



1 Croft Stairs
Newcastle upon Tyne
NE1 2HG

Ref: 211108.L.003
13 May 2022

Patrick Casey,
Senior Site Manager – Civils Division,
Chartrange,
Wharf Street,
Dukinfield,
Cheshire,
SK16 4NJ

Dear Patrick,

Re: Gas Membrane Validation – Sports Block, Belle Vue Coop Academy

This letter has been produced in order to report and advise on the validation of the installation of gas protection measures in line with the Visqueen Design (Enclosure 1) at the following site:

- **Belle Vue Coop Academy, Manchester M12 5AL**

It is our understanding that gas protection measures are required within each of the school blocks at the abovementioned site in line with Characteristic Situation 2 ground gas classification (BS8485:2015+A1:2019).

Validation inspections have recently been carried out at the **Sports Block** (as shown in Enclosure 2) and details relating to the inspections are provided in the following table:

Date of Inspection	Inspecting Engineer	Inspected				Pass/Fail	Comments
		Membrane	Joints/Seals	Service Entry Points	Dowel Entries		
16.03.2022	RJ	✓	✓	X	X	Fail	<u>Partial Validation</u> and assessment of underlying sand/insulation. Service entries and dowels note yet ready for validation.
05.04.2022	RJ	✓	✓	✓	✓	Pass	Validation of Membrane, dowel entries etc. across the whole block, excluding a service pit under the stairs and three stanchions.
03.05.2022	RJ	✓	✓	✓	✓	Pass	Photographic Validation of the service pit under the stairs and three stanchions.

See Enclosure 2: Photographic Records for visual evidence.



Additional comments

Failed inspections were due to unsealed penetrations in the membrane and/or incomplete membrane coverage. This letter report confirms the final validation of the Sports Block after the REL Visit 2 and the supplementary photographic records were provided by the specialist installer Water8Solutions Ltd for the service pit and three remaining stanchions (Enclosure 2).

Conclusion

The overall installation of the Visqueen gas protection design was satisfactory within the Sports Block and **the gas protection measures at the inspected areas are considered to have been installed in accordance with the agreed Visqueen Design (Enclosure 1).**

We trust that these comments and attachments are to your satisfaction and if you require any further information or clarification, please do not hesitate to contact us.

Yours sincerely,

**Rebecca Jordan BSc (Hons) MEnv M.I. Soil Sci
Consultant**

For and on behalf of Roberts Environmental Ltd

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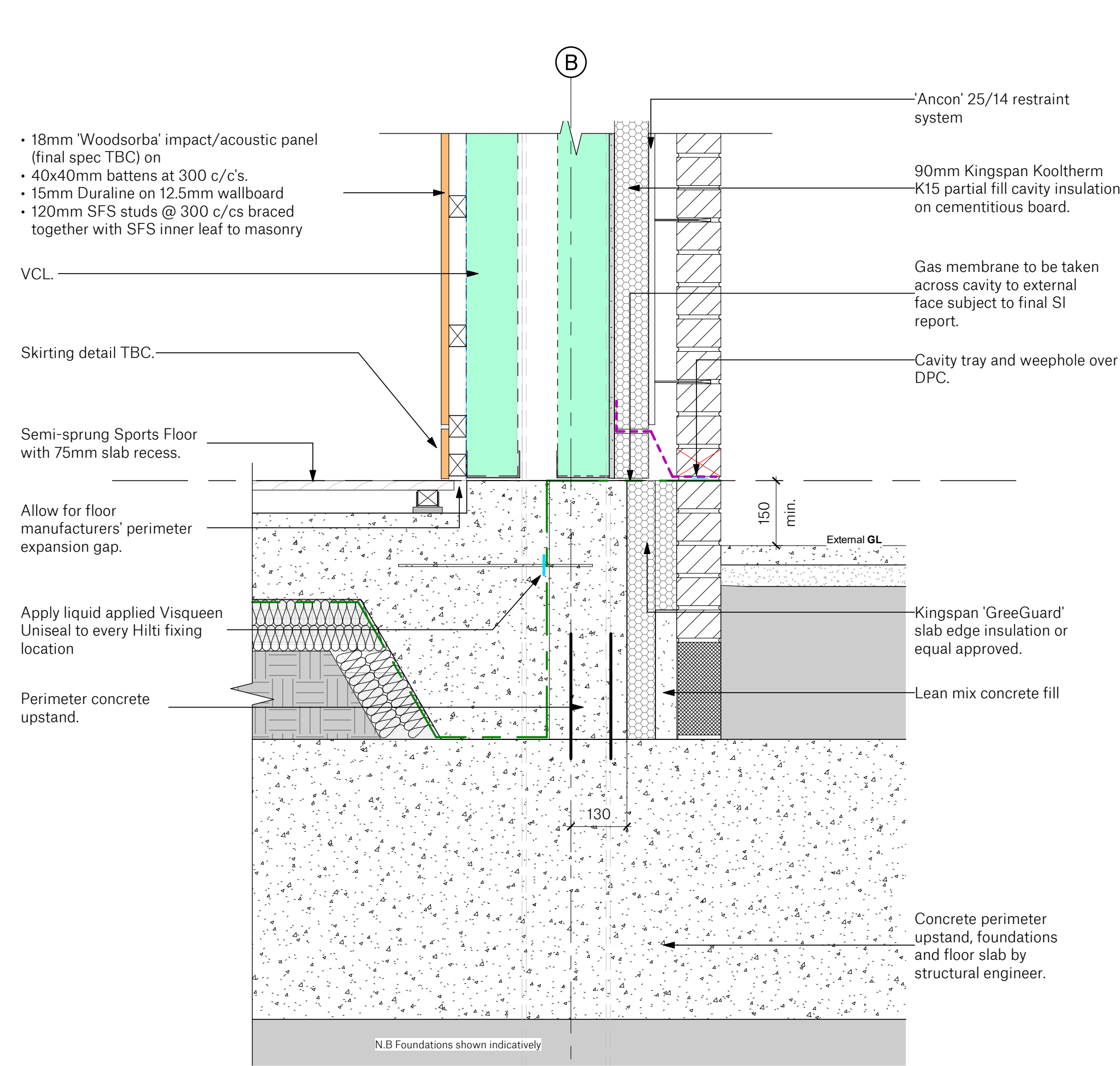
Enclosures:

- Enclosure 1 – Visqueen Drawings
- Enclosure 2 – Photographic Records

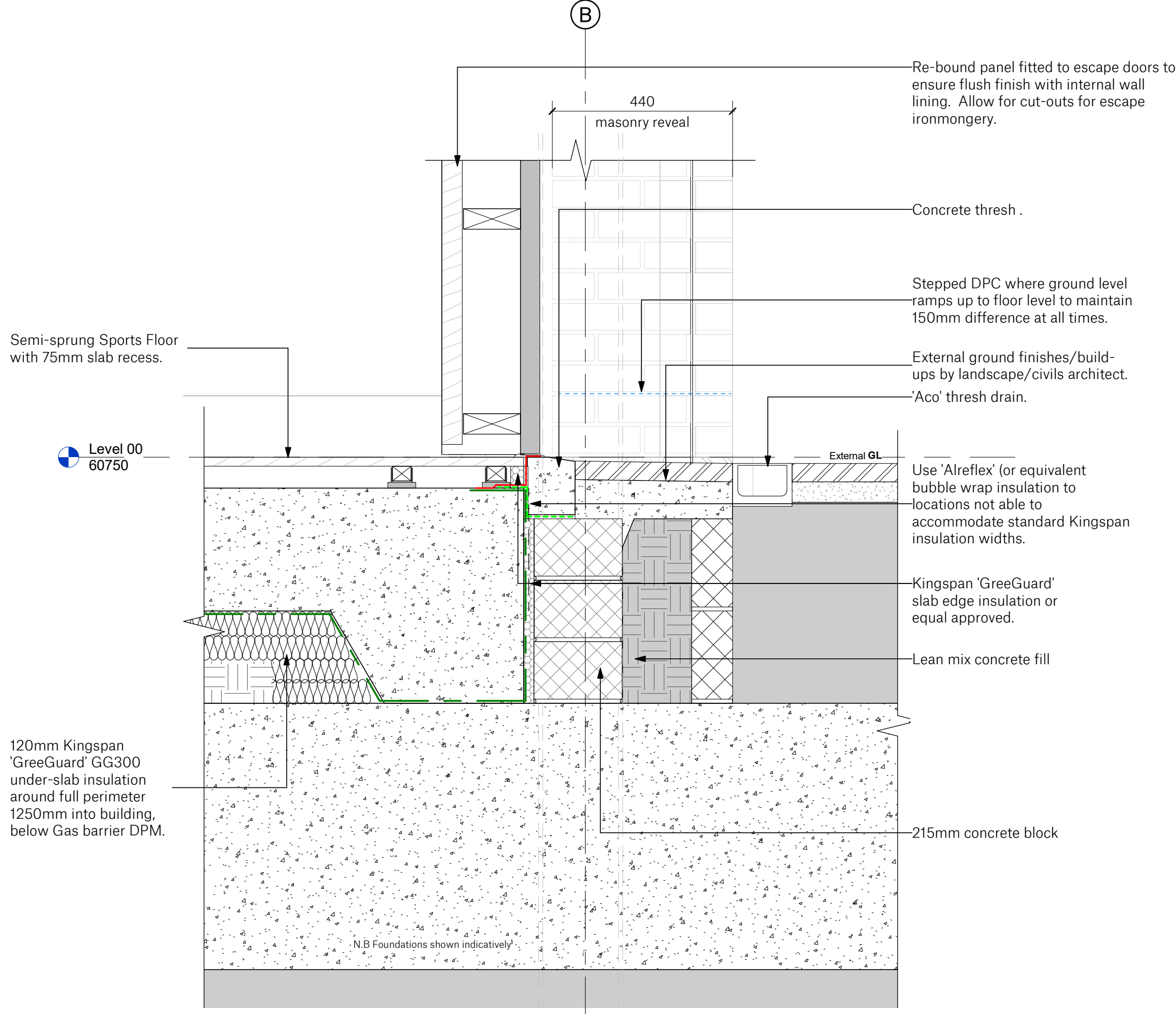


Enclosure I – Visqueen Drawings

Revision	Description	Author	Checker	Date
P01	First Issue	AWA	LB	08/06/21
P02	Details amended following changes to BDP slab & substructure design	AWA	LB	30/09/21
P03	Waterproofing to base of upstand wall to re-bar locations amended , sports hall internal lining updated, extent of sports slab recess updated	RG	AWA	02/08/21
C01	Updated following further developments between SRM & BDP. Issued as CONSTRUCTION	AWA	RG	20/09/21
C02	Details updated in line with Roberts assessor comments and markup following inspection	RG	SPE	07/02/22



