

Our ref.: 784-B070935/Gas Verification/V1

Planning Ref.25/00369/FUL/Condition 4

Mark Gough
Senior Project Manager
Lysander Associates Ltd

22 May 2026

Dear Mark

Subject: Guard Hut Gas Verification Report - Plot J2, Kingsway Business Park, Rochdale, OL16 4NR (V1)

1.0 Introduction

Planning approval for the development of Plot J2 Kingsway Business Park in Rochdale was granted for various minor works and alterations including construction of a Guard Hut. Condition 4 of the approval (reference 25/00369/FUL) requires that:

The development hereby permitted shall not be carried out otherwise than in accordance with the recommendations contained within the submitted 'Phase 1 Geo-Environmental Assessment' ref. 784-B070935 dated May 2025 by Tetra Tech Limited. Before the proposed guard house is first brought into use, a verification report evidencing a gas protection score of 1.5 from gas protection measures installed in accordance with BS848:2015 has been achieved shall be submitted to and approved in writing by the Local Planning Authority.

This letter report provides verification of the gas mitigation measures associated with the Guard Hut development in order to seek discharge of Condition 4.

2.0 Tetra Tech Phase 1 Report Summary & Findings

This desk-based Phase 1 Geo-environmental Assessment (*784-B070935 dated May 2025 by Tetra Tech Limited*) covers the whole J2 development site, inclusive of the area where

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Leeds, United Kingdom, LS1 4ER

the Guard Hut will be placed. The report reviews the findings of a ground investigation reported by BWB (report reference 'Phase 2 Geo-Environmental Assessment' ref. KBP-BWB-ZJXX-RP-YE-0002_Ph2_P2 dated February 2018). This ground investigation covered the J2 plot and additionally the neighbouring unit to the west.

Ground conditions recorded (including the Site) were reported as Topsoil overlying up to a maximum of 1.4m thickness of Made Ground overlying alluvium, hummocky glacial deposits and glacial till. No significant contamination was encountered and low gas levels, considered as likely sourced from the organic nature of some of the superficial deposits, were recorded. The two warehouse structures (one of which is on site) were protected from accumulating ground gases using a ground floor slab and gas resistant membrane. This was independently verified and the associated planning condition discharged.

3.0 Guard Hut Development and Construction Details

The Guard Hut is sited to the front (south) of the existing warehouse and north of James Kearns Avenue, as illustrated in the appended Proposed Site Plan (Drawing No. 24086-ASA-00-EX.SI-D-A-NMA03_(S4-P01)) by Ashton Smith. The Guard Hut comprises a single-storey, modular steel-framed unit of approximate dimensions (for the steel frame only) 8.502m by 3.402m and height 3.625m. Two separate pedestrian entrances are provided comprising a single and double door entry and windows are located along 3 sides of the unit. Drawings illustrating the layout and construction (Drawing refs: Q024521-001 V4 and Q024521-002 V2, by Portable Space) are included in Appendix B.

4.0 Gas Regime Recorded on Site

Using the data for all 6no. boreholes across 4no. gas monitoring rounds, the wider area achieves a Gas Screening Value (GSV) of 0.66 litres/hour and a Characteristic Situation 2 (CS2 – 'low' gas risk) in accordance with CIRIA C665, 2007. This assessment was based on the 2no. large warehouse structures (a 'Type D' development). The minimum and maximum steady state concentrations recorded for borehole flow, oxygen, carbon dioxide and methane are summarised in Table 1 (as reported by BWB, 2018). Note that the boreholes that lie within the Site boundary include BH01 and BH02 only with BH02 the closest borehole to the Guard Hut location.

Table 1 Summary of Recorded Gas Results Across the Site and Neighbouring Plot (BWB, 2018)

Borehole	Steady Flow (l/hr)		Carbon Dioxide (% v/v)		Methane (% v/v)	
	Min.	Max.	Min.	Max.	Min	Max.
BH01*	<0.1	5.1	0.3	4.7	<0.1	<0.1
BH02*	<0.1	<0.1	0.9	1.8	<0.1	<0.1
BH03	<0.1	2.6	2.9	4.0	<0.1	<0.1
BH04	<0.1	0.1	2.3	3.9	<0.1	<0.1
BH05	<0.1	<0.1	1.8	3.3	<0.1	<0.1
BH06	<0.1	-0.3	<0.1	13.1	<0.1	<0.1

* Located within site boundary (BH02 closest to Guard Hut).

Using the 2no. boreholes located within the current site boundary (BH01 and BH02), a worse-case GSV of 0.24 litres/hour is achieved which, whilst lower than that for the wider site, still falls within CS2 category. If the data closest to the Guard Hut location only is taken (BH02), a GSV of 0.0018 l/hr is achieved which falls into a CS1 ('very low' gas risk) where no protection measures are required. However, in line with industry guidance and best practice, the worse case scenario is used to identify the scope of gas mitigation measures required and therefore, the Guard Hut is considered herein as falling within CS2.

