

**Plot H,
Charles Street, Manchester**
Enabling Works Flood Risk Assessment

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Acronyms	
AEP	Annual Exceedance Probability
AOD	Above Ordnance Datum
CIRIA	Construction Industry Research and Information Association
DCG	Design and Construction Guidance
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
FEED	Flood Emergency and Evacuation Plan
FRA	Flood Risk Assessment
LLFA	Lead Local Flood Authority
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
SFRA	Strategic Flood Risk Assessment
SWMP	Surface Water Management Plan
UU	United Utilities

1.0 Introduction

Roscoe have been commissioned to undertake a Flood Risk Assessment (FRA) for the enabling works for Plot H, Charles Street in Manchester. This statement will be used to support the planning application for the demolition and enabling works at the site in advance of a future site development. It should be noted that this future development is not considered as part of this Flood Risk Assessment, with only the demolition and enabling works being considered.

The national Planning Policy Framework (NPPF) states that an appropriate FRA will be required for all development proposals of 1ha or greater in Flood Zone 1 and for any development within Flood Zone 2 or 3.

The EA's Flood Map for Planning shows that the site is located in Flood Zone 2, this assessment will therefore focus on the flood risk to the site from watercourses.

1.1 Relevant Policy

This FRA has been carried out in accordance with the NPPF and the accompanying Planning Practice Guidance (PPG) "Flood Risk and Coastal Change". This FRA also incorporates advice and guidance from the Environment Agency (EA), Manchester City Strategic Flood Risk Assessment (SFRA) 2011 and CIRIA documents.

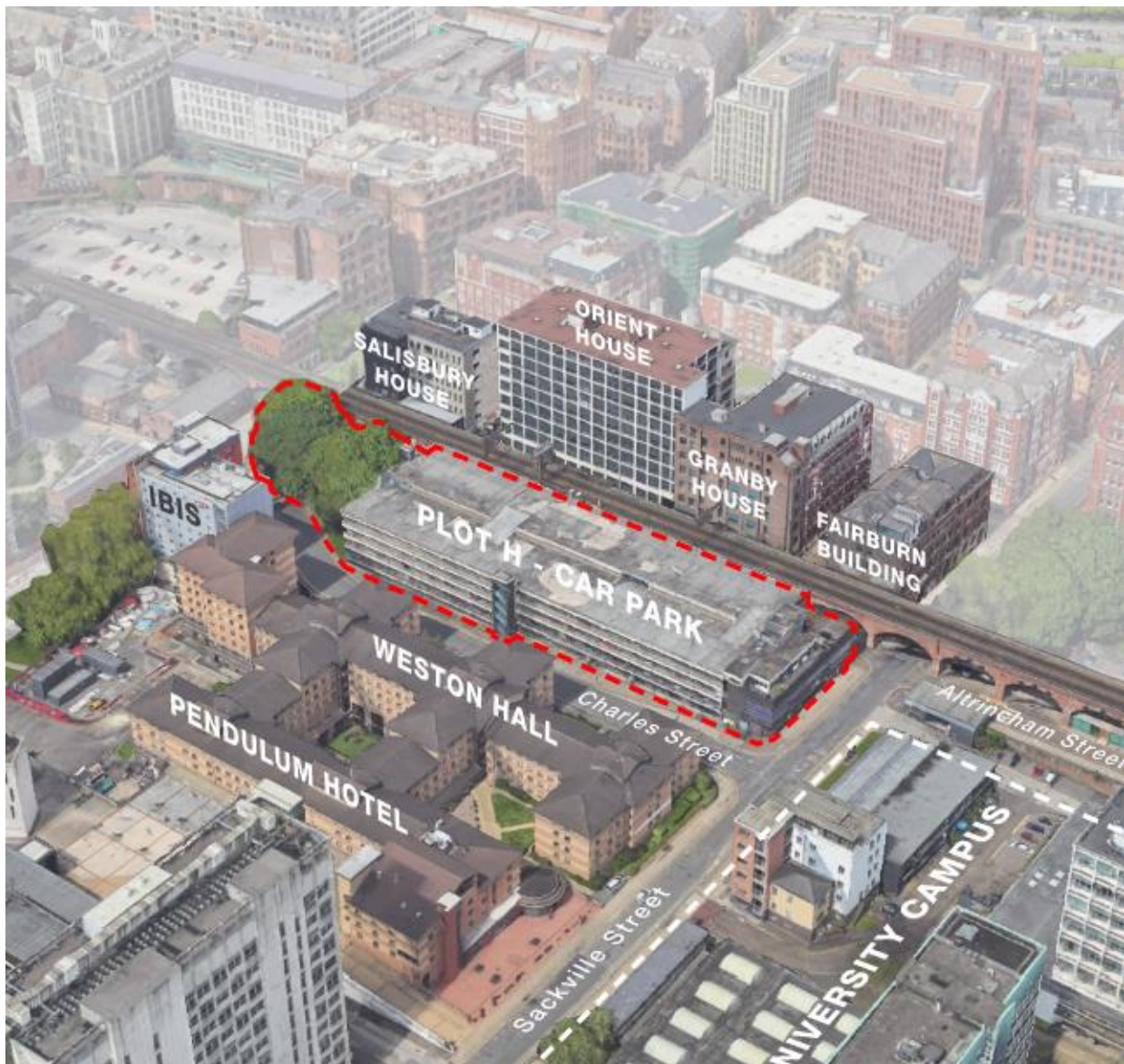


Figure 1.1: Site location plan

2.0 Site Description and Location

The site is located in Manchester city centre. It forms the north-western corner of the former UMIST campus. The site can be identified by nearest postcode M1 7AR and can be further located by national grid reference 38444, 39757. The site is bound by Charles Street to the South, Manchester South Junction and Altrincham Railway viaduct and Granby Row to the North, Sackville Street to the East and Princess Street to the West. The site also lies within the sister strategic regeneration area aligned to Plot H.

