

Date: 17 March 2025
Reference: 14-768-V1

GAS MEMBRANE VALIDATION – HAWKS VIEW, CASTLETON

Project Name:	Hawks View, Castleton (formerly known as Castleton Sidings)
Project Number:	14-768
Client:	Kellen Homes
Date:	14 March 2025
Project Manager & Qualifications:	J Sheridan (MeSci, FGS)
E3P Engineer:	J Sheridan (MeSci, FGS)
Gas Membrane Installers Name & Qualifications:	Westbourne Civil Engineers Ltd & Keytec Installation Services
Ground Gas Protection Design Report:	E3P Gas Protection Design Report (14-768-R8, March 2025)
Plots:	Subfloor Void – Plots 9-15, 18-21,127-129

The gas mitigation measures validation site inspection record and associated photographs are enclosed within this letter as a Controlled Quality Assurance (CQA) site data capture record.

FINAL QUALITY ASSURANCE

E3P SITE VALIDATION CQA	QUALIFICATIONS	POSITION
Jessica Sheridan	MeSci, FGS, MEnvSci	Senior Consultant
PREPARED BY	QUALIFICATIONS	POSITION
Jessica Sheridan	MeSci, FGS, MEnvSci	Senior Consultant
AUTHORISED BY	QUALIFICATIONS	POSITION
Martin Dyer	BSc (Hons), FGS, FEnvSci, CEnv	Director

Table 1 Validation Letter References

PLOT NUMBER	DATE	REPORT REFERENCE
Subfloor 9-15, 18-21,127-129	14/03/2025	V1





GROUND GAS MITIGATION DESIGN

The Ground Gas Risk Assessment for the site determined that site should be classified as Characteristic Situation 2 with incorporation of low level VOC resistant membrane in accordance with BS8485 2015 (+A1 2019).

A Gas Protection Design Report (GPDR) was prepared by E3P (14-768-R8, March 2025). Since the issue of the report, minor revisions have been made to the subfloor design, which are presented within this verification letter for clarity.

The GPDR has been prepared, reviewed, and authorised by a suitably qualified person who holds the relevant technical and professional qualifications.

OVERVIEW OF GROUND GAS MITIGATION DESIGN & CONSTRUCTION REQUIREMENTS

Characteristic Situation 2 – Design Mitigation Requirements.

- ❖ Passive sub-floor dispersal layer of very good performance which meets all criteria out in Paragraph B.6 of BS8485:2015 (minimum 150 mm clear void space and with correct frequency of side ventilation).
- ❖ Lapped and taped / sealed gas and low level VOC resistant membrane in the floor slab construction which meets all the criteria as set out in Table 7 of BS8485:2015 (+A1 2019) and Verification in Section 3.2.2 of CIRIA 735³³

Banners Gate prepared the site-specific engineering drawings on behalf of Kellen Homes as Foundation Detail Ref: 23147 500 F.

The sub-structure design forms a key component of the validation procedure to ensure the constructed mitigation requirements meet the specified design criteria.

