled "Dry Ridge". The side elevation shows a horizontal roofline with a 35° pitch indicated by a vertical line and an arrow. Labels include "50° Tile Vent" at the gable peak, "Dry Ridge", "35°", "Tile Vent", and "50° Tile Vent" at the side end.

[illegible][illegible]

P8	14.05.24	DW	AH	Substructure Updated
P7	14.05.24	DW	AH	Links shown to airbricks where required.
P6	13.05.24	DW	AH	Drms added to internal masonry to set out openings.
P5	02.05.24	DW	AH	Drms to internal blockwork added.
P4	25.04.24	DW	AH	Drawings coordinated with 3rd party and engineers information.
P3	10.10.23	KK	DW	Wall Legend and spec of d/mew updated.
P2	01.09.23	KK	DW	Updated to suit client comments.
P1	02.06.23	MJ	DW	Floor plans added to sheets. Additional information added to substructure plans.

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External Door Schedule (Block 14)						
Door Ref	Type Mark	STRUCTURAL		Door Panel - Colour	Required Clear Width	Comments
		Width	Height			
B14-ED01	EDT-04	1023	2110	Dark Grey		

Window Schedule (Block 14)						
Mark	Type	STRUCTURAL	Egress	Safety	Obstruction	Comments
		Windo	Windo	Glazing	Glazing	
U0 - Ground Floor						
U1-W001	WT-08	1585	1510	No	Yes	No
U1-W002	WT-18	1473	1510	No	Yes	No
U1-W003	WT-08	1585	1510	No	Yes	No
U1-W004	WT-08	1585	1510	No	Yes	No
U1-W005	WT-19	1473	1510	No	Yes	No
U1-W006	WT-04	1585	1510	No	Yes	No
U1-W007	WT-09	1585	1560	No	No	No
U1-W008	WT-02	1585	1510	No	No	No
U0 - 1st Floor						
U1-W009	WT-08	1585	1510	No	Yes	No
U1-W010	WT-02	1685	1210	No	No	No
U1-W011	WT-07	1585	1360	Yes	No	No
U1-W012	WT-02	1685	1210	No	No	No
U1-W013	WT-02	1685	1210	No	No	Yes
U1-W014	WT-02	1685	1210	No	No	No
U1-W015	WT-02	1685	1210	No	No	Yes
U1-W016	WT-11	1585	1360	Yes	No	No
U1-W017	WT-03	1685	1360	Yes	No	No
U1-W018	WT-03	1685	1360	Yes	No	No

Glazing and Trickle Vent Requirements

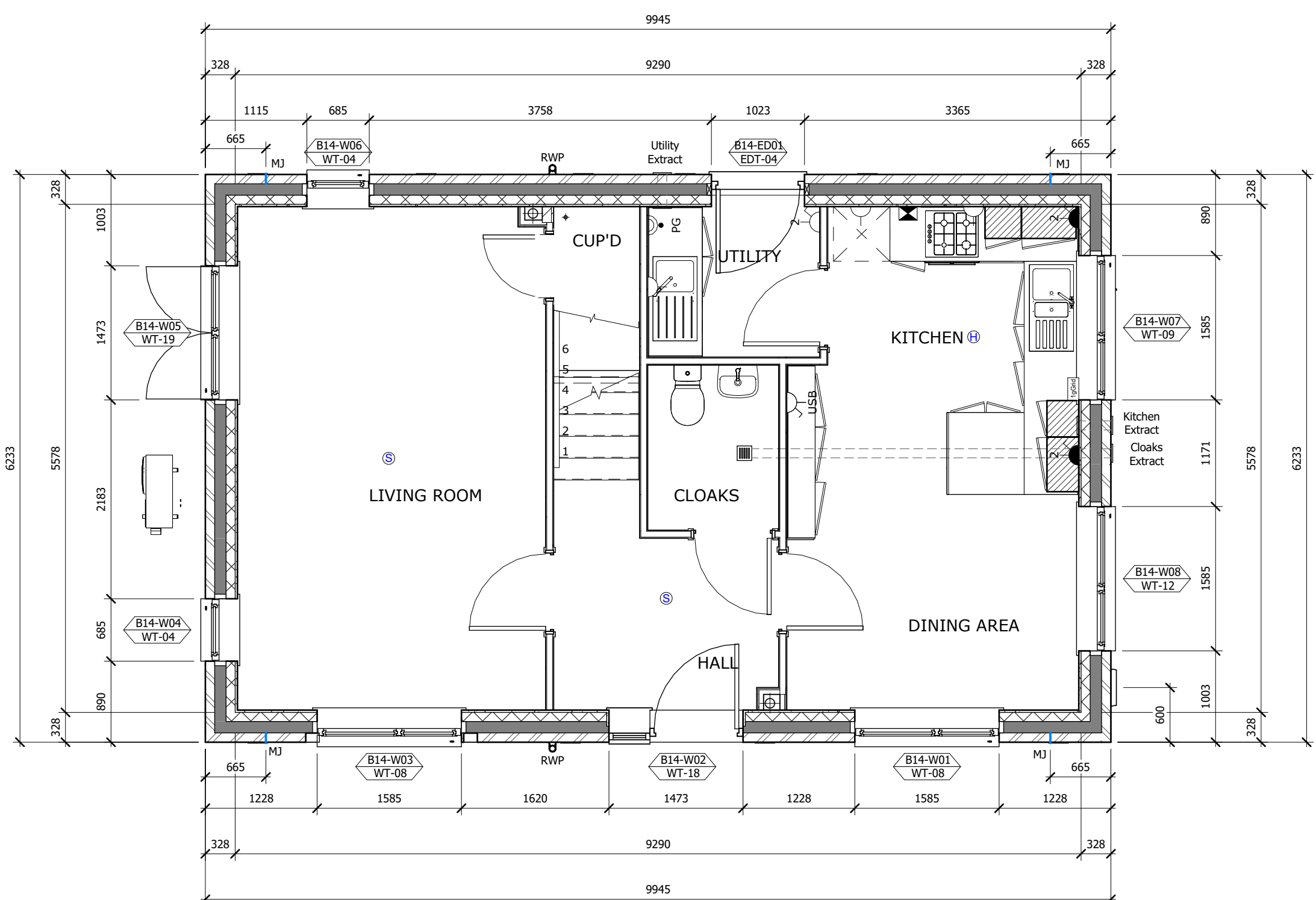
Ground Floor
28dB R(w+Ctr) Glazing & 32dB D(n, e, w) Trickle or Wall Vent (to habitable rooms only)

First Floor
28dB R(w+Ctr) Glazing & 32dB D(n, e, w) Trickle or Wall Vent (to habitable rooms only)

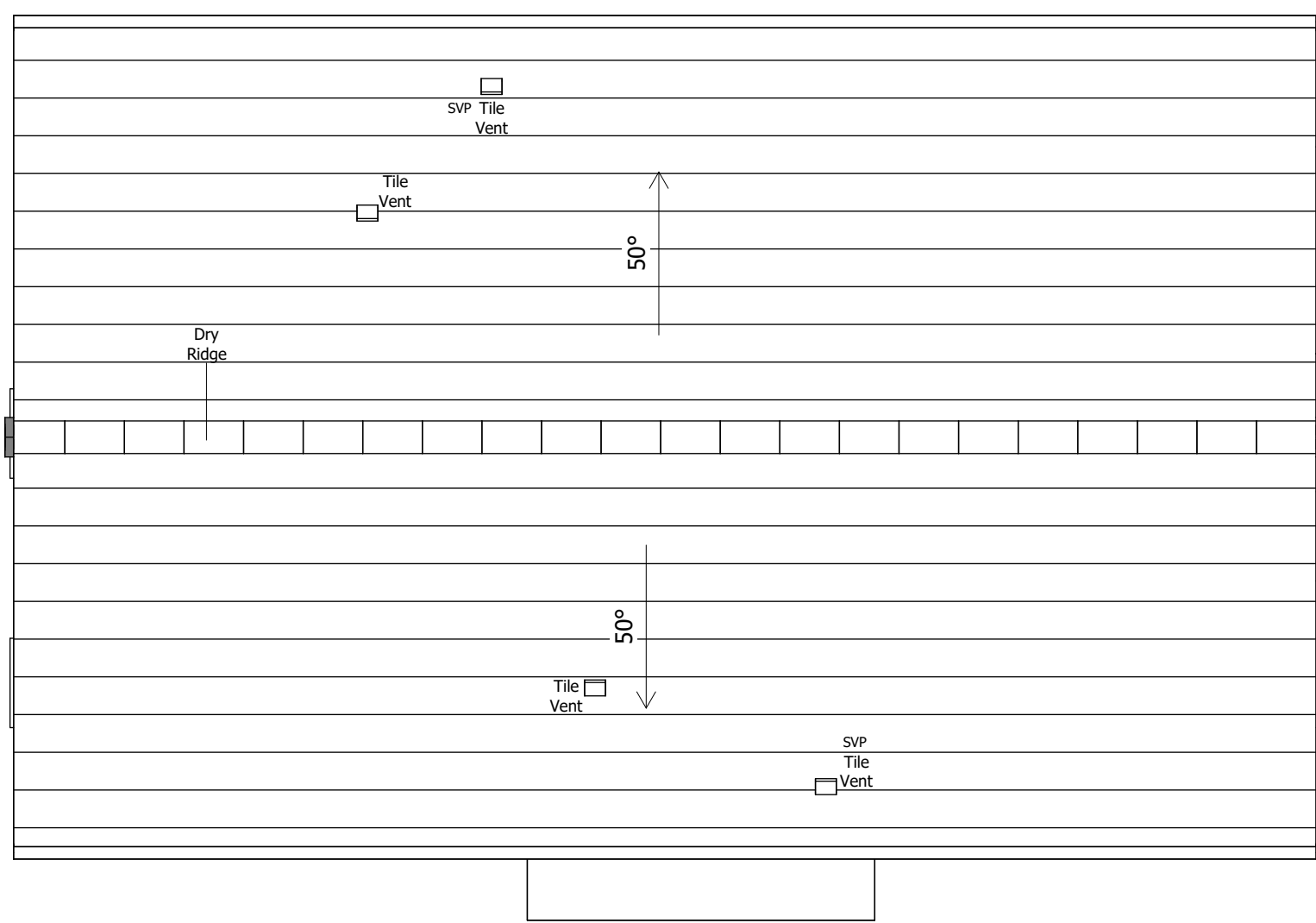
Plot Mechanical Ventilation Requirements - Vent Axia Cool Box System

BED 1 - 30 l/s

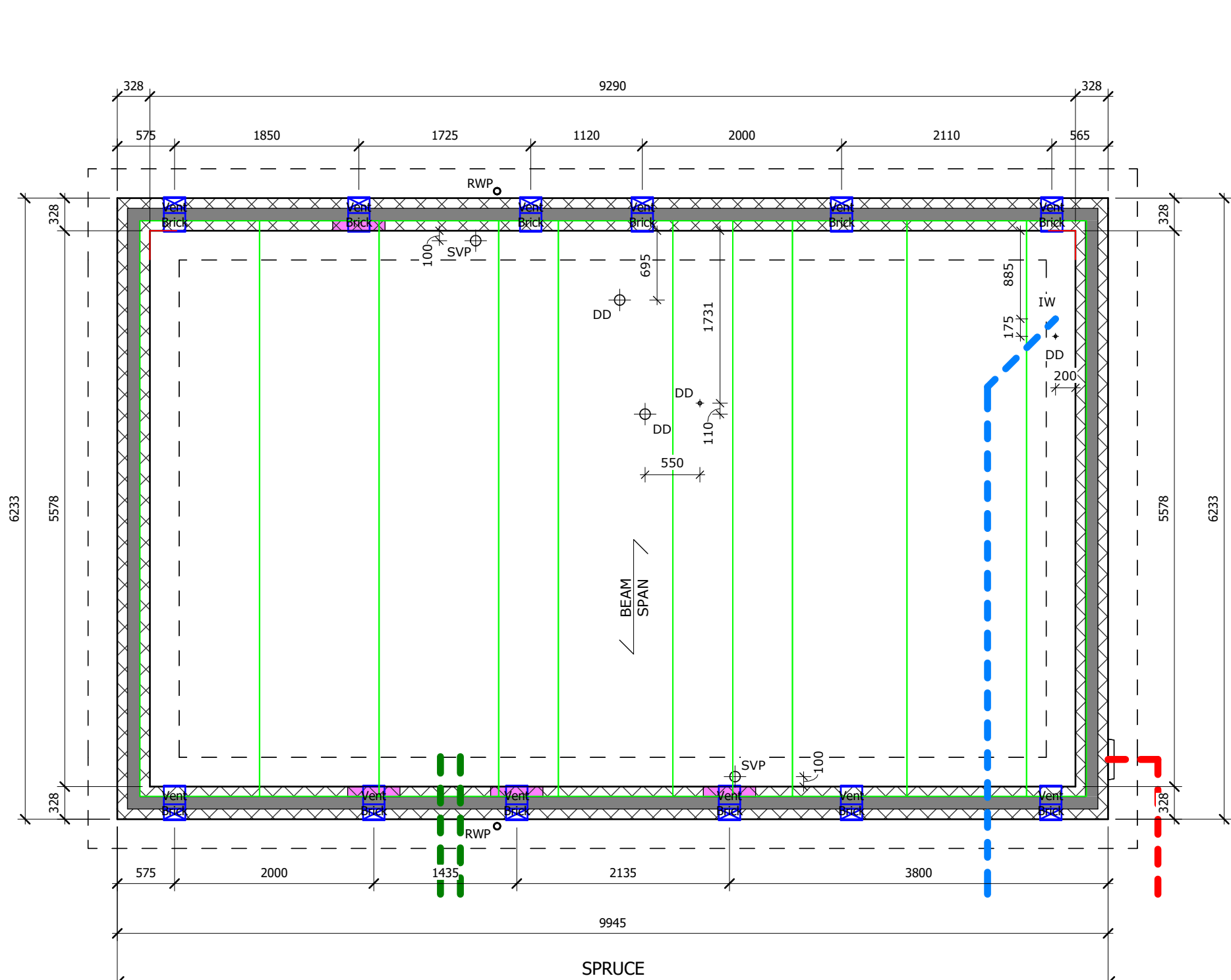
For detail system design refer to VENT AXIA.



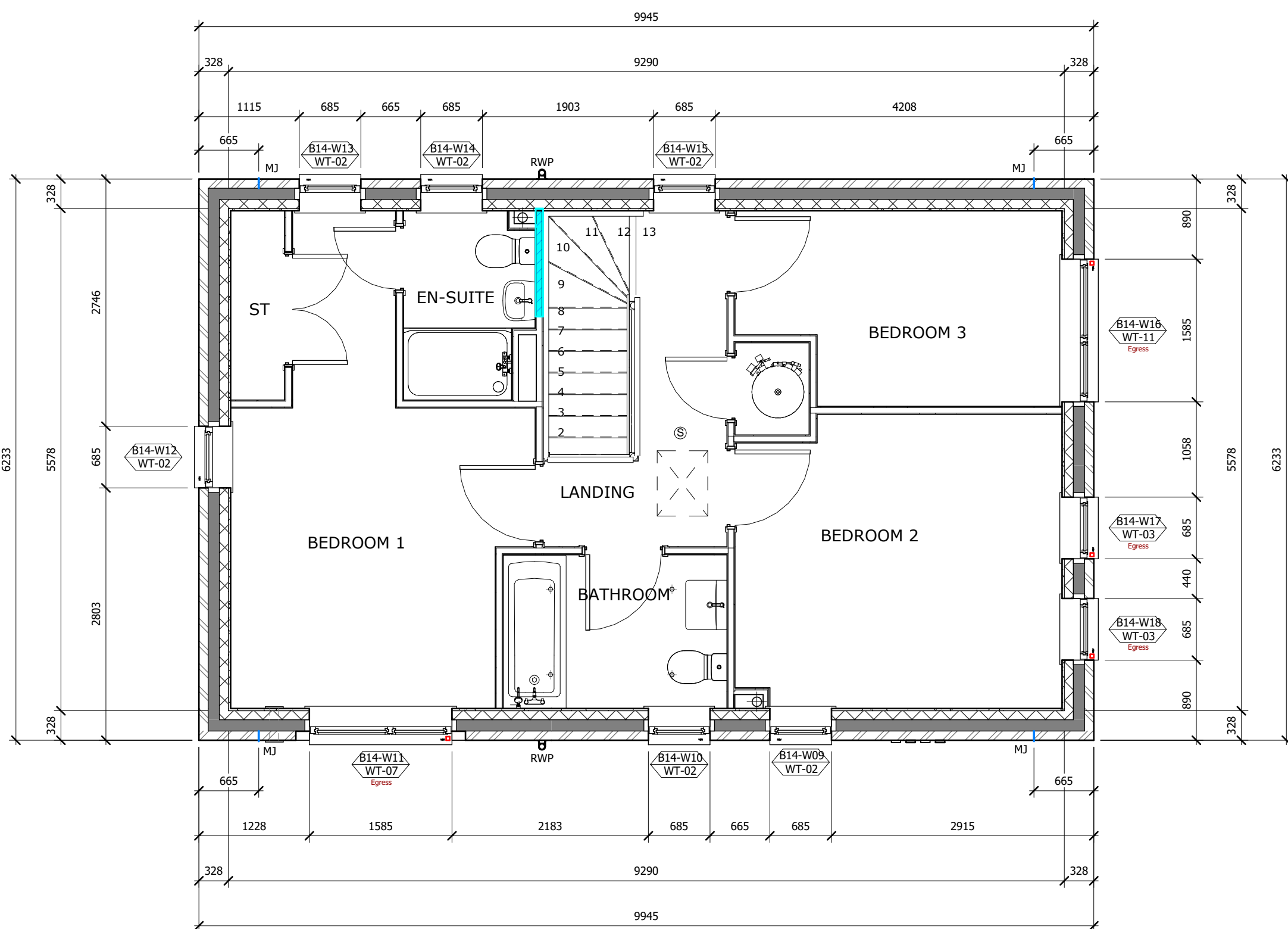
Ground Floor Plan
1 : 50



Roof Plan
1 : 50



Substructure Plan



First Floor Plan
1 : 50

[illegible]

P5	14.06.24	DW	AH	Substantively Updated Drawings coordinated with 3rd party and engineers information.
P4	17.03.24	DW	JT	Visit Area Code System schedule Initial layout and spec of other updates.
P3	10.03.23	KJ	DW	Updated to suit client comments.
P2	01.09.23	KJ	DW	From design update to inserts. Additional information added to substructure plans.
P1	01.09.23	HL	DW	

Rev:	Date:	Drawn:	Checked:	Description:
S0				Work In Progress

Hollin Gate, Littleborough

GA Block Plans - Plot 43

Block 14

Location:

Hollingworth Road
Littleborough

Client:

