



FOUL AND SURFACE WATER DRAINAGE STRATEGY

FOR
**SHIPYARD
(ALBERT SHED)
WATER STREET
MANCHESTER**

ON BEHALF OF
MANCHESTER QUAYS TWO LTD



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Flood Risk Assessment for Shipyard (Albert Shed), Water Street, Manchester 2132/01r2a			
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1.0 INTRODUCTION

- 1.1 Manchester Quays Two Ltd. is proposing a commercial redevelopment of the existing Albert Shed building located on the corner of Water Street and New Quay Street in Manchester city centre. The proposed re-development – to be known as Shipyard - will see the existing building structure refurbished, reinforced, or reconstructed where necessary, the existing car park retained at basement level, the conversion of the first floor for use as food and drink operation, a new mezzanine floor added above first floor level as part of the food and drink operation, and a new entrance structure constructed to the southwest of the existing building.
- 1.2 The National Planning Policy Framework (NPPF) (Communities and Local Government, July 2021) and the associated Guidance for flood risk and coastal change (Communities and Local Government, August 2022), requires surface water management to be considered as part of any planning application. The Local Planning Authority will also require information on how foul effluent will be managed.
- 1.3 ARP Associates have therefore been appointed to implement appropriate consultations, carry out an assessment of the site, and prepare a Foul and Surface Water Drainage Strategy for the proposed development, in accordance with the requirements of the NPPF, to support a planning application for the proposed development.
- 1.4 The consultations and site appraisal for this assessment were carried out between August and December 2022. The findings of this report are based on data available at the time of the study; it may require review if new data becomes available or relevant policy/guidance is updated prior to development proposals being approved.
- 1.5 The report has been initially prepared for the use and reliance of the Client only. The report shall not be relied upon or transferred to any other parties without the written agreement of ARP Associates. For the avoidance of any doubt, where ARP Associates enters into a letter of reliance for the benefit of a third party, that third party will be permitted to rely on the report.

No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party without ARP Associates consent.

- 1.6 Attention is drawn to the requirements of the Construction Design and Management Regulations 2015, and in particular, the duties and obligations of the Clients.

2.0 SITE DESCRIPTION

General

- 2.1 The site, which is centred on Ordnance Survey Grid Reference 383119, 398182, is located on Water Street in Manchester city centre (M3 4JQ).
- 2.2 The site extends to an area of approximately 0.2 hectares (ha). It has overall dimensions of approximately 60m (northeast - southwest) by 45m (southeast - northwest).
- 2.3 Water Street runs to the southeast of the site, with New Quay Street to the northeast of the site. The northwest of the site is located directly adjacent to the River Irwell, and the site is just downstream of a bridge carrying New Quay Street over the river. To the southwest of the site are the listed Victoria & Albert warehouses which are used as a hotel, with a service yard and relatively modern hotel extension located directly adjacent to the site.
- 2.4 A site location plan (200097-3DR-XX-DR-A-08001) and an aerial image of the site (2132/01/SK02) are presented in Appendix A.

Surrounding Land Use

- 2.5 The site lies on the fringes of the wider St Johns strategic development area, which encompasses the former Granada Studios site, the former Globe & Simpson site, and other surrounding land. A significant amount of redevelopment is underway within this wider area, including construction of new buildings on the opposite side of Water Street to the site. In undertaking this assessment, reference has been made to the 'Globe and Simpson, St Johns Drainage and SuDS Strategy' (Curtins; Ref: 068166-CUR-00-XX-RP-C-92003; February 2022) which provides relevant information on the adjacent proposals and wider drainage strategy.

Existing Site and Building

- 2.6 The majority of the site comprises a former shipping warehouse known as Albert Shed. A number of photographs of the exterior and interior of the existing building are provided in Appendix C for reference. Plans showing the layout, elevations and cross-sections of the existing building are included in Appendix B for reference. A number of photographs of the exterior and interior of the existing building are provided in Appendix C.
- 2.7 Internally, the building currently has two floor levels:
- The 'Basement' level (Level 00) lies below the external ground level on New Quay Street and Water Street, although on the southwest it lies at the same level as the service yard of the adjacent hotel from where it can be accessed by vehicle. At present this floor is used as a car park for the adjacent hotel.
 - The 'First Floor' level (Level 01) is at approximately the same level as the external footpath level at the Water Street / New Quay Street junction, and therefore lies slightly below the level of New Quay Street adjacent to the bridge over the river, and above the level of Water Street adjacent to the south of the site. This floor was used as a car park in the past, but is not currently in use.
- 2.8 The building is a combination of traditional timber roof supported by a steel framed structure. The Ground Level car park is supported by a series of steel beam and columns which support a concrete metal decked floor. There are also two existing vehicle ramps to the former First Floor parking level - one to the southwest of the main building which provides access from Water Street, and an incomplete ramp within the building which provides access from within the Basement level.
- 2.9 The Water Street elevation of the building is of brick construction. The New Quay Street elevation comprises a solid brick wall at the bottom with wooden panel construction above. The south-eastern elevation of the building is open to the service yard adjacent, with the Basement level parking being accessible directly from the service yard. On the River Irwell side of the site there is a short brick wall with railings on top, forming the top of the river wall. There

is some temporary hoarding in place which provides a physical barrier between the inside of the Basement level and the river edge, but this is not fully contiguous, and the building is effectively open to the river side.

Site Topography and Building Levels

- 2.10 A topographical survey of the site was undertaken by Leach Rhodes Walker in September 2008, and a copy of the survey drawing is included in Appendix D for reference. The survey illustrates the relatively levels between the Basement parking area, the adjacent roads, and the adjacent hotel service yard.
- 2.11 From the topographical survey and further cross-sectional drawings provided by the architect, it is understood that key levels associated with the existing building and site are as follows:
- The existing Basement parking area (Level 00) is at a level of approximately 25.24mAOD.
 - The existing First Floor (Level 01) is at a level of approximately 28.27mAOD.
 - New Quay Steet adjacent to the site falls from a level of approximately 28.67mAOD adjacent to the northern corner of the site, to a level of approximately 27.58mAOD at the junction with Water Street to the east of the site (i.e. above the Basement level of the building but below the First Floor Level).
 - Water Street adjacent to the site falls from approximately 27.58mAOD at the junction with New Quay Steet, to a level of approximately 25.93mAOD adjacent to the southern corner of the site (i.e. above the Basement level of the building but below the First Floor Level).
 - The existing service yard of the adjacent hotel is at a level of approximately 25.13-25.15mAOD (i.e. just below the Basement level of the building).
- 2.12 The existing building has an overhanging roof on its north-western elevation, which extends out over the River Irwell by approximately 6m.

Hydrology

- 2.13 The site is located directly adjacent to the River Irwell, and lies just downstream of the bridge which carries New Quay Street across the river. The river is classified as an Ordinary Watercourse at this location, and flows past the site in a south-westerly direction.
- 2.14 The River Irwell becomes the Manchester Ship Canal approximately 1km southwest of the site. This is a navigable waterway which is owned and operated by the Manchester Ship Canal Company. Flows in the Ship Canal are fluvially influenced from the upstream River Irwell and other contributing watercourses along its length, and the water level is actively managed by locks and sluice gates to maintain conditions suitable for navigation. In some conditions, the effects of this active water level management downstream may have a bearing on the water levels within the River Irwell.

Existing Drainage

- 2.15 Public sewer records have been obtained from United Utilities (included in Appendix E), and a survey of existing drains and sewers within and around the site has been undertaken by IWJS in October 2022 (included in Appendix F). Based on interpolation from this information, the existing drainage and sewer systems within and adjacent to the site are summarised below, and are illustrated in the Existing Drainage drawing 2132/01/SK03 which is included in Appendix G.
- 2.16 There is a 600mm diameter combined public sewer within Water Street, which flows towards the northeast. With reference to the 'Globe and Simpson, St Johns Drainage and SuDS Strategy', it is understood that this sewer has recently been constructed as a replacement for a smaller combined sewer which is now abandoned, in order to provide a suitable drainage outfall for some of the plots of the nearby St Johns development scheme. Two new manholes have been constructed in Water Street on this combined sewer. The survey identified that one of these manholes (UC1 on drawing 2132/01/SK03) includes a 300mm diameter incoming pipe from the direction of the Shipyard site. A proposed pipe in this location is indicated in the 'Globe

and Simpson, St Johns Drainage and SuDS Strategy' to be provided as a connection for new development at the Shipyard site, thus it is assumed that this has been provided for this reason.

- 2.17 At the junction of Water Street and New Quay Street, the combined sewer joins with a 680x810mm combined public sewer from the northeast, becoming a 610x900mm sewer and flowing in a south-easterly direction along New Quay Street. Also located within the road junction is a Combined Sewer Overflow chamber, which would be expected to provide an overflow route for the combined sewer system in the event of high flows. The 650x1220mm overflow pipe runs southwest down Water Street before turning towards the northwest (towards the river) at a point adjacent to the southern end of the site. From here it flows northwest through the southern corner of the site, through the adjacent hotel service yard, beneath the hotel building, and outfalls to the River Irwell.
- 2.18 Within the site, the existing building roof is drained by a system of gutters located on the outside edges of the roof and in the central roof valleys. Three of these gutters discharge via downpipes attached to columns within the building (two downpipes per gutter), which connect into a below-ground surface water drain (below the Basement floor level). Full survey of the below-ground drains could not be undertaken due to lack of suitable access points, however insertion of the survey camera into one broken downpipe suggested that the below-ground drains run towards the southwest.
- 2.19 It is considered most likely that the surface water drains discharge directly to the 650x1200mm surface water public sewer which passes through the site and the adjacent service yard before it outfalls to the River Irwell.
- 2.20 The guttering on the north-eastern edge of the roof is broken and missing in places, but appears likely to also have discharged to the same below-ground surface water drains as described above. However, based on its location it is also considered possible that the gutter in the northern corner of the site discharged directly to the River Irwell, as access was not available to this part of the site to confirm this.

- 2.21 The survey also covered the private drainage system within the service yard of the adjacent hotel. The survey identified this to be a surface water drainage networks, which drains the hardstanding of the service yard via channel drains and an oil separator. The drainage system was found to outfall towards Water Street, however it was not possible to survey beyond the site boundary due to debris in the line, and the surveyor was unable to attempt access at the downstream manhole due to ongoing construction works on the opposite side of Water Street. However, based on the public sewer records, it is considered most likely that this system discharges to the combined public sewer in Water Street.
- 2.22 Positive highway drainage systems are present within both New Quay Street and Water Street adjacent to the site. The drainage survey confirmed that highway gullies in both New Quay Street and Water Street discharge runoff to the local combined public sewer network.

3.0 CONSULTATION AND DATA REVIEW

Lead Local Flood Authority

- 3.1 Manchester City Council is the Lead Local Flood Authority (LLFA) (and Planning Authority) for this area. Consultation with the LLFA has not been undertaken at this initial stage. However, relevant publicly available data has been reviewed for reference, as discussed below.
- 3.2 The LLFA require flood risk and drainage matters to be considered in accordance with the National Planning Policy Framework and associated Technical Guidance, the criteria laid down in other relevant guidance from Government, the Environment Agency, and DEFRA, and Greater Manchester policies. The LLFA note that the Strategic Flood Risk Assessment (SFRA) provides a good starting point for developers in understanding flood risk in Manchester, and that the Environment Agency Flood map provides the most up-to-date modelled flood risk information.
- 3.3 The Level 1 Strategic Flood Risk Assessment (SFRA) for Greater Manchester - Update (JBA Consulting; March 2019) includes the following relevant information for the Manchester City Council area, which has informed this assessment:
- Detailed map No. 15 confirms that the site is within a Critical Drainage Area.
 - A Flood Risk Assessment is required for all development over 0.5ha within a Critical Drainage Area. The development shall have regard to recommended runoff rates, and development should be designed so that there is no flooding to the development in a 1 in 30 year event and no property flooding in a 1 in 100 year plus climate allowance change event.
 - In a Critical Drainage Area, runoff from redeveloped brownfield sites should be restricted to at least 50% less than pre-development rate.
- 3.4 The LLFA highlight that surface water runoff from new developments is not automatically allowed to connect to surface water or combined public sewers. In order to manage surface water, developers are encouraged to implement sustainable drainage into new development. The management of surface water should be demonstrated as part of a site-specific

assessment, ensuring the proposed drainage system will reduce flood risk to the site itself and elsewhere, taking climate change into account.

- 3.5 Land Drainage Consent is required to connect surface water to a watercourse that is not classified as Main River, or if the developer intends to make any alteration to that watercourse.

Water Authority

- 3.6 United Utilities is the Water Authority for this area. A pre-development enquiry has been submitted to United Utilities to seek agreement in principle for the drainage proposals and works which may affect United Utilities assets. At the time of writing a response has not been received. However, the public sewer records have been reviewed as discussed in Section 2, and a copy of these is included in Appendix E for reference.

- 3.7 Based on recent experience it is anticipated that United Utilities will have the following general requirements:

- Domestic foul water should be discharged to the local public foul/combined sewer network.
- In respect of surface water, consideration should firstly be given to discharge to soakaway, waterbody, or highway drain in that priority order, before connection to sewers will be considered.

Environment Agency

- 3.8 Consultation was undertaken with the Environment Agency, and a copy of its response, reference GMMC274769SW/HXEA15MG761F dated 10th August 2022, is presented in Appendix H for reference.

- 3.9 The Environment Agency provided modelled flood data taken from the current River Irwell and Manchester Ship Canal hydraulic model (the 'Inland Modelling 2015-16: Manchester Ship Canal')

study, dated 1st May 2020). As discussed above, the water level in the ship canal is actively managed and relies on the operation of lock gates and sluices downstream. The model data therefore includes flood levels for a number of operational scenarios, in order to allow analysis of flood levels in the event of failure of the normal water level management protocol. This is discussed fully within the Flood Risk Assessment report (2132/01r2) but the data is also used herein to estimate the impact of surface water discharge on the watercourse.

4.0 CLIMATE CHANGE

- 4.1 NPPF requires that the projected impacts of climate change are taken into account over the lifetime of a development. Studies have projected that the global sea levels will continue to rise, and there will be an increase in river flows and rainfall intensity across the country, with the degree of change depending on greenhouse gas emissions and the sensitivity of the climate system.
- 4.2 Recommended allowances for assessment are set out in Environment Agency publication ‘Flood risk assessments: climate change allowances’ (published February 2016; last updated May 2022). Within this guidance, a regionalised approach is adopted to climate change impacts based upon the river Management Catchment within which the proposed development site falls, the intended design life of the development, the flood risk vulnerability of the proposed development, and the Flood Zone classification of the site.
- 4.3 The site is situated within the Irwell Management Catchment of the North West River Basin District. For commercial development, climate change impacts over a design life of at least 75 years should be considered (taking the design life to 2099 assuming opening in 2024).
- 4.4 In accordance with the current guidance, the impacts of the “central” climate change scenario (50th percentile of potential scenarios) should be considered with regards to rainfall intensity, where the development lifetime extends to between 2061 and 2100. Within this Management Catchment, this is predicted to lead to an increase in rainfall intensity of up to 30% in the 1 in 30 year (3.33% annual exceedance probability) rainfall event, and up to 30% in the 1 in 100 year (1% annual exceedance probability) rainfall event.
- 4.5 The above allowances will be considered in relation to the surface water drainage systems serving the development.

5.0 DEVELOPMENT PROPOSALS

Development Proposals

- 5.1 Development Description - The proposals are for the redevelopment of the existing Albert Shed building, to regenerate the building and provide a new food and drink operation, to be known as Shipyard. The development proposals are illustrated in the plans in Appendix J, which includes proposed floor plans, elevations, and cross-sections.
- 5.2 The proposed re-development will largely be within the existing building structure, which will be refurbished and reinforced where necessary, although the existing lean-to timber structure to the New Quay Street elevation will require demolishing and re-building with new foundations and a steel frame.
- 5.3 The existing car park is to be retained at Basement level, the existing First Floor is to be converted for use as food and drink operation, and a new Mezzanine floor is to be added above first floor level as part of the food and drink operation.
- 5.4 A new service/delivery area is to be constructed to the southwest of the existing building, in the location of an existing ramp which is to be removed. The delivery area will be level with the adjacent road at approximately 26.30mAOD (between Basement and First Floor level). A new electricity substation is proposed to the south of the service/delivery area, with access off Water Street.
- 5.5 The main pedestrian access to the site will be from Water Street, via a new entrance to the First Floor level. New fire exit stairwells will be added between the First Floor and the Basement parking area.

- 5.6 Proposed Levels - From the architects' plans (Appendix J), it can be seen that key levels associated with the proposed use of the building following redevelopment are as follows:
- The existing Basement level (Level 00) - to remain as a car parking area - remains at approximately 25.24mAOD.
 - The existing First Floor level (Level 01) - to be converted to a food and drink operation - remains at approximately 28.27mAOD.
 - The new Mezzanine level (Level M1) - part of the new food and drink operation - will be constructed at approximately 31.82mAOD.
 - The new service/delivery area will be constructed at approximately 26.30mAOD.
- 5.7 Relationship to Existing Public Sewer - As set out in Section 2, there is an existing 650x1200mm surface water public sewer passing through the southern part of the site, which provides an outfall from a Combined Sewer Overflow upstream. As a minimum, the existing sewer will be subject to a 3m 'maintenance strip' on either side of the centreline. However, it may be subject to a more onerous formal easement, which is likely to be of the order of 6.5m either side of the centreline based on its size and depth. This should be confirmed via review of the deeds and liaison with United Utilities.
- 5.8 The new service/delivery area and sub-station will be located within the above potential area of influence over the existing surface water public sewer and is therefore subject to further agreement with United Utilities. Works which will lead to permanent structures being located over the existing public sewer or within the sewer easement/maintenance strip will be subject to granting of a formal Build Over agreement with United Utilities. Works up to 6.5m of the centre line of the sewer should therefore be discussed with United Utilities to agree key principles before undertaking detailed design.
- 5.9 As a minimum, any proposed works which have the potential to adversely impact upon the existing public sewer will need to be designed in such a way so as not to adversely affect the sewer through surcharging, and so as to minimise risk of damage during construction.

- 5.10 The drainage survey undertaken to date has confirmed the approximate location of the public sewer within the site. However, to inform detailed foundation design, the exact position of the sewer will need to be established on site by excavation. The drainage survey identified no significant defects within the length of the sewer within the site, therefore no remedial works are likely to be required prior to development.
- 5.11 The means of construction in the vicinity of the existing sewer should be chosen to minimise potential damage to the sewer. Construction of foundations close to the sewer may require the use of auger-bored piles as opposed to driven piles, to reduce the risk of damage.
- 5.12 It should be noted that the proposals are not expected to lead to a significant reduction in maintenance access to the public sewer in this area when compared to the existing ramp arrangement.
- 5.13 Land Drainage Consent - The River Irwell is an Ordinary Watercourse at this location. Land Drainage Consent (under the Land Drainage Act 1991) may therefore be required for any works which affect the banks of the River Irwell or works undertaken over the River Irwell. The requirements for any consent should be discussed with the Lead Local Flood Authority, which is responsible for granting consent if required.
- 5.14 It should be noted that the granting of planning permission does not guarantee the granting of Land Drainage Consent.

6.0 SURFACE WATER DRAINAGE

- 6.1 The existing and proposed surface water drainage regime is considered below. This section should be read in conjunction with the ARP Drainage Strategy drawing 2132/01/SK05 which has been prepared to illustrate the proposals.

Existing Surface Water Run-off

- 6.2 As set out in Section 2, the existing building roof is drained by a system of gutters which discharge via downpipes attached to columns within the building then connect into a below-ground surface water drain (below the Basement floor level). It is considered most likely that the surface water drains discharge directly to the 650x1200mm surface water public sewer which passes through the site and the adjacent service yard before it outfalls to the River Irwell.
- 6.3 The guttering on the north-eastern edge of the roof appears likely to also have discharged to the same surface water drains as described above. However, it is also possible that the gutter in the northern corner of the site discharged directly to the River Irwell.
- 6.4 Runoff from the southern part of the site, where the existing car park access ramp is located, would be expected to drain via the surface water drainage systems in the adjacent service yard. It is considered most likely that this system discharges to the combined public sewer in Water Street.
- 6.5 In order to estimate the existing surface water runoff from the site via the existing surface water drains, an estimate of the existing impermeable area on site has been made. As the entire site is covered by the building or hardstanding, the existing impermeable area is approximately 0.2ha.
- 6.6 The existing runoff rate from the site has been estimated for a range of return period events using the Causeway Flow computer programme, applying the Rational Method and FSR rainfall model. Using a combination of these methods. The resulting estimated existing surface water

discharge rate is summarised in Table 1, and the full calculations are included in Appendix K for reference.

Table 1. Estimated Existing Surface Water Runoff Rate

Rainfall Return Period	Estimated Existing Runoff Rate (l/s)
1 in 1	33.3
1 in 30	77.0
1 in 100	96.7

Proposed Surface Water Drainage

- 6.7 The proposed means of managing surface water runoff from the proposed development has been considered with respect to the hierarchy set out in Building Regulations Part H (2010) as follows.
- 6.8 Infiltration - Consideration of the proposed means of surface water drainage should firstly be given to infiltration techniques (to ground). The site and the adjacent hotel service yard is 100% impermeable and is understood to have been in use as an industrial site for many years prior to its use as a car park and hotel, therefore ground conditions below the surface would not be expected to be conducive to the use of infiltration. Furthermore, the site and adjacent service yard are highly constrained by existing buildings, existing services, and the existing public sewer, meaning that there is unlikely to be sufficient space on site or within the adjacent service yard to locate a soakaway a suitable distance from existing constraints. On this basis the use of infiltration as a means of managing surface water has been dismissed.
- 6.9 Watercourse – As infiltration is unfeasible, discharge to a watercourse must be considered as the next option. As set out in Section 2, it is believed that surface water runoff from the roof of the existing Albert Shed building discharges to the adjacent River Irwell via the 650x1200mm surface water public sewer. Although it may be feasible to construct a new direct outfall to the

watercourse to serve the site, this would not provide any significant benefits over the current indirect arrangement.

- 6.10 On this basis it is proposed that the site should continue to discharge to the River Irwell via the adjacent surface water public sewer.
- 6.11 Public Sewer – As above, the site is already believed to discharge via the adjacent surface water public sewer, but this provides a sustainable outfall to the adjacent watercourse. On the above basis, discharge of surface water to the combined public sewer system is not expected to be required.

Proposed Surface Water Discharge

- 6.12 It is a requirement of the NPPF to ensure that surface water run-off from any proposed development has negligible consequence on downstream areas, either in terms of impact upon downstream sewer capacity or flood risk impacts due to discharge to a watercourse. This is normally achieved by attenuating post-development discharge in order that the rate of runoff is not increased by the development, and if possible is reduced. Storage is then normally provided on site to manage the attenuated flows up to the 1 in 100 year plus climate change allowance rainfall event.
- 6.13 As discussed in Section 3, the Level 1 Strategic Flood Risk Assessment (SFRA) for Greater Manchester - Update (JBA Consulting; March 2019) suggests that, in a Critical Drainage Area, runoff from redeveloped brownfield sites should be restricted to at least 50% less than the pre-development rate. If the rate of discharge from the site were to be limited to say 50% of the existing 1 in 1 year runoff rate (as estimated above), the discharge limit would be 16.6l/s and a significant volume of on-site storage would be required.
- 6.14 However, as noted previously, the site and adjacent service yard are highly constrained by existing buildings, existing services, and the existing public sewer, meaning that there is unlikely to be sufficient space on site or within the adjacent service yard to locate a suitable

attenuation tank. On this basis it is proposed that discharge of surface water is maintained at the pre-development rates via the existing infrastructure. i.e. no attenuation of flows.

