

Foam Converters, Todmorden Road, OL15 9EG

Reference: R0844 FRA-v2

Jun-26

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FLOOD RISK ASSESSMENT

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Purpose of this report

- 1.1 RIDA Reports Ltd has been appointed to undertake a Level 2 – Scoping Study Flood Risk Assessment for a development located at OL15 9EG.

Objectives

- 1.2 The objectives of this FRA are to demonstrate the following:
- Whether the proposed development will likely be affected by current or future flooding.
 - Whether the proposed development will increase flood risk elsewhere.
 - Whether the flood risks associated with the proposed development can be satisfactorily managed.
 - Whether the measures proposed to deal with the flood risk are sustainable.

Documents Consulted

- 1.3 To achieve these objectives, the following documents have been consulted and referenced:

The National Planning Policy Framework (NPPF)
CIRIA C753 document The SuDS Manual, 2015
Local Flood Risk Management Strategy (LFRMS)
Level 1 Strategic Flood Risk Assessment (SFRA)
Aerial photographs and topographical survey of the site
British Geological Society Records
Local Council flood Maps
Environment Agency flood maps
The CIRIA publication 'C635 Designing for exceedance in urban drainage Good practice'



Development Site and Location

- 2.1 The site is located at Todmorden Road, Littleborough. The nearest postcode is OL15 9EG. Refer to appendix A for site location plan.
- 2.2 The current use of the site is a Foam supplier industry. The current user vulnerability classification of the site is Less vulnerable . The site is located in the River Flood Zone 3. Refer to Appendix B for more details.

Development Proposals

- 2.3 The proposed development includes the construction of two blocks with a total of 11 dwellings. Refer to Appendix B for the layout of the proposed development.
- 2.4 The vulnerability classification of the proposed development is More vulnerable with an estimated lifetime between 50 and 100 years.

Site Hydrology and Hydrogeology

- | | | |
|------------------------|-----|---|
| Hydrology | 2.5 | The Rochdale Canal is located approximately 1 m away from the development. |
| Aquifer | 2.6 | The development is located within a secondary aquifer type A. Aquifers type A consist of permeable layers capable of supporting water supplies at a local rather than strategic scale. They are generally aquifers formerly classified as minor aquifers. |
| Source Protection Zone | 2.7 | The site is not located within a Source Protection Zone. |
| Groundwater Levels | 2.8 | The ground water levels for this site are unknown. |

Site Geology

- | | | |
|----------------------|------|--|
| Bedrock | 2.9 | The British Geological Survey records of the site show that it is located within the Woodhead Hill Rock - Sandstone. |
| Superficial Deposits | 2.10 | The British Geological Survey records show that the superficial deposits are Alluvium - Clay, Silt, Sand and Gravel. |



National Planning Policy Framework (NPPF)

- 3.1 The NPPF and its technical guidance is a set of planning policies with the key objective of contributing to sustainable development. As part of it, they ensure that flood risk and sustainability are considered during the planning process. This ensures that developments are not located in flood risk areas and directs developments to lower risk areas. The NPPF applies a sequential risk-based approach to determining land suitability for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the development layout and the application of Sustainable Drainage Systems (SuDS).

The Flood and Water Management Act (2010)

- 3.2 The Flood and Water Management Act aims to reduce the flood risk associated with extreme weather events. It provides robust flood risk management for people, homes and businesses and encourages using SuDS for developments. A robust SuDS strategy should consider the recommendations in this Flood Risk Assessment.

Strategic Flood Risk Assessment (SFRA)

- 3.3 Planning policy with regard to development and flood risk in the area is detailed in the Rochdale Borough's Strategy for Flood Risk Management 2014-2024 (RBSFRM 2014-2024) which was published in 2014. The proposed development site is located within the administrative boundary of the Rochdale Borough Council.
- 3.4 The SFRA commits to direct new development to locations at the lowest flood risk. The SFRA provides information on the levels and flood hazards that could result from flooding. The Environment Agency flood zone maps and the SFRA ignore the presence of existing flood defences when defining the potential extent of flooding.
- 3.5 This report follows the guidance given in the Rochdale Borough's Strategy for Flood Risk Management 2014-2024 by evaluating the flood risk and providing relevant flood mitigation.



- 4.1 The NPPF guidance states that the sequential test "is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding."

Applicability of the Sequential Test

- 4.2 The flood risks were determined by identifying all the sources of flooding and assessing their possible impact and likelihood to development. It is confirmed that the development is:

- In Flood Zone 3, based on the Planning Flood Risk Map
- In Flood Zone 3b, based on the Flood Level information Provided by the Environment Agency
- At Low risk of surface flooding
- At high risk of groundwater flooding
- Outside of a critical drainage area
- Outside of an area with sewer flooding

- 4.3 Due to the flood risk on the development, a sequential test is required. For this development, the sequential assessment was completed for the area within the red line of the planning application. The development has been located at the lowest flood risk. Regarding looking at other reasonably available sites, it is unlikely that other areas are available in lower flood risk probability as the development is small and can only be located within the proximity of the existing land use and land ownership. It is concluded that the current proposals pass the sequential test.

Exception Test

- 4.4 Fluvial flood risk has been assessed using the Environment Agency Flood Map for Planning, in accordance with the sequential risk-based approach set out in the NPPF and Planning Practice Guidance. The requirement for the Exception Test is determined by the vulnerability classification of the proposed land use in relation to the mapped Flood Zone designation. This ensures that the need for an Exception Test is based on the statutory flood map, while more detailed datasets are used within the FRA to refine site-specific risk and mitigation measures.



Step 1 Flood Zone categorisation	4.5 The proposed development lies within Flood Zone 3 on the Environment Agency Flood Map for Planning. The Flood Zone 3 is considered to have a high probability of flooding with a 100 years or greater annual probability or >1%AEP. The national map does not distinguish between Flood Zone 3a (high probability) and Flood Zone 3b (functional floodplain); however, these categories are set out in Table 2 of the NPPF Planning Practice Guidance to determine land use compatibility. To refine this distinction at site level, more detailed datasets such as EA Product 4/6 model outputs are used, which provide flood depth and frequency information and enable identification of functional floodplain (Zone 3b) versus defended high-probability floodplain (Zone 3a). For this FRA assessment, the product 4/6 confirms that the development is in Flood Zone 3b.
Step 2 Flood risk vulnerability	4.6 In Annex 3: Flood risk vulnerability classification of the NPPF Planning Practice Guide, the proposed development is classified as 'More vulnerable '.
Step 3 Flood Zone incompatibility	4.7 Flood risk vulnerability and flood zone 'incompatibility' table 2 of the NPPF Planning Practice Guide states that More vulnerable developments in flood Zone 3 are required to pass the Exception Test.

The Exception Test

4.8 The development requires passing the Exception Test. To pass the exception test, they should be demonstrated the following:

(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and

(b) the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Both elements of the exception test should be satisfied for development to be allocated or permitted.

4.9 The proposed development delivers wider sustainability benefits consistent with NPPF objectives. It reduces flood risk to the wider community through direct provision of flood risk management storage in the SuDS, and incorporates multifunctional Sustainable Drainage Systems (SuDS) integrated with green infrastructure. These measures significantly exceed the minimum requirements of national policy.



The scheme provides flood risk betterment beyond the site boundary rather than solely managing its own risk. This is achieved by:

- Integrating green infrastructure to create additional capacity for the flow and storage of flood water;
- Implementing SuDS that not only control runoff from the development but also relieve pressure on existing combined sewers; and
- Safeguarding and contributing to flood risk management infrastructure that benefits existing communities.

4.10 The supporting sections of this Flood Risk Assessment confirm that the development can be safely delivered for its lifetime, with allowances for climate change, and that the proposed surface water strategy may reduce flood risk elsewhere. On this basis, both elements of the Exception Test are satisfied, and the development is considered compliant with national planning policy.



- 5.1 The development has been assessed for the following potential flood risks, river and tidal flood risk, surface water flooding, flooding from groundwater, reservoir flood risk and drainage systems.

Flood Defence and Historic Flooding

- 5.2 The Environment Agency records show that the site benefits from flood defences. They also show that the area around the site has potentially been flooded in the past. This data does not indicate if a property has been flooded internally. See Appendix C for details.

Flooding from river and sea

- 5.3 The site is affected by River Flooding. The proposed development lies within Flood Zone 3 on the Environment Agency Flood Map for Planning. The Flood Zone 3 is considered to have a high probability of flooding with a 100 years or greater annual probability or >1%AEP. The national map does not distinguish between Flood Zone 3a (high probability) and Flood Zone 3b (functional floodplain); however, these categories are set out in Table 2 of the NPPF Planning Practice Guidance to determine land use compatibility. To refine this distinction at site level, more detailed datasets such as EA Product 4/6 model outputs are used, which provide flood depth and frequency information and enable identification of functional floodplain (Zone 3b) versus defended high-probability floodplain (Zone 3a). For this FRA assessment, the product 4/6 confirms that the development is in Flood Zone 3b.
- 5.4 The climate change allowance has been taken from the EA peak river flow map. The vulnerability of the development, the design life of the building, and the flood zone classification were used to determine it. The climate change allowance for this site is 35%. The nearest climate change allowance of 35% provided by the EA was used as the most representative to complete this assessment.
- 5.5 The levels provided by the Environment Agency are shown in table 1 below. Further details are provided in Appendix D.



Flood levels in channel

Return Period	Flood Level (m AOD)
1 in 20 (5%)	NIL
1 in 30 (3.3%)	NIL
1 in 100 (1%)	NIL
1 in 100 + 35%(CC)	NIL
1 in 1000 (0.1%)	NIL

Flood levels at Site

Return Period	Flood Level (m AOD)
1 in 20 (5%)	144.471
1 in 30 (3.3%)	144.545
1 in 100 (1%)	NIL
1 in 100 + 35%(CC)	145.261
1 in 1000 (0.1%)	NIL

- 5.6 The river flood risk level is 145.261m AOD. The external depth of water is 1.06m.

Surface water (overland flows) flood risk

- 5.7 The Environment Agency Flood Map for Planning Surface Water dataset indicates a low surface water flood risk. A residual risk of localised shallow ponding during extreme rainfall events remains possible. The mapping includes present day and climate change scenarios based on the UKCP18 Upper End 2070s climate change allowance.

- 5.8 *The Environment Agency Flood Map for Planning Surface Water datasets combine national flood modelling with locally available detailed flood model information. Flood extents below 75mm depth are removed from the mapping, as shallow surface water flooding of this magnitude is generally unlikely to prevent access or cause flooding to properties.*

Building footprints are raised within the modelling process by approximately 300mm above surrounding ground levels. As a result, raw model outputs can sometimes indicate that buildings are outside mapped flood extents.

The mapping is not intended to provide property-specific flood risk or confirm flooding to individual buildings. However, building footprints are infilled using OS MasterMap data where surrounding flood extents indicate potential flood risk to buildings.

The modelling process also removes isolated small wet areas and infills isolated dry areas surrounded by floodwater to improve the usability and consistency of the datasets for strategic planning purposes.

- 5.9 The strategic flood risk for the Rochdale Borough Council confirms that the flood risk for the site is Low. The surface water flood data from the strategic flood risk assessment has not been produced to determine the flood levels at individual properties. This data does not contain the climate change allowances for depth levels. Therefore, the Design flood level is based on the



Environment Agency Flood Map for Planning Surface Water datasets. The mapping is not intended to determine flood levels at individual properties and therefore the design flood level below remains an estimate based on the best available information. Actual flood depths across the site may vary depending on local ground conditions and drainage capacity.

- 5.10 Based on the Environment Agency Flood Map for Planning Surface Water datasets, the Strategic Flood Risk Assessment and the presence of surface water drainage systems within the site and surrounding area, the site is considered to be at Low risk of surface water flooding during extreme rainfall events. The flood depths have been informed by the Flood Map for Planning Surface Water climate change datasets, which are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. The 'Upper end' (based on the 95th percentile) for the 2070s epoch (2061-2125) has been used for the climate change scenarios. The mapping indicates a potential flood depth of approximately 200mm. The average ground level at the location of the mapped surface water flooding is approximately 143.8 m AOD and therefore the estimated surface water flood level at the site could be in the region of 144 m AOD. This level has been adopted for the purposes of this Flood Risk Assessment.

Flooding from drainage systems in adjacent areas

- 5.11 The council records have been reviewed. The flooding from drainage incidents maps were not found in the Strategic Flood Risk Assessment. Therefore, for the purpose of this report, it has been assumed that the risk of flooding from drainage systems is low.

Reservoirs Risks

- 5.12 The Reservoir Flood Map (RFM) produced by the Environment Agency do not show the risk to individual properties of dam breach flooding. The maps do not indicate or relate to any particular probability of dam breach flooding. The maps were prepared for emergency planning purposes. They can be used to help reservoir owners produce on-site plans, and the Local Resilience Forum produce off-site plans and to prioritise areas for evacuation/early warning in the event of a potential dam failure. The RFM shows that the development could be within the possible dam breach flooding path. See Appendix C.



Groundwater flood risk

- 5.13 The British Geological Survey's flood risk susceptibility maps show that the development has the potential for groundwater flooding above ground level. Groundwater levels vary seasonally and are influenced by ground and meteorological conditions and proximity to water features. The groundwater flooding risk for this site is considered to be high. The groundwater flood depth could potentially be 0.15m. The average external level at the site is 143.35m AOD. The potential groundwater flood level is 143.5m AOD. This level has been given as a precautionary measure. It is recommended that monitoring of groundwater is undertaken should this measure be reviewed. Refer to Appendix C for record drawings.

Critical Drainage Areas

- 5.14 The Strategic Flood Risk Assessment was reviewed as part of this assessment. However, it does not show the critical drainage areas within the council. For this report, it has been assumed that the site is outside of a notified critical drainage area.



6.1 The Flood hazard assessment has demonstrated that the site is:

- In Flood Zone 3, based on the Planning Flood Risk Map
- In Flood Zone 3b, based on the Flood Level information Provided by the Environment Agency
- At Low risk of surface flooding
- At high risk of groundwater flooding
- Outside of a critical drainage area
- Outside of an area with sewer flooding

6.2 Under the NPPF it is necessary to demonstrate that, for any new development on the site, it is possible to provide an adequate level of flood protection for personnel working or living at the development.

Design Flood Level

6.3 The design flood level is the maximum estimated water level during the design storm event including an allowance for climate change in line with current best practice and the national planning policy guidance.

6.4 The Design Flood Level for this development has been determined by evaluating the levels from the Fluvial/Sea, Surface Water and Groundwater flood levels.

6.5 For this site, the Design Flood Level is 145.261m AOD. This is the highest level and corresponds to the River/Sea Flood Level.

Flood Protection

6.6 The National Planning Guidance standing advice and Environment Agency recommends that where possible, flood avoidance is provided by establishing the development's finished floor level 600mm above (freeboard) the design flood level. However, this level can be reduced if there is a high level of certainty about the estimated flood level. For this site the estimated free board has been determined to be 0.3m above the Design Flood Level due to the quality of the flood risk information available and the type of risk. The finished floor should be 145.56m AOD. It would involve a height differential of 1.36m. This is the distance between the average external level (144.2m AOD) and the potential Finished Floor Level.

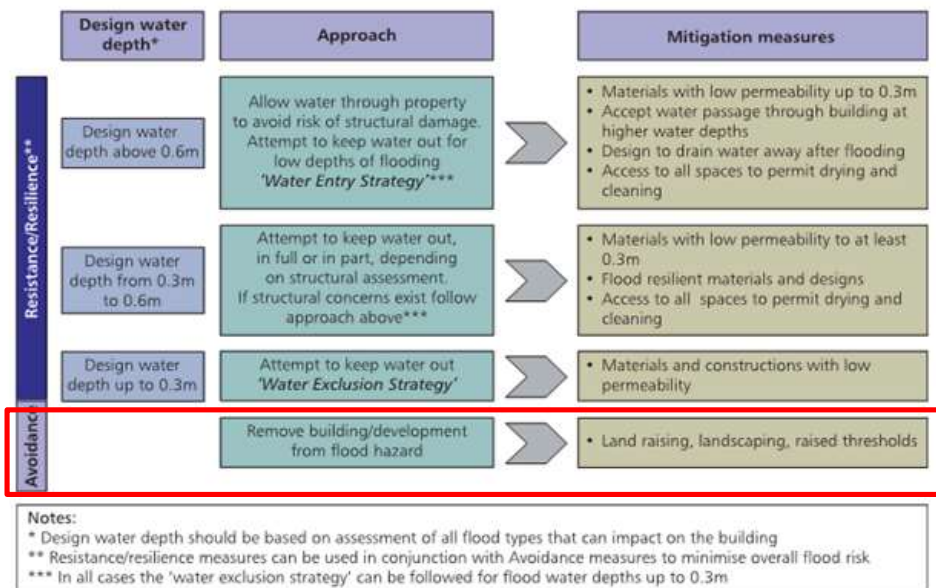
6.7 It is possible to achieve this FFL. As the foundations and other parts of the building may be in contact with water, the following flood mitigation is



proposed.

- 6.8 The flood mitigation strategies for the development has been based on the CLG 2007 Improving the Flood Performance of New Buildings. See the figure below for the strategy highlighted in red. The strategy is based on the water level within the proximity to the building.

Rationale for flood resilient and/or resistant design strategies



- 6.9 The design water depth for this site is 1.06m. The development should utilise building materials that are suitable for a 'water exclusion strategy'. Materials classified as "Good" (highlighted in red) in the Figure below shall be used for new construction up to 145.861m AOD.



Flood resilience characteristics of building materials (based on laboratory testing)

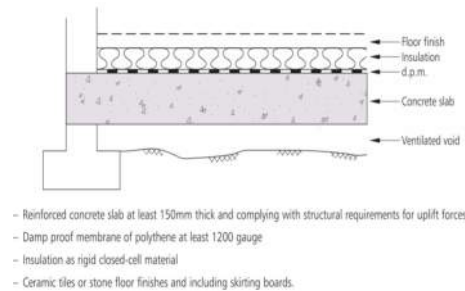
Material	Resilience characteristics*		
	Water penetration	Drying ability	Retention of pre-flood dimensions, integrity
Bricks			
Engineering bricks (Classes A and B)	Good	Good	Good
Facing bricks (pressed)	Medium	Medium	Good
Facing bricks (handmade)	Poor	Poor	Poor
Blocks			
Concrete (3.5N, 7N)	Poor	Medium	Good
Aircrete	Medium	Poor	Good
Timber board			
OSB2, 11mm thick	Medium	Poor	Poor
OSB3, 18mm thick	Medium	Poor	Poor
Gypsum plasterboard			
Gypsum Plasterboard, 9mm thick	Poor	Not assessed	Poor
Mortars			
Below d.p.c. 1:3(cement:sand)	Good	Good	Good
Above d.p.c. 1:6(cement:sand)	Good	Good	Good

*Resilience characteristics are related to the testing carried out and exclude aspects such as ability to withstand freeze/thaw cycles, cleanability and mould growth

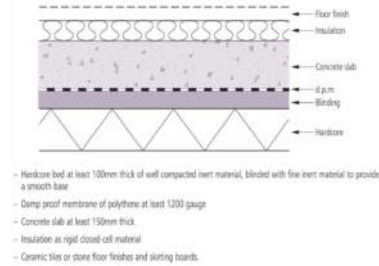
- 6.10 New services and fittings (communications wiring, heating systems, electrical services, water, electricity and gas meters) should be placed at above the level of 145.861m AOD. All service entries should be sealed (e.g. with expanding foam or similar closed cell material).
- 6.11 Closed-cell insulation should be used for pipes. Sealed PVC external framed doors or good fit and sealed wooden frames should be used.
- 6.12 Hollow core timber internal doors should not be used unless sufficient flood warning is given, butt hinges, can be used to allow internal doors to be easily removed and stored.
- 6.13 Suspended concrete floor slab at least 150mm thick is the preferred option. Beam and Block slabs with geomembrane and 75mm min screed can also be used. There should be a minimum space of 150mm ventilated void between the ground level and the bottom of the floor slab. Damp proof membranes should be included in the design. Floor insulation should be of the closed-cell type. Under floor services using ferrous materials should be avoided. Ceramic/concrete-based floor tiles, sitting on a bed of sand, cement render and water resistant grout can be used. Ground-bearing slabs are also an option. See figures below.