Countryside Partnerships

HOLL-WBA-XX-XX-DR-A-20_2038

P6

Nov 24

MI

DW

1:50

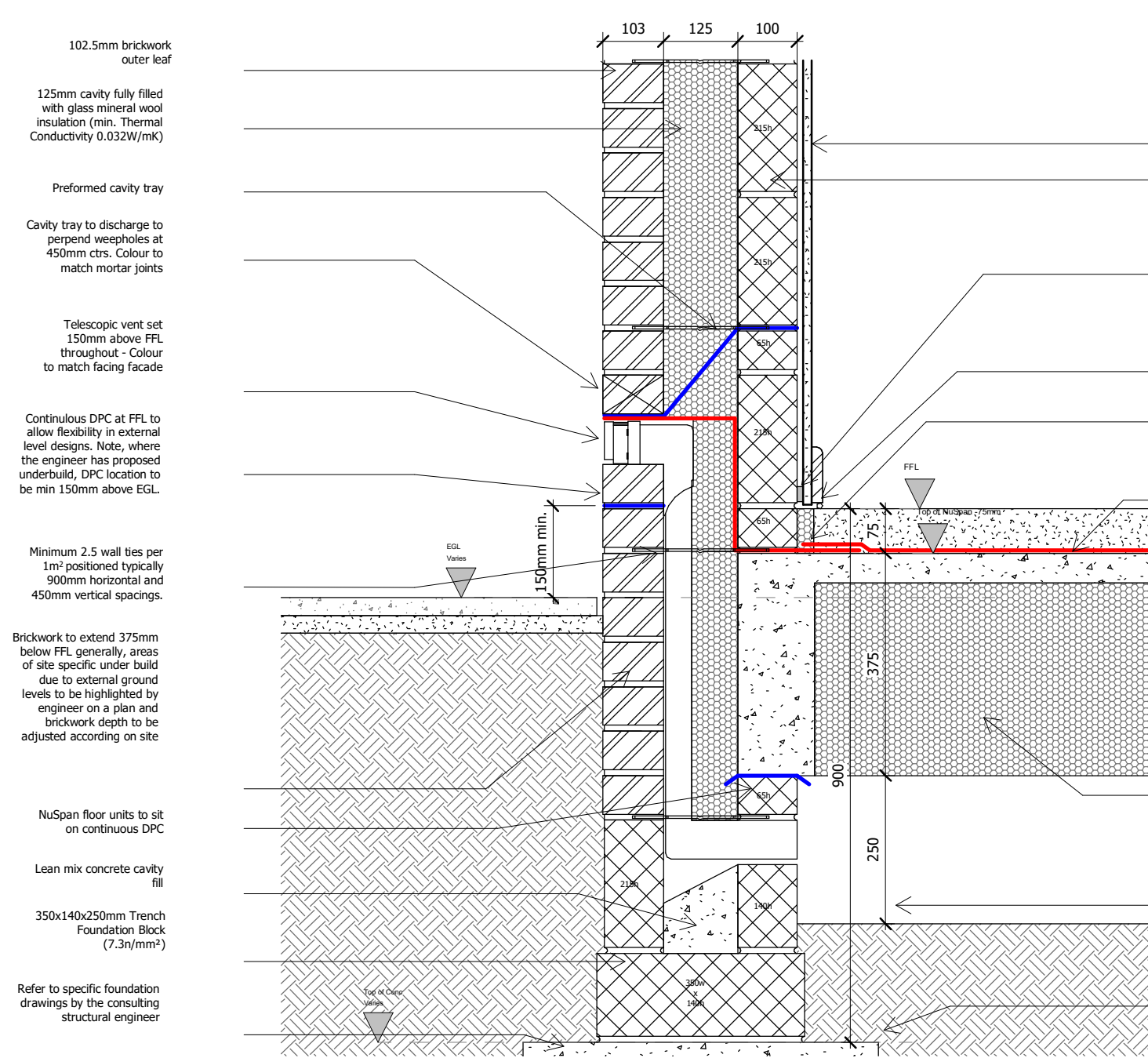
146 pgs

4046-001

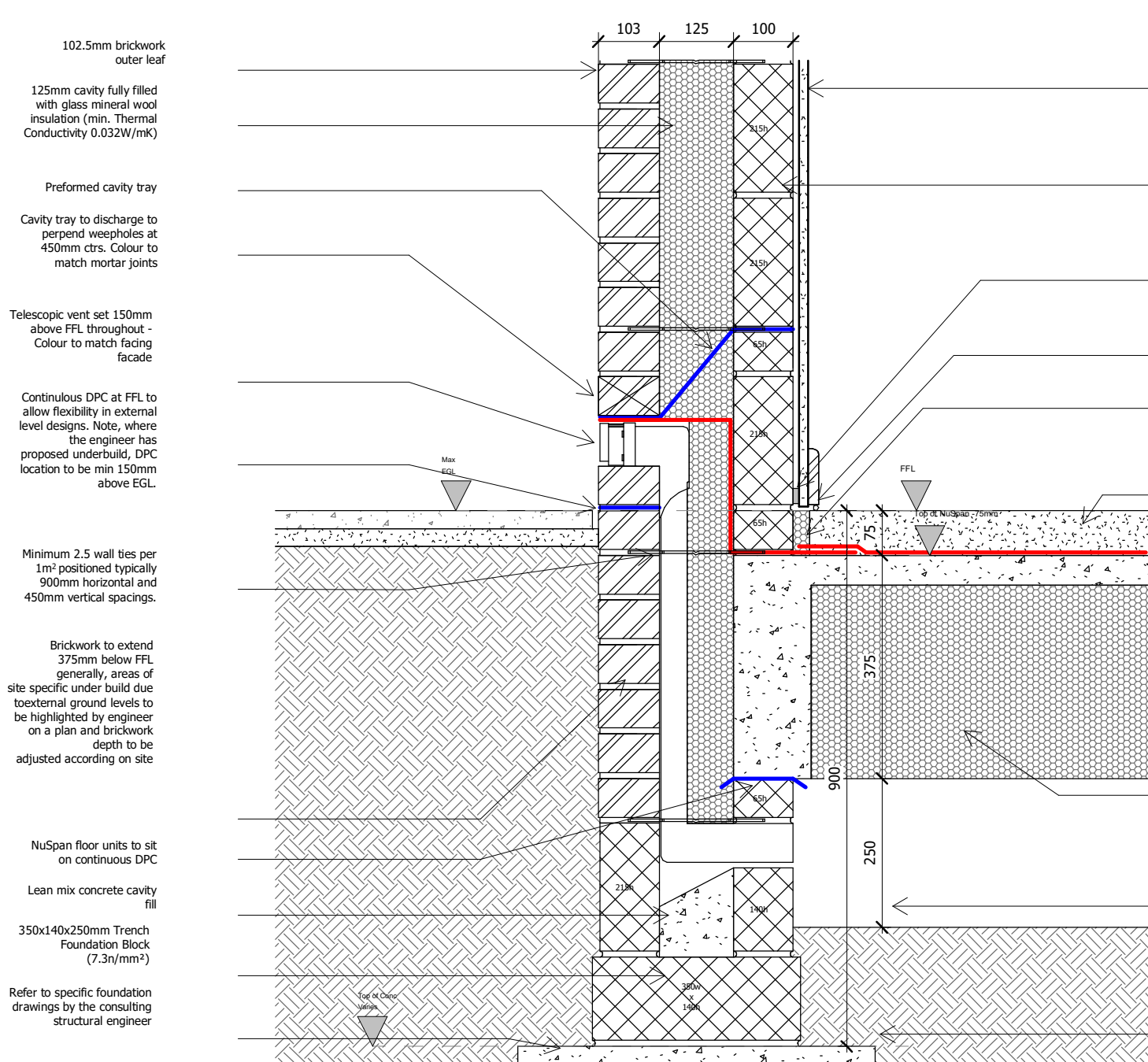
WATSON BATTY ARCHITECTS

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Leeds | Loughborough

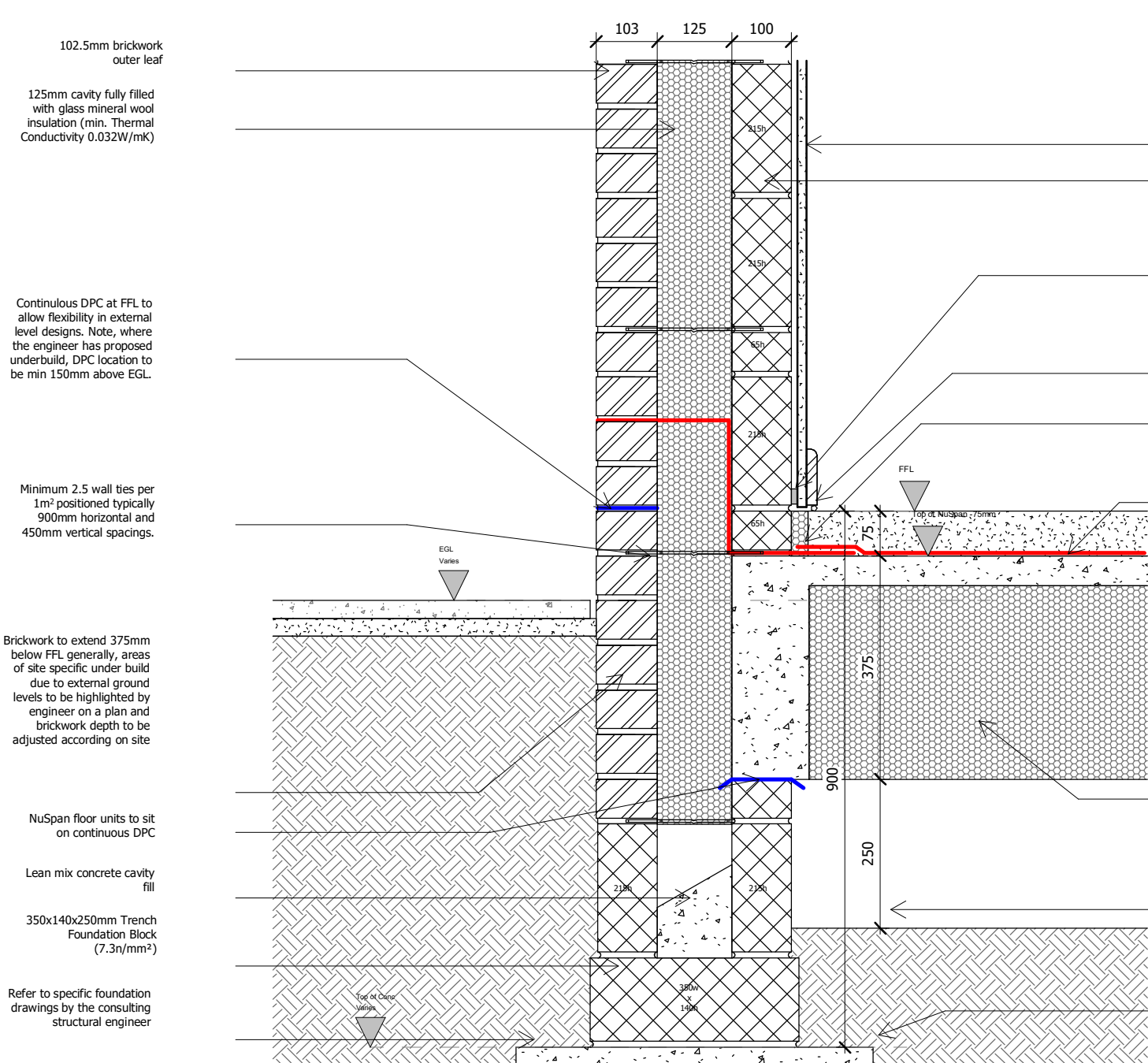
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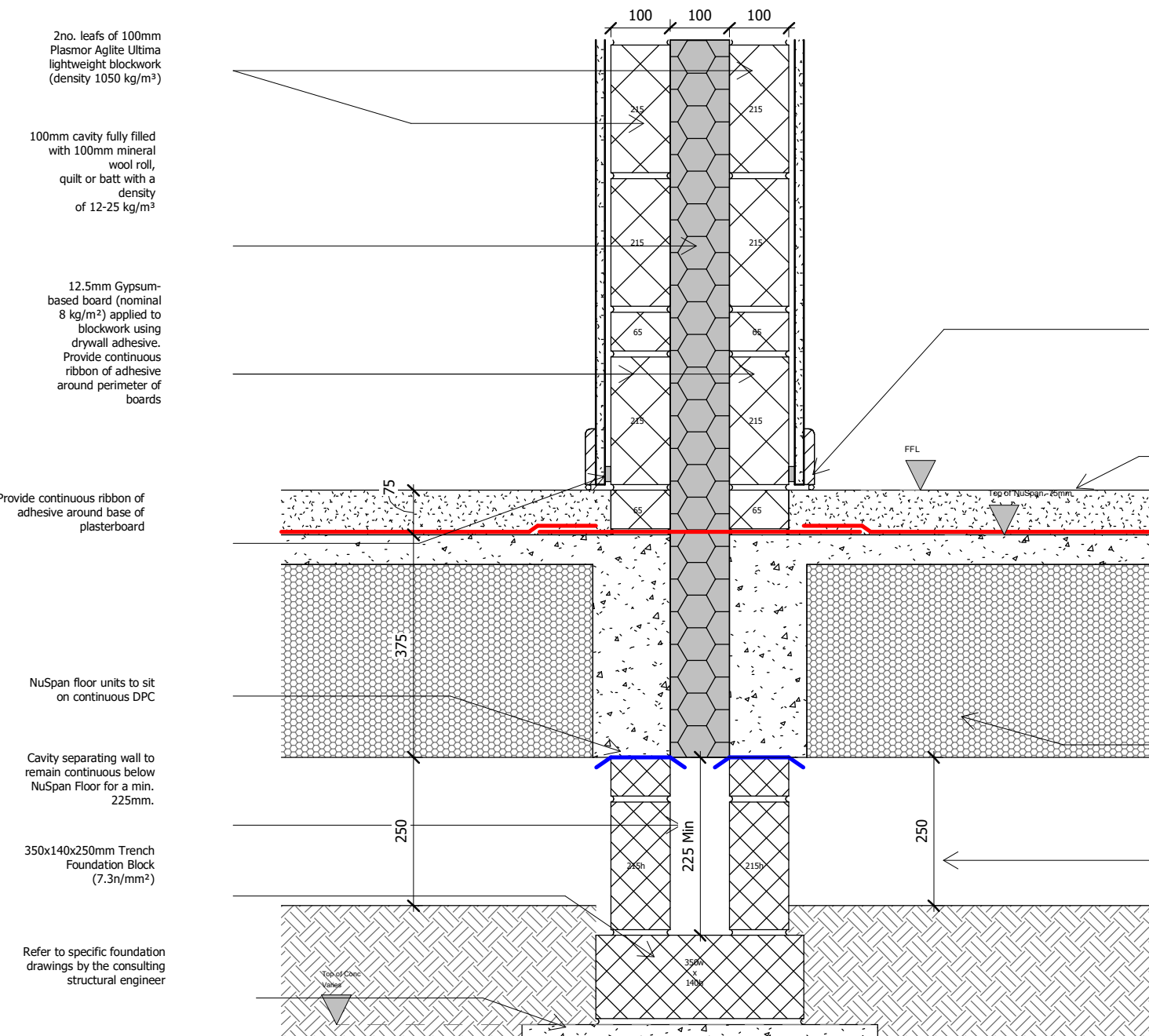
Brick External Wall / Ground Floor Junction
External Ground Level -150



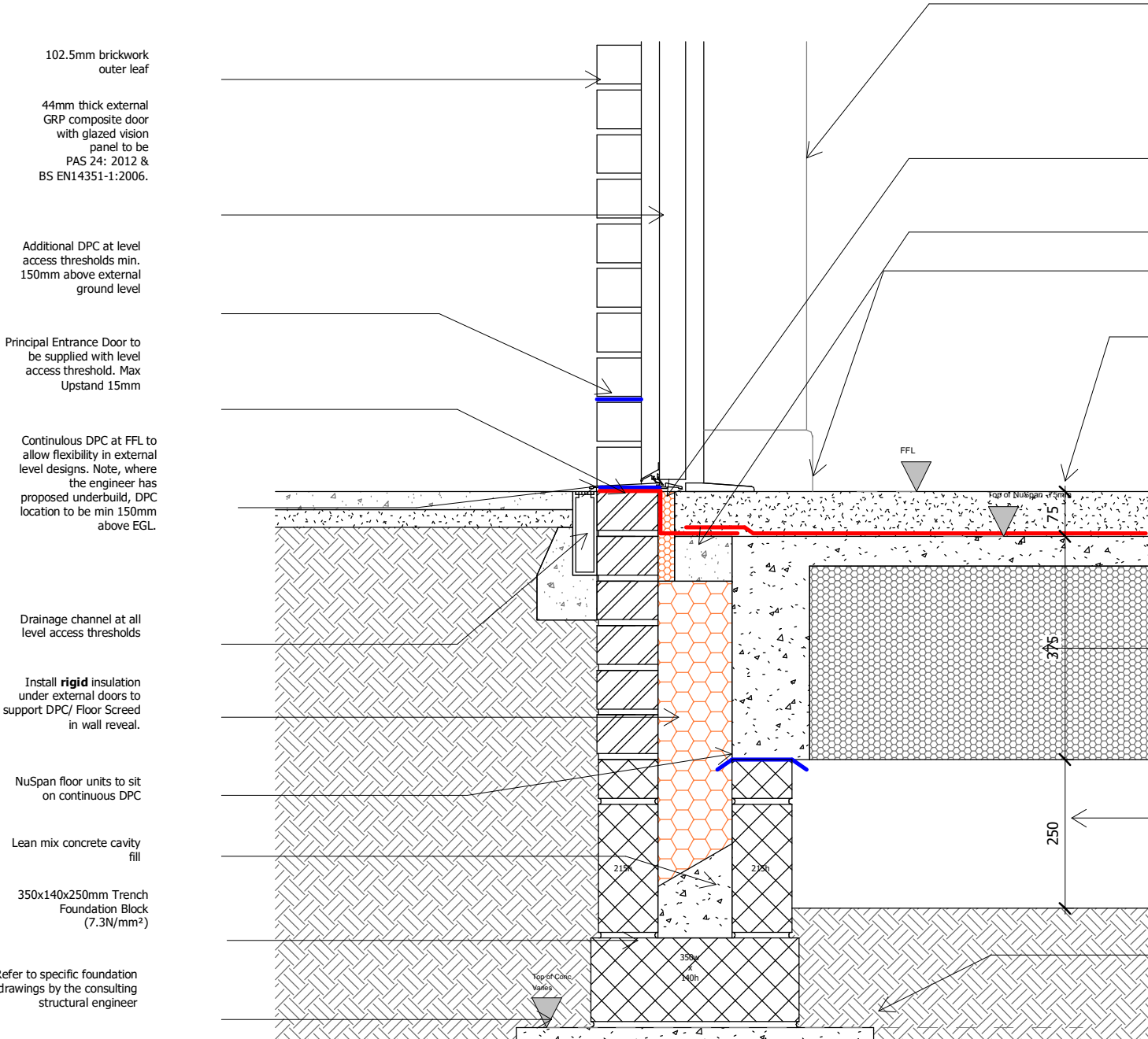
Brick External Wall / Ground Floor Junction
Max External Ground Level



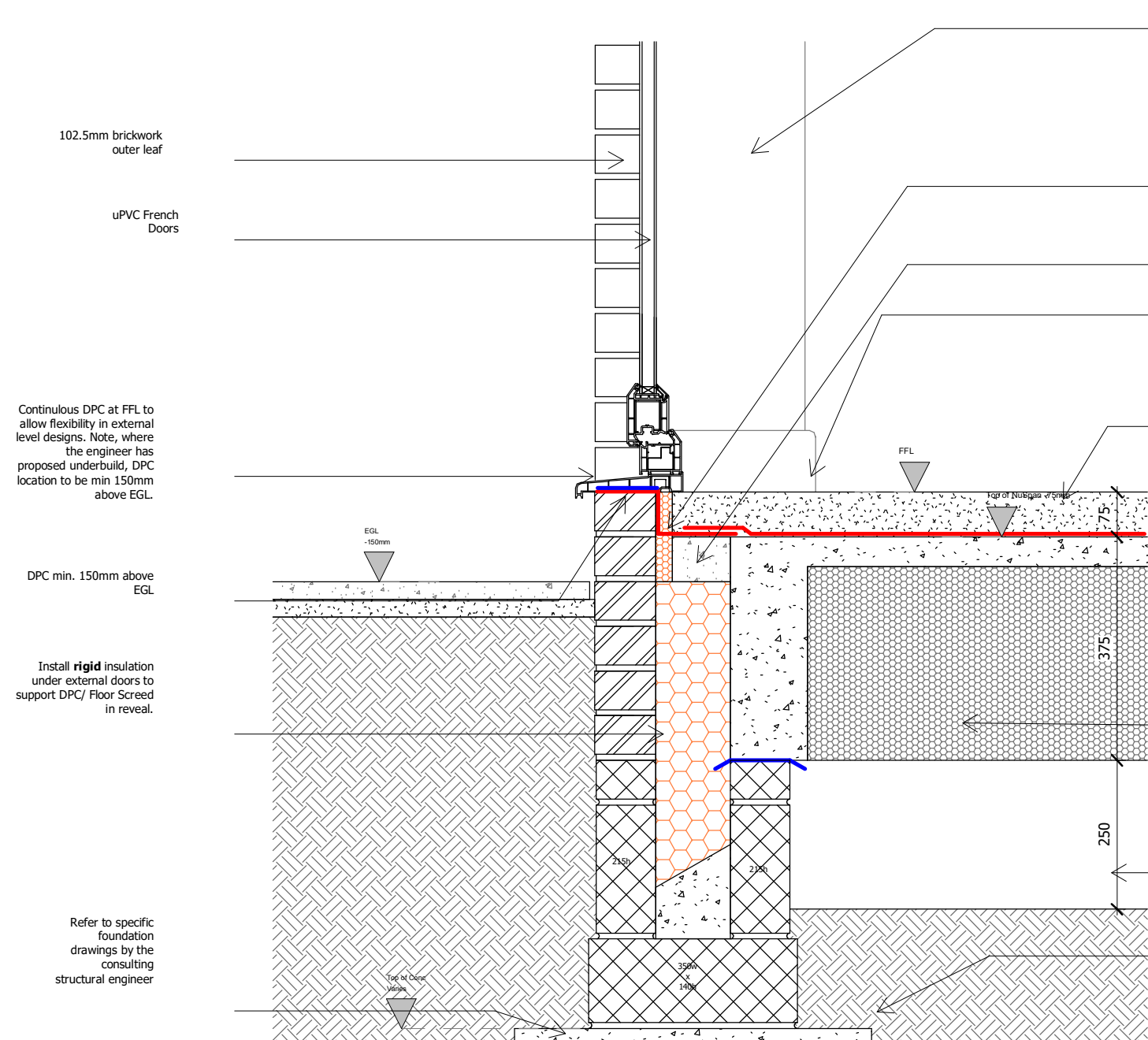
Brick External Wall / Ground Floor Junction
External Ground Level -150



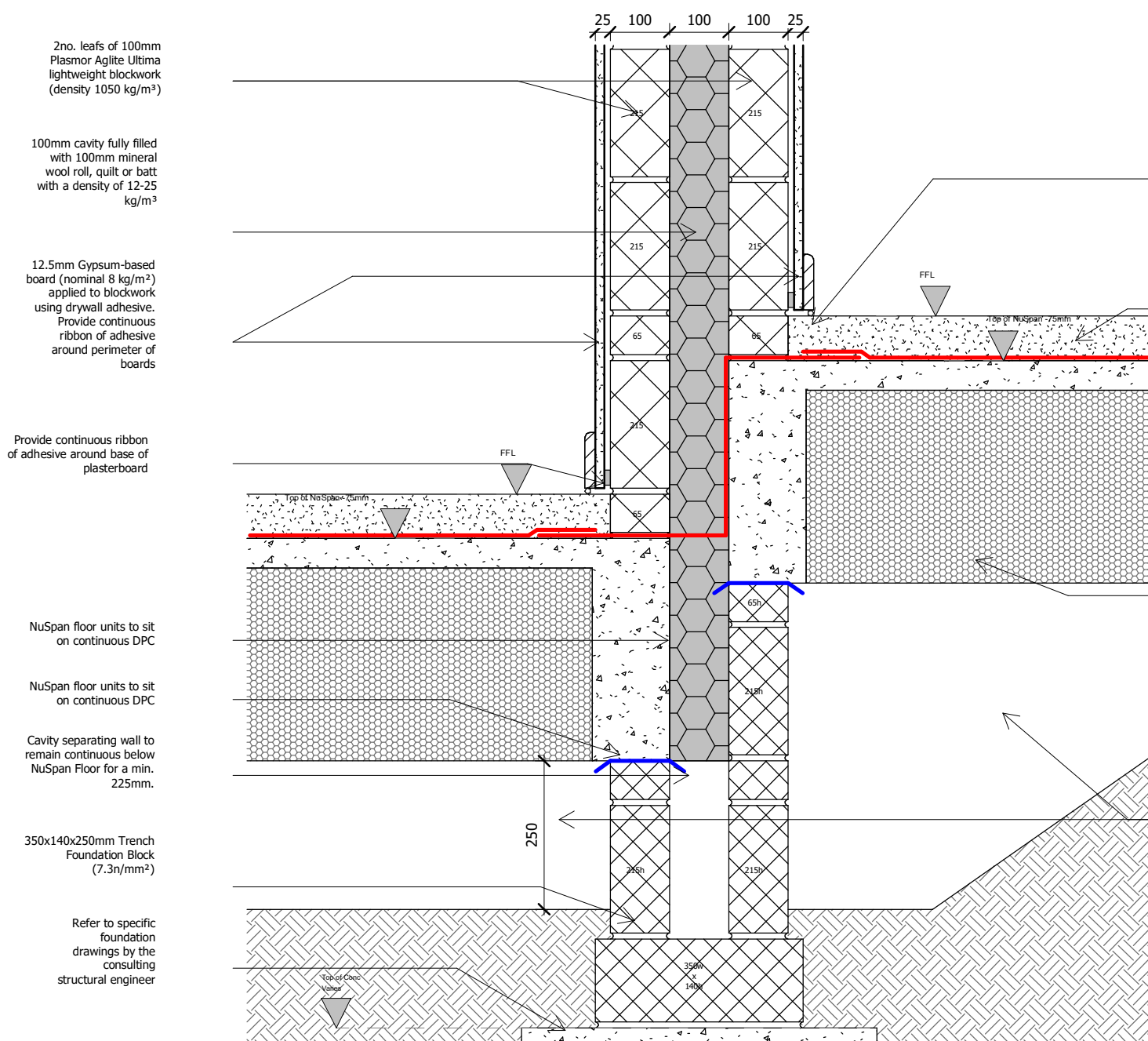
Separating Wall / Ground Floor Junction
Robust Detail E-WM-34



Brick External Wall / Ground Floor Threshold Junction
Level Access Principle Entrance Doors



Brick External Wall / Ground Floor Threshold Junction
Patio Doors



Typical Separating Wall / Stepped Ground Floor Junction
Robust Detail - E-WM-34

TARGET U-VALUES
External Wall: Brick & Render on Blockwork - 0.21w/m²k Stone - 0.22w/m²k
Cavity Wall to Garage Wall: 0.20w/m²k
Wall to Garage: 0.34w/m²k
Dormer Wall: 0.26w/m²k
Party Wall: 0.00w/m²k (To be to Robust Detail E-WM-34)
Ground Floor: 0.11w/m²k
Floor above Garage: 0.15w/m²k
Party Floor: 0.00w/m²k (To be to Robust Detail E-FC-4)
Roof - Insulated Ceiling: 0.08w/m²k
Roof - Insulated Slope (Eaves to Flat Ceiling): 0.14w/m²k
Roof - Flat Ceiling for Room in Roof HTs: 0.08w/m²k
Dormer Flat Roof: 0.16w/m²k
Porch Flat Roof: 0.16w/m²k
Front Entrance Door: 1.10w/m²k
Rear / Side Entrance Door: 1.20w/m²k
Windows: 1.20w/m²k
Patio Doors: 1.30w/m²k
Roof Windows: 1.30w/m²k

DPC & Cavity Tray Requirements
Flexible (plastic or rubber) DPC used as a cavity tray must meet the requirements of BS EN 14909 and have a third-party certification that confirms their suitability for use as a cavity tray.