- 6.15 As the site is currently 100% impermeable and will remain as such, this approach will not lead to an increase in surface water runoff to the River Irwell in present-day rainfall events. However, it is recognised that there may be an increase in the rate of discharge of surface water into the River Irwell in the future, due to the projected impacts of climate change. Table 2 provides an estimate of the post-development rates of runoff using the above approach to discharge.

Table 2. Estimated Post-Development Surface Water Runoff Rate

Rainfall Return Period	Estimated Post-Development Runoff Rate (l/s)
1 in 1	33.3
1 in 30	77.0
1 in 100	96.7
<i>1 in 30 plus 30% climate change allowance</i>	<i>100.1</i>
<i>1 in 100 plus 30% climate change allowance</i>	<i>125.7</i>

- 6.16 Taking the largest change in flow into the river as a result of climate change as the difference between the 1 in 100 year event and the 1 in 100 year plus 30% climate change allowance event, an increase in discharge of up to 29l/s (0.029m³/s) may be expected as a result of climate change over the lifetime of the development.
- 6.17 In order to consider the impact the additional runoff could have on the downstream watercourse, reference has been made to the fluvial flood model data provided by the Environment Agency (Appendix H), for model node ea013_0251_IRWZ01_1113 located downstream of the New Quay Street bridge. The results of this analysis are set out in Table 3.

Table 3. Estimated Maximum Percentage Increase in Fluvial Flow in River Irwell Due to Climate Change Impacts on Runoff from Site Over the Lifetime of the Development

Flood Return Period	Operating Scenario	Fluvial Flow (m³/s)	Estimated Increase in Runoff / Fluvial Flow (m³/s)	Estimated Increase in Fluvial Flow (%)
1 in 5	Normal operation	310.25	0.029	+0.009%
1 in 10		351.35		+0.008%
1 in 25		411.30		+0.007%
1 in 50		445.27		+0.007%
1 in 75		466.57		+0.006%
1 in 100		495.71		+0.006%
1 in 100 plus 35% climate change allowance		589.13		+0.005%
1 in 200		552.99		+0.005%
1 in 1000		773.43		+0.004%
1 in 100	Latchford 3 Gates Closed	495.71		+0.006%
1 in 1000		770.29		+0.004%

6.18 It can be seen from Table 3 that maintaining the existing surface water discharge arrangements, with no attenuation of flows, would not be expected to have a detrimental impact on flood risk downstream in the present day or future rainfall scenarios. The projected impacts of climate change would lead to an increase in flow in the River Irwell of less than 0.01%, which would not be expected to lead to any discernible increase in predicted flood level in the River.

6.19 The above strategy is subject to agreement with the Lead Local Flood Authority and United Utilities.

Exceedance Flows

6.20 The capacity of the existing below-ground surface water drains serving the site is unknown, as the size and gradient of the pipes conveying flow from the existing rainwater down pipes could

not be confirmed during the survey. Therefore, in implementing the above strategy there is a risk that the capacity of the existing drains will not be sufficient to meet current design standards of no surcharging during the 1 in 2 year event and no flooding during a 1 in 30 year event. However, it must be recognised that this is not a new development but a redevelopment, therefore the provision of a new surface water drainage system designed to current standards could be considered disproportionate, especially given that the space on site is not conducive to the provision of storage.

- 6.21 In the event that flooding from the surface water drainage system occurs on site, due to the capacity of the drainage system being exceeded, or in the event of a blockage, flooding would only be expected to occur within the existing Basement car parking level. It would not therefore be expected to have any significant detrimental impact upon the development proposals for the First Floor and Mezzanine. The maximum potential depth of flooding at the basement level due to surface water would be approximately 300mm, beyond which water would overtop the river wall. Once the source of any exceedance flow subsides, any flooding in the Basement would be expected to drain down via existing drains.
- 6.22 To minimise the risk of failure of the drainage systems the exiting below-ground drains should be cleansed, surveyed, and subject to any necessary repair as part of the redevelopment. The above-ground rainwater hardware should also be replaced as per the Architect's details.
- 6.23 Regular inspection and maintenance will be required in order to see that the capacity of the drainage system remains robust and reduce the risk of problems occurring. This is discussed further in Section 8.

7.0 FOUL DRAINAGE

- 7.1 This section sets out the proposed means of managing foul discharge from the proposed development.
- 7.2 This section should be read in conjunction with the ARP Drainage Strategy drawing (2132/01/SK05) which has been prepared to illustrate the proposals.

Existing Foul Drainage

- 7.3 There is no existing foul drainage system serving the site itself. The nearest private foul drainage system is that which serves the adjacent hotel. It is not known whether this system would have sufficient capacity to convey all new foul flows from the proposed development.
- 7.4 There is a 600mm diameter combined public sewer in Water Street to the southeast of the site, which has been recently constructed to serve neighbouring developments. It is understood that a 300mm diameter stub connection into a new manhole on Water Street has been provided as part of the new sewer construction. Based on information contained within documents relating to the ongoing construction project on the opposite side of Water Street, this stub is understood to have been provided for a future foul drainage connection from the Shipyard site.

Proposed Foul Drainage

- 7.5 It is anticipated that the new foul drains serving the First Floor level and Mezzanine level of the proposed development will be routed above-ground to stacks adjacent to the structural columns of the building. There is not expected to be any requirement for foul drainage provision for the Basement level itself, other than draining foul flows from the floors above. The stacks from above will discharge to a new system of gravity foul drainage installed below the Basement floor, with all flows routed to a single point, most likely beneath in the southeast of the building.

- 7.6 As above, it is understood that a 300mm diameter stub has been constructed in one of the new combined public sewer manholes in Water Street (Manhole UC1 on the accompanying plans). It is therefore proposed that the foul drainage from the development is connected to this stub. Details of the connection to the public sewer will be subject to final agreement with United Utilities and may be subject to a Section 106 connection application.
- 7.7 Cover and invert levels of manholes within Water Street, and the invert level of the stub pipe, will need to be confirmed prior to detailed design, as these features were not included in the original topographical survey (due to this being undertaken prior to their construction). In the absence of exact levels, an estimate of the invert level of the stub has been made based on the drainage survey results and approximate ground levels.
- 7.8 A preliminary assessment of the indicative above-ground foul drainage requirements and the subsequent below-ground foul drainage requirements has also been undertaken. Based on the estimated outfall level at the receiving stub pipe and the preliminary assessment of likely below ground drainage requirements, it is anticipated that a foul package pumping station is likely to be required in order to facilitate a discharge to the combined public sewer. This shall be confirmed
- 7.9 Note: It has been considered whether it would be appropriate to discharge foul effluent from the proposed development via the existing drainage systems serving the adjacent hotel (which is under the same ownership). However, the survey of the existing drainage in the hotel service yard suggested that the drains in this part of the site were surface water drains rather than foul/combined drains, and would not therefore be a suitable outfall for foul effluent. Also, the drains are a maximum of 150mm diameter and are likely to have been designed specifically to convey the flows expected to be generated by the hotel building and hardstanding, therefore there is no guarantee of sufficient capacity being available. Furthermore, the downstream connectivity of the drains present in the hotel service yard could not be established due to debris in the outgoing pipe and no access from downstream due to construction works, therefore a viable route to the combined public sewer could not be confirmed.

8.0 MAINTENANCE

- 8.1 There is a residual risk of flooding from all drainage systems in the event of siltation or a blockage occurring, or in the event of pumping station failure. It is therefore essential that drainage systems are subject to periodic inspection and maintenance, so that the design standard is not compromised, and to reduce the risk of blockage or failure.
- 8.2 The inspection and maintenance of both the foul and surface water drainage infrastructure on site is expected to remain the responsibility of the building /site owner.
- 8.3 An appropriate inspection and maintenance plan should be established, to be implemented by the responsible party using suitably qualified professionals where necessary. The plan may be subject to agreement with the Lead Local Flood Authority prior to the building coming into use.

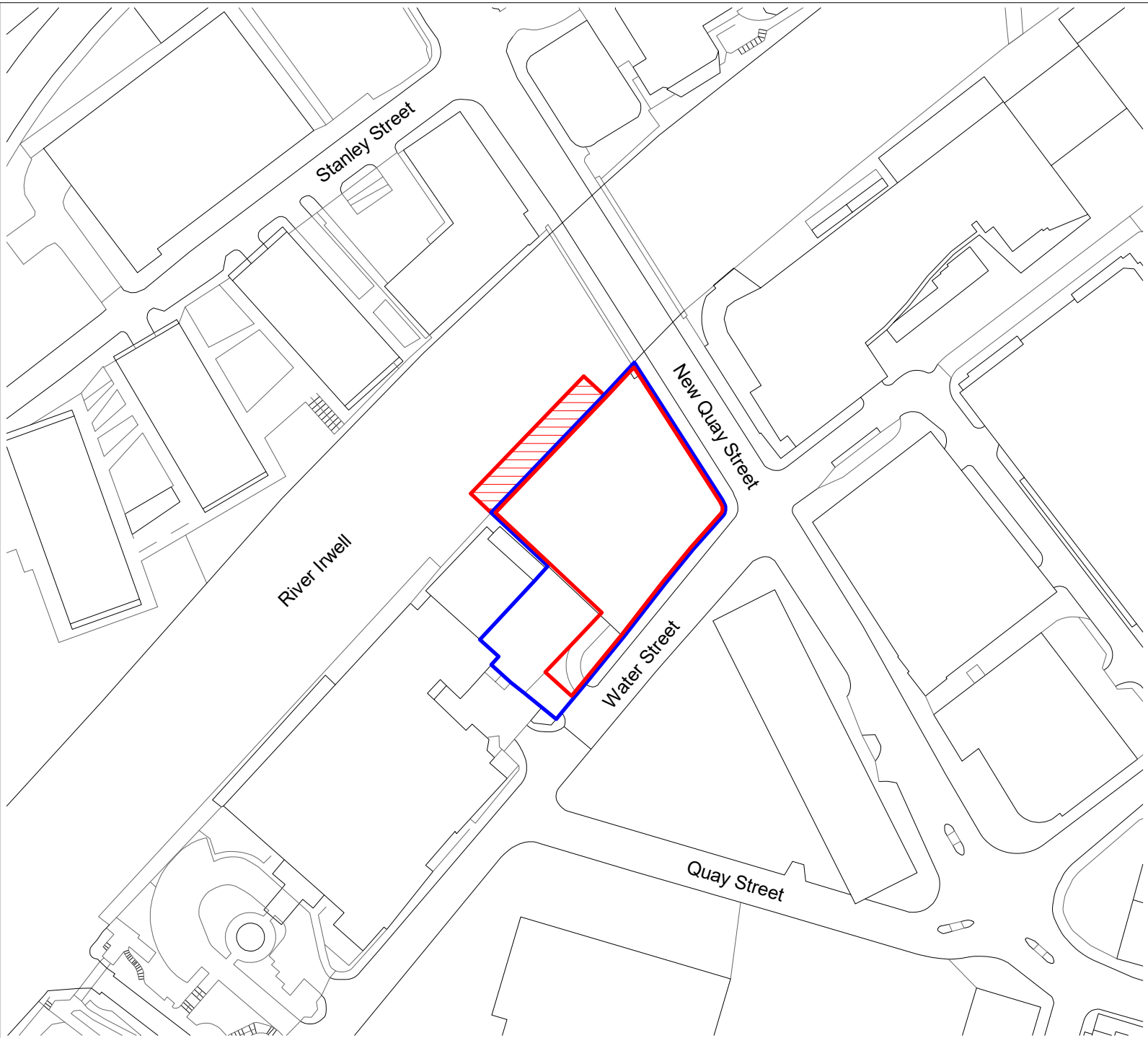
9.0 SUMMARY

- 9.1 The principles of a sustainable surface water management strategy for the proposed development are set out within the report. It has been determined that infiltration techniques are not suitable for use on this site. The existing site is believed to discharge to the adjacent River Irwell via the existing public surface water sewer which runs through the south of the site and the adjacent hotel service yard, therefore it is suggested that maintaining this existing discharge arrangement is the most appropriate strategy.
- 9.2 As the proposals are for the redevelopment of an existing building, and as there is limited space on site which could be used to provide surface water storage, it is proposed that surface water will continue to discharge with no new attenuation of flows. It has been demonstrated within the report that this strategy would not be expected to lead to any increase in downstream flood risk in the present day, or in the future when the projected impacts of climate change are considered.
- 9.3 In the event that flooding from the surface water drainage system occurs on site, due to the capacity of the drainage system being exceeded, or in the event of a blockage, flooding would only be expected to occur within the existing Basement car parking level and would not have any significant detrimental impact upon the development proposals for the First Floor and Mezzanine.
- 9.4 To minimise the risk of failure of the drainage systems the exiting below-ground drains should be cleansed, surveyed, and subject to any necessary repair as part of the redevelopment. The above-ground rainwater hardware should also be replaced as per the Architect's details.
- 9.5 It is proposed that foul effluent from the proposed development will be discharged to the combined public sewer in Water Street. Subject to further survey and confirmation of above-ground foul drainage proposals, a package pumping station may be required to facilitate this discharge. The strategy is subject to agreement with United Utilities, and formal Section 106 approval by United Utilities.

- 9.6 The proposed foul and surface water drainage strategy is illustrated in the ARP Drainage Strategy drawing 2132/01/SK05.
- 9.7 Suitable maintenance regimes will be required for proposed drainage infrastructure. It is envisaged that inspection and maintenance of drainage infrastructure on site will remain the responsibility of the building /site owner. A maintenance plan should be developed and implemented by the responsible party over the lifetime of the development.
- 9.8 Works which will lead to permanent structures being located over the existing public sewer in the south of the site, or within the sewer easement/maintenance strip, will be subject to granting of a formal Build Over agreement with United Utilities. To inform detailed foundation design, the exact position of the sewer will need to be established on site by excavation.
- 9.9 A Land Drainage Consent (under the Land Drainage Act 1991) may be required from the LLFA for any works which affect the banks of the River Irwell or works undertaken over the River Irwell.
- 9.10 The findings of this report are subject to the approval of the Regulatory Authorities. Detailed design and calculations shall be submitted to the Planning Authority for approval prior to construction on the development site.
- 9.11 Subject to compliance with the above, it is envisaged that the proposed development can satisfy the requirements of the National Planning Policy Framework and the Planning Practice Guidance in relation to surface water management and foul drainage.

APPENDIX A

SITE LOCATION PLAN AND AERIAL IMAGE



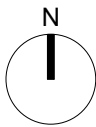
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Notes

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All dimensions are to be checked prior to construction and any discrepancies are to be identified to the Architect.

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- KEY
- Application site boundary
 - Ownership boundary
 - Part of the roof overhanging the river

DRAFT

Revisions

Status
PLANNING

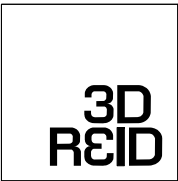
Client
ALLIED LONDON

Project
**SHIPYARD
WATER STREET
MANCHESTER**

Title
Location Plan

Scale	Size	Date	Drawn	Checked
1 : 1250	A3	26/08/22	GL	NS

3DReid
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Architecture Interiors Masterplanning



Drawing No.
200097-3DR-XX-DR-A-08001

Rev.



Key

- Approximate Site Boundary
- - Existing Roof Overhang



ARP (NORTH WEST) LTD
CHARTERED CONSULTING ENGINEERS
Space 10, This is The Space, 68 Quay Street, Manchester M3 3EJ
Telephone: 07726 766 271 www.arpassociates.co.uk

Project SHIPYARDS
WATER STREET
MANCHESTER

Client MANCHESTER QUAYS TWO
LTD

Title AERIAL IMAGE

Date NOVEMBER 2020

Drawn MGW	Scale AS SHOWN
--------------	-------------------

Job No. 2132/01/SK02

APPENDIX B

EXISTING SITE PHOTOGRAPHS



Notes

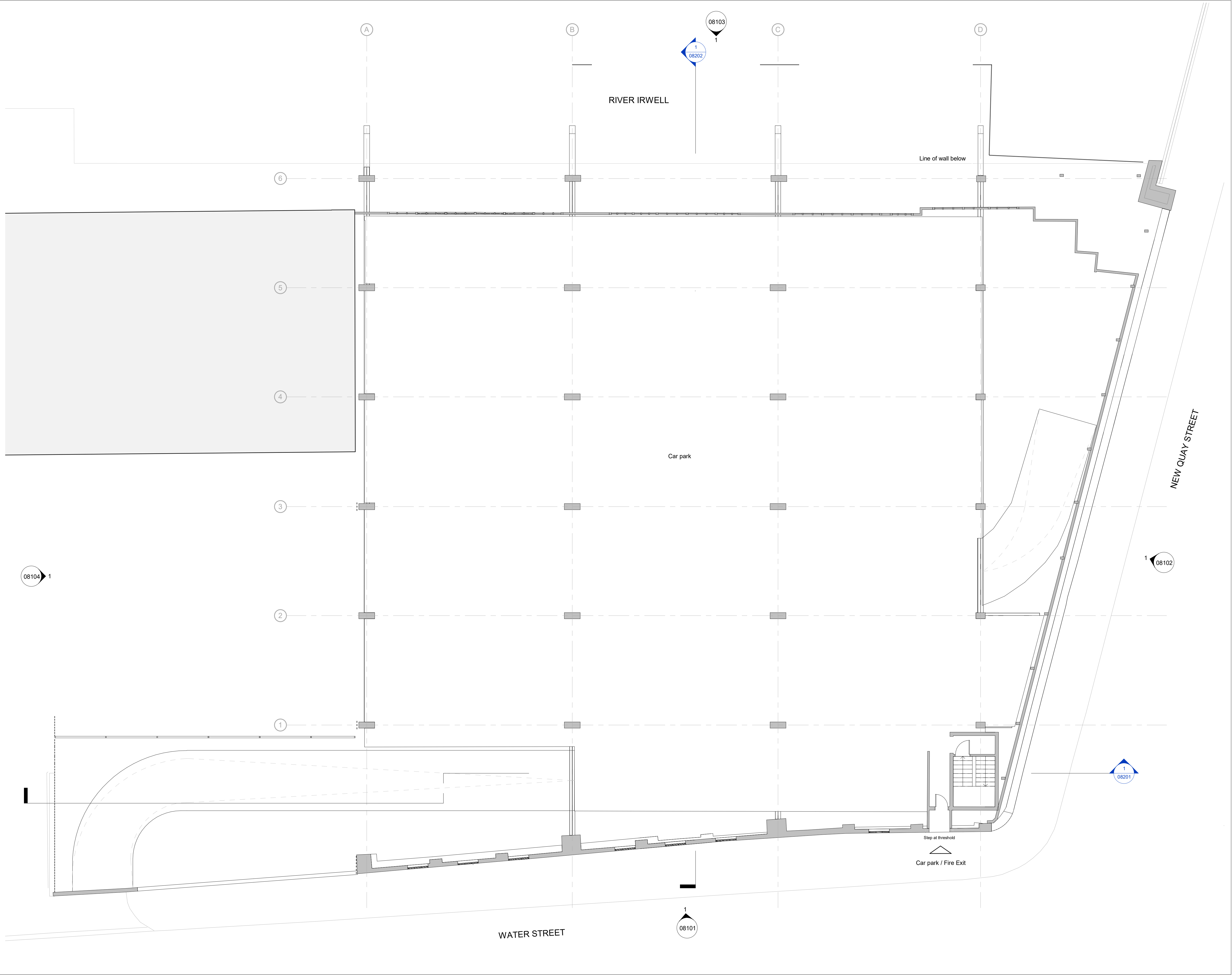
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Revisions				
Status				
PLANNING				
Client				
ALLIED LONDON				
Project				
SHIPYARD WATER STREET MANCHESTER				
Title				
Level 00 Existing GA plan				
Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/10/22	GL	NS



Notes

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Revisions				
Status	PLANNING			
Client	ALLIED LONDON			
Project	SHIPYARD WATER STREET MANCHESTER			
Title	Level 01 Existing GA plan			
Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/10/22	GL	NS
3DReid www.3DReid.com Architecture Interiors Masterplanning				
Drawing No.			Rev.	
200097-3DR-01-DR-A-08012				



- KEY
- ① Existing windows retained and made good
If refurbishing is not possible, replace with a new window to match existing.
 - ② Existing brickwork retained, cleaned and made good.
 - ③ New metal canopy in black and free standing signage
 - ④ New timber sliding shutters
 - ⑤ New entrance with curtain wall and sliding doors in black grey
 - ⑥ New metal framed screen to service yard in black grey
 - ⑦ New metal service yard and substation door in black grey
 - ⑧ New metal fire exit gate in black grey
 - ⑨ New metal roof fascia in black grey
 - ⑩ New painted signage and artwork
 - ⑪ New brickwork within existing window opening
 - ⑫ New extract air discharge
 - ⑬ New extract louvre

Notes

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Revisions

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3D
REID

Status
PLANNING

Client
ALLIED LONDON

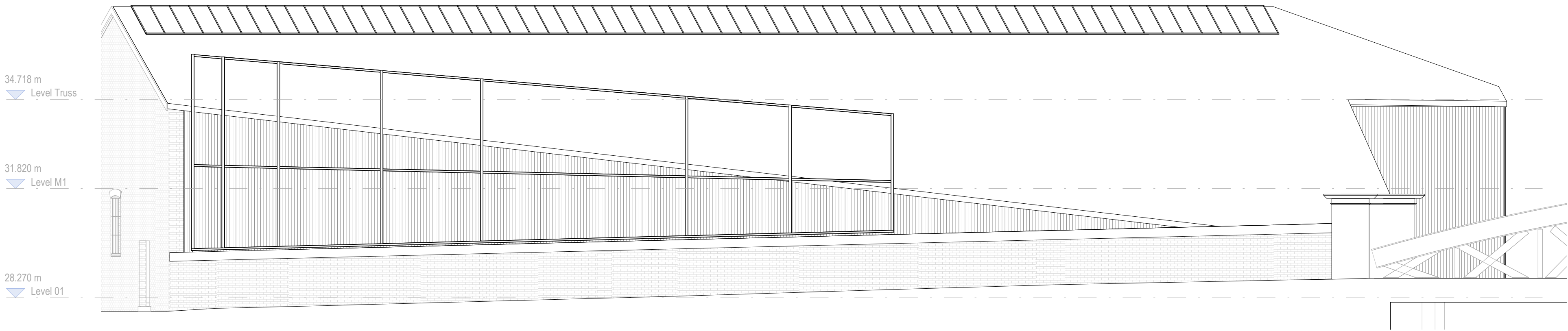
Project
**SHIPYARD
WATER ST, MANCHESTER**

Title
**Existing South-East Elevation
Water Street**

Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/21	GL	NS

Drawing No. 200097-3DR-ZZ-DR-A-08101

Rev.