Figure 1 Structural Engineers Substructure Design – External Wall

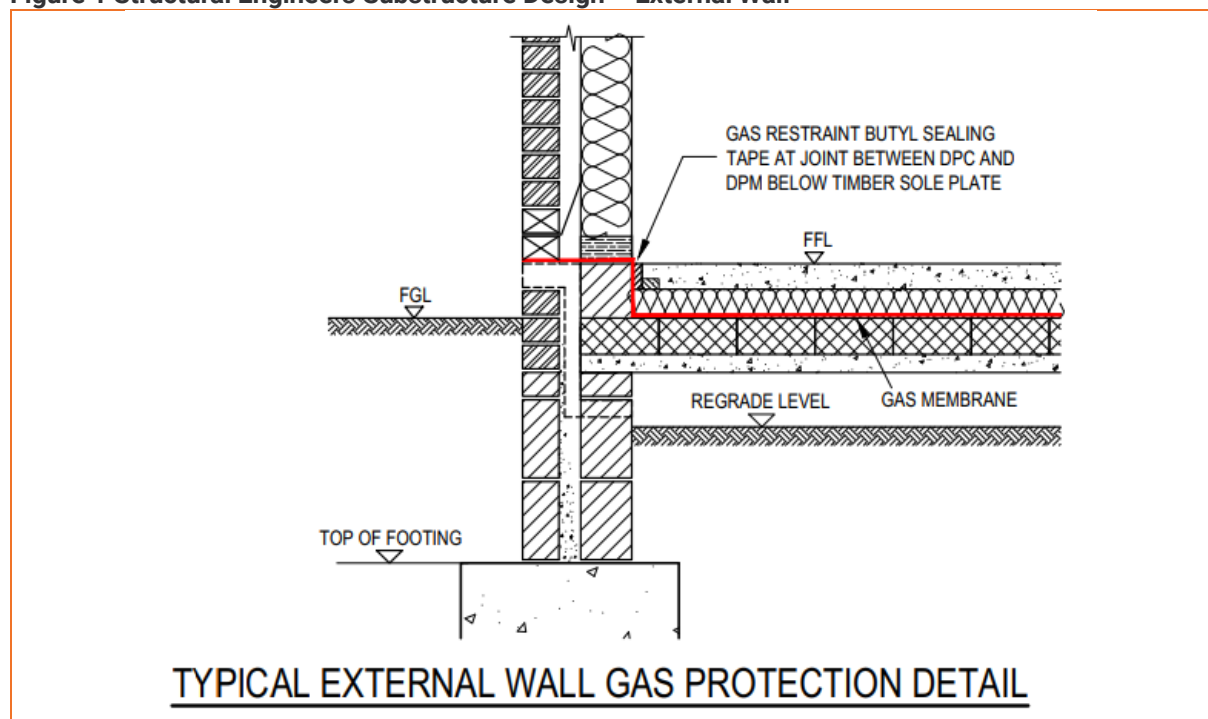