P4	17.11.23	DW	AH	Revised following client comments
P3	08.11.23	DW	AH	TOC/FLL updated to 900mm
P2	09.10.23	DW	AH	Revised following client comments
P1	29.06.23	DW	RJ	Extra details added

Rev:	Date:	Drawn:	Checked:	Description:
S0				Work In Progress

Hollin Gate, Littleborough

Assembly Details - Brick - Sheet 1

Location:

Hollingworth Road
Littleborough

Client:

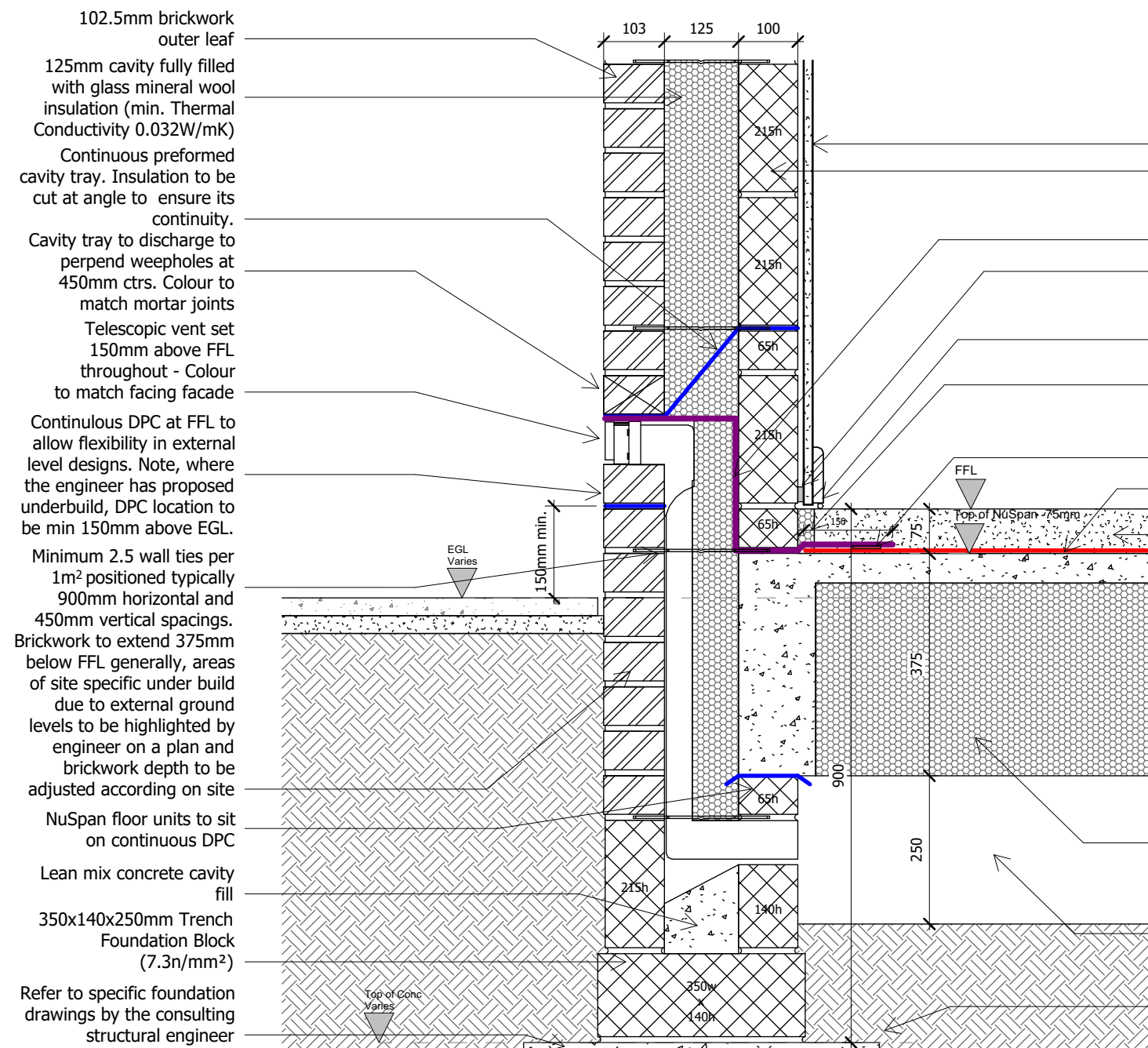
Countryside Partnerships

UPRN	Originator	Zone	Level	Type	Role	Series/Number	Revision:
HOLL-WBA-XX-XX-DR-A-20_9001							P4
Date:	Drawn:	Checked:	Scale: @A1		Int Job No:		
May 23	WMB	RJ	As indicated		4046-001		

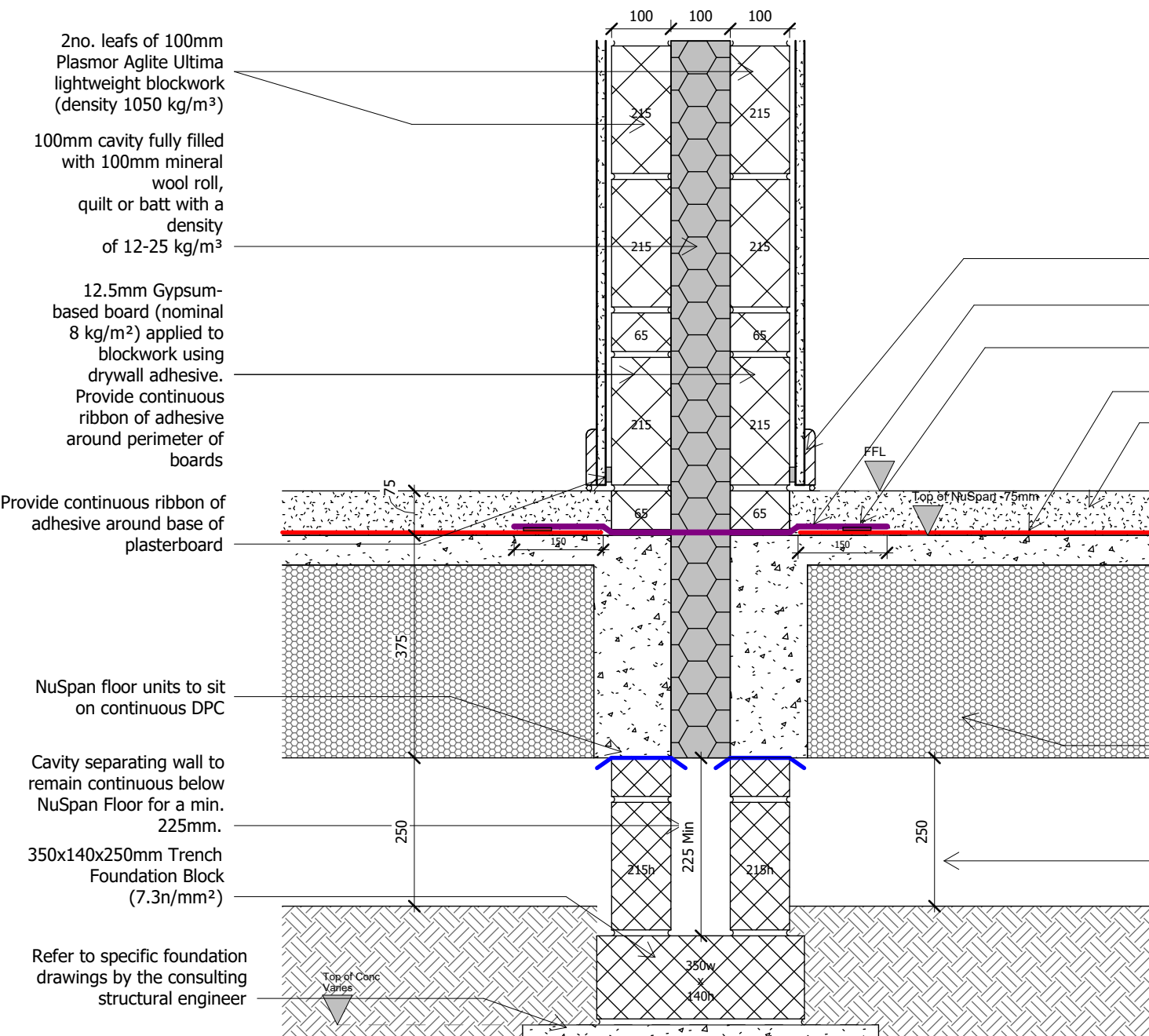
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FUTURE BUILT

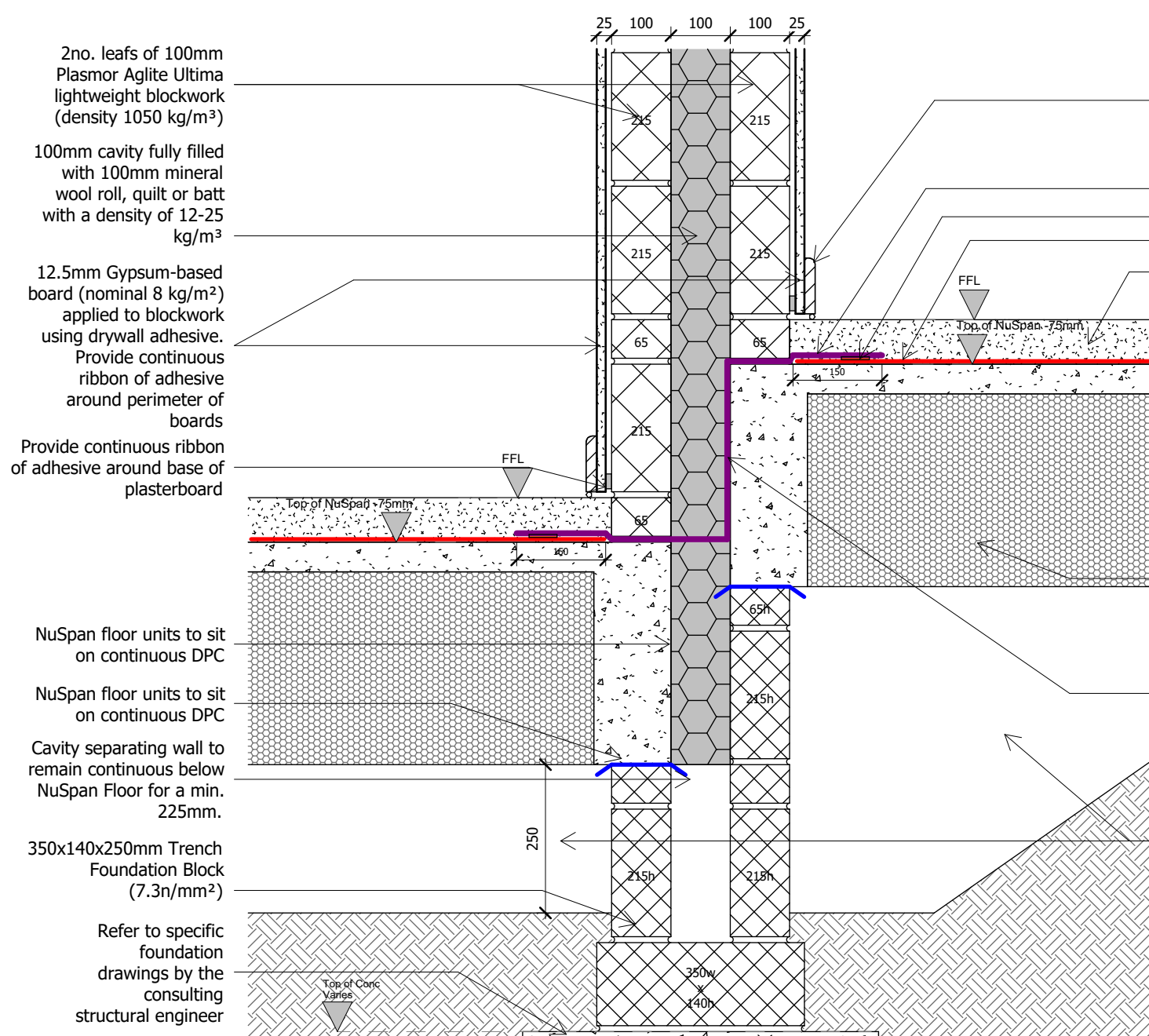
Note: Do not Scale from this drawing. All dimensions to be checked on site



Brick External Wall / Ground Floor Junction
External Ground Level -150

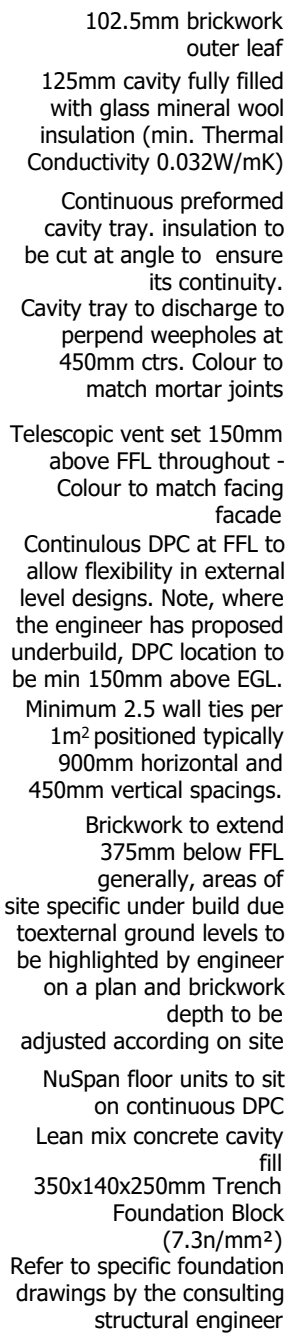


Separating Wall / Ground Floor Junction
Robust Detail E-WM-34

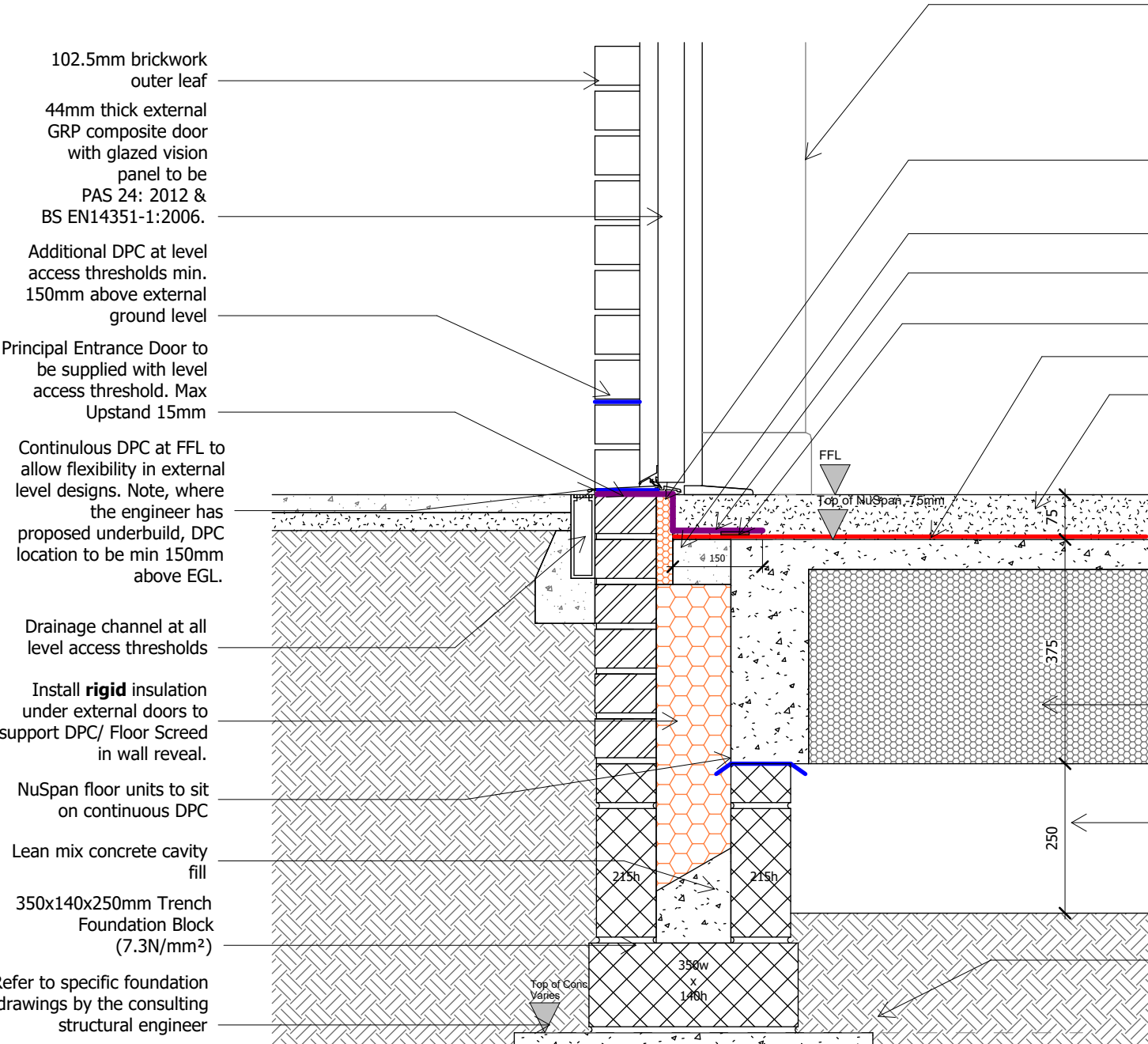


Typical Separating Wall / Stepped Ground Floor Junction
Robust Detail - E-WM-34

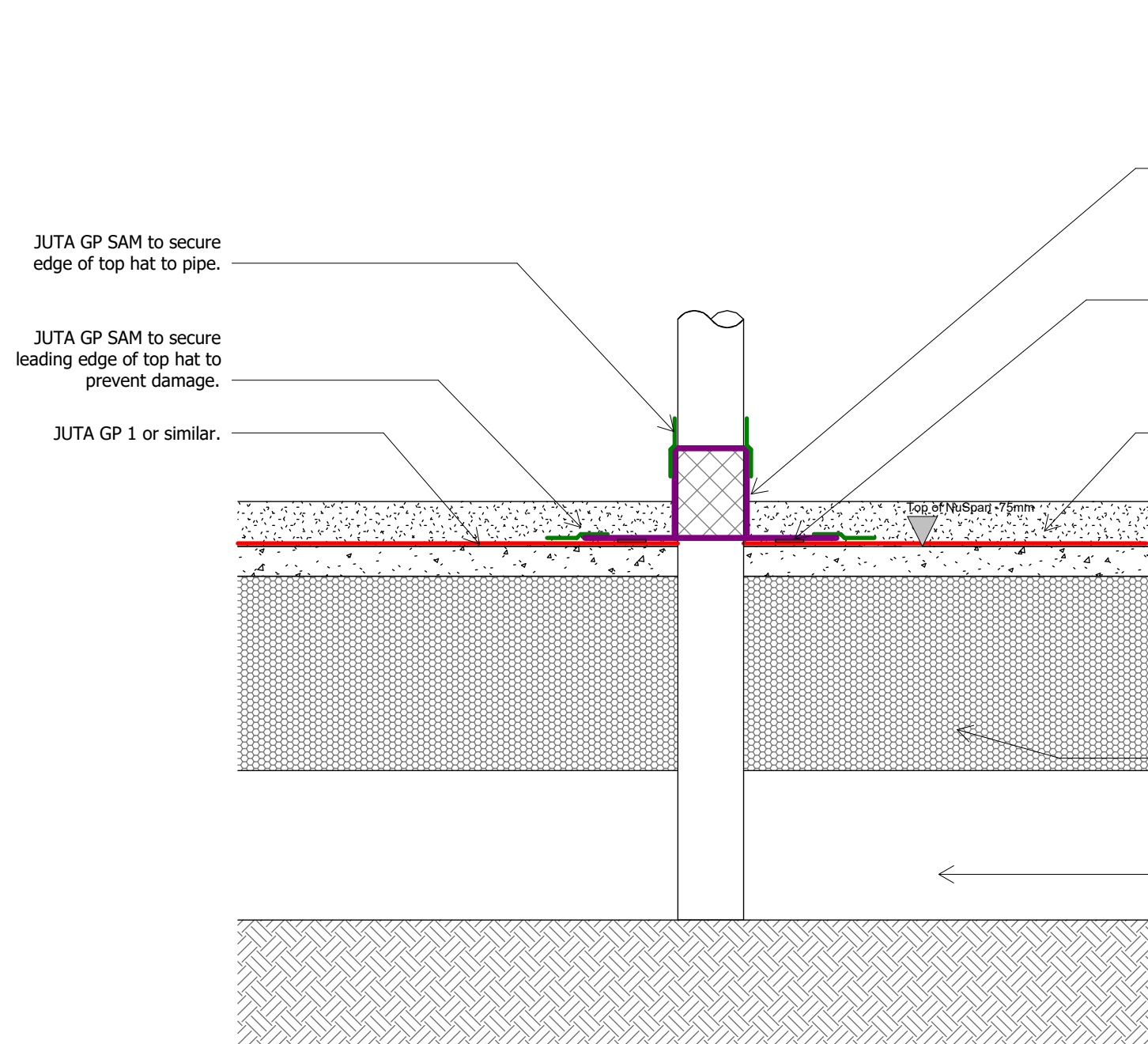
12.5mm Plasterboard applied to blockwork using drywall adhesive dabs. Provide continuous ribbon of adhesive around perimeter of boards
100mm concrete blockwork inner leaf (Thermal Conductivity 0.31W/mk)
Juta GP DPC or similar.
Provide continuous ribbon of adhesive around base of plasterboard
Skirting board with mastic sealant
25mm thick perimeter insulation - min R-value of 0.8m2K/W
Juta GP Tape or similar.
Juta GP 1 or similar.
75mm Sand & Cement Screed on Proprietary CS2 rated Juta GP1 or similar membrane across all floor area, to be lapped (min 150mm to manufacturers requirements) and taped at perimeter with Juta GP DPC or similar. Any penetrations through DPM to be sealed in accordance with manufacturers details & recommendations.
NuSpan Preformed Insulated Suspended Floor System NU G375 to specialist design
250mm minimum ventilated void (to engineers design)
Site specific heave protection if required, in line with consulting engineer's design & details



Brick External Wall / Ground Floor Junction
Max External Ground Level

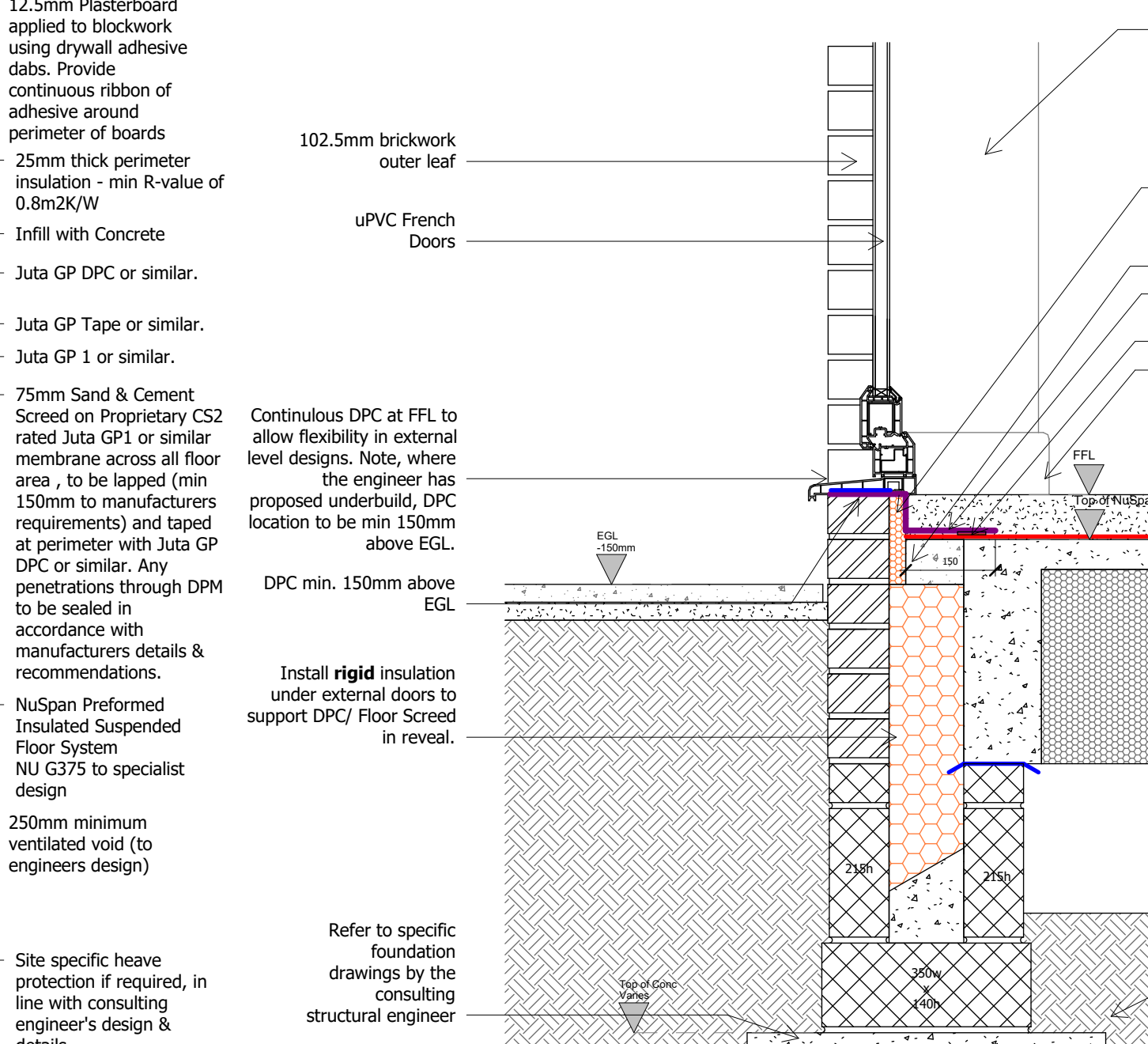


Brick External Wall / Ground Floor Threshold Junction
Level Access Principle Entrance Doors