- KEY
- ① New ribbed metal roof finish in black grey
 - ② New framed roof skylights
 - ③ New painted signage
 - ④ New timber cladding to external wall
 - ⑤ Existing advertising board frame reused
 - ⑥ New metal secondary entrance gate in black grey
 - ⑦ New timber canopy
 - ⑧ Existing bridge pier retained
 - ⑨ Existing brick wall made good

Notes

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REID

Status
PLANNING

Client
ALLIED LONDON

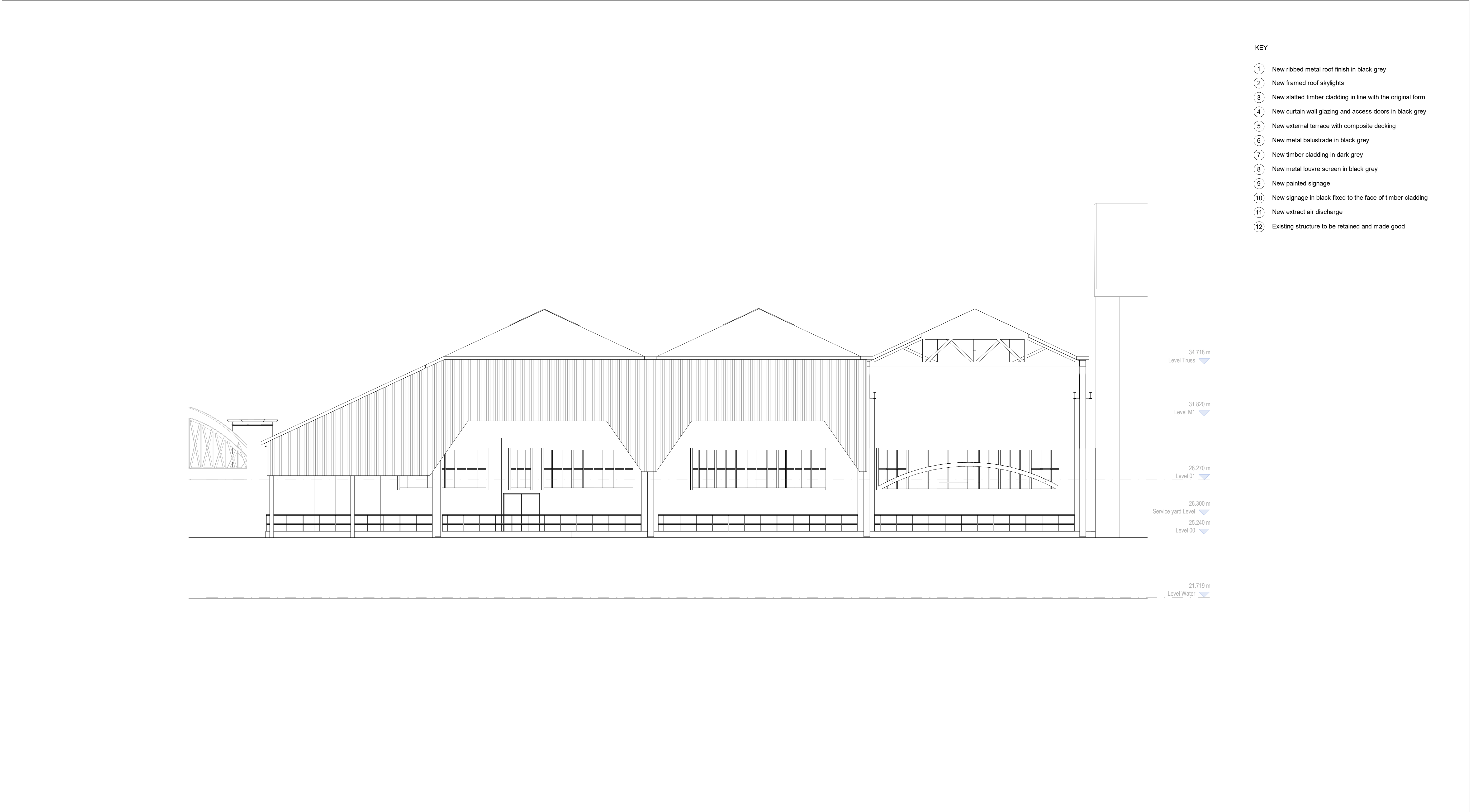
Project
SHIPYARD
WATER ST, MANCHESTER

Title
Existing North-East Elevation
New Quay Street

Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/21	GL	NS

Drawing No. 200097-3DR-ZZ-DR-A-08102

Rev.



Notes

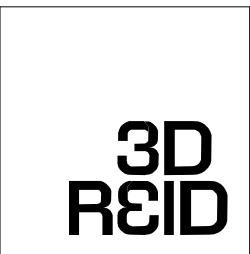
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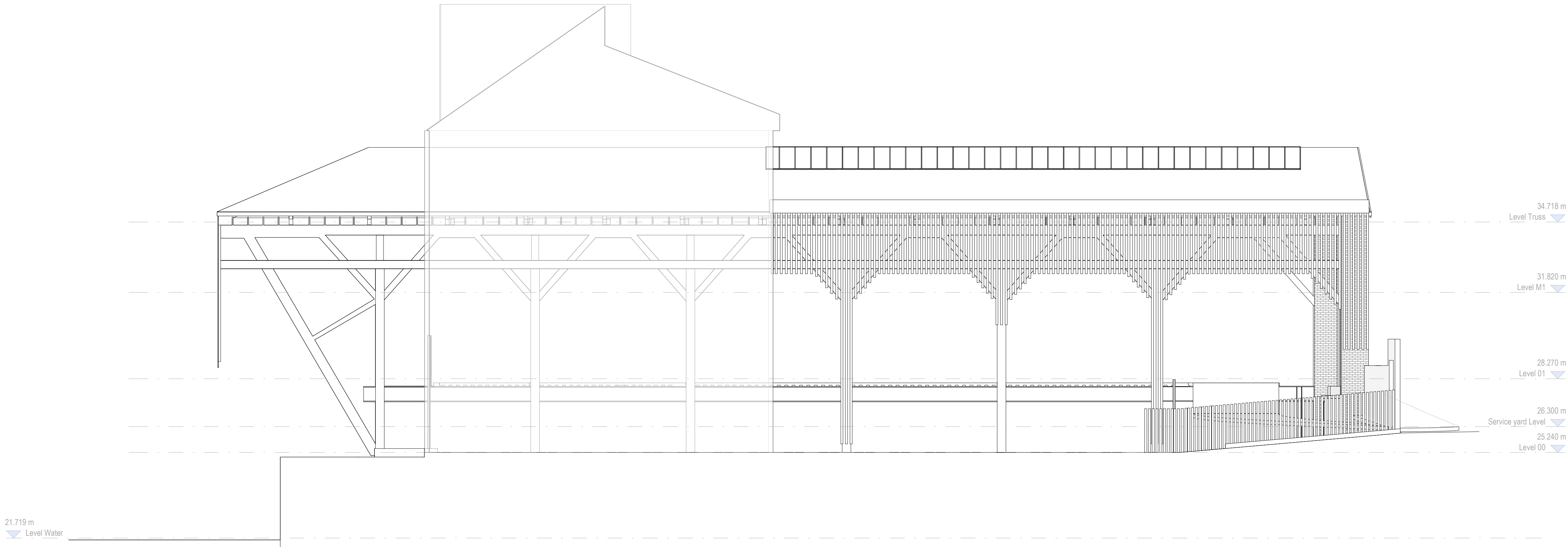
Revisions

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Status	PLANNING			
Client	ALLIED LONDON			
Project	SHIPYARD WATER ST, MANCHESTER			
Title	Existing North-West Elevation River Irwell			
Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/21	GL	NS
Drawing No.				Rev.
200097-3DR-ZZ-DR-A-08103				



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Status
PLANNING

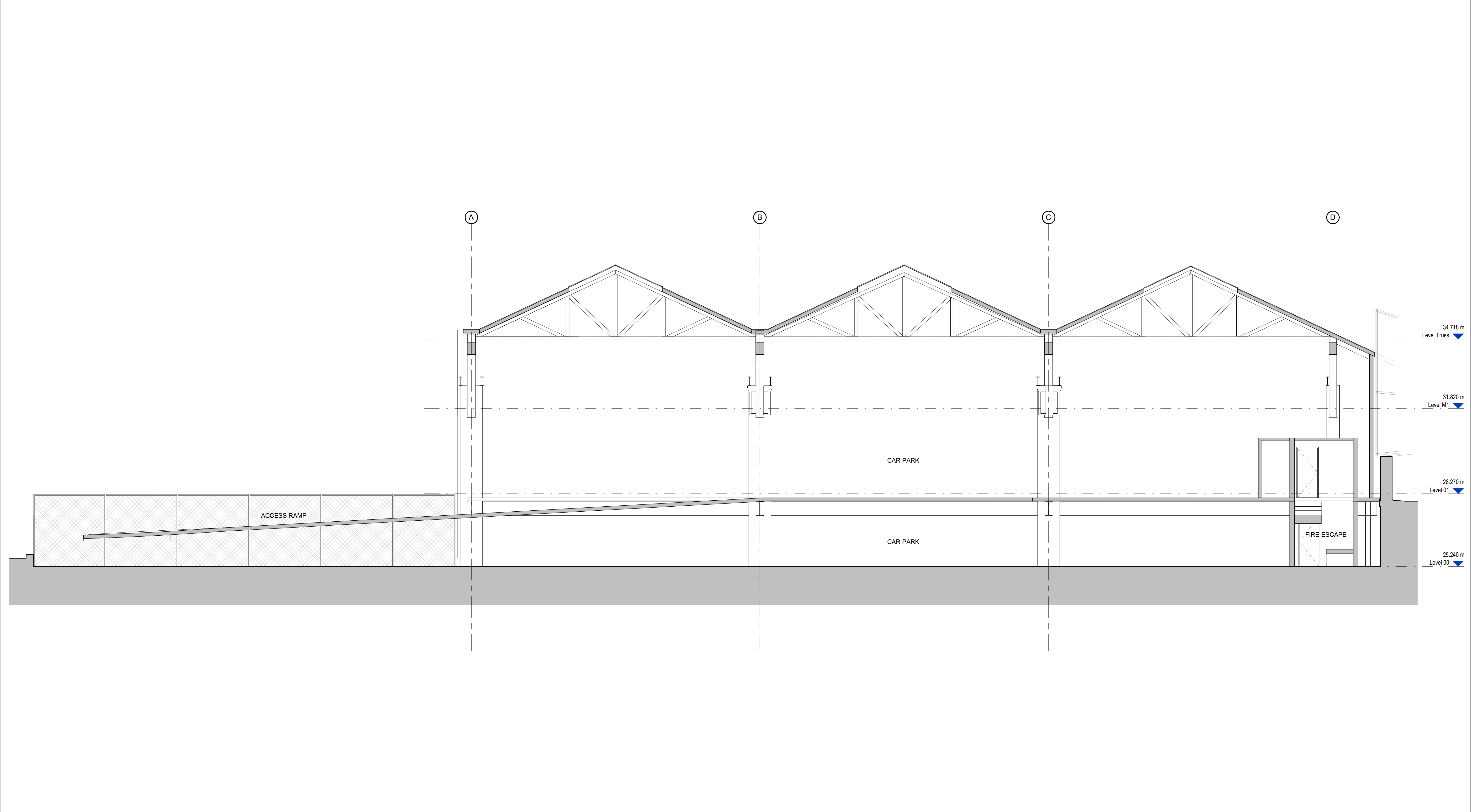
Client
ALLIED LONDON

Project
SHIPYARD
WATER ST, MANCHESTER

Title
Existing South-West Elevation
Service Yard

Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/22	GL	NS

Drawing No.	Rev.
200097-3DR-ZZ-DR-A-08104	



Notes

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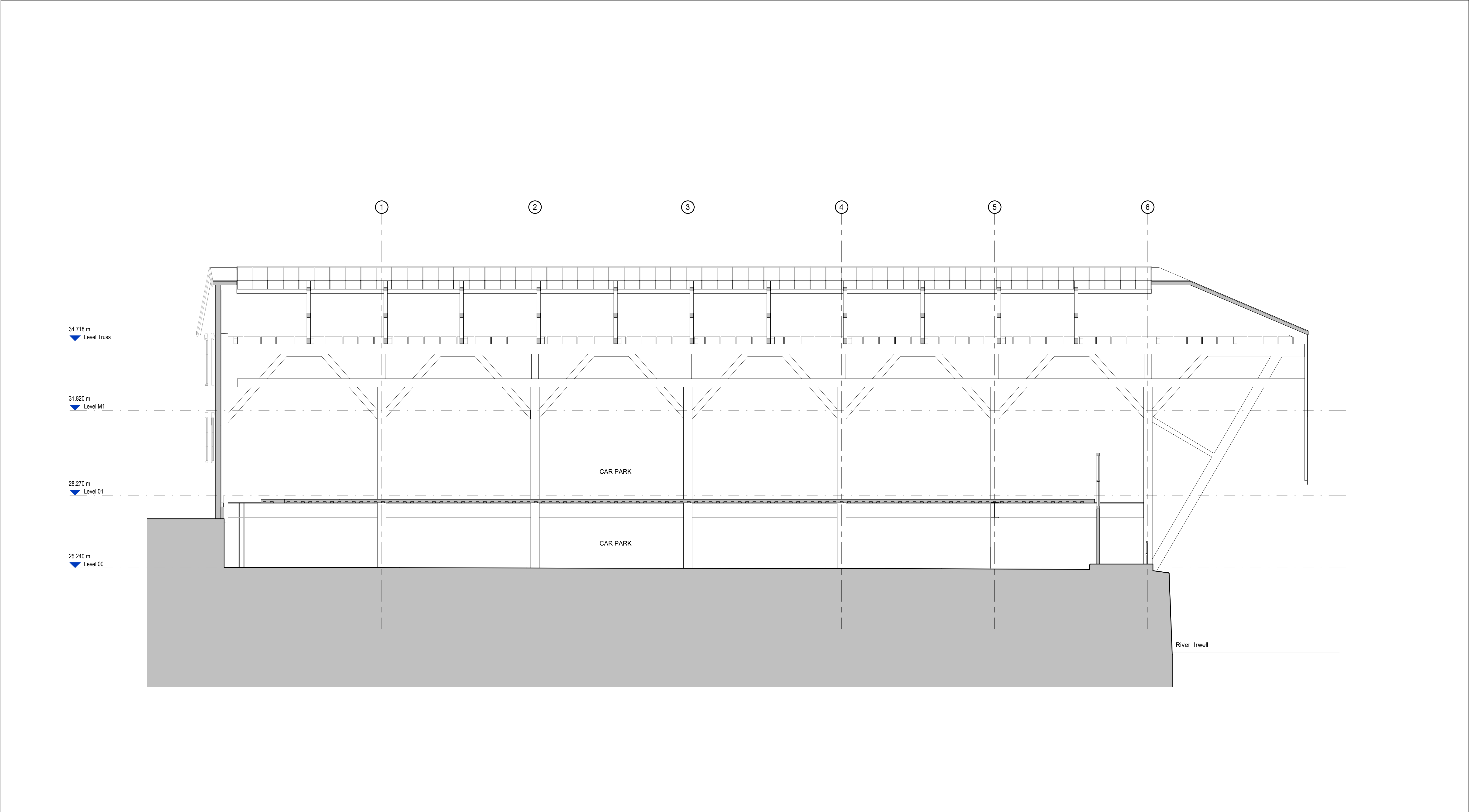
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Revisions

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Status	PLANNING			
Client	ALLIED LONDON			
Project	SHIPYARD WATER ST, MANCHESTER			
Title	Existing GA Section A-A			
Scale	Size	Date	Drawn	Checked
1 : 75	A1	26/08/22	GL	NS
Drawing No.				Rev.
200097-3DR-ZZ-DR-A-08201				



Notes

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Status PLANNING					
Client ALLIED LONDON					
Project SHIPYARD WATER ST, MANCHESTER					
Title Existing GA Section B-B					
Scale	Size	Date	Drawn	Checked	
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Drawing No.			Rev.		
200097-3DR-ZZ-DR-A-08202					

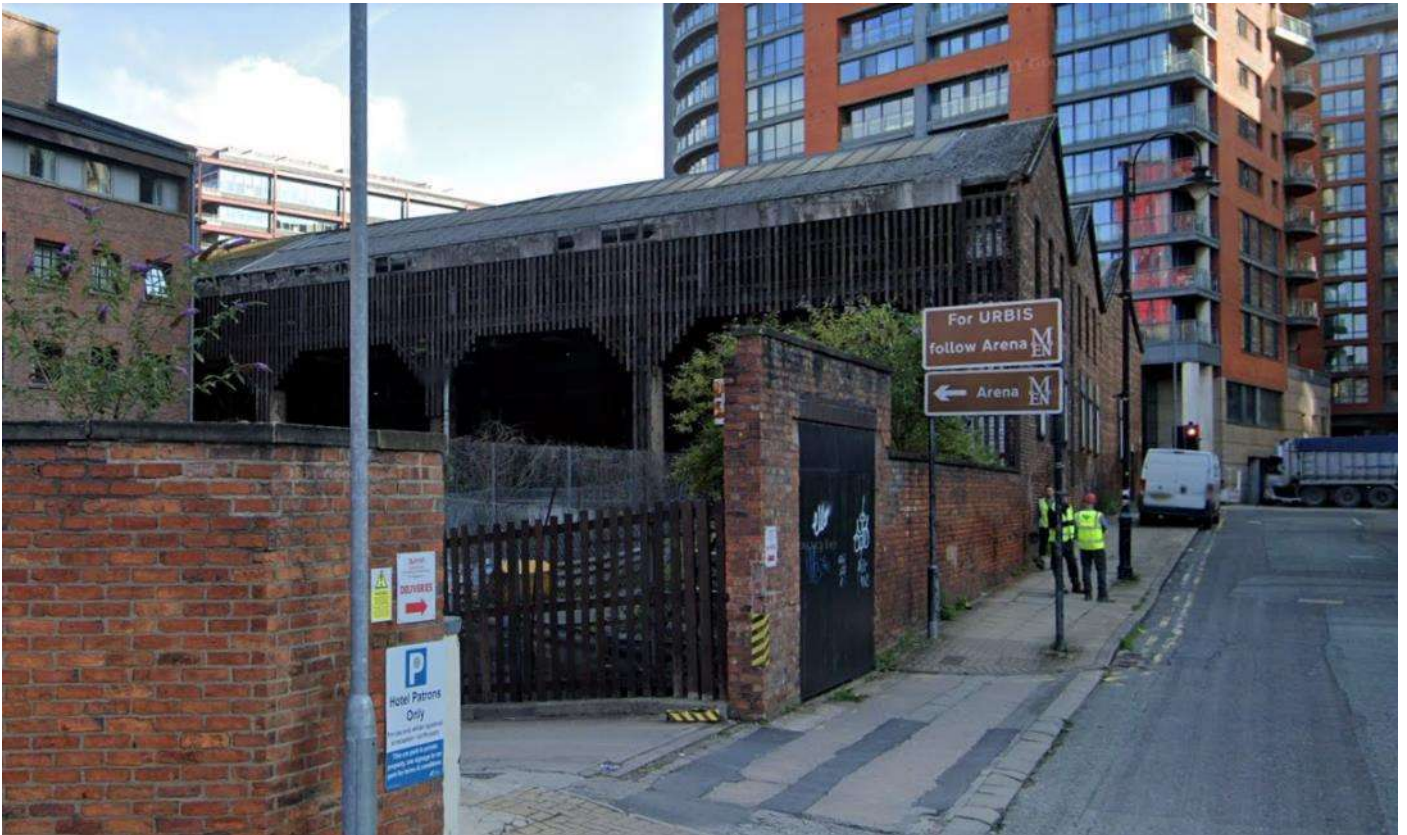
APPENDIX C

EXISTING SITE PHOTOGRAPHS

Photograph 1. View towards eastern corner of building from New Quay Street.



Photograph 2. View northeast along Water Street – existing ramp to Ground Floor level begins from behind black door in centre of photograph.



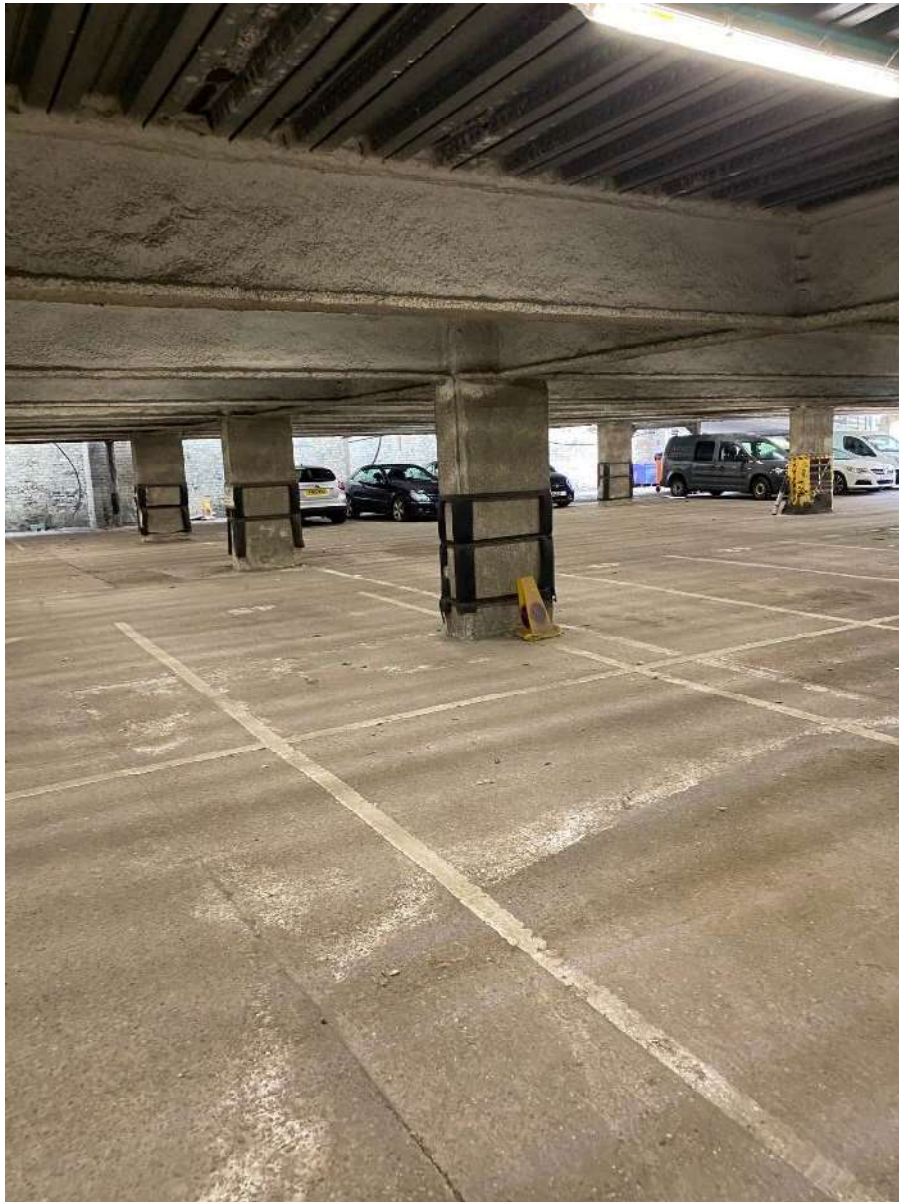
Photograph 3. View from opposite side of River Irwell



Photograph 3. View on southwest elevation, showing existing basement parking level, existing Ground Floor level and interior of roof.