Figure 2 Structural Engineers Substructure Design – Party Wall

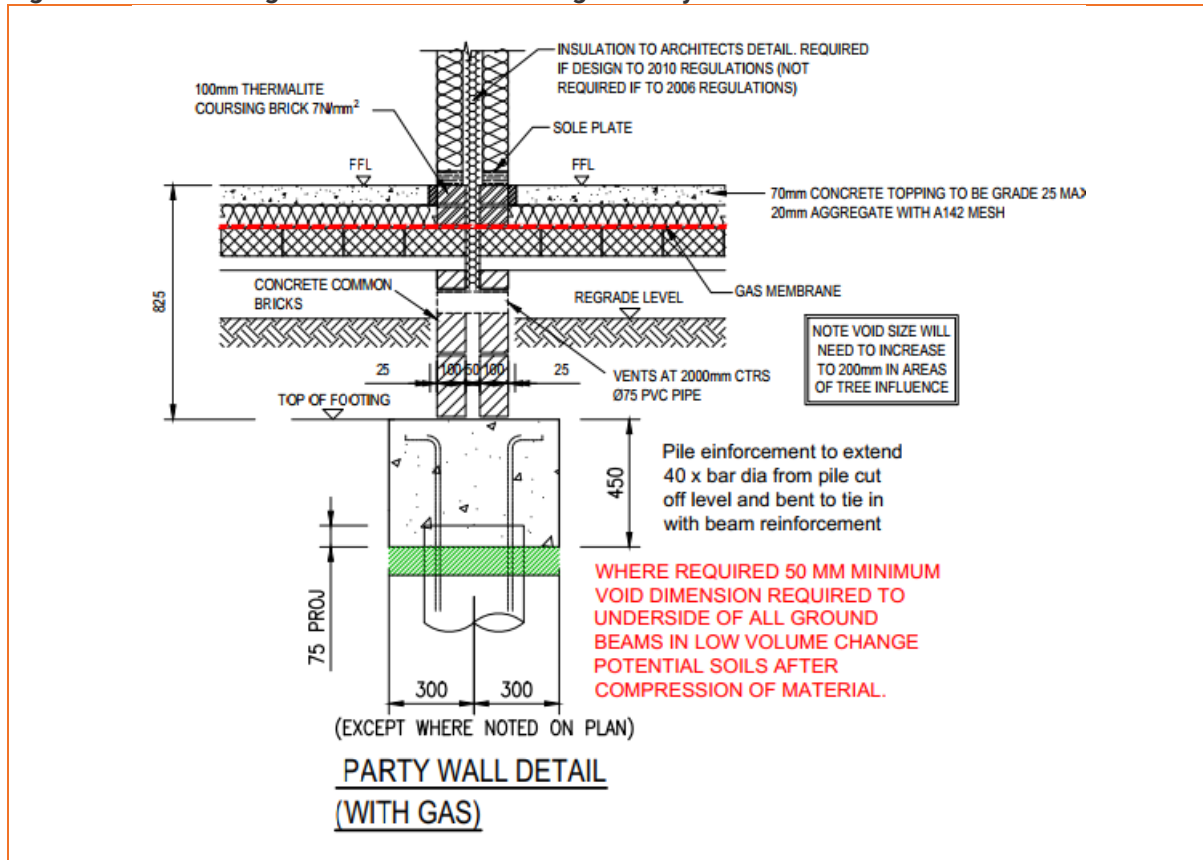
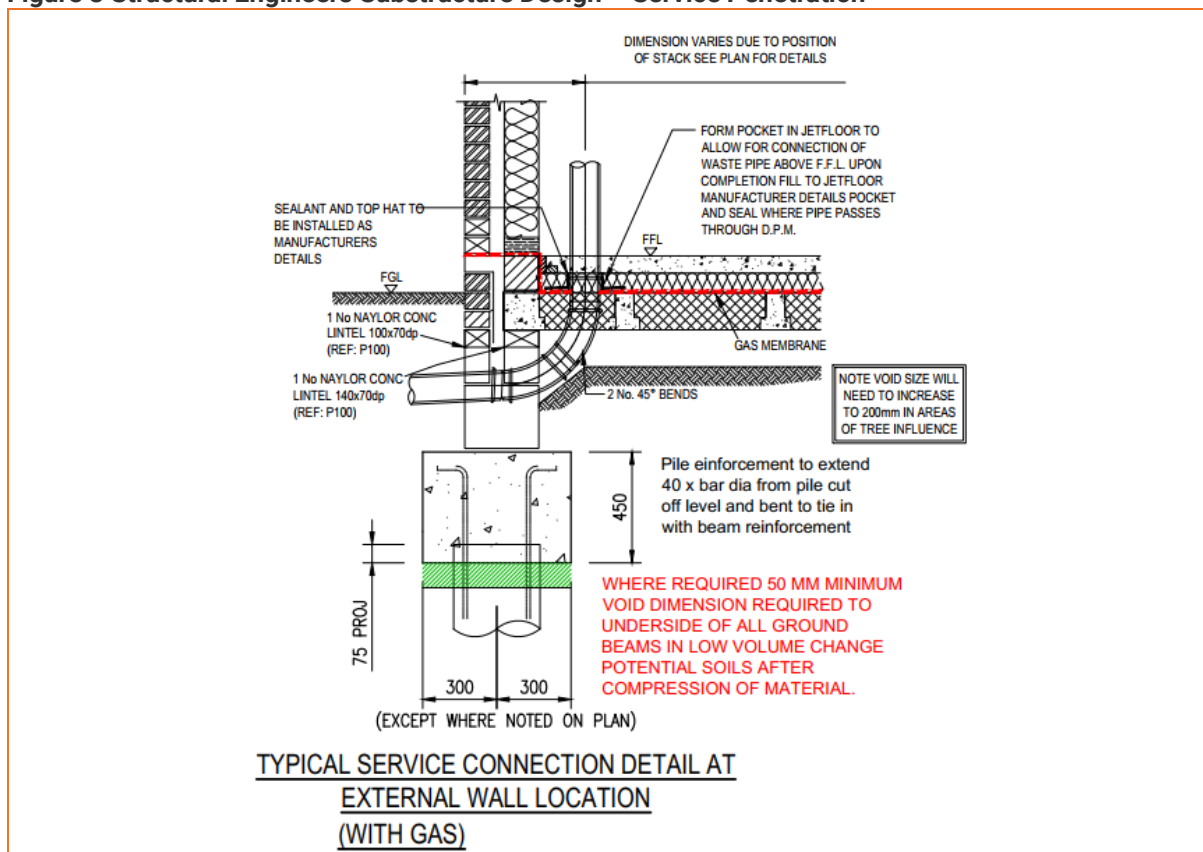