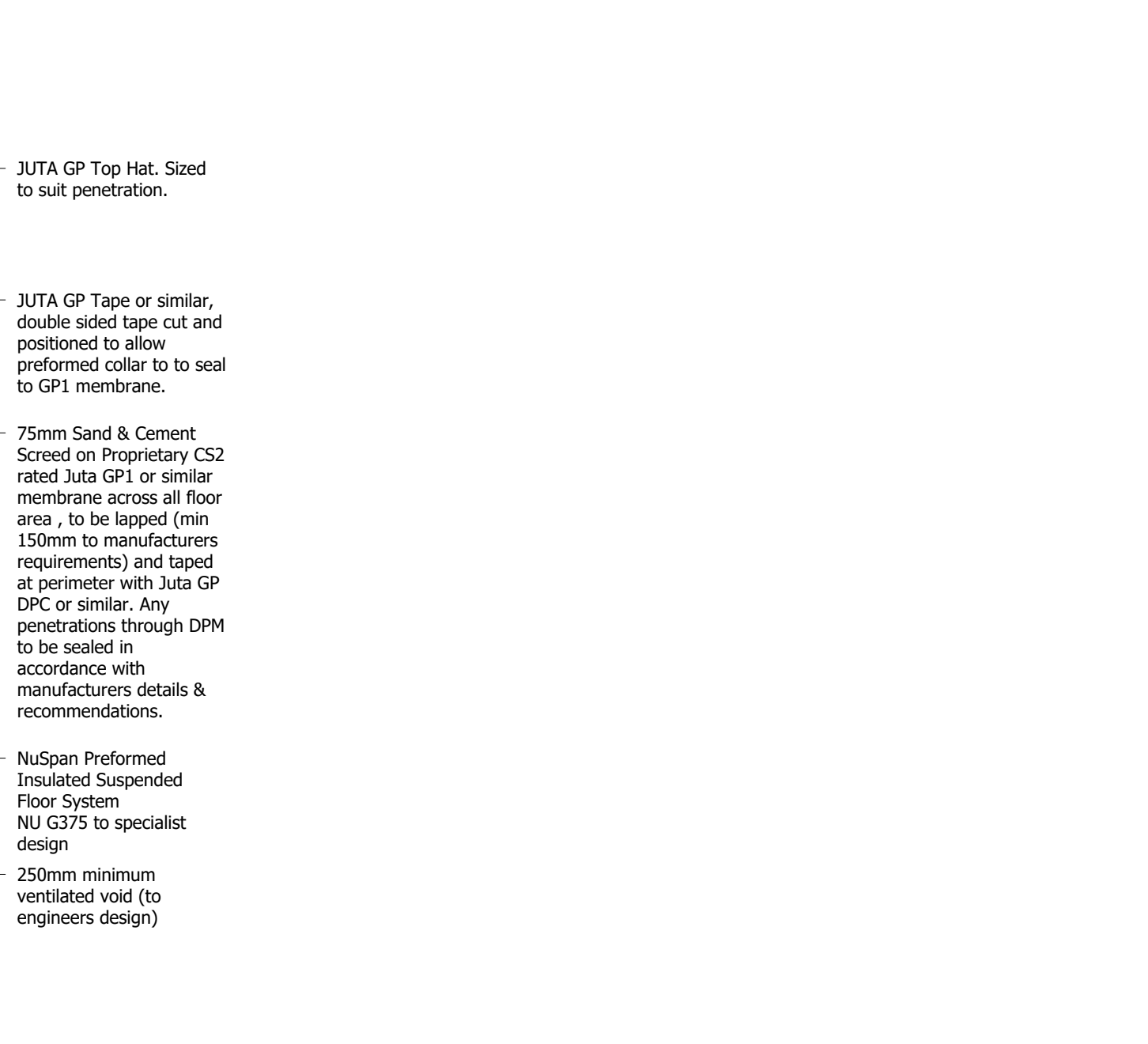


Service Penetration Ground Floor

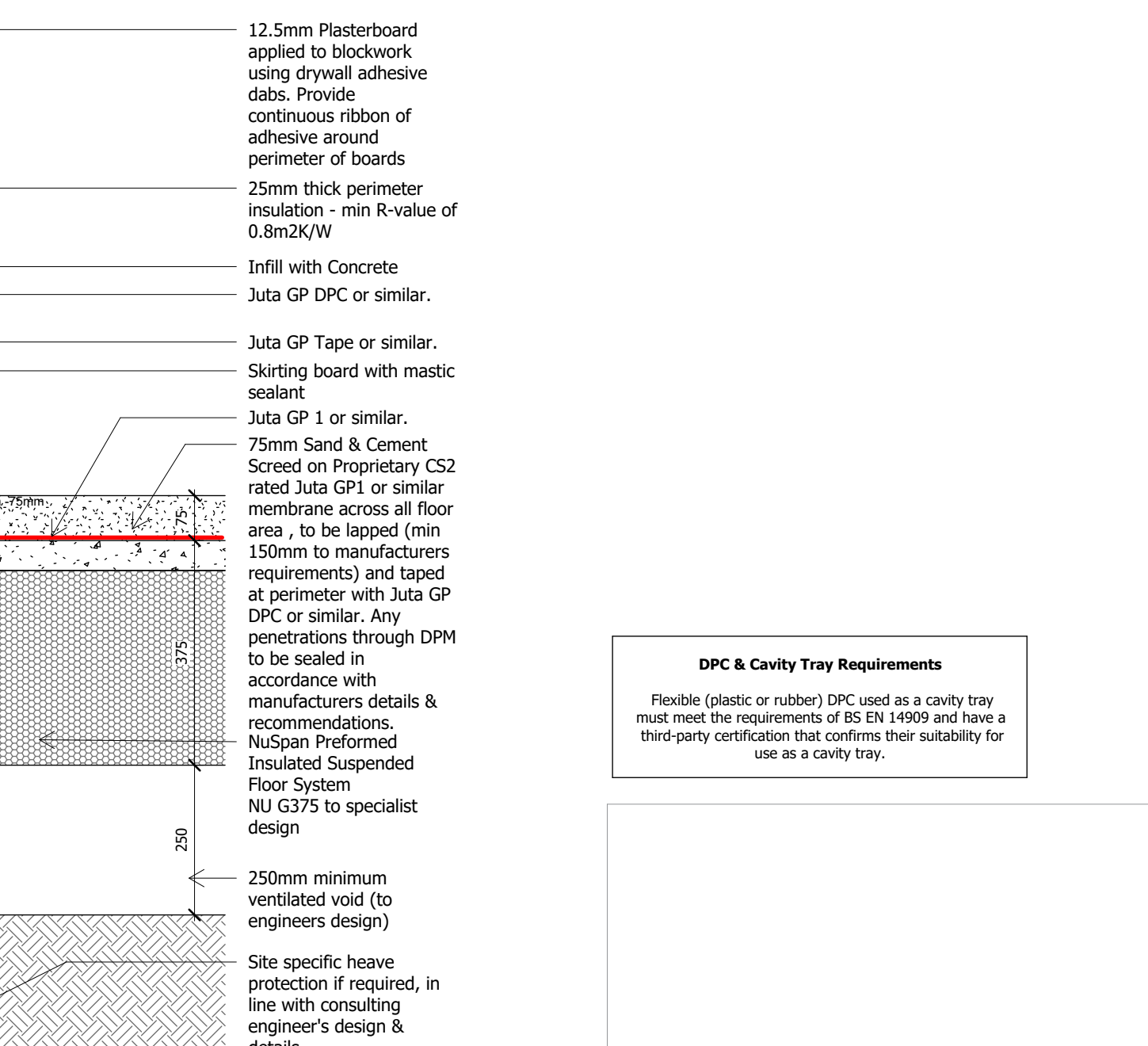
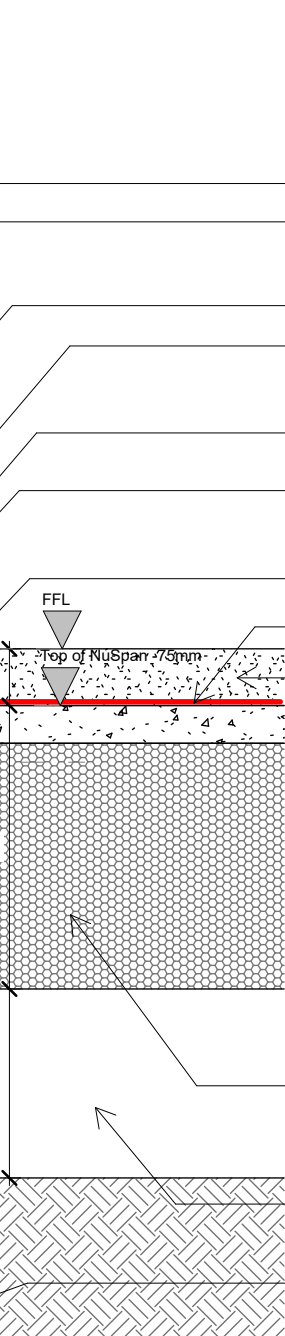
12.5mm Plasterboard applied to blockwork using drywall adhesive dabs. Provide continuous ribbon of adhesive around perimeter of boards
100mm concrete blockwork inner leaf (Thermal Conductivity 0.31W/mk)
Juta GP DPC or similar.
Provide continuous ribbon of adhesive around base of plasterboard
Skirting board with mastic sealant
25mm thick perimeter insulation - min R-value of 0.8m2K/W
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75mm Sand & Cement Screed on Proprietary CS2 rated Juta GP1 or similar membrane across all floor area, to be lapped (min 150mm to manufacturers requirements) and taped at perimeter with Juta GP DPC or similar. Any penetrations through DPM to be sealed in accordance with manufacturers details & recommendations.
NuSpan Preformed Insulated Suspended Floor System NU G375 to specialist design
250mm minimum ventilated void (to engineers design)
Site specific heave protection if required, in line with consulting engineer's design & details



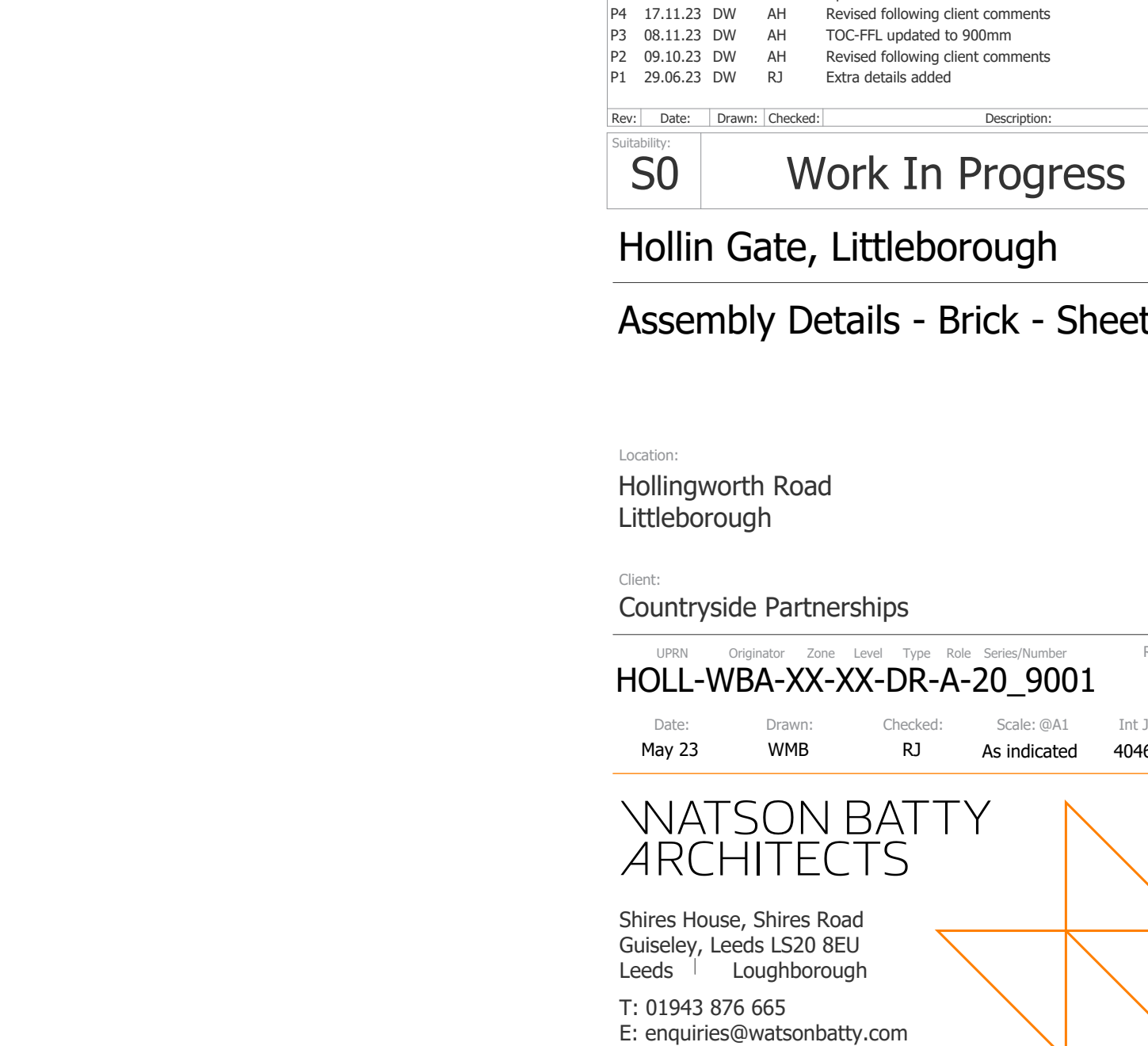
Brick External Wall / Ground Floor Threshold Junction
Patio Doors



Service Penetration Ground Floor



Brick External Wall / Ground Floor Threshold Junction
Patio Doors



Service Penetration Ground Floor

TARGET U-VALUES
External Wall: Brick & Render on Blockwork - 0.21w/m²k Stone - 0.22w/m²k
Cavity Wall to Garage Wall: 0.20w/m²k
Wall to Garage: 0.34w/m²k
Dormer Wall: 0.26w/m²k
Party Wall: 0.00w/m²k (To be to Robust Detail E-WM-34)
Ground Floor: 0.11w/m²k
Floor above Garage: 0.15w/m²k
Party Floor: 0.00w/m²k (To be to Robust Detail E-FC-4)
Roof - Insulated Ceiling: 0.08w/m²k
Roof - Insulated Slope (Eaves to Flat Ceiling): 0.14w/m²k
Roof - Flat Ceiling for Room in Roof HTs: 0.08w/m²k
Dormer Flat Roof: 0.16w/m²k
Porch Flat Roof: 0.16w/m²k
Front Entrance Door: 1.10w/m²k
Rear / Side Entrance Door: 1.20w/m²k
Windows: 1.20w/m²k
Patio Doors: 1.30w/m²k
Roof Windows: 1.30w/m²k

DPC & Cavity Tray Requirements
Flexible (plastic or rubber) DPC used as a cavity tray must meet the requirements of BS EN 14989 and have a third-party certification that confirms their suitability for use as a cavity tray.

P5	07.06.24	DW	AH	Updated with Juta Gas membrane
P4	17.11.23	DW	AH	Revised following client comments
P3	08.11.23	DW	AH	TOC FFL updated to 900mm
P2	09.10.23	DW	AH	Revised following client comments
P1	25.06.23	DW	RJ	Extra details added

Rev	Date	Drawn	Checked	Description
S0				Work In Progress

Hollin Gate, Littleborough

Assembly Details - Brick - Sheet 1

Location:
Hollingworth Road
Littleborough

Client:
Countryside Partnerships

UPRN	Originator	Zone	Level	Type	Rate	Series/Number	Revision
HOLL-WBA-XX-XX-DR-A-20_9001							P5
Date:	Drawn:	Checked:	Scale:	Int Job No:			
May 23	WMB	RJ	As indicated	4046-001			

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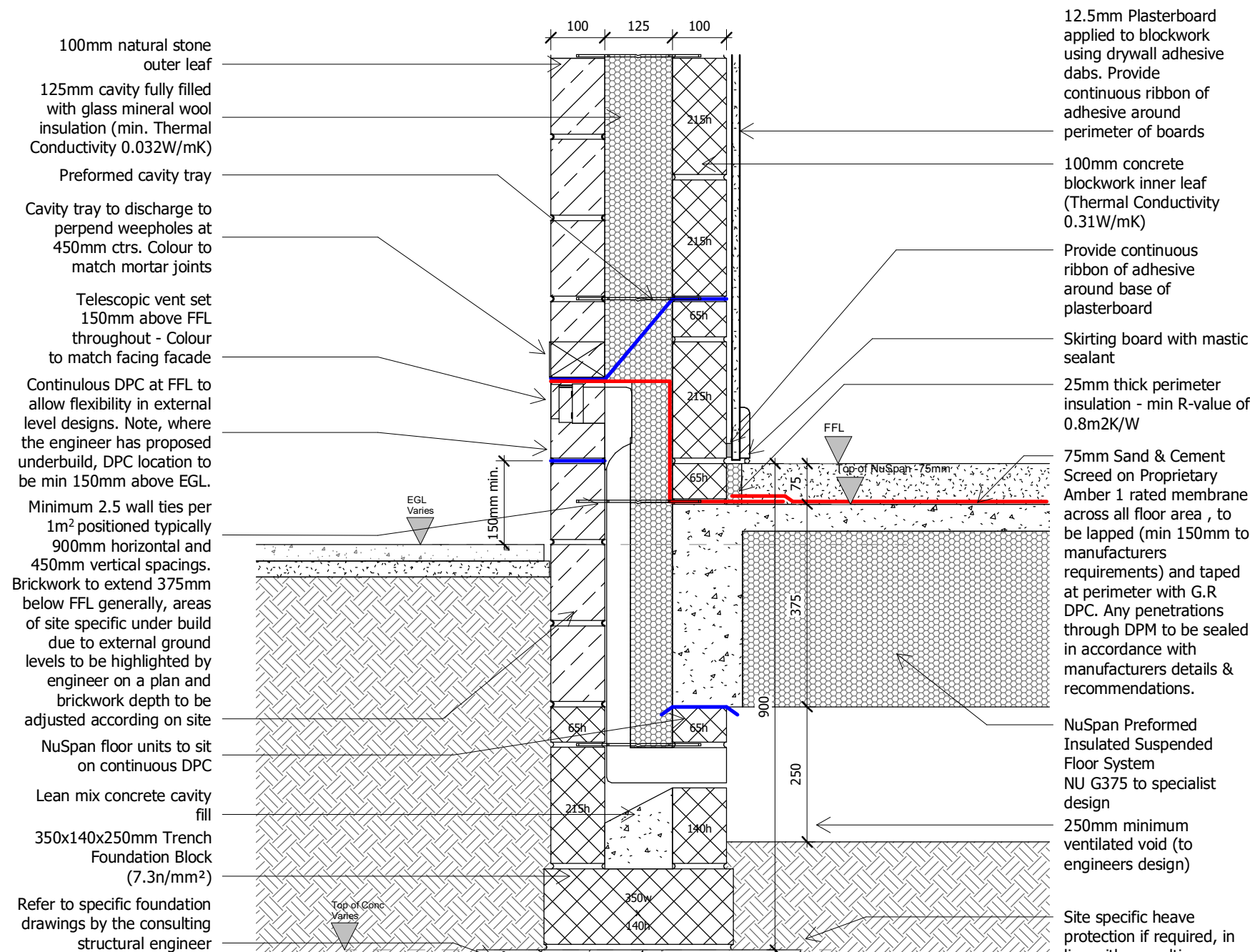
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W: www.watsonbatty.com

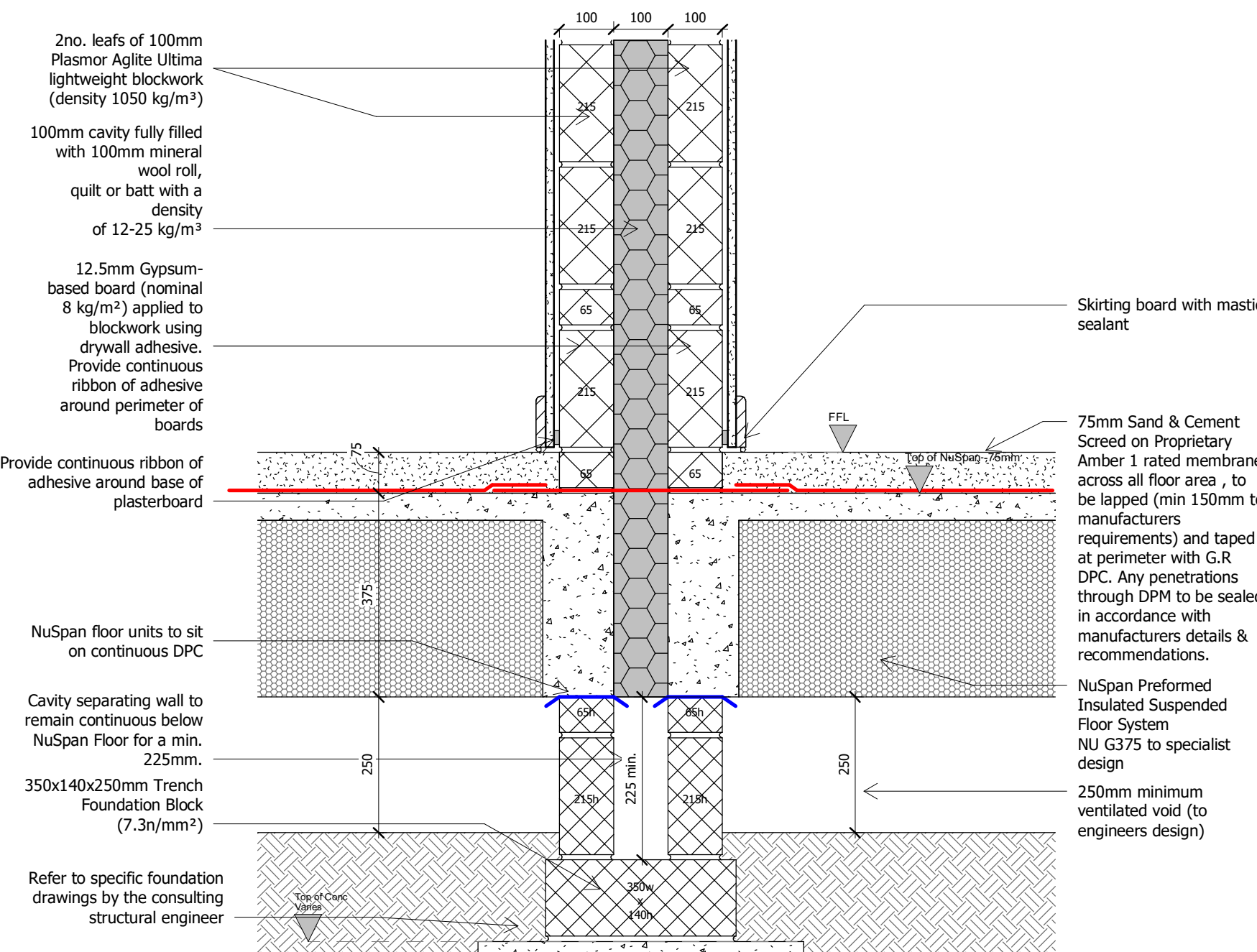


FUTURE BUILT

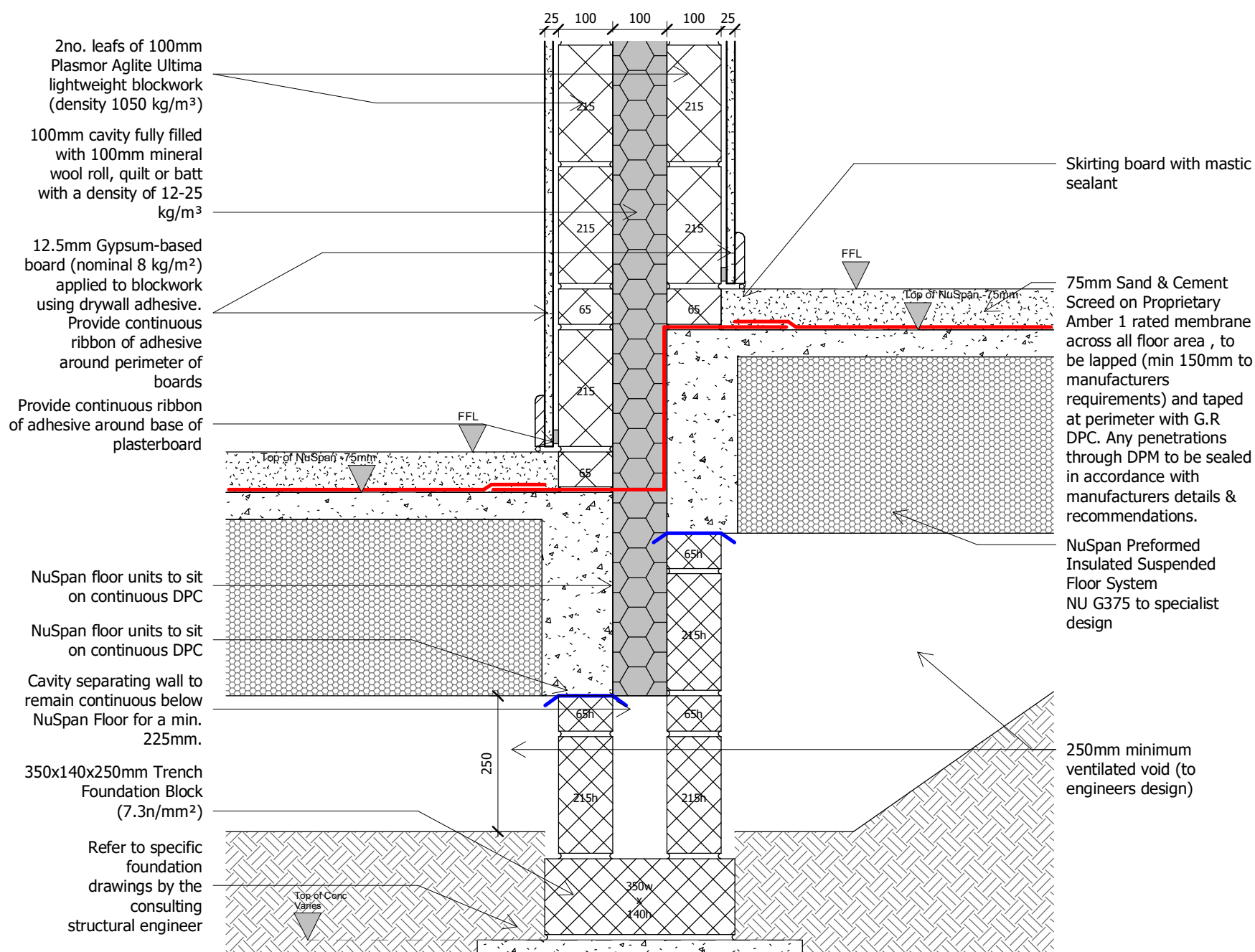
Note: Do not Scale from this drawing. All dimensions to be checked on site