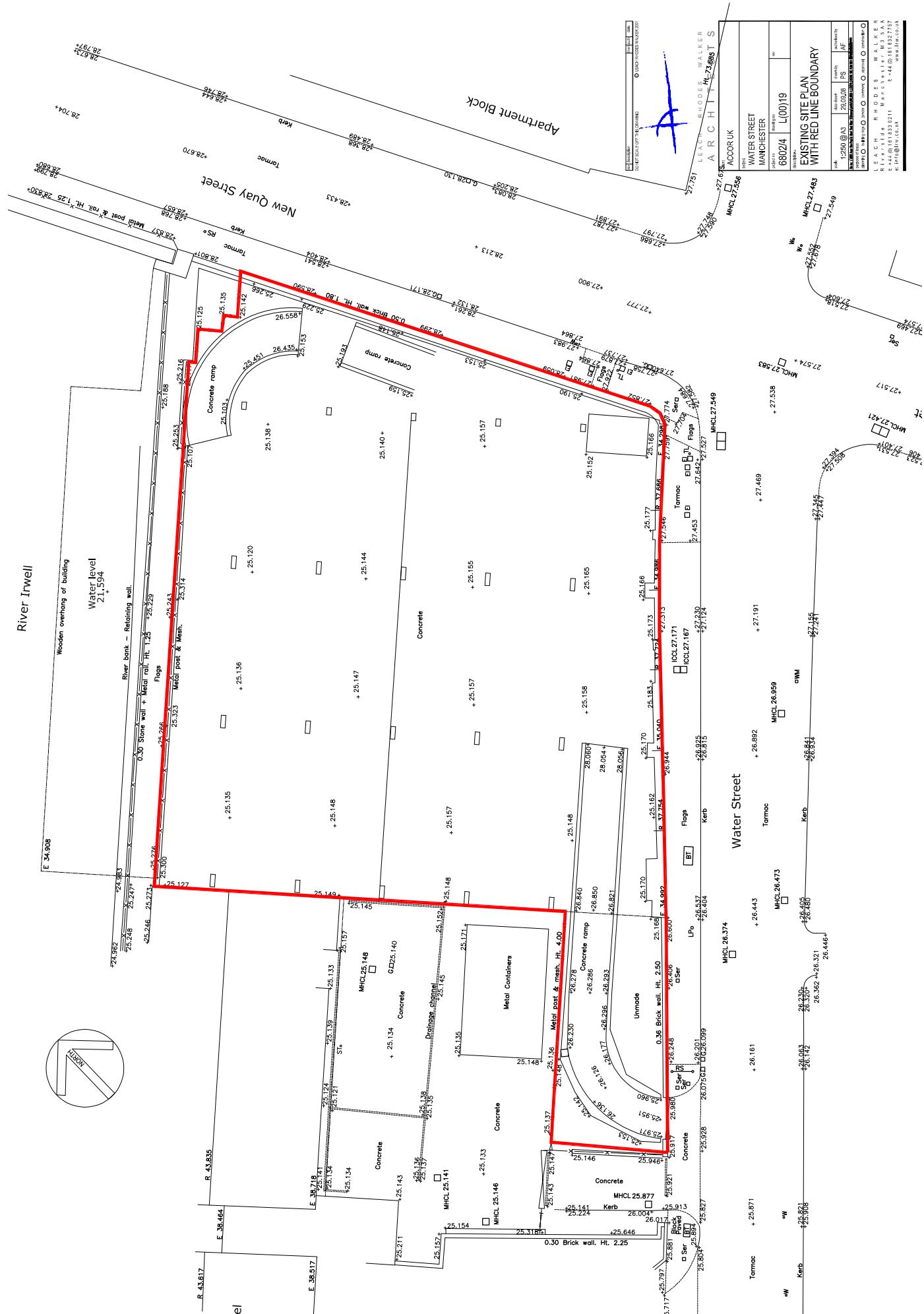


Photograph 4. Typical view within Basement car park level.



APPENDIX D

SITE TOPOGRAPHY



APPENDIX E

WATER AUTHORITY DATA

ARP Geotechnical Ltd

**5/6 Northwest Business Park
Servia Hill,
Leeds, West Yorkshire
LS6 2QH**

FAO:

How to contact us:

**United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP**

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

**Your Ref: NW147/01
Our Ref: UUPS-ORD-426618
Date: 26/08/2022**

Dear Sirs

Location: Albert Shed

I acknowledge with thanks your request dated 24/08/2022 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. <http://www.unitedutilities.com/work-near-asset.aspx>.

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please [contact us](#).

Yours Faithfully,



Karen McCormack
Property Searches Manager

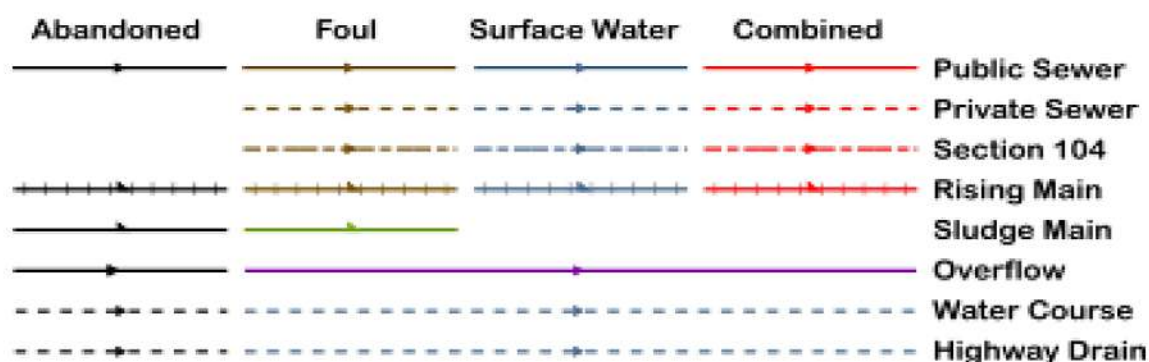
TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

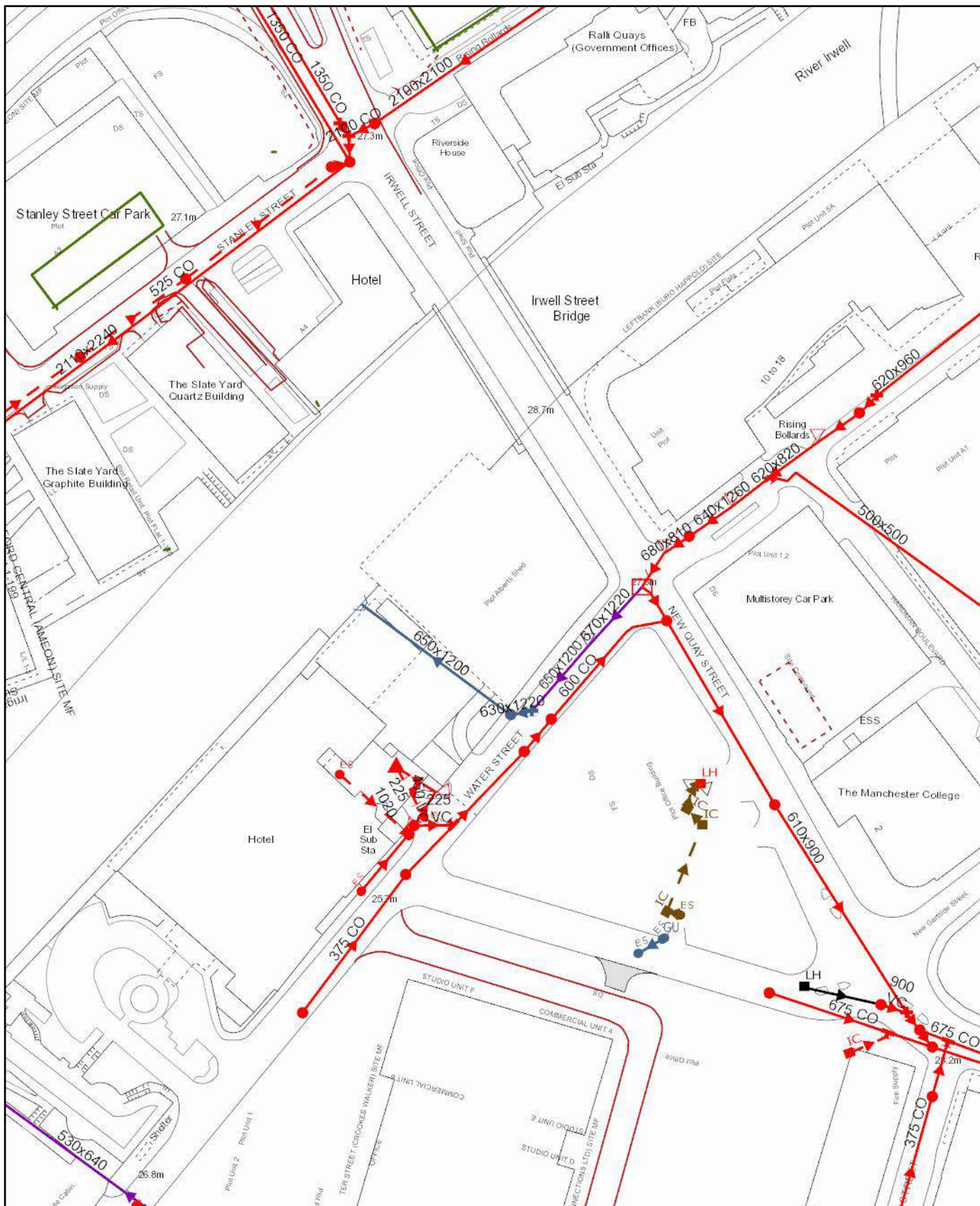
Wastewater Symbolology



All point assets follow the standard colour convention:

red – combined	brown - foul
blue – surface water	purple - overflow

- | | |
|----------------------|--------------------------|
| Manhole | Side Entry Manhole |
| HS Head of System | Outfall |
| ES Extent of Survey | Screen Chamber |
| RE Rodding Eye | IC Inspection Chamber |
| IN Inlet | Bifurcation Chamber |
| DP Discharge Point | LH Lamp Hole |
| VV Vortex | T Junction / Saddle |
| PE Penstock | Catchpit |
| WO Washout Chamber | Valve Chamber |
| VA Valve | Vent Column |
| AV Air Valve | Vortex Chamber |
| NRV Non Return Valve | Penstock Chamber |
| SQ Soakaway | Network Storage Tank |
| GU Gully | Sewer Overflow |
| CA Cascade | Ww Treatment Works |
| FM Flow Meter | Ww Pumping Station |
| HA Hatch Box | Septic Tank |
| OI Oil Interceptor | Control Kiosk |
| SM Summit | |
| DS Drop Shaft | Change of Characteristic |
| OP Orifice Plate | |



Scale: 1:1250
Date: 26/08/2022

SEWER RECORDS



Address or Site Reference: Albert Shed
Printed by: Property Searches

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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APPENDIX F

DRAINAGE SURVEY



CCTV SURVEY INSPECTION REPORT

Client:	ARP Geotechnical Ltd
Location:	Alberts Shed, Water St, Manchester M3 4JQ
Date Issued:	09.11.2022



Industrial Water Jetting Systems Ltd

Dickens House, Old Stowmarket Road, Woolpit, Bury St. Edmunds IP22 9QS

Tel: 01359 242606 Fax: 01359 242 621
Web: www.iwjs.co.uk Email: surveys@iwjs.co.uk



Project

Project Name: ARP Alberts Shed_ Water St Mcr 209324 2022_10_05
Project Date: 05/10/2022
Inspection Standard: MSCC5 Sewers & Drainage GB (SRM5 Scoring)

Table of Contents

Project Name	Project Number	Project Date
ARP Alberts Shed Water St Mcr 209324 2022_10_05		05/10/2022

Project Information	P-1
Scoring Summary	P-2
Section Item 1: SJ83981108 > SJ83980102 (SJ83981108X)	1
Section Item 2: GY1 > MAIN (GY1X)	3
Section Item 3: GY2 > MAIN (GY2X)	5
Section Item 4: GY3 > MAIN (GY3X)	7
Section Item 5: GY4 > MAIN (GY4X)	8
Section Item 6: GY5 > MAIN (GY5X)	9
Section Item 8: GULLY > MH03 (GULLYX)	10
Section Item 9: INT GULLY > MH03 (INT GULLYX)	12
Section Item 10: MH02 > MH01 (MH02X)	14
Section Item 11: MH01 > MH04 (MH01X)	16
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Section Item 13: PIPEA > MH02 (PIPEAX)	27
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Project Information

Project Name	Project Number	Project Date
ARP Alberts Shed Water St Mcr 209324 2022_10_05		05/10/2022

Site

Company: ARP Geotechnical Ltd
Street: Alberts Shed, Water St
Town or City: Manchester
County: Greater Manchester
Post Code: M3 4JQ

Contractor

Company: IWJS
Contact: Aden Halliwell
Department: Account Executive North
Street: Unit 10 Huntsman Drive
Town or City: North Bank Industrial Estate, Irlam
County: Greater Manchester
Post Code: M44 5EG
Phone: 0161 776 0499
Mobile: 07876026188
Email: Aden.Halliwell@iwjs.co.uk

Scoring Summary

Project Name	Project Number	Project Date
ARP Alberts Shed_ Water St Mcr 209324 2022_10_05		05/10/2022

Structural Defects

Section	PLR	Grade	Description
All inspected pipes are in an acceptable structural condition (< grade 3).			

Service / Operational Condition

- Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.
- Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.
- Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
1	SJ83981108X	5	Other obstacles, protruding through wall from 1 o'clock to 5 o'clock, 30% cross-sectional area loss
11	MH01X	4	Settled deposits, hard or compacted, 20% cross-sectional area loss
12	UPSTREAMX	5	Settled deposits, fine, 80% cross-sectional area loss
13	PIPE AX	5	Settled deposits, fine, 100% cross-sectional area loss
16	MH04X	4	Settled deposits, fine, 50% cross-sectional area loss

Abandoned Surveys

Section	PLR	Description
1	SJ83981108X	Survey abandoned
4	GY3X	Survey abandoned
5	GY4X	Survey abandoned
6	GY5X	Survey abandoned
11	MH01X	Survey abandoned
12	UPSTREAMX	Survey abandoned
13	PIPE AX	Survey abandoned
16	MH04X	Survey abandoned
16	MH04X	Survey abandoned

Information

These scoring summaries are based on the SRM grading from the WRc.

Section Inspection - 05/10/2022 - SJ83981108X

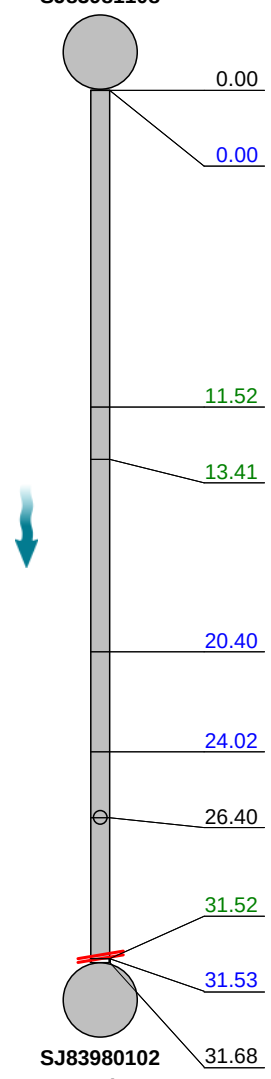


Item No. 1	Insp. No. 1	Date 05/10/22	Time 19:49	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR SJ83981108X
Operator A Wharton		Vehicle FL65 CZR		Camera Small Crawler	Preset Length Not Specified	Legal Status Railways Drainage	Alternative ID Not Specified

Town or Village:	Mcr	Inspection Direction:	Downstream	Upstream Node:	SJ83981108
Road:	Water St	Inspected Length:	31.53 m	Upstream Pipe Depth:	
Location:	Footway	Total Length:	31.68 m	Downstream Node:	SJ83980102
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Egg shaped		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	1,200 mm	Width:	650 mm
Flow Control:	No flow control	Material:	Brick		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale: 1:275	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m SJ83981108 						
	0.00	MH	Start node, manhole, reference: SJ83981108	00:00:00		
	0.00	WL	Water level, 10% of the vertical dimension	00:00:00		
	11.52	LR	Line deviates right: sharp	00:01:00		
	13.41	LL	Line deviates left: sharp	00:01:15		
	20.40	REM	General remark: Uncharted manhole no access	00:01:51		
	24.02	WL	Water level, 20% of the vertical dimension	00:03:51		
	26.40	CN	Connection other than junction at 12 o'clock, 225mm dia	00:04:05	SJ839811 08X_2d31f 6c7-d1ba-	
	31.52	OBI	Other obstacles, protruding through wall from 1 o'clock to 5 o'clock, 30% cross-sectional area loss	00:05:28	SJ839811 08X_ecb2 0e68-b8b5	5
	31.53	SA	Survey abandoned: Due to obstruction in line	00:06:16		
	31.68		End of pipe			
SJ83980102 Depth: m						

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	0.3	10.0	5.0

Section Pictures - 05/10/2022 - SJ83981108X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Downstream	SJ83981108X		



SJ83981108X_2d31f6c7-d1ba-4647-a7ba-8a75d3cb57f2_202
21005_195425_046.jpg, 00:04:05, 26.40 m
Connection other than junction at 12 o'clock, 225mm dia



SJ83981108X_ecb20e68-b8b5-4a7c-8daf-c439e93fb031_202
21005_195602_766.jpg, 00:05:28, 31.52 m
Other obstacles, protruding through wall from 1 o'clock to 5
o'clock, 30% cross-sectional area loss

Section Inspection - 05/10/2022 - GY1X

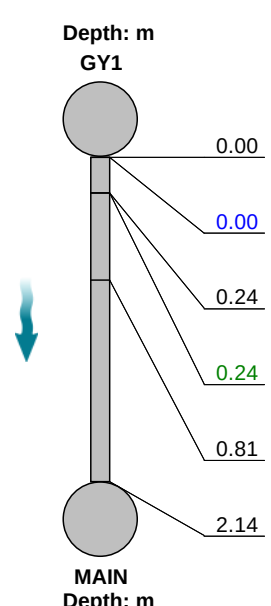


Item No. 2	Insp. No. 1	Date 05/10/22	Time 20:34	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR GY1X
Operator A Wharton		Vehicle FL65 CZR		Camera Small Crawler	Preset Length Not Specified	Legal Status Public Sewer	Alternative ID Not Specified

Town or Village:	Mcr	Inspection Direction:	Downstream	Upstream Node:	GY1
Road:	Water St	Inspected Length:	2.14 m	Upstream Pipe Depth:	
Location:	Footway	Total Length:	2.14 m	Downstream Node:	MAIN
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	GY	Start node, gully, reference: GY1	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension	00:06:39		
		0.24	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:06	GY1X_d30 5ec1e-7a5 8-4598-ad	
		0.24	LD	Line deviates down: sharp	00:00:09		
		0.81	MCVC	Pipe material changes to vitrified clay at this point	00:00:47	GY1X_c91 48e46-e50 3-4938-87	
		2.14	BRF	Finish node, major connection without manhole, reference: MAIN	00:01:05		

Construction Features

Miscellaneous Features

Structural Defects

Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Pictures - 05/10/2022 - GY1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Downstream	GY1X		



GY1X_d305ec1e-7a58-4598-add2-ba499467c92f_20221005_203459_956.jpg, 00:00:06, 0.24 m
Pipe material changes to polyvinyl chloride at this point



GY1X_c9148e46-e503-4938-8716-260d03f90f3f_20221005_203547_931.jpg, 00:00:47, 0.81 m
Pipe material changes to vitrified clay at this point

Section Inspection - 05/10/2022 - GY2X



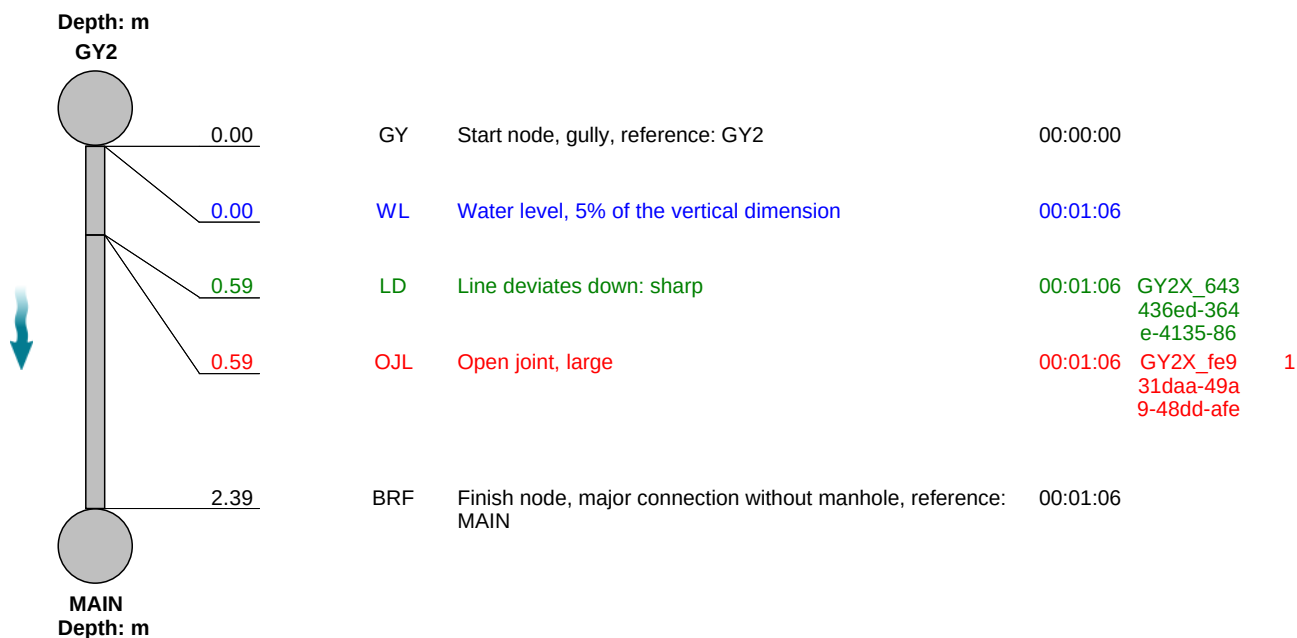
Item No. 3	Insp. No. 1	Date 05/10/22	Time 20:38	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR GY2X
Operator A Wharton		Vehicle FL65 CZR		Camera Small Crawler	Preset Length Not Specified	Legal Status Public Sewer	Alternative ID Not Specified

Town or Village:	Mcr	Inspection Direction:	Downstream	Upstream Node:	GY2
Road:	Water St	Inspected Length:	2.39 m	Upstream Pipe Depth:	
Location:	Footway	Total Length:	2.39 m	Downstream Node:	MAIN
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

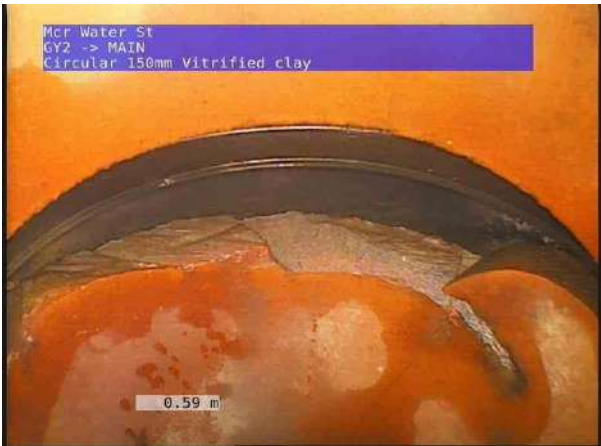
Scale: 1:50 Position [m] Code Observation MPEG Photo Grade



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	2.0	0.9	2.0	1.0	0	0.0	0.0	0.0	1.0

Section Pictures - 05/10/2022 - GY2X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Downstream	GY2X		



GY2X_643436ed-364e-4135-867b-7909a17ae7f6_20221005_203854_767.jpg, 00:01:06, 0.59 m
Line deviates down, sharp



GY2X_fe931daa-49a9-48dd-afe6-b2ae47cc4b14_20221005_203856_417.jpg, 00:01:06, 0.59 m
Open joint, large

Section Inspection - 05/10/2022 - GY3X

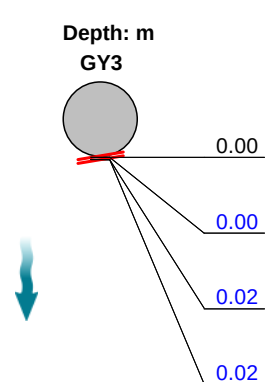


Item No. 4	Insp. No. 1	Date 05/10/22	Time 20:50	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR GY3X
Operator A Wharton		Vehicle FL65 CZR		Camera Push Rod	Preset Length Not Specified	Legal Status Public Sewer	Alternative ID Not Specified