Figure 3 Structural Engineers Substructure Design – Service Penetration





SUMMARY OF VALIDATION INSPECTION & APPROVAL

SUB-FLOOR VOID

The sub-floor void for plots 9-15, 18-21, 127-129 was inspected on 14th March 2025.

The sub-floor void was observed and inspected to be a minimum of 150 mm with no visible inclusions that would limit the performance of this ventilation mechanism. Sleeper wall ventilation bricks were also observed to be present. Where these were found to be absent (plots 19 and 127/128), Westbourne Civils were notified and instructed to rectify prior to a follow up inspection.

A return visit was made on 17th March to reinspect and confirmed the sleeper wall ventilation for plots 19 and 127/128 to have been installed.

Photographs of the sub-floor voids are included in the final section of this CQA Validation.

AIR BRICKS & TELESCOPIC VENTILATION

As per NHBC guidance and the structural engineers design as part of the mitigation a telescopic vent and vent brick is required at 2 m intervals in the brick course. E3P can confirm these have also been fitted accurately on all elevations of the plot to allow the sufficient function of the passive sub-floor ventilation system.

E3P ENGINEER'S SITE CHECK SHEET

The engineer check sheet completed whilst on-site during the validation on a plot-by-plot basis is attached, and a complete set of images is presented as evidence. Larger images are presented at the rear of this section.

All information provided within this validation letter report was accurate at the time of construction. E3P operates under the assumption that all data provided by installers is reliable.



Floor Void Inspection

14 Mar 2025 / J Sheridan

Complete

Score 12 / 15 (80%)

Site Name Castleton Sidings

Project Number 14-768

Conducted on 14 Mar 2025 8:28 AM GMT

Prepared by J Sheridan

Location 126 Fairway
Rochdale
England
OL11 3BZ
United Kingdom
(53.58898442552095, -
2.1825155226850597)

Plot Inspection 12 / 15 (80%)

Plot Inspection 1 2 / 2 (100%)

Plot Number 14/15

Is the void clear? Yes

Depth of Void 150



Photo 1



Photo 2



Photo 3



Photo 4

Are Sleeper Walls Vented? Yes



Photo 5



Photo 6

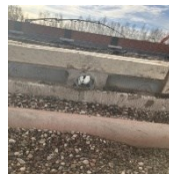


Photo 7



Photo 8



Photo 9



Photo 10

Plot Inspection 2

1 / 1 (100%)

Plot Number

13

Is the void clear?

Yes



Photo 11



Photo 12

Depth of Void

200



Photo 13



Photo 14

Are Sleeper Walls Vented?

N/A

Plot Inspection 3

2 / 2 (100%)

Plot Number

11/12

Is the void clear?

Yes



Photo 15



Photo 16

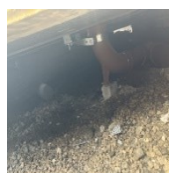


Photo 17



Photo 18



Photo 19

Depth of Void

300



Photo 20



Photo 21

Are Sleeper Walls Vented?

Yes



Photo 22



Photo 23



Photo 24

Plot Inspection 4

2 / 2 (100%)

Plot Number

9/10

Is the void clear?