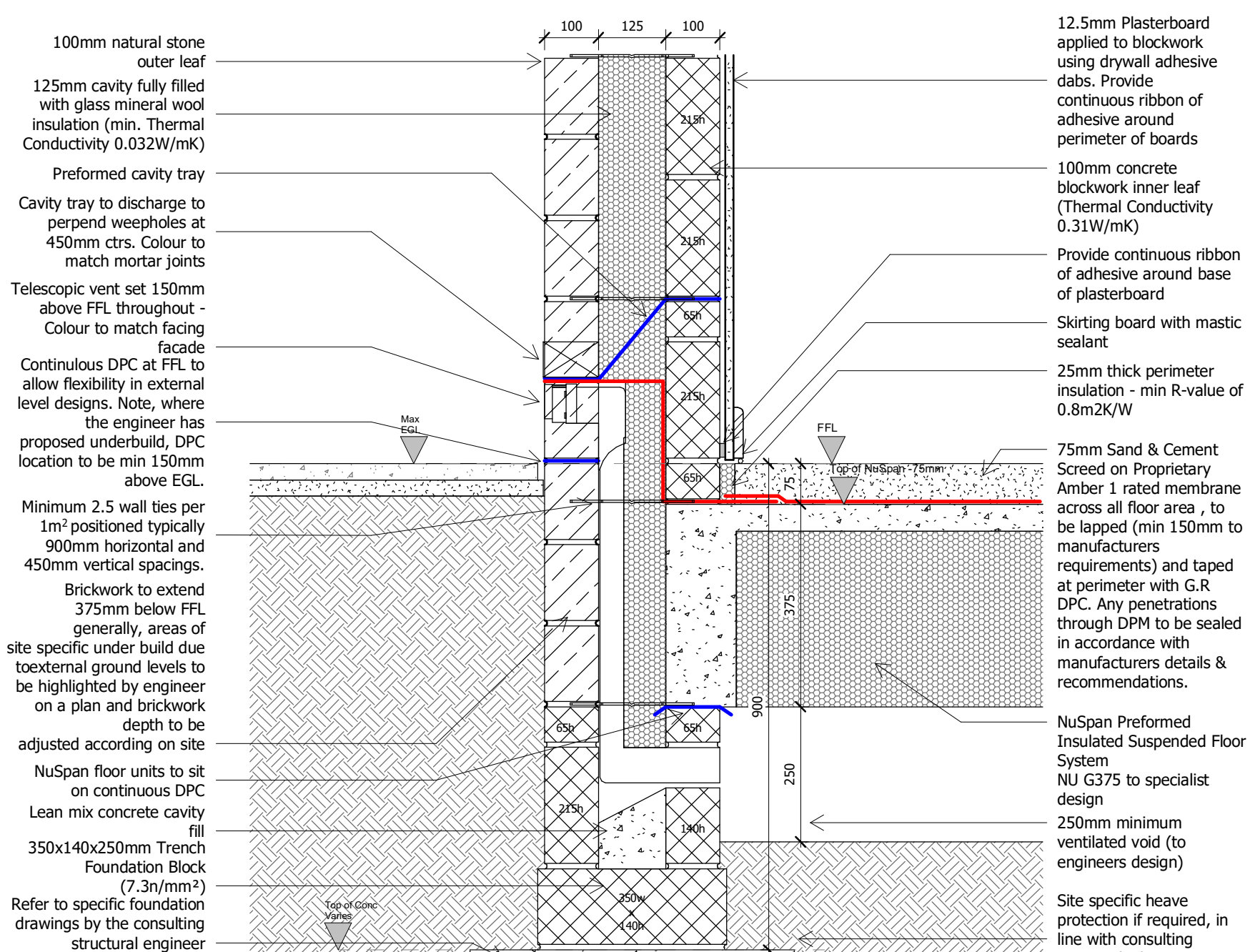
Stone External Wall / Ground Floor Junction
External Ground Level -150



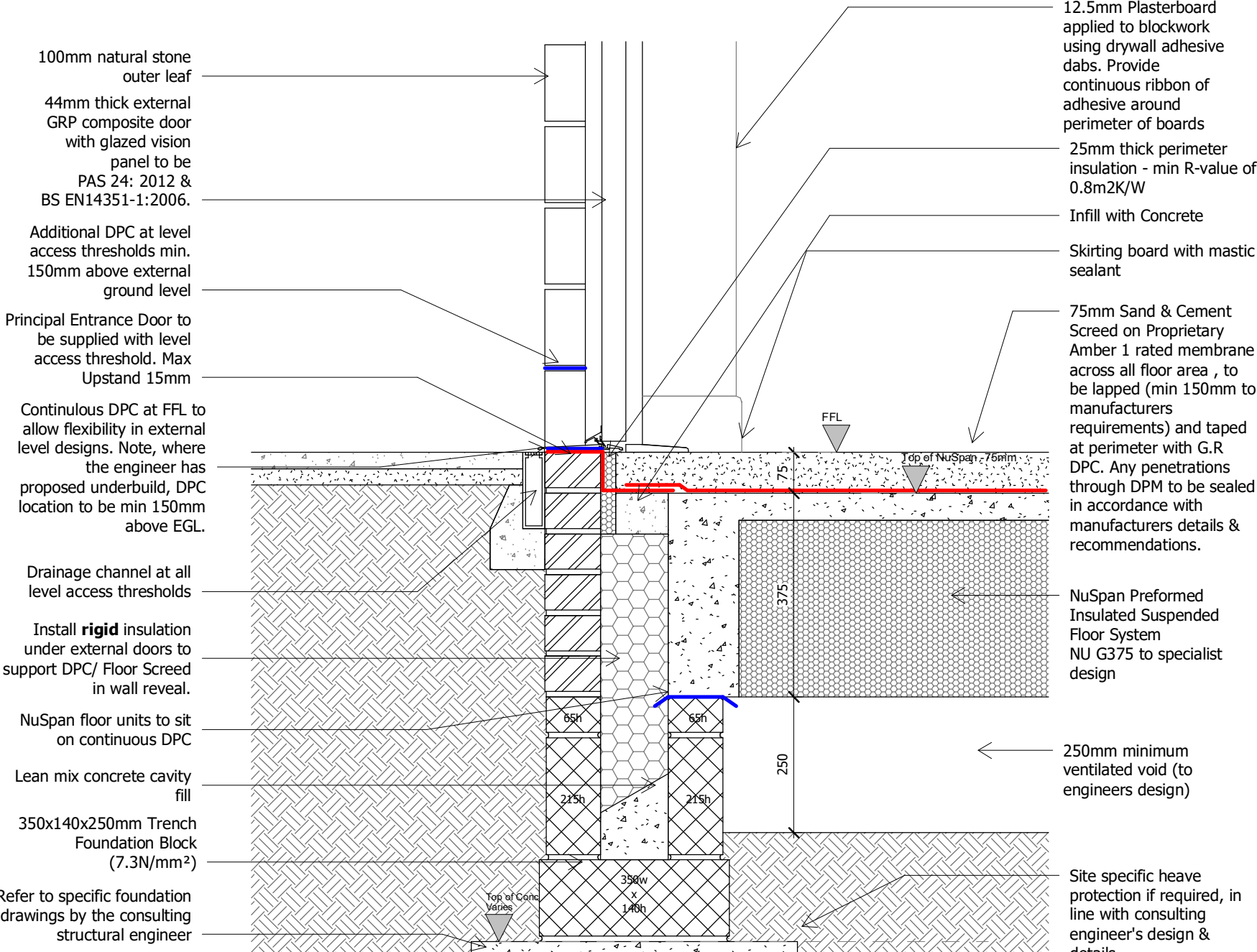
Separating Wall / Ground Floor Junction
Robust Detail E-WM-34



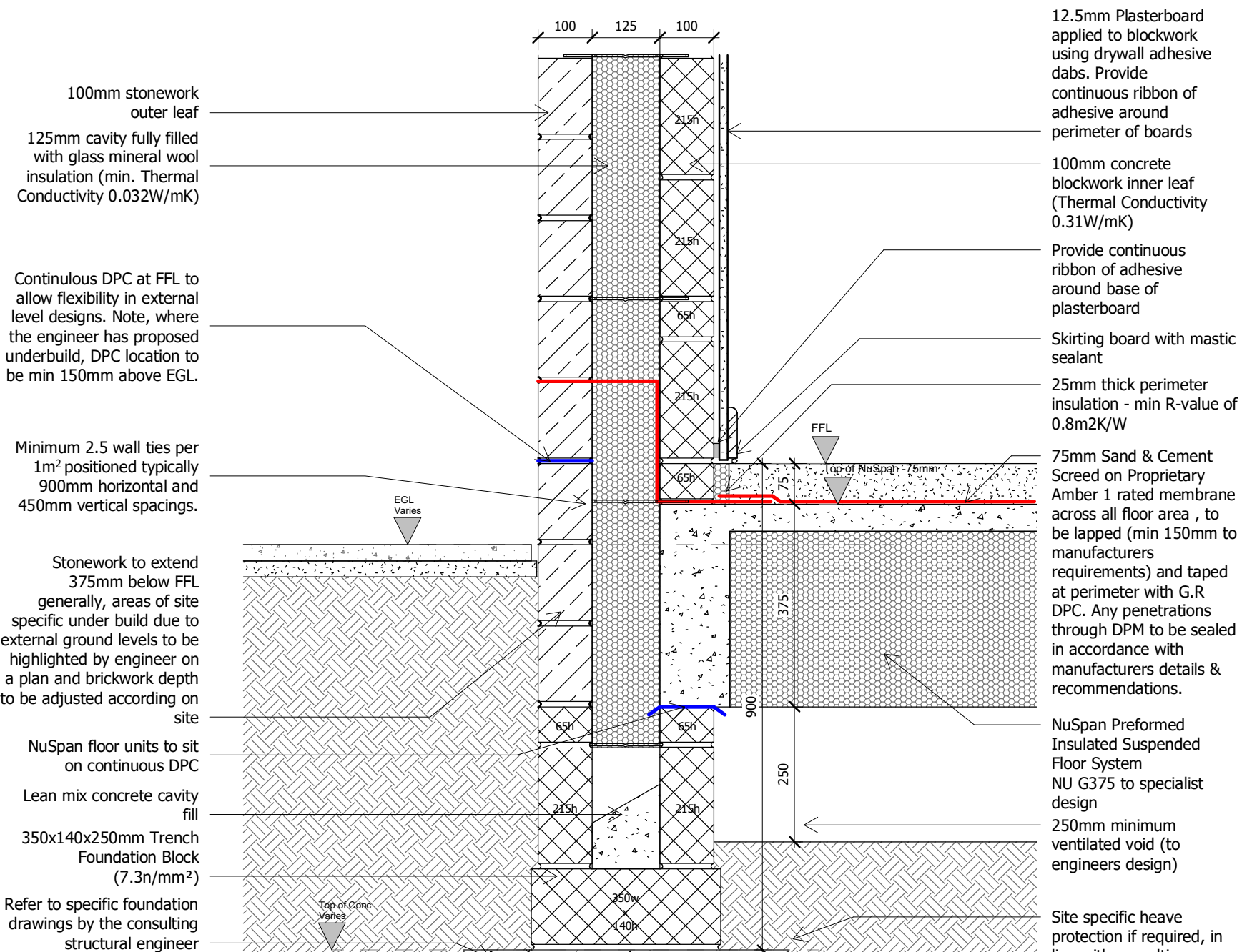
Typical Separating Wall / Stepped Ground Floor Junction
Robust Detail - E-WM-34



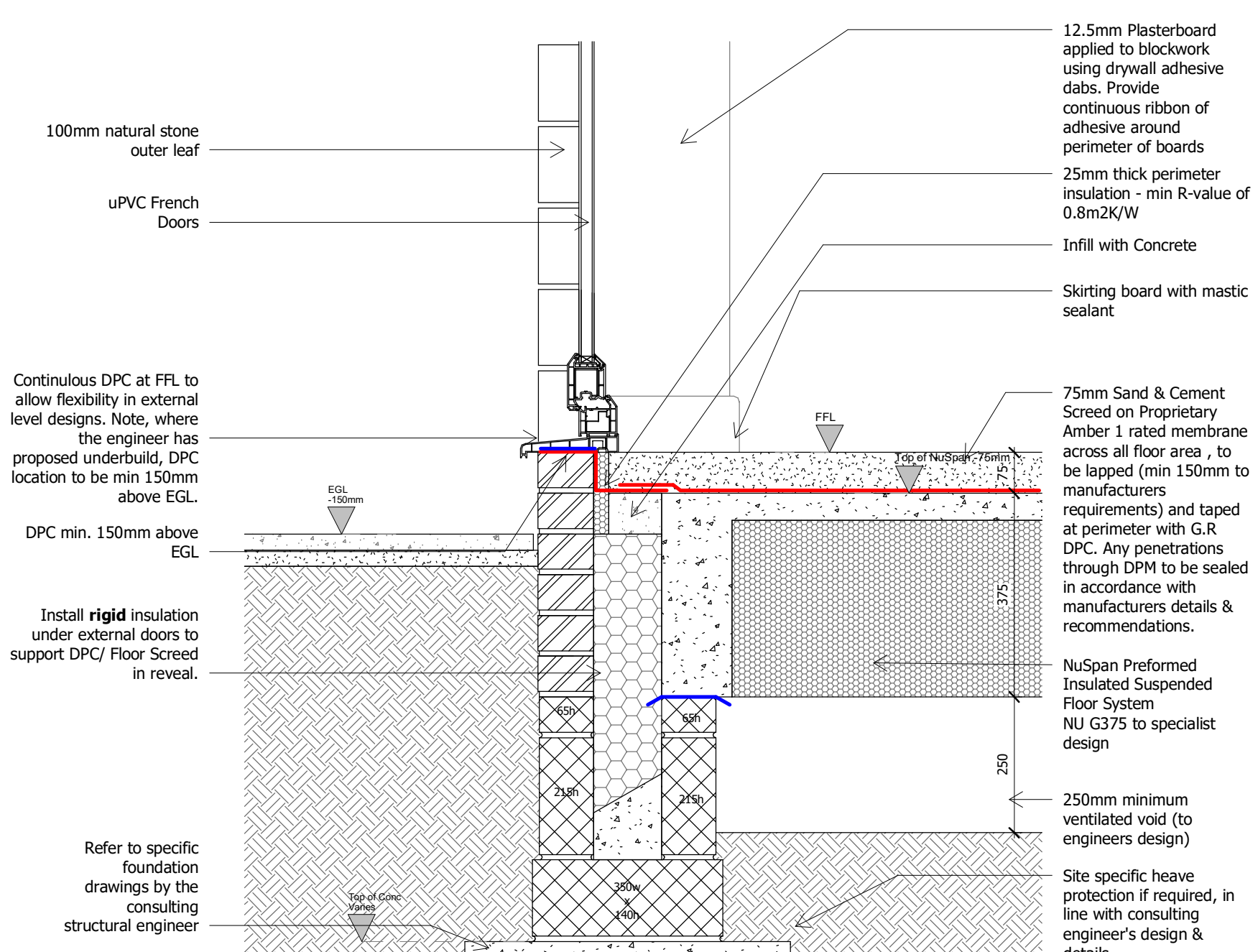
Stone External Wall / Ground Floor Junction
Max External Ground Level



Stone External Wall / Ground Floor Threshold Junction
Level Access Principle Entrance Doors



Stone External Wall / Ground Floor Junction
External Ground Level -150



Stone External Wall / Ground Floor Threshold Junction
Patio Doors

TARGET U-VALUES
External Wall: Brick & Render on Blockwork - 0.21w/m²k Stone - 0.22w/m²k
Cavity Wall to Garage Wall: 0.20w/m²k
Wall to Garage: 0.34w/m²k
Dormer Wall: 0.26w/m²k
Party Wall: 0.00w/m²k (To be to Robust Detail E-WM-34)
Ground Floor: 0.11w/m²k
Floor above Garage: 0.15w/m²k
Party Floor: 0.00w/m²k (To be to Robust Detail E-FC-4)
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Roof - Insulated Slope (Eaves to Flat Ceiling): 0.14w/m²k
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Windows: 1.20w/m²k
Patio Doors: 1.30w/m²k
Roof Windows: 1.30w/m²k

DPC & Cavity Tray Requirements
Flexible (plastic or rubber) DPC used as a cavity tray must meet the requirements of BS EN 14999 and have a third-party certification that confirms their suitability for use as a cavity tray.

P3	17.11.23	DW	AH	Revised following client comments
P2	08.11.23	DW	AH	TOC-FFL updated to 900mm
P1	09.10.23	DW	AH	Revised following client comments

Rev:	Date:	Drawn:	Checked:	Description:
S0				Work In Progress

Hollin Gate, Littleborough

Assembly Details - Stone - Sheet 1

Location:

Hollingworth Road
Littleborough

Client:

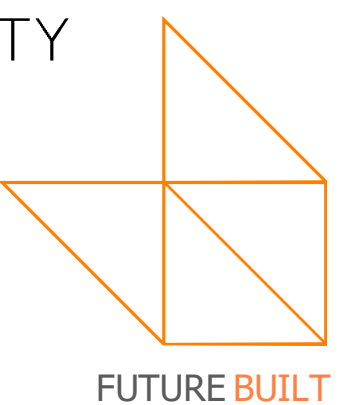
Countryside Partnerships

UPRN	Originator	Zone	Level	Type	Role	Series/Number	Revision:
OLL-WBA-XX-XX-DR-A-20_9101							P3
Date:	Drawn:	Checked:	Scale: @A1		Int Job No:		
May 23	WMB	RJ	As indicated		4046-001		

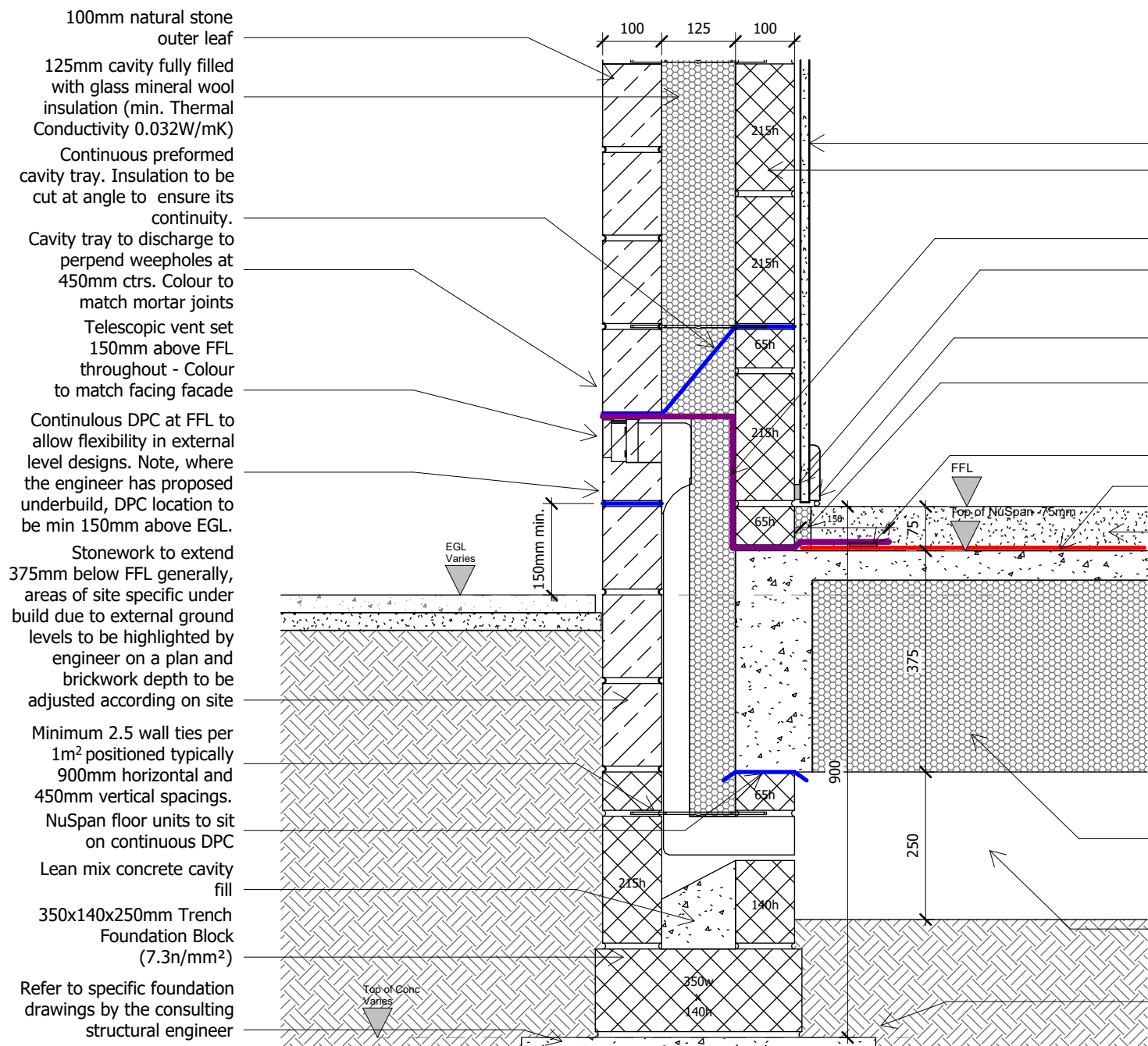
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Guiseley, Leeds LS20 8EU
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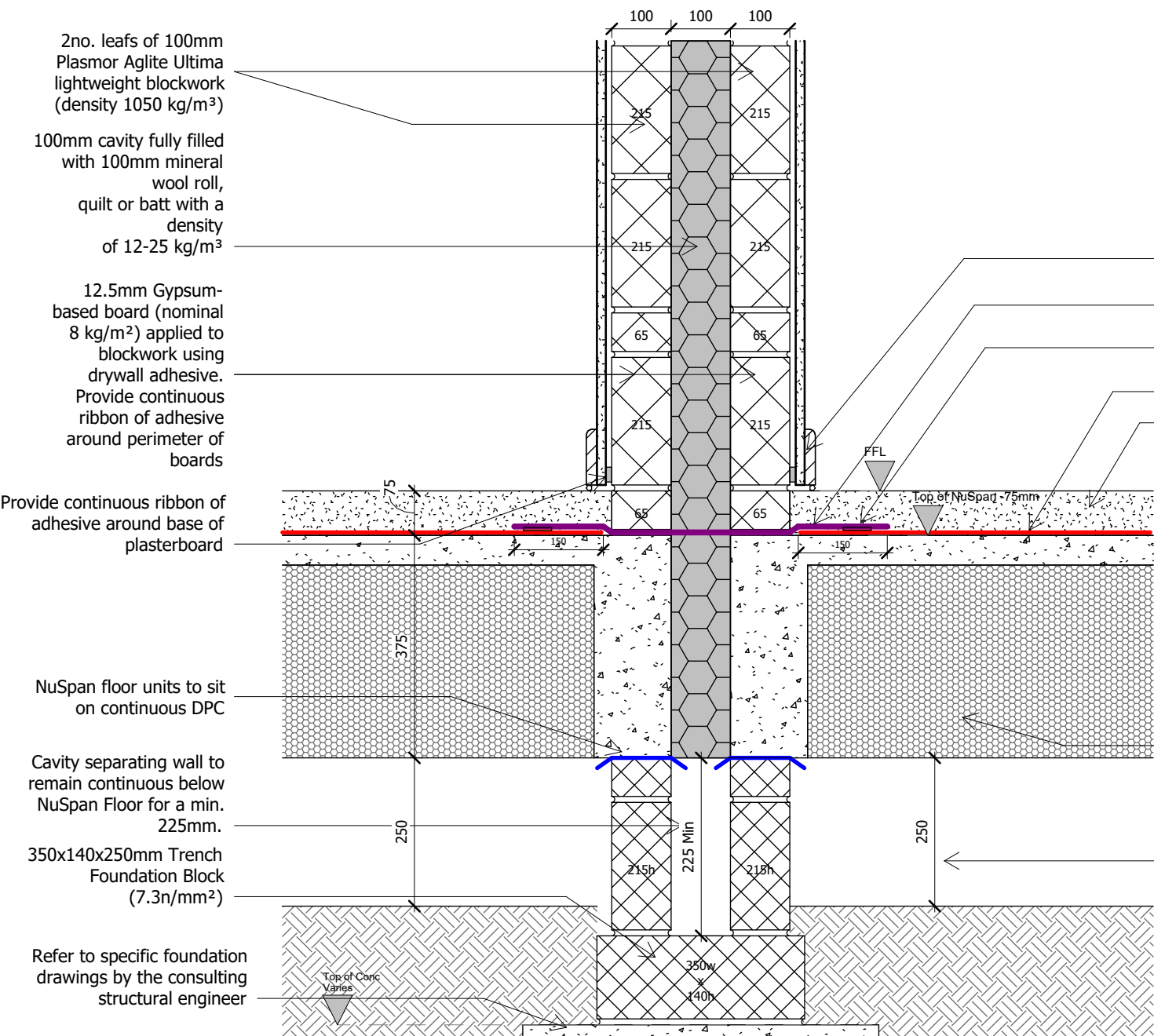
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W: www.watsonbatty.com