Slab Edge Detail 04
1:10



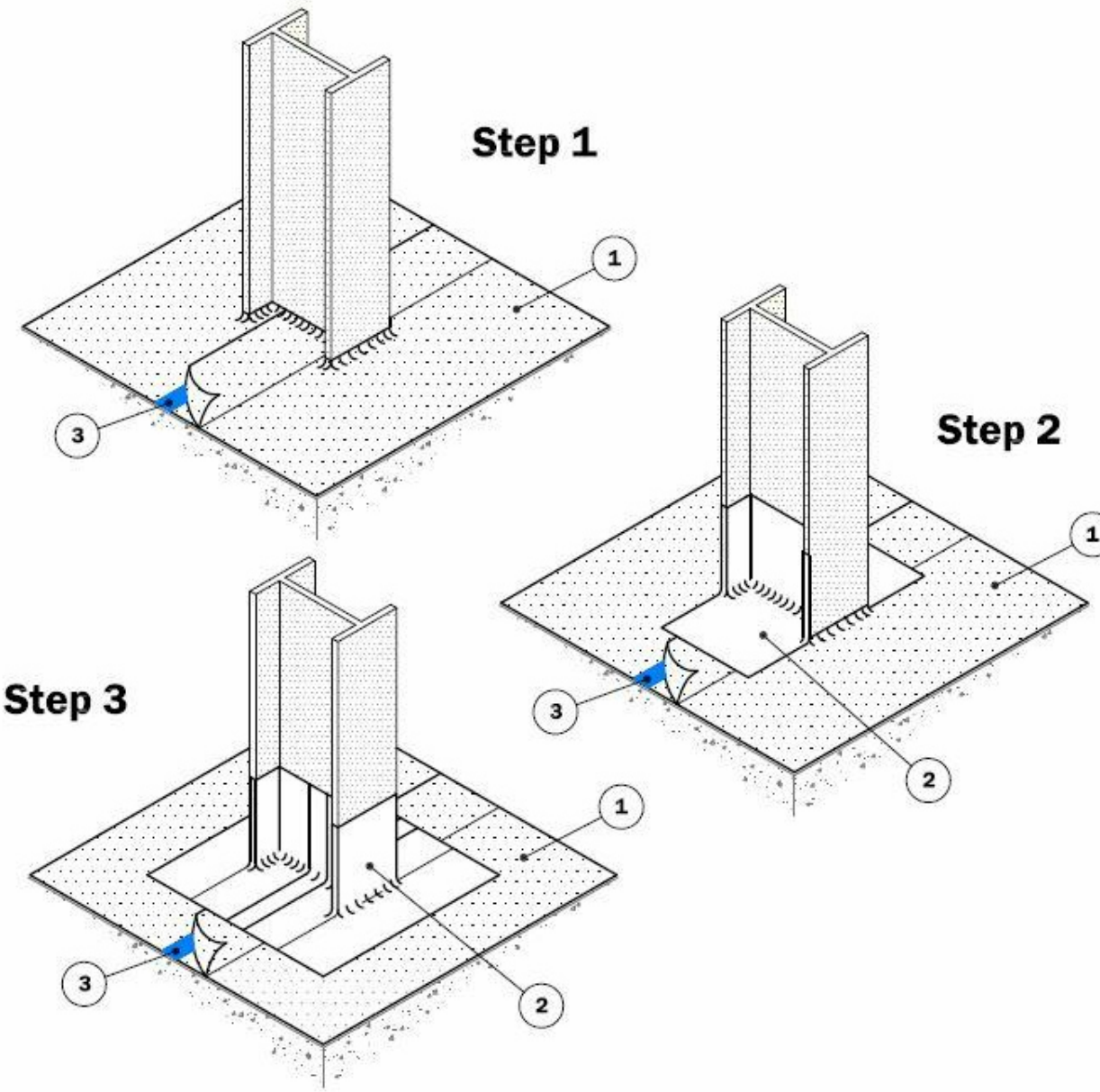
Slab Edge Detail 05
1:10

KEY TO MATERIALS :-	
1	Visqueen Gas Barrier.
2	Visqueen 300mm / 500mm Detailing Strlp.
3	Visqueen Double Sided Tape (10m x 50mm).

Step 1.
Install Visqueen Gas Barrier DPM on a suitable smooth & well compacted blinding layer. All laps to be 150mm minimum & fully sealed using Visqueen Double Sided Tape & Visqueen Gas Resistant Foli Tape. Neatly cut the DPM around the profile of the steel column.

Step 2.
Ensure steelwork is clean & dry before applying Visqueen Detailing Strip (300mm or 500mm). Ensure that the Detailing Strip extends 150mm minimum horizontally onto the DPM & 150mm minimum vertically onto the steel column. Ensure all laps are fully sealed.

Step 3.
Apply more Detailing Strip to the remaining exposed steel flanges ensuring all laps are 150mm in all directions & fully sealed.