Yes



Photo 25



Photo 26



Photo 27

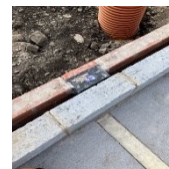


Photo 28



Photo 29

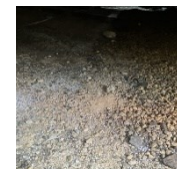


Photo 30

Depth of Void

300



Photo 31



Photo 32



Photo 33



Photo 34



Photo 35

Are Sleeper Walls Vented?

Yes

Plot Inspection 5

1 / 1 (100%)

Plot Number

18

Is the void clear?

Yes



Photo 36

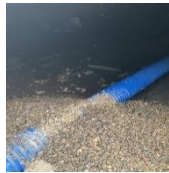


Photo 37



Photo 38

Depth of Void

600



Photo 39



Photo 40

Are Sleeper Walls Vented?

N/A

Plot Inspection 6

1 / 2 (50%)

Plot Number

19

Is the void clear?

Yes

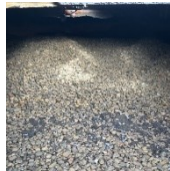


Photo 41



Photo 42



Photo 43



Photo 44



Photo 45



Photo 46

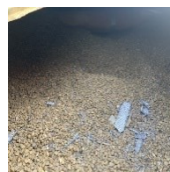


Photo 47

Depth of Void

400



Photo 48



Photo 49



Photo 50

Are Sleeper Walls Vented?

No

Sleeper Vents to be installed-revisit 17/3/25



Plot Inspection 7

1 / 2 (50%)

Plot Number

20/21

Is the void clear?

Yes



Photo 51

Depth of Void

300



Photo 52



Photo 53



Photo 54

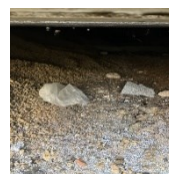


Photo 55

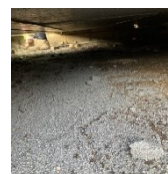


Photo 56

Are Sleeper Walls Vented?

Plot Inspection 8

1 / 1 (100%)

Plot Number

129

Is the void clear?

Yes



Photo 57



Photo 58



Photo 59

Depth of Void

150



Photo 60



Photo 61

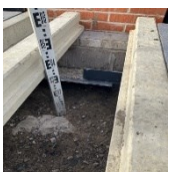


Photo 62

Are Sleeper Walls Vented?

N/A

Plot Inspection 9

1 / 2 (50%)



Plot Number

127/128

Is the void clear?

Yes



Photo 63



Photo 64



Photo 65

Depth of Void

200

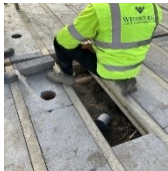


Photo 66



Photo 67



Photo 68



Photo 69



Photo 70

Are Sleeper Walls Vented?