Land to north and northwest, beyond the viaduct arches on Granby Row, comprises the following residential buildings: Uncle, Granby House, and Salisbury House. Land to the north-east comprises green public space at Vimto Park and the now vacant Sackville Building, which also form part of the sister masterplan.

To the east lies the Paper Science Building and Renold Building. Renold Building has recently undergone works to re-activate the building for commercial uses and collaboration spaces related to Sister and beyond Renold, Plot C for which planning applications have been recently submitted for a commercial development and new civic square. Further north-east lies Picadilly station, Manchester's primary rail hub.

Land to the south comprises Weston Hall which is purpose-built student accommodation building. Land to the south-west comprises the former UMIST Campus.

The southern boundary of the SRF area is the Mancunian Way, beyond which lies the predominantly residential areas of Ardwick, Brunswick and Hulme.

The site principally was used as a multistorey car park which closed in October 2024. The car park is no longer fit for purpose and therefore has reached the end of its economic life. The site is roughly 0.53 ha.

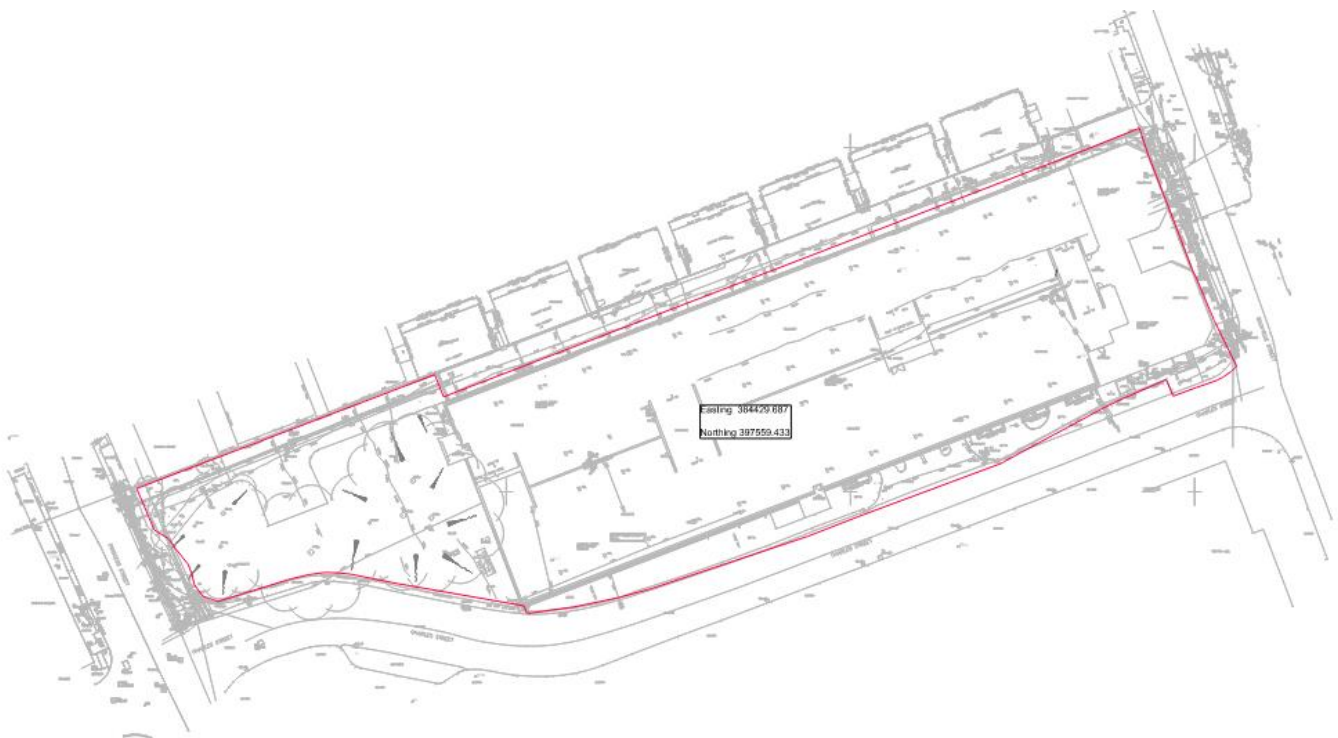


Figure 1.2: Enabling Works Red Line Boundary

2.1 Development Proposal

This FRA relates solely to the enabling works associated with the early-stage preparation of the site. These works are temporary in nature and do not form part of the permanent development. A separate FRA will be submitted to support the full application.