GB-52 Detail
N.T.S

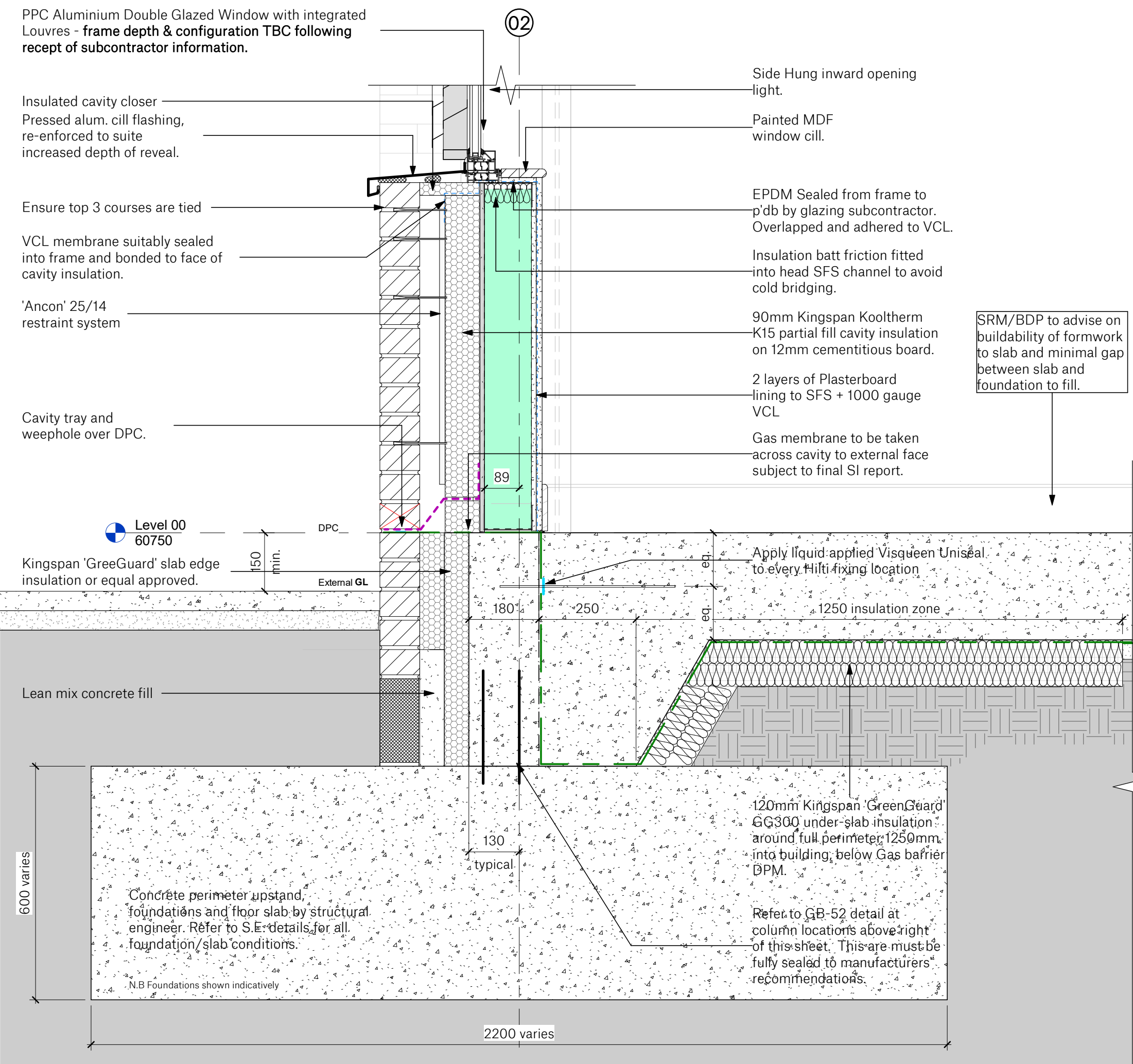
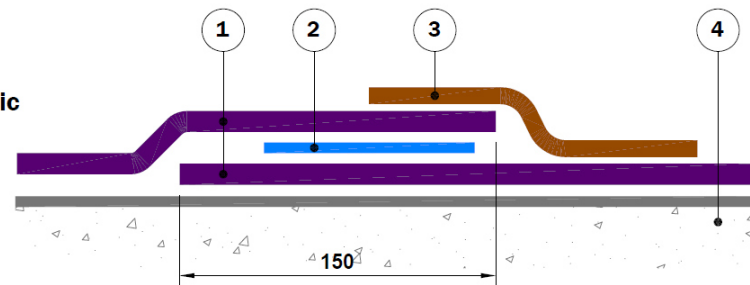
Visqueen Jointing Details