5.0 Gas Mitigation Approach

In accordance with British Standard 8485:2015+A1:2019 Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings ('BS8485') and CIRIA Report C735, the Guard Hut would be considered a 'Type C' (in contrast to the larger warehouse building in the development which is 'Type D'). Based on the guidance, the design criteria for this building for a CS2 requires 2.5 points to mitigate against gas risk. However, it is noted that the planning condition requires a score of 1.5 points to be achieved, acknowledging the modular style unit rather than a founded building. The minimum gas protection score needs to be achieved by two or more of the following three types of protection measures:

- Floor slab as a structural barrier
- Ventilation measures
- Gas resistant membrane

The primary mitigation measure is the positioning of the Guard Hut on the pre-existing jointed concrete ground bearing slab, nominally mesh reinforced. This provides a points score of 0.5.

The secondary mitigation measure is the construction of a passively ventilated clear void space beneath the Guard Hut. According to the guidance, this is considered ‘*very effective*’ at dispersing gas. A point score of 2.5 can be achieved if the minimum area of side ventilation is 1,500mm² per metre run of wall on at least two opposite sides and the depth of the clear void space is a minimum of 100mm.

By incorporating both these aspects into the Guard Hut design, a score of 3 points can be achieved, considerably more than the minimum required by either Planning Condition 4 or BS8485.

A drawing (Ref 242125-ECE-ZZ-ZZ-SK-S-0002, by EirEng) included in Appendix B demonstrates the proposed layout of the concrete plinths (pad foundations) and slab beneath the Guard Hut. 8no. square-shaped concrete plinths are proposed along the corners and edges of the Guard Hut, each with plan dimensions measuring 600mm by 600mm. The existing concrete ground slab is situated on a slight slope thereby requiring differing thicknesses of plinths in order to create a level surface on which to place the Guard Hut. A minimum depth of 150mm was proposed. Each pad foundation is to be anchored to the underlying concrete by means of 4no. Hilti HIT-HY 200 pins embedded 100mm into the ground slab.

6.0 Verification of Gas Mitigation Measures Implemented

Appendix C contains photographs of the construction and completion of 8no. square shaped concrete plinths on the existing concrete ground slab in accordance with the proposed design as detailed in Section 5.0. Thicknesses of each completed plinth are between 220mm and 250mm and therefore exceed the minimum 100mm depth of void space required by BS8485.

To calculate the void space, we have used the minimum concrete plinth thickness of 220mm. Therefore, along a 1m (1000mm) side of the Guard Hut, the area of void per metre run of wall is calculated to be:

$$220\text{mm} \times 1000\text{mm} = 220,000\text{mm}^2$$

For each 8.502m length of the building, this equates to a total void space of 1,870,440mm² on each opposing side of the building. If the obstruction of the (equivalent of) 3no. concrete plinths (which each measure 600mm width by 220mm height = 132,000mm²) are deducted from the total void space:

$$1,870,440\text{mm}^2 - 396,000\text{mm}^2 = 1,474,440\text{mm}^2$$

Additionally, steps to access the Guard hut (given it will be situated above surrounding ground level) also remove a void space volume of 396,000mm² and 522,500mm² (918,500mm² in total) at each of the two entrances across one side of the hut. Deducting this from the total void space provides a figure of 555,940mm² or 65,389.3mm² per metre run of wall.

Therefore, even using the most conservative scenario, the side ventilation provides a minimum of 65,389.3mm² per metre of void space on all 4no. sides of the Guard Hut, which is substantially greater than the minimum 1,500mm² required by BS8485.

7.0 Conclusion

The siting of the Guard Hut is, at worst case, considered to be CS2 or a 'low' gas risk requiring basic protection measures. For a Type C building, 2.5 points of gas protection are therefore achieved using 2 methods. The existing concrete ground slab, evidenced in the photographs in Appendix C, provides 0.5 points. The ventilation measures beneath the building (clear void space) provide a further 2.5 points. A total of 3 points is therefore achieved and considered sufficient to both accord with available guidance (CIRIA C735 and BS8485) and meet the requirements of Planning Condition 4 of Approval reference 25/00369/FUL). No other recommendations relating to ground contamination mitigation were recommended in the Tetra Tech Phase 1 Geo-environmental Assessment Report and therefore, it is requested that Condition 4 be discharged in full.

