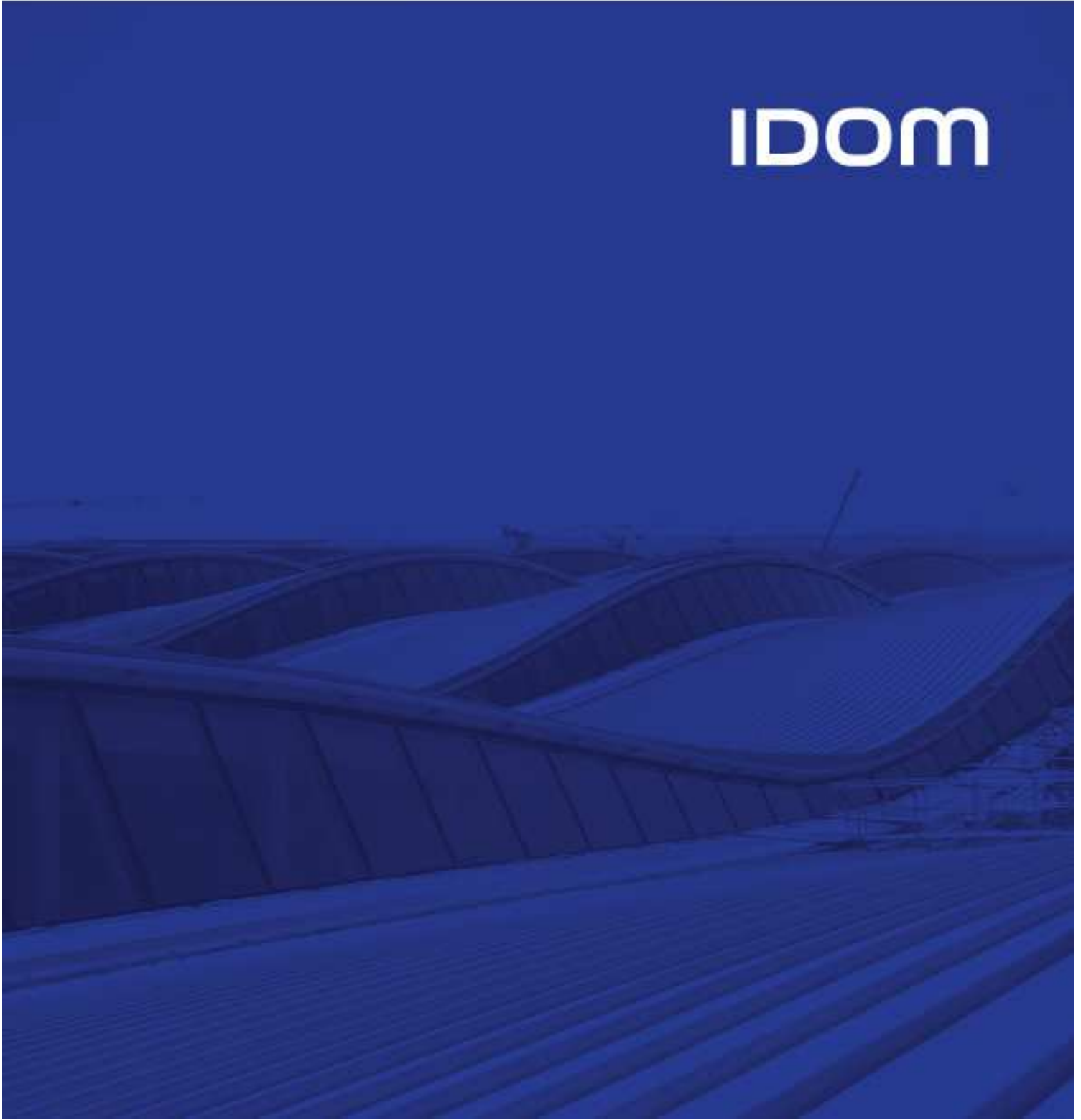


**REMEDIATION METHOD STATEMENT
LAND TO THE WEST OF RODNEY STREET
ANCOATS, MANCHESTER
WATES CONSTRUCTION LTD
RMS-22434-22-193 REV A
22 FEBRUARY 2023**

IDOM



REMEDICATION METHOD STATEMENT
LAND TO THE WEST OF RODNEY
STREET
ANCOATS, MANCHESTER
WATES CONSTRUCTION LTD
RMS-22434-22-193

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Report issued from

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SECTION 1 INTRODUCTION

- 1.1 Wates Construction Ltd (Wates) proposes to develop an area of land located to the west of Rodney Street, Ancoats for a residential land use. The proposed development includes the erection of two residential apartment buildings, one of 8 storeys (68 apartments) and one of 5 storeys (50 apartments), to form a total of 118 residential apartments; and erection of ten 3-storey townhouses; together with car and cycle parking provision, hard and soft landscaping including public realm, access, substation and other associated works.
- 1.2 IDOM Merebrook Limited (IDOM) has been commissioned by Wates to provide a Remedial Method Statement (RMS) based on the findings of the Phase 2 Site Investigation (EPS 2021) and supplementary Contaminated Land Assessment (IDOM 2022).
- 1.3 The objectives of this report are to:
- i. Summarise the contamination present at the site and the associated risks;*
 - ii. Present a remediation strategy to be approved by the environmental regulators;*
 - iii. Confirm the validation procedures and techniques required to ensure that the remediation is effective;*
 - iv. Confirm the required acceptance criteria for site-derived soils and imported soils;*
 - v. Identify soil resources and suitable future uses within the proposed development;*
 - vi. Confirm soil waste identification and disposal protocols;*
 - vii. Summarise the environmental controls to be implemented during the construction work in order to manage contamination issues.*
- 1.4 Desk based and intrusive geo-environmental investigations have been undertaken in relation to the subject site to establish ground conditions. The reports listed below have been referred to during the production of this remedial strategy, and should be read in conjunction with it:
- i. Curtins; Rodney Street, Ancoats – Phase 1 Preliminary Risk Assessment (ref: St Ann’s Hospital, London – Due Diligence Report: Ground Conditions (ref: 079056-CUR-00-XX-DR-GE-001) dated July 2021;*
 - ii. EPS; Land off Rodney Street – Phase 2 Geo-Environmental Assessment (ref: UK21.5551), dated December 2021.*

iii. IDOM Merebrook Ltd, Contaminated Land Assessment. Ref: GEA-22434-22-182, Dated July 2022.

- 1.5 This document sets out the principles and the measures which will be required to remediate the site to provide a platform on which construction of the proposed development can commence. The actions described should be executed as part of a groundworks contract led by the developer. The contractor's performance with regard to geo-environmental matters should be monitored throughout the works by a suitably qualified Environmental Consultant.
- 1.6 This report has been prepared for Wates for the sole purpose outlined above and no extended duty of care to any third party is implied or offered. Third parties making reference to this report should consult Wates and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 SITE INFORMATION

2.1 OVERVIEW

- 2.1.1 The site lies to the east of Ancoats, Manchester, approximately 1.30 km east of Manchester Victoria train station.
- 2.1.2 The site is located at National Grid Reference 385304, 398959 and indicated on drawing 22434-001-001, presented in Appendix 1 of this report.
- 2.1.3 The site is a vacant parcel of land predominantly covered with soft landscaping. There are localised areas of hard standing which include asphalt, concrete and flagstone sections.
- 2.1.4 The proposed development comprises construction of two 5-8 storey residential blocks, 10 no. 3-storey townhouses together with associated parking provisions and soft landscaping.
- 2.1.5 Earliest historical map records dating to the 1820s show the site to have been previously developed into a series of terraced housing with associated yards and outhouses. The site was later re-developed with the demolition of the initial dwellings and construction of an unnamed works in 1963. By 1969 a residential building had been constructed in the south side of the site and new terraced housing had been built in the north. By 2006 all buildings on the site are shown to have been demolished and at present, the site remains undeveloped.
- 2.1.6 Intrusive investigations encountered Made Ground/topsoil up to 2.6 m bgl. Underlying the Made Ground the natural stratigraphic sequence included several metres of superficial Devensian age glacial Till deposits with bedrock of the Collyhurst Sandstone at depth.
- 2.1.7 The Made Ground was noted to contain clinker and brick and is subject to widespread contamination relative to human health screening criteria, including:

lead, arsenic, pH, PAH compounds and asbestos (fibres and fragments). PAH contamination was also encountered in samples of topsoil and a sample of natural clay was impacted by heavy metals (lead and arsenic).

2.1.8 The superficial Devensian Till deposits are classified as a Secondary Aquifer, whilst the underlying Collyhurst Sandstone is classified as a Principal Aquifer. The site is not located within a groundwater Source Protection Zone (SPZ).

2.1.9 The previous EPS investigation identified perched groundwater at depths between 0.199 - 9.031 m depth, whilst the natural groundwater table was indicated to lie around 15-20 m depth.

2.1.10 The nearest surface water feature is the Rochdale Canal, located approximately 110 m to the southeast of site.

2.2 SOIL CHEMICAL ANALYSIS

2.2.1 Soil chemical analysis results from both EPS and IDOM were assessed against *Suitable for Use Levels* (S4ULs) published in 2015 by LQM/CIEH¹, and Category 4 screening levels² with respect to a residential end use.