N.T.S

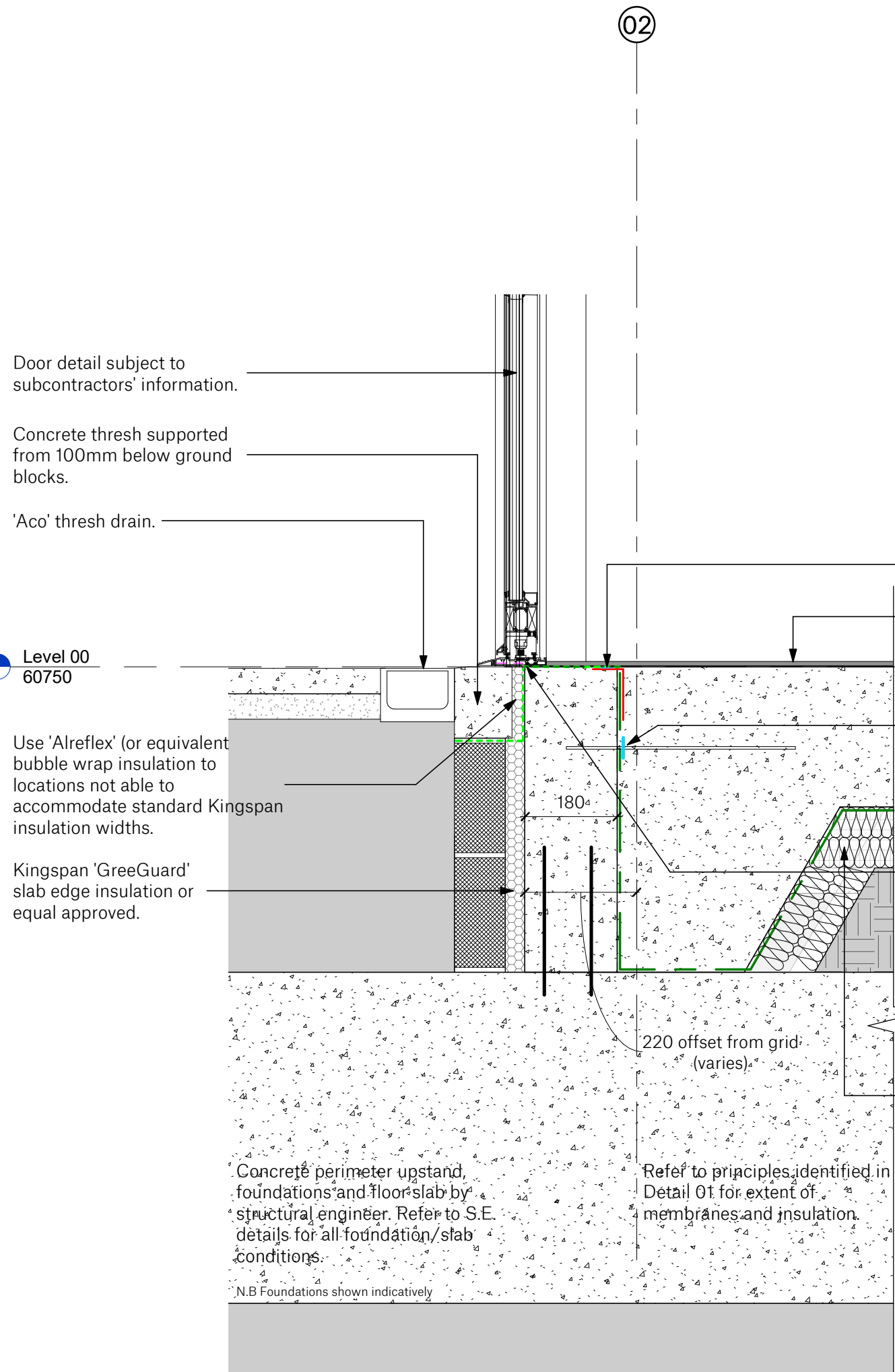
KEY TO MATERIALS :-	
1	Visqueen Ultimate GeoSeal or loose laid membrane
2	Visqueen Ultimate Double Sided Tape.
3	Visqueen Ultimate Lap Tape.
4	Smooth slab or blinding layer.

NB : Ensure careful placement of steel reinforcement to avoid damage to the DPM.