Suspended Concrete Slab detail



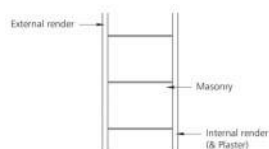
Ground bearing Concrete Slab detail



6.14 Concrete blocks used in foundations should be sealed with an impermeable material or encased in concrete to prevent water movement from the ground to the wall construction. In new walls use extended periscope subfloor ventilators or fit removable airbrick covers; fix plasterboard sheets horizontally rather than vertically, or split sheets mid-height with a dado rail, to reduce the extent of replacement; specify lime- or cement-based renovating plasters or renders rather than gypsum-based, with water-resistant paint finishes. The use of water-proof, water-resistant or micro-porous surface coatings on masonry should be avoided as they can inhibit the drying-out of the building fabric.

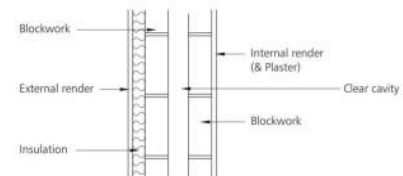
6.15 Good quality facing bricks or external renders with water-repellent properties can be used for the external face. See the examples below of external walls that can be used.

Solid External Wall



- External cement based render, preferably with lime content. Composition depends on masonry. The following mixes have good resilient properties:
 - 1 cement : 6 sand on bricks;
 - 1 cement : 4 sand: 1/2 lime on concrete blockwork or bricks;
 - 1 cement : 6 sand: 1 lime on Aircrete blocks.
 - Masonry with minimum thickness of 300mm (thin mortar joint construction using Aircrete blocks is effective as demonstrated in laboratory tests) or alternatively reinforced concrete wall
 - Internal cement-based render, preferably with lime content. Composition depends on masonry, the following mix is effective for flood resilience:
 - 1 cement : 6 sand: 1 lime on Aircrete.
- Apply external and internal renders, following good practice guidance, ensuring minimum total thickness of 20mm and at least two coats.
- Use external insulation in preference to internal insulation.

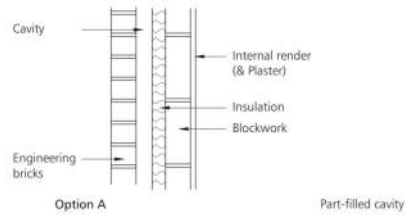
Cavity External Walls – Clear cavity



Clear cavity

- External cement based render, preferably with lime content. Composition depends on masonry; the following mixes are effective for flood resilience:
 - 1 cement : 4 sand: 1/2 lime on concrete blockwork (or bricks);
 - 1 cement : 6 sand: 1 lime on Aircrete.
- Apply render following good practice guidance, ensuring minimum total thickness of 20mm and two coats.
- Internal cement based render, preferably with lime content. Composition depends on masonry. The following mix works well:
 - 1 cement : 6 sand: 1 lime on Aircrete.
- Stainless steel wall ties should be used to minimise corrosion and consequent staining.

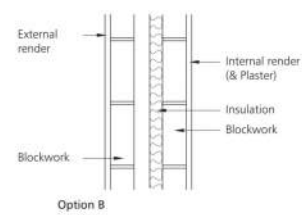
Cavity External Walls- Part fill Option A



Part-filled cavity – Option A

- External face consisting of engineering bricks up to required level for flood protection (up to 0.6m maximum above floor level plus one course). Other external facing materials can be used above this level, but ensure interface is watertight.
- Rigid insulation.
- Internal face consisting of blocks.
- Internal cement based render, preferably with lime content. Composition depends on masonry; the following mix is effective:
1 cement : 6 sand: 1 lime on Aircrete.
- Ensure stainless steel wall ties are used to minimise corrosion and consequent staining.
- Sacrificial plasterboard can be used, but it needs to be removed between ground floor and flood level. The board should be fitted horizontally to make removal easier. In some cases a dado rail can be used to cover the joints.

Cavity External Walls- Part fill Option B



Part-filled cavity – Option B

- External cement based render, preferably with lime content. Composition depends on masonry; the following mixes are effective:
1 cement : 4 sand: 1/2 lime on concrete blockwork
1 cement : 6 sand: 1 lime on Aircrete.
- External face consisting of blocks.
- Rigid insulation.
- Internal face consisting of blocks.
- Internal cement based render, preferably with lime content. Composition depends on masonry; the following mix is effective for flood resilience:
1 cement : 6 sand: 1 lime on Aircrete.
- Ensure stainless steel wall ties are used to minimise corrosion and consequent staining.

6.16 The general precautionary measures to mitigate the risk of groundwater flooding in this development are:

- Ground floor threshold levels are higher than 0.25 m above ground level to allow for uncertainty.
- It is proposed to add a tanking membrane up to 0.3 m above the ground level.
- Flow paths are provided around the proposed development, which groundwater will take in the event of groundwater emergence.

As these measures would mitigate the risks from groundwater flooding, it is considered that the risk from groundwater has been managed.



7.1

The NPPF specifically stipulates that consideration should be given to potential off-site flood impacts of any proposed development. These off-site impacts are in relation to the following:

- Surface water management
- Flood flow conveyance, storage and climate change

Surface Water Management

7.2

The surface water run-off will be disposed of using SuDS techniques. The aim is to provide a sustainable design that accommodates the proposed attenuation volume and replicates the existing drainage regime using the SuDS hierarchy. See drainage strategy produced for this project for more information.

7.3

With no increase in the rate of surface water discharge from the site, compared to the site in its current configuration, the proposed development would have no adverse impact on surface water flood risk at the site or surrounding area. The SuDS should be designed at the detailed project stage.

The SuDS Hierarchy (Source:EA Thames region, SuDS a practical guide)

	<i>SUDS technique</i>	<i>Flood Reduction</i>	<i>Pollution Reduction</i>	<i>Landscape & Wildlife Benefit</i>
Most Sustainable ↑ ↓ Least Sustainable	Living roofs	✓	✓	✓
	Basins and ponds - Constructed wetlands - Balancing ponds - Detention basins - Retention ponds	✓	✓	✓
	Filter strips and swales	✓	✓	✓
	Infiltration devices - soakaways - infiltration trenches and basins	✓	✓	✓
	Permeable surfaces and filter drains - gravelled areas - solid paving blocks - porous paviers	✓	✓	
	Tanked systems - over-sized pipes/tanks - storms cells	✓		



Flood Flow conveyance and storage

- 7.4 The proposed development fully compensates for the flood volume taken from the flood zone. See Appendix D for details.
- 7.5 The new development contributes positively to the flood zone by increasing its capacity.



- 8.1 This flood risk assessment has identified the potential flooding mechanisms that could affect the site. As part of this, the following residual risks have been evaluated.

Public safety and Site Access

- 8.2 This assessment has demonstrated that the proposed development will have no adverse impact on flood risk in the area surrounding the site. Available evidence indicates that the development would not change surface water generation. Therefore, there is no basis to indicate that, with respect to flood risk, the proposed development would adversely impact public safety.
- 8.3 It will be necessary to ensure that all building users are fully informed of procedures to be implemented during the threat of imminent flooding.

Flood Warning and evacuation

- 8.4 The site is located within an area covered by the Environment Agency Flood Alert service. It is recommended that the users of the proposed development are registered with this service to receive early warning of imminent flooding.
- 8.5 The occupants of the site are encouraged to sign up for the alerts. An appropriate Flood Management and Evacuation Plan tailored to the use of the site should be in place before the site occupation. Table 4 below shows the actions that will be taken for each flood warning.
- 8.6 Action to be taken in the event of an Alarm being Raised or a Flood Warning Received:
- Raise the alarm and evacuate the site following the established Fire Drill procedures. The main assembly is as per the main house fire drill assembly point.
 - Contact Emergency Fire Services (999) if necessary and Environment Agency Floodline: (0845 988 1188) if the event is unexpected.
 - If safe to do so, locate and turn off critical services, e.g. water, gas & electricity.
 - Follow the routes below to evacuate the site altogether.



Actions that will be taken for each flood warning

Warning	Message	Timing	Action
 FLOOD ALERT	Flooding is possible. Be prepared.	2 hours to 2 days in advance of flooding.	- Be prepared for flooding. - Prepare a flood kit.
 FLOOD WARNING	Flooding is expected. Immediate action required.	Half an hour to 1 day in advance of flooding.	- Act now to protect your property. - Block doors with flood boards or sandbags and cover airbricks and other ventilation holes. - Move pets and valuables to a safe place. - Keep a flood kit ready. - Move any critical equipment and information to a safe location
 SEVERE FLOOD WARNING	Severe flooding. Danger to life.	When flooding poses a significant threat to life and different actions are required.	- Be ready should you need to evacuate from the property. - Co-operate with the emergency services and call 999 if you are in immediate danger.
Warning Removed	No further flooding is currently expected for your area.	Issued when a flood warning is no longer in force.	- Flood water may still be around and could be contaminated. - If you've been flooded, ring your buildings and contents insurance company as soon as possible.

Useful local phone numbers

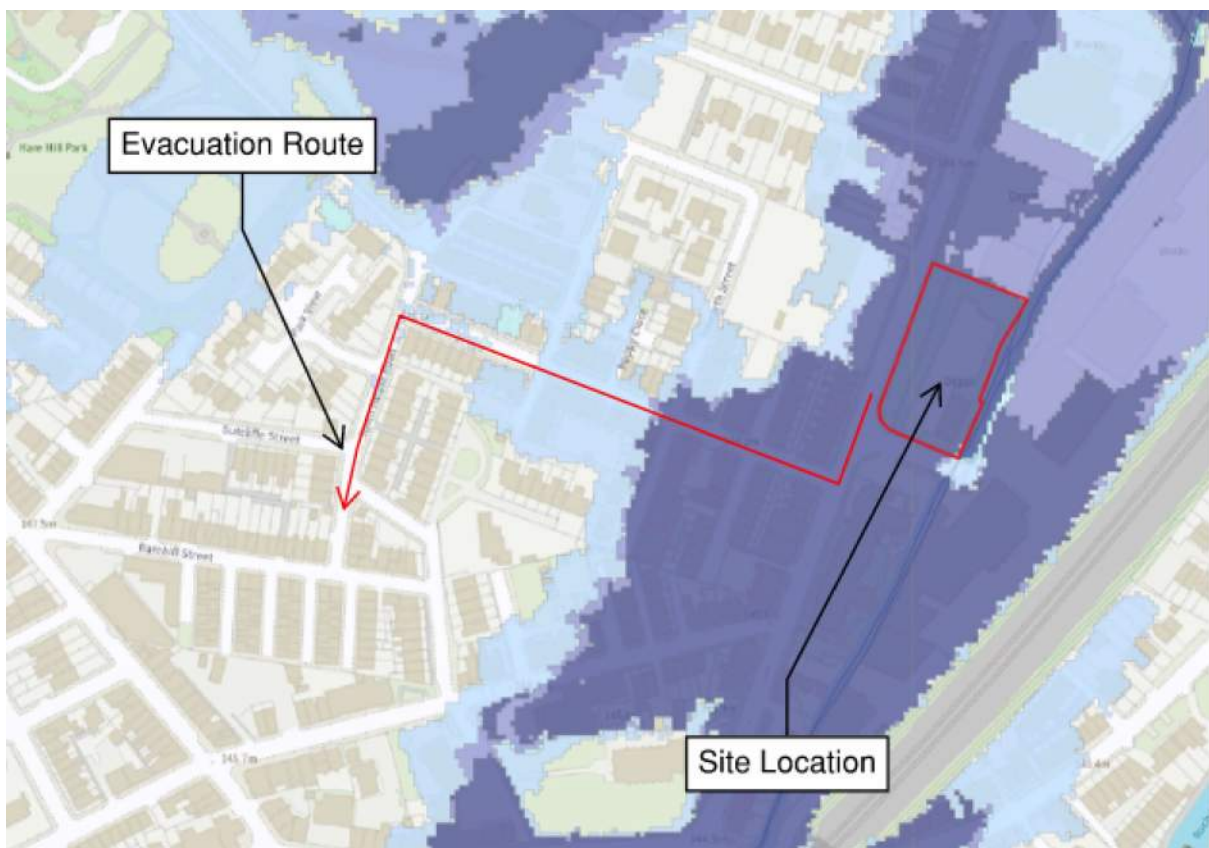
Please write your local phone numbers in the space provided below. Make sure they are easy to find in the event of a flood.

	Local authority:
	Local police:
	Gas and electricity company:
	Insurance company and policy details:
	Doctor:
	Pharmacy:
	Electrician:
	Gas safe engineer:
	Plumber:
	Builder:



- 8.7 The proposed evacuation route below shows how the development could be evacuated before the 1 in 1000 or 0.1% annual probability of flooding extreme flood occurs. Safe egress is achievable by following Todmorden Road, up to Newall Street then following and reaching Town House Road which is shown to be beyond the extent of flooding. See figure below for details.

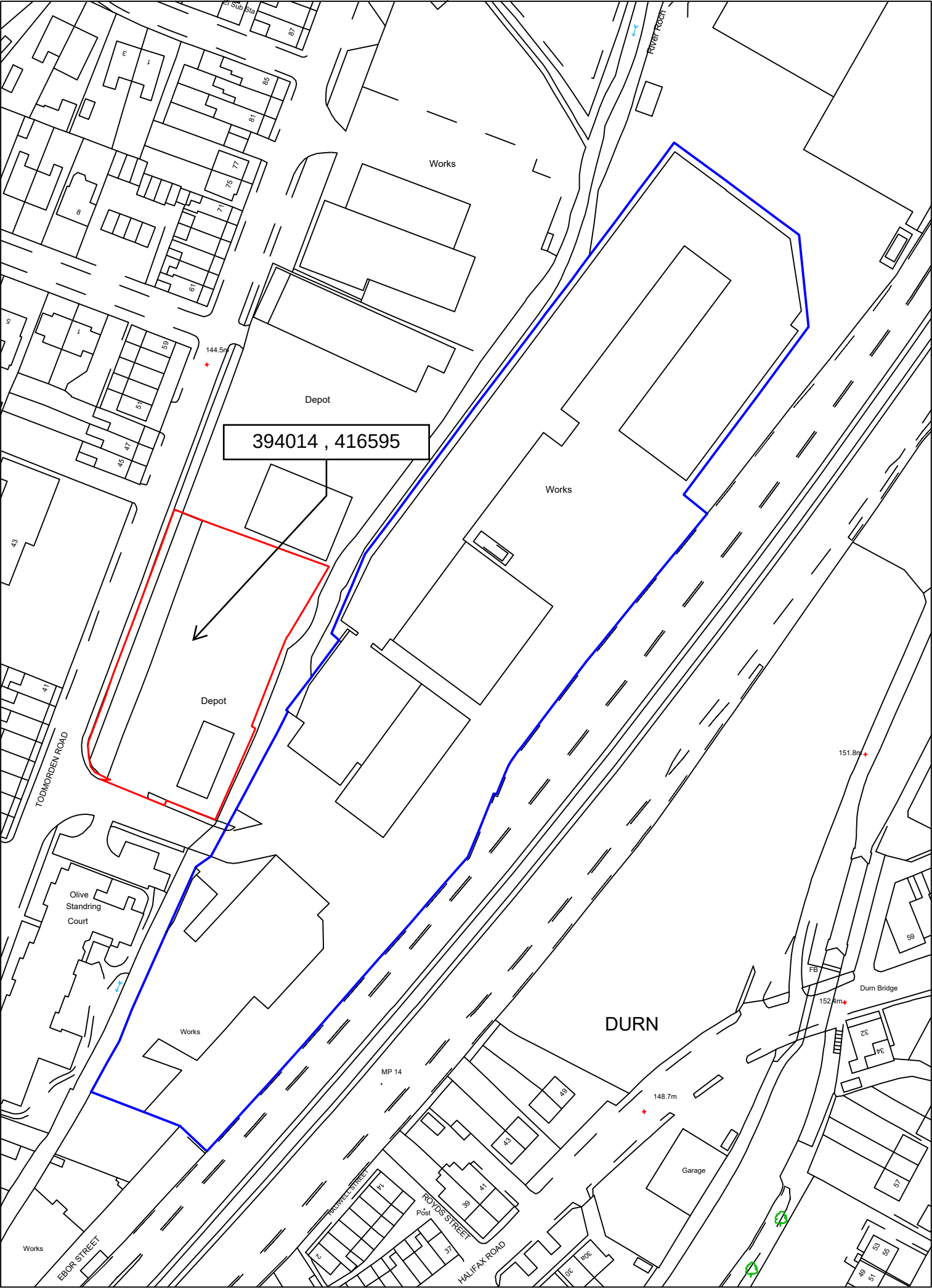
Evacuation Route



- 9.1 It is concluded that subject to the proposed mitigation measures, the site can be developed in accordance with the provisions of the NPPF and the requirements of the Environment Agency and the local planning authority.
- 9.2 This report demonstrates that the proposal will be safe, in terms of flood risk, for its design life and will not increase the flood risk elsewhere.
- 9.3 It is proposed that a formal Flood Warning and Emergency Response Plan is developed for the proposed development to communicate flood emergency response procedures to all the occupants of the site.

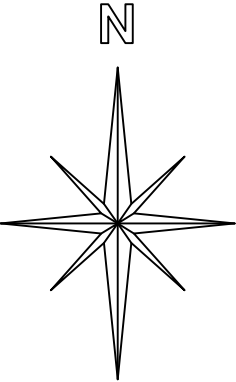


Appendix A



Scale 1:1250

SITE LOCATION PLAN



Appendix B

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CONSTRUCTION NOTES:-

DRAWING TITLE

EXISTING TOPOGRAPHICAL SURVEY DETAILS

JCA

JAMES CAMPBELL ASSOCIATES LTD

CHARTERED ARCHITECTURAL SERVICES

CIOB

THE CHARTERED INSTITUTE OF BUILDING

CIAT

THE CHARTERED INSTITUTE OF ARCHITECTS

Campbell House

173 Rochdale Road

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Rochdale

OL16 3BN

Tel: 01706 354888

Mob: 07817 623183

Email: admin@jamescampbellassociates.co.uk

Web: www.jamescampbellassociates.co.uk

PROJECT

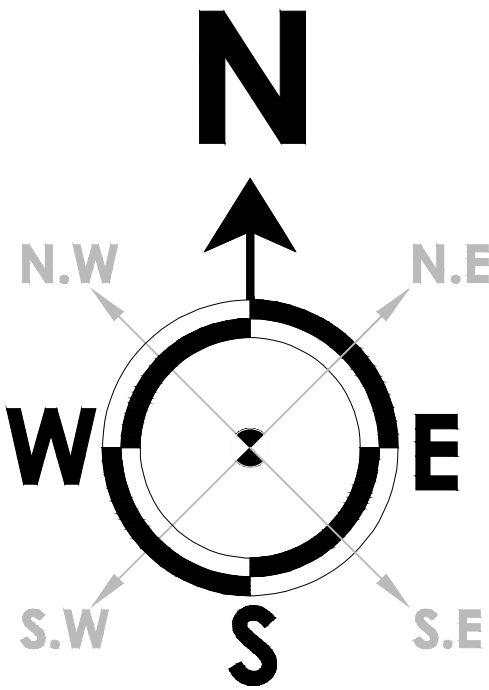
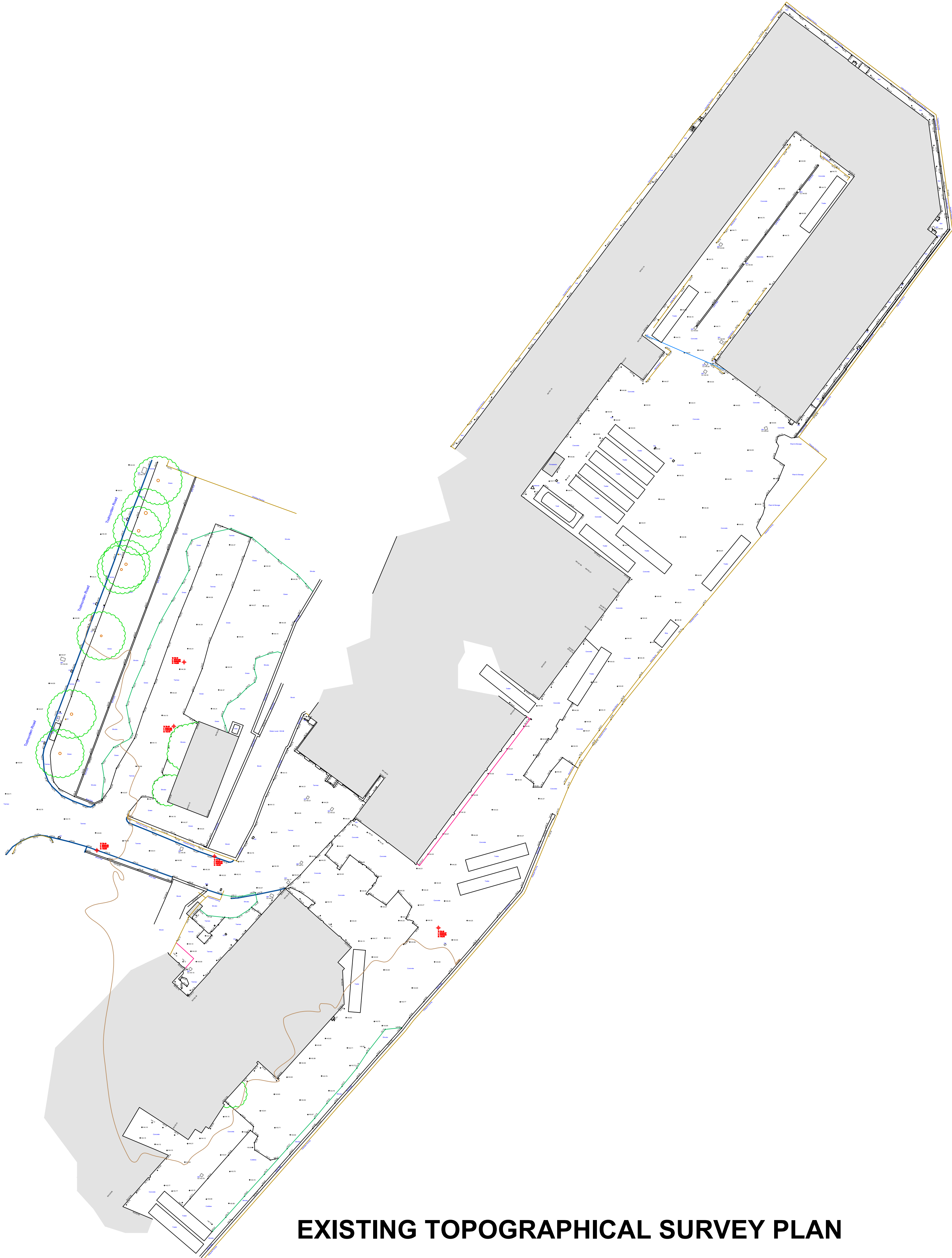
PROPOSED REDEVELOPMENT