Town or Village:	Mcr	Inspection Direction:	Downstream	Upstream Node:	GY3
Road:	Water St	Inspected Length:	0.02 m	Upstream Pipe Depth:	
Location:	Footway	Total Length:	0.02 m	Downstream Node:	MAIN
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	GY	Start node, gully, reference: GY3	00:00:00		
		0.00	WL	Water level, 10% of the vertical dimension	00:00:38		
		0.02	REM	General remark: No access for jet or cctv line is running	00:00:12		
		0.02	SA	Survey abandoned: No access into line	00:00:13		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Inspection - 05/10/2022 - GY4X

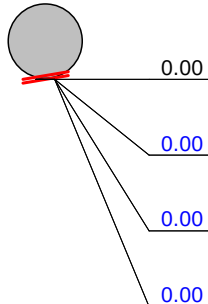


Item No. 5	Insp. No. 1	Date 05/10/22	Time 22:04	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR GY4X
Operator A Wharton		Vehicle FL65 CZR		Camera Push Rod	Preset Length Not Specified	Legal Status Public Sewer	Alternative ID Not Specified

Town or Village:	Mcr	Inspection Direction:	Downstream	Upstream Node:	GY4
Road:	Water St	Inspected Length:	0.00 m	Upstream Pipe Depth:	
Location:	Footway	Total Length:	0.00 m	Downstream Node:	MAIN
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m GY4 							
		0.00	GY	Start node, gully, reference: GY4	00:00:16		
		0.00	WL	Water level, 10% of the vertical dimension	00:00:16		
		0.00	REM	General remark: NO CCTV ACCESS DUE TO SWAN TRAP ON GULLY	00:00:16		
		0.00	SA	Survey abandoned: NO CCTV ACCESS DUE TO TRAP ON GULLY	00:00:16		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Inspection - 05/10/2022 - GY5X

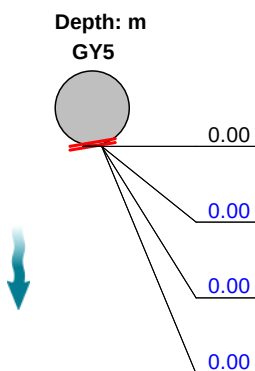


Item No. 6	Insp. No. 1	Date 05/10/22	Time 22:05	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR GY5X
Operator A Wharton		Vehicle FL65 CZR		Camera Push Rod	Preset Length Not Specified	Legal Status Public Sewer	Alternative ID Not Specified

Town or Village:	Mcr	Inspection Direction:	Downstream	Upstream Node:	GY5
Road:	Water St	Inspected Length:	0.00 m	Upstream Pipe Depth:	
Location:	Footway	Total Length:	0.00 m	Downstream Node:	MAIN
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	GY	Start node, gully, reference: GY5	00:00:16		
		0.00	WL	Water level, 10% of the vertical dimension	00:00:16		
		0.00	REM	General remark: NO CCTV ACCESS DUE TO SWAN TRAP ON GULLY	00:00:16		
		0.00	SA	Survey abandoned: NO CCTV ACCESS DUE TO TRAP	00:00:16		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

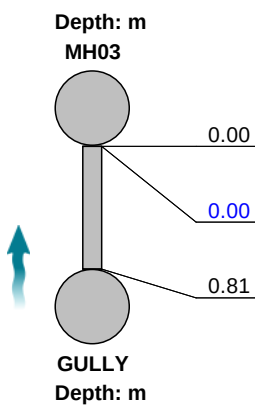
Section Inspection - 03/11/2022 - GULLYX



Item No. 8	Insp. No. 1	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR GULLYX
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	GULLY
Road:	Water Stree	Inspected Length:	0.81 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	0.81 m	Downstream Node:	MH03
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: MH03	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		0.81	GYF	Finish node, gully, reference: GULLY	00:00:07	GULLYX_8b30a0c4-f9c2-486f-	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Pictures - 03/11/2022 - GULLYX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
8	Upstream	GULLYX	209324	209324



GULLYX_8b30a0c4-f9c2-486f-8622-9a0cac761c25_20221103_110746_439.jpg, 00:00:07, 0.81 m
Finish node, gully, reference: GULLY

Section Inspection - 03/11/2022 - INT GULLYX

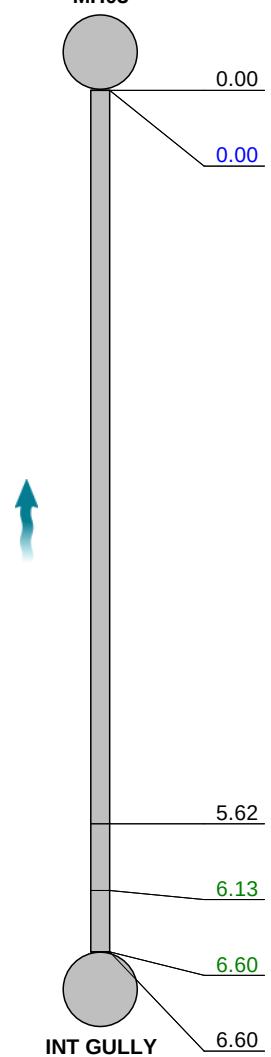


Item No. 9	Insp. No. 1	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR INT GULLYX
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	INT GULLY
Road:	Water Stree	Inspected Length:	6.60 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	6.60 m	Downstream Node:	MH03
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:58	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m MH03 							
		0.00	MH	Start node, manhole, reference: MH03	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		5.62	SR	Sealing ring intruding from 8 o'clock to 10 o'clock	00:00:18	INT GULLYX_62ca5182-	1 / 1
		6.13	LR	Line deviates right	00:00:20	INT GULLYX_3ca9e406-	
		6.60	LU	Line deviates up	00:00:27		
		6.60	OCF	Finish node, other special chamber, reference: INT GULLY: INTERNAL GULLY	00:00:27	INT GULLYX_b44b2059-	

Construction Features

Miscellaneous Features

Structural Defects

Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	5.0	0.8	5.0	1.0	1	0.0	0.0	0.0	1.0

Section Pictures - 03/11/2022 - INT GULLYX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
9	Upstream	INT GULLYX	209324	209324



INT
GULLYX_62ca5182-b463-47c2-afca-743c1606bd9a_20221103_111008_920.jpg, 00:00:18, 5.62 m
Sealing ring intruding from 8 o'clock to 10 o'clock



INT
GULLYX_3ca9e406-385c-4cb3-aac4-e32f2ab4b197_20221103_111020_695.jpg, 00:00:20, 6.13 m
Line deviates right



INT
GULLYX_b44b2059-3500-4da4-b404-f4379f5f0aee_20221103_111043_704.jpg, 00:00:27, 6.60 m
Finish node, other special chamber, reference: INT GULLY, INTERNAL GULLY

Section Inspection - 03/11/2022 - MH02X



Item No. 10	Insp. No. 1	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR MH02X
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	MH02
Road:	Water Stree	Inspected Length:	4.28 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	4.28 m	Downstream Node:	MH01
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m MH01 0.00 MH Start node, manhole, reference: MH01 00:00:00							
0.00 WL Water level, 5% of the vertical dimension							
3.44 LL Line deviates left 00:00:12 MH02X_5 649f3a6-fc 35-4340-a							
4.28 MHF Finish node, manhole, reference: MH02: INTERCEPTOR 00:00:23 MH02X_0c 80a264-77 22-4266-b							
Depth: m MH02							

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Pictures - 03/11/2022 - MH02X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
10	Upstream	MH02X	209324	209324



MH02X_5649f3a6-fc35-4340-aa58-f5dd11ebddb5_20221103_115149_741.jpg, 00:00:12, 3.44 m
Line deviates left



MH02X_0c80a264-7722-4266-bdd7-9a3ec675f348_20221103_115215_780.jpg, 00:00:23, 4.28 m
Finish node, manhole, reference: MH02, INTERCEPTOR

Section Inspection - 03/11/2022 - MH01X



Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
11	3	03/11/22	11:42	209324	No Rain Or Snow	Yes	MH01X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
A.EAGLESOME		FG64 FLM		Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	MH01
Road:	Water Stree	Inspected Length:	11.40 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	11.40 m	Downstream Node:	MH04
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:99	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m MH01 MH04 Depth: m							
		0.00	MH	Start node, manhole, reference: MH01	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		0.29	JN	Junction at 2 o'clock, 100mm dia	00:00:04	MH01X_6c 986c9b-75 97-4e10-b	
		1.30	CC	Crack, circumferential from 10 o'clock to 3 o'clock	00:00:07	MH01X_e d977b99-f 111-41eb-	2 / 2
		1.78	JN	Junction at 11 o'clock, 100mm dia	00:00:09	MH01X_7 3f03247-5 0e8-4c4d-	
		11.40	MHF	Finish node, manhole, reference: MH04	00:00:43		

Construction Features

Miscellaneous Features

Structural Defects

Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	10.0	0.9	10.0	2.0	1	1.0	0.1	1.0	2.0

Section Pictures - 03/11/2022 - MH01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
11	Downstream	MH01X	209324	209324



MH01X_6c986c9b-7597-4e10-bd14-b7b09cb2373c_20221103_111732_185.jpg, 00:00:04, 0.29 m
Junction at 2 o'clock, 100mm dia



MH01X_ed977b99-f111-41eb-8f6f-aff2638454ed_20221103_111749_073.jpg, 00:00:07, 1.30 m
Crack, circumferential from 10 o'clock to 3 o'clock



MH01X_73f03247-50e8-4c4d-a11c-fd4f8848867a_20221103_111802_241.jpg, 00:00:09, 1.78 m
Junction at 11 o'clock, 100mm dia

Section Inspection - 03/11/2022 - MH01X

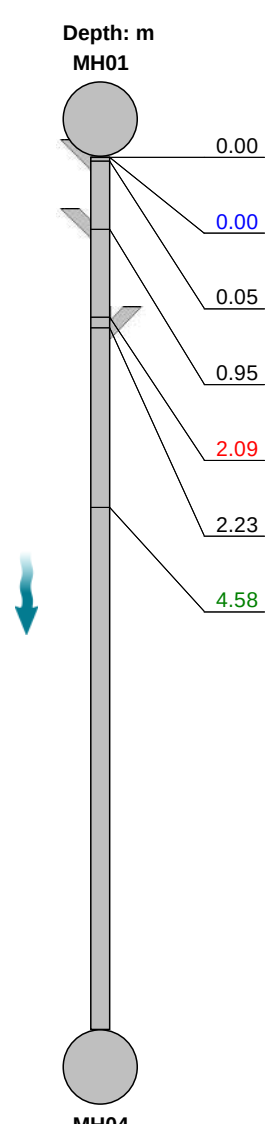


Item No. 11	Insp. No. 2	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR MH01X
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	MH01
Road:	Water Stree	Inspected Length:	4.58 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	11.40 m	Downstream Node:	MH04
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:99	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: MH01	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		0.05	JN	Junction at 2 o'clock, 100mm dia	00:00:01	MH01X_ec 86657f-06 57-4975-9	
		0.95	JN	Junction at 2 o'clock, 100mm dia	00:00:04	MH01X_7 edd5d05-6 14e-4d4e-	
		2.09	CC	Crack, circumferential from 10 o'clock to 3 o'clock	00:00:08	MH01X_7 58c0d89-b 821-49e1-	
		2.23	JN	Junction at 11 o'clock, 100mm dia	00:00:09	MH01X_5 44743af-6 a54-4558-	
		4.58	DEC	Settled deposits, hard or compacted, 10% cross-sectional area loss: BRICK	00:00:22	MH01X_5c 69a701-e7 fa-4165-a5	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0

Section Pictures - 03/11/2022 - MH01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
11	Downstream	MH01X	209324	209324



MH01X_ec86657f-0657-4975-9eda-e6d809d3f18a_20221103_111458_128.jpg, 00:00:01, 0.05 m
Junction at 2 o'clock, 100mm dia



MH01X_7edd5d05-614e-4d4e-a7f7-91b04670f24d_20221103_111518_598.jpg, 00:00:04, 0.95 m
Junction at 2 o'clock, 100mm dia



MH01X_758c0d89-b821-49e1-9045-a0146f49eaf0_20221103_111543_688.jpg, 00:00:08, 2.09 m
Crack, circumferential from 10 o'clock to 3 o'clock



MH01X_544743af-6a54-4558-81e8-6a4bfb5db003_20221103_111557_598.jpg, 00:00:09, 2.23 m
Junction at 11 o'clock, 100mm dia

Section Pictures - 03/11/2022 - MH01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
11	Downstream	MH01X	209324	209324



MH01X_5c69a701-e7fa-4165-a560-b921ce80b435_20221103_111622_513.jpg, 00:00:22, 4.58 m
Settled deposits, hard or compacted, 10% cross-sectional area loss, BRICK

Section Inspection - 03/11/2022 - MH01X

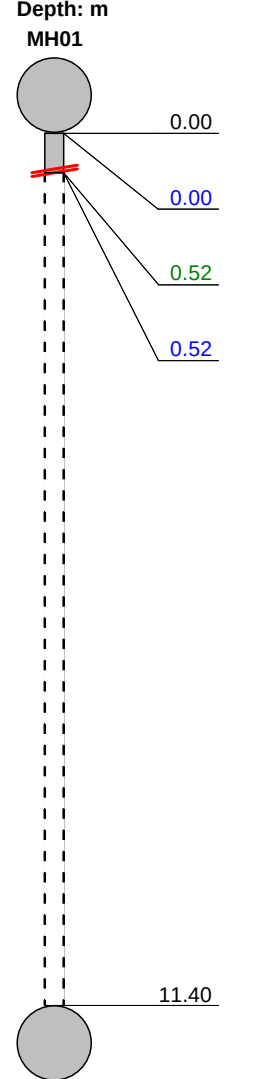


Item No. 11	Insp. No. 1	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR MH01X
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	MH01
Road:	Water Stree	Inspected Length:	0.52 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	11.40 m	Downstream Node:	MH04
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:99	Position [m]	Code	Observation	MPEG	Photo	Grade																														
Depth: m MH01  <table><tr><td>MH</td><td>Start node, manhole, reference: MH01</td><td>00:00:00</td><td></td><td></td><td></td></tr><tr><td>WL</td><td>Water level, 5% of the vertical dimension</td><td></td><td></td><td></td><td></td></tr><tr><td>DEC</td><td>Settled deposits, hard or compacted, 20% cross-sectional area loss: BRICK</td><td>00:00:14</td><td>MH01X_9 d1ef569-c 7da-4395-</td><td>4</td><td></td></tr><tr><td>SA</td><td>Survey abandoned: DUE TO BRICK IN THE LINE</td><td>00:00:14</td><td></td><td></td><td></td></tr><tr><td></td><td>End of pipe</td><td></td><td></td><td></td><td></td></tr></table> MH04 Depth: m								MH	Start node, manhole, reference: MH01	00:00:00				WL	Water level, 5% of the vertical dimension					DEC	Settled deposits, hard or compacted, 20% cross-sectional area loss: BRICK	00:00:14	MH01X_9 d1ef569-c 7da-4395-	4		SA	Survey abandoned: DUE TO BRICK IN THE LINE	00:00:14					End of pipe				
MH	Start node, manhole, reference: MH01	00:00:00																																			
WL	Water level, 5% of the vertical dimension																																				
DEC	Settled deposits, hard or compacted, 20% cross-sectional area loss: BRICK	00:00:14	MH01X_9 d1ef569-c 7da-4395-	4																																	
SA	Survey abandoned: DUE TO BRICK IN THE LINE	00:00:14																																			
	End of pipe																																				

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	5.0	9.6	5.0	5.0

Section Pictures - 03/11/2022 - MH01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
11	Downstream	MH01X	209324	209324



MH01X_9d1ef569-c7da-4395-8e66-61dcdb648657_20221103_111334_440.jpg, 00:00:14, 0.52 m
Settled deposits, hard or compacted, 20% cross-sectional area loss, BRICK

Section Inspection - 03/11/2022 - UPSTREAMX

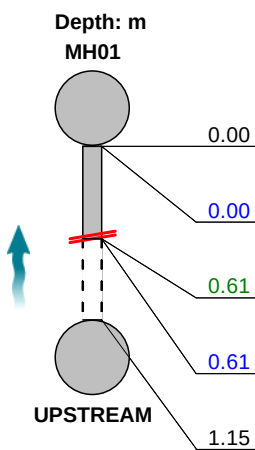


Item No. 12	Insp. No. 2	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR UPSTREAMX
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	UPSTREAM
Road:	Water Stree	Inspected Length:	0.61 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	1.15 m	Downstream Node:	MH01
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: MH01	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		0.61	DES	Settled deposits, fine, 80% cross-sectional area loss: BRICK	00:00:14	UPSTREA MX_bbbd1 632-55f8-4	5
		0.61	SA	Survey abandoned: DUE TO BRICK IN THE LINE	00:00:14	UPSTREA MX_f23bd 0f1-b6de-4	
		1.15		End of pipe			

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	16.4	10.0	5.0

Section Pictures - 03/11/2022 - UPSTREAMX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
12	Upstream	UPSTREAMX	209324	209324



UPSTREAMX_bbbd1632-55f8-432d-908a-931082e5bfa0_202
21103_114936_236.jpg, 00:00:14, 0.61 m
Settled deposits, fine, 80% cross-sectional area loss, BRICK



UPSTREAMX_f23bd0f1-b6de-409b-a45d-34eea2a08706_202
21103_114950_325.jpg, 00:00:14, 0.61 m
Survey abandoned, DUE TO BRICK IN THE LINE

Section Inspection - 03/11/2022 - UPSTREAMX

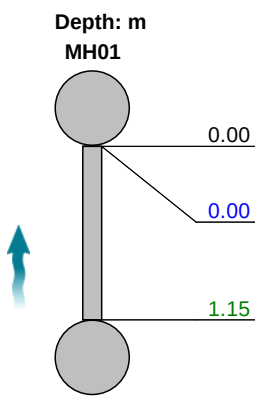


Item No. 12	Insp. No. 1	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR UPSTREAMX
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	UPSTREAM
Road:	Water Stree	Inspected Length:	1.15 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	1.15 m	Downstream Node:	MH01
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: MH01	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		1.15	DES	Settled deposits, fine, 80% cross-sectional area loss: BRICK	00:00:16	UPSTREA MX_e9b52 31e-8ef0-4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0

Section Pictures - 03/11/2022 - UPSTREAMX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
12	Upstream	UPSTREAMX	209324	209324



UPSTREAMX_e9b5231e-8ef0-4888-a9ec-0526debadabe_202
21103_113849_327.jpg, 00:00:16, 1.15 m
Settled deposits, fine, 80% cross-sectional area loss, BRICK

Section Inspection - 03/11/2022 - PIPE AX

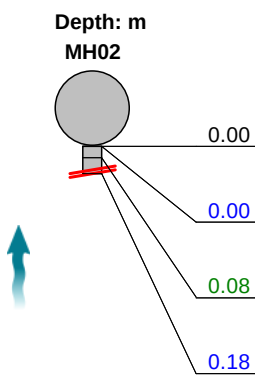


Item No. 13	Insp. No. 1	Date 03/11/22	Time 11:41	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR PIPE AX
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	PIPE A
Road:	Water Stree	Inspected Length:	0.18 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	0.18 m	Downstream Node:	MH02
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: MH02	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		0.08	DES	Settled deposits, fine, 100% cross-sectional area loss	00:00:01	PIPE AX_f1247 b96-911d-	5
		0.18	SA	Survey abandoned: DUE TO SILT	00:00:17	PIPE AX_fd4da b9d-f328-4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	10.0	55.6	10.0	5.0

Section Pictures - 03/11/2022 - PIPE AX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
13	Upstream	PIPE AX	209324	209324



PIPE
AX_f1247b96-911d-45ae-b513-4e620648cbef_20221103_115
640_637.jpg, 00:00:01, 0.08 m
Settled deposits, fine, 100% cross-sectional area loss



PIPE
AX_fd4dab9d-f328-4d40-8b53-bb00776ffb41_20221103_1156
56_375.jpg, 00:00:17, 0.18 m
Survey abandoned, DUE TO SILT

Section Inspection - 03/11/2022 - DOWNPIPEX



Item No. 15	Insp. No. 1	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR DOWNPIPEX
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	DOWNPIPE
Road:	Water Stree	Inspected Length:	4.62 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	4.62 m	Downstream Node:	MH03
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale: 1:50 Position [m] Code Observation MPEG Photo Grade

Depth: m
MH03



0.00

MH

Start node, manhole, reference: MH03

00:00:00

0.00

WL

Water level, 5% of the vertical dimension

4.62

LU

Line deviates up

00:00:27

4.62

OCF

Finish node, other special chamber, reference: DOWNPIPE: 00:00:27
RAIN WATER DOWN PIPE

DOWNPIP
EX_73b6c
0f5-a6f5-4

DOWNPIPE
Depth: m

Construction Features

Miscellaneous Features

Structural Defects

Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Pictures - 03/11/2022 - DOWNPIPEX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
15	Upstream	DOWNPIPEX	209324	209324



DOWNPIPEX_73b6c0f5-a6f5-4482-b9bc-03d926337feb_2022
1103_110603_096.jpg, 00:00:27, 4.62 m
Finish node, other special chamber, reference: DOWNPIPE,
RAIN WATER DOWN PIPE

Section Inspection - 03/11/2022 - MH04X

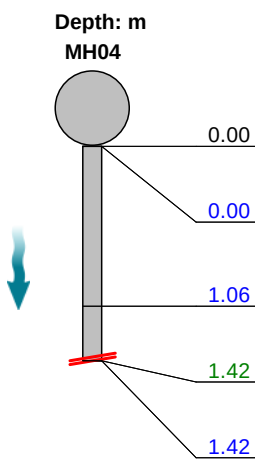


Item No. 16	Insp. No. 2	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR MH04X
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	MH04
Road:	Water Stree	Inspected Length:	1.42 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	1.42 m	Downstream Node:	DOWNSTREAM
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: MH04	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		1.06	WL	Water level, 50% of the vertical dimension	00:00:04		
		1.42	DES	Settled deposits, fine, 50% cross-sectional area loss	00:00:22	MH04X_a edf9866-9 5a1-47ce-	4
		1.42	SA	Survey abandoned: DUE TO SILT AND DEBRIS	00:00:22	MH04X_8 6c1a2af-4 02a-432c-	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	8.0	5.6	8.0	5.0

Section Pictures - 03/11/2022 - MH04X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
16	Downstream	MH04X	209324	209324



MH04X_aedf9866-95a1-47ce-85b5-e0ea0ae17a03_20221103_113512_208.jpg, 00:00:22, 1.42 m
Settled deposits, fine, 50% cross-sectional area loss



MH04X_86c1a2af-402a-432c-99a1-a51d12199534_20221103_113525_263.jpg, 00:00:22, 1.42 m
Survey abandoned, DUE TO SILT AND DEBRIS

Section Inspection - 03/11/2022 - MH04X

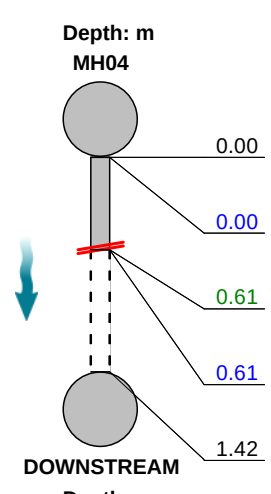


Item No. 16	Insp. No. 1	Date 03/11/22	Time 11:42	Client's Job Ref 209324	Weather No Rain Or Snow	Pre Cleaned Yes	PLR MH04X
Operator A.EAGLESOME		Vehicle FG64 FLM		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	MH04
Road:	Water Stree	Inspected Length:	0.61 m	Upstream Pipe Depth:	
Location:	Property or buildings	Total Length:	1.42 m	Downstream Node:	DOWNSTREAM
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular	Type text here	
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
							