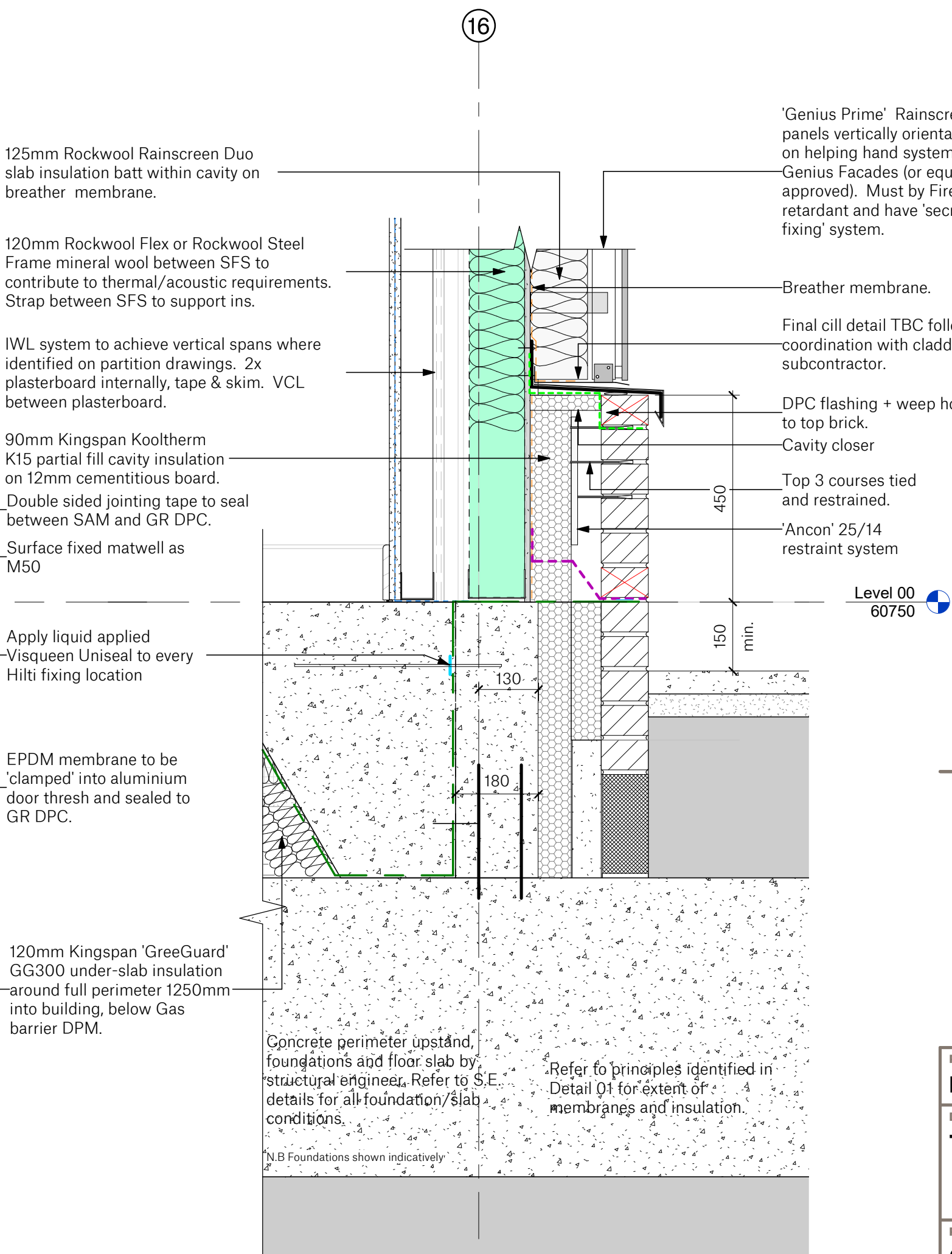
TAPED JOINT :
LOW RISK of hydrostatic water pressure



Slab Edge Detail 01



Slab Edge Detail 02



Slab Edge Detail 03

LEGEND

- Extent of SFS
- Visqueen Liquid Gas Membrane
- Visqueen ZEDEX CPT DPC (cavity tray)
- Visqueen GR DPC
- Visqueen GR SAM
- Visqueen Gas Barrier
- Visqueen GR Lap Tape
- VisqueenPro Double Sided Jointing Tape (50mm x 10m)
- Visqueen Double Sided Jointing Tape (100mm x 15m)
- Visqueen Treadguard 1500
- Visqueen Protect & Drain 12mm
- Visqueen Pro 300/500mm Detailing Strip on HP Tanking primer
- Visqueen Ultimate GeoSeal
- EPDM
- VCL
- Breather Membrane

NOTE:

Always refer to slab edge setting-out plans for location of slab edge offset from gridlines.

SPACE

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Sir Robert McALPINE

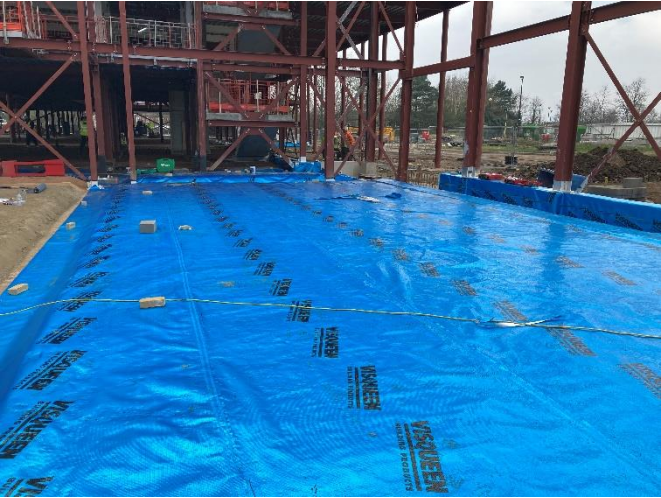
MANCHESTER CITY COUNCIL

Project Belle Vue Co-op Academy, Manchester				
Drawing Title Typical Slab Edge Details - Sheet 01				
Project No. 009433	Drawing No. 01-XX-DR-A-100001	Status C02	Revision As indicated	Scale at A1 As indicated
File Reference: 009433-SPA-01-XX-DR-A-100001				
This drawing is Copyright - Check all dimensions on site - Inform originator of any discrepancies - Work to figured dimensions only - Do not scale				