LOCATION

GNG Foam Converters (Lancs) Ltd
Pennine Industrial Estate
Todmorden Road
Littleborough

DRAWN:-	Frank James Smith	DRAWING NUMBER:-
DATE:-	June 2024	24.3344.1
SCALE:-	1:500 @ A1	
ISSUE:-		

EXISTING TOPOGRAPHICAL SURVEY PLAN



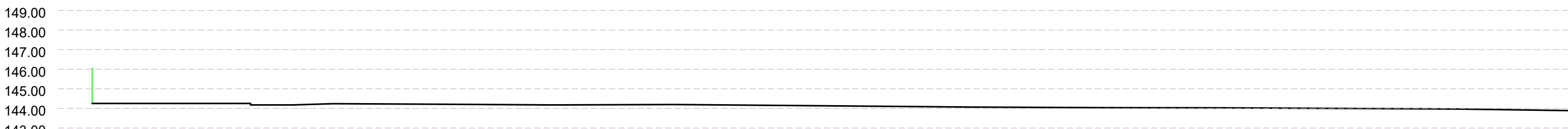
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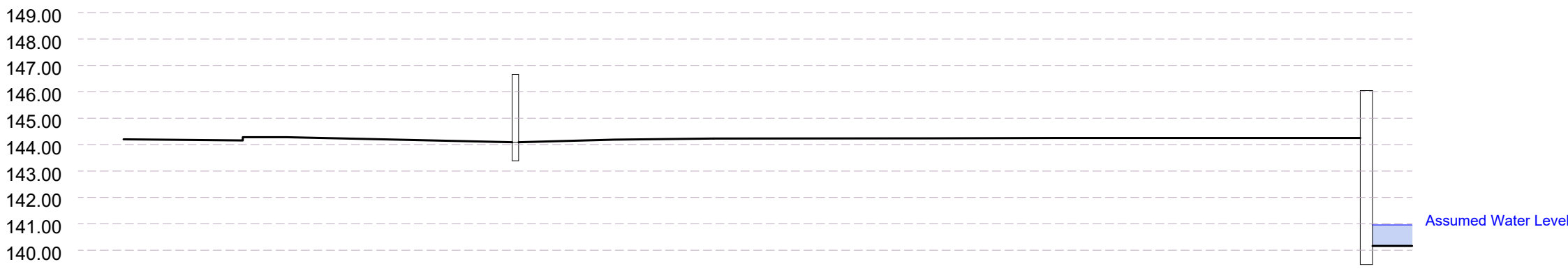
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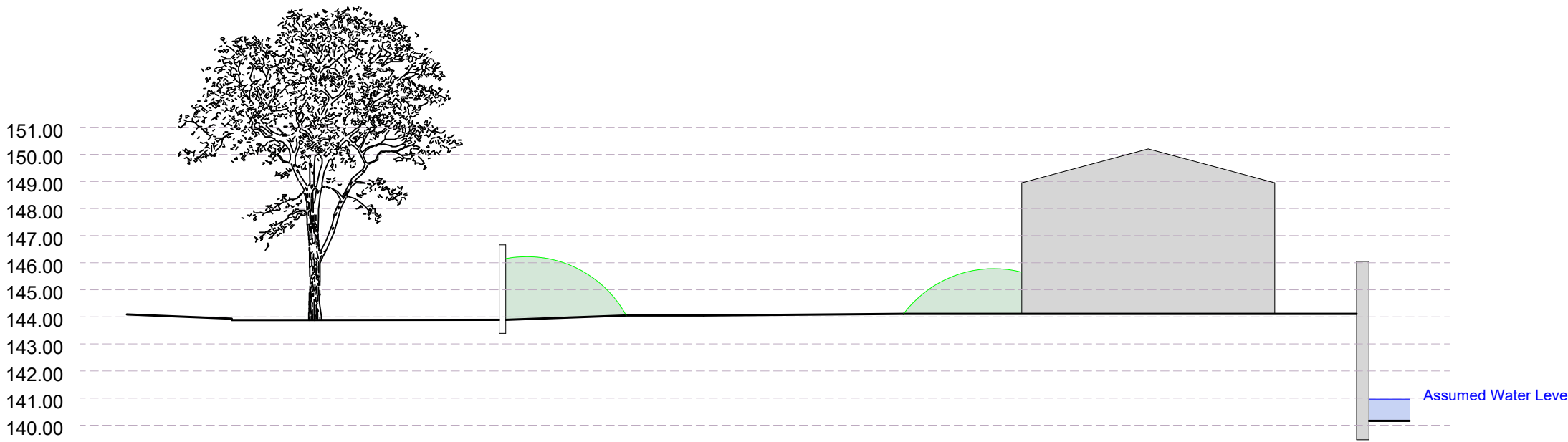
CONSTRUCTION NOTES:-



EXISTING SECTION 1 - 1



EXISTING SECTION 2 - 2



EXISTING SECTION 3 - 3



EXISTING SECTION 4 - 4

DRAWING TITLE		
EXISTING SITE SECTIONS		
JCA James Campbell Associates Ltd Chartered Architectural Services CIOB THE ROYAL INSTITUTE OF BUILDING CIAT THE INSTITUTE OF CIVIL ENGINEERS		
Campbell House 173 Rochdale Road Firgrove Rochdale OL16 3BN Tel: 01706 354888 Mob: 07817 623183 Email: admin@jamescampbellassociates.co.uk Web: www.jamescampbellassociates.co.uk		
PROJECT		
PROPOSED RESIDENTIAL DEVELOPMENT		
LOCATION		
GNG Foam Converters (Lancs) Ltd Pennine Industrial Estate Todmorden Road Littleborough		
DRAWN:-	Frank James Smith	DRAWING NUMBER:-
DATE:-	April 2025	24.3344.2
SCALE:-	1:200 @ A1	
ISSUE:-		

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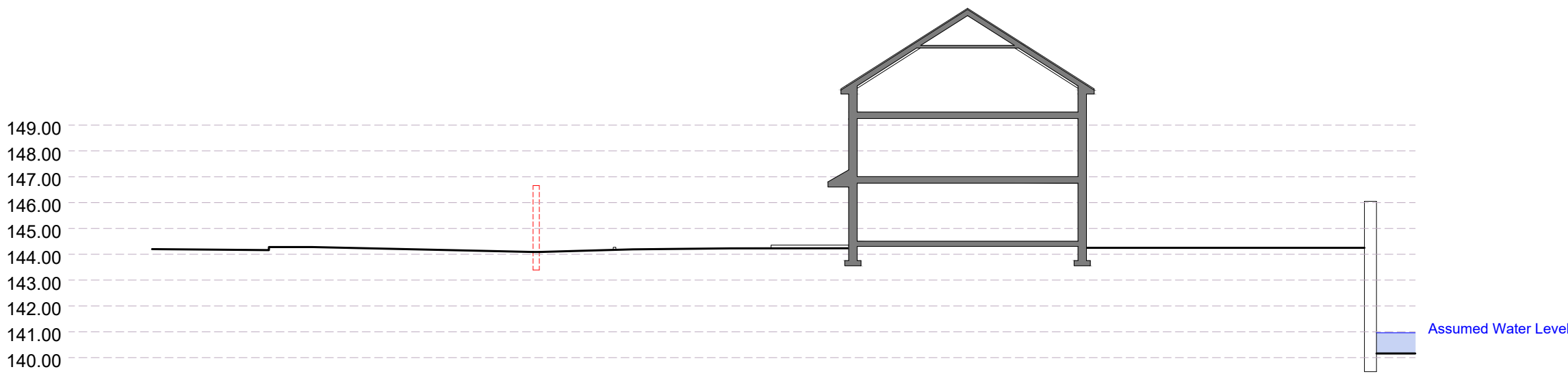
The contract for the works is between the client and his / her contractor. Contractor to visit site, study the details provided within the drawing and be familiar with both the work to be carried out in accordance with the details provided. Any stated dimension must be checked prior to any form of construction. All works and materials to comply with all relevant British Standards and carry a genuine BBA certificate. The materials specified within this drawing are a guide for the contractor as they are recognised materials with genuine BBA certificates etc. Any contractor who decides to use any different materials than that noted on the drawing must inform James Campbell Associates Ltd.

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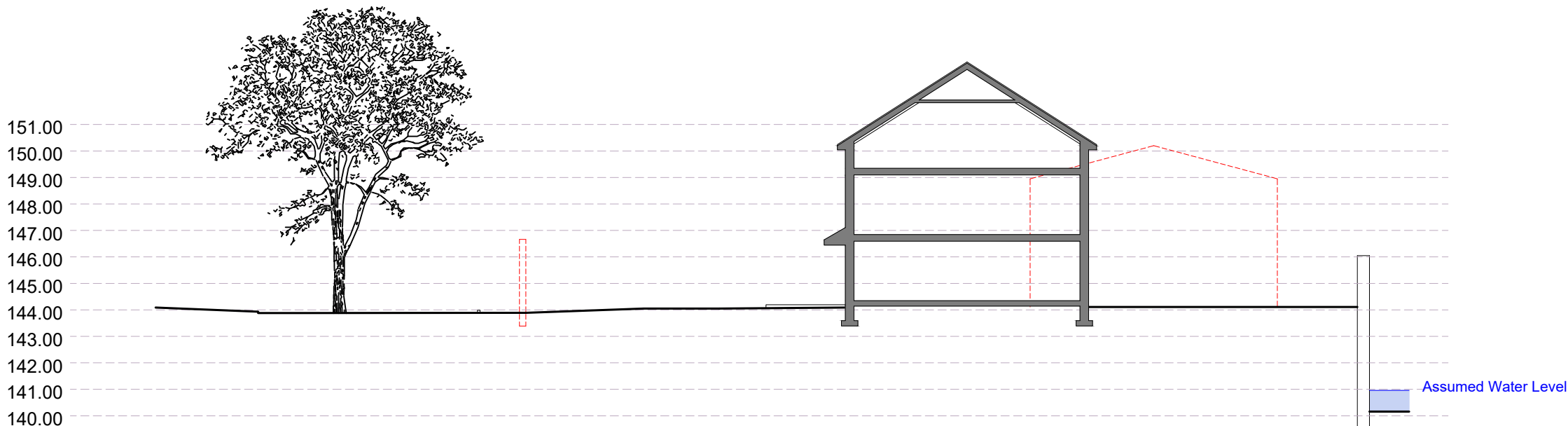
CONSTRUCTION NOTES:-