The enabling works include the following activities:

- Site establishment including site hoardings and site welfare.
- Soft strip and asbestos removal.
- Temporary works installation.
- Road and footpath closures.
- Top-down demolition of the structure adjacent to the railway bridge.
- Demolition of the remaining main block down to ground floor slab.
- Demolition of the basement car park.
- Lift concrete slabs and foundations.
- Crush all hard arisings to 6F2 grading.
- Demolition arisings will be used on site to fill in the existing basement.
- Site clearance, including removal of vegetation and debris.
- Removal of existing areas of hardstanding.
- Construction of temporary site access and haul roads to facilitate plant and vehicle movement.
- Installation of temporary site compounds and welfare facilities, such as cabins and storage areas.

Importantly, the enabling works will:

- Not involve any deep excavations, basements, or piling;
- Not include any permanent drainage infrastructure at this stage.

All temporary structures will be located away from known flood flow paths and will be demountable in the event of a flood alert. The works are of limited duration and are expected to be completed within 20 weeks incorporating the pre-commencement duration (c6 weeks) and main works duration (c14 weeks). A layout plan showing the location and extent of the enabling works is shown in Figure 2.1.

For the duration of the project, the welfare area will be located within the red line boundary. Access to the site will be through a secure gate to enter the site or access the welfare accommodation. Demolition vehicle access will utilise a one-way delivery system for access and egress on the site. Material storage will be contained within the site boundary.

The proposal is demolition of the existing building on site containing the multi-storey car park and three ancillary retail units. Once demolished the cleared site will facilitate the next phase of development at Sister. The demolition works will be supported by the appointment of traffic management installations, full height hoarding (2.4m high), full height wrapped protection scaffold to the north, east and partial west elevations. The top three floors of the multi storey car park will be demolished in a top-down, floor by floor sequence. The remaining structure is then proposed to be demolished on a structural bay-by-bay basis and the foundations removed up to a depth of 2m.

The welfare units and storage cabins are set above the design flood level, based on the latest EA flood data and climate change allowances. No deep excavations, basements, or long-term ground lowering are proposed. All equipment and materials will be stored on elevated hardstanding or removed from site during periods of elevated flood risk.

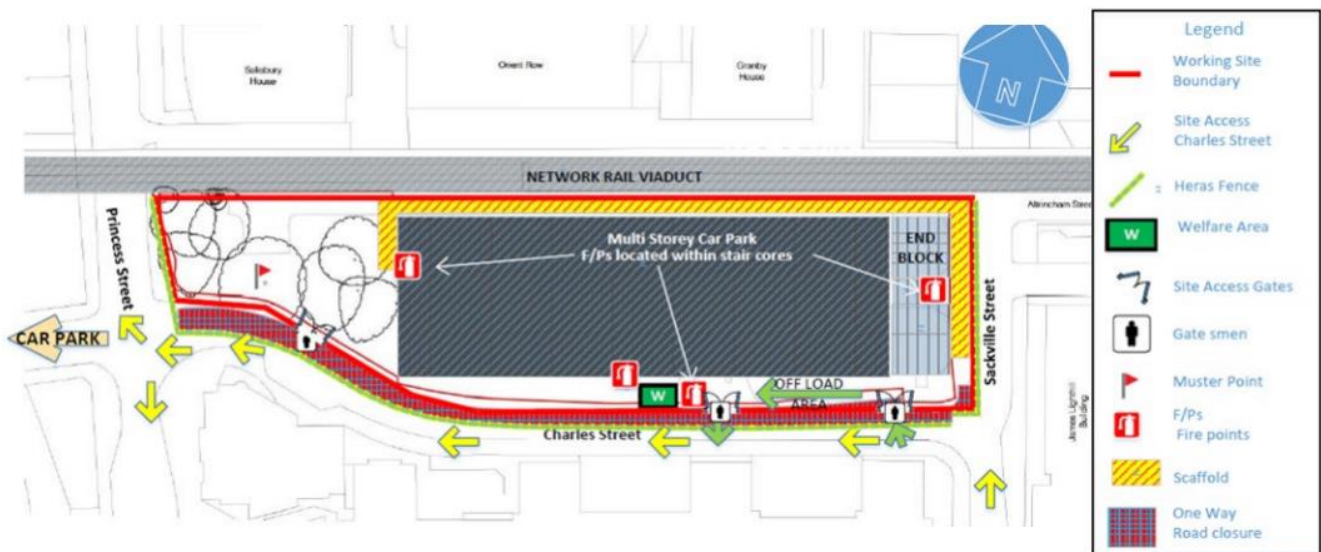


Figure 2.1: Temporary Works Site Layout

2.2 Temporary Works Drainage

During the enabling works, the existing basement is to be fully removed and filled with crushed 6F2 material won from the demolition works taking place. This material is freely permeable and will function as a temporary permeable paving layer, allowing surface water from rainfall to infiltrate directly into the underlying ground rather than generating surface runoff.

The top level of this platform will be set approximately 250 mm below the existing surrounding external levels. This means the site will act as a shallow storage area for rainfall and will not displace or push rainwater off-site onto adjacent land or highways.

To provide additional control of surface water during intense rainfall, a 200 mm deep perimeter filter drain incorporating a porous pipe will be installed around the edge of the temporary platform. This system will collect and convey any excess water to an existing manhole within the site, where it can enter the existing drainage system in a controlled manner.