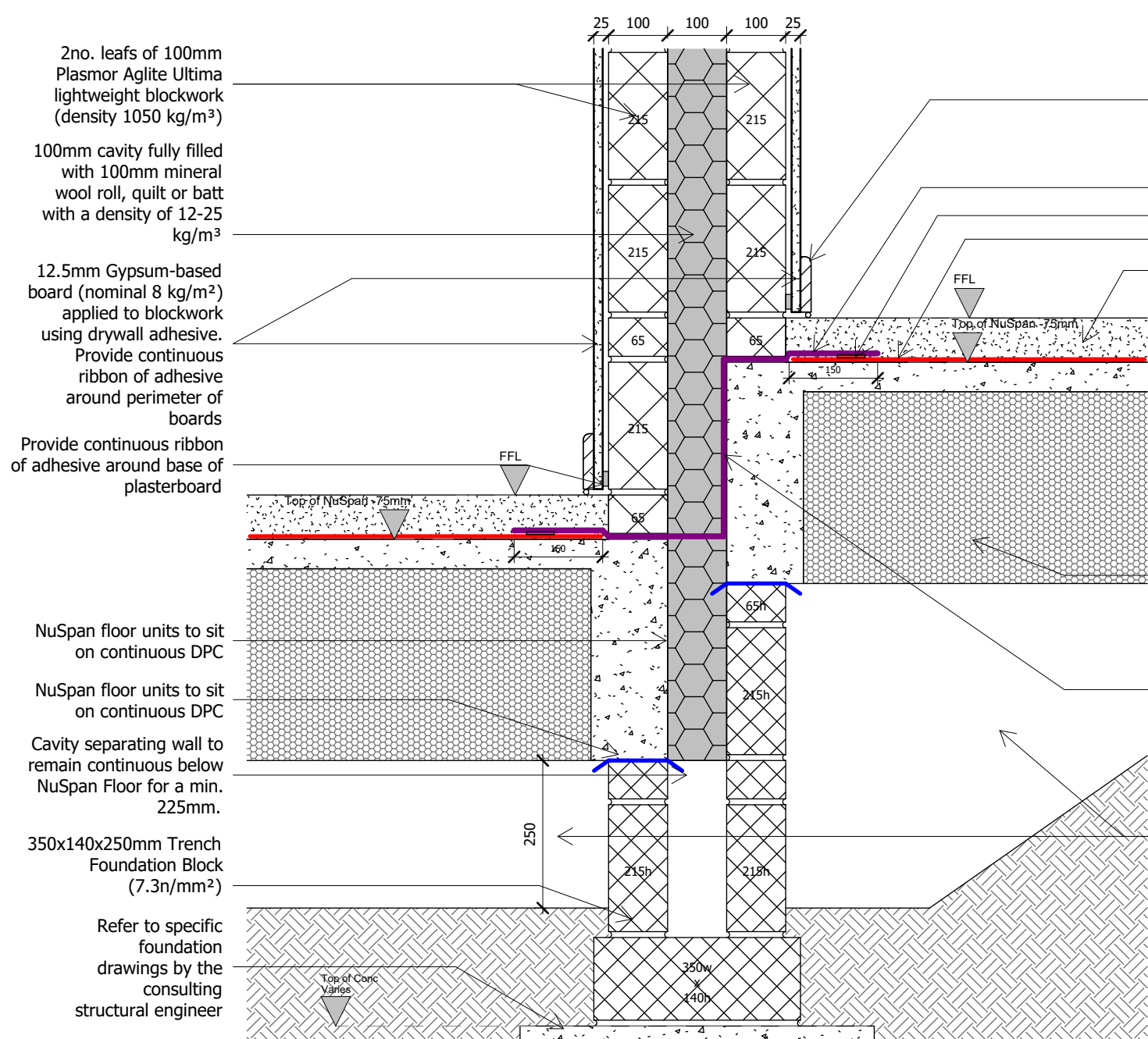
Note: Do not Scale from this drawing. All dimensions to be checked on site



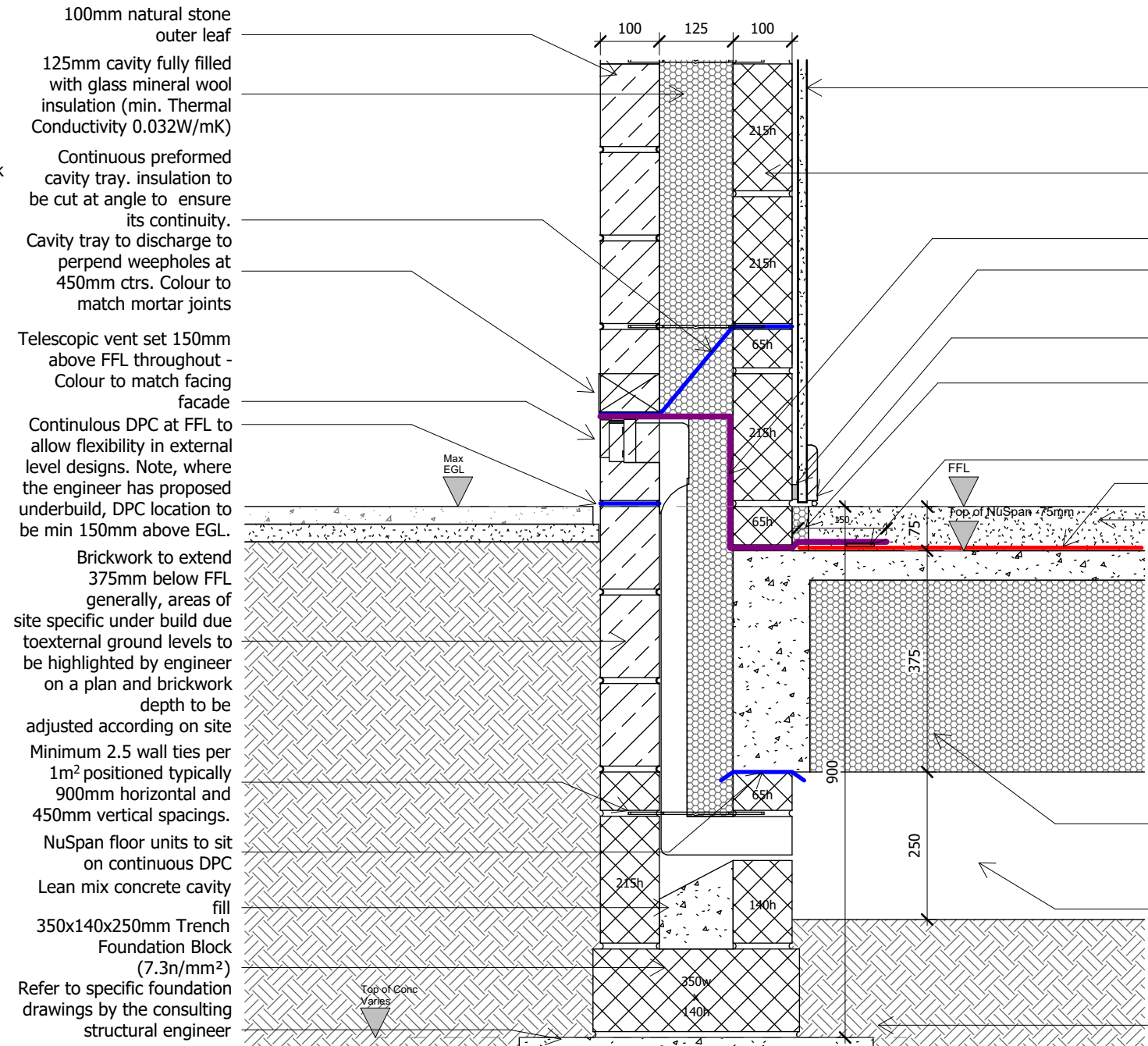
Stone External Wall / Ground Floor Junction
External Ground Level -150



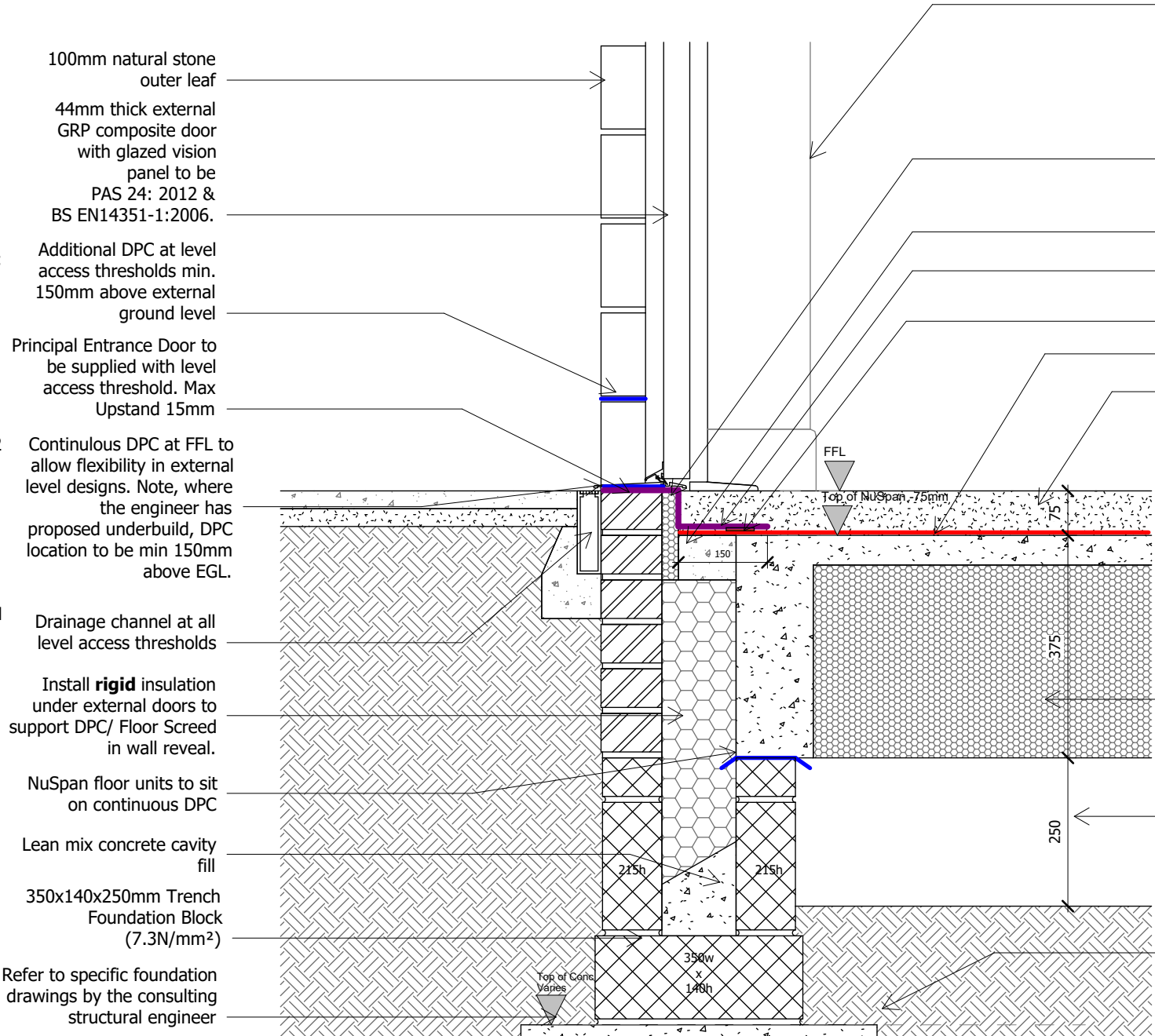
Separating Wall / Ground Floor Junction
Robust Detail E-WM-34



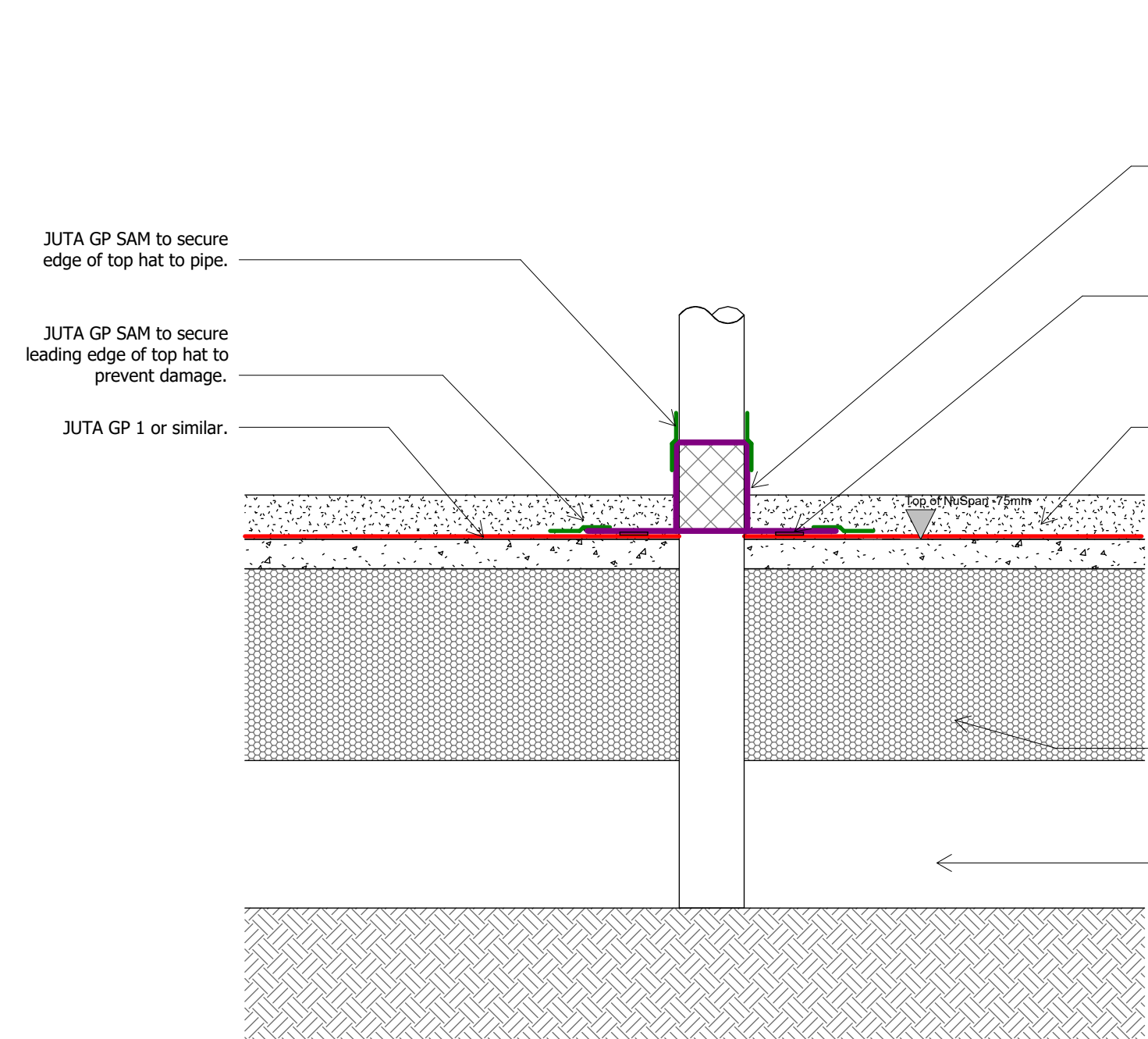
Typical Separating Wall / Stepped Ground Floor Junction
Robust Detail - E-WM-34



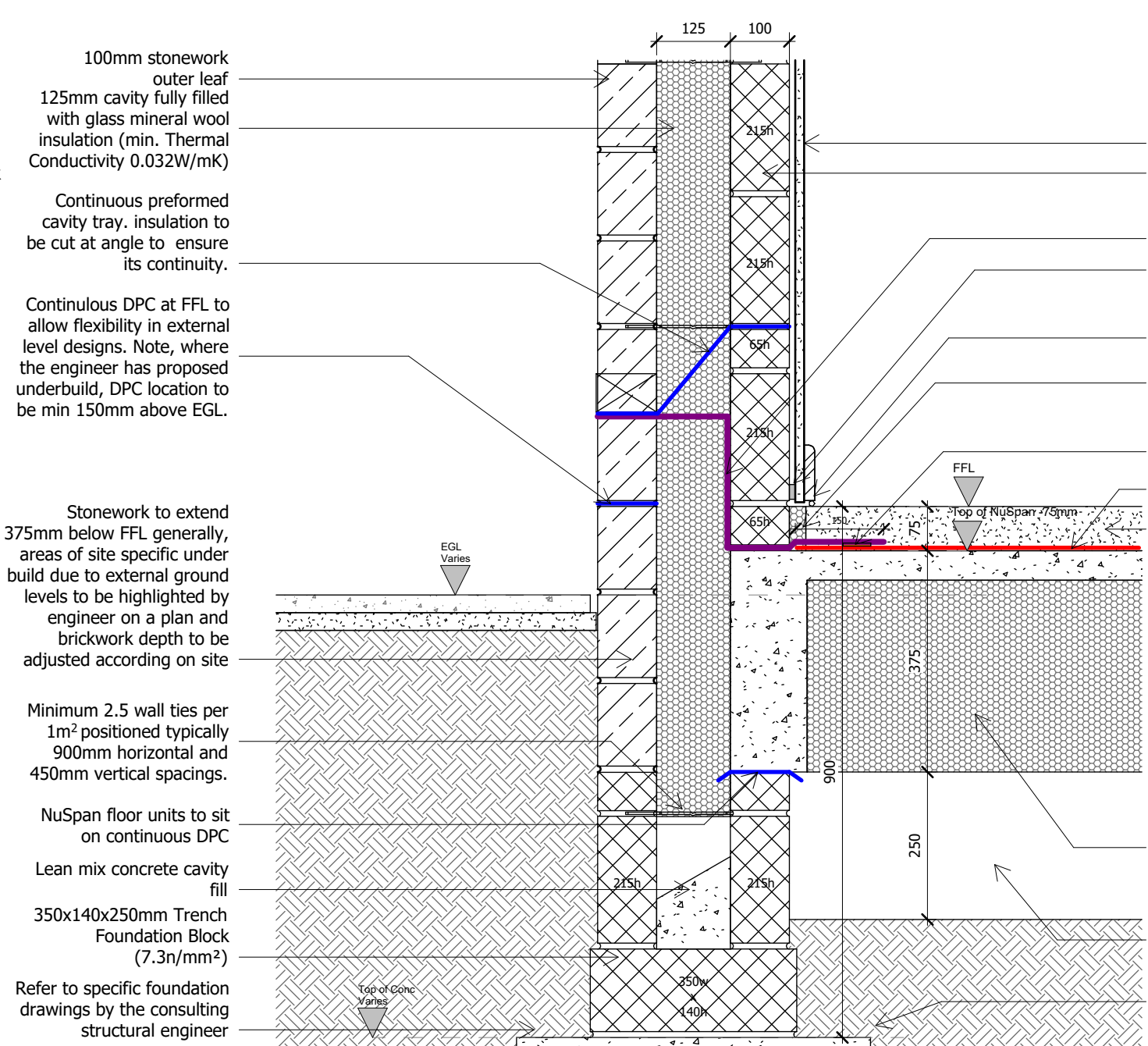
Stone External Wall / Ground Floor Junction
Max External Ground Level