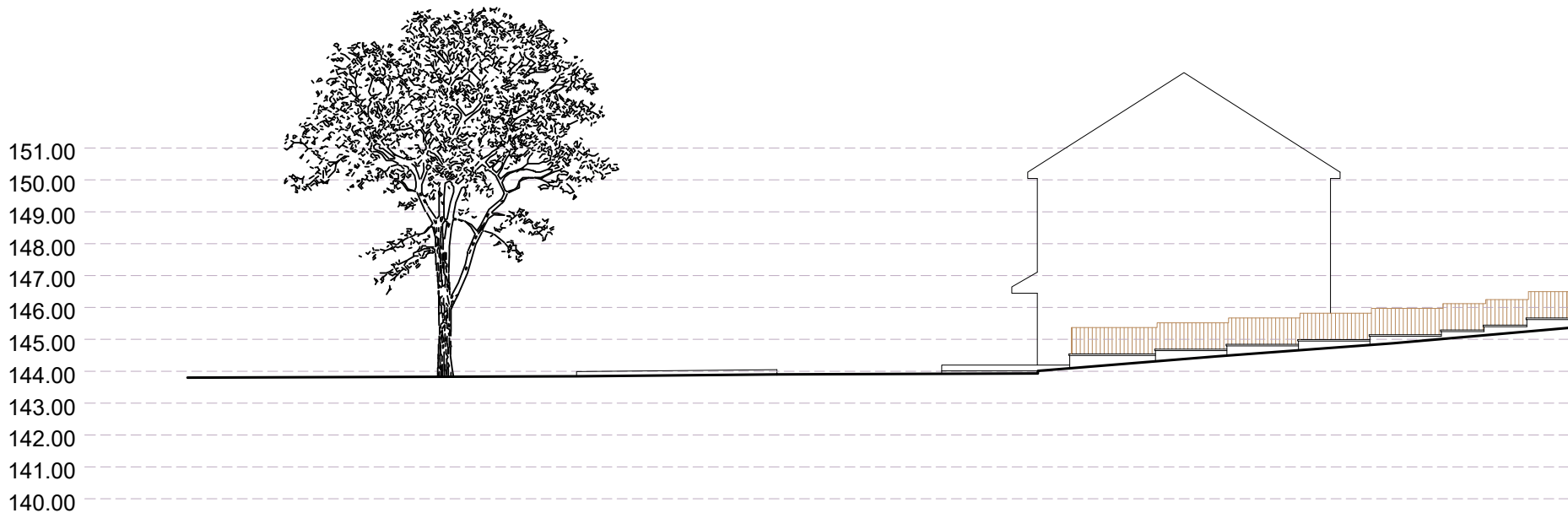
PROPOSED SECTION 1 - 1



PROPOSED SECTION 2 - 2

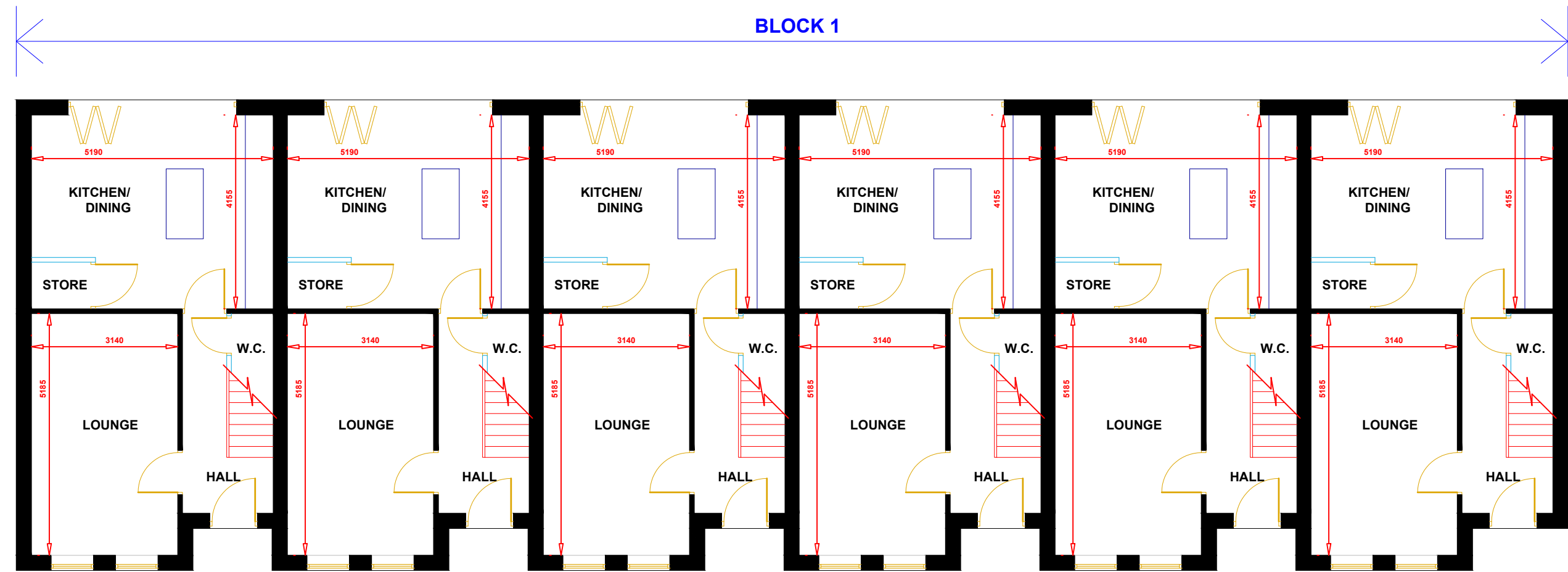


PROPOSED SECTION 3 - 3

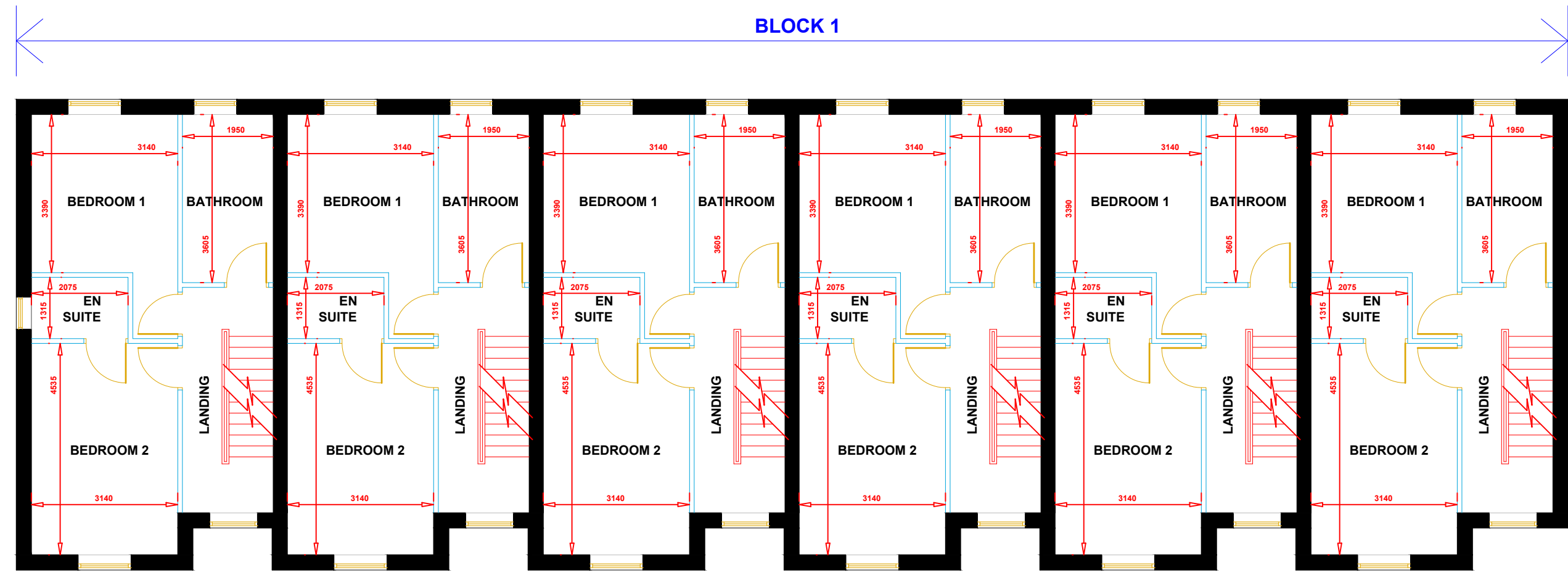


PROPOSED SECTION 4 - 4

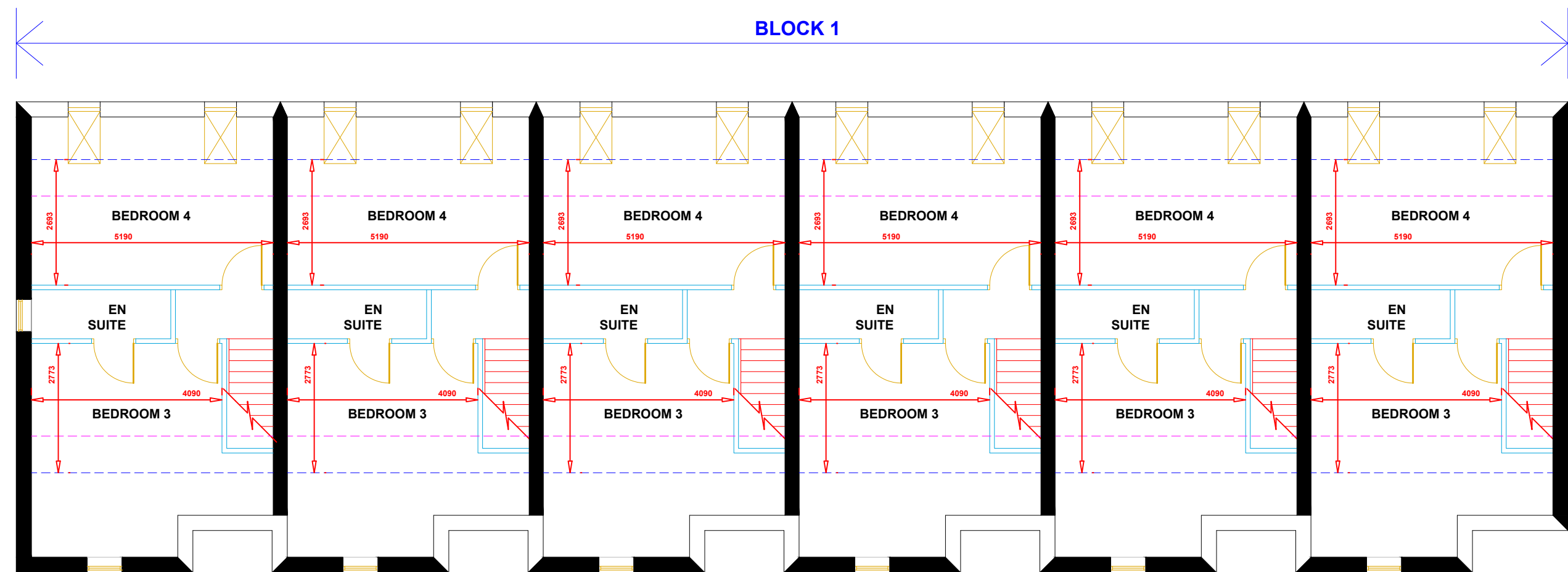
DRAWING TITLE		
PROPOSED SITE SECTIONS		
JCA JAMES CAMPBELL ASSOCIATES LTD CHARTERED ARCHITECTURAL SERVICES CIOB THE CHARTERED INSTITUTE OF BUILDING CIAT THE CHARTERED INSTITUTE OF ARCHITECTS Campbell House 173 Rochdale Road Firgrove Rochdale OL16 3BN Tel: 01706 354888 Mob: 07817 623183 Email: admin@jamescampbellassociates.co.uk Web: www.jamescampbellassociates.co.uk		
PROJECT		
PROPOSED RESIDENTIAL DEVELOPMENT		
LOCATION		
GNG Foam Converters (Lancs) Ltd Pennine Industrial Estate Todmorden Road Littleborough		
DRAWN:-	Frank James Smith	DRAWING NUMBER:-
DATE:-	April 2025	24.3344.3
SCALE:-	1:200 @ A1	
ISSUE:-		



PROPOSED GROUND FLOOR PLAN



PROPOSED FIRST FLOOR PLAN



PROPOSED SECOND FLOOR PLAN

Area Schedule

Ground Floor

Room	Area
Lounge	16.2m2
Hall	6.7m2
W.c	1.5m2
Kitchen / Dining	21.5m2

Total Gross Ground Floor Area = 47m2

Total Gross Internal Area = 129m2

First Floor

Room	Area
Landing	9.4m2
Bedroom 1	12m2
Bedroom 2	14.2m2
En Suite	2.7m2
Bathroom	7.6m2

Total Gross Ground Floor Area = 47m2

Second Floor

Room	Area
Landing	4.5m2
Bedroom 3	12m2
En Suite	3.1m2
Bedroom 4	13.9m2

Total Gross Second Floor Area = 35m2 (Min. 1.5m Height)

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CONSTRUCTION NOTES:-

DRAWING TITLE

PROPOSED BLOCK 1 FLOOR PLANS

JCA

JAMES CAMPBELL ASSOCIATES LTD
CHARTERED ARCHITECTURAL SERVICES



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173 Rochdale Road
Firgrove
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OL16 3BN

Tel: 01706 354888
Mob: 07817 623183
Email: admin@jamescampbellassociates.co.uk
Web: www.jamescampbellassociates.co.uk

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION

GNG Foam Converters (Lancs) Ltd
Pennine Industrial Estate
Todmorden Road
Littleborough

DRAWN:-

Frank James Smith

DRAWING NUMBER:-

DATE:-

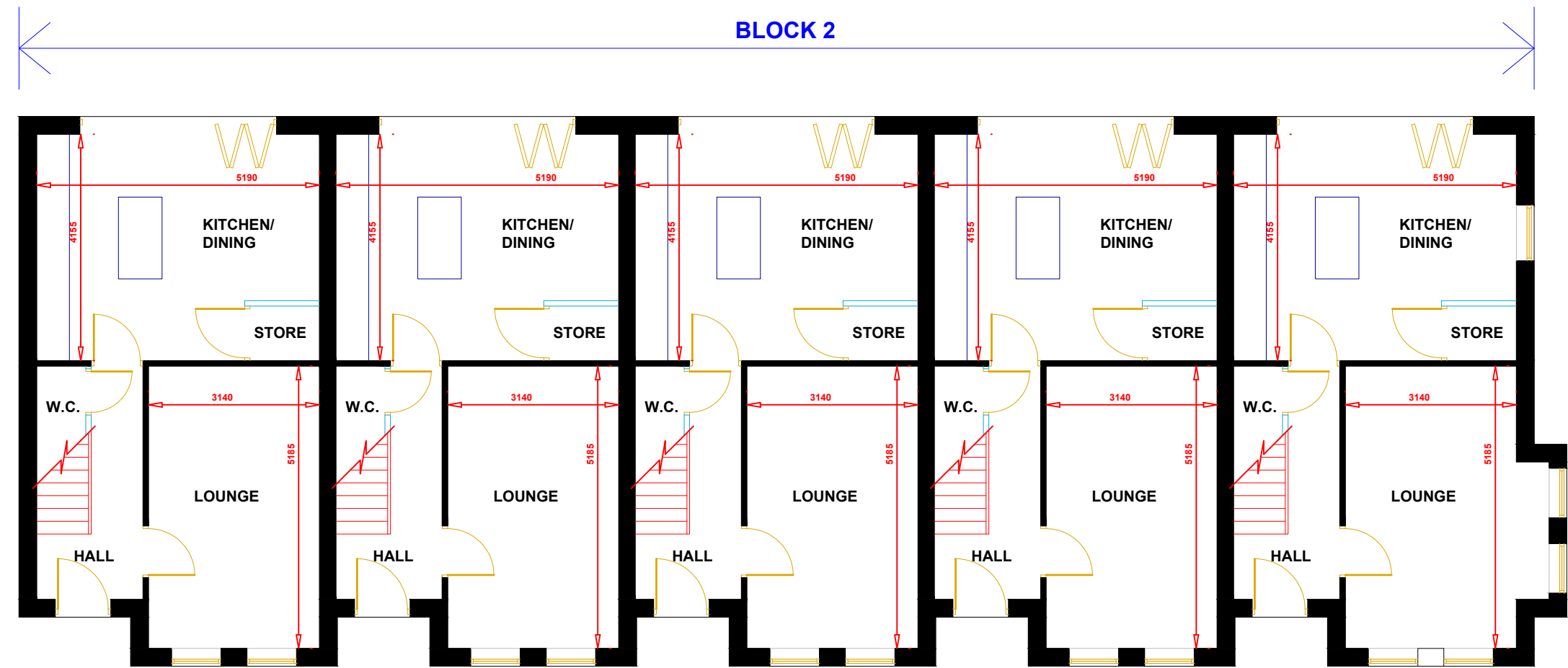
April 2025

SCALE:-

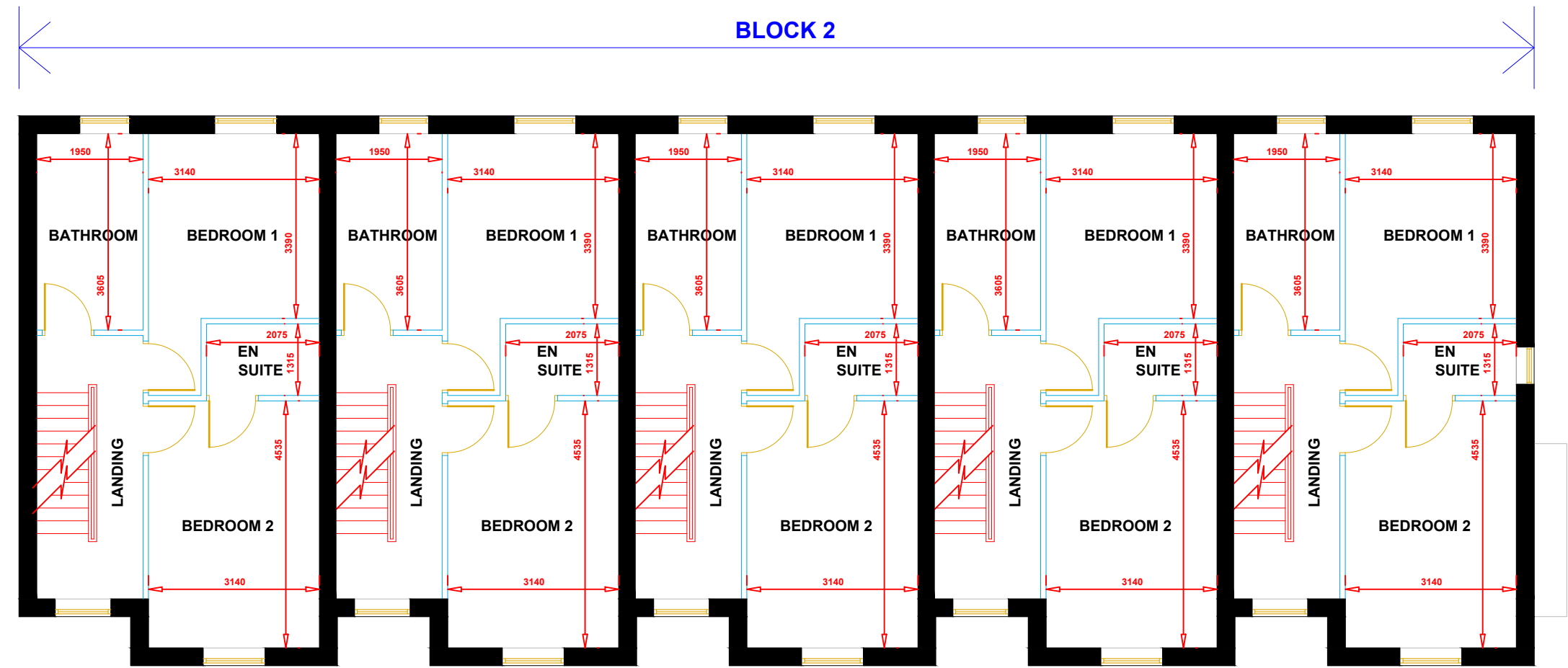
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ISSUE:-

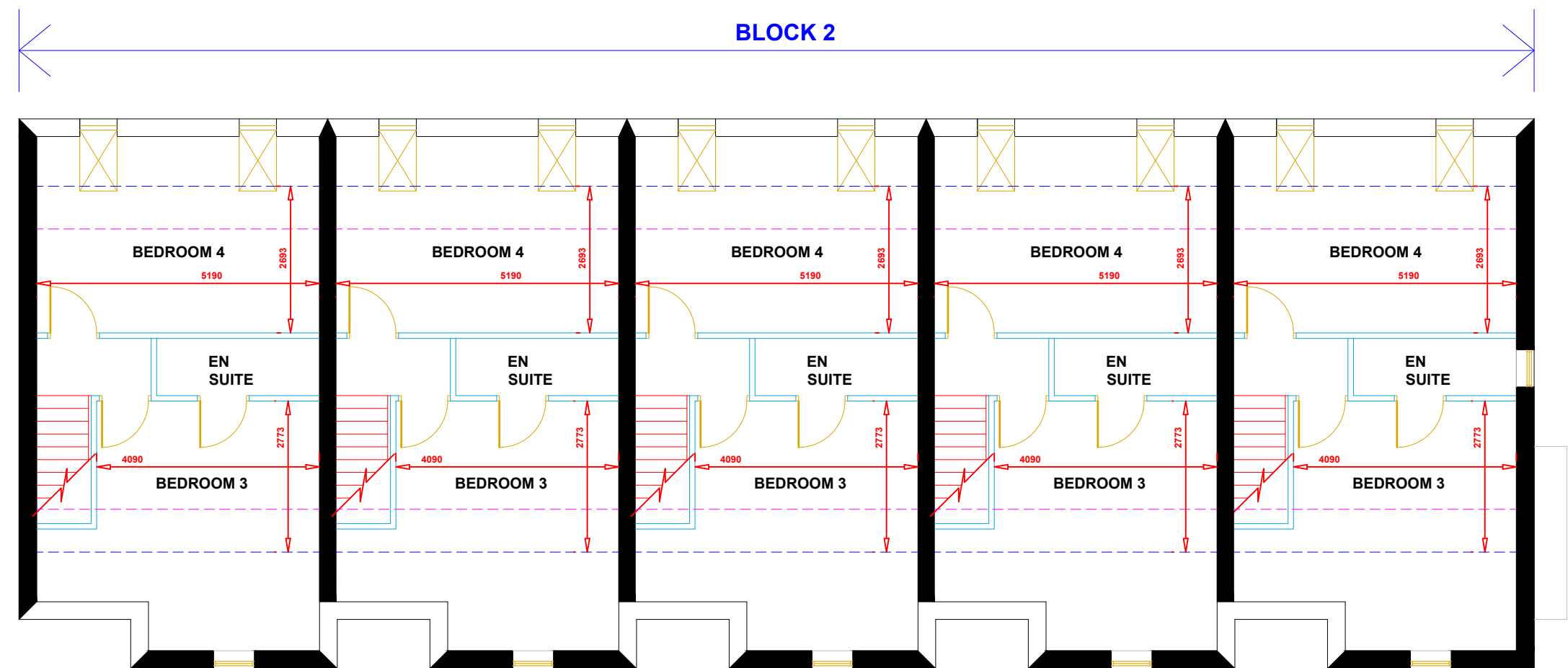
24.3344.4



PROPOSED GROUND FLOOR PLAN



PROPOSED FIRST FLOOR PLAN



PROPOSED SECOND FLOOR PLAN

Area Schedule

Ground Floor

Room	Area
Lounge	16.2m2
Hall	6.7m2
W.c	1.5m2
Kitchen / Dining	21.5m2

Total Gross Ground Floor Area = **47m2**

Total Gross Internal Area = 129m2

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En Suite	3.1m2
Bedroom 4	13.9m2

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CONSTRUCTION NOTES:-

DRAWING TITLE

PROPOSED BLOCK 2 FLOOR PLANS

JCA
JAMES CAMPBELL ASSOCIATES LTD
CHARTERED ARCHITECTURAL SERVICES
CIOB
CIAT

Campbell House
173 Rochdale Road
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OL16 3BN

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Email: admin@jamescampbellassociates.co.uk
Web: www.jamescampbellassociates.co.uk

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION

GNG Foam Converters (Lancs) Ltd
Pennine Industrial Estate
Todmorden Road
Littleborough

DRAWN:- Frank James Smith
DATE:- July 2024
SCALE:- 1:100 @ A1
ISSUE:-

DRAWING NUMBER:-
24.3344.5

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CONSTRUCTION NOTES:-

DRAWING TITLE

PROPOSED BLOCK 1 ELEVATIONS

JCA

JAMES CAMPBELL ASSOCIATES LTD
CHARTERED ARCHITECTURAL SERVICES



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Rochdale
OL16 3BN

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Mob: 07817 623183
Email: admin@jamescampbellassociates.co.uk
Web: www.jamescampbellassociates.co.uk

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION

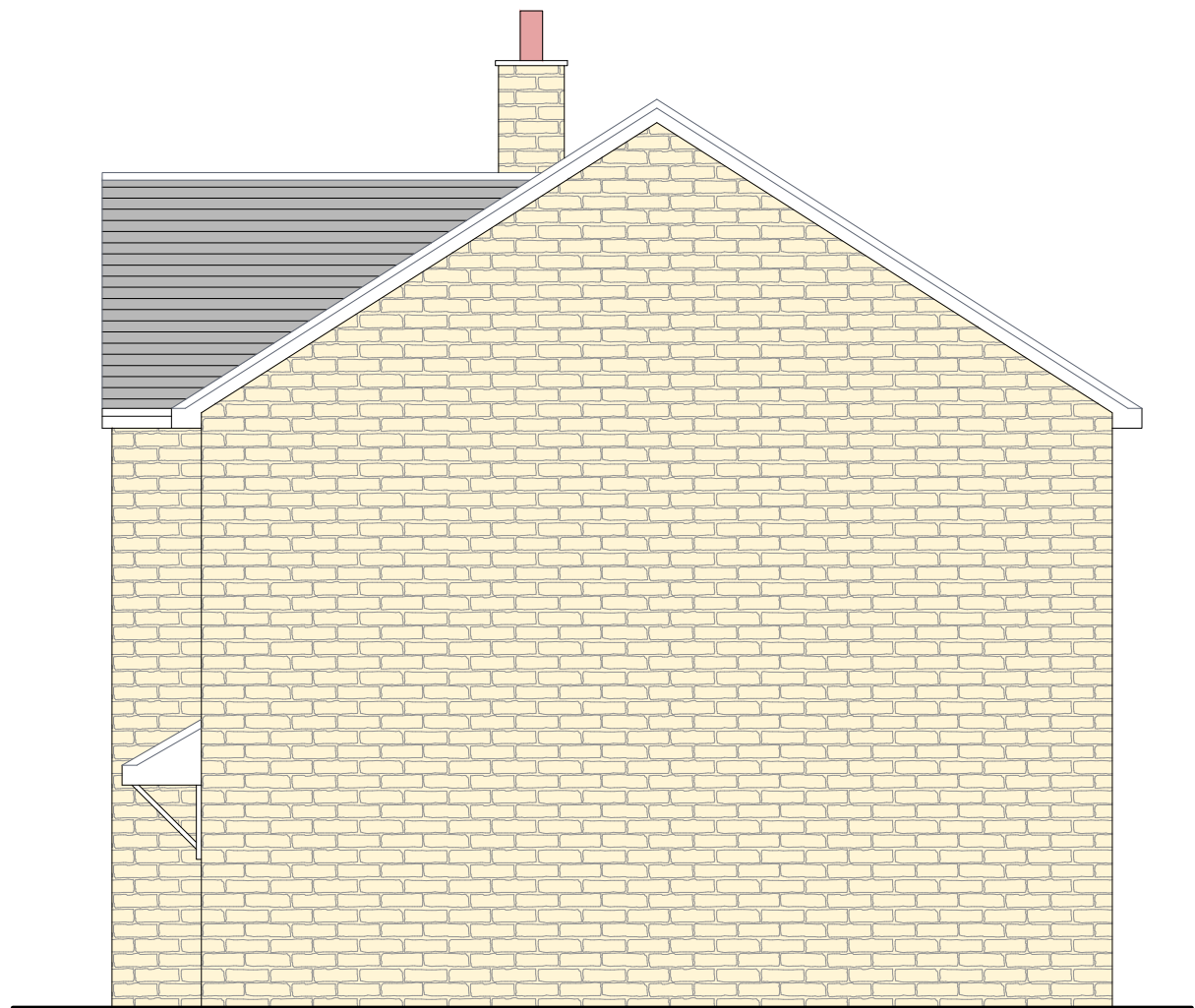
GNG Foam Converters (Lancs) Ltd
Pennine Industrial Estate
Todmorden Road
Littleborough