This arrangement will ensure that surface water is retained, attenuated, and discharged gradually, reducing the risk of runoff or flooding during the enabling works.

A drawing showing the layout of the proposed drainage arrangement is included in Appendix A.

3.0 Flood Risk Assessment

3.1 Flood Risk from Watercourses

The EA's flood map for planning, figure 3.1, shows that the site is located in Flood Zone 2 and is at risk of flooding from the River Medlock. The River Medlock is located directly southwest of the site. It continues westward as a minor watercourse, running along the southern and western boundary of the site. Land in this flood zone is assessed as having a medium probability of flooding. The EA's maps suggests that the site is not located in an area which benefits from flood defences however the EA's website also states that not all defences are shown on the map.

The site is however located in an area of low fluvial flood risk (risk of flooding from rivers and sea) with much of the Eastern portion of the site (where most of the demolition works will take place) being in an area of very low fluvial flooding. This can be seen in figure 3.2. As such, most of the enabling works will therefore take place outside the identified fluvial flood extent noted by the EA.

As all temporary site compounds, access routes and materials storage will be located outside of the recorded flood area, the enabling works will not:

- Obstruct flood flows.
- Reduce floodplain storage.
- Increase flood risk to third parties.

While the proximity of the river is acknowledged, the location of the enabling works outside the area of historic fluvial flooding means that the flood risk to and from the enabling phase is low. Nonetheless, a precautionary approach will be adopted, including monitoring river levels during high-risk periods and ensuring that all temporary site infrastructure remains demountable and relocatable in the event of a flood warning.

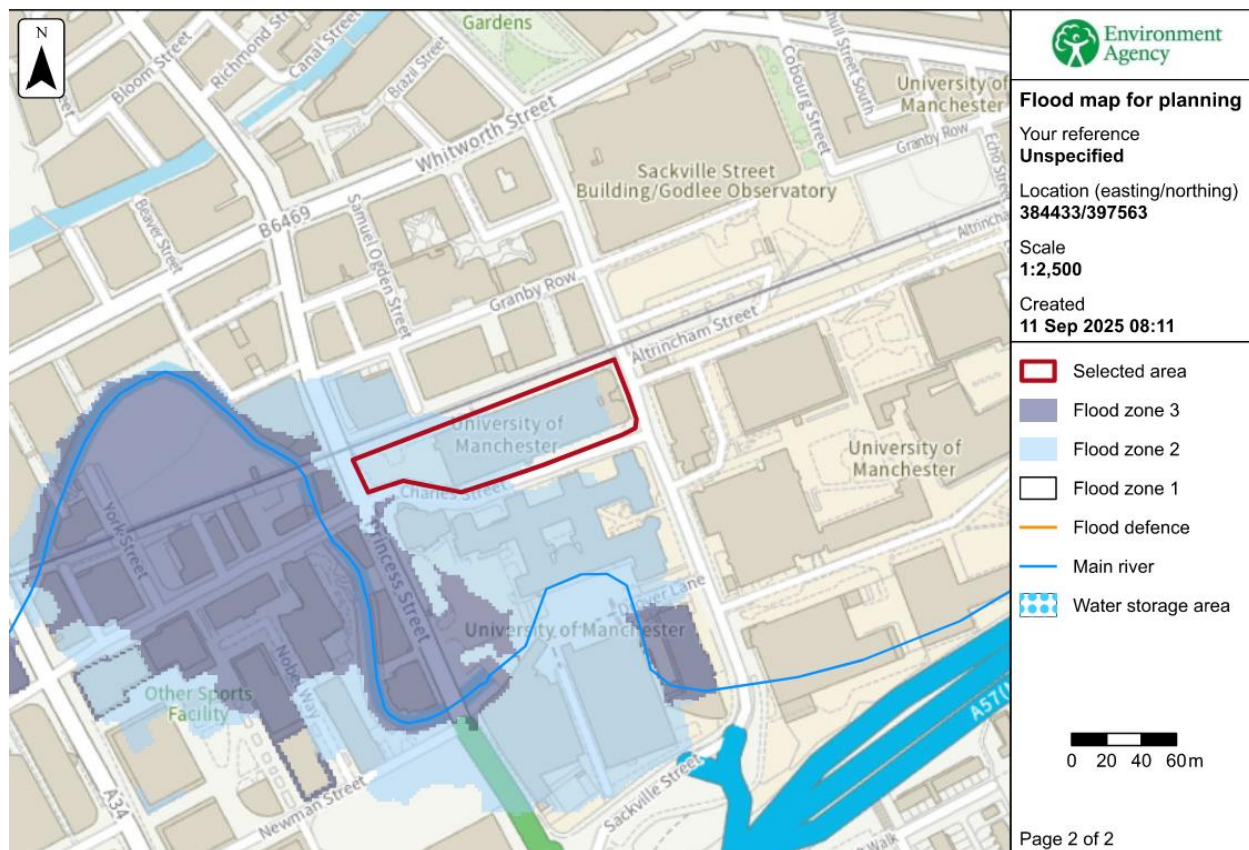


Figure 3.1: EA Flood Map for Planning



Figure 3.2: EA Flood Map for Planning

3.2 Flood Risk from Pluvial Flooding

Pluvial flooding can occur when intense or prolonged rainfall overwhelms surface water drainage systems, resulting in overland flow and temporary ponding in low-lying areas. This is typically a concern where the local topography encourages runoff to concentrate or where drainage infrastructure is insufficient.