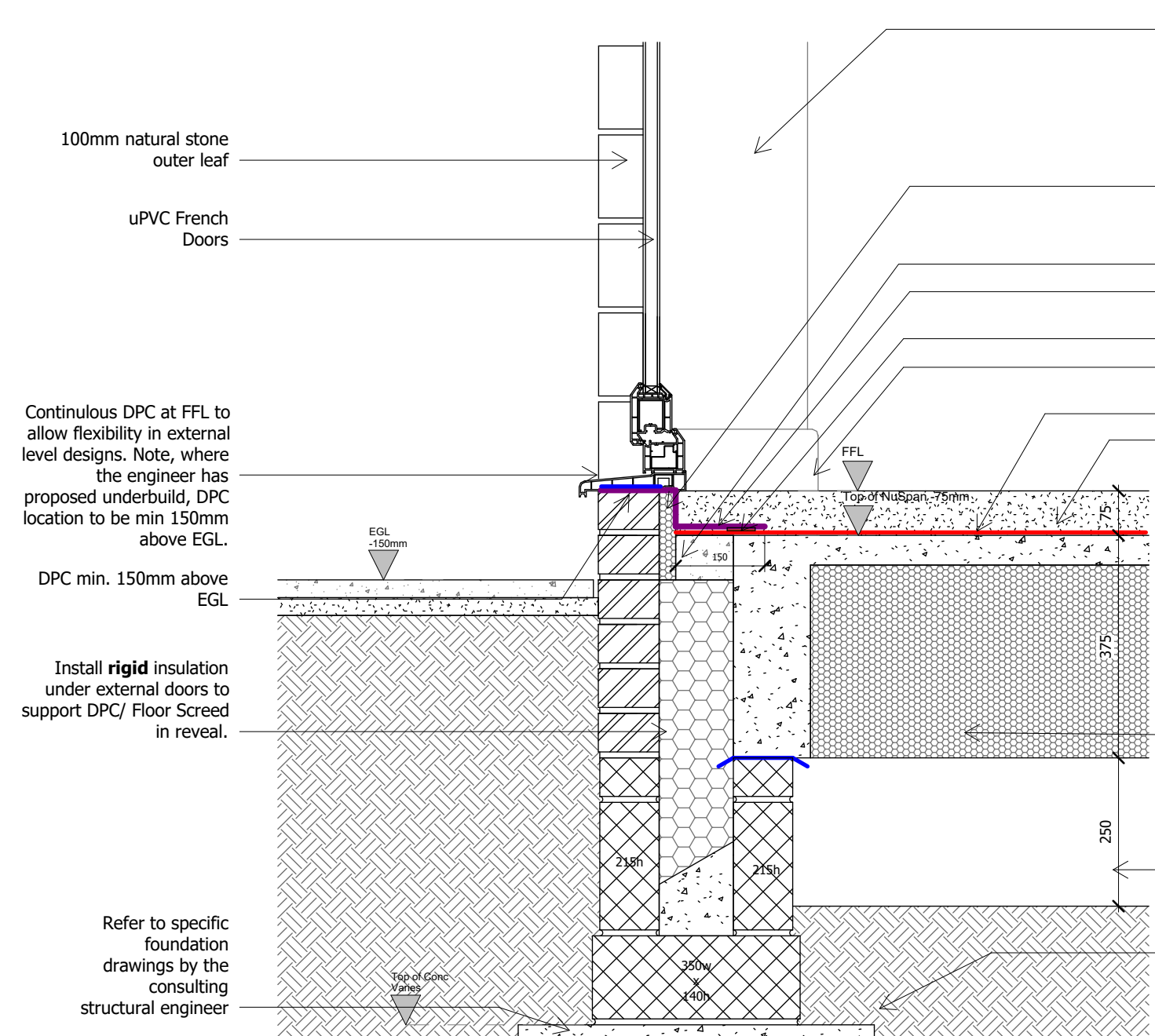
Brick External Wall / Ground Floor Threshold Junction
Level Access Principle Entrance Doors



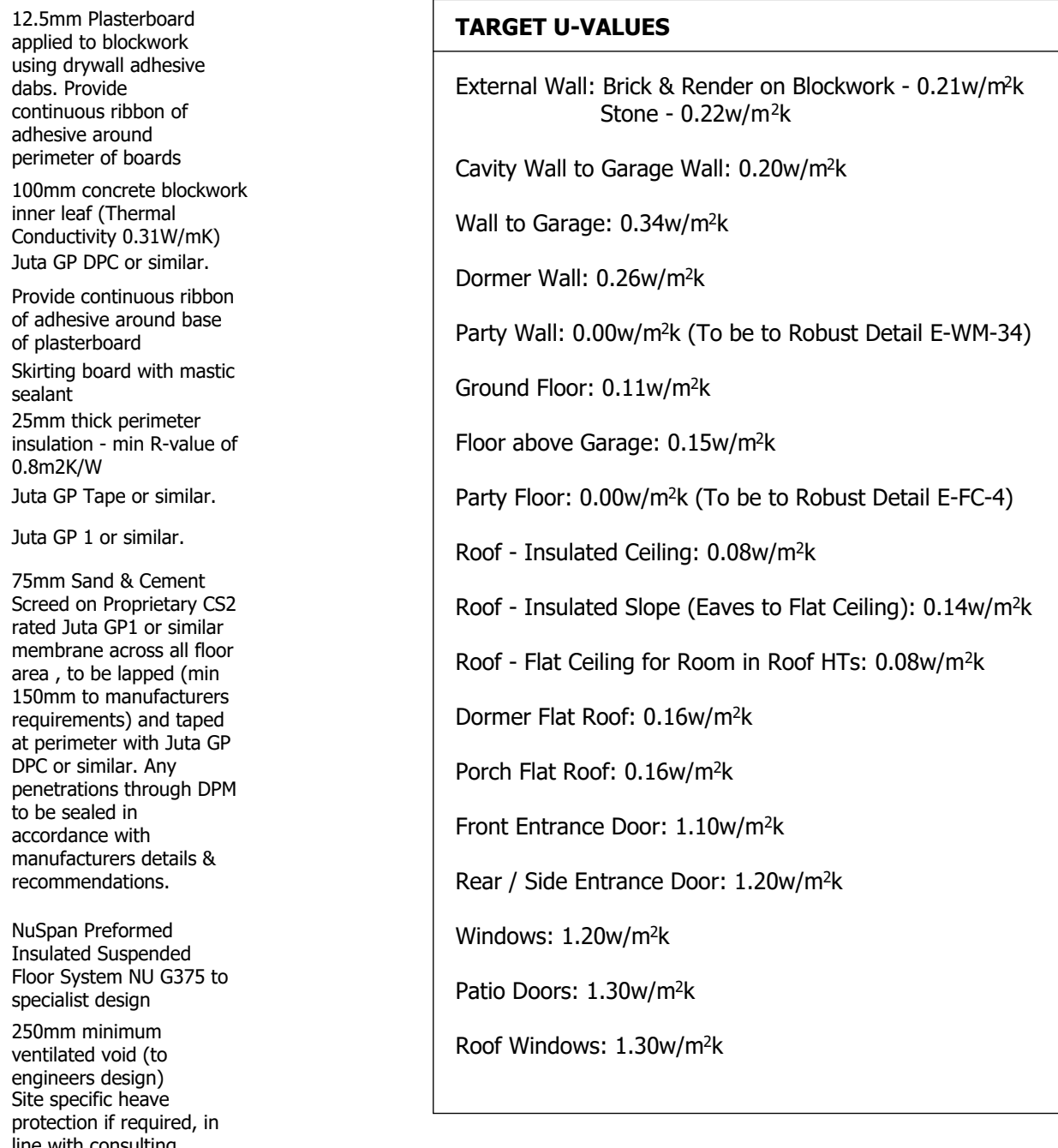
Service Penetration Ground Floor



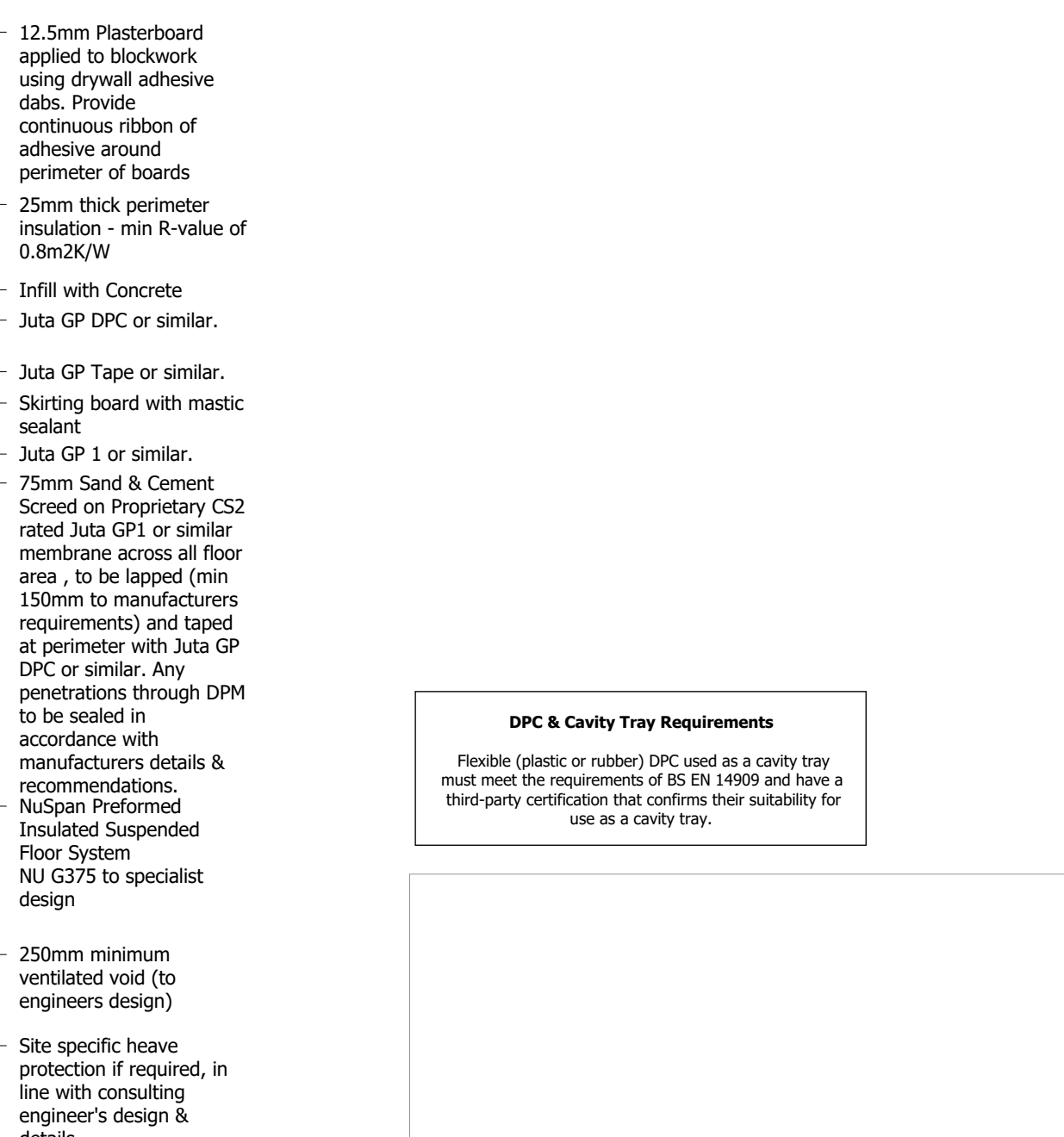
Stone External Wall / Ground Floor Junction
External Ground Level -150



Brick External Wall / Ground Floor Threshold Junction
Patio Doors



Stone External Wall / Ground Floor Junction
External Ground Level -150



Brick External Wall / Ground Floor Threshold Junction
Patio Doors

TARGET U-VALUES
External Wall: Brick & Render on Blockwork - 0.21w/m²k Stone - 0.22w/m²k
Cavity Wall to Garage Wall: 0.20w/m²k
Wall to Garage: 0.34w/m²k
Dormer Wall: 0.26w/m²k
Party Wall: 0.00w/m²k (To be to Robust Detail E-WM-34)
Ground Floor: 0.11w/m²k
Floor above Garage: 0.15w/m²k
Party Floor: 0.00w/m²k (To be to Robust Detail E-FC-4)
Roof - Insulated Ceiling: 0.08w/m²k
Roof - Insulated Slope (Eaves to Flat Ceiling): 0.14w/m²k
Roof - Flat Ceiling for Room in Roof HTs: 0.08w/m²k
Dormer Flat Roof: 0.16w/m²k
Porch Flat Roof: 0.16w/m²k
Front Entrance Door: 1.10w/m²k
Rear / Side Entrance Door: 1.20w/m²k
Windows: 1.20w/m²k
Patio Doors: 1.30w/m²k
Roof Windows: 1.30w/m²k

DPC & Cavity Tray Requirements
Flexible (plastic or rubber) DPC used as a cavity tray must meet the requirements of BS EN 14989 and have a third-party certification that confirms their suitability for use as a cavity tray.

P4	13.06.24	DW	AH	Updated membrane ref.
P3	17.11.23	DW	AH	Revised following client comments
P2	08.11.23	DW	AH	TOC-FFL updated to 900mm
P1	09.10.23	DW	AH	Revised following client comments

Rev:	Date:	Drawn:	Checked:	Description:
S0				Work In Progress

Hollin Gate, Littleborough

Assembly Details - Stone - Sheet 1

Location:
Hollingworth Road
Littleborough

Client:
Countryside Partnerships

UPRN	Originator	Zone	Level	Type	Rate	Series/Number	Revision:
HOLL-WBA-XX-XX-DR-A-20_9101							P4
Date:	Drawn:	Checked:	Scale:	Int Job No:			
May 23	WMB	RJ	As indicated	4046-001			

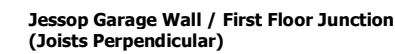
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FUTURE BUILT

Note: Do not Scale from this drawing. All dimensions to be checked on site



DPC & Cavity Tray Requirements

Flexible (plastic or rubber) DPC used as a cavity tray must meet the requirements of BS EN 14909 and have a third-party certification that confirms their suitability for use as a cavity tray.

Hollin Gate, Littleborough

Feature Assembly Details - Sheet 1

Location:
Hollingworth Road
Littleborough

Client:
Countryside Partnerships

UPRN	Originator	Zone	Level	Type	Role	Series/Number	Revision:
HOLL-WBA-XX-XX-DR-A-20_9201							P1
Date:	Drawn:	Checked:	Scale:	Int Job No:			
02/28/23	WMB	RJ	As indicated	4046-001			

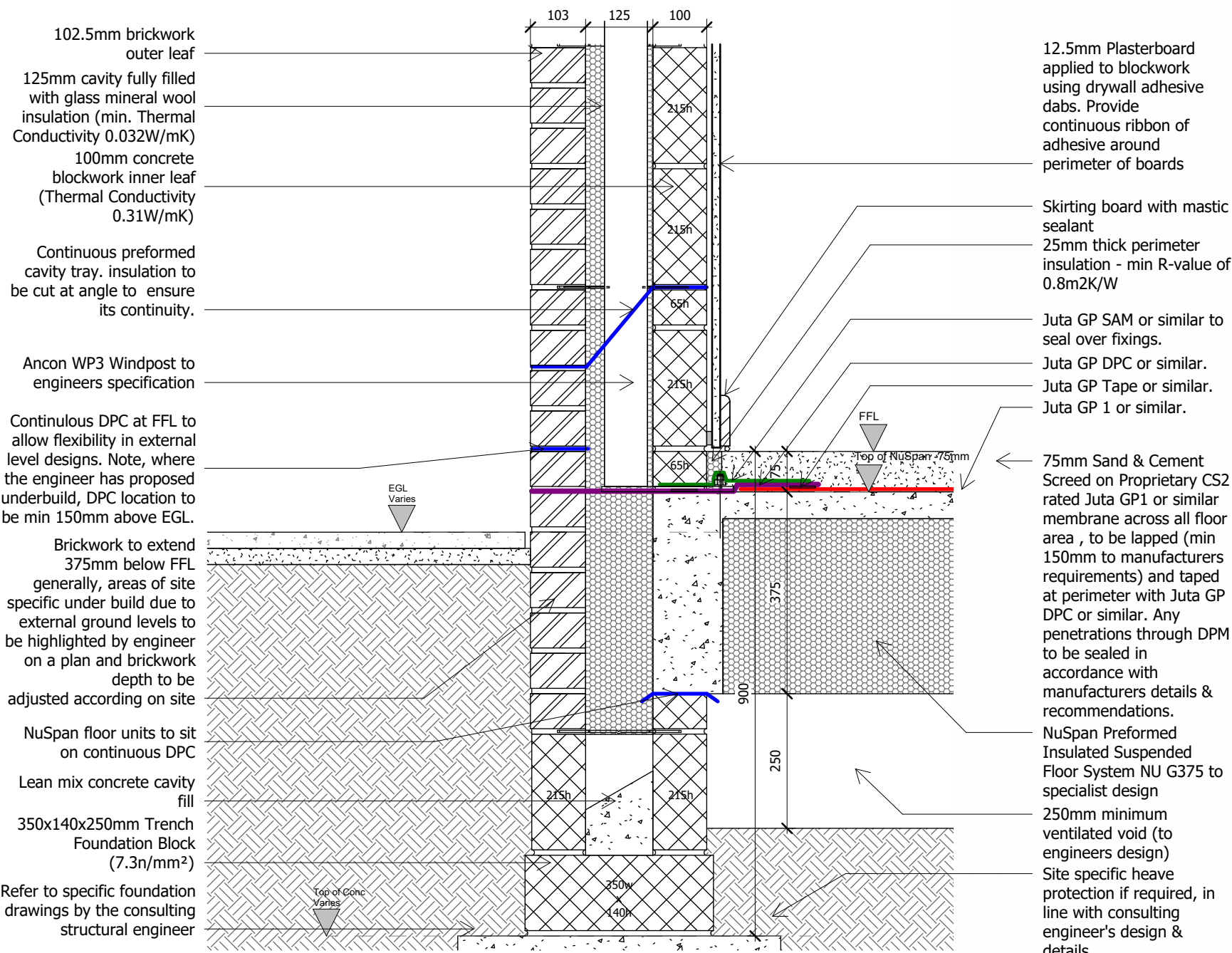
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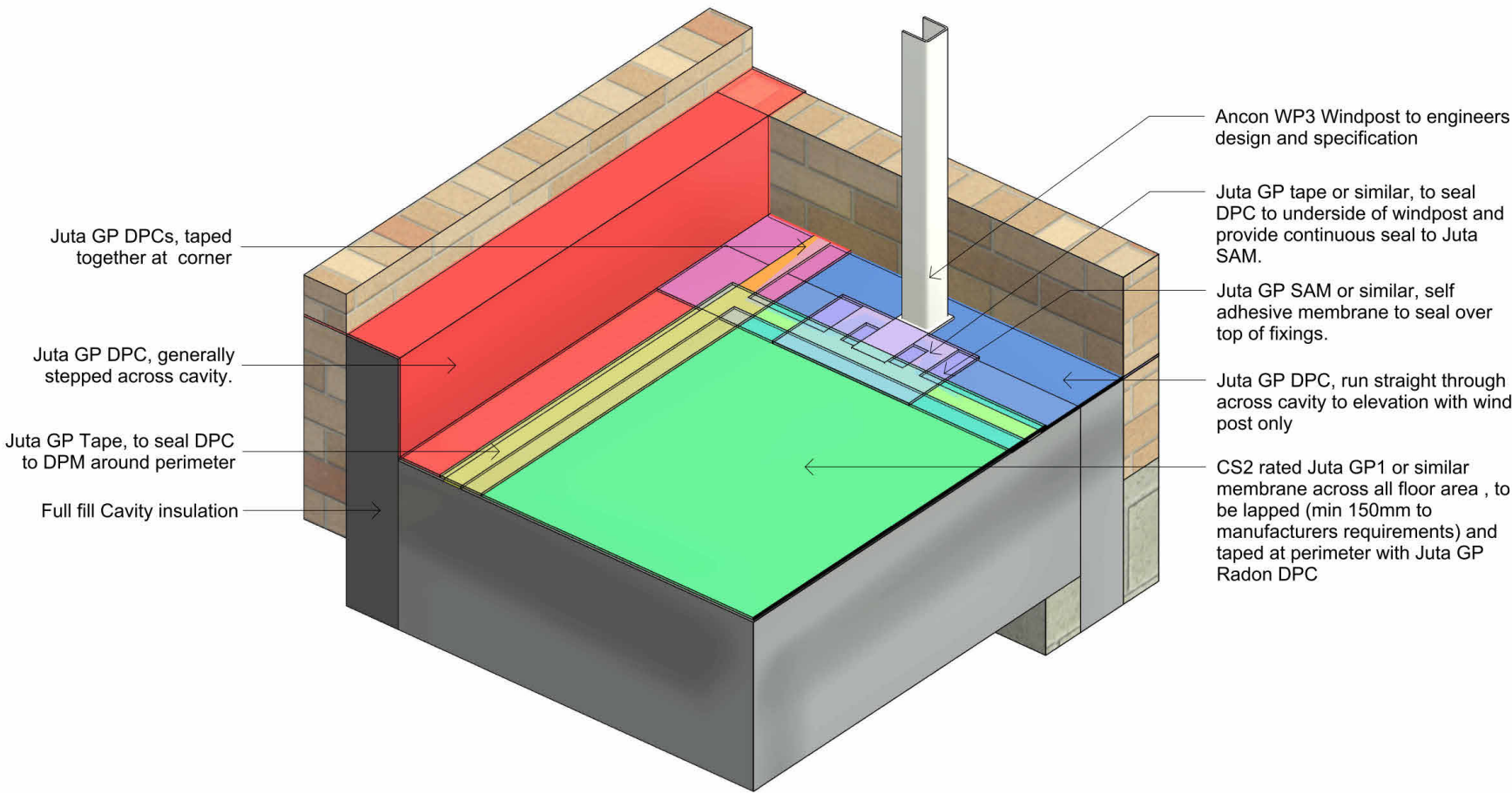
Note: Do not Scale from this drawing. All dimensions to be checked on site



Birch - Brick External Wall / Ground Floor Junction. WindPost and Gas Membrane Interface
External Ground Level -150 Note: Detail applies to rear elevation of Plots 1, 39 and 46 only.

- 12.5mm Plasterboard applied to blockwork using drywall adhesive dabs. Provide continuous ribbon of adhesive around perimeter of boards
- Skirting board with mastic sealant
- 25mm thick perimeter insulation - min R-value of 0.8m2K/W
- Juta GP SAM or similar to seal over fixings.
- Juta GP DPC or similar.
- Juta GP Tape or similar.
- Juta GP 1 or similar.
- 75mm Sand & Cement Screed on Proprietary CS2 rated Juta GP1 or similar membrane across all floor area , to be lapped (min 150mm to manufacturers requirements) and taped at perimeter with Juta GP DPC or similar. Any penetrations through DPM to be sealed in accordance with manufacturers details & recommendations.
- NuSpan Preformed Insulated Suspended Floor System NU G375 to specialist design
- 250mm minimum ventilated void (to engineers design)
- Site specific heave protection if required, in line with consulting engineer's design & details

Birch - Windpost and Gas Membrane interface, 3D Detail.
Note: Detail applies to rear elevation of Plots 1, 39 and 46 only.



- Juta GP DPCs, taped together at corner
- Juta GP DPC, generally stepped across cavity.
- Juta GP Tape, to seal DPC to DPM around perimeter
- Full fill Cavity insulation
- Ancon WP3 Windpost to engineers design and specification
- Juta GP tape or similar, to seal DPC to underside of windpost and provide continuous seal to Juta SAM.
- Juta GP SAM or similar, self adhesive membrane to seal over top of fixings.
- Juta GP DPC, run straight through across cavity to elevation with wind post only
- CS2 rated Juta GP1 or similar membrane across all floor area , to be lapped (min 150mm to manufacturers requirements) and taped at perimeter with Juta GP Radon DPC

TARGET U-VALUES
External Wall: Brick & Render on Blockwork - 0.21w/m²k Stone - 0.22w/m²k
Cavity Wall to Garage Wall: 0.20w/m²k
Wall to Garage: 0.34w/m²k
Dormer Wall: 0.26w/m²k
Party Wall: 0.00w/m²k (To be to Robust Detail E-WM-34)
Ground Floor: 0.11w/m²k
Floor above Garage: 0.15w/m²k
Party Floor: 0.00w/m²k (To be to Robust Detail E-FC-4)
Roof - Insulated Ceiling: 0.08w/m²k
Roof - Insulated Slope (Eaves to Flat Ceiling): 0.14w/m²k
Roof - Flat Ceiling for Room in Roof HTs: 0.08w/m²k
Dormer Flat Roof: 0.16w/m²k
Porch Flat Roof: 0.16w/m²k
Front Entrance Door: 1.10w/m²k
Rear / Side Entrance Door: 1.20w/m²k
Windows: 1.20w/m²k
Patio Doors: 1.30w/m²k
Roof Windows: 1.30w/m²k

DPC & Cavity Tray Requirements
Flexible (plastic or rubber) DPC used as a cavity tray must meet the requirements of BS EN 14909 and have a third-party certification that confirms their suitability for use as a cavity tray.

P2	13.06.24	DW	AH	Updated membrane ref.
P1	07.06.24	DW	AH	Initial Issue.