		0.00	MH	Start node, manhole, reference: MH04	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension			
		0.61	DES	Settled deposits, fine, 10% cross-sectional area loss	00:00:20		3
		0.61	SA	Survey abandoned: DUE TO SILT AND DEBRIS	00:00:20	MH04X_a 0d3e00e-9 b66-4916-	
		1.42		End of pipe			

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	3.3	2.0	4.0

Section Pictures - 03/11/2022 - MH04X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
16	Downstream	MH04X	209324	209324



MH04X_a0d3e00e-9b66-4916-9f05-b42dff528cc_20221103_113317_432.jpg, 00:00:20, 0.61 m
Survey abandoned, DUE TO SILT AND DEBRIS



Project No. 209324
Survey Date. 05/10/2022
Surveyor. A WHARTON

Asset Survey Card

Asset ID: 1102 eg: MH, CP, GY
Status: PU Asset Type: MH Function: F Cover Level:
Location: WATER STREET
Town: MANCHESTER

COVER DETAILS

☒ Square ☐ Rectangle ☐ Triangle ☐ Dbl Triangle ☐ Circular ☐ Other Other
☐ Hinged ☐ Lockable ☐ Grating ☐ Cover Duty 600 x 600 Size (mm)

PIPE DETAILS

Incoming Pipes

Pipe	Depth from Cover (m)	Upstream / Downstream Ref	Shape	Size (mm) Height Width		Pipe Mat	Lining Mat	Soffit Level (m)	Invert Level (m)
A	2.2	N/A	C	150	x	VC			
B	2.86	N/A	C	600	x	CO			
C					x				
D					x				
E					x				
F					x				

Outgoing Pipes

X	2.88	N/A	C	600	x	CO			
Y					x				

MANHOLE CONSTRUCTION DETAILS

Shaft

x Size (mm) Depth (m) No. of Reg Courses Soffit

Chamber

2000 x Size (mm) Y Side Entry ☐ OX / H2S / METH Toxic atmosphere ☐ Evidence of Surge

☒ Pre Cast Concrete ☐ Insitu Concrete ☐ Brick ☐ GRP ☐ Reducing Slab
 Step Irons 7 Ladder No. of Landings Depth of Flow (mm) Depth of Silt (mm)

ADDITIONAL CONSTRUCTION DETAILS

☐ Flap Valve ☐ Orifice ☐ Sluice Gate ☐ Weir ☐ Screens ☐ Penstock ☐ Flume ☐ H/Wall

CONDITION INFORMATION (Specify in Remark)

	Cover	Shaft	Irons/Ladder	Chamber	Benching	Channel
OK	☒	☒	☒	☒	☒	☒
Needs Attention	☐	☐	☐	☐	☐	☐
Urgent Attention	☐	☐	☐	☐	☐	☐

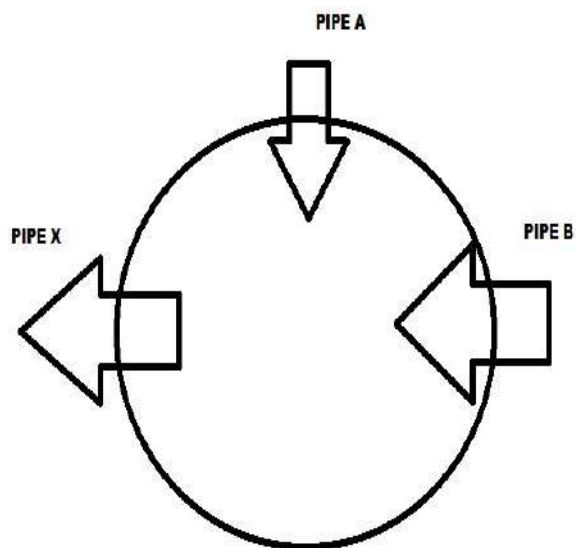
Remark

See Overleaf for Key

LOCATION SKETCH

REFER TO ATTACHED PLAN

PLAN OF MANHOLE



LOCATION PHOTO



INTERNAL PHOTO



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	
	GU : Gully	OF : Outfall	SA : Soakaway	
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPM : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Random Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		



Project No. 209324
Survey Date. 05/10/2022
Surveyor. A WHARTON

Asset Survey Card

Asset ID: 1108 eg: MH, CP, GY
Status: PU Asset Type: MH Function: SW Cover Level:
Location: WATER STREET
Town: MANCHESTER

COVER DETAILS

☒ Square ☐ Rectangle ☐ Triangle ☐ Dbl Triangle ☐ Circular ☐ Other Other
☐ Hinged ☐ Lockable ☐ Grating ☐ Cover Duty 600 x 600 Size (mm)

PIPE DETAILS

Incoming Pipes

Pipe	Depth from Cover (m)	Upstream / Downstream Ref	Shape	Size (mm) Height Width			Pipe Mat	Lining Mat	Soffit Level (m)	Invert Level (m)
A	4.45	N/A	EGG	1200	x	650	BR			
B	3.22	N/S	C	150	x		PVC			
C					x					
D					x					
E					x					
F					x					

Outgoing Pipes

X	4.47	N/S	EGG	1200	x	650	BR			
Y					x					

MANHOLE CONSTRUCTION DETAILS

Shaft

x Size (mm) Depth (m) No. of Reg Courses Soffit

Chamber

1100 x Size (mm) Y Side Entry ☐ OX / H2S / METH ☐ Toxic atmosphere ☐ Evidence of Surge

☐ Pre Cast Concrete ☐ Insitu Concrete ☒ Brick ☐ GRP ☐ Reducing Slab
 12 Step Irons ☐ Ladder ☐ No. of Landings Depth of Flow (mm) Depth of Silt (mm)

ADDITIONAL CONSTRUCTION DETAILS

☐ Flap Valve ☐ Orifice ☐ Sluice Gate ☐ Weir ☐ Screens ☐ Penstock ☐ Flume ☐ H/Wall

CONDITION INFORMATION (Specify in Remark)

	Cover	Shaft	Irons/Ladder	Chamber	Benching	Channel
OK	☒	☒	☒	☒	☒	☒
Needs Attention	☐	☐	☐	☐	☐	☐
Urgent Attention	☐	☐	☐	☐	☐	☐

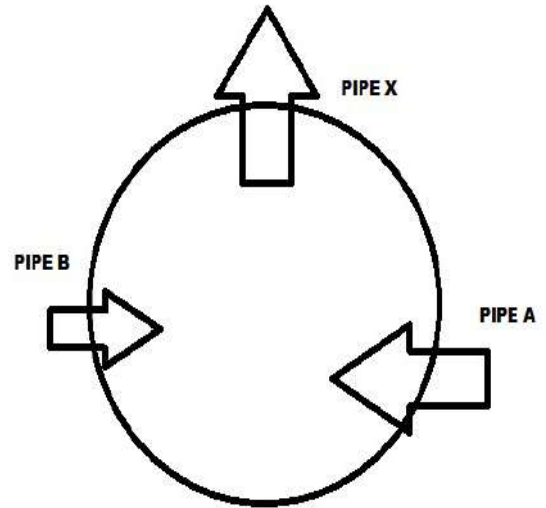
Remark

See Overleaf for Key

LOCATION SKETCH

REFER TO ATTACHED PLAN

PLAN OF MANHOLE



LOCATION PHOTO



INTERNAL PHOTO



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	
	GU : Gully	OF : Outfall	SA : Soakaway	
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPM : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Random Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		

Project No. 209324

Survey Date. 03/11/2022

Surveyor. A.EAGLESOME / N.MORTON

Asset Survey Card

Asset ID: MH01 eg: MH, CP, GY

Status: Asset Type: MH Function: SW Cover Level:

Location: ALBERTS SHED, WATER STREET, M3 4JQ

Town: MANCHESTER

COVER DETAILS

☐ Square
 ☐ Rectangle
 ☐ Triangle
 ☐ Dbl Triangle
 ☐ Circular
 ☐ Other Other

☐ Hinged
 ☐ Lockable
 ☐ Grating
 ☐ Cover Duty
 660 x 660 Size (mm)

PIPE DETAILS

Incoming Pipes

Pipe	Depth from Cover (m)	Upstream / Downstream Ref	Shape	Size (mm) Height Width		Pipe Mat	Lining Mat	Soffit Level (m)	Invert Level (m)
A	0.76		C	150	x		VC		
B	0.66	MH02	C	150	x		VC		
C					x				
D					x				
E					x				
F					x				

Outgoing Pipes

X	0.76	MH04	C	150	x		VC		
Y					x				

MANHOLE CONSTRUCTION DETAILS

Shaft

NA x NA Size (mm)
 NA Depth (m)
 No. of Reg Courses
 Soffit

Chamber

660 x 660 Size (mm)
 N Side Entry
 N OX / H2S / METH Toxic atmosphere
 N Evidence of Surge

☐ Pre Cast Concrete
 ☐ Insitu Concrete
 ☐ Brick
 ☐ GRP
 ☐ Reducing Slab

0 Step Irons
 N Ladder
 0 No. of Landings
 5 Depth of Flow (mm)
 0 Depth of Silt (mm)

ADDITIONAL CONSTRUCTION DETAILS

☐ Flap Valve
 ☐ Orifice
 ☐ Sluice Gate
 ☐ Weir
 ☐ Screens
 ☐ Penstock
 ☐ Flume
 ☐ H/Wall

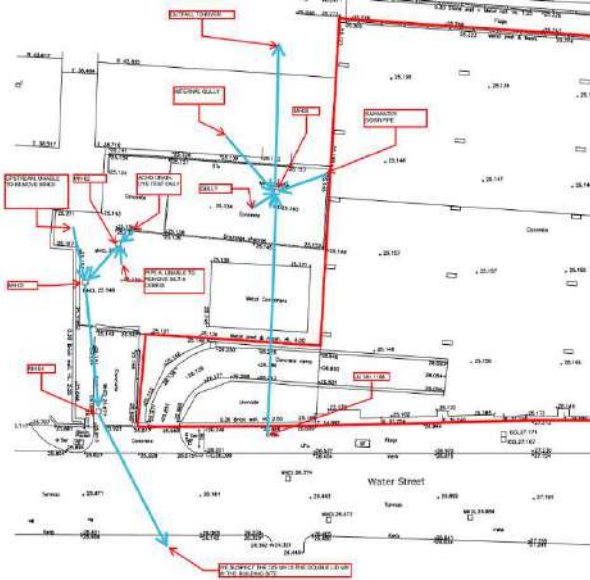
CONDITION INFORMATION (Specify in Remark)

	Cover	Shaft	Irons/Ladder	Chamber	Benching	Channel
OK	☐	☐	☐	☐	☐	☐
Needs Attention	☐	☐	☐	☐	☐	☐
Urgent Attention	☐	☐	☐	☐	☐	☐

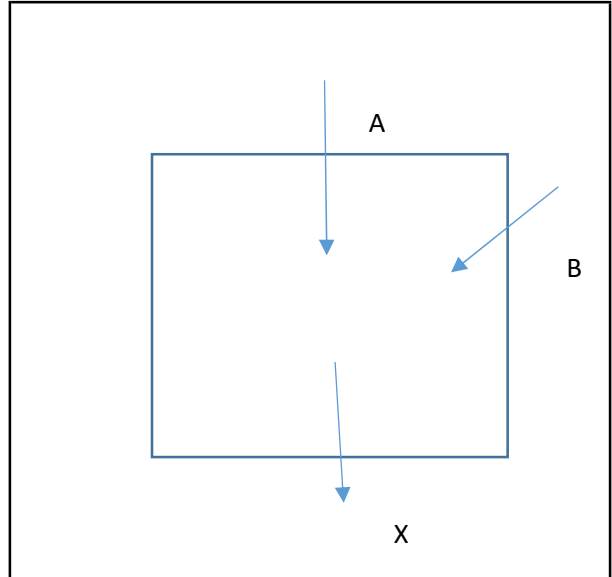
Remark

GPS & COVER LEVEL POINTS ARE ON THE GPS TABLET. I WAS UNABLE TO GET THEM OFF THE TABLET WHILE ONSITE

LOCATION SKETCH



PLAN OF MANHOLE



LOCATION PHOTO



INTERNAL PHOTO



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	
	GU : Gully	OF : Outfall	SA : Soakaway	
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPM : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Random Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		

Project No. 209324
 Survey Date. 03/11/2022
 Surveyor. A.EAGLESOME / N.MORTON

Asset Survey Card

Asset ID: MH02 eg: MH, CP, GY
 Status: Asset Type: MH Function: SW Cover Level:
 Location: ALBERTS SHED, WATER STREET, M3 4JQ
 Town: MANCHESTER

COVER DETAILS

☐ Square ☐ Rectangle ☐ Triangle ☐ Dbl Triangle ☐ Circular ☐ Other Other
☐ Hinged ☐ Lockable ☐ Grating ☐ Cover Duty 660 x 660 Size (mm)

PIPE DETAILS

Incoming Pipes

Pipe	Depth from Cover (m)	Upstream / Downstream Ref	Shape	Size (mm) Height Width		Pipe Mat	Lining Mat	Soffit Level (m)	Invert Level (m)
A	0.18		C	100	x	PVC			
B	0.8	ACHO	C	150	x	PVC			
C					x				
D					x				
E					x				
F					x				

Outgoing Pipes

X					x				
Y					x				

MANHOLE CONSTRUCTION DETAILS

Shaft

660 x 660 Size (mm) 0.33 Depth (m) No. of Reg Courses Soffit

Chamber

660 x 900 Size (mm) N Side Entry N OX / H2S / METH Toxic atmosphere N Evidence of Surge

☐ Pre Cast Concrete ☐ Insitu Concrete ☐ Brick ☐ GRP ☐ Reducing Slab
☐ Step Irons ☐ Ladder ☐ No. of Landings 20 Depth of Flow (mm) 10 Depth of Silt (mm)

ADDITIONAL CONSTRUCTION DETAILS

☐ Flap Valve ☐ Orifice ☐ Sluice Gate ☐ Weir ☐ Screens ☐ Penstock ☐ Flume ☐ H/Wall

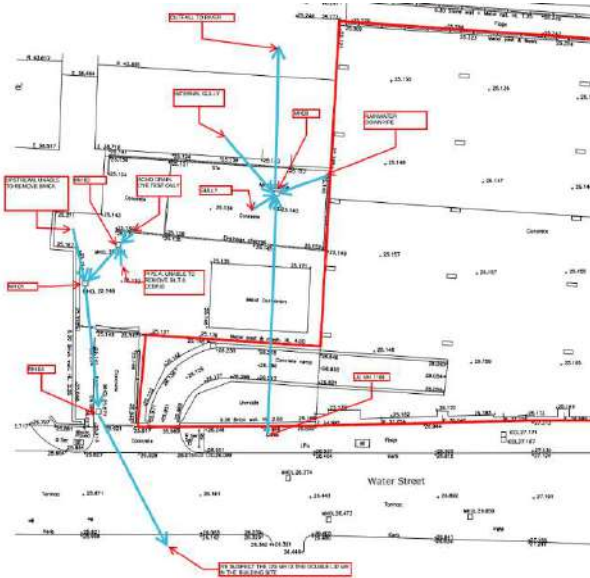
CONDITION INFORMATION (Specify in Remark)

	Cover	Shaft	Irons/Ladder	Chamber	Benching	Channel
OK	☐	☐	☐	☐	☐	☐
Needs Attention	☐	☐	☐	☐	☐	☐
Urgent Attention	☐	☐	☐	☐	☐	☐

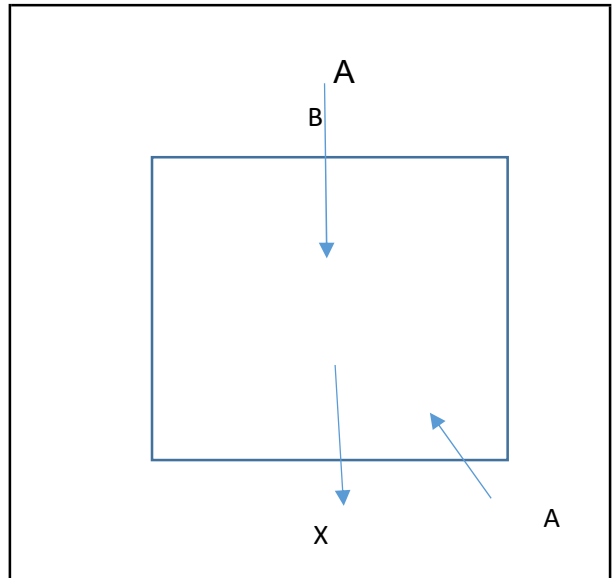
Remark

GPS & COVER LEVEL POINTS ARE ON THE GPS TABLET. I WAS UNABLE TO GET THEM OFF THE TABLET WHILE ONSITE
 UNABLE TO GET PIPE DEPTH OF OUTGOING DUE TO INTERCEPTOR

LOCATION SKETCH



PLAN OF MANHOLE



LOCATION PHOTO



INTERNAL PHOTO



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	
	GU : Gully	OF : Outfall	SA : Soakaway	
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPM : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Random Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		

Project No. 209324

Survey Date. 03/11/2022

Surveyor. A.EAGLESOME / N.MORTON

Asset Survey Card

Asset ID: MH03 eg: MH, CP, GY

Status: Asset Type: MH Function: SW Cover Level:

Location: ALBERTS SHED, WATER STREET, M3 4JQ

Town: MANCHESTER

COVER DETAILS

☐ Square
 ☐ Rectangle
 ☐ Triangle
 ☐ Dbl Triangle
 ☐ Circular
 ☐ Other Other

☐ Hinged
 ☐ Lockable
 ☐ Grating
 ☐ Cover Duty
 600 x 600 Size (mm)

PIPE DETAILS

Incoming Pipes

Pipe	Depth from Cover (m)	Upstream / Downstream Ref	Shape	Size (mm) Height Width		Pipe Mat	Lining Mat	Soffit Level (m)	Invert Level (m)
A	0.19	DOWNPIPE	C	150	x	PVC			
B	0.2	GULLY	C	150	x	PVC			
C	3.74	1108		1200	x	650	BRI		
D	0.36	INTERNAL GULY	C	150	x	PVC			
E					x				
F					x				

Outgoing Pipes

X	3.74	OUTFALL		1200	x	650	BRI		
Y					x				

MANHOLE CONSTRUCTION DETAILS

Shaft

600 x 600 Size (mm)
 0.5 Depth (m)
 2 No. of Reg Courses
 Soffit

Chamber

x Size (mm)
 N Side Entry
 N OX / H2S / METH Toxic atmosphere
 N Evidence of Surge

☐ Pre Cast Concrete
 ☐ Insitu Concrete
 ☐ Brick
 ☐ GRP
 ☐ Reducing Slab

0 Step Irons
 N Ladder
 0 No. of Landings
 50 Depth of Flow (mm)
 40 Depth of Silt (mm)

ADDITIONAL CONSTRUCTION DETAILS

☐ Flap Valve
 ☐ Orifice
 ☐ Sluice Gate
 ☐ Weir
 ☐ Screens
 ☐ Penstock
 ☐ Flume
 ☐ H/Wall

CONDITION INFORMATION (Specify in Remark)

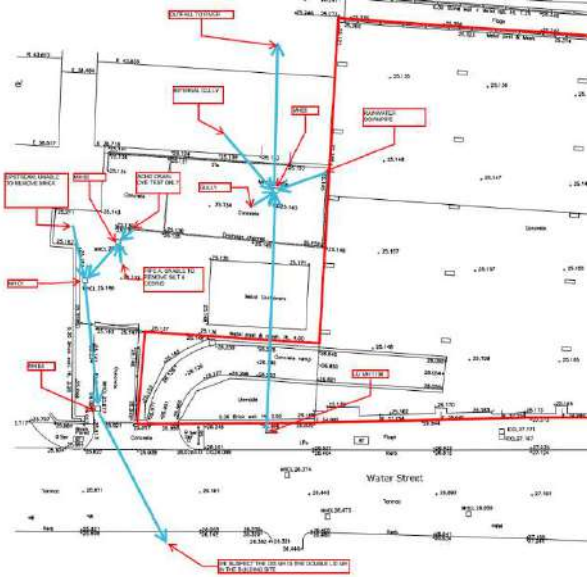
	Cover	Shaft	Irons/Ladder	Chamber	Benching	Channel
OK	☐	☐	☐	☐	☐	☐
Needs Attention	☐	☐	☐	☐	☐	☐
Urgent Attention	☐	☐	☐	☐	☐	☐

Remark

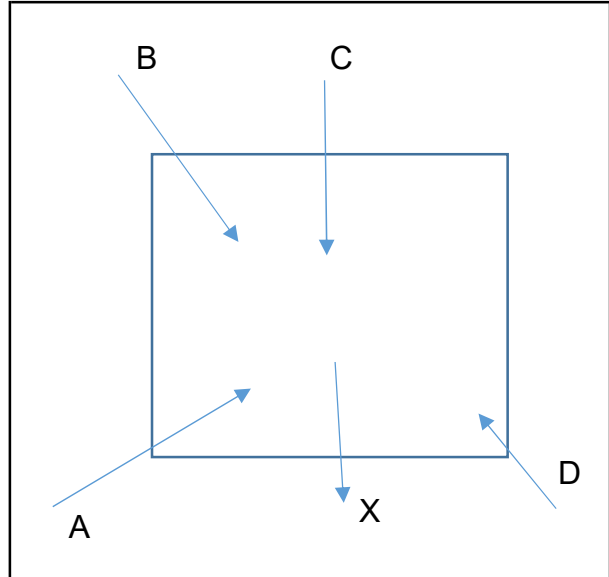
GPS & COVER LEVEL POINTS ARE ON THE GPS TABLET. I WAS UNABLE TO GET THEM OFF THE TABLET WHILE ONSITE

WILL NEED MAN ENTRY WITH MAN RIDING WIKCH FOR CHAMBER SIZE DUE TO NO STEPPING IRONS

LOCATION SKETCH



PLAN OF MANHOLE



LOCATION PHOTO



INTERNAL PHOTO



STATUS	PU : Public 24 : Section 24	PR : Private HD : Highway Drain	WC : Culverted Watercourse	} Applies to main outlet
FUNCTION	F : Foul	C : Combined	S : Surface Water	
MANHOLE TYPE	IF : Infall LH : Lamphole GU : Gully	MH : Manhole RE : Rodding Eye OF : Outfall	CP : Catchpit SO : Storm Overflow SA : Soakaway	
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular S : Square B : Barrel X : Other (state in words)	E : Egg T : Trapezoidal H : Horseshoe (Inverted U)	R : Rectangular A : Arched U : U-shaped with flat top	
PIPE (OR LINING) MATERIAL	AK : Alkathene CI : Cast Iron CSB : Concrete Segments (Bolted) DI : Ductile Iron PSC : Plastic/Steel Composite RPM : Reinforced Plastic Matrix PP : Polypropylene MAR : Masonry, Random Courses	AC : Asbestos Cement SI : Spun (Grey) Iron CSU : Concrete Segments (Unbolted) GRC : Glass Reinforced Concrete PVC : Polyvinyl Chloride ST : Steel PF : Pitch Fibre XXX : Other (State in remarks)	BR : Brick CO : Concrete CC : Concrete Box Culvert GRP : Glass Reinforced Plastic PE : Polyethylene VC : Vitrified Clay MAC : Masonry, Coursed	
LINING	BL : Bitumen CL : Cement	RL : Resin PI : Plastic	IS : Insituform	

Project No. 209324

Survey Date. 03/11/2022

Surveyor. A.EAGLESOME / N.MORTON

Asset Survey Card

Asset ID: MH04 eg: MH, CP, GY

Status: Asset Type: MH Function: SW Cover Level:

Location: ALBERTS SHED, WATER STREET, M3 4JQ

Town: MANCHESTER

COVER DETAILS

☐ Square
 ☐ Rectangle
 ☐ Triangle
 ☐ Dbl Triangle
 ☐ Circular
 ☐ Other Other

☐ Hinged
 ☐ Lockable
 ☐ Grating
 ☐ Cover Duty
 660 x 660 Size (mm)