DRAWN:- Frank James Smith
DATE:- April 2025
SCALE:- 1:75 @ A1
ISSUE:-

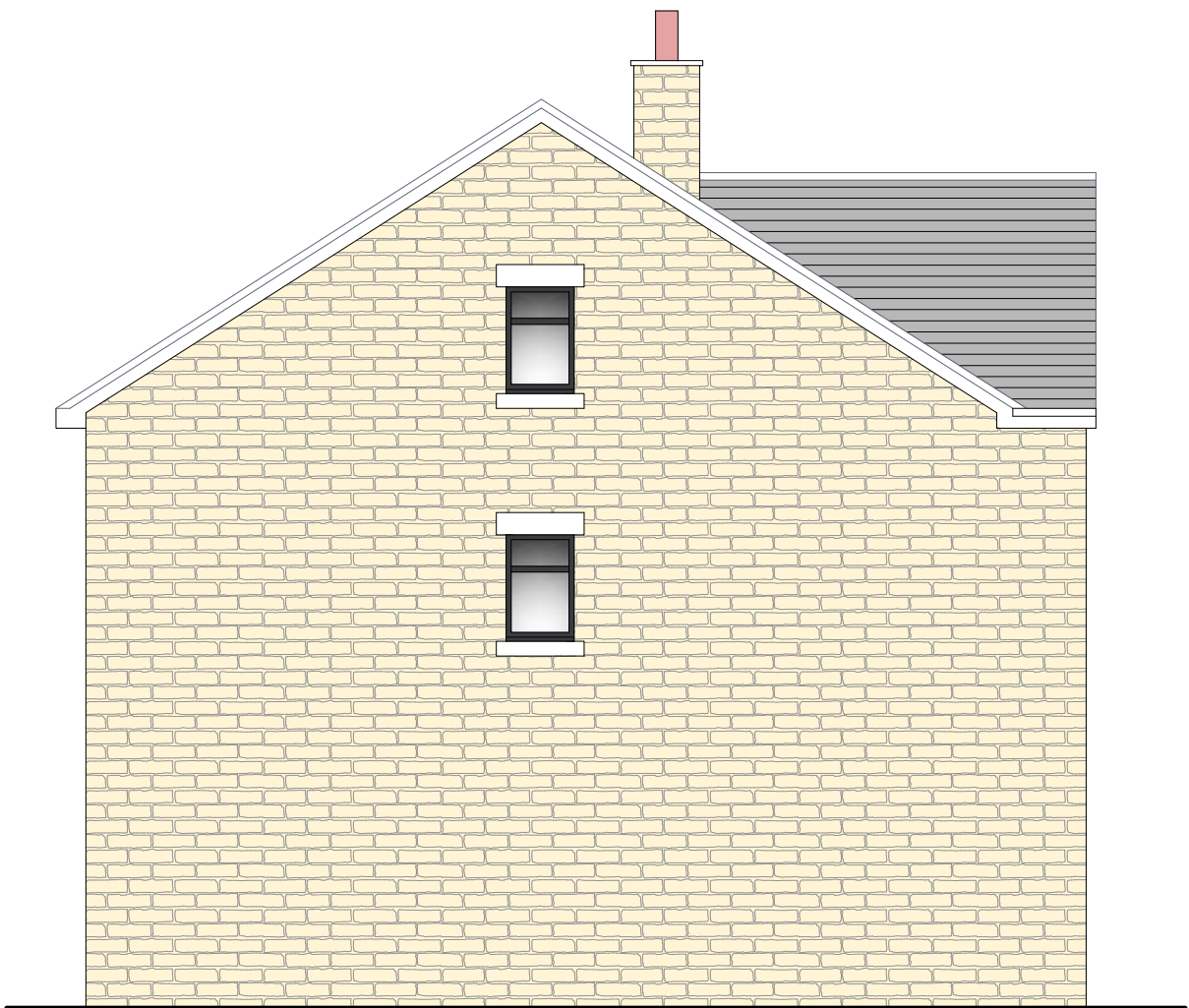
DRAWING NUMBER:-
24.3344.6



PROPOSED FRONT ELEVATION



PROPOSED SIDE ELEVATION 1



PROPOSED SIDE ELEVATION 2



PROPOSED REAR ELEVATION

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CONSTRUCTION NOTES:-

DRAWING TITLE

PROPOSED BLOCK 2 ELEVATIONS

JCA

CHARTERED ARCHITECTURAL SERVICES

CIOB

THE CHARTERED INSTITUTE OF BUILDING

CIAT

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173 Rochdale Road
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Mob: 07817 623183
Email: admin@jamescampbellassociates.co.uk
Web: www.jamescampbellassociates.co.uk

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION

GNG Foam Converters (Lancs) Ltd
Pennine Industrial Estate
Todmorden Road
Littleborough

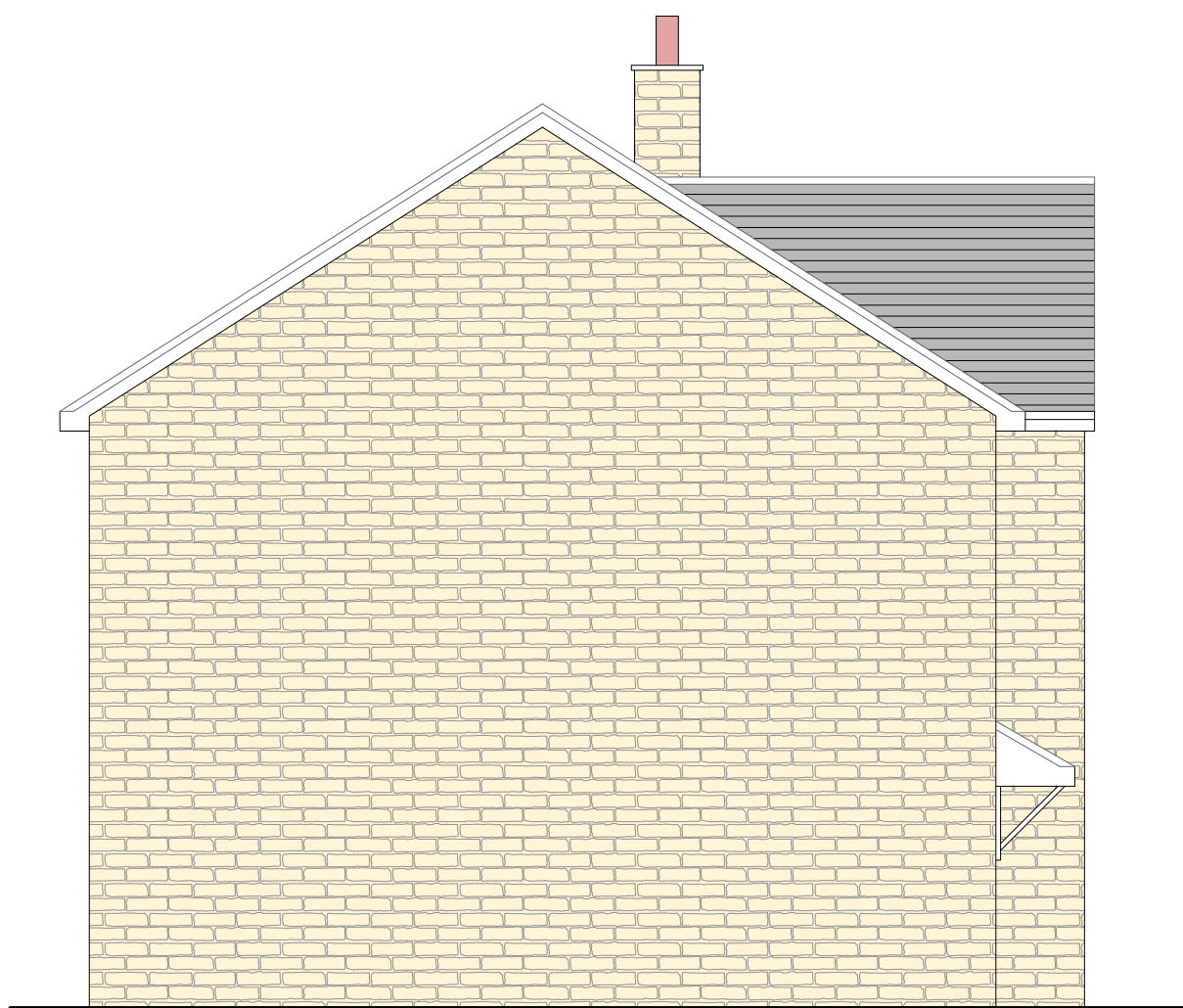
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DATE:- March 2025
SCALE:- 1:75 @ A1
ISSUE:-

DRAWING NUMBER:-

24.3344.7



PROPOSED FRONT ELEVATION



PROPOSED SIDE ELEVATION 1



PROPOSED SIDE ELEVATION 2

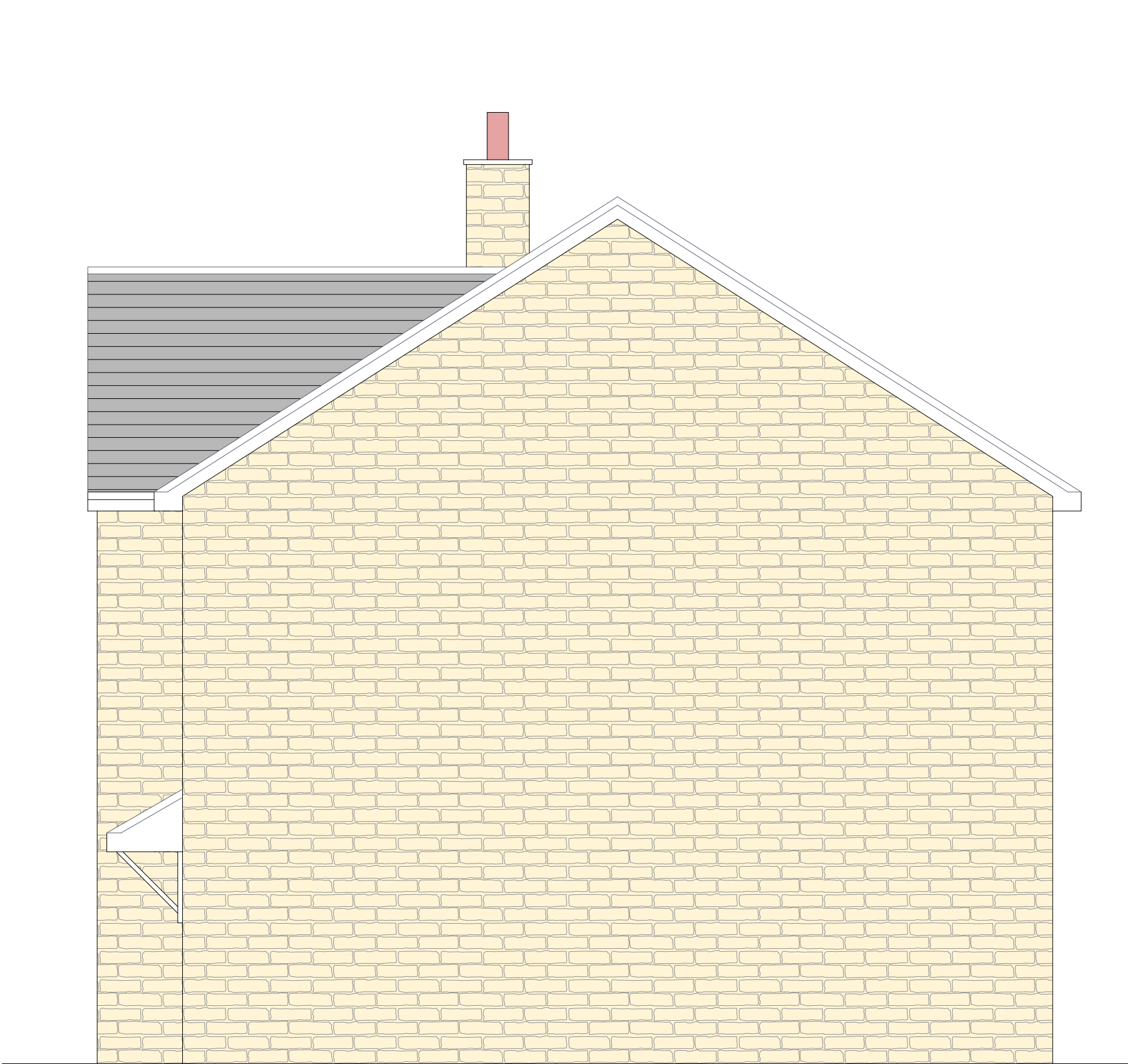


PROPOSED REAR ELEVATION

DRAWING TITLE		PROPOSED LANDSCAPING AND BOUNDARY DETAIL PLAN	
		JAMES CAMPBELL ASSOCIATES LTD CHARTERED ARCHITECTURAL SERVICES  	
Campbell House 173 Rochdale Road Firgrove Rochdale OL16 3BN		Tel: 01706 354888 Mob: 07867 023183 Email: admin@jamescampbellassociates.co.uk Web: www.jamescampbellassociates.co.uk	
PROJECT			
PROPOSED RESIDENTIAL DEVELOPMENT			
LOCATION			
GNG Foam Converters (Lancs) Ltd Pennine Industrial Estate Todmorden Road Littleborough			
DRAWN:- Frank James Smith		DRAWING NUMBER:-	
DATE:- April 2025		24.3344.8	
SCALE:- 1:100 @ A0			
ISSUE:-			



PROPOSED FRONT ELEVATION

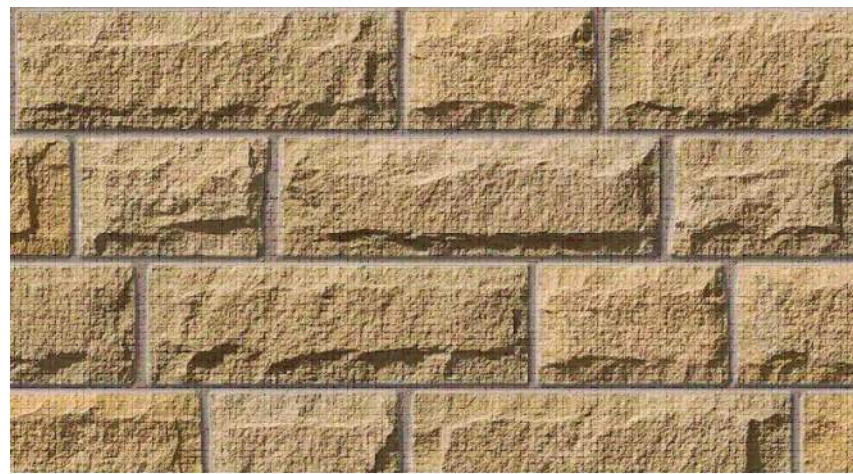


PROPOSED SIDE ELEVATION 1



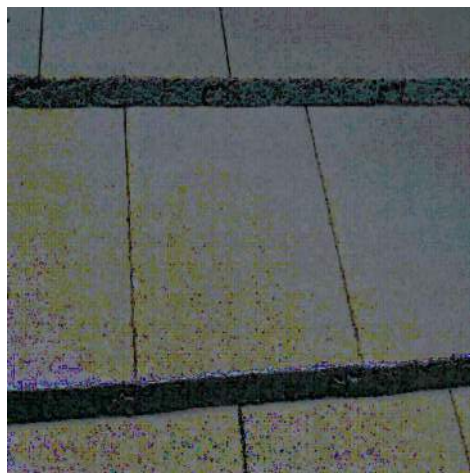
PROPOSED REAR ELEVATION

1. External Facade



Primary - Anstone Premier (Med Buff)

2. Roofing



Marley Modern Grey Concrete Tile

3. Misc.

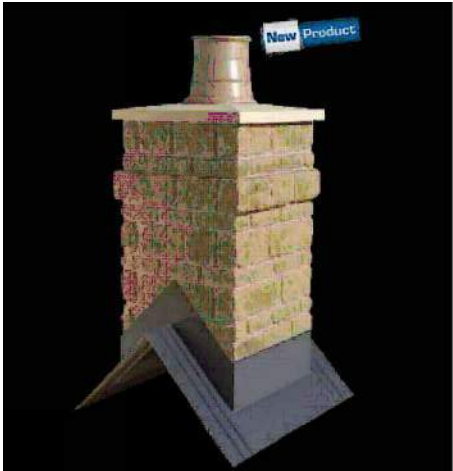


(A) Window and Doors
Dark Grey upvc Window/
Door Frames - Anthracite



(B) Eaves
Slate grey eaves boards
(RAL7015)

(C) Gutter
Black 117mm Square
UPVC Gutter (4m)



(D) Chimneys
GRP Chimney Fixtures
stone clad



(E) Cladding
Anthracite cladding to
canopies

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CONSTRUCTION NOTES:-

DRAWING TITLE

MATERIAL DETAIL

JCA
JAMES CAMPBELL ASSOCIATES LTD
CHARTERED ARCHITECTURAL SERVICES

CIAT

Campbell House
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Rochdale
OL16 3BN

Tel: 01706 354888
Mob: 07817 623183
Email: admin@jamescampbellassociates.co.uk
Web: www.jamescampbellassociates.co.uk

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION

GNG Foam Converters (Lancs) Ltd
Pennine Industrial Estate
Todmorden Road
Littleborough

DRAWN:-	Frank James Smith	DRAWING NUMBER:-
DATE:-	April 2025	24.3344.9A
SCALE:-	1:50 @ A1	
ISSUE:-	A	



PROPOSED SITE PLAN

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CONSTRUCTION NOTES:-

N

N.W.

N.E.

W

E

S.W.

S

S.E.