Rev	Date	Drawn	Checked	Description
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S0	Work In Progress
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Hollin Gate, Littleborough

Feature Assembly Details - Sheet 7

Location:
Hollingworth Road
Littleborough

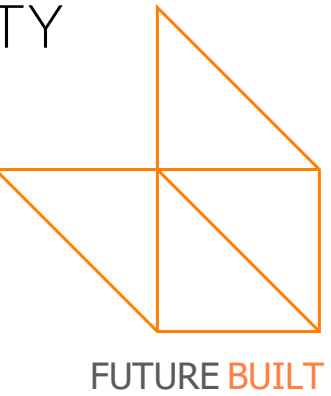
Client:
Countryside Partnerships

UPRN	Originator	Zone	Level	Type	Role	Series/Number	Revision:
HOLL-WBA-XX-XX-DR-A-20_9207							P2
Date:	Drawn:	Checked:	Scale:	Int Job No:			
jun 24	DW	RJ	As indicated	4046-001			

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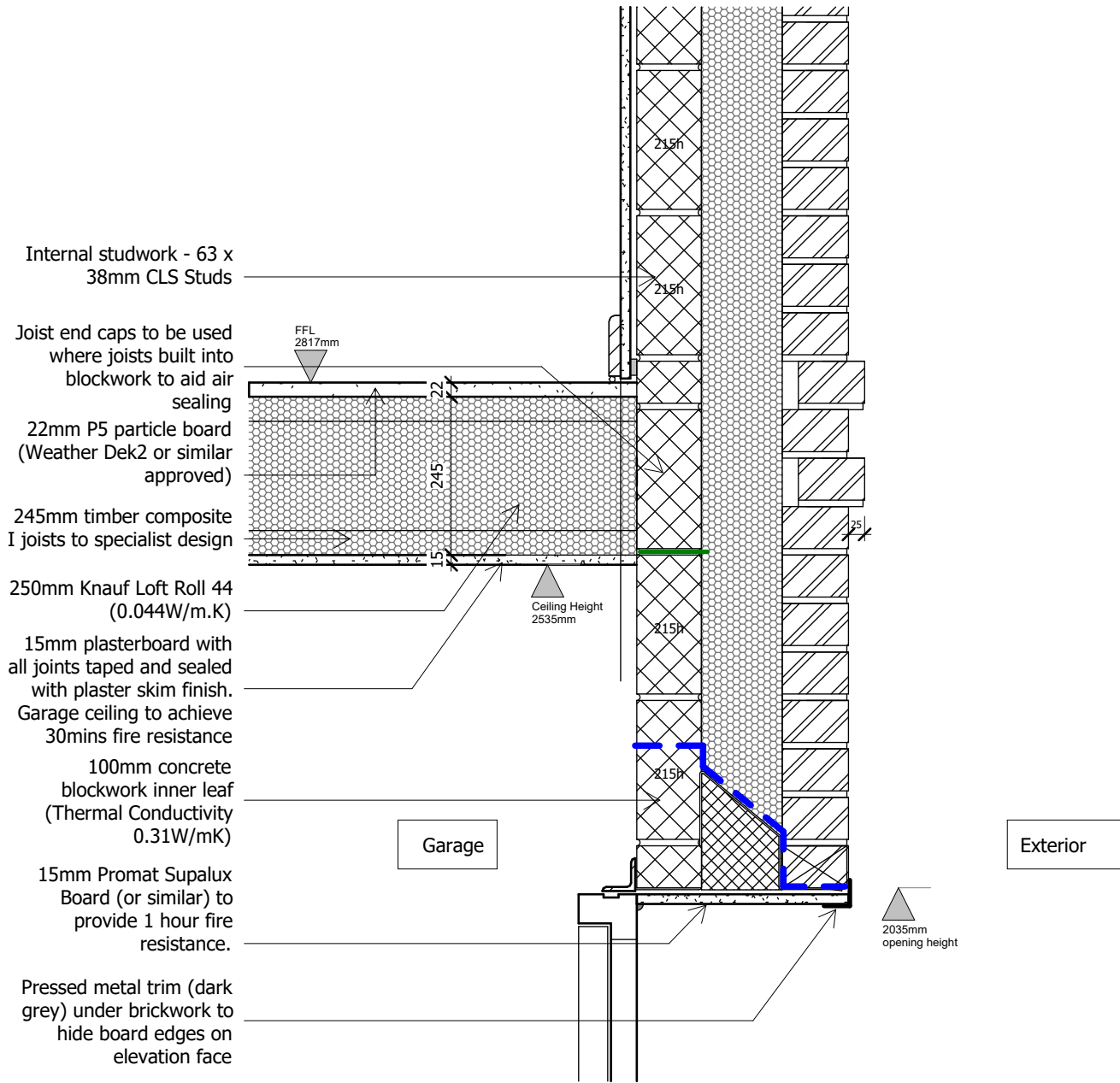
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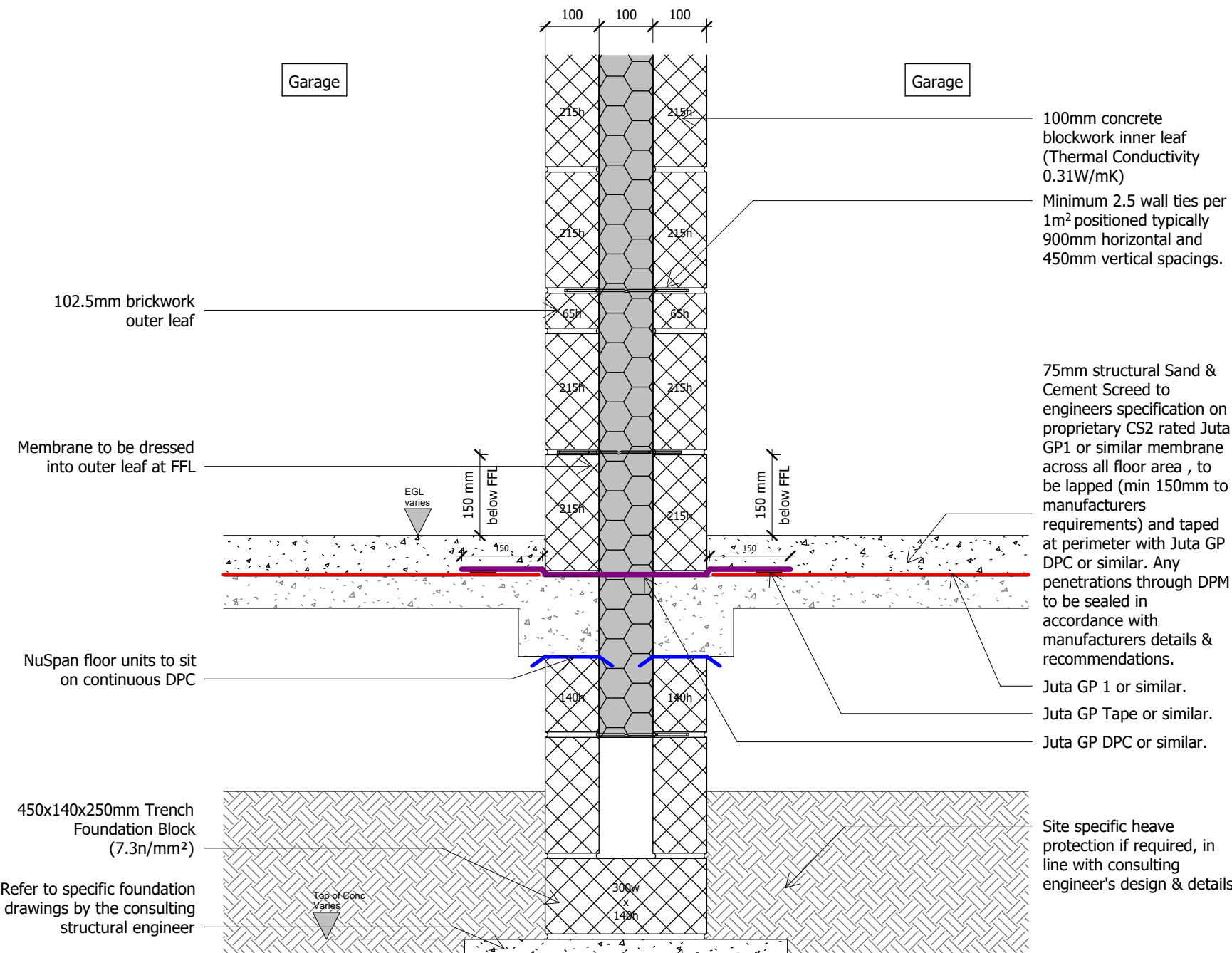


FUTURE BUILT

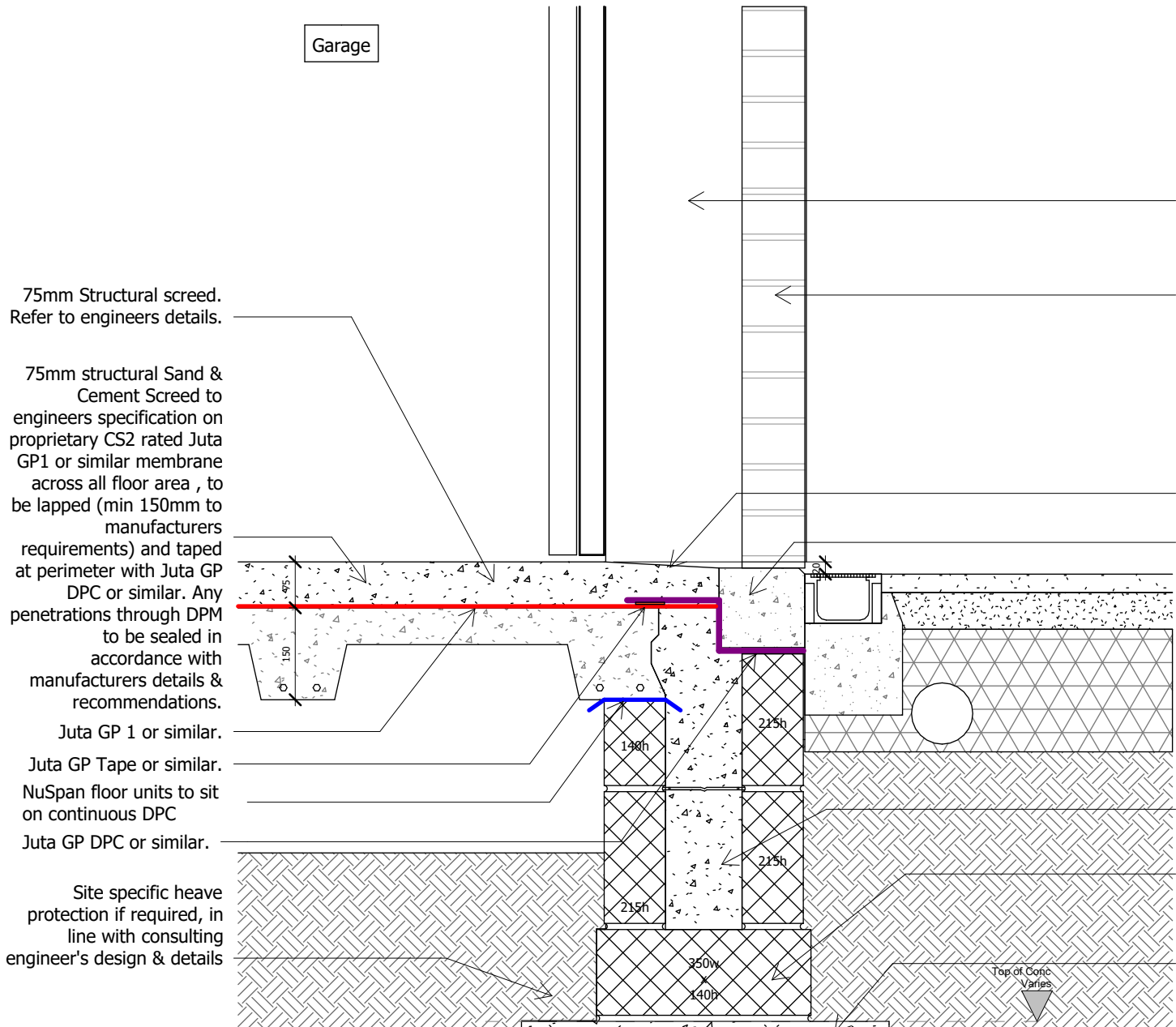
Note: Do not Scale from this drawing. All dimensions to be checked on site



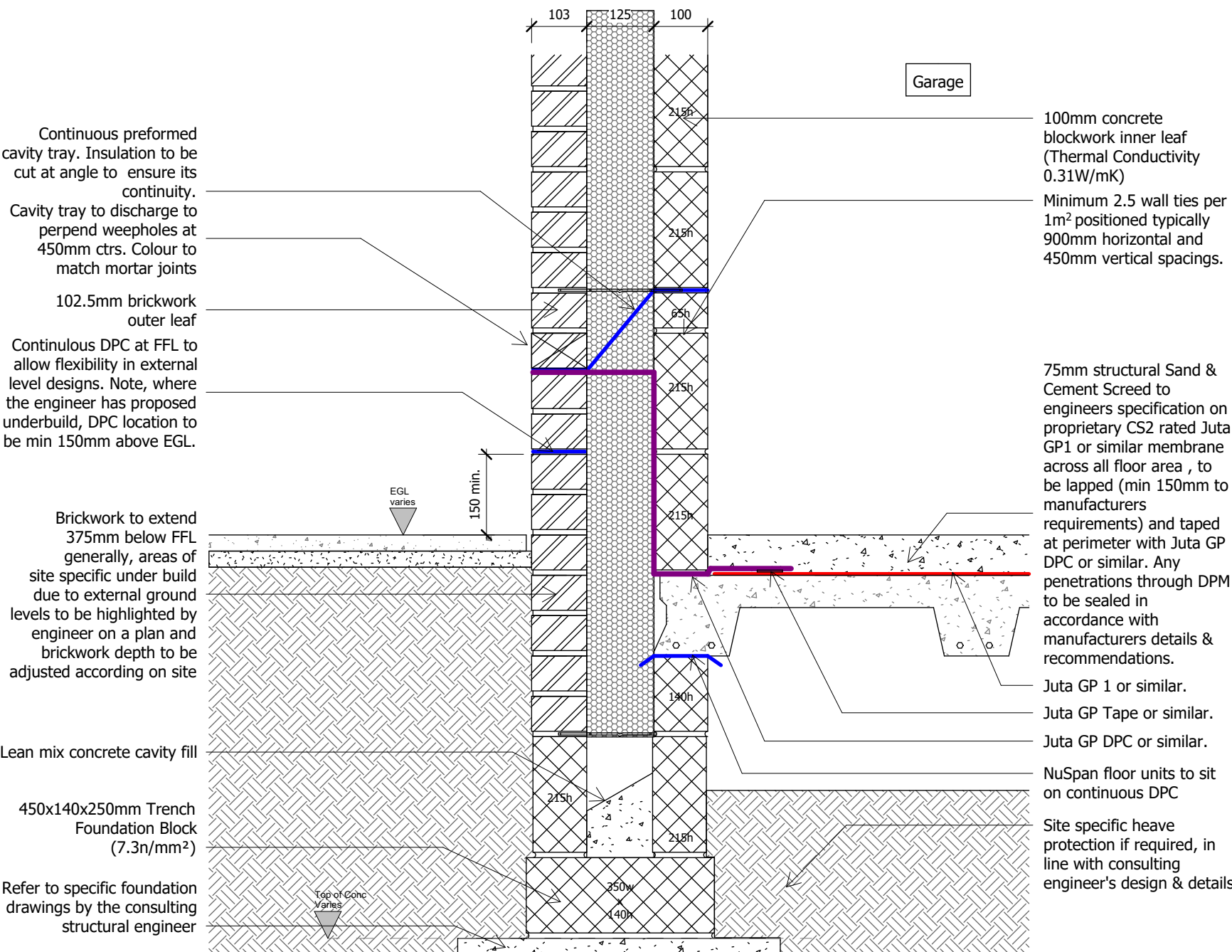
Stansfield Garage Wall / First Floor Junction
(Joists Perpendicular)



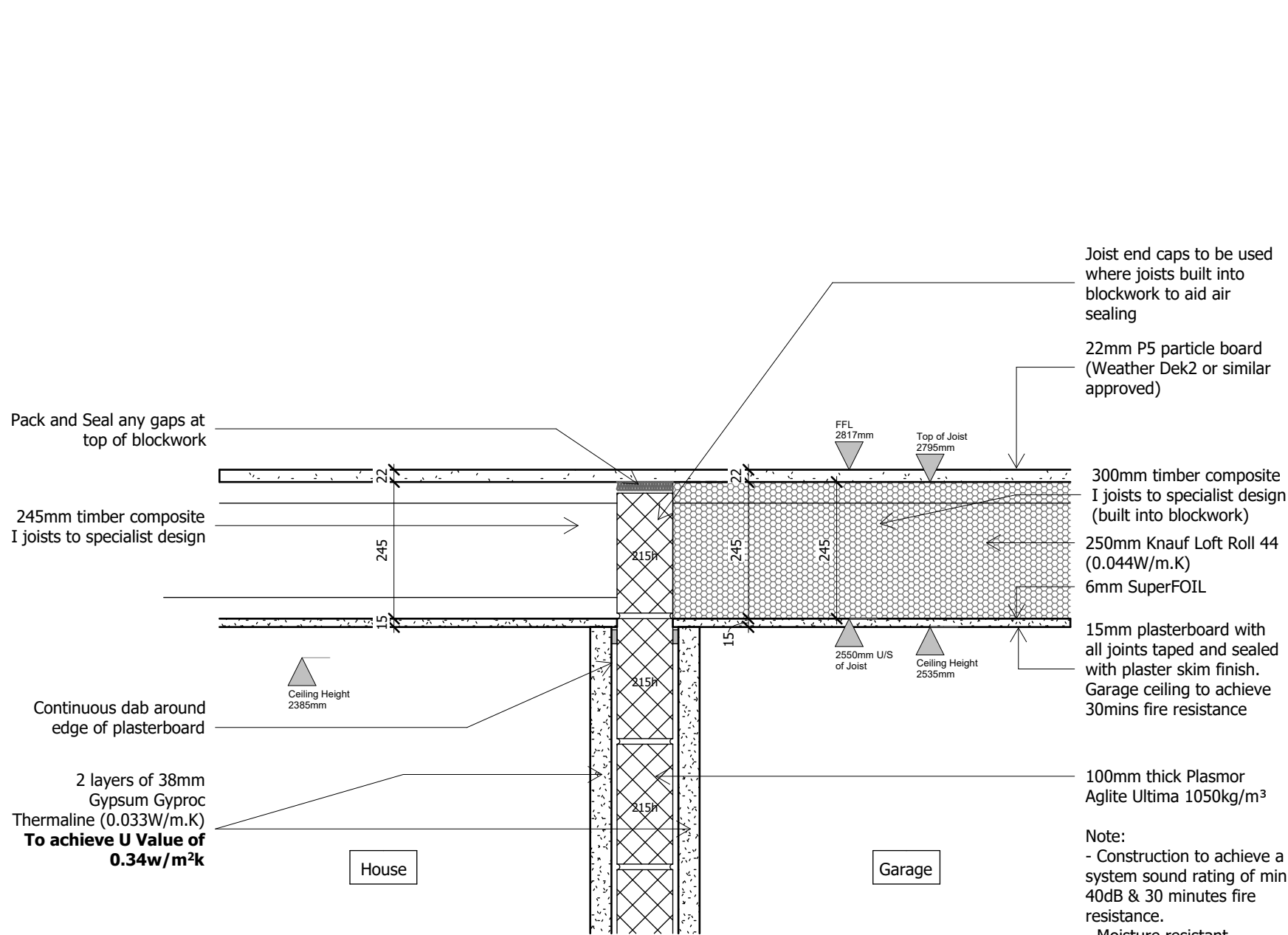
Separating Wall Stansfield
Integral Garage Adjacent Pair - Robust Detail E-WM-34



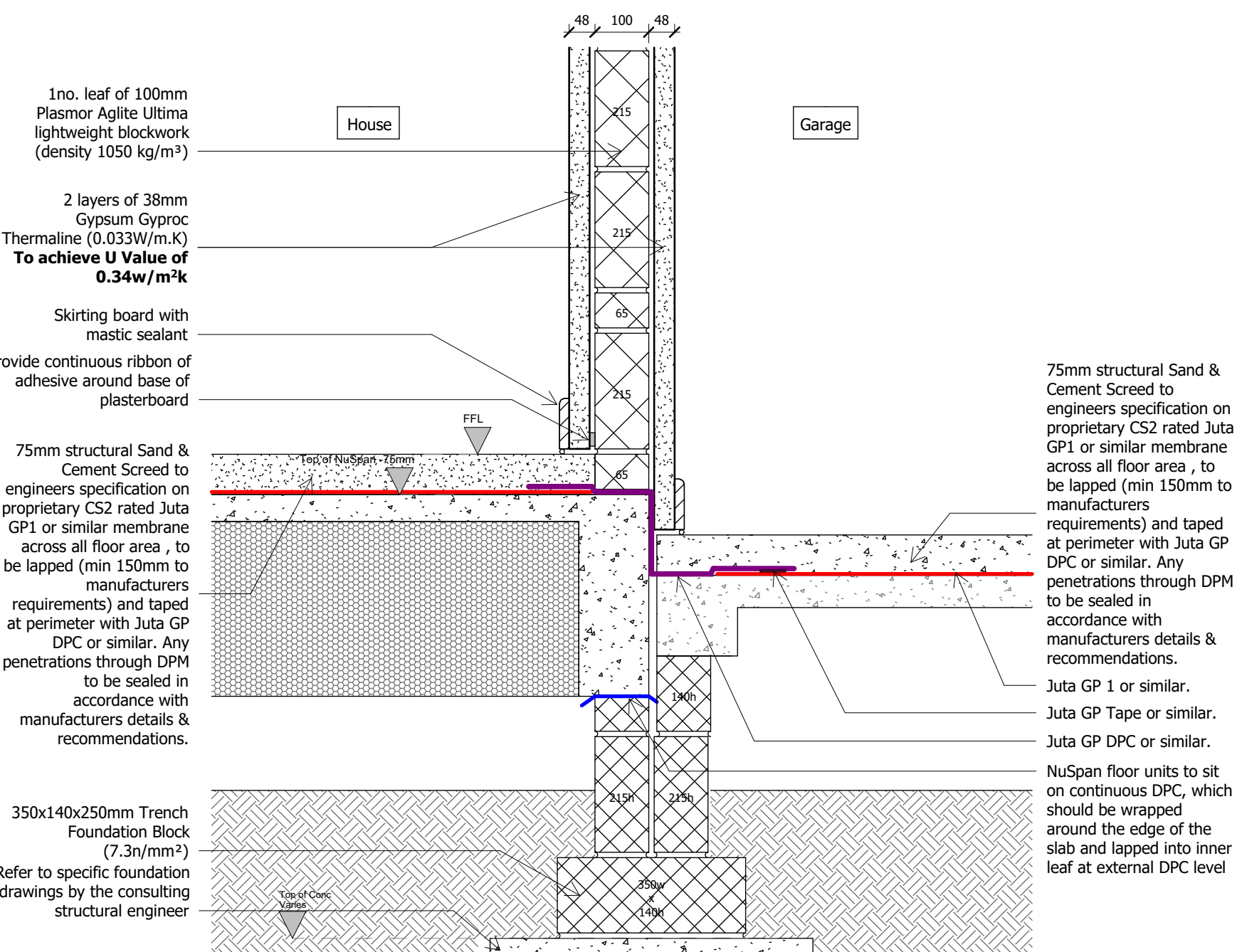
Stansfield Brick External Wall Adjacent to Garage Threshold
Integral Garage



Stansfield Brick External Wall Adjacent to Garage Threshold
Integral Garage



Stansfield Internal Garage Wall / First Floor Junction
(Joists Perpendicular)



Stansfield
Integral Garage Wall / Ground Floor Junction

TARGET U-VALUES
External Wall: Brick & Render on Blockwork - 0.21w/m²k Stone - 0.22w/m²k
Cavity Wall to Garage Wall: 0.20w/m²k
Wall to Garage: 0.34w/m²k
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Party Wall: 0.00w/m²k (To be to Robust Detail E-WM-34)
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Roof Windows: 1.30w/m²k

DPC & Cavity Tray Requirements
Flexible (plastic or rubber) DPC used as a cavity tray must meet the requirements of BS EN 14909 and have a third-party certification that confirms their suitability for use as a cavity tray.

P1 13.06.24 DW AH Initial issue.
Rev: 1 Date: 13.06.24 Drawn: 13.06.24 Checked: 13.06.24 Description: 13.06.24
Suitability: S0 Work In Progress

Hollin Gate, Littleborough

Feature Assembly Details - Sheet 8

Location:		Hollingworth Road Littleborough					
Client:		Countryside Partnerships					
UPRN	Originator	Zone	Level	Type	Role	Series/Number	Revision:
HOLL-WBA-XX-XX-DR-A-20_9208							P1
Date:	Drawn:	Checked:	Scale: @A1			Int Job No:	
02/28/23	WMB	RJ	As indicated			4046-001	

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Note: Do not Scale from this drawing. All dimensions to be checked on site