Yours sincerely,



C Cooke, BSc, MSc, CEnv

Head of Land Quality

Tetra Tech Limited

Appendix A Report Conditions

Appendix B Drawings

Appendix C Photograph Verification Records

Appendix A Report Conditions

APPENDIX A - REPORT CONDITIONS

GAS VERIFICATION REPORT

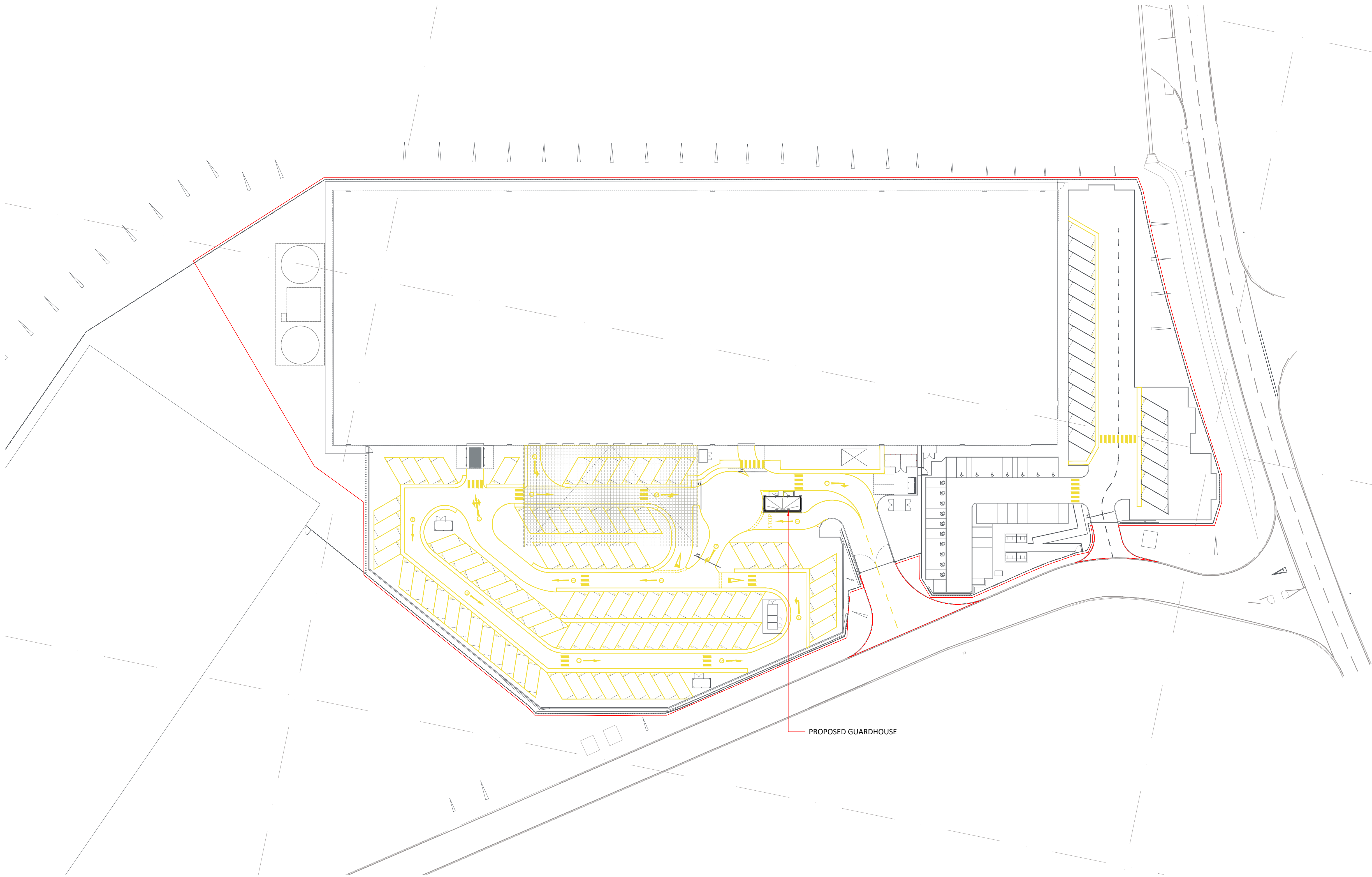
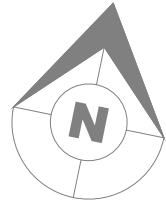
This report is produced solely for the benefit of Lysander Associates Ltd and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report is based on a study of readily accessible referenced historical records and third party reports. Some of the opinions are based on unconfirmed data and information and are presented in good faith without exhaustive clarification. Where ground conditions are discussed but no physical site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to detailed activities related to the site. Where test results undertaken by others have been made available these can only be regarded as a limited sample.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, we are unable to give categorical assurances that they will be accepted by Authorities or Funds etc. without question, as such bodies may have unpublished, often more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to Tetra Tech. In time improved practices or amended guidance may necessitate a re-assessment. The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous use and abuse of the site and adjacent sites. The report concentrates on the site as defined in the report and provides an opinion on surrounding sites.

Appendix B Drawings



PROPOSED GUARDHOUSE

PROPOSED SITE PLAN
1:500

Scale this drawing for planning purposes only.
Ashton Smith to be notified of discrepancies in figured dimensions.
Contractors must check all dimensions from site.
This drawing is copyright and is for use on this site only.
This drawing is to be used solely for information as entitled.
For other information refer to the latest revision of any cross referenced drawing.



LOCATION PLAN:

NOTES:

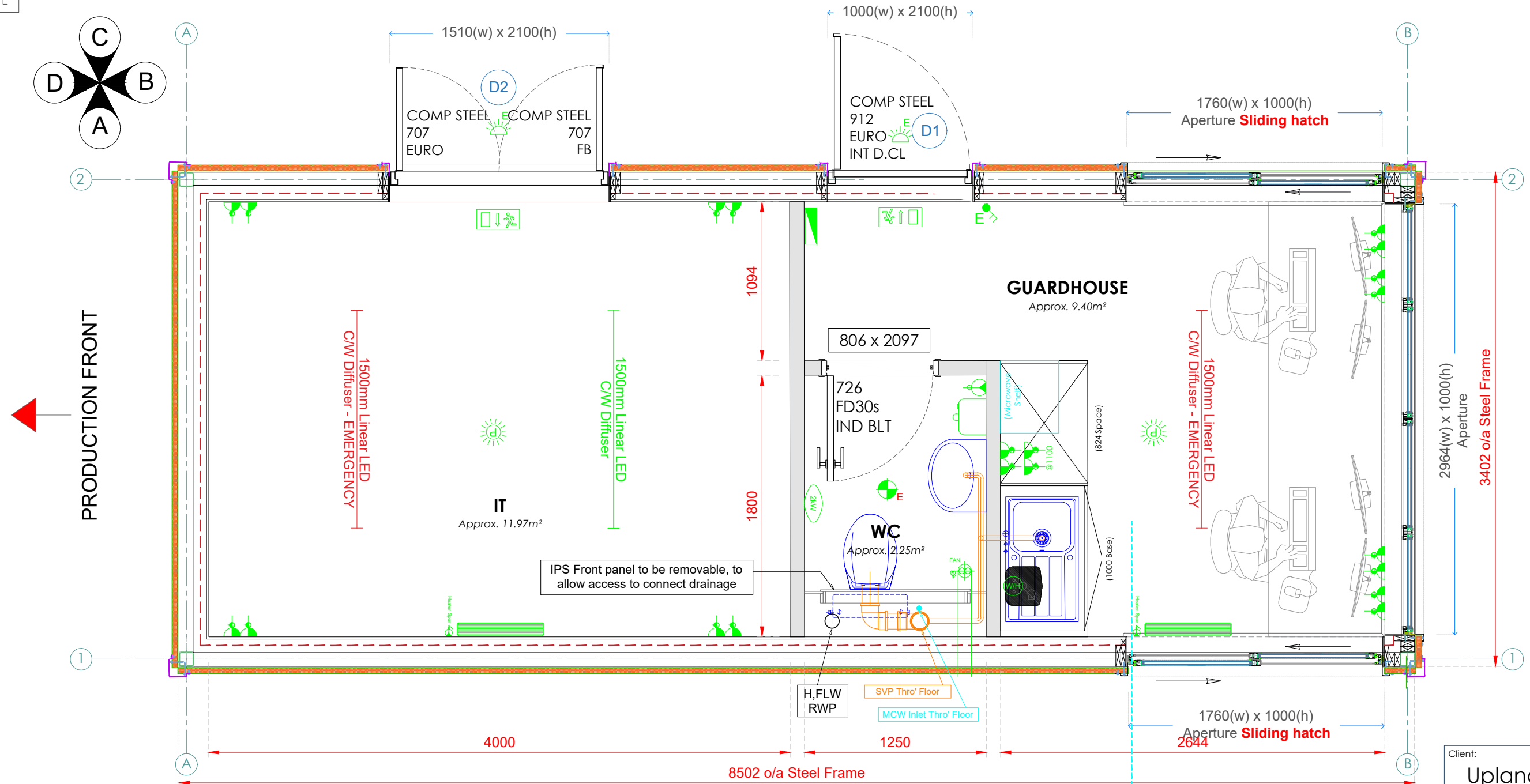
— DENOTES SITE BOUNDARY: 22708m² / 2.27 Hectare / 237645ft² / 5.45 Acres

REV	DATE	DESCRIPTION
P01	30/04/2026	INITIAL ISSUE FOR PLANNING PURPOSES

CB	KN
DRAWN BY	CHECK BY

PROJECT TITLE					
VAN STORAGE FACILITY					
JAMES KEARNS AVENUE					
ROCHDALE, OL16 4NW					
DRAWING TITLE					
PROPOSED SITE PLAN					
RIBA STAGE	STATUS			DRAWN BY	CHECKED BY
N/A	PLANNING			CB	KN
SHEET	SCALE	DATE	SUITABILITY	REVISION	
A1	1 : 500	30/04/2026	S4	P01	
DRAWING NO.					
24086 - ASA - 00 - EX.SI - D - A - NMA03 _ (S4 - P01)					

CLIENT	
LYSANDER	
AshtonSmith Beyond Design	
Ashton Smith, Belvedere House, 2 Victoria Avenue, Harrogate, North Yorkshire, HG1 3EL Tel: 01423 522882 Fax: 01423 565104 www.ashtonsmith.co.uk	



GA Floorplan
O/A Useful Floor Area 24.23m²

Electric Connections

⚠ Connection TBC - Maximum Demand TBC

Power Legend

- Consumer Unit
- Double Socket @ 500mm AFFL unless noted otherwise
- Switched Fused Spur
- Water Heater
- Hand Drier
- H/L Wall Mounted Downflow heater 2kw timed
- Ceiling Mounted Loovent Extract Fan 30 l/sec timed
- Wall Mounted Electric Heater 2kw c/w digital timer, WiFi & Bluetooth

Lighting Legend

- 1500mm H/F Single LED Light c/w Diffuser
- 1500mm H/F Single LED Light c/w Diffuser c.w Emergency
- Circular LED Bulkhead light c/w PIR & Emergency
- External Light c/w Emergency
- Emergency Key Switch
- PIR Sensor
- Illuminated Emergency Exit sign c/w 3hr Emergency back-up