KEY

Existing Retained Trees

Removed Building / Wall

Section Lines

New Garden Landscaping

Existing Retained Landscaping

Proposed Dwellings (Block 1)

Proposed Dwellings (Block 2)

Proposed New Access Road

Proposed New Footpath(s)

Proposed Parking Spaces

Proposed Retaining Wall

Proposed Low Level Wall

DRAWING TITLE

PROPOSED SITE PLAN

JCA

JAMES CAMPBELL ASSOCIATES LTD

CHARTERED ARCHITECTURAL SERVICES

Campbell House
173 Rochdale Road
Firgrove
Rochdale
OL16 3BN

Tel: 01706 354888
Mob: 07817 623183
Email: admin@jamescampbellassociates.co.uk
Web: www.jamescampbellassociates.co.uk

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

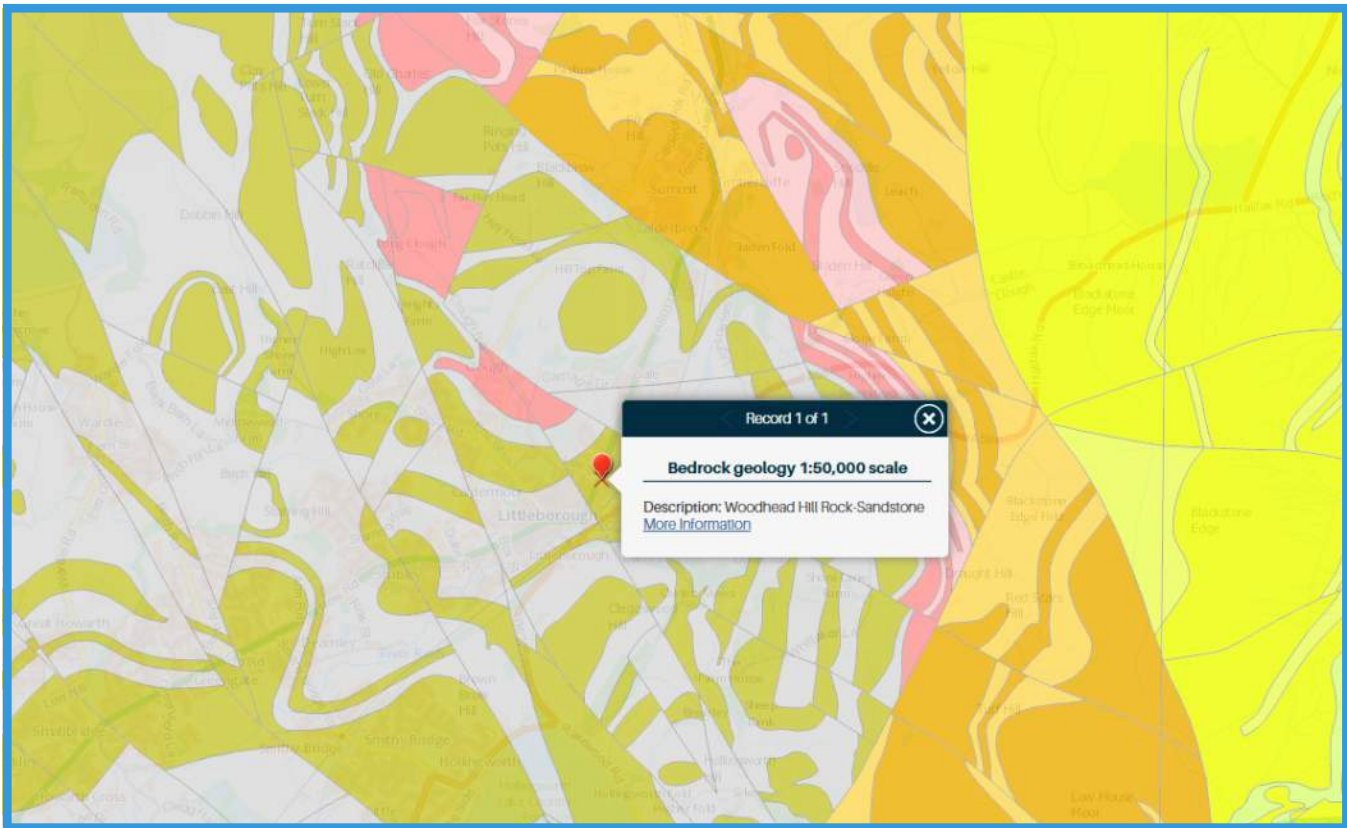
LOCATION

GNG Foam Converters (Lancs) Ltd
Pennine Industrial Estate
Todmorden Road
Littleborough

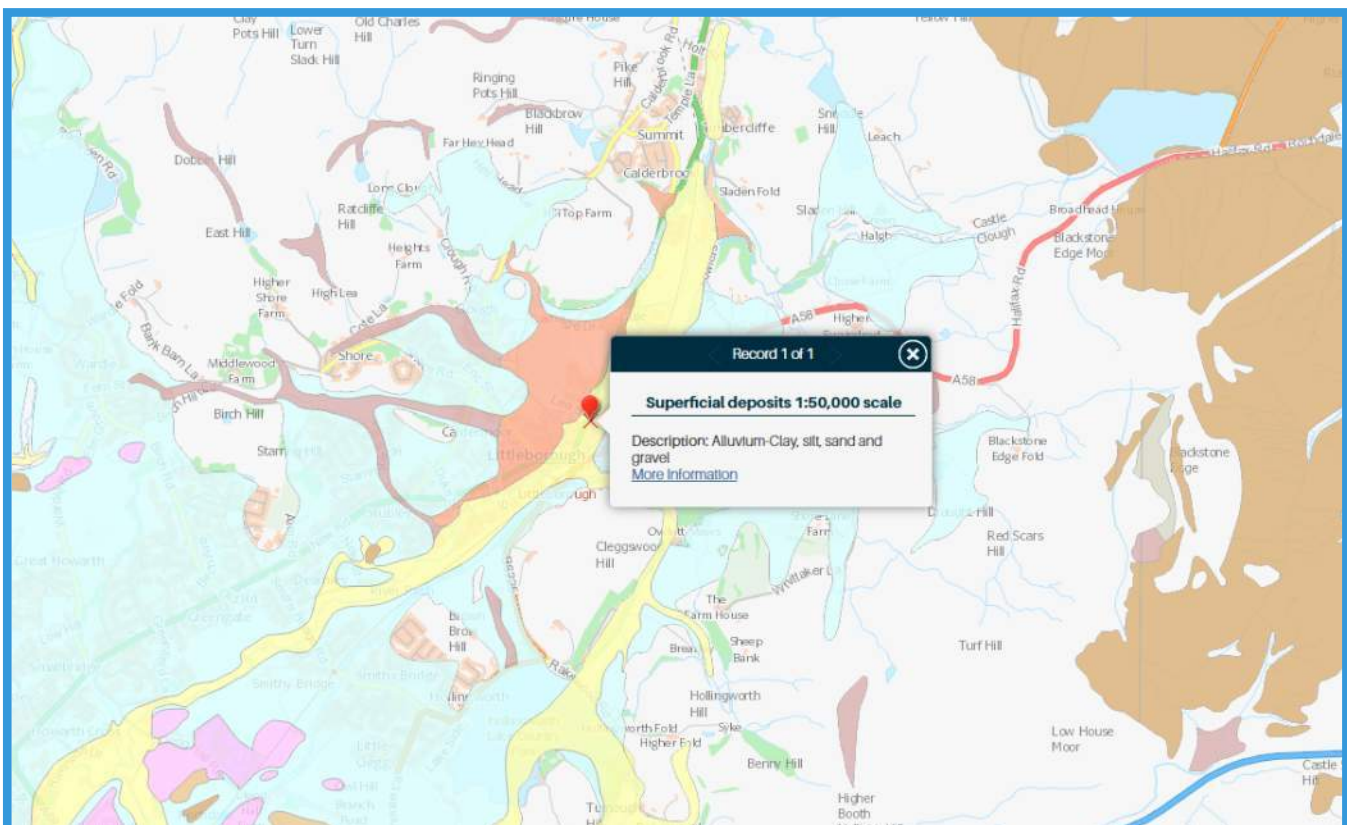
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DATE:-	April 2025	24.3344.10
SCALE:-	1:125 @ A1	
ISSUE:-		

Appendix C

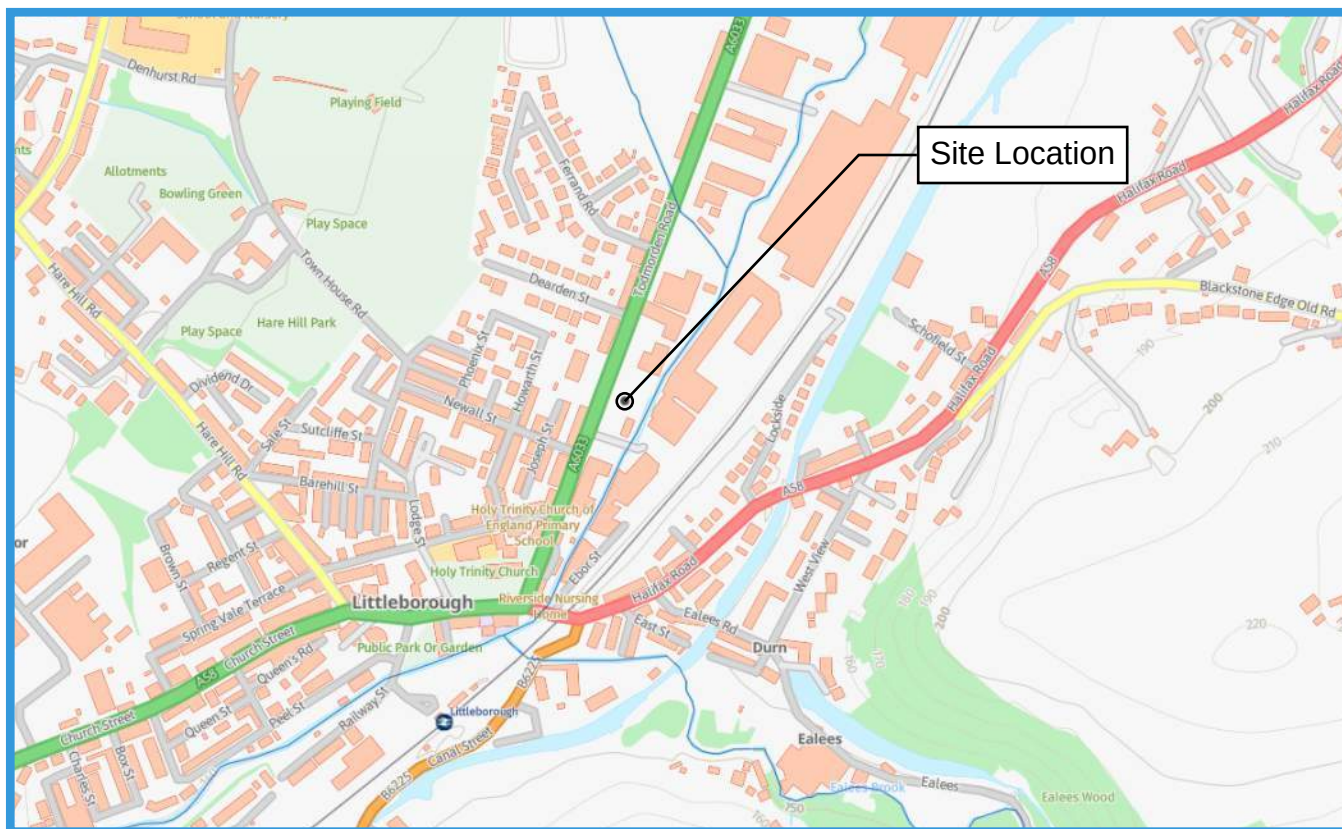
GEOLOGY - BEDROCK - Woodhead Hill Rock-Sandstone



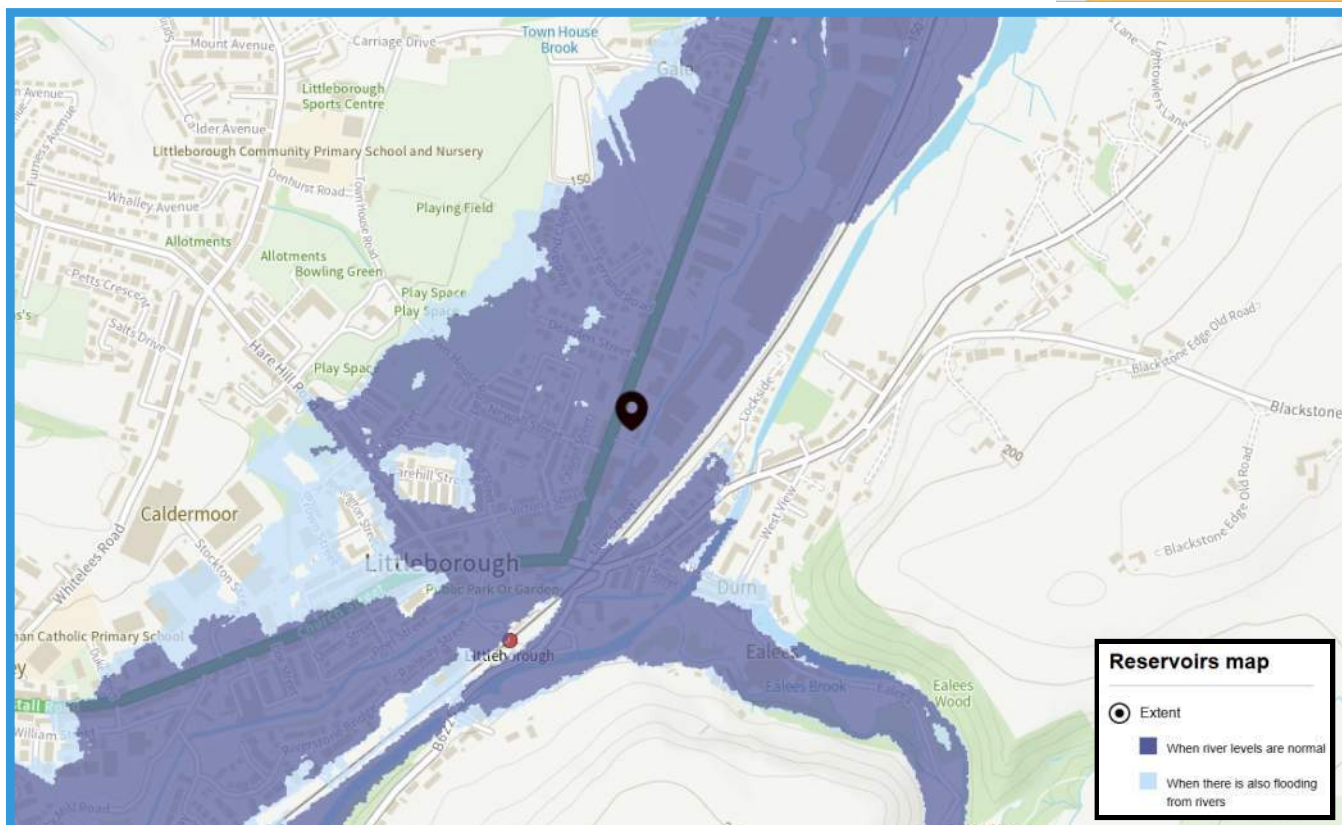
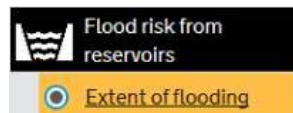
GEOLOGY - SUPERFICIAL DEPOSITS - Alluvium-Clay, silt, sand and gravel



Main River Map



Reservoirs Map

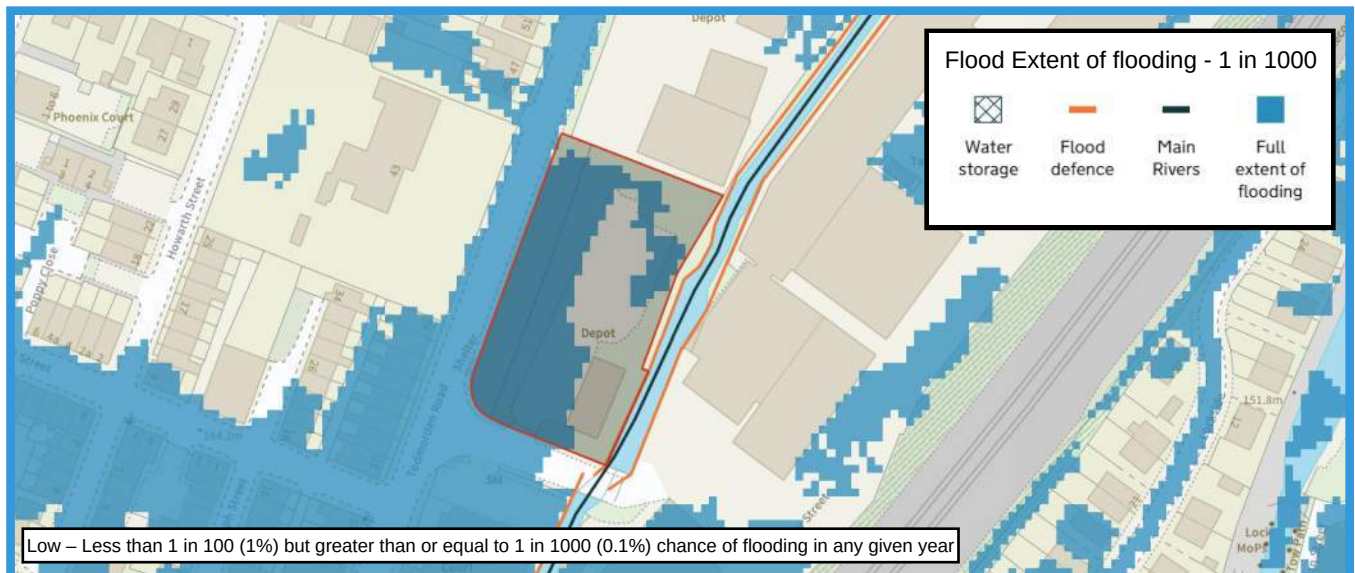
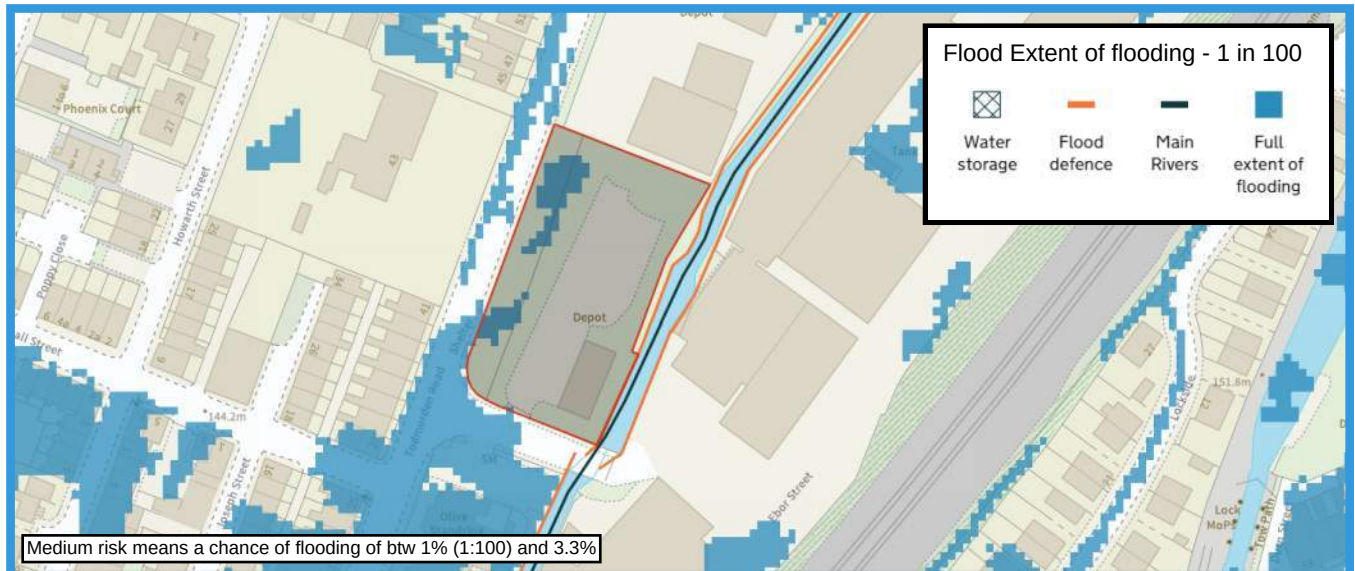


This is the EA Climate change scenarios. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5.