PIPE DETAILS

Incoming Pipes

Pipe	Depth from Cover (m)	Upstream / Downstream Ref	Shape	Size (mm) Height Width		Pipe Mat	Lining Mat	Soffit Level (m)	Invert Level (m)
A	2.2	MH01	C	150	x	VC			
B	0.74		C	150	x	PVC			
C					x				
D					x				
E					x				
F					x				

Outgoing Pipes

X	2.12		C	150	x	VC			
Y					x				

MANHOLE CONSTRUCTION DETAILS

Shaft

520 x 520 Size (mm)
 0.96 Depth (m)
 10 No. of Reg Courses
 Soffit

Chamber

600 x 600 Size (mm)
 N Side Entry
 N OX / H2S / METH Toxic atmosphere
 N Evidence of Surge

☐ Pre Cast Concrete
 ☐ Insitu Concrete
 ☐ Brick
 ☐ GRP
 ☐ Reducing Slab

0 Step Irons
 N Ladder
 0 No. of Landings
 5 Depth of Flow (mm)
 0 Depth of Silt (mm)

ADDITIONAL CONSTRUCTION DETAILS

☐ Flap Valve
 ☐ Orifice
 ☐ Sluice Gate
 ☐ Weir
 ☐ Screens
 ☐ Penstock
 ☐ Flume
 ☐ H/Wall

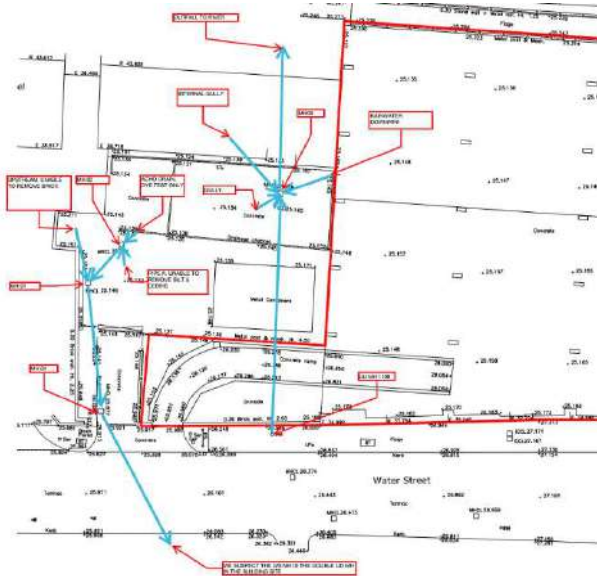
CONDITION INFORMATION (Specify in Remark)

	Cover	Shaft	Irons/Ladder	Chamber	Benching	Channel
OK	☐	☐	☐	☐	☐	☐
Needs Attention	☐	☐	☐	☐	☐	☐
Urgent Attention	☐	☐	☐	☐	☐	☐

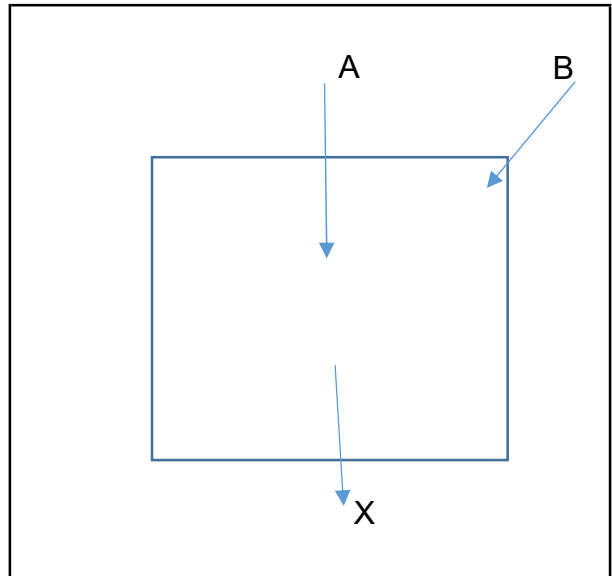
Remark

GPS & COVER LEVEL POINTS ARE ON THE GPS TABLET. I WAS UNABLE TO GET THEM OFF THE TABLET WHILE ONSITE

LOCATION SKETCH



PLAN OF MANHOLE



LOCATION PHOTO



INTERNAL PHOTO



STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
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	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPM : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Random Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		



Project No. 209324
Survey Date. 05/10/2022
Surveyor. A WHARTON

Asset Survey Card

Asset ID: UC01 eg: MH, CP, GY
Status: PU Asset Type: MH Function: F Cover Level:
Location: WATER STREET
Town: MANCHESTER

COVER DETAILS

☒ Square ☐ Rectangle ☐ Triangle ☐ Dbl Triangle ☐ Circular ☐ Other Other
☐ Hinged ☐ Lockable ☐ Grating ☐ Cover Duty 600 x 600 Size (mm)

PIPE DETAILS

Incoming Pipes

Pipe	Depth from Cover (m)	Upstream / Downstream Ref	Shape	Size (mm) Height Width		Pipe Mat	Lining Mat	Soffit Level (m)	Invert Level (m)
A	2.4	N/A	C	150	x	VC			
B	2.9	N/A	C	600	x	CO			
C	2.38	N/A	C	300	x	VC			
D					x				
E					x				
F					x				

Outgoing Pipes

X	2.92	N/A	C	600	x	CO			
Y					x				

MANHOLE CONSTRUCTION DETAILS

Shaft

x Size (mm) Depth (m) No. of Reg Courses Soffit

Chamber

2000 x Size (mm) Y Side Entry ☐ OX / H2S / METH Toxic atmosphere ☐ Evidence of Surge

☒ Pre Cast Concrete ☐ Insitu Concrete ☐ Brick ☐ GRP ☐ Reducing Slab
 Step Irons 7 Ladder No. of Landings Depth of Flow (mm) Depth of Silt (mm)

ADDITIONAL CONSTRUCTION DETAILS

☐ Flap Valve ☐ Orifice ☐ Sluice Gate ☐ Weir ☐ Screens ☐ Penstock ☐ Flume ☐ H/Wall

CONDITION INFORMATION (Specify in Remark)

	Cover	Shaft	Irons/Ladder	Chamber	Benching	Channel
OK	☒	☒	☒	☒	☒	☒
Needs Attention	☐	☐	☐	☐	☐	☐
Urgent Attention	☐	☐	☐	☐	☐	☐

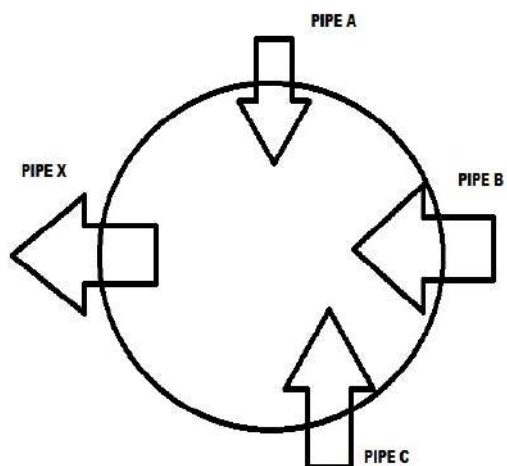
Remark

See Overleaf for Key

LOCATION SKETCH

REFER TO ATTACHED PLAN

PLAN OF MANHOLE



LOCATION PHOTO

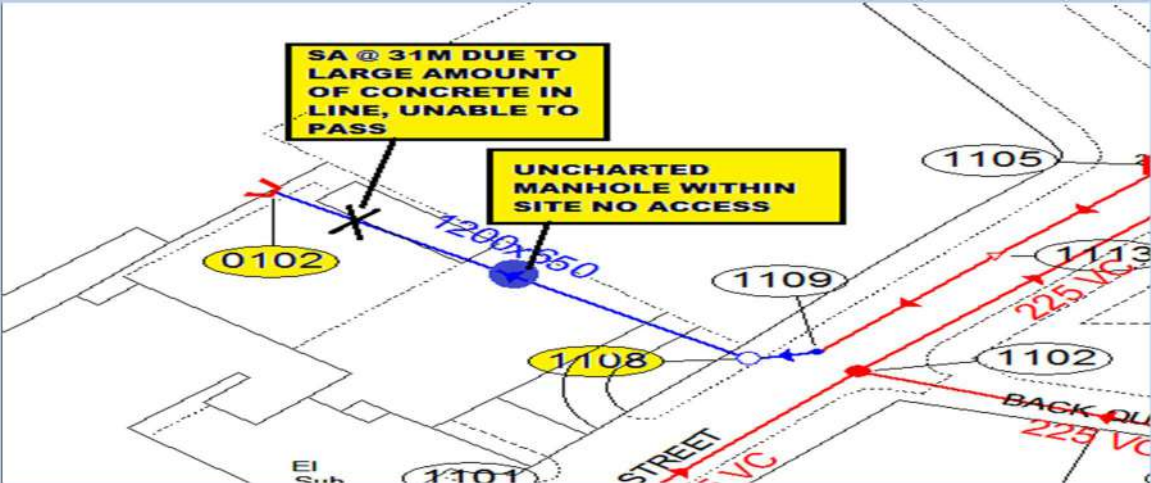


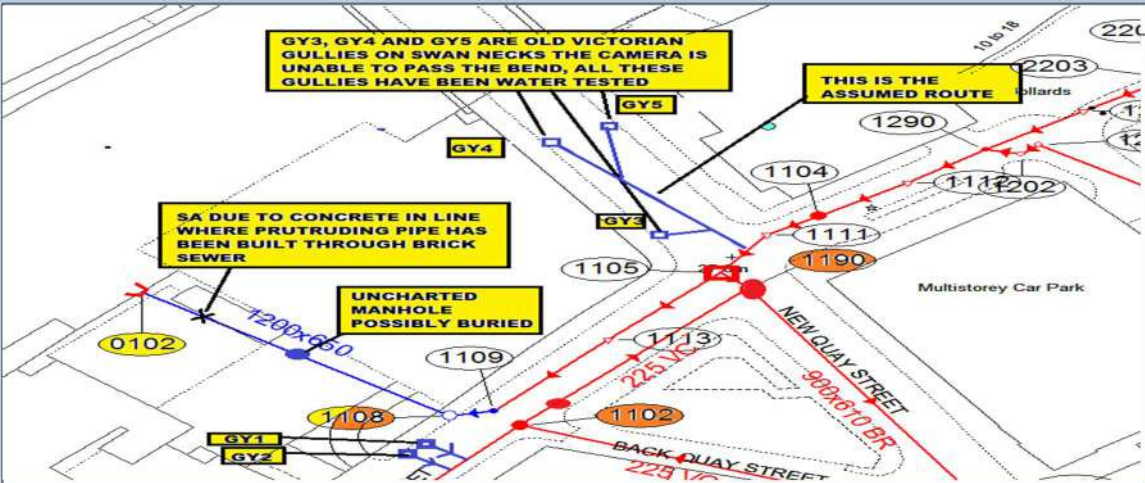
INTERNAL PHOTO

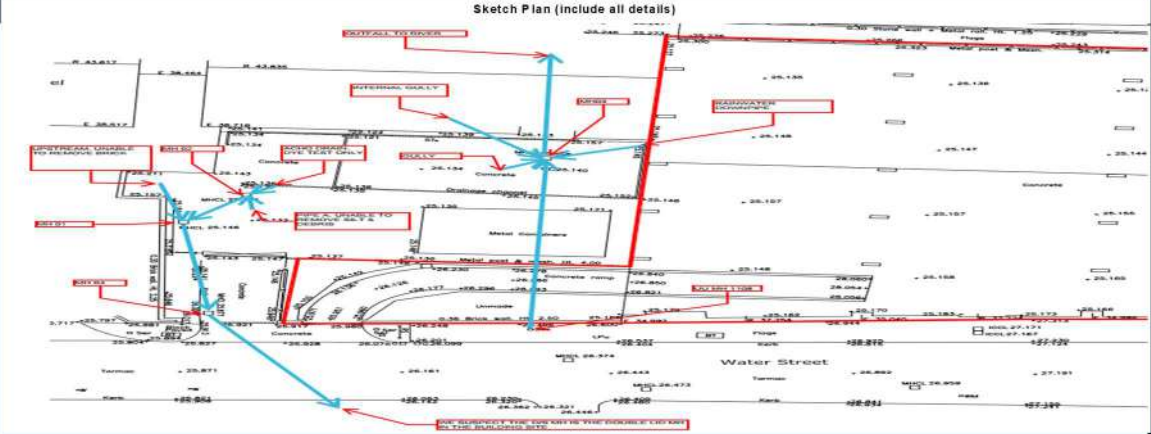


STATUS	PU : Public	PR : Private	WC : Culverted Watercourse	} Applies to main outlet
	24 : Section 24	HD : Highway Drain		
FUNCTION	F : Foul	C : Combined	S : Surface Water	} Applies to main outlet
MANHOLE TYPE	IF : Infall	MH : Manhole	CP : Catchpit	
	LH : Lamphole	RE : Rodding Eye	SO : Storm Overflow	
	GU : Gully	OF : Outfall	SA : Soakaway	
COVER DUTY	L : Light Duty	M : Medium Duty	H : Heavy Duty	
SHAPE	C : Circular	E : Egg	R : Rectangular	
	S : Square	T : Trapezoidal	A : Arched	
	B : Barrel	H : Horseshoe (Inverted U)	U : U-shaped with flat top	
	X : Other (state in words)			
PIPE (OR LINING) MATERIAL	AK : Alkathene	AC : Asbestos Cement	BR : Brick	
	CI : Cast Iron	SI : Spun (Grey) Iron	CO : Concrete	
	CSB : Concrete Segments (Bolted)	CSU : Concrete Segments (Unbolted)	CC : Concrete Box Culvert	
	DI : Ductile Iron	GRC : Glass Reinforced Concrete	GRP : Glass Reinforced Plastic	
	PSC : Plastic/Steel Composite	PVC : Polyvinyl Chloride	PE : Polyethylene	
	RPM : Reinforced Plastic Matrix	ST : Steel	VC : Vitrified Clay	
	PP : Polypropylene	PF : Pitch Fibre	MAC : Masonry, Coursed	
	MAR : Masonry, Random Courses	XXX : Other (State in remarks)		
LINING	BL : Bitumen	RL : Resin	IS : Insituform	
	CL : Cement	PI : Plastic		

IWJS		IWJS Work Record				Work Order				
TL Number	209324	Day	Tuesday	Date	04/10/2022	Target Time on Site	19:00	Actual Time	19:00	
Address						DC Name		Manchester		
Property Occupied?	YES ☐ NO ☐	Property Type	U ☐ R ☐ P ☐ B ☐ I ☐ N ☐							
Instructions		JET + CCTV + MH CARDS AND GPS								
Ganger	A WHARTON + J ASTLEY		Type of Unit (Tick Box)							
2nd Man			CCTV	Recycler	Van Pack	Muller	Tanker	Remote Reel	Flexline	
3rd Man	TEAM DRAINAGE		☒	☐	☐	☐	☐	☐	☒	
REMEMBER TO RING OFFICE OR SITE MANAGER AS SOON AS ANY PROBLEMS ARE ENCOUNTERED ON SITE										
Start Time	Finish Time	Activity and Site Details							Hrs	Mins
1900	03:00	ARRIVED ON SITE CARRIED OUT CCTV SURVEY OF SURFACE WATER 1200x650 BRICK EGG SEWER AFTER EXTENSIVE CLEANING WAS CARRIED OUT, JET WAS STOPPING WHEN JETTING WAS BEING CARRIED OUT. UPON CCTV SURVEY WE FOUND A PIPE HAD BEEN BUILT INTO THE STRUCTURE AT 30M AND THERE IS A LARGE AMOUNT OF SET CONCRETE APPROX 30%. FURTHER CLEANING IS REQUIRED TO ATTEMPT TO REMOVE. ALL WORKS ARE CARRIED OUT IN ACCORDANCE WITH RISK ASSESSMENT + METHOD STATEMENT							8	



IWJS		IWJS Work Record				Work Order				
TL Number	209324	Day	Wednesday	Date	05/10/2022	Target Time on Site	19:00	Actual Time	19:00	
Address						DC Name		Manchester		
Property Occupied?	YES ☐ NO ☐	Property Type	U ☐ R ☐ P ☐ B ☐ I ☐ N ☐							
Instructions		JET + CCTV + MH CARDS AND GPS								
Ganger	A WHARTON + J ASTLEY		Type of Unit (Tick Box)							
2nd Man			CCTV	Recycler	Van Pack	Muller	Tanker	Remote Reel	Flexline	
3rd Man	TEAM DRAINAGE		☒	☐	☐	☐	☐	☐	☒	
REMEMBER TO RING OFFICE OR SITE MANAGER AS SOON AS ANY PROBLEMS ARE ENCOUNTERED ON SITE										
Start Time	Finish Time	Activity and Site Details							Hrs	Mins
1900	03:00	ARRIVED ON SITE WE ATTEMPTED TO JET THE CONCRETE IN BRICK SEWER BUT DUE TO VERY HEAVY RAINFALL THE LEVELS WERE HIGH AND THEREFORE WARTHOG OR BULLDOG CUTTING COULDN'T BE ATTEMPTED, SO WE CARRIED OUT CLEANING AND CCTV ON GULLIES AS PER INSTRUCTION. HOWEVER GY3, GY4, GY5 ARE VERY OLD VICTORIAN GULLIES WITH TRAPS AT THE BOTTOM AND WE WERE UNABLE TO NEGOTIATE THE BEND TO ACCESS THE CAMERA. GY1, GY2 WERE CLEANED AND CCTV SUCCESSFULLY. WE THEN PROCEEDED TO COMPLETE MANHOLE SURVEY CARDS FOR REQ MANHOLES, WE WERE UNABLE TO RAISE 1109 AS IT APPEARS TO BE SEIZED, MH IS ON VERY BUSY JUNCTION TRAFFIC IS VERY BUSY CONSTANTLY NO MATTER WHAT TIME. ALL WORKS ARE CARRIED OUT IN ACCORDANCE WITH RISK ASSESSMENT + METHOD STATEMENT							8	
										

IWJS		IWJS Work Record				Work Order		209324		
TL Number	209324	Day	Thursday	Date	03/11/2022	Target Time on Site	NA	Actual Time	07:30	
Address						ALBERTS SHED, WATER STREET, MANCHESTER, M3 4JQ		DC Name	Manchester	
Instructions		DESILT CCTV AS PER PLANS PROVIDED								
Ganger	A.EAGLESOME - FG64 FLM				Type of Unit (Tick Box)					
2nd Man	M.AUSTIN - FJ12 SXM				CCTV	Recycler	Van Pack	Muller	Tanker	
3rd Man	N.MORTON / D.NUGENT				☒	☒	☐	☐	☐	
REMEMBER TO RING OFFICE OR SITE MANAGER AS SOON AS ANY PROBLEMS ARE ENCOUNTERED ON SITE										
Start Time	Finish Time	Activity and Site Details							Hrs	Mins
CCTV FLM 07:30 RECYCLER SXM 08:00	14:00	ARRIVED ON SITE AND WAITED FOR ACCESS TO BE GRANTED IN TO THE CAR PARK. ONCE ACCESS WAS GRANTED WE LOCATED 4 MHS TO WORK FROM. ALL LINES HAVE BEEN JETTED AND SURVEYED ALONG WITH MH CARDS AND GPS. THE RAINWATER DOWNPIPES UNDER ALBERTS SHED GOT STRAIGHT TO GROUND WITH NO JETTING OR CCTV ACCESS. PLEASE FIND ATTACHED DCS WITH ALL PIPE INFORMATION AND PICTURES USING THE PICTURES TAB AT THE BOTTOM. ALL VIDEO FOOTAGE HAS BEEN UPLOADED TO WINCAN WEB							6	30
Sketch Plan (include all details) 										



River Irwell

GY4

GY3

GY5

0102 OUTFALL

S/A @ 31.53m
due to
obstruction in
the line

RAINWATER
DOWN PIPE

INT GULLY

MH03

GULLY

MH02

S/A @ 0.18m u/s
due to silt.

MH 1108

GY1

GY2

UC01

MH 1102

S/A @ 0.61m u/s
due to brick in
the line.

MH01

MH04

WATER STREET

We suspect the
D/S MH is the
double lid MH in
the building site

NEW QUAY STREET

NOTES

- DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE. IF IN DOUBT, ASK.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT CCTV DOCUMENTATION.
- ALL DIMENSIONS AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
- PIPE RUNS ARE ASSUMED STRAIGHT BETWEEN CHAMBERS UNLESS OTHERWISE INDICATED.
- ALL UTILITIES ARE UNDERGROUND EXCEPT WHERE INDICATED.

DRAINAGE/CCTV SURVEY LEGEND

- MANHOLE
- GULLY
- SURFACE SEWER
- UNABLE TO SURVEY

Rev	Date	Details of issue / revision	Drw	Rev
-----	------	-----------------------------	-----	-----

ISSUES & REVISIONS



Head Office: Dickens House, Old Stowmarket Road, Woodpit, Bury St Edmunds, Suffolk IP30 9QS
Essex Office: 230 Old London Road, Marks Tey, Colchester, Essex CO6 1EN
Lincoln Office: Unit 4, Boundary Lane Enterprise Park, South Hykeham, Lincoln LN6 9NQ
Manchester Office: Unit 10 Huntsman Drive, North Bank Industrial Estate, Irlam, Manchester M44 5EG
Norfolk Office: Green Road, Yacham Road Industrial Estate, Dereham, Norfolk NR20 3TG

Client

ARP Geotechnical Ltd

Project Title

Alberts Shed, Water St,
Manchester M3 4JQ

Drawing Title

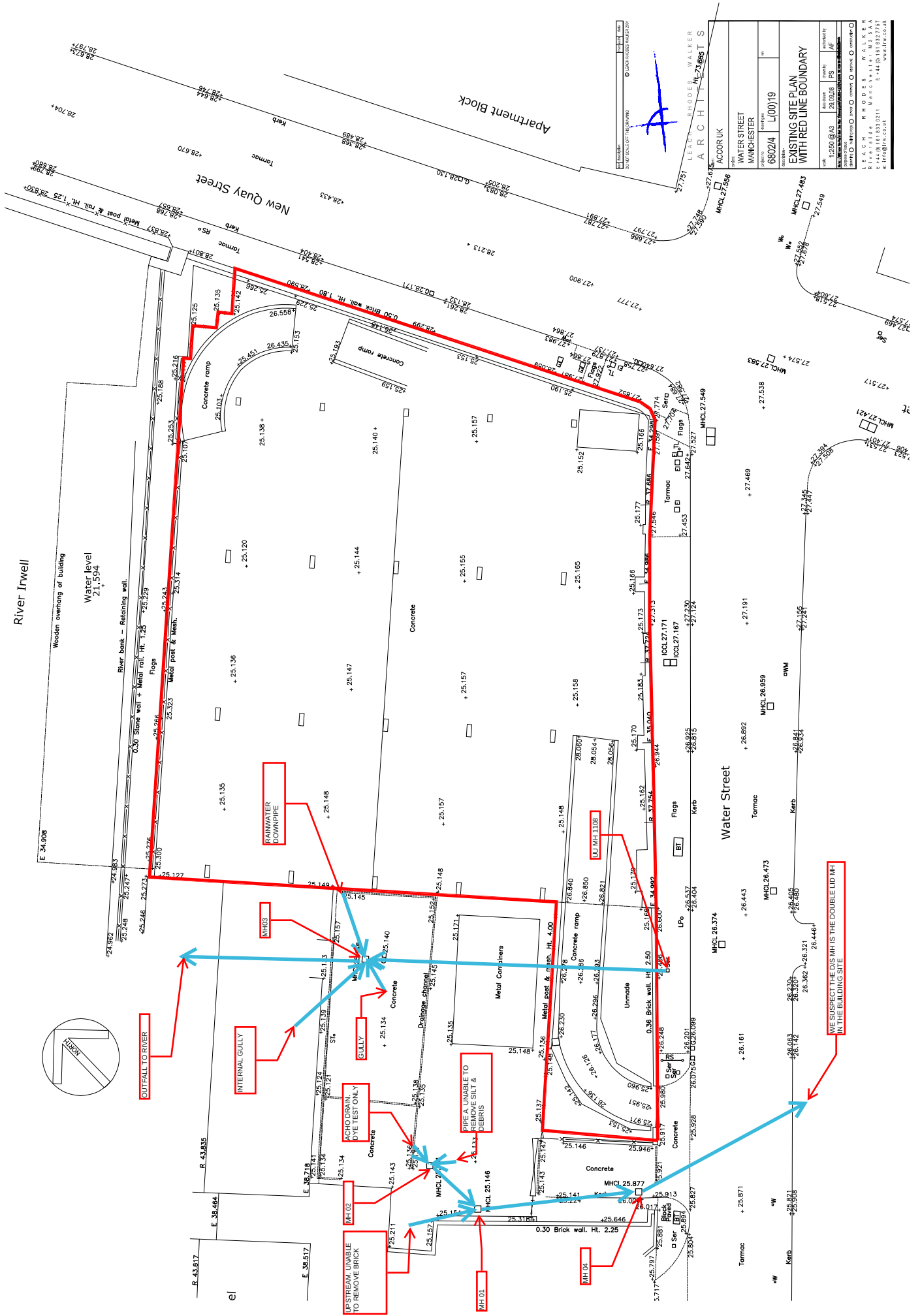
Drainage system
investigation.