Based on Environment Agency surface water flood mapping, the site is located in an area classified as very low risk of surface water flooding. There are no mapped overland flow routes crossing the site, and adjacent roads are also shown to be at low risk, meaning the potential for off-site flows entering the site is minimal.

During the temporary works, all hard arisings will be crushed and reused on-site as a 6F2 grading material. This material is coarse and permeable, allowing rainwater to infiltrate readily. The existing basement will be fully removed and then filled with the crushed 6F2 material, allowing surface water from rainfall to infiltrate directly into the underlying ground, rather than generating surface runoff.

The placement level of this material will be around 250 mm below the existing surrounding finished floor level (FFL), effectively forming a shallow depression. As a result, the site will act as a temporary storage area for rainfall, rather than increasing runoff onto adjacent land or highways.

Given:

- the low risk of pluvial flooding from surrounding land.
- the use of permeable material.
- the site's slightly lowered level relative to surrounding ground.

The overall risk of surface water flooding during the enabling works is considered very low. No additional flood mitigation measures are considered necessary, although river levels and weather forecasts will be monitored during works to ensure temporary structures do not impede natural drainage.

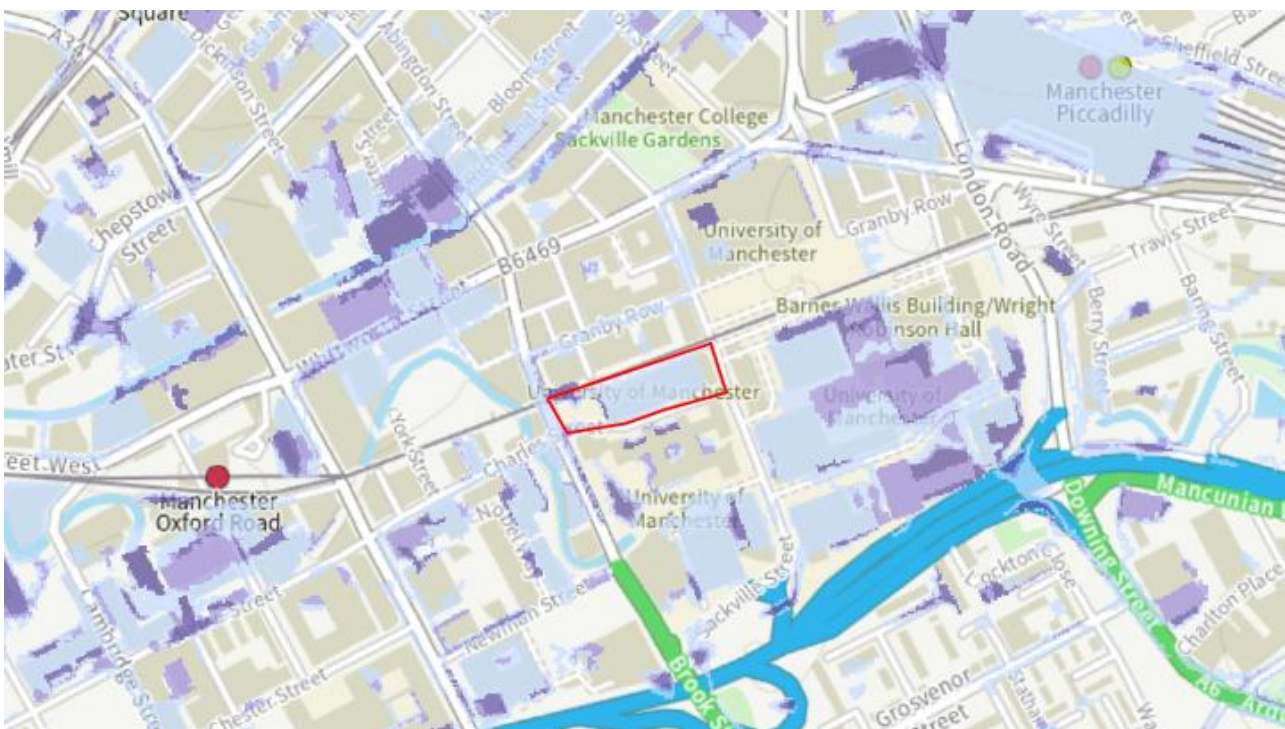


Figure 3.3: EA Historic Pluvial Flood Map 2025

3.3 Flood Risk from Overland Flows

Overland flow can occur when adjacent infrastructure becomes overwhelmed during periods of intense rainfall, particularly when highway or site drainage systems exceed their design capacity or become blocked. The direction and extent of such flows are largely controlled by local topography, which directs surface water toward lower-lying areas.

A review of topographic survey data shows that the site levels fall from approximately 36.6 m AOD in the east to 33.0 m AOD in the west, creating a gentle westward slope across the site. Charles Street, located immediately south of the site, appears slightly lower than the site platform, while a railway bridge located directly to the north forms a physical barrier that would prevent any overland flows from entering from the north. Given these surrounding level relationships, it is unlikely that overland flows from adjacent land or roads would enter the site during extreme rainfall events.