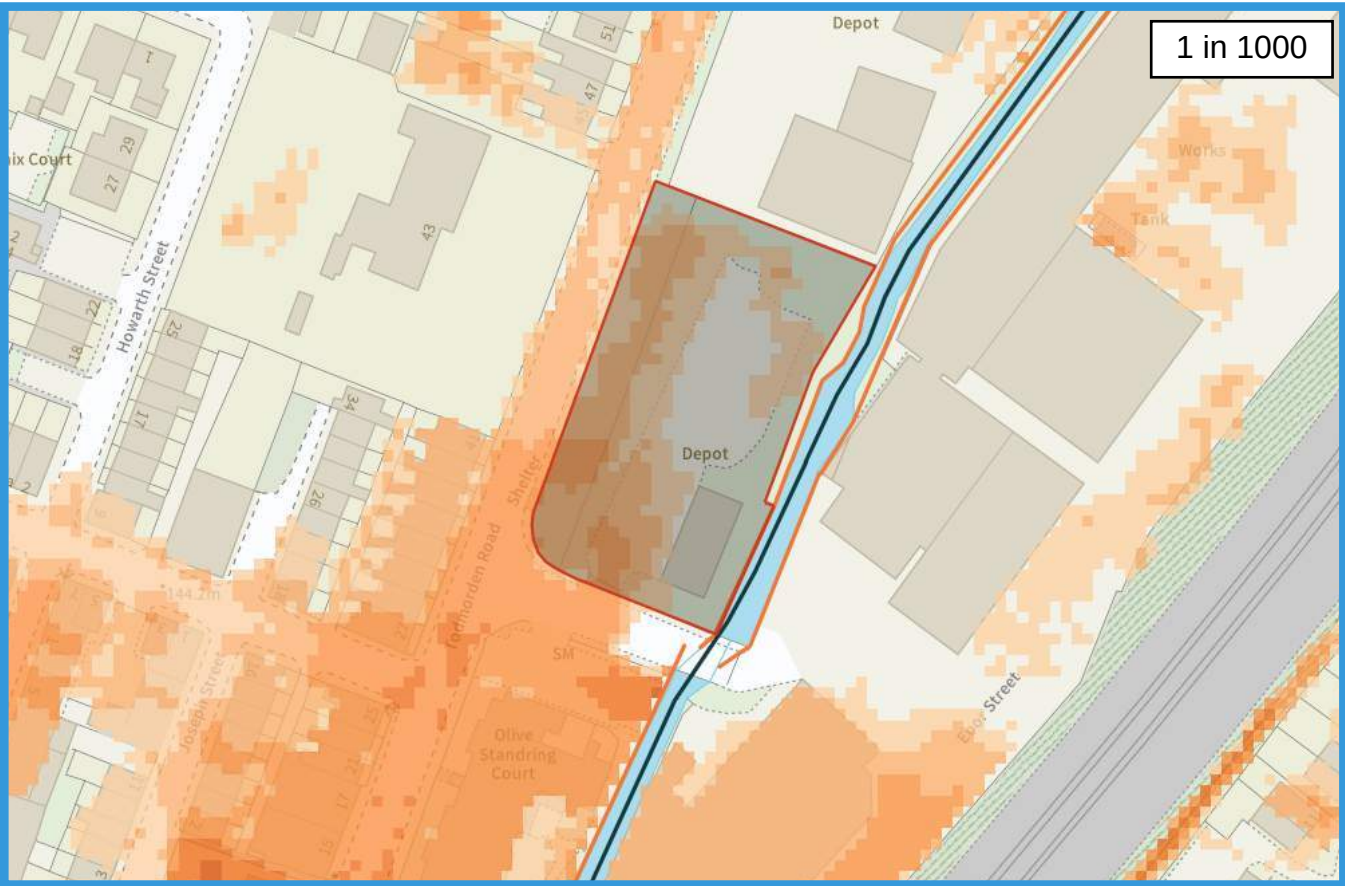
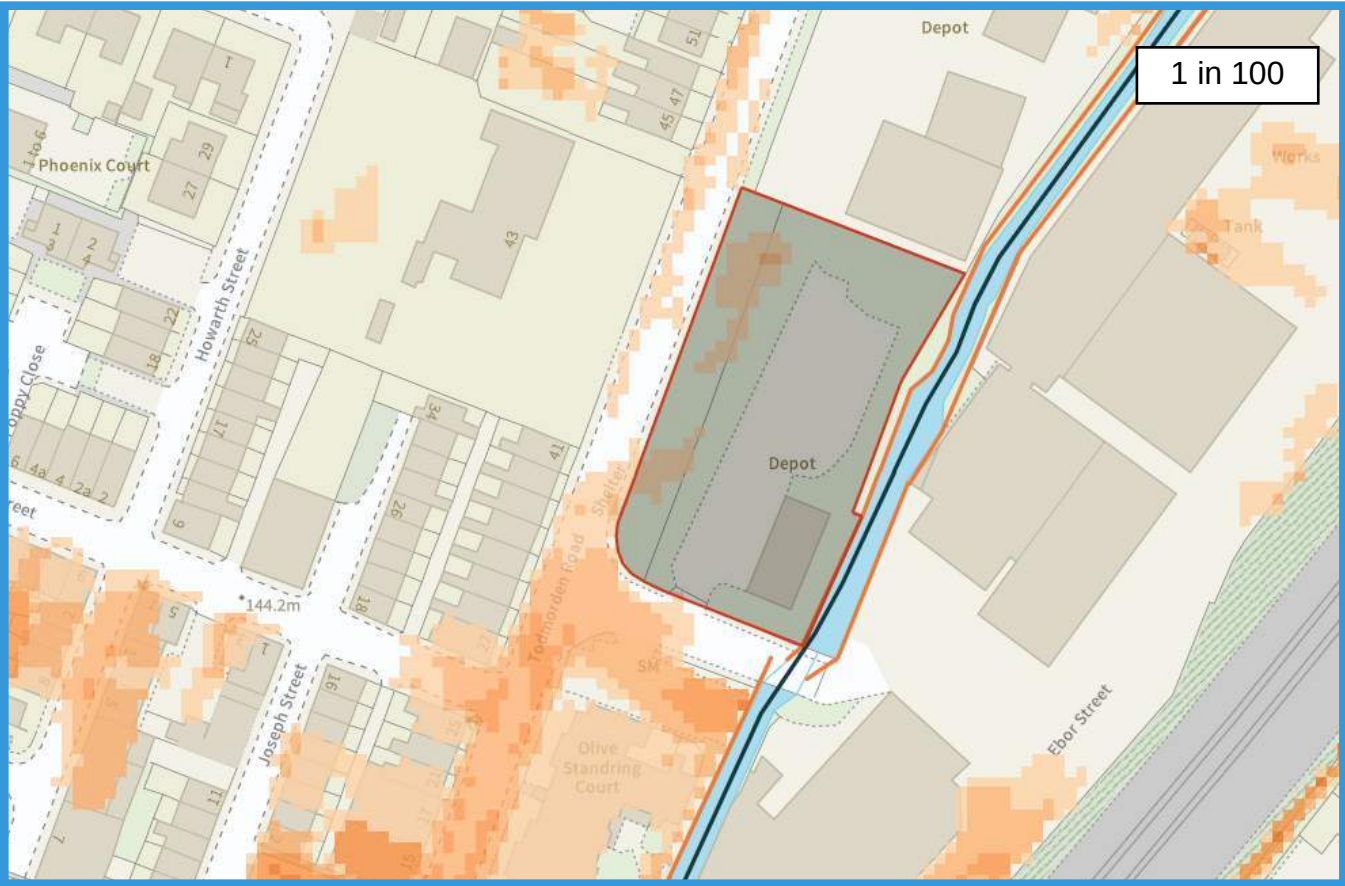
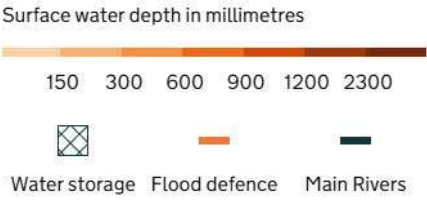
The 'Upper end' (based on the 95th percentile) for the 2070s epoch (2061-2125) has been used for the climate change scenarios. We have chosen long-term epochs appropriate to support long-term planning and development decisions.

EXTENT

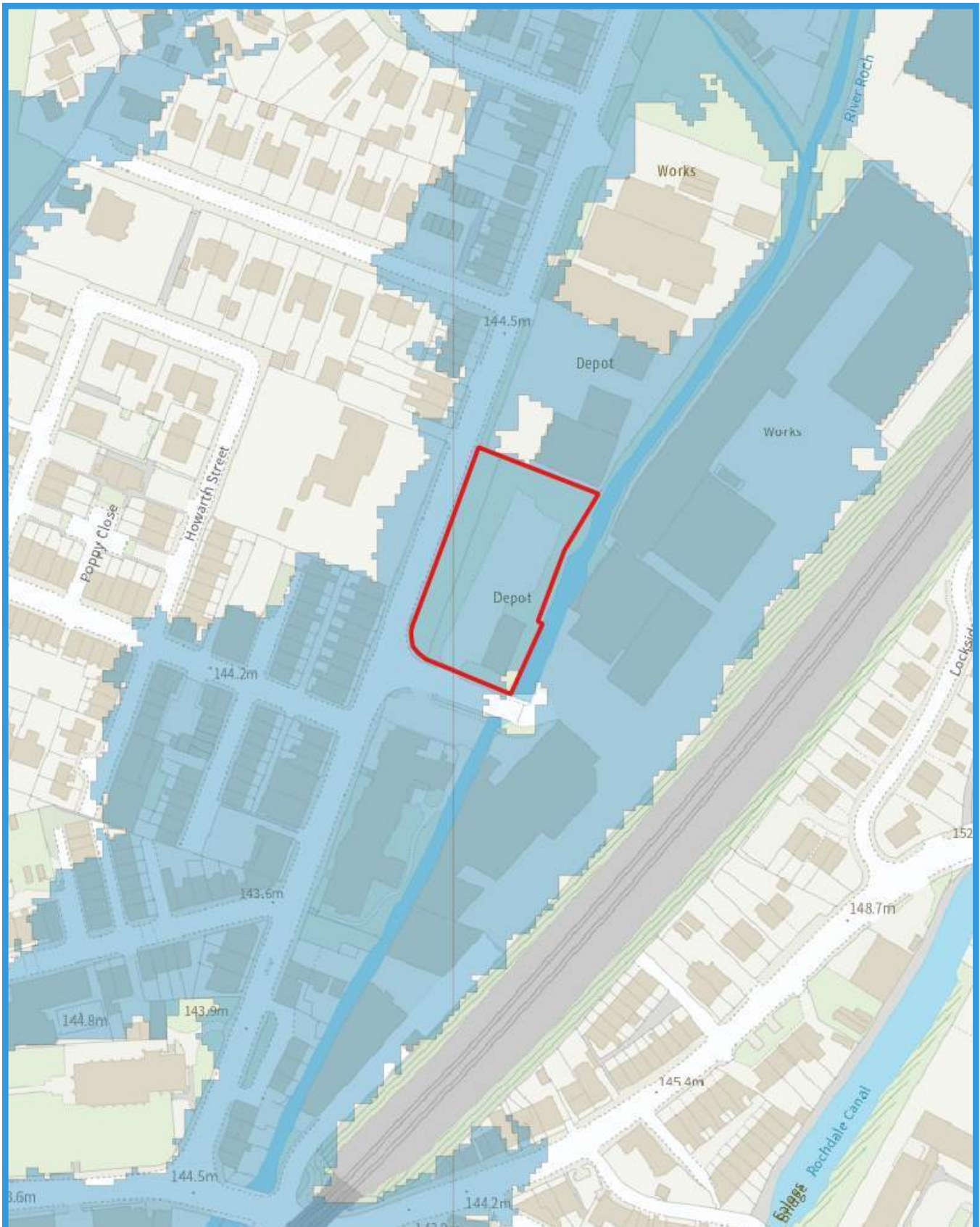
2061 to 2125



WATER DEPTH 2061 to 2125



Zone 3b - Rivers_1in30_Sea_1in30_defended_extents_CCP1



Site Check Report generated on Tue Jun 23 2026

The following features have been found in your search area:

You selected the location: Centroid Grid Ref: SD94021659

Aquifer Designation Map (Superficial Drift) (England)

TYPOLOGY Secondary A

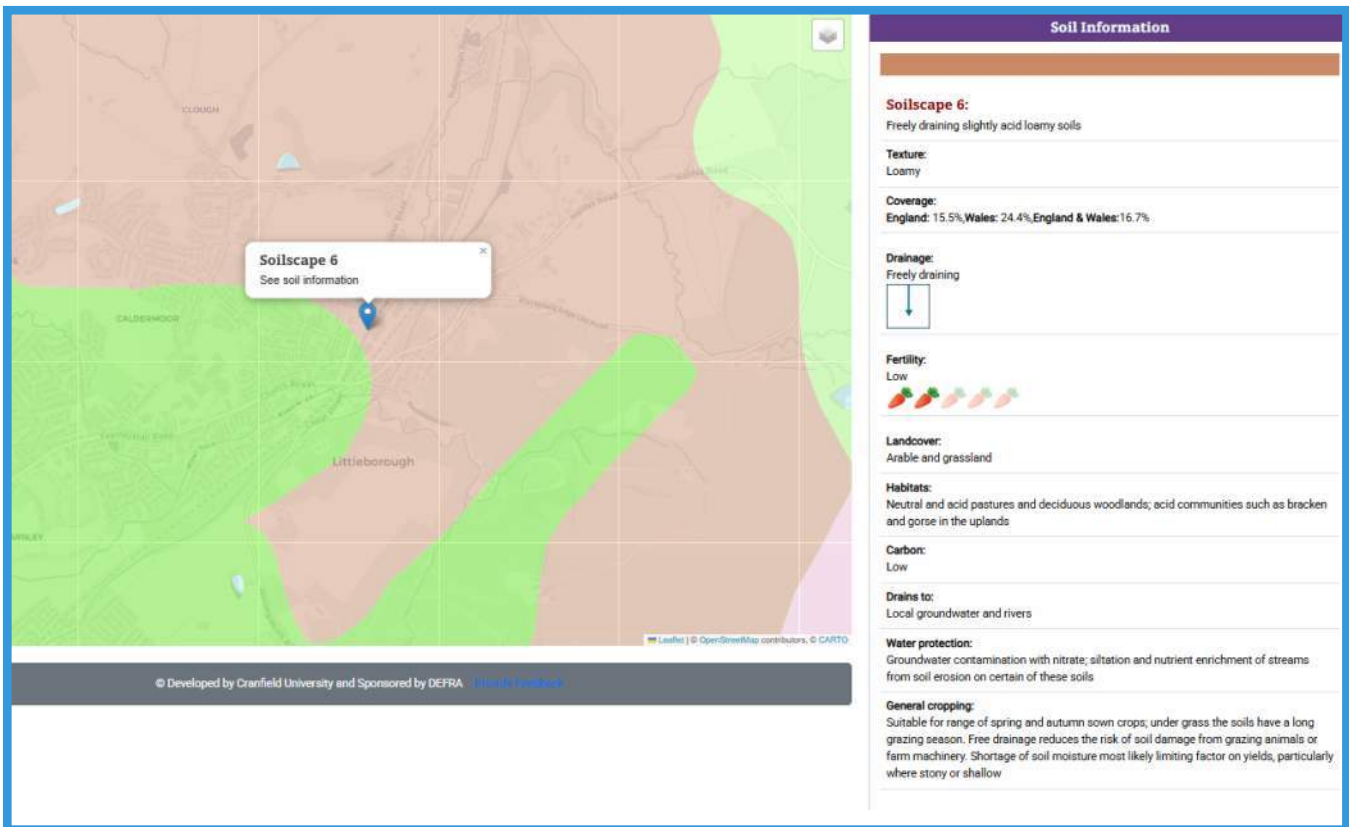
Aquifer Designation Map (Bedrock) (England)

TYPOLOGY Secondary A

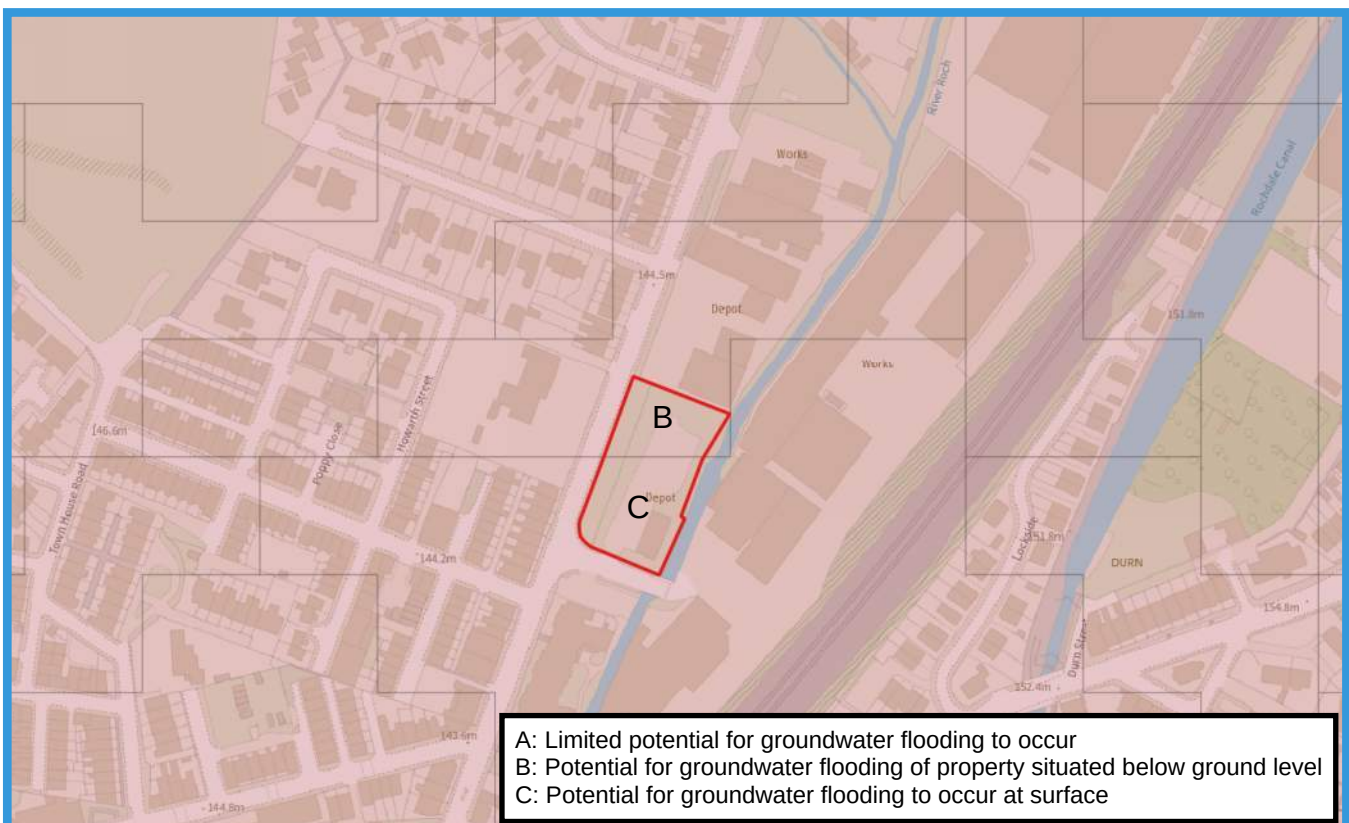
Source Protection Zones merged (England)

No Features found

SOILSCAPES MAP



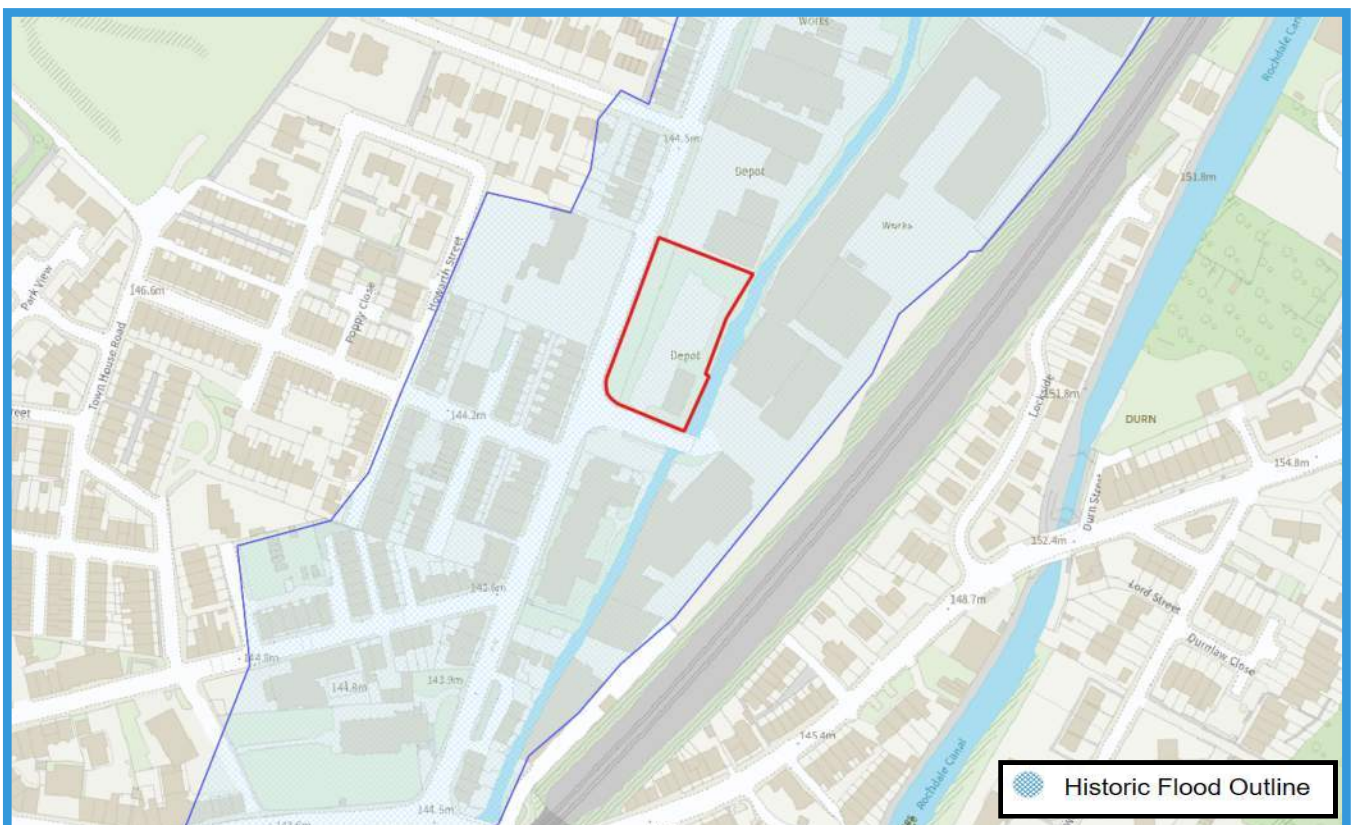
GROUND WATER FLOOD RISK



FLOOD WARNING AREA



HISTORIC FLOOD MAP



Flood map for planning

Your reference
Unspecified

Location (easting/northing)
394015/416592

Created
23 June 2026 21:00

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see <https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>)