Internal Finishes Schedule

Room	Floor	Internal Walls	Ceiling	Skirting
Guard House	Polyflor Polysafe - Silver Birch 4020 r12 Slip resistance	Paint Finish - Colour 9002 vinyl Silk & Hygenic cladding to 1.2m FFL	MR Paint Finish	Vinyl Skirting, self adhesive PVC 100mm RAL 7038
WC	Polyflor Polysafe - Silver Birch 4020 r12 Slip resistance	IPS Panel 7024 Graphite Grey - 200x200mm Ceramic wall tiles to 1.4m FFL RAL9010 Pure White & MR vinyl silk paint RAL 9016 Traffic White above	MR Paint Finish	Vinyl Skirting, self adhesive PVC 100mm RAL 7038
IT Room	Polyflor Polysafe - Silver Birch 4020 r12 Slip resistance	Paint Finish - Colour 9002 vinyl Silk & Hygenic cladding to 1.2m FFL	MR Paint Finish	Vinyl Skirting, self adhesive PVC 100mm RAL 7038

v4	External door handed	PP	13/03/26
v3	Fire signage corrected	PP	12/02/26
v2	Single External door handed	PP	03/02/26
Rev	Description of Rev	By	Date

Client:
Uplands Retail Limited

Project:
Guard House

Drawing Title:
GA Plan Layout

Drawn By: PP
Checked By: PP
Date: 06/11/25
Scale: 1:30

Works Order Number:

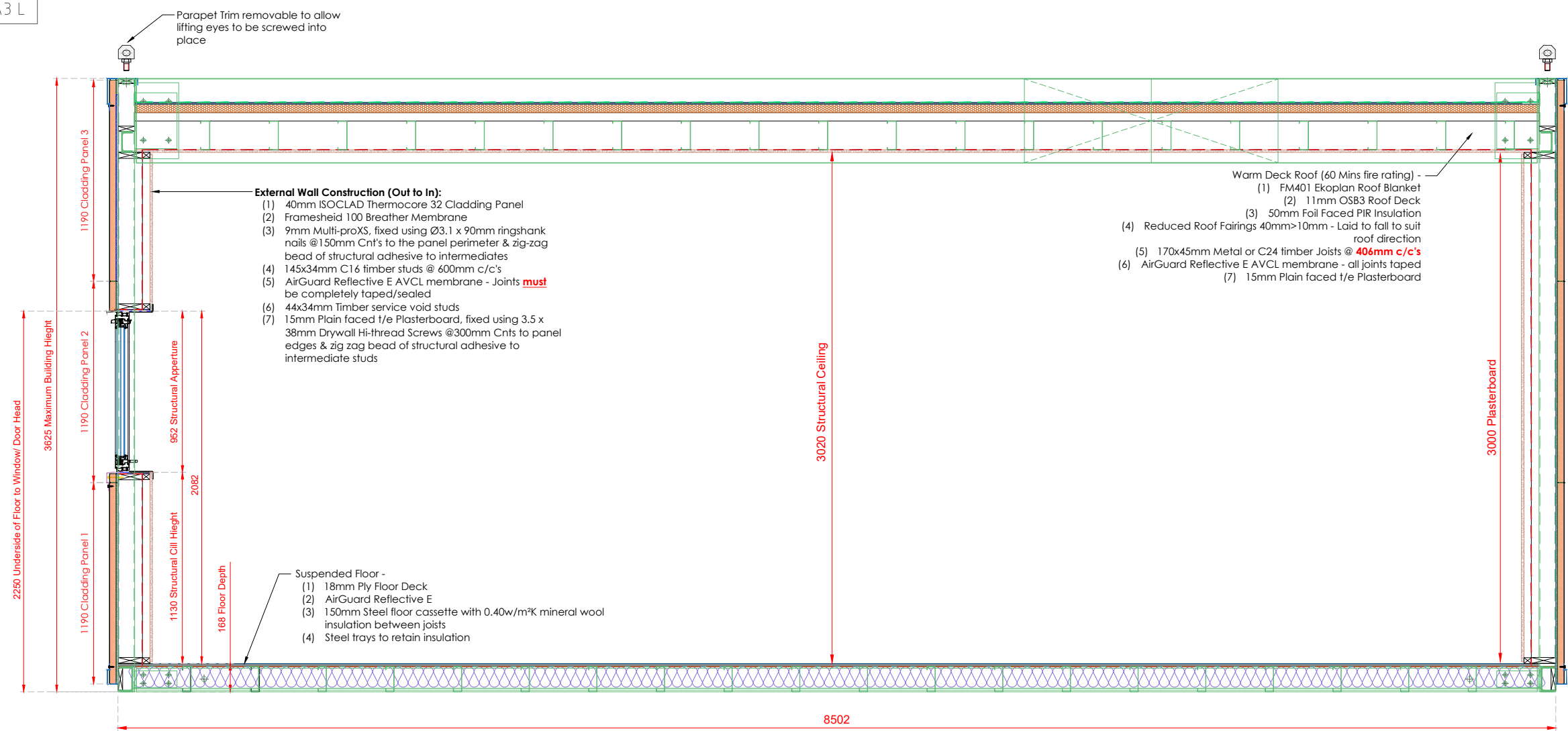
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Drawing Number:
Q024521-001