During the enabling works, the existing basement is to be fully removed and filled with crushed 6F2 material won from the demolition works taking place. This material is freely permeable and will function as a temporary permeable paving layer, allowing surface water from rainfall to infiltrate directly into the underlying ground rather than generating surface runoff.

Given the absence of incoming flow routes, the site's lower temporary level, and the permeable nature of the construction platform, the overall risk of overland flow affecting the site during the enabling works is very low. No additional mitigation is considered necessary, though surface conditions will be monitored during works to ensure that temporary structures do not obstruct local drainage.

The enabling works are temporary in nature and do not involve changes in land use, the construction of permanent structures, or any increase in flood vulnerability. As such, the Sequential Test and Exception Test are not considered applicable to this stage of works.

3.4 Flood Risk from Groundwater

Groundwater flooding occurs when water from sub-surface strata rises to the surface, typically following prolonged periods of heavy rainfall when the water table becomes elevated. Such flooding is generally more likely in low-lying areas with shallow groundwater tables, permeable underlying geology, or where historic borehole data indicates high groundwater strikes.

At present, no borehole or ground investigation data is available for this site, and therefore the exact depth to groundwater is unknown. However, given the site's elevated levels relative to surrounding streets and absence of recorded groundwater issues in the surrounding area, the risk of groundwater emergence is perceived to be low.

The proposed enabling works:

- Will not involve any deep excavations or below-ground structures.
- Will not alter existing ground levels (the temporary surface will sit below existing adjacent site levels).
- Are limited to temporary activities such as demolition of existing above ground buildings, removal of existing below ground foundations and the filling in of the existing basement.

As such, the risk of groundwater flooding affecting the site during the enabling works is very low. No dewatering or specialist groundwater control measures are anticipated, and standard site management practices will be sufficient to manage any minor or localised groundwater issues should they arise.

3.5 Flood Risk from Reservoirs

According to the Environment Agency's flood mapping for reservoirs, the site is located within an area identified as being at risk in the extremely unlikely event of a reservoir failure.

While the probability of reservoir flooding is extremely low, due to robust inspection and maintenance procedures under the Reservoir Act 1975, the consequences could be significant. The flood extent mapping provided by the EA assumes a worst-case uncontrolled release and does not account for operational response or downstream attenuation. This map is attached as Figure 3.3.

For these enabling works applications:

- No permanent structures are proposed.
- All temporary infrastructure (e.g. welfare cabins, material storage) will be sited away from known flow paths.
- Site personnel will be briefed on flood response procedures, and a temporary Flood Emergency and Evacuation Plan (FEPP) will be in place during the enabling phase.

Given the low likelihood and short-term nature of the enabling works, with appropriate site management measures in place, the residual risk from reservoir flooding is considered acceptable for this phase of development. Much of the reservoir network is owned and managed by UU, who monitor and maintain reservoirs as required to ensure their structural integrity and safety.