2.2.2 The assessments identified sporadic exceedances of arsenic, lead, a number of the USEPA 16 priority polyaromatic hydrocarbons (PAHs) within the soils, as well as one occurrence of elevated hexavalent chromium and alkaline pH locally.

2.2.3 Asbestos was also identified by screening in six shallow soil samples collected from across the site, with further bulk samples of visible asbestos also identified.

2.3 HAZARDOUS GAS

2.3.1 A hazardous gas risk assessment was completed by EPS in report reference EPS; Land off Rodney Street – Phase 2 Geo-Environmental Assessment (ref: UK21.5551), dated December 2021.

2.3.2 The assessment considered the results of the six rounds of gas monitoring across multiple barometric pressures and states, together with onsite observations and the soil chemistry. The measured gas concentrations showed sustained gas flows within several boreholes, with the highest being 1.0l/hr in WS04. Carbon dioxide was detected in each borehole on multiple occasions, up to a maximum 11.8% in BH02. Organic vapours were identified at very low levels (<0.5ppm).

¹ Nathanail, C. P., McCaffrey, C., Gillett, A. G., Ogden, R. C. and Nathanail, J. F. 2015. *The LQM/CIEH S4ULs for Human Health Risk Assessment*. Land Quality Press, Nottingham. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3100. All rights reserved. Including August 2015 nickel update.

² SP1010 *Development of Category 4 Screening Levels Main Report* (Dec 2013) and SP1010 *Policy Companion Document* (Mar 2014).¹

2.3.3 The gassing regime was concluded to fall into a Characteristic Situation 2 (CS2) 'low risk' scenario, whereby basic ground gas protection measures are considered necessary within the proposed buildings.

2.3.4 The site was not shown to be in a radon affected area.

2.4 SUMMARY OF IDENTIFIED POLLUTANT LINKAGES

2.4.1 Following completion of the supplementary Phase 2 investigation potentially significant risks were identified to human health via exposure to made ground contamination, asbestos containing materials and ground gases. A risk from permeation and degradation of potable water pipes from organic contaminants was also considered possible. The conceptual model is presented in Table 1 below.

Table 1: Revised Conceptual Model

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	PATHWAYS	RECEPTORS	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (current users)	Low risk identified Made ground is impacted by several forms of contamination. However, the site is disused.
	Ingestion and inhalation of contaminated soil and dust	Human health (current users)	
Heavy metals and hydrocarbons (made ground)	Contact with contaminated soil	Human health (future residents, construction workers and members of the public)	Moderate risk identified Contamination of made ground soils metals, PAH and asbestos. Mitigation measures will be required in the limited areas of soft landscaping. Outside of these areas buildings and hardstanding will sever potential pathways.
	Ingestion and inhalation of contaminated soil and dust	Human health (future residents, construction workers and members of the public)	
Asbestos (made ground and structures)	Ingestion and inhalation of contaminated soil and dust	Human health (future residents, construction workers and members of the public)	Moderate risk identified A significant number of asbestos detections (fibres and fragments) were reported across the site.
Contamination (all forms)	Vertical migration to aquifer	Controlled waters	Low risk identified Limited shallow groundwater has been encountered and a significant thickness of cohesive clay acts as an aquitard to the aquifer at depth.
Contamination (all forms)	Horizontal migration to surface water	Controlled waters	No risk identified Considering the distance to the nearest sensitive water receptor and lack of abstraction points, this pathway is considered unlikely.
Hydrocarbons	Direct contact	Plastic water pipes	Moderate risk identified PAH contamination presents a risk to permeable services.
Hazardous Gas/Vapours In soil	Ingress into buildings and voids	Human health (future residents, construction workers and members of the public)	Low-moderate risk identified Based on the available data supplied in the EPS report, the ground gas regime is considered to be Characteristic Situation 2 (CS2) (low risk).

POSSIBLE POLLUTANT LINKAGE			RISK CHARACTERISATION
POTENTIAL SOURCES	PATHWAYS	RECEPTORS	
Adjacent Land	Horizontal migration of groundwater/gas.	Neighbouring properties	Low risk identified The available data indicates a low risk.

SECTION 3 REMEDIAL ACTION PLAN

3.1 OVERVIEW

3.1.1 The identified risks at the site can be mitigated by removal of either the source, pathway or receptor. With reference to the conceptual model for the site a remediation strategy, based on source or pathway removal, has been designed.

3.1.2 The remedial measures for this site can be summarised by the below:

- i. Watching brief by suitably trained personnel to aid in identification and management of asbestos containing material and unknown contamination;
- ii. The removal and appropriate disposal of any identifiable asbestos containing materials;
- iii. A clean cover system comprising of hardstanding, or a validated clean cover layer over a suitable geo-membrane;
- iv. Incorporation of passive measures to prevent ingress of ground gases;
- v. The appropriate assessment and management of any unexpected contamination; and
- vi. Minimising dust and other emissions from site during the development phase.

3.2 HUMAN HEALTH

3.2.1 Asbestos

3.2.2 A part-time watching brief will be maintained by IDOM during the earthworks phase to aid in the identification of Asbestos Containing Materials (ACM). Any identified ACM will require removal by appropriately trained personnel.

3.2.3 Strict dust control measures will be employed to ensure the risk of airborne fibres is kept to a minimum.

3.2.4 All works will be carried out in strict accordance with an Asbestos Management Plan (AMP) to be issued under a separate title.

3.2.5 Regular visits to inspect for adherence to the AMP, evidence of which will be issued within a validation report following completion of works on the site.

3.2.6 Clean Cover

3.2.7 Any areas not covered with hardstanding will be required to have a clean/ validated subsoil and topsoil layer. The cover system shall comprise:

- i.* 300 mm thickness of clean validated material in communal open space areas (or 600 mm thickness in private garden areas), including a minimum of 150 mm topsoil; over,
- ii.* A geotextile membrane marker layer segregating the clean validated material from the made ground beneath. The specification for the geotextile membrane must be approved by the relevant authorities prior to use to ensure suitability for this project. Parallel layers of the membrane should be suitably secured together, or overlapped by a minimum of 0.20 m.
- iii.* In areas within the vicinity of pre-existing trees, a minimum of 150mm of clean cover is required to minimise root distress and disturbance to growth.

Table 2: Summary of clean cover depth requirements

DESCRIPTION OF CLEAN COVER AREA	CLEAN COVER DEPTH REQUIREMENTS
Private back gardens	600 mm
Private front gardens	600 mm
Public open space	300 mm
Tree growth areas	150 mm

3.2.8 Suitable topsoil is unlikely to arise from engineering/ reprofiling works on the site. Where suitable cover soil is not available, imported material complying with the criteria below will be required.

3.2.9 A final landscape design has been provided and is appended to this report. The designs include the planting of a number of trees that will require a greater thickness of soil for healthy plant growth. Tree pits will excavated to the required depth as specified by the landscape architect, lined with a geo-membrane to the same specification stated in 3.2.7 and filled with suitable clean cover materials.

3.2.10 Validation of the clean cover depth once placed will be undertaken by IDOM, with samples submitted for chemical analysis at rates in accordance with Manchester City Council Guidance. Table 3.

Table 3: MCC Guidance chemical analysis frequency.

End-use	Greenfield	Remediated	Brownfield	Unknown Soil Source
Residential Gardens	1/200m3	1/100m3	1/50m3	1/50m3
Soft Landscaping	1/200m3	1/150m3	1/50m3	1/50m3
Other	1/200m3	1/200m3	1/200m3	1/200m3

- 3.2.11 Topsoil and subsoil used for the formation of soft landscaped areas shall meet the criteria set out in Table 4 below. The criteria below are derived from *Suitable for Use Levels* (S4ULs) published in 2015 by LQM/CIEH. For the purposes of selecting imported growing media, S4ULs derived for the most sensitive residential end use are considered appropriate and will be protective of future maintenance workers.

Table 4: Criteria for imported Topsoil and Subsoil materials.

CONTAMINANT	UNITS	SCREENING LEVEL (SL)
HUMAN HEALTH RISK ASSESSMENT		
Asbestos in soil	-	absent
pH	-	5 – 9
Staining and odours		absent
Arsenic	mg.kg ⁻¹	37
Cadmium	mg.kg ⁻¹	11
Chromium (total)	mg.kg ⁻¹	910
Hexavalent Chromium	mg.kg ⁻¹	6
Lead	mg.kg ⁻¹	200
Mercury	mg.kg ⁻¹	40
Nickel	mg.kg ⁻¹	130
Selenium	mg.kg ⁻¹	250
TPH Aliphatic >EC ₅ - EC ₆	mg.kg ⁻¹	42
TPH Aliphatic >EC ₆ - EC ₈	mg.kg ⁻¹	100
TPH Aliphatic >EC ₈ - EC ₁₀	mg.kg ⁻¹	27
TPH Aliphatic >EC ₁₀ - EC ₁₂	mg.kg ⁻¹	130
TPH Aliphatic >EC ₁₂ - EC ₁₆	mg.kg ⁻¹	1100
TPH Aliphatic >EC ₁₆ - EC ₂₁	mg.kg ⁻¹	65000
TPH Aliphatic >EC ₂₁ - EC ₃₅	mg.kg ⁻¹	65000
TPH Aromatic >EC ₅ - EC ₇	mg.kg ⁻¹	70
TPH Aromatic >EC ₇ - EC ₈	mg.kg ⁻¹	130
TPH Aromatic >EC ₈ - EC ₁₀	mg.kg ⁻¹	34