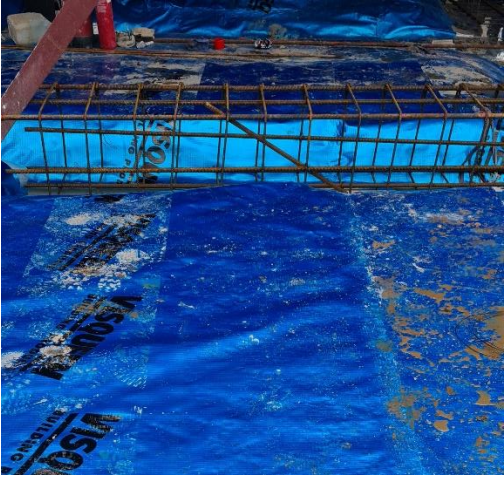


Enclosure 2 – Photographic Records

REL Visit 1 – 16 March 2022

1.	View of area showing partial membrane installation.	
2.	View of area showing partial membrane installation.	
3.	View of area showing partial membrane installation.	

Photographic Record Provided by Water8Solutions – 24 March 2022

4.	View of the membrane installed in the remaining areas, in accordance with the Visqueen design.	
5.	View of a sealed stanchion, identifying the Visqueen design has been followed accordingly.	
6.	View of the perimeter of the Sports Block showing the sealed stanchions, corners, etc. Dowel holes had not yet been sealed with Axiom in this area.	

REL Visit 2 – 5 April 2022

7.	View of the dowel holes within the gas membrane, sealed with Axiom.	
8.	View of the service entry pit, identifying the Visqueen design has been followed accordingly.	
9.	View of sealed service entries.	

REL Visit 2 – 5 April 2022 (Cont'd)

10.	View confirming Visqueen membrane installation across the entire footprint of the plot (beneath the steel works).	
11.	View confirming stanchions have been sealed following the Visqueen design and dowel entries have been sealed with Axiom.	
12.	View confirming sealing of service pit in accordance with the Visqueen design.	

Photographic Record provided by Water8 Solutions Following Visit on 5 April 2022

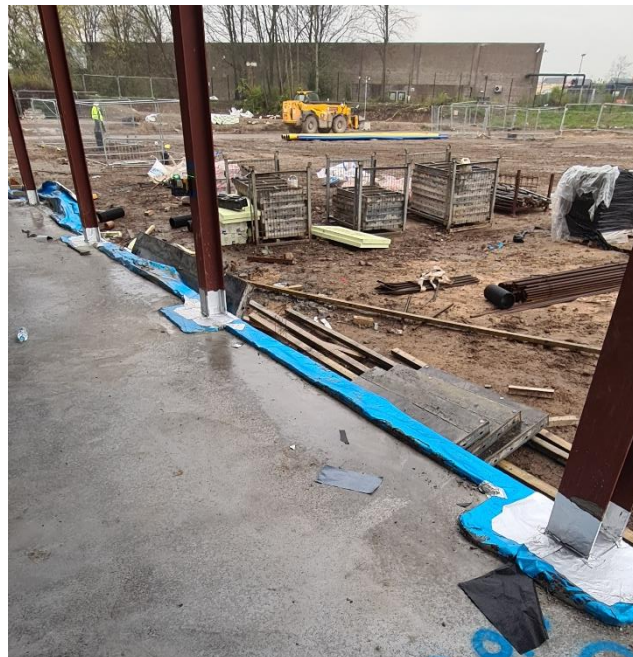
13.

View of a stanchion sealed following the site visit 5 April 2022.



14.

View of a stanchions sealed following the site visit 5 April 2022.



15.	View of the service pit sealed following the site visit on 5 April 2022.	
16.	View of repairs on the doorway of the Sports Block following the site visit on 5 April 2022.	

Above is a selection of relevant photographs, further photographs are available if requested.