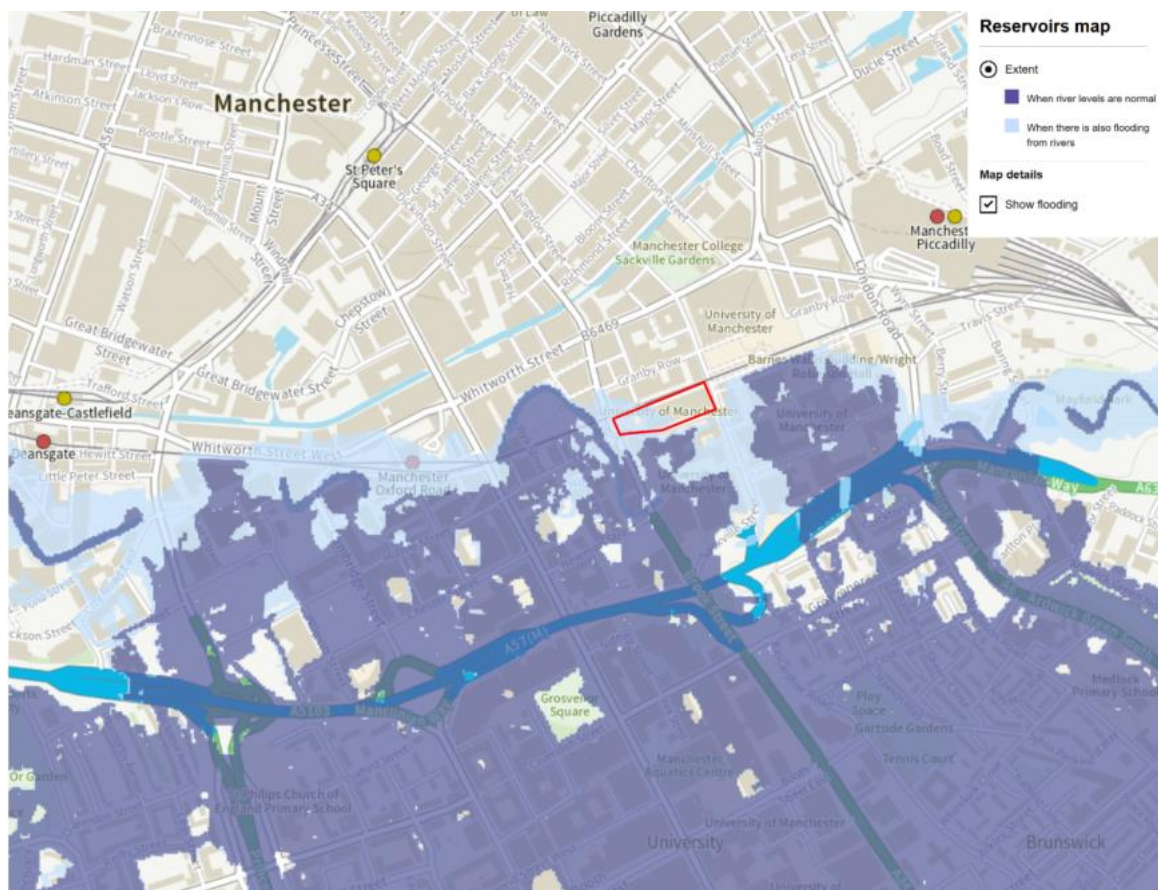


Figure 3.3 Environment Agency Risk of Reservoir Flooding Map 2025

The EA's information states that reservoir flooding is extremely unlikely to happen and there has been no loss of life in the UK from reservoir flooding since 1925. The Reservoir Act of 1975 ensures that reservoirs are inspected regularly, and essential safety work is carried out.

3.6 Flood Risk from Sewers

Sewer flooding can occur when the capacity of the public sewer network is exceeded during intense rainfall, or if blockages or hydraulic restrictions occur.

There are no known records of sewer flooding in the vicinity of the site, and the risk of surcharge from the local sewer network is therefore considered to be very low.

The proposed enabling works:

- Will not involve any new connections to the public sewer network.
- Will not alter existing site drainage arrangements.
- Are temporary and above-ground in nature.

Given the absence of historic incidents and the limited scope of the works, the risk of flooding from public sewer surcharge during the enabling phase is considered negligible. As a precaution, any temporary compounds, welfare units and material storage areas will be located away from existing manholes or low-lying areas, and surface conditions will be monitored during periods of heavy rainfall.

3.7 Climate Change

In line with the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG), the potential effects of climate change on flood risk have been considered, although the proposed works are temporary and limited to above-ground activities.

The site is located within Flood Zone 2, indicating a low to medium probability of fluvial flooding during extreme events. No detailed (Product 4) climate change model data is currently available for the site but given the existing topographic levels and the distance from the nearest main river channel, it is anticipated that any future increases in river levels because of climate change would not significantly increase flood risk to the site during the short-term enabling works.

Furthermore, the enabling works will:

- Not involve any deep excavations or below-ground structures.
- Include the placement of permeable crushed 6F2 material across the site, allowing rainwater to infiltrate.
- Sit around 250 mm below surrounding ground levels, meaning the site will temporarily act as a shallow storage area for rainfall rather than displacing runoff.

Given these factors, the risk to the site from climate change-driven flooding during the enabling works is low. As a precaution, temporary welfare units and compounds can be positioned on the slightly higher ground within the site, and site staff should remain aware of Met Office weather warnings during the works.

4.0 Safe Access, Warning and Evacuation Plan

In accordance with the Planning Practice Guidance (PPG), developments located within areas at risk of flooding should provide safe access and egress to land outside the floodplain. Although the proposed enabling works are temporary in nature and will not introduce any permanent increase in vulnerability, the site lies within Flood Zone 2 and is therefore subject to a low to medium risk of flooding.

Given that the works are short-term and will only be occupied during working hours, it is not expected that detailed permanent access routes will be required. However, to ensure staff safety during the enabling phase, a site-specific Flood Emergency and Evacuation Plan (FEEP) will be implemented.

Key measures will include:

- Site operatives registering with the Environment Agency's Flood Warning Service.
- Monitoring Met Office weather warnings and suspending works if a flood warning is issued.
- Identifying and maintaining safe access and egress routes via the surrounding highway network, which lies outside mapped flood extents.
- Briefing all staff on site-specific evacuation procedures.
- Locating welfare units on the areas of lowest flood risk within the site.
- Storing materials, equipment and plant securely to avoid damage or displacement in the unlikely event of flooding.

These measures will ensure that safe evacuation can be achieved quickly and effectively, and that the enabling works can be carried out without increasing flood risk to people or property.

5.0 Conclusions

This FRA relates solely to the enabling works associated with the early-stage preparation of the site. These works are temporary in nature and do not form part of the permanent development. A separate FRA will be submitted to support the full application.

The site can be identified by nearest postcode M1 7AR, and can be further identified by national reference 38444, 39757.

The EA mapping indicates that the site is within Flood Zone 2.

The overall risk of pluvial flooding during the enabling works is low, although overland flow from extreme rainfall will continue to be monitored, and all temporary structures will be positioned to avoid identified flow paths.

The overall risk from overland flow is low and manageable during the enabling phase.

The risk of groundwater flooding during the enabling phase is considered low. Standard site management practices will be sufficient to mitigate any minor or localised groundwater related issues that may arise during the works.