CONTAMINANT	UNITS	SCREENING LEVEL (SL)
TPH Aromatic >EC ₁₀ - EC ₁₂	mg.kg ⁻¹	74
TPH Aromatic >EC ₁₂ - EC ₁₆	mg.kg ⁻¹	140
TPH Aromatic >EC ₁₆ - EC ₂₁	mg.kg ⁻¹	260
TPH Aromatic >EC ₂₁ - EC ₃₅	mg.kg ⁻¹	1100
Benzene	mg.kg ⁻¹	0.087
Toluene	mg.kg ⁻¹	130
Ethylbenzene	mg.kg ⁻¹	47
Xylene	mg.kg ⁻¹	56
Acenaphthene	mg.kg ⁻¹	210
Acenaphthylene	mg.kg ⁻¹	170
Anthracene	mg.kg ⁻¹	2400
Benz(a)anthracene	mg.kg ⁻¹	7.2
Benzo(a)pyrene	mg.kg ⁻¹	2.2
Benzo(b)fluoranthene	mg.kg ⁻¹	2.6
Benzo(ghi)perylene	mg.kg ⁻¹	77
Benzo(k)fluoranthene	mg.kg ⁻¹	320
Chrysene	mg.kg ⁻¹	15
Dibenz(ah)anthracene	mg.kg ⁻¹	0.24
Fluoranthene	mg.kg ⁻¹	280
Fluorene	mg.kg ⁻¹	170
Indeno(123-cd)pyrene	mg.kg ⁻¹	27
Naphthalene	mg.kg ⁻¹	2.3
Phenanthrene	mg.kg ⁻¹	95
Pyrene	mg.kg ⁻¹	620
Phenol	mg.kg ⁻¹	120

3.2.12 In addition to the above chemical criteria, it shall be ensured that the imported / re-used soils are free from any staining, odours or deleterious materials.

3.2.13 The validation report will provide details of the chemical quality and depth of material placed in soft landscaping areas. The validation report will be provided to the local environmental health officer upon completion of the works.

3.3 CONTROLLED WATERS

3.3.1 No specific action is proposed for the protection of controlled waters but if piling is proposed it is recommended that a piling works risk assessment is prepared.

3.4 UNEXPECTED CONTAMINATION

3.4.1 If unexpected contamination such as: fuels, oils, discoloration, putrescible wastes, drums/containers are encountered works will cease in the affected area immediately and the site manager will contact IDOM for advice. Following an appropriate

assessment, IDOM will advise on the best course of action to proceed and contact the necessary authorities if appropriate.

3.5 SERVICES

3.5.1 It is recommended that the utility provider is consulted with respect to their requirements for water supply pipes. Targeted testing at pipe depths along proposed pipeline routes may be needed.

3.5.2 Service corridors should be backfilled with material that will not create any unacceptable risk to personnel who may need to access them in the future, if certified clean imported material is not to be used further testing may be required. Backfill material should conform to specifications specified by the utility company or client.

3.6 WASTE

3.6.1 Materials, including waste soils which are not to be retained on site, should be removed and disposed of in accordance with all relevant statutes including the *Environmental Protection Act 1990* as amended, *The Controlled Waste Regulations 2012* as amended, *The Waste Regulations 2011* as amended, *The Hazardous Waste Regulations 2005* as amended, *The Waste Management Regulations 2006*, *The Environmental Permitting Regulations 2010* as amended and *The Hazardous Waste (Miscellaneous Amendments) Regulations 2015*.

3.6.2 Basic waste classification shall be required for material requiring disposal.

3.6.3 Further testing may be required prior to any offsite disposal of any material should it be required. Acceptance of any material will ultimately be at the discretion of the waste facility.

3.7 RE-USE OF MADE GROUND

3.7.1 As a sustainable alternative to off-site disposal, it may be possible to re-use site-won soils provided the following criteria are met:

- i.* Use of the material will not create an unacceptable risk of pollution to the environment or harm to human health;
- ii.* The material must be chemically and geotechnically suitable without further treatment;
- iii.* There must be certainty of use within the scheme;
- iv.* Material should only be used in the quantity necessary for that use.

3.7.2 A Materials Management Plan (MMP) shall be prepared under the CL:AIRE 'Code of Practice on the Definition of Waste' for the re-use of site-won materials. The MMP shall be signed off by a qualified person (QP) and submitted for approval prior to commencement of groundworks.

3.8 GROUND GAS AND VAPOURS

3.8.1 A ground gas assessment has been completed by EPS in report ref EPS; Land off Rodney Street – Phase 2 Geo-Environmental Assessment (ref: UK21.5551), dated December 2021.

3.8.2 Based on the existing ground gas monitoring information provided, the site has been classified as a Characteristic Situation 2 (CS-2) based on a Gas Screening Value calculated for carbon dioxide of 0.118 litres/hour. The EPS ground gas assessment recommends that protection measures be incorporated into new structures. Remedial measures are set out below in 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*.

3.8.3 Two residential building types are indicated from the development details provided: medium-rise apartment blocks and low-rise town houses. In accordance with Tables 3 and 4 of the Code of Practice, the building types are considered to conform to a Type A development for which a gas protection score of 3.5 is required to meet a CS-2 gas regime.

3.8.4 In the Townhouse the following elements will be incorporated

i. A high permeability subfloor layer to ventilate, dilute and disperse ground gas (1.5 points)

ii. A gas resistant membrane (2 points)

3.8.5 In the Residential Blocks the following elements will be incorporated

i. Structural barrier (i.e. floor slabs, basement floors and walls) (1.5 points)

ii. A gas resistant membrane (2 points)

iii. Pressure relief pathway (0.5 points).

3.8.6 Indicative details of the floor (not for construction) are provided in Appendix 2.

3.8.7 The membrane shall be contiguous with the damp proof course and shall span the wall cavity, internal walls and shall be positioned to avoid damage during the installation and fixing of door thresholds. The membrane element should be certified as gas resistant with a methane permeability of <40 ml/m²/atm/day with BBA certification and be robust enough to minimise risk of post-installation damage. Installation should be carried out by a suitably qualified installer and with welding of dpm seams recommended.

3.8.8 Independent verification of the installation shall be undertaken in accordance with CIRIA C735 'Good practice on the testing and verification of protection systems for buildings against hazardous ground gases'. As a minimum visual and fingertip inspection of the membrane element shall be conducted on the first five house plots

and first half of the apartment block floor area with air lancing conducted on seams, services penetrations and corner detailing strips. The inspection frequency thereafter shall be to the minimum recommended by C735.

SECTION 4 ENVIRONMENTAL CONTROL

4.1 GENERAL

- 4.1.2 The developer shall have in place a Construction Plan which details the measures to minimise dust and other emissions.
- 4.1.3 Working hours shall be restricted to those imposed by the local Planning Department to minimise the nuisance to nearby residents.
- 4.1.4 Every precaution shall be taken to avoid interference with, or damage to public utilities, buildings and other services, in or near the site and prevent the interruption or pollution of any adjoining watercourses, drains and ditches.
- 4.1.1 All Contractors shall be instructed to comply with all relevant Planning Conditions with respect to the execution of the works.

4.2 ASBESTOS

- 4.2.1 All personnel shall be made aware of the asbestos contamination identified on site. All works shall be undertaken in strict accordance with an asbestos management plan.

4.3 NUISANCE FROM NOISE

- 4.3.1 Every precaution deemed sensible and practical shall be undertaken to prevent nuisance to neighbouring properties due to noise. Such precautions shall include the fitting of efficient silencers (suitable for residential areas) to the exhausts of all engines and mechanical plant employed on the site.

4.4 NUISANCE FROM DUST

- 4.4.1 A potential for nuisance dust-generation affecting adjacent off-site properties is also recognised, irrespective of contaminant levels. It is recommended that dust suppression measures are employed whilst groundworks and any other potential dust-generating activities are ongoing.
- 4.4.2 With the presence of asbestos on site, it is recommended that slab surfaces are cleared and soil is kept sufficiently dampened (approximately 10 % moisture content) to ensure the risk of asbestos fibre release is kept to a minimum.
- 4.4.3 A Competent Person (the Site Manager) shall be nominated on site to ensure dust is monitored and/or suppressed by damping down, and to ensure any complaints of nuisance made are logged and measures reviewed accordingly.

- 4.4.4 Three static dust deposition gauges shall be deployed around the site perimeter for the duration of the groundworks phase. These shall be sampled every three-four weeks to compare dust deposition rates with guidelines values for nuisance dust.

4.5 **STOCKPILED MATERIALS**

- 4.5.1 Excavated soils destined either for off-site disposal or re-use shall be stockpiled separately, labelled and fenced.

- 4.5.2 Stockpiles shall be formed to prevent dust generation and to shed water. They shall not be placed near drains or watercourses.

4.6 **BURNING**

- 4.6.1 The disposal of any materials on site by burning shall not be permitted.

4.7 **WHEEL CLEANSING / PUBLIC HIGHWAYS**

- 4.7.1 A wheel cleansing facility shall be provided at the site entrance for the duration of the works. A Competent Person (the Site Manager) shall be nominated on site to ensure all vehicles entering the public highway from the site have been inspected and all mud and debris removed from the undercarriage and wheels prior to leaving the site. A road sweeper shall be made available and deployed to clear dust, mud and debris from the public highway when necessary.