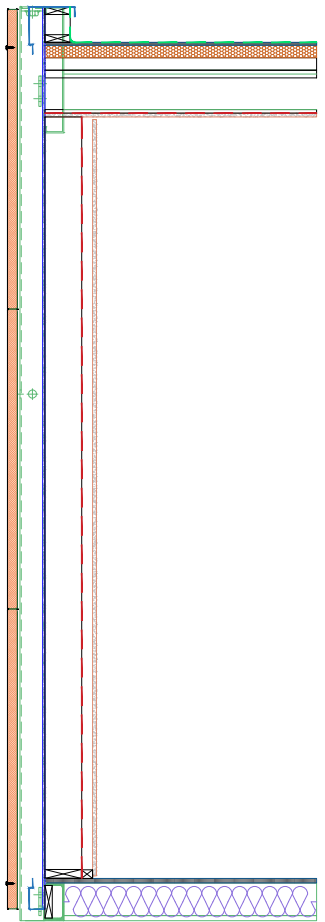
Rev:
v4

portablespace
cabin & container hire | sales | conversions | modular

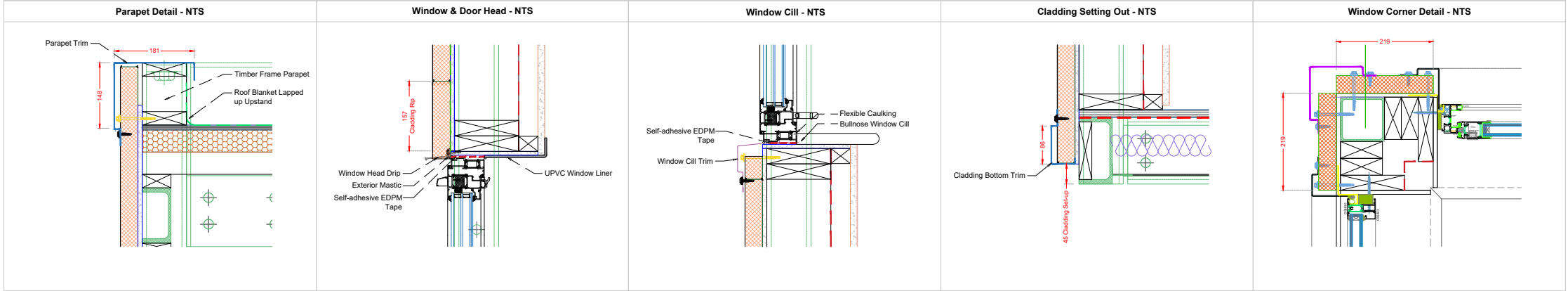
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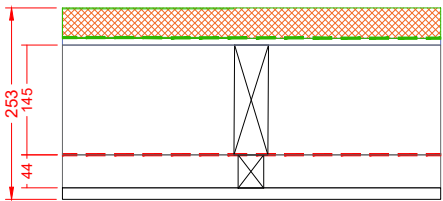
Section Through



Section Across

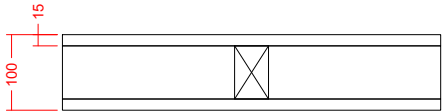


External Wall Key



- External Wall (60 Mins fire rating)-
- (1) 40mm ISOCLAD Thermocore 32 Insulated Cladding
 - (2) Framesheid 100 Breather Membrane
 - (3) 9mm Multipro-XS
 - (4) 145x34mm C16 Studs @ 400mm c/c's
 - (5) 44x34mm Service Void
 - (6) AirGuard Reflective E AVCL membrane - all joints taped
 - (7) 15mm Plain faced t/e Plasterboard

Insulated Internal Wall Key



- Internal Wall (30 Mins fire rating / 38db Acoustic Reduction) -
- (1) 70x35mm Timber studs
 - (2) 15mm Plain faced t/e Plasterboard

v2	Ground interface reverted to original detail	PP	13/03/26
v1	Ground interface detail amended	PP	12/02/26
Rev	Description of Rev	By	Date

Client:

Uplands Retail Limited

Project:

Guard House

Drawing Title:

Building Section

Drawn By:

PP

Checked By:

PP

Date:

06/11/25

Scale:

NTS

Works Order Number:

Sheet Size:

A3

Drawing Number:

Q024521-002

Rev:

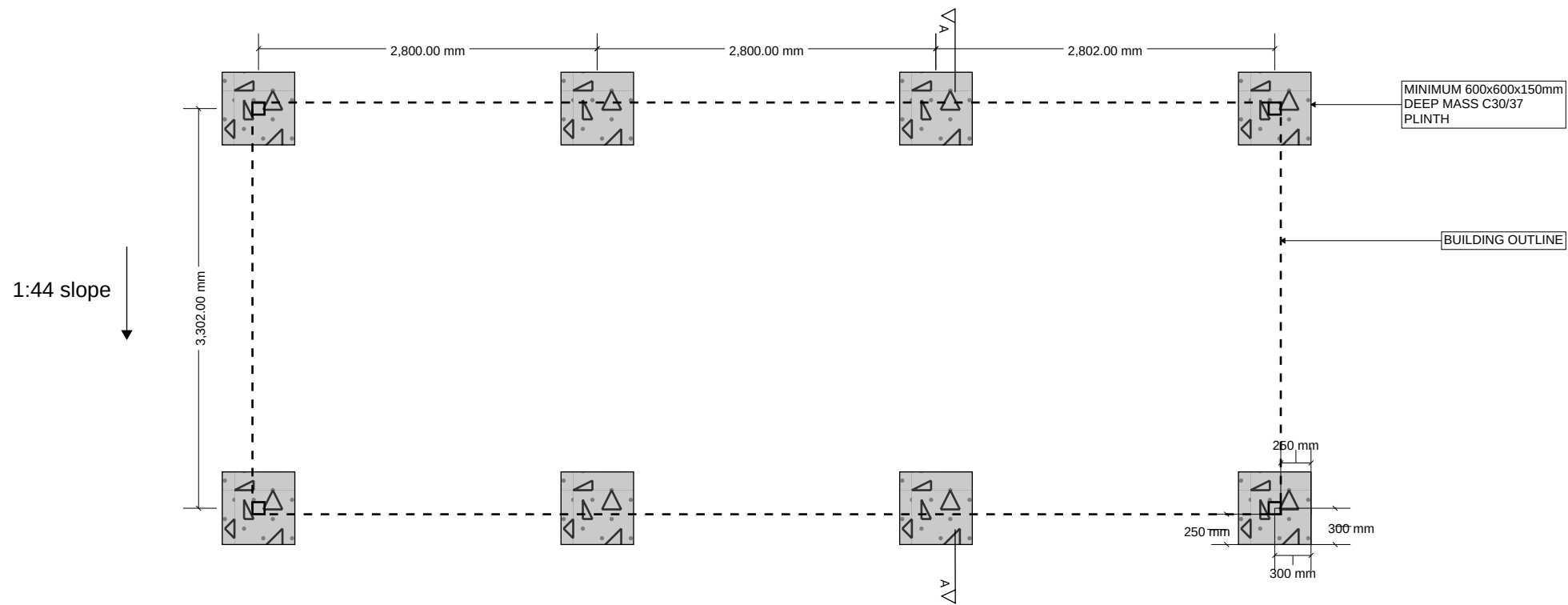
v2

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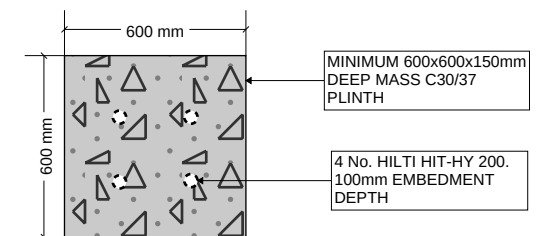
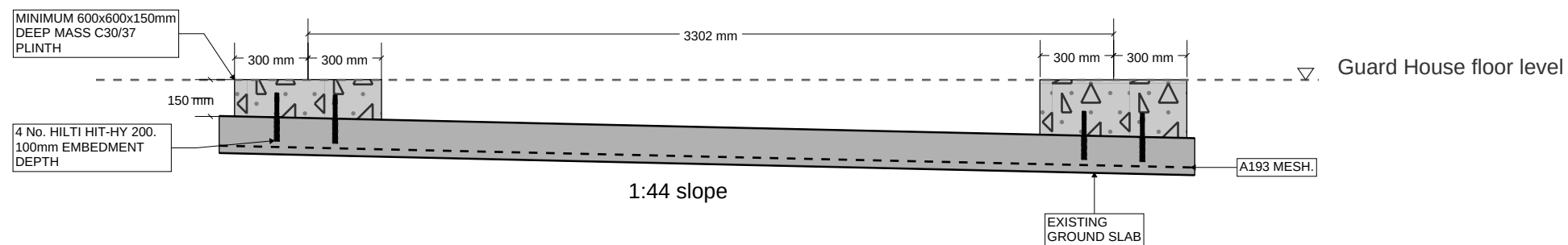
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PAD FOUNDATIONS TO HAVE A MINIMUM DEPTH OF 150mm. PAD DEPTHS SHALL INCREASE AS REQUIRED DOWN THE SLOPE SO THAT ALL PLINTH TOP LEVELS ARE MAINTAINED TO SUIT THE GUARD HOUSE FLOOR LEVEL.

GUARD HUT FOUNDATION LAYOUT
SCALE 1:50



SECTION A-A: GUARD HUT FOUNDATION
SCALE 1:25

GUARD HUT FOUNDATION DETAIL
SCALE 1:25

Appendix C Verification Photographs



Photograph No.1: Setting out of the 8no. pad foundation locations on existing concrete slab



Photograph No.2: Setting out of the 8no. pad foundation locations on existing concrete slab

2nd Floor,
11 York Street,
Manchester
M2 2AW
Environmental Consultancy
Ground Technologies & Investigation