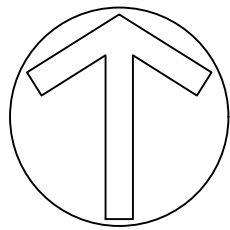
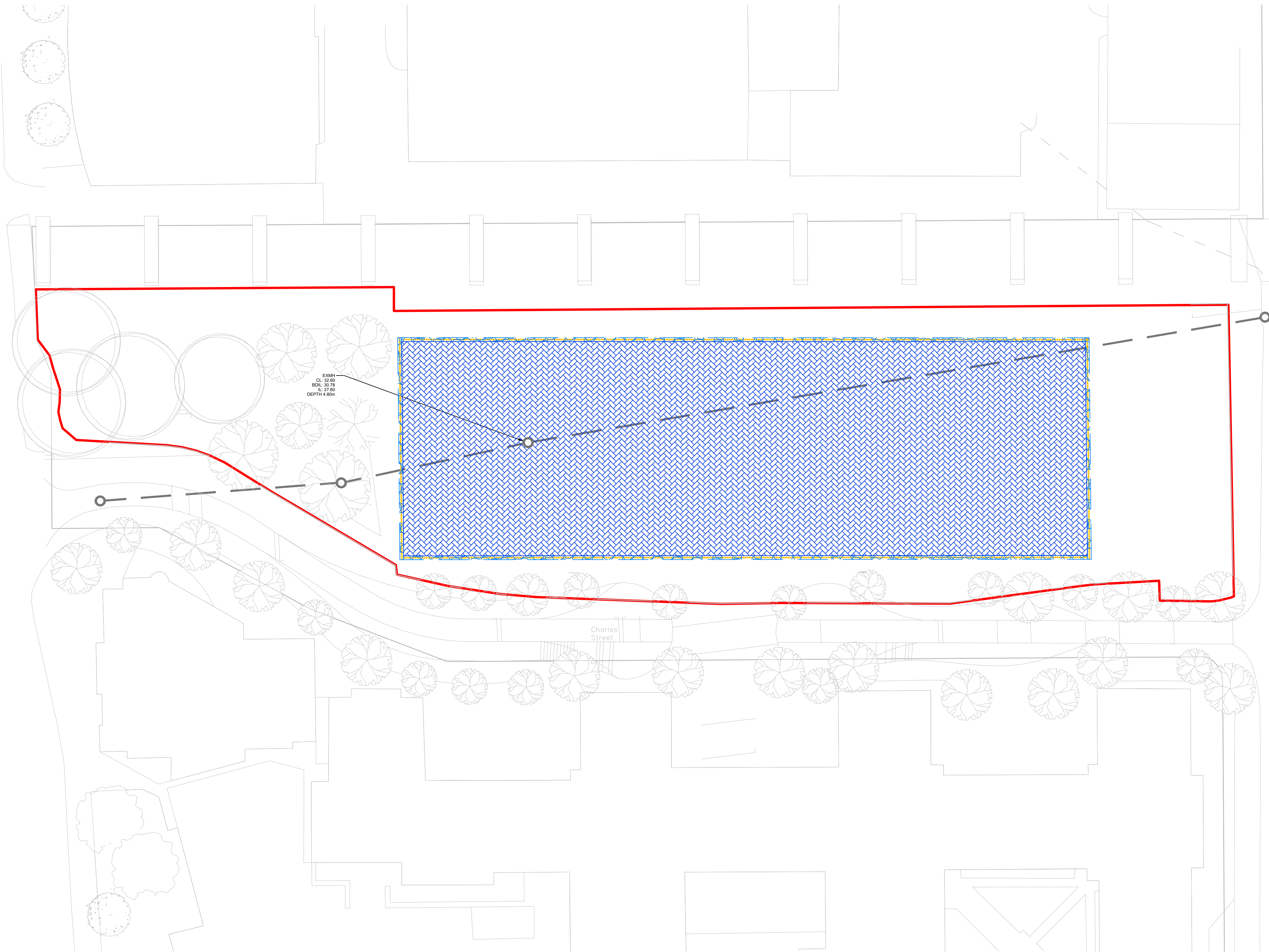
The residual risk from reservoir flooding is considered low.

The risk of flooding from public sewer surcharge is low and will be monitored throughout the enabling phase.

A site-specific Flood Emergency and Evacuation Plan (FEED) will be implemented for the duration of the enabling phase.

Appendix A

Proposed Drainage Layout



DO NOT SCALE

- General:
1. Do not scale from the drawings. All dimensions must be checked / verified on site. If in doubt ask.
 2. This drawing is to be read in conjunction with all relevant Architects, Engineers and specialists drawings and specifications.
 3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
 4. The drawing is for information purposes only. Drainage design subject to change throughout detailed design.

- Proposed Surface Water Drainage
- Existing Surface Water Culvert
- Porous Paving
- Filter Drain

P01	19.09.25	NP	FOR INFORMATION	JT	JT
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: FOR INFORMATION



CLIENT: RG GROUP

ARCHITECT: HODDER + PARTNERS

PROJECT: CHARLES STREET MANCHESTER

TITLE: PROPOSED DRAINAGE LAYOUT OPTION 1

SCALE @ A1:	CHECKED:	APPROVED:
1:200	JT	AW
PROJECT NUMBER:	DESIGNED:	DRAWN:
25XXX	AY	AY
		DATE:
		MAY 2025

DRAWING No:	REV:
25XXX-ROS-00-00-DR-C-09000	P01