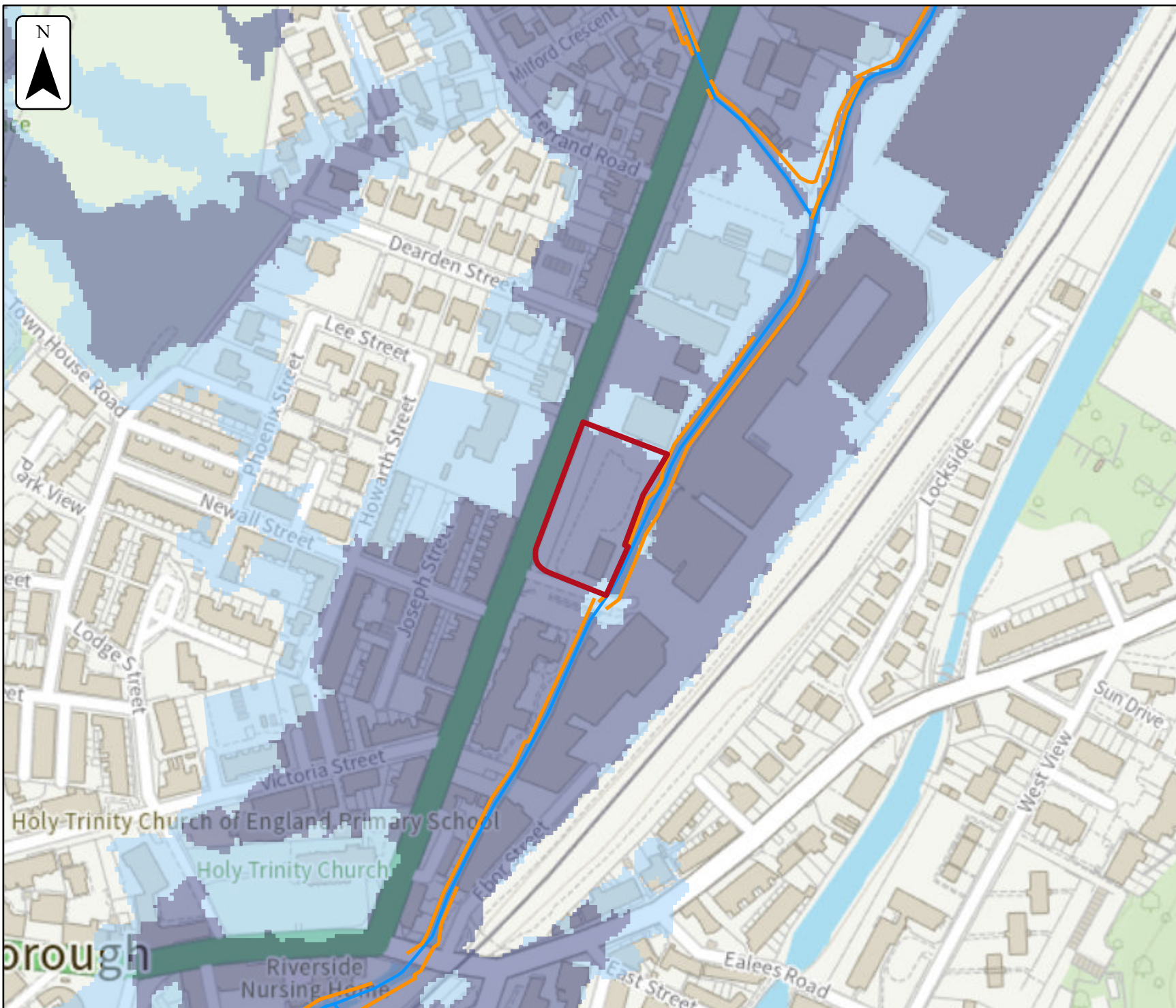
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2026 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

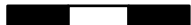
Unspecified

Location (easting/northing)
394015/416592

Scale
1:2,500

Created
23 Jun 2026 21:01

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area


0 20 40 60m

Appendix D

FLOOD LEVELS

Rochdale and Littleborough 2013

Flood Level at the property



Defended

Node	Easting	Northing	1 in 20	1 in 30	1 in 75	1 in 100 +35%CC	1 in 100 +70%CC
1	394012.8	416625.8	144.471	144.544	144.795	145.247	145.640
2	394029.2	416617.7	144.471	144.545	144.795	145.247	145.637
3	394039.8	416613.1	144.471	144.545	144.795	145.246	145.556
4	394002.5	416598.2	144.471	144.545	144.796	145.247	145.616
5	394017.4	416593.7	144.471	144.545	144.796	145.247	145.582
6	394028.9	416589.2	144.471	144.545	144.796	145.247	145.578
7	393991.7	416572.4	144.471	144.544	144.795	145.246	145.632
8	394007.4	416567.7	144.471	144.544	144.796	145.247	145.634
9	394020.6	416562.2	Nil	Nil	Nil	145.261	145.555



D - 1 in 20



D - 1 in 30



D - 1 in 75



D - 1 in 100 + 35CC



D - 1 in 100 + 70CC

Undefended

Node	Easting	Northing	1 in 20	1 in 30	1 in 75	1 in 100 +35%CC	1 in 100 +70%CC
1	394012.8	416625.8	144.401	144.418	144.578	145.124	145.415
2	394029.2	416617.7	144.395	144.413	144.581	145.124	145.412
3	394039.8	416613.1	144.393	144.411	144.588	145.113	145.403
4	394002.5	416598.2	144.339	144.357	144.565	145.127	145.424
5	394017.4	416593.7	144.362	144.385	144.569	145.122	145.421
6	394028.9	416589.2	144.380	144.396	144.572	145.105	145.371
7	393991.7	416572.4	144.218	144.270	144.549	145.128	145.431
8	394007.4	416567.7	144.212	144.267	144.560	145.130	145.433
9	394020.6	416562.2	Nil	Nil	Nil	145.136	145.400



U - 1 in 20



U - 1 in 30



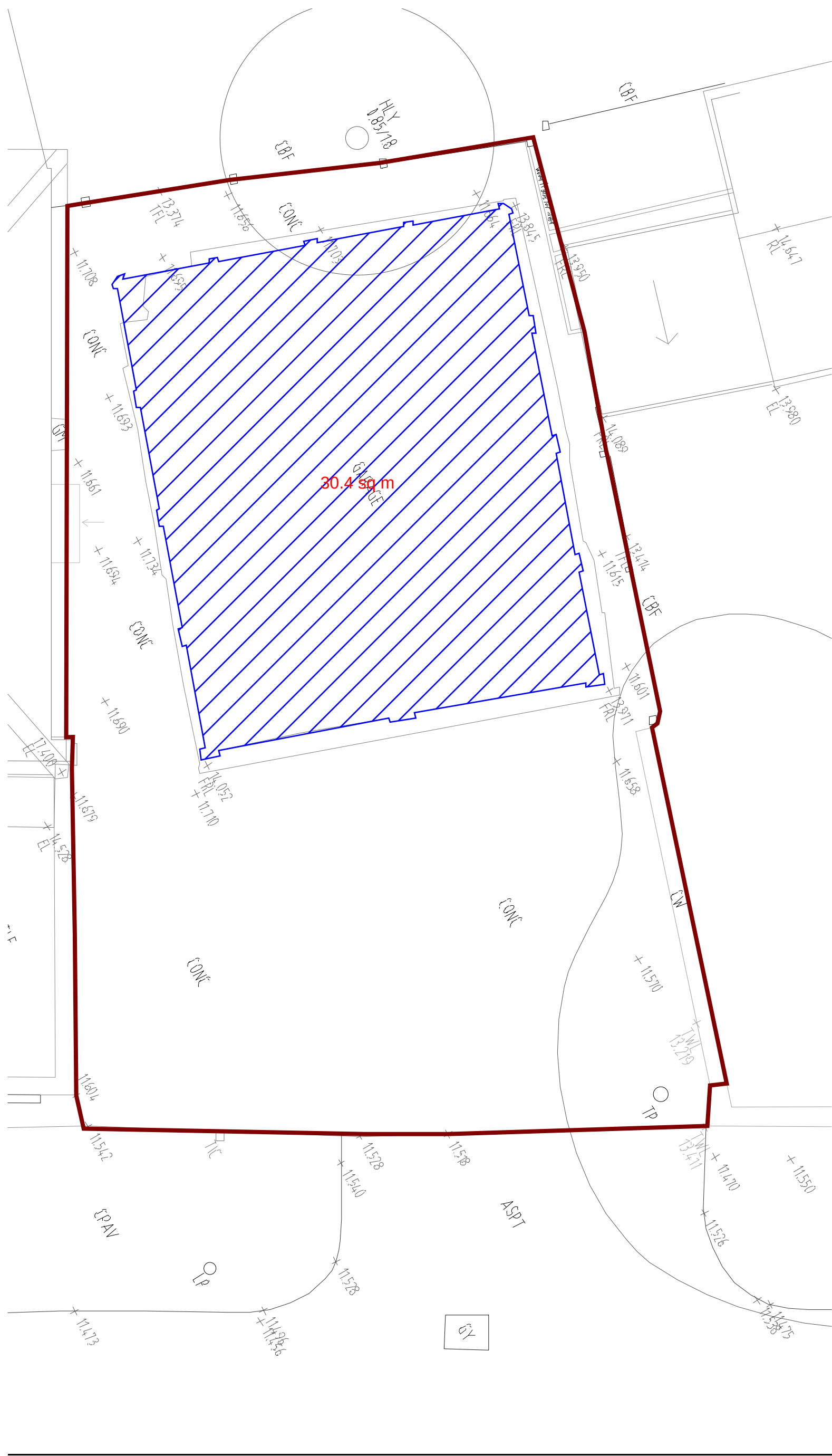
U - 1 in 75



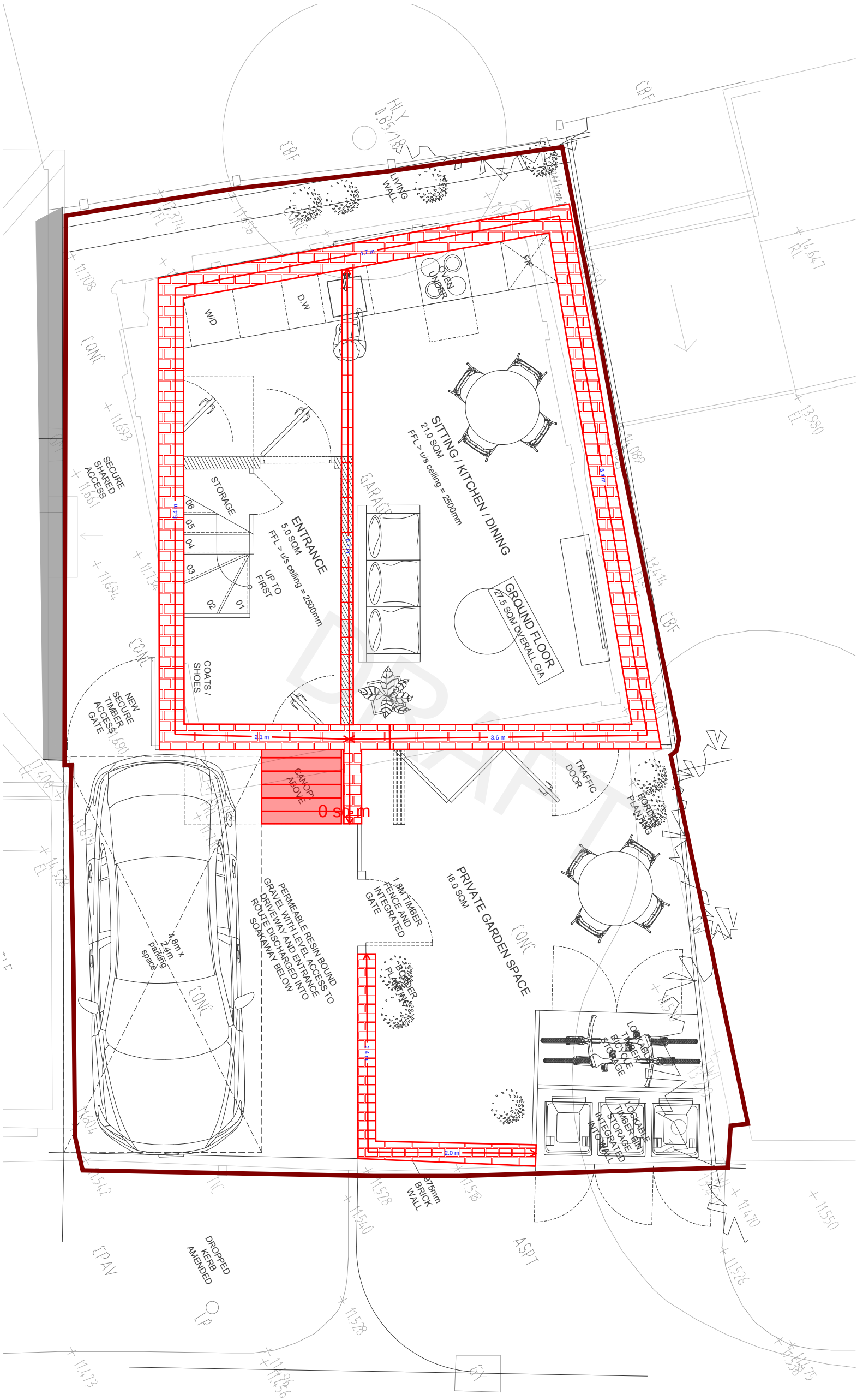
U - 1 in 100 + 35CC



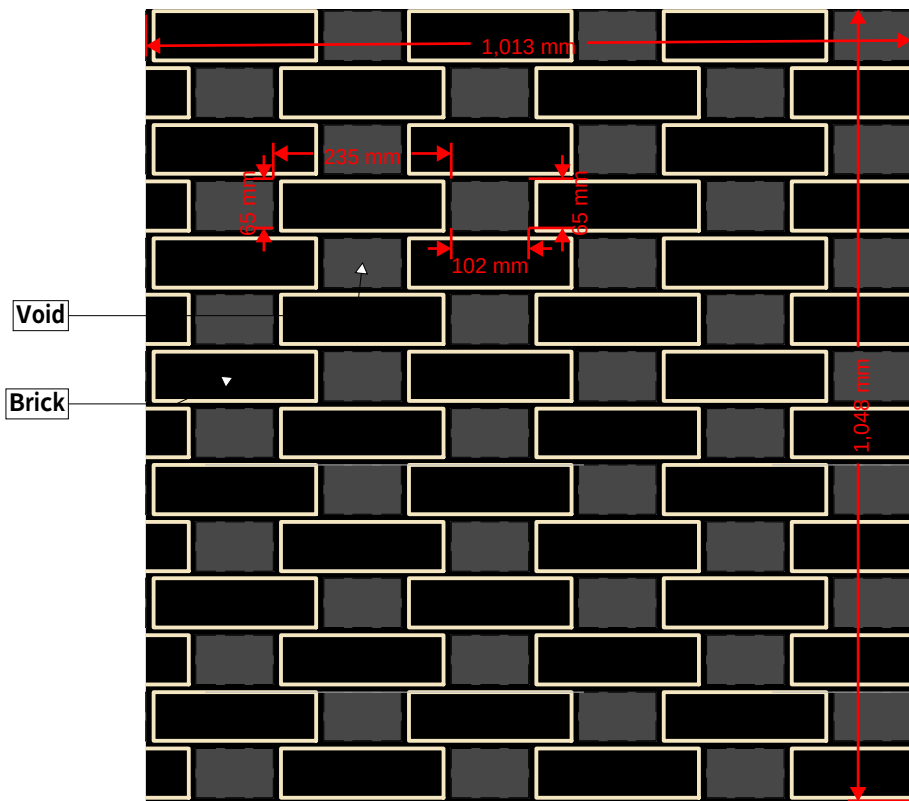
U - 1 in 100 + 70CC



EXISTING SITE LAYOUT
1:50



PROPOSED SITE LAYOUT
1:50



HIT AND MISS BRICK WALL
1 in 10

Hit and Miss Brick Wall	
Opening Size Width	0.235 m
Opening Size Height	0.065 m
Area Opening	0.015 m2
Number of Openings	42
Total Area Opening	0.642 m2
Total Area Panel	1.062 m2



Conclusion Flood Volume calculation
The calculations below confirm that the new development fully compensates the flood volume level per level for the design flood level!

Total Flood Compensation Volume

Levels m AOD		Buildings being demolished*	Excavations*	Total Volume
Lower	Higher	m3	m3	m3
11.58	11.78	6.1	0.0	6.1
11.78	11.98	6.1	0.0	6.1
11.98	12.18	6.1	0.0	6.1
12.18	12.38	6.1	0.0	6.1

* See tables below for detailed calculations

Flood Compensation - Demolished Buildings

Levels m AOD		Total Area m2	Total Volume m3
Lower	Higher		
11.58	11.78	30.4	6.1
11.78	11.98	30.4	6.1
11.98	12.18	30.4	6.1
12.18	12.38	30.4	6.1

Flood Compensation - Excavations

Levels m AOD		Total Depth	Average Depth	Total Area	Total Volume
Lower	Higher	m	m	m2	m3
11.58	11.78	0.200	0	0	0.0
11.78	11.98	0.200	0	0	0.0
11.98	12.18	0.200	0	0	0.0
12.18	12.38	0.200	0	0	0.0

Total New Built Volume Taken from flood zone

Levels m AOD		Volume taken from hit and miss m3	Volume taken from area m3	Total Volume m3
Lower	Higher			
11.58	11.78	0.5	0.2	0.7
11.78	11.98	0.5	0.2	0.7
11.98	12.18	0.5	0.2	0.7
12.18	12.38	0.5	0.2	0.7

* See tables below for detailed calculations

Levels m AOD		Total Length walls	Total Area	Hit and Miss wall brick area	Depth of Brick	Number of brick leafs	Total Volume taken by Hit and Miss m3
Lower	Higher	m	m2	m2	m	No.	
11.58	11.78	33.40	6.68	0.36	0.102	2	0.5
11.78	11.98	33.40	6.68	0.36	0.102	2	0.5
11.98	12.18	33.40	6.68	0.36	0.102	2	0.5
12.18	12.38	33.40	6.68	0.36	0.102	2	0.5

Levels m AOD		Total Area	Total Volume
Lower	Higher	m2	m3
11.58	11.78	0.9	0.2
11.78	11.98	0.9	0.2
11.98	12.18	0.9	0.2
12.18	12.38	0.9	0.2

Comparison between Hit and Miss Wall and 1m wide Openings	
Height of wall	0.80 m
Total Linear Meter of wall	22.3 m
Total Area of wall	17.8 m2
Total Area Hit and Miss Brick Opening	10.8 m2
Area for 1m wide Opening	5 m
EA recommended distance of openings	4.46
Opening Size Height	0.80 m
Total Area Opening Requirement from EA	3.6 m2

Conclusion
It is proposed to construct a hit and miss walls at the base of the new building that will allow flows to move from the front to the rear of the property. This hit & miss brickwork produces an water flow area of 10.8 m2. This is a better, more attractive, practical, feasible solution, as the 1m wide void spaced at 5m results in only 3.6 m2 of water flow area.

Do not scale from this drawing. Refer to figured dimensions only. RIDA Reports Ltd registered in England and Wales No. 10590566. This drawing is copyright of RIDA Reports Ltd.

Drawing Scale Bar

Drawing scale	Line length	Drawing scale	Line length
1:5	= 0.25 metres	1:200	= 10.0 metres
1:10	= 0.5 metres	1:250	= 12.5 metres
1:20	= 1.0 metres	1:500	= 25.0 metres
1:25	= 1.25 metres	1:1000	= 50.0 metres
1:50	= 2.5 metres	1:1250	= 62.5 metres
1:100	= 5.0 metres	1:2500	= 125 metres

Measure length of line above for checking of scale

GENERAL NOTES

This drawing should be read in conjunction with relevant Structural and Architectural Information:

All work to be undertaken in accordance with relevant health and safety legislation, adopting safe methods of working and in accordance with manufacturers' product literature and H&S data sheets.

Contractor to check all levels, dimensions and heights on site before commencing.

Refer to structural engineers details for all structural, underground drainage requirements.

KEY

Study Area

Hit and Miss brick

Existing Building Taken out of the flood zone

12.38 m AOD 1 in 100 + CC Levels

Flood Compensation Area

Rev Details Date By Chd

Drawing Status:
PRELIMINARY

Client:

XXXXXXXXXXXXXXXXXXXX

Project:

XXXXXXXXXXXXXXXXXXXX

Drawing:

Flood Compensation
Volume

Print Size: Scale: Project No: Drawing No: Revision:

A1 1:XXXX XXXX 020 P1