Project: Guard Hut Gas Verification
Kingsway Business Park, Rochdale

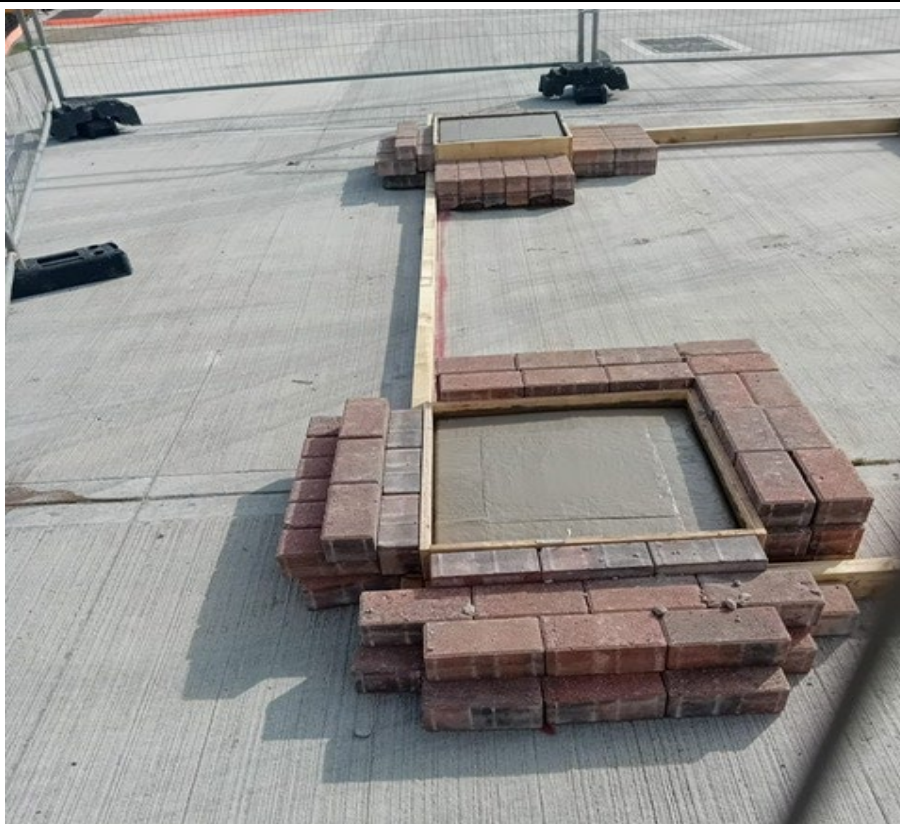
Client: Lysander Associates

784-B070935

Date: 24th March 2026



Photograph No.3: Demonstrable thicknesses of concrete pads (c. 2no. brick depths in foreground, 3no. bricks in background) and ground anchors installed.



Photograph No.4: Concrete poured in place.

2nd Floor,
11 York Street,
Manchester
M2 2AW



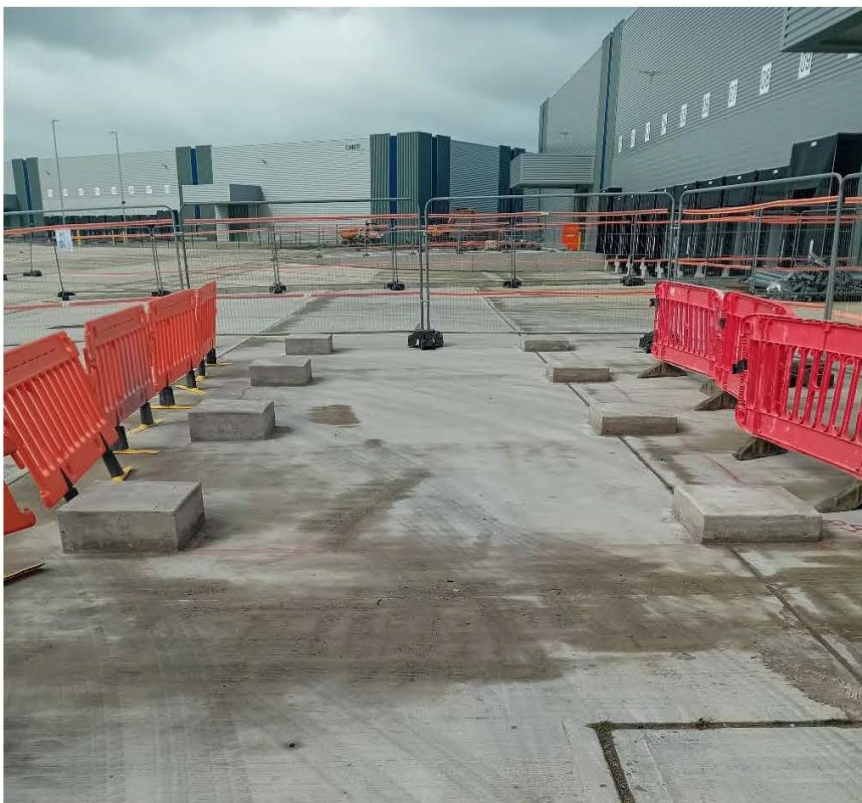
Environmental Consultancy
Ground Technologies & Investigation

Project: Guard Hut Gas Verification
Kingsway Business Park, Rochdale

Client: Lysander Associates

784-B070935

Date: 24th March 2026



Photograph No.5: Construction of 8no. concrete plinths on existing concrete slab



Photograph No.6: Concrete plinth of depth 250mm

2nd Floor,
11 York Street,
Manchester
M2 2AW



Environmental Consultancy
Ground Technologies & Investigation

Project: Guard Hut Gas Verification
Kingsway Business Park, Rochdale

Client: Lysander Associates

784-B070935

Date: 30th March 2026



Photograph No.7: Concrete plinth of depth 225mm



Photograph No.8: Concrete plinth of depth 230mm

2nd Floor,
11 York Street,
Manchester
M2 2AW

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Ground Technologies &
Investigation



Project: Guard Hut Gas Verification
Kingsway Business Park, Rochdale

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784-B070935

Date: 30th March 2026



Photograph No.9: Concrete plinth of depth 220mm



Photograph No.10: Completed concrete pad foundation (plan view)

2nd Floor,
11 York Street,
Manchester
M2 2AW

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Ground Technologies &
Investigation



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