Scale	NTS	Drawn	JS
Size	A1	Reviewed	BN

Drawing Status

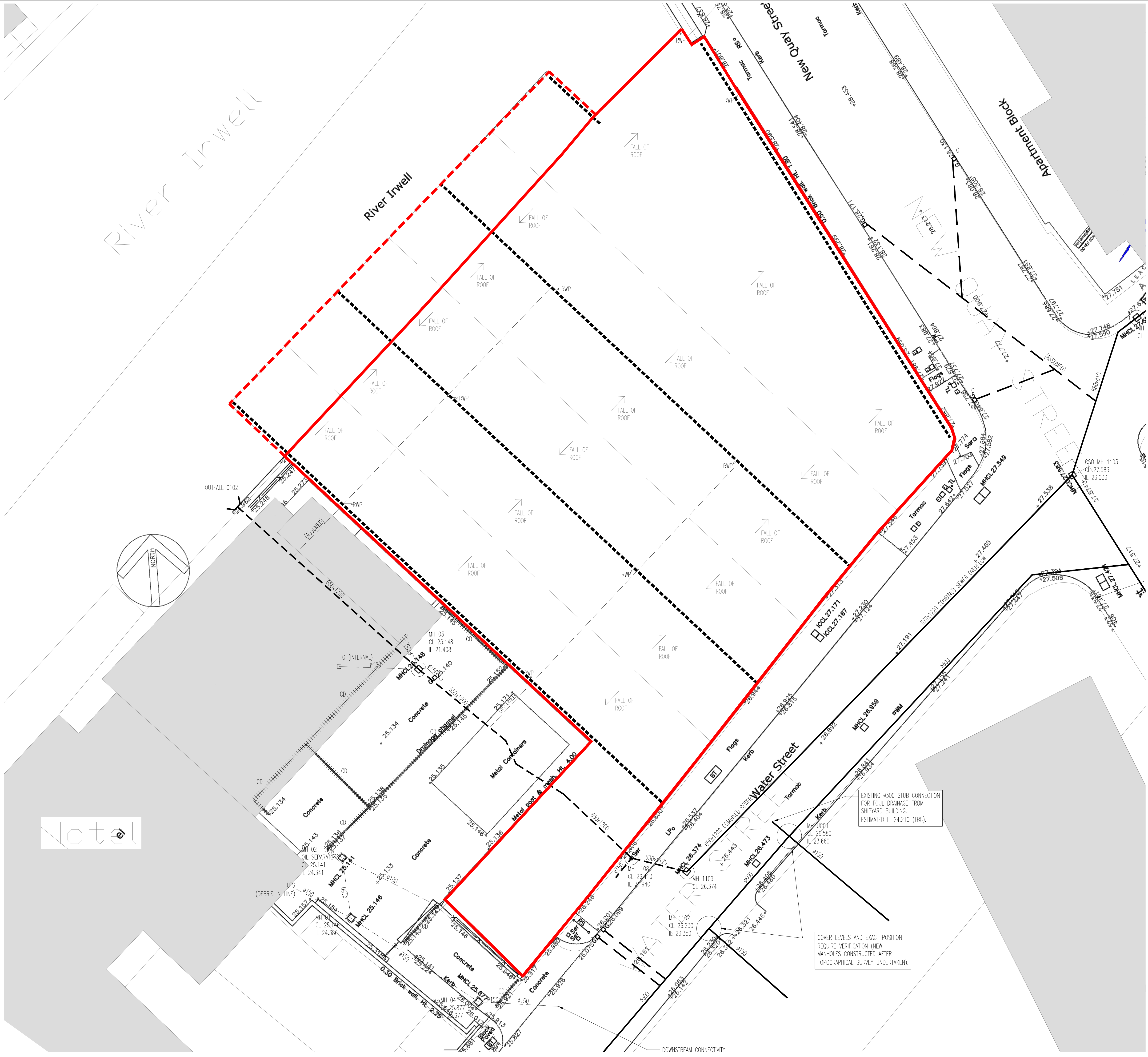
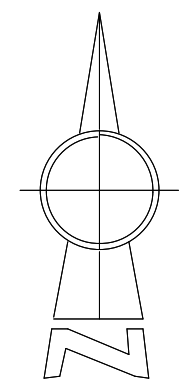
EXISTING

Drawing No.	Revision
IWJS - 209324	1



APPENDIX G

EXISTING DRAINAGE PLAN



ATTENTION IS DRAWN TO THE REQUIREMENTS OF THE CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS 2015 AND THE DUTIES AND RESPONSIBILITIES CONTAINED THEREIN

Key

- Approximate site boundary
- Existing building roof overhang
- Existing combined public sewer
- Existing surface water public sewer
- Existing private combined drain
- Existing private surface water drain
- Existing rainwater down pipe
- Existing gully
- Existing roof gutter (at high level)
- Existing channel drain
- Existing highway drain

General Notes

- Do not scale from this drawing.
- To be read in conjunction with ARP Foul and Surface Water Drainage Strategy report 2132/01r2.
- Drawing is based on the following information provided by others: United Utilities public sewer records (August 2022); Drainage survey by IWJS (October 2022); Topographical Survey by Leach Rhodes Walker (September 2008).
- Location and level of existing drains and sewers is indicative only and should be confirmed on site prior to construction.

Rev	MW	09.12.22	First issue	MW	AH
	By	Date	Revision	Chk	Apvd

ARP

ARP ASSOCIATES
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ARP Associates is a trading division of ARP Geotechnical Ltd, a company registered in England and Wales with company number 3771811, whose registered office is at 5/6 Northwest Business Park, Servia Hill, Leeds LS6 2QH

TITLE	
EXISTING DRAINS AND SEWERS	
PROJECT	
SHIPYARD	
CLIENT	
MANCHESTER QUAYS TWO LTD	
DRAWING STATUS	
PRELIMINARY	
Scale	Date
1:150 @ A1	DEC 22
Drawn	MW
Chk.	—
Drg. No.	Rev
2132/01/SK03	/

A P P E N D I X H

ENVIRONMENT AGENCY DATA

Flood map for planning

Your reference
The Shipyard

Location (easting/northing)
383116/398175

Created
10 Aug 2022 11:42

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 www.gov.uk/guidance/flood-risk-assessment-standing-advice)

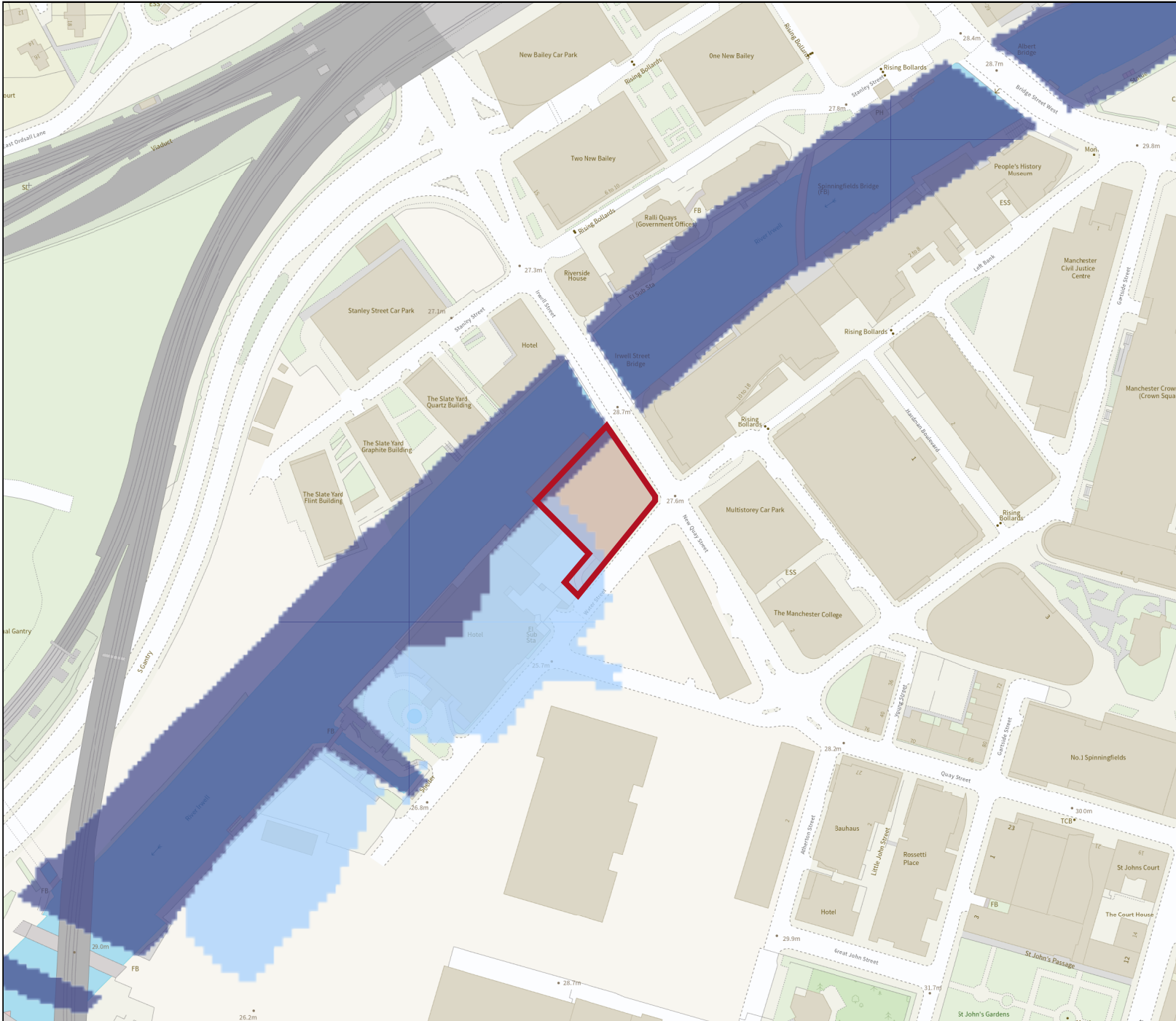
Notes

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 2021 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

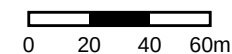


Your reference
The Shipyard

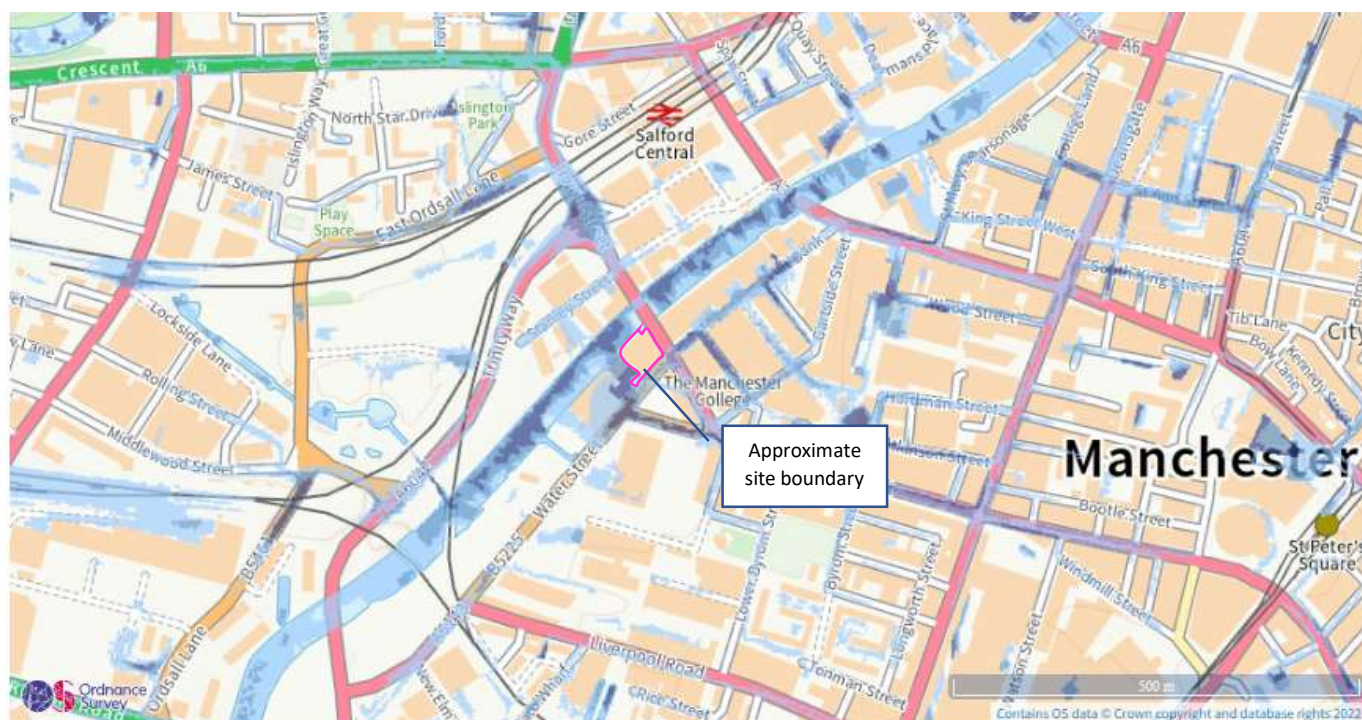
Scale
1:2500

Created
10 Aug 2022 11:42

-  Selected area
-  Flood zone 3
-  Flood zone 3: areas benefitting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area



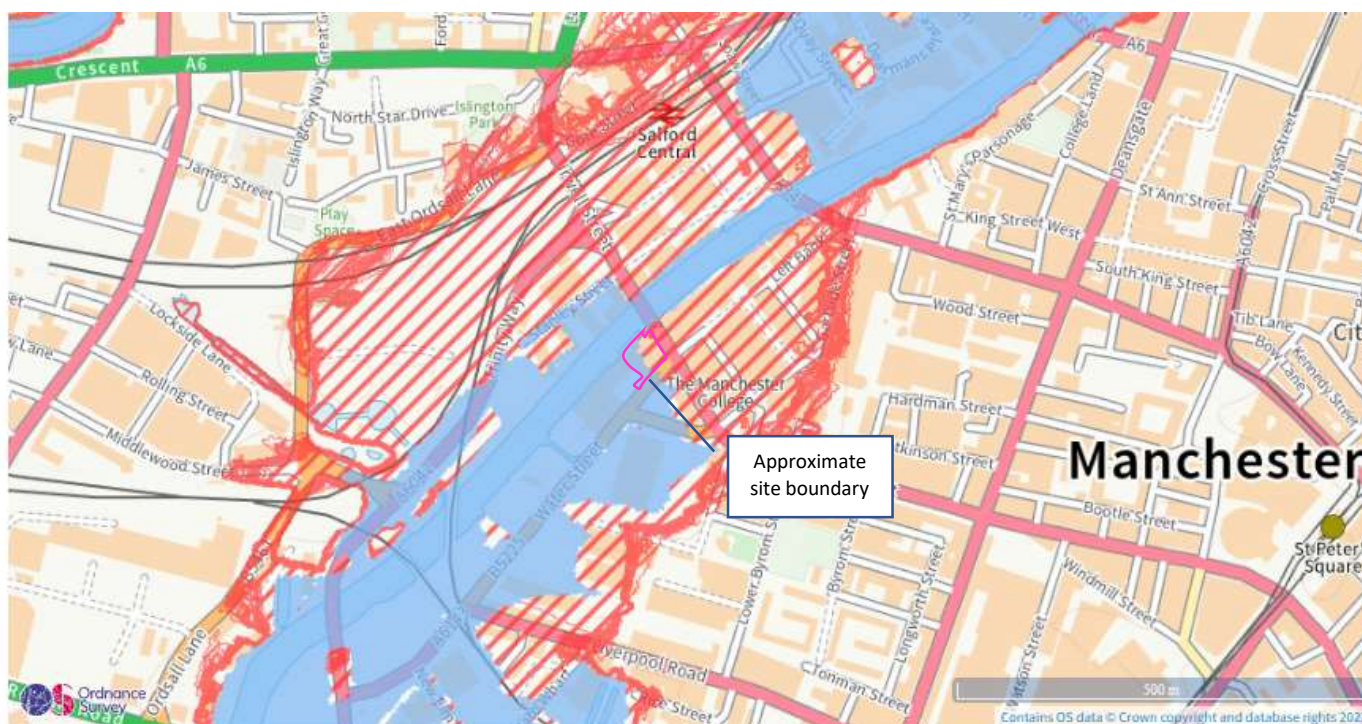
Extracts from Environment Agency Risk of Flooding from Surface Water Map



Extent of flooding from surface water

High Medium Low Very low

Extract from Environment Agency Risk of Flooding from Reservoirs Map



Maximum extent of flooding from reservoirs:

when river levels are normal when there is also flooding from rivers

Flood risk assessment data

Location of site: 383117 / 398178 (shown as easting and northing coordinates)

Document created on: 10 August 2022

This information was previously known as a product 4.

Customer reference number: GMMC274769SW / HXEA15MG761F

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- areas benefiting from defences
- historic flooding
- flood defences and attributes
- modelled data
- climate change modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Surface water and other sources of flooding

Use the [long term flood risk service](#) to find out about the risk of flooding from:

- surface water
- ordinary watercourses
- reservoirs

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: Inland Modelling 2015-16: Manchester Ship Canal

Scenario(s): Normal Operation, Latchford 1 Gate Closed Scenario, Latchford 3 Gates Closed Scenario.

Date: 1 May 2020

These models contain the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

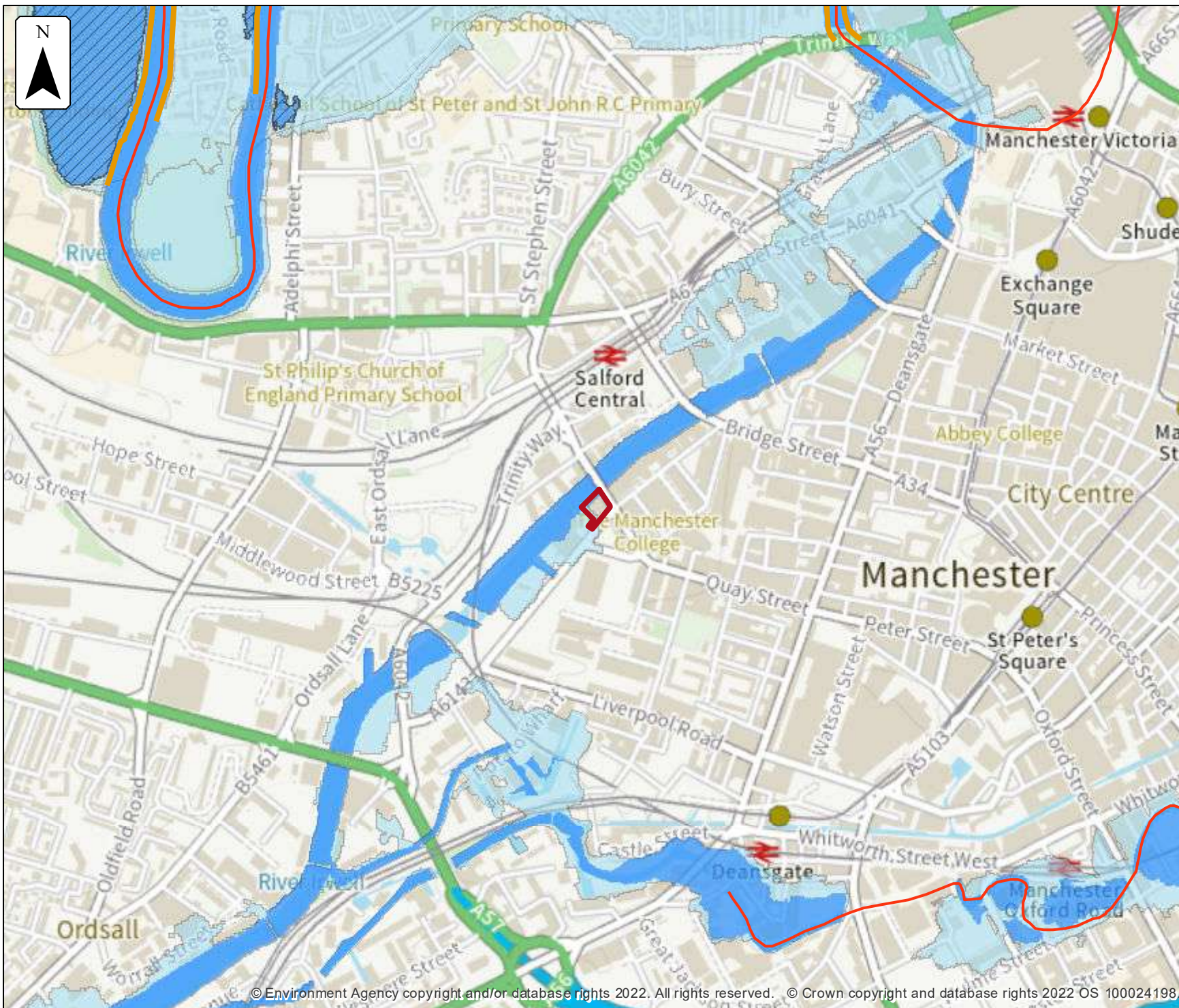
This data is updated on a quarterly basis as better data becomes available.

Areas benefiting from defences

This map shows the areas benefiting from defences for 2 possible events:

- fluvial (river flooding) event that has a 1% annual exceedance probability (AEP), this means a 1% chance of occurring in any one year
- tidal or coastal event that has a 0.5% annual exceedance probability (AEP), this means a 0.5% chance of occurring in any one year

[Download the GIS dataset for areas benefiting from defences](#)



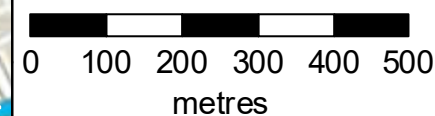
Flood map for planning

Location (easting/northing)
383117/398178

Scale
1:10,000

Created
10 Aug 2022

-  Selected area
-  Main river
-  Flood defence
-  Areas benefiting from flood defence
-  Flood zone 3
-  Flood zone 2