- 4.7.2 All vehicles carrying materials from site shall be fully sheeted before leaving the site and loaded in such a way that no loose material can fall onto any highway.

- 4.7.3 Public highways shall not be used for the storage of materials or plant.

SECTION 5 GENERAL SITE PRACTICES

- 5.1 Operatives should not be allowed to eat, drink or smoke on site except in designated areas and should be required to wash all exposed skin at the end of each shift. Operatives should be informed of the potential hazards at the site and should be required to report any observations of suspect materials.

- 5.2 As with any sampling exercise, it is possible that groundworks will discover conditions or soils different from those found to date. Construction managers and supervisors should be aware that further remediation measures may be required if such conditions are found.

- 5.3 Any observations of ground conditions potentially atypical of those described above shall be reported to IDOM for assessment. Where, upon initial inspection, it is confirmed that potential new contamination has been encountered then the works will cease and IDOM will prepare and submit a Method Statement for assessing and dealing with the suspected contamination. This may include additional risk assessment and/or removal of contaminated material if this is deemed necessary.

Contamination encountered shall be reported to the local environmental health officer ensuring remedial measures are agreed in writing.

- 5.4 All works will be carried out to the satisfaction of the local environmental health officer.

SECTION 6 VALIDATION REPORTING

- 6.1 As works progress IDOM will maintain a watching brief to ensure adherence to this RMS and subsequent Asbestos Management Plan (AMP) which will be issued under a separate title. A validation report will be submitted following the completion of remediation works that will include *inter alia*:

- i.* Examples of site diaries completed by a suitably trained engineer with details of daily activities and communications. The site diaries will contain pictures showing key stages of works and highlight compliance of any key remediation strategy points (e.g. Placement of geo-membrane, excavation and backfilling of service trenches etc.).
- ii.* The excavation of tree-pits and subsequent lining with geo-membrane will be supervised by an appropriately trained engineer to ensure it is completed to an appropriate standard. Photographic evidence of the excavations, including tree pit depth measurements shall be collected and included within the verification report.
- iii.* Testing certificates of any materials intended to be reused for service trench backfill.
- iv.* Waste transfer notes for any materials that are required to be disposed of during works.
- v.* Gas protection validation records.
- vi.* Any records relating to specialist advisors responding to unforeseen conditions.

- 6.2 Verification of the clean imported subsoil and topsoil will be undertaken by IDOM. Samples of the imported clean cover material will be tested at a rate of 1 per 250 m³. Samples will be submitted to an MCERTS/UKAS accredited laboratory for analysis of a suite of contaminants including asbestos fibres. Laboratory certificates shall be included within the verification report, along with an analysis to the chemical specification found in table 2 of this report.

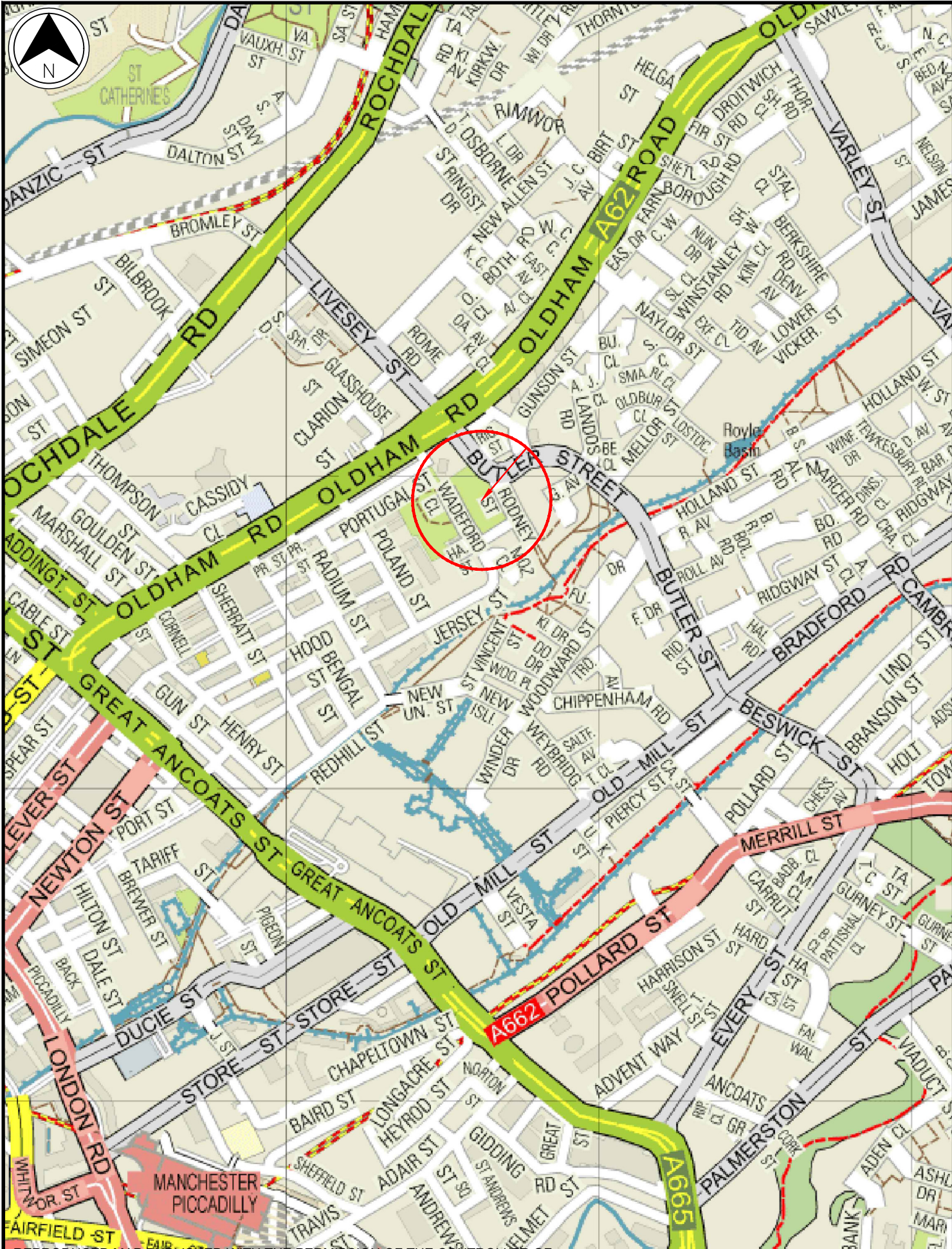
- 6.3 Depth checks will be undertaken to prove that the minimum requirement of clean subsoil and topsoil has been placed over a geotextile membrane barrier. Hand dug observation pits shall be excavated to the geo-membrane layer and inspected by a suitably trained engineer. Pictures will be captured to clearly show the depth of the pit and included within the verification report. Depth checks shall be conducted at a

frequency of one per ornamental shrub area, plus a further ten pits at randomly selected areas, selected to provide a broad spatial coverage across all soft landscaped areas.

6.4 The following details/ hold points will also be adopted in the gas protection verification of the overall measures and will be incorporated in a verification report:

- i.* Description of the installation, including details of parties involved (i.e. installer, verifier) and guarantees offered;
- ii.* Details of any deviation from the original design, and explanation and justification;
- iii.* As-built construction drawings/schematic plans and product specifications;
- iv.* Quality assurance/verification evidence, including photographs, monitoring/ test results and data gathered;
- v.* Details of any communications held with regulatory bodies; and
- vi.* Conclusions, including future monitoring/management requirements and/or limitations of measures applied.

- APPENDIX 1**
- Site location plan 22434-001-001
 - Proposed development layout



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Site Location Plan

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First Issue		13-05-2022	-
		FDO	LNW
ISSUE DETAILS		DWN	CHD
DWG NO.		22434-001-001	REVISION
SCALE		N.T.S	DATE
			May 2022
DRAWN		FDO	CHECKED
			LNW
			FRAME DIMS (mm)
			(A4) 250x181
			APPROVED
			LNW



APPENDIX 2 ▪ Foundation construction drawings





Note:
Do Not Scale from this drawing.
Dimensions are to be checked on site.
If in doubt please ask.