No

Vents to be added-revisit 17/3/25



Media summary



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

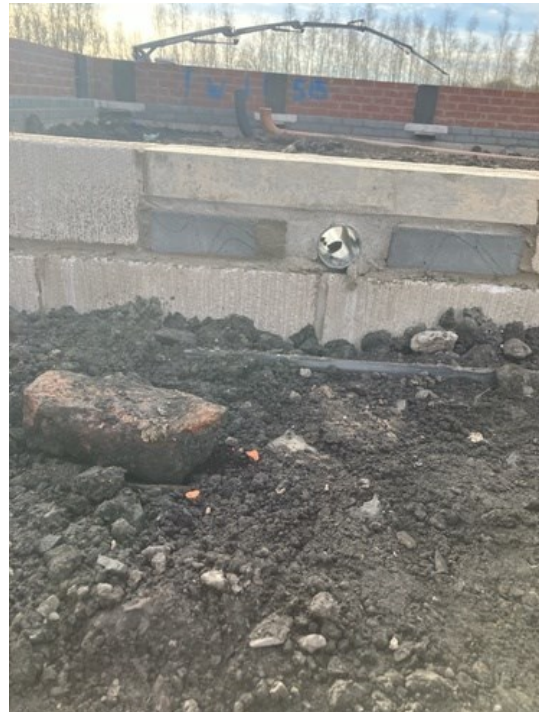


Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24



Photo 25



Photo 26



Photo 27



Photo 28



Photo 29



Photo 30



Photo 31



Photo 32



Photo 33

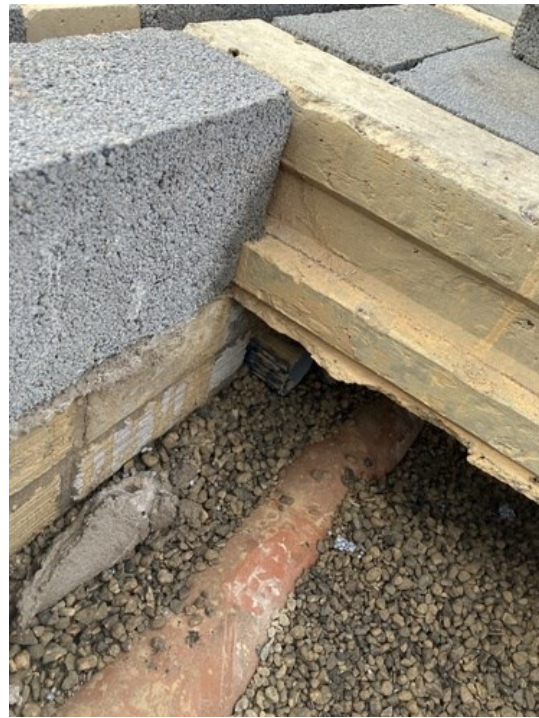


Photo 34



Photo 35



Photo 36



Photo 37



Photo 38



Photo 39



Photo 40



Photo 41



Photo 42



Photo 43



Photo 44



Photo 45



Photo 46



Photo 47



Photo 48



Photo 49



Photo 50



Photo 51



Photo 52



Photo 53



Photo 54



Photo 55



Photo 56



Photo 57



Photo 58



Photo 59



Photo 60



Photo 61



Photo 62



Photo 63



Photo 64



Photo 65



Photo 66



Photo 67



Photo 68



Photo 69



Photo 70



Floor Void Inspection – Revisit

17 Mar 2025 / Jordan James

Complete

Score	12 / 12 (100%)
Site Name	Castleton Sidings
Project Number	14768
Conducted on	17 Mar 2025 10:28 AM GMT
Prepared by	Jordan James
Location	102 Fairway Rochdale England OL11 3BZ United Kingdom (53.588844733063375, - 2.1829079143198666)
<u>Plot Inspection</u>	12 / 12 (100%)
Plot Inspection 1	2 / 2 (100%)
Plot Number	21
Is the void clear?	Yes
Depth of Void	300
	
Photo 1	
Are Sleeper Walls Vented?	Yes
	
Photo 2	



Plot Inspection 2		2 / 2 (100%)
Plot Number		22
Is the void clear?		Yes
Depth of Void		500
		
Photo 3		
Are Sleeper Walls Vented?		Yes
		
Photo 4		
Plot Inspection 3		2 / 2 (100%)
Plot Number		128
Is the void clear?		Yes
Depth of Void		300
		
Photo 5		
Are Sleeper Walls Vented?		Yes
		
Photo 6		



Plot Inspection 4

2 / 2 (100%)

Plot Number

127

Is the void clear?

Yes

Depth of Void

370



Photo 7

Are Sleeper Walls Vented?

Yes



Photo 8

Plot Inspection 5

2 / 2 (100%)

Plot Number

126

Is the void clear?

Yes

Depth of Void

400

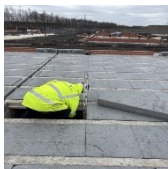


Photo 9

Are Sleeper Walls Vented?

Yes



Photo 10



Plot Inspection 6

2 / 2 (100%)

Plot Number

125

Is the void clear?

Yes

Depth of Void

350



Photo 11

Are Sleeper Walls Vented?

Yes



Photo 12

Media summary



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12