Membrane Key

	Breather Membrane Spec. Ref. Pr_25_57_10_94
	Damp Proof Course Spec. Ref. Pr_25_57_21_06
	Damp Proof Membrane Spec. Ref. Pr_25_57_65_60
	Separation Layer Spec. Ref. Ss_30_42_15_30
	EPDM Spec. Ref. Pr_35_90_33_25
	Vapour Control Layer Spec. Ref. Pr_25_57_65_60
	Airtightness Tape Spec. Ref. Pr_35_90_87_69
	Gas Membrane - REQUIREMENT TBC
	Airtightness Line

P02	26.10.22	LB	Stage 4b - Insulation retention clips added to external wall details
P01	25.08.22	LB	Stage 4a issue

Rev Date Intls Details

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Project Title	This City residential development, Ancoats, Manchester
Client	Wates Construction Ltd
Location	Land to the west of Rodney Street, Manchester, M4 6JJ

Drawing ref Residential Block A & B - Typical External Wall-Ground Floor Detail Sheet_2

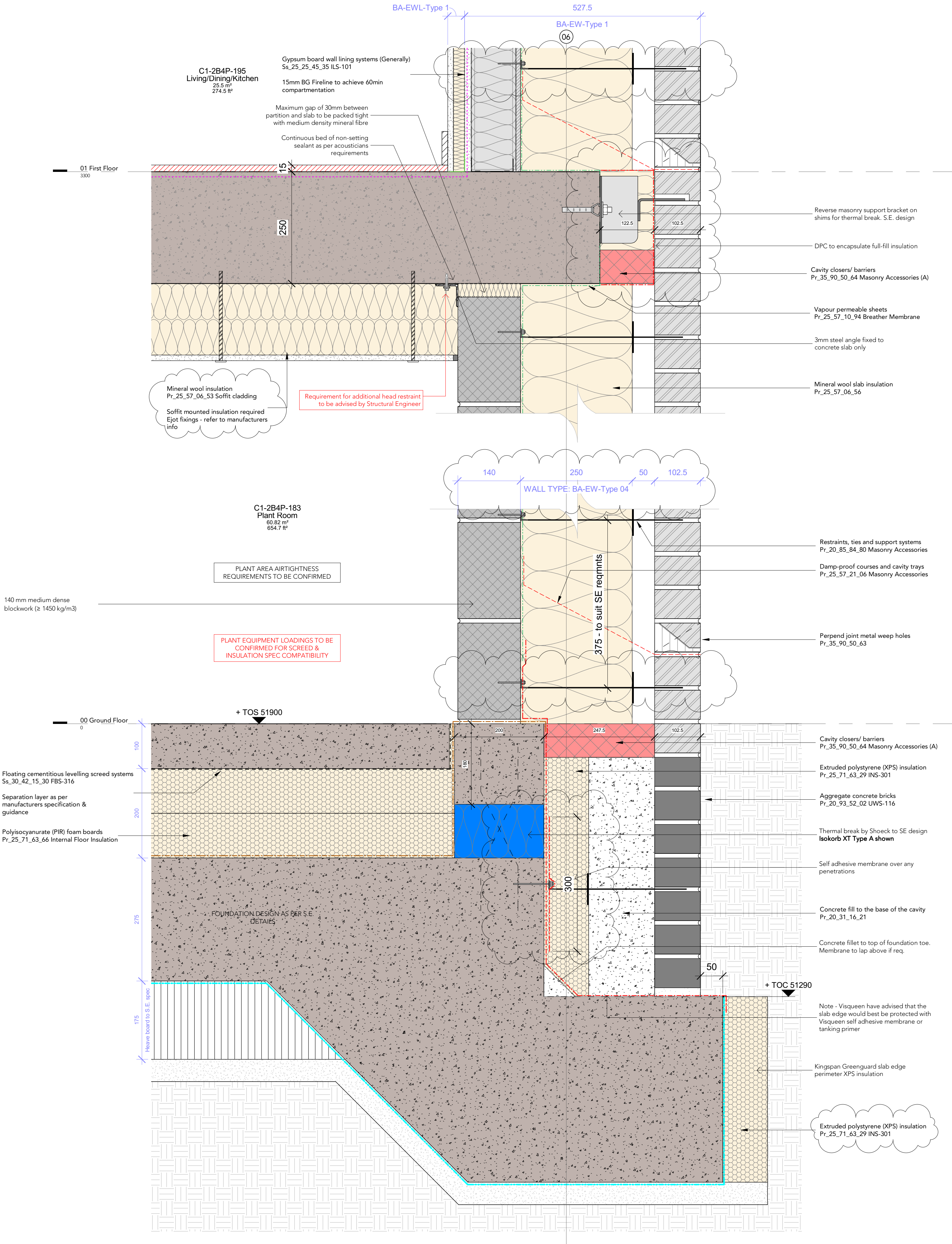
Date	26/10/2022 16:02:01	Scale	As indicated
Checker	SD	Orig Paper Size	A1

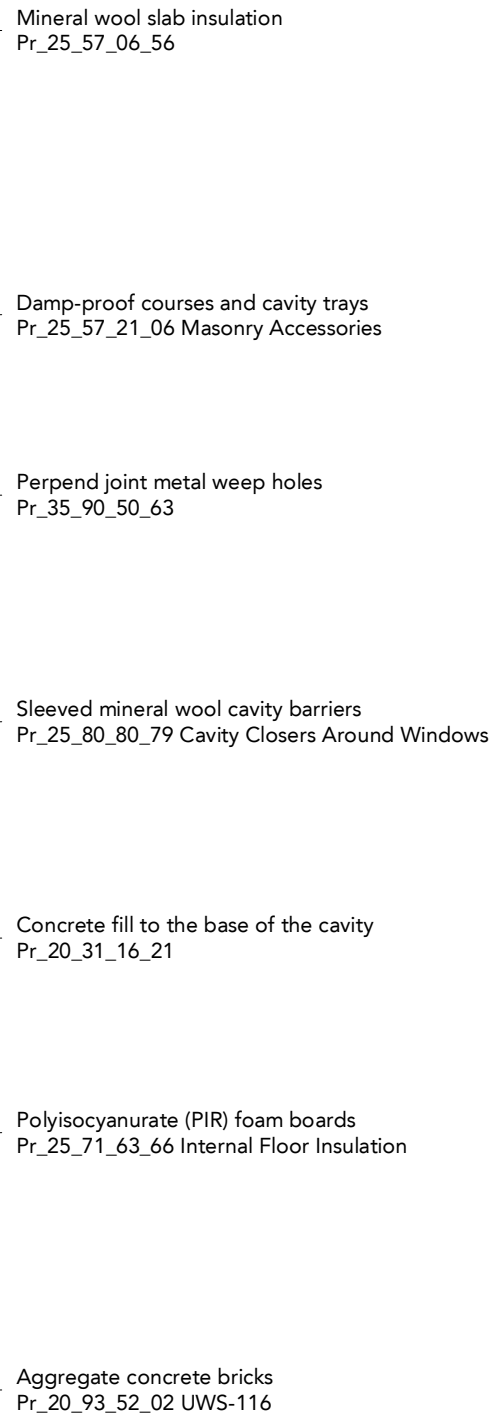
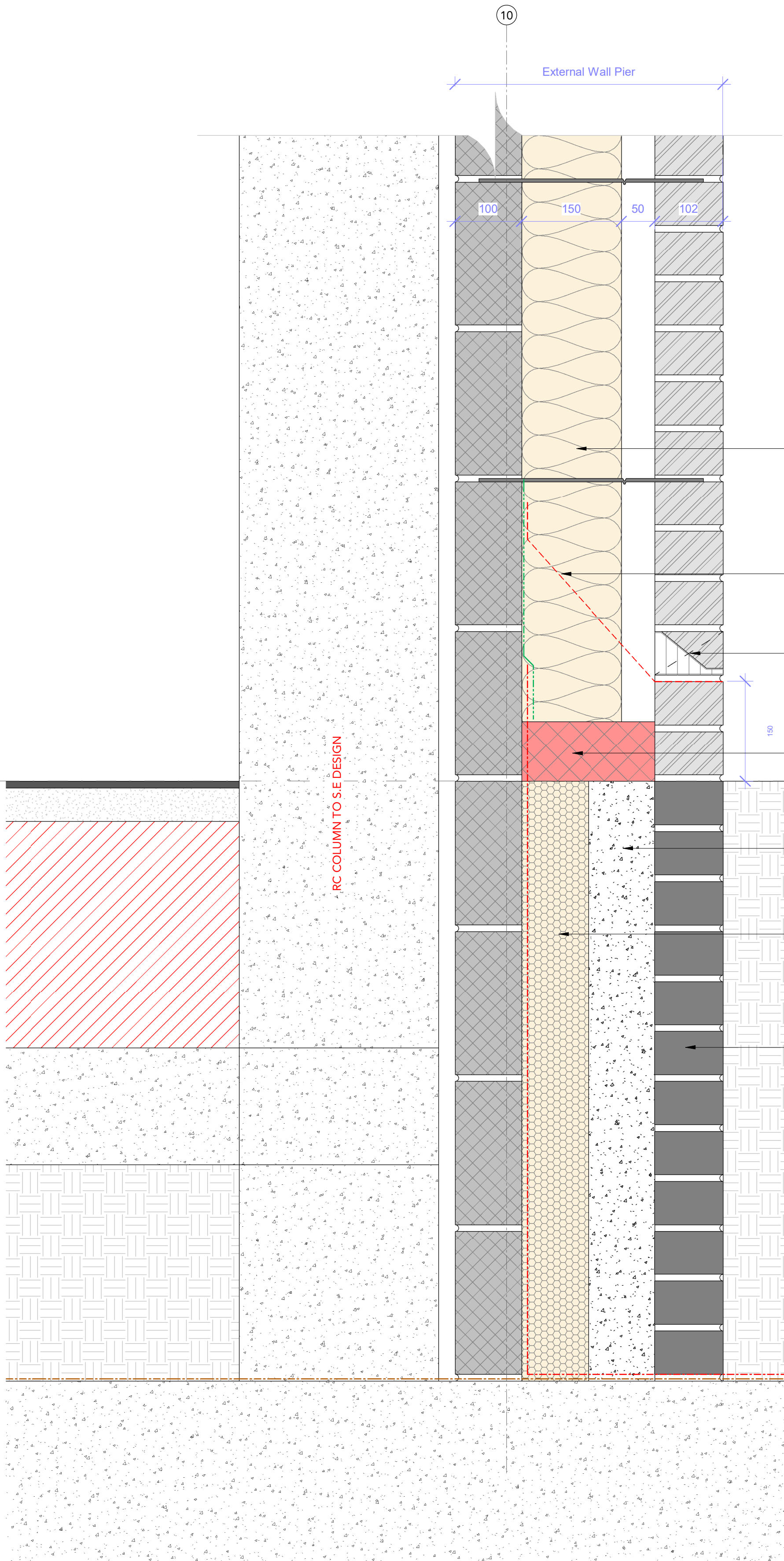
Job No: 9139 Status S2

Project: Origin: Zone: Level: Type: Disc: Number: Rev:

Typical External Wall-Ground Floor Detail_3

1 : 5





P01	25.08.22	LB	Stage 4a issue
Rev	Date	Intls	Details

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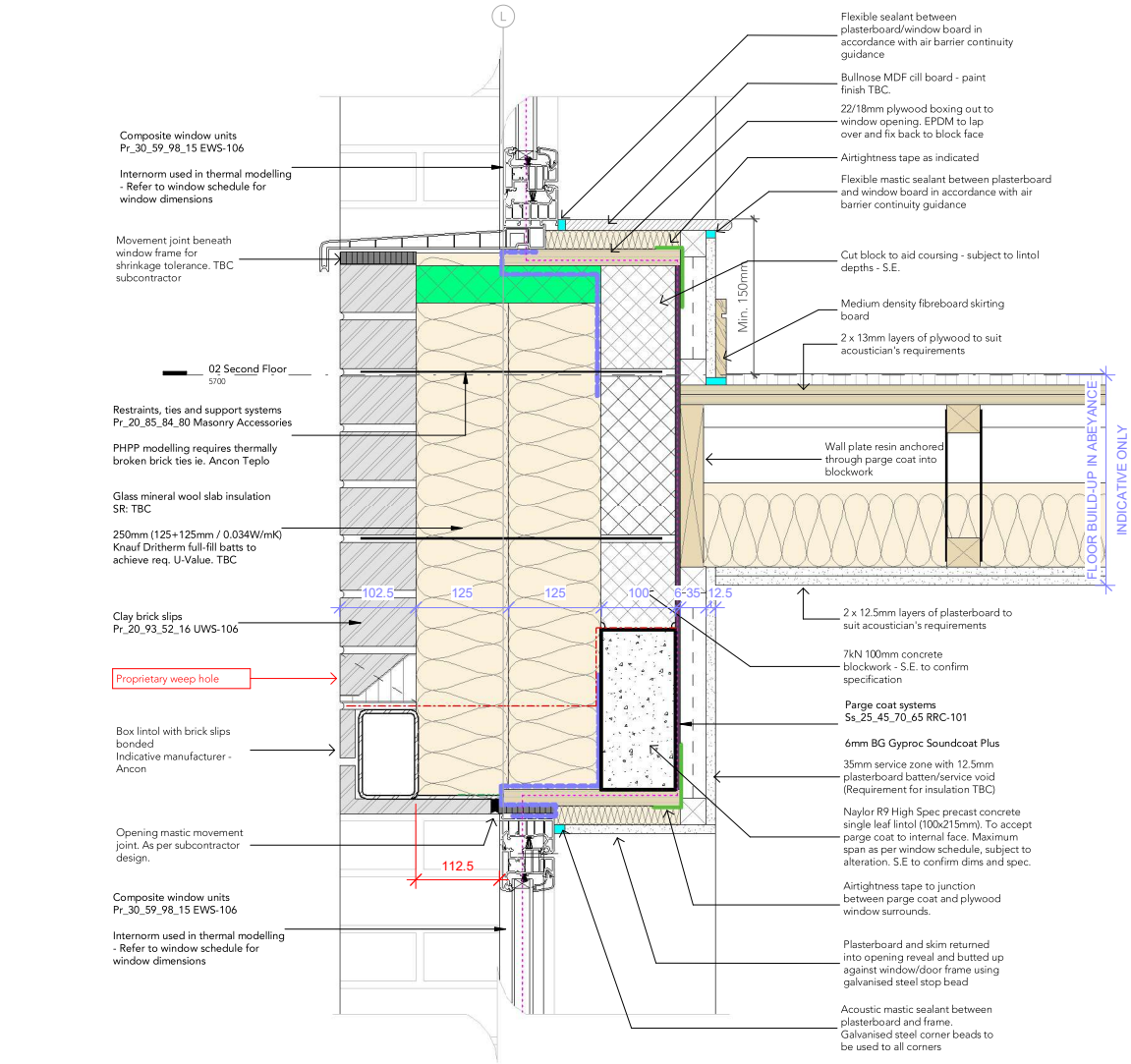
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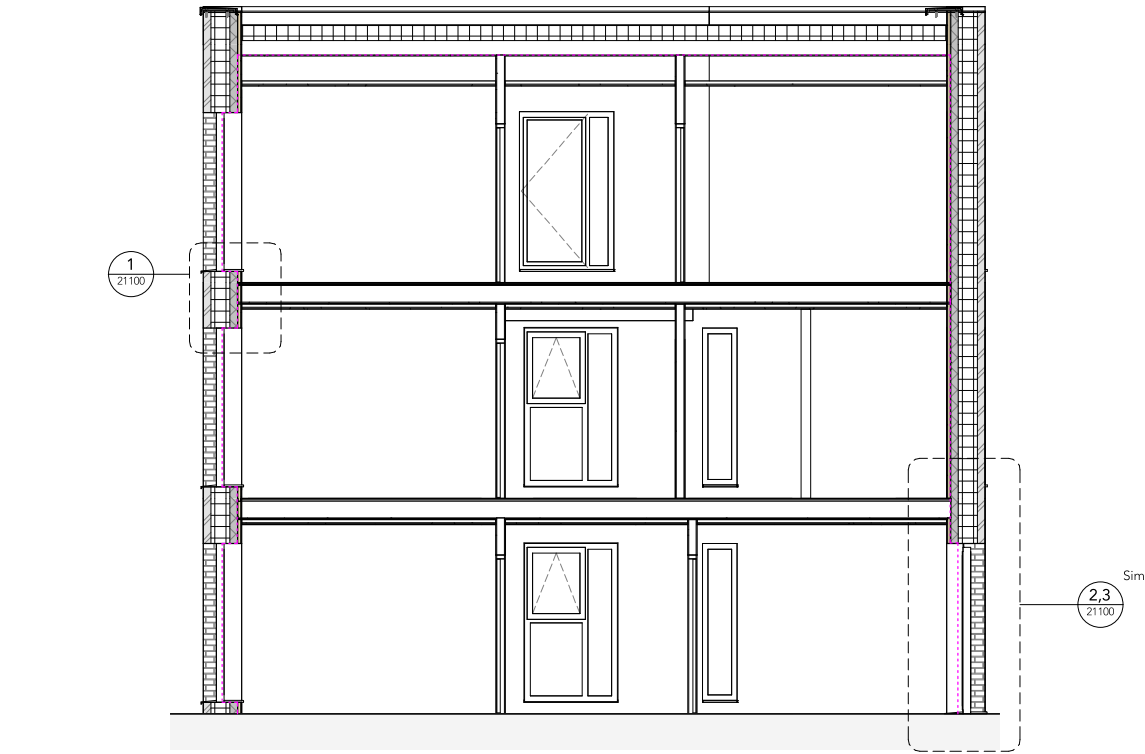
Project Title	This City residential development, Ancoats, Manchester
Client	Wates Construction Ltd
Location	Land to the west of Rodney Street, Manchester, M4 6JJ
Drawing ref	Residential Block B - Car Park External Wall Type 3 Section_Detail

Date	25/08/2022 14:14:50	Scale	As indicated
Checker	SD	Orig Paper Size	A1

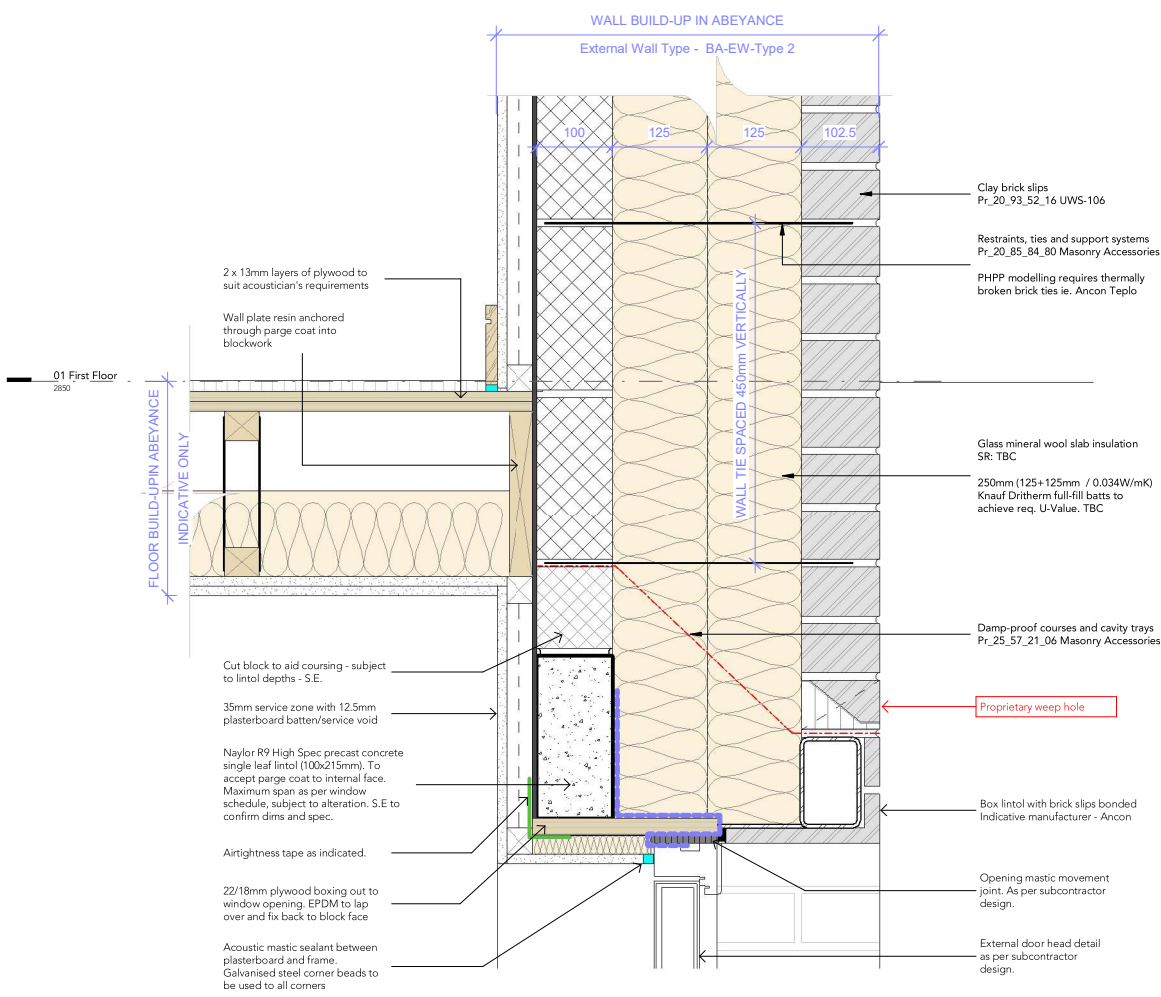
Project: Origin: Zone: Level: Type: Disc: Number: Rev:



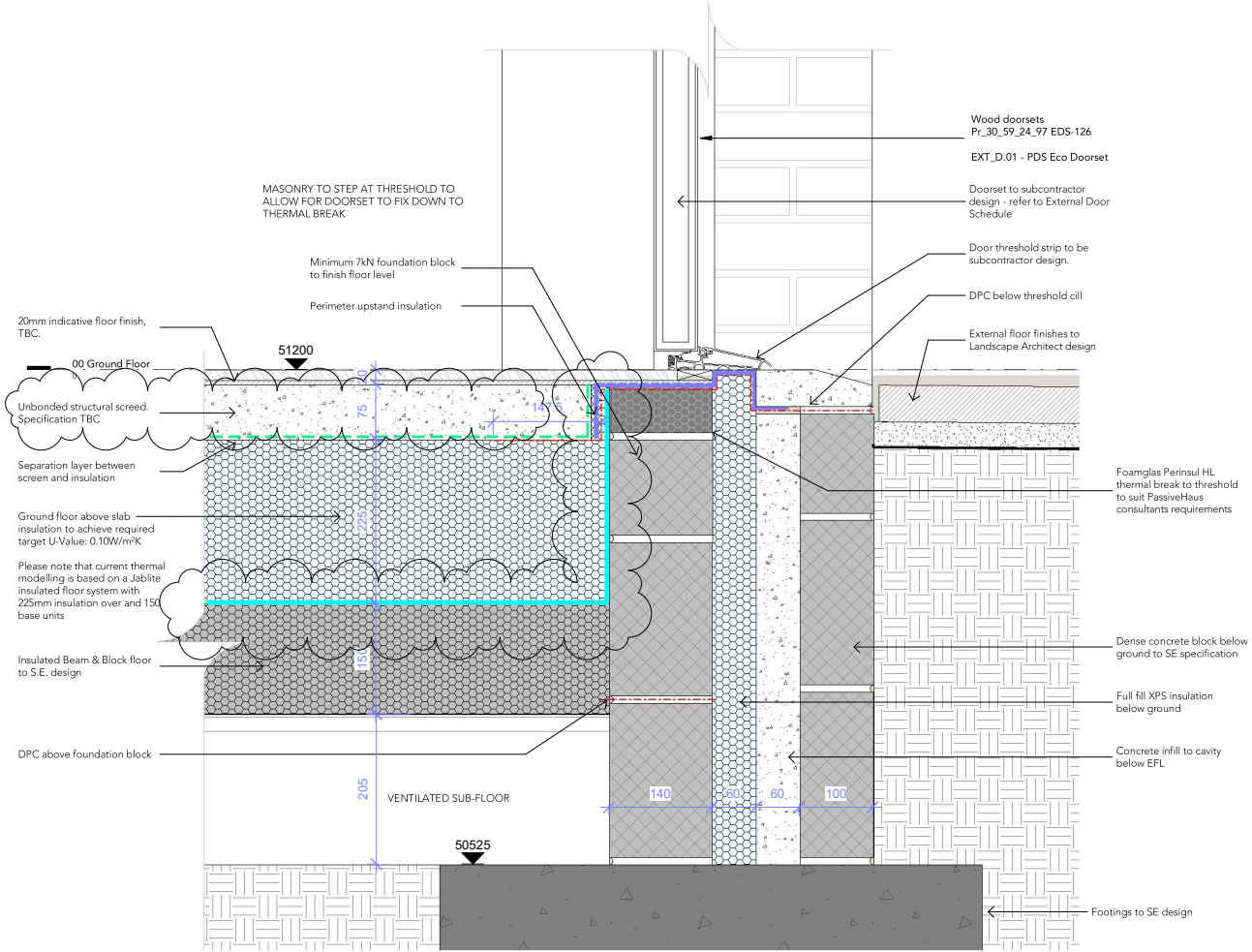
Townhouse - External Wall_Section Details_1
1 : 5



Flat Roof_Reference Section 1
1 : 50



Townhouse - External Wall_Section Details_2 & 3
1 : 5



Membrane Key

- Breather Membrane (Pr_25_57_10_94)
- Damp Proof Course (Pr_25_57_21_06)
- Damp Proof Membrane (Ss_32_20_30_51 DPS-236)
- EPDM (Pr_35_90_33_25)
- Vapour Control Layer (Pr_25_57_21_06)
- Gas Membrane - Specification (TBC by specialist)
- Airtightness Tape (Spec. Ref. Pr_35_90_87_69)
- Airtightness Line

Note: Do Not Scale from this drawing. Dimensions are to be checked on site. If in doubt please ask.

FOR COMMENT

NOTE:

Please note - external wall build up with blockwork issued for comment.

Final wall thickness and design is reliant on thermal modelling of blockwork junction details by Passivehaus Consultant

Rev	Date	Ints	Details
P05	17.02.23	LB	Gas membrane revised following specialist comments.
P04	19.10.22	LB	Amended window references and Airtightness tape colour.
P03	12.10.22	LB	External Wall amendments to blockwork/full fill construction.
P02	30.08.22	SD	Stage 4A issue - Notation updated generally
P01	20.05.22	LB	Issued for information

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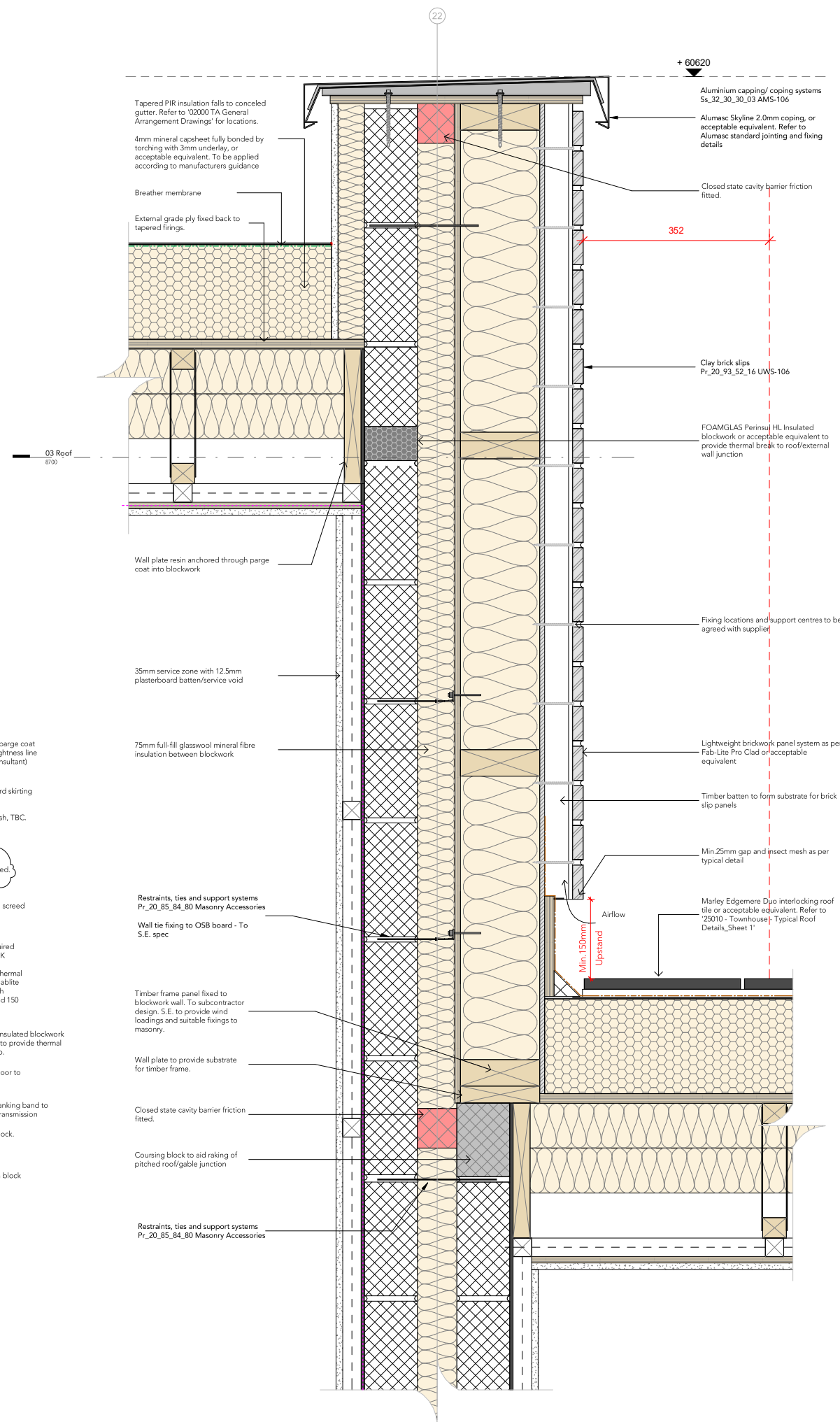
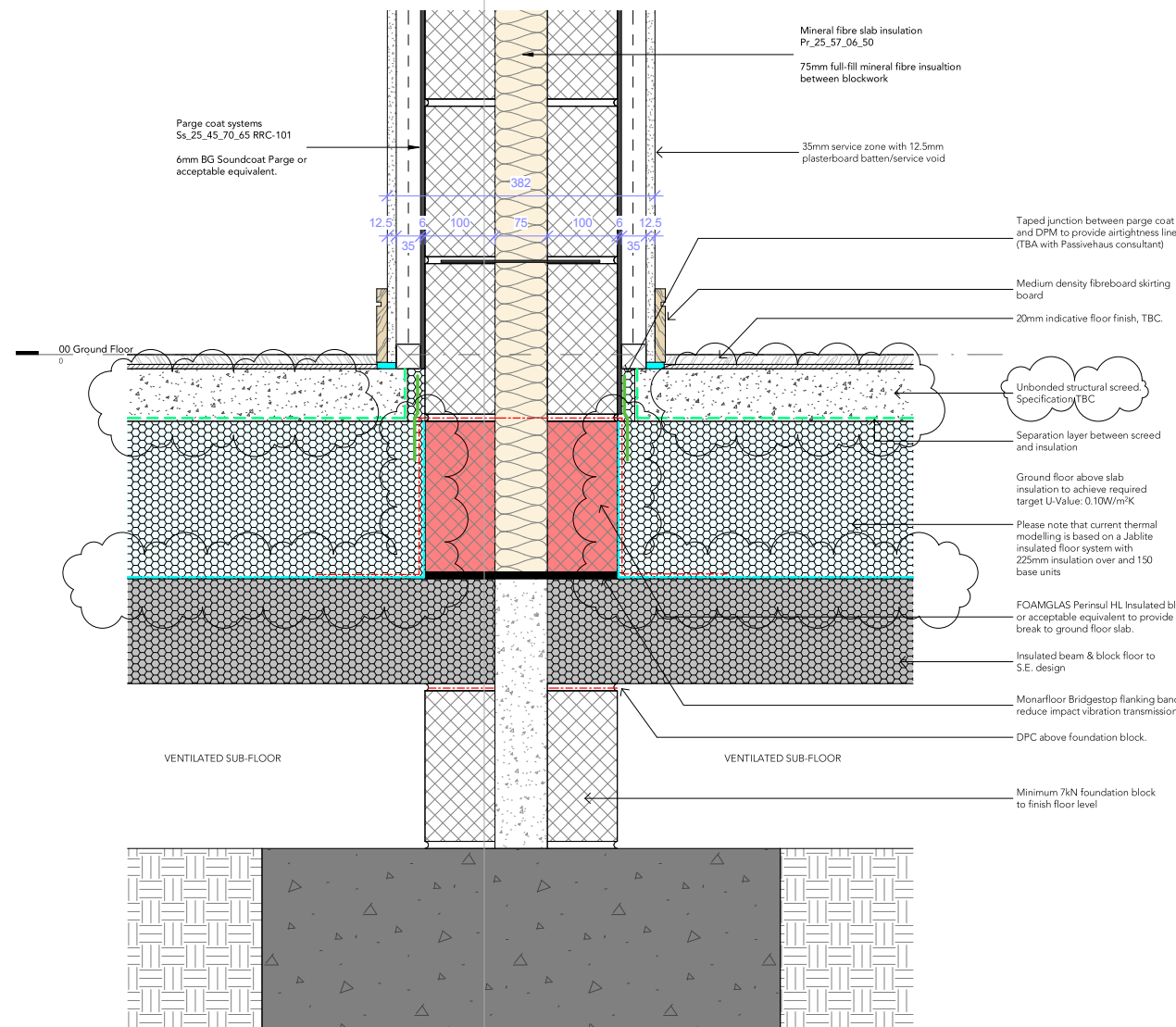
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Project Title	This City residential development, Ancoats, Manchester
Client	Wates Construction Ltd
Location	Land to the west of Rodney Street, Manchester, M4 6JJ

Drawing ref Townhouse - External Wall Detail Sheet_1

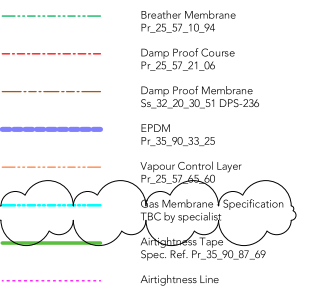
Date	17/02/2023 15:52:04	Scale	As indicated				
Checker	Checker	Orig Paper Size	A1				
Job No:	9139	Status	S2				
Project:	Origin:	Zone:	Level:	Type:	Disc:	Number:	Rev:

RODSTA-BUT-T-ZZ-DD-A- 21100- P05

D
D

Note:
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Dimensions are to be checked on site.
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Membrane Key



FOR COMMENT

NOTE:

Please note - external wall build up with blockwork issued for comment.

Final wall thickness and design is reliant on thermal modelling of blockwork junction details by Passivehaus Consultant

P02	17.02.23	LB	Gas membrane revised following specialist comments.
P01	12.10.22	LB	External Wall amendments to blockwork/full fill construction.

Rev	Date	Intls	Details
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Project Title	This City residential development, Ancoats, Manchester
Client	Wates Construction Ltd
Location	Land to the west of Rodney Street, Manchester, M4 6JJ

Drawing ref Townhouse - External Wall Detail Sheet_3

Date	17/02/2023 15:52:16	Scale	As indicated
Checker	BT	Orig Paper Size	A1

Job No: 9139 Status S2

Project: Origin: Zone: Level: Type: Disc: Number: Rev:

RODSTA-BUT-T-ZZ-DD-A- 21202- P02

Typical External Wall_Blockwork Full Fill_Section Detail

1:5

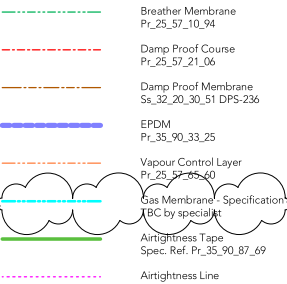
Townhouse - External Wall_Ventilated sub-floor_Section Detail

1:5



Note:
Do Not Scale from this drawing.
Dimensions are to be checked on site.
If in doubt please ask.

Membrane Key



FOR COMMENT

NOTE:

Please note - external wall build up with blockwork issued for comment.

Final wall thickness and design is reliant on thermal modelling of blockwork junction details by Passivehaus Consultant

P02	17.02.23	LB	Gas membrane revised following specialist comments.
P01	12.10.22	LB	External Wall amendments to blockwork/full fill construction.

Rev Date Intis Details

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Project Title	This City residential development, Ancoats, Manchester
Client	Wates Construction Ltd
Location	Land to the west of Rodney Street, Manchester, M4 6JJ

Drawing ref Townhouse - External Wall Detail Sheet_2

Date	17/02/2023 15:52:10	Scale	As indicated
Checker	LB	Orig Paper Size	A1

Job No: 9139 Status: S2

Project: Origin: Zone: Level: Type: Disc: Number: Rev:

RODSTA-BUT-T-ZZ-DD-A- 21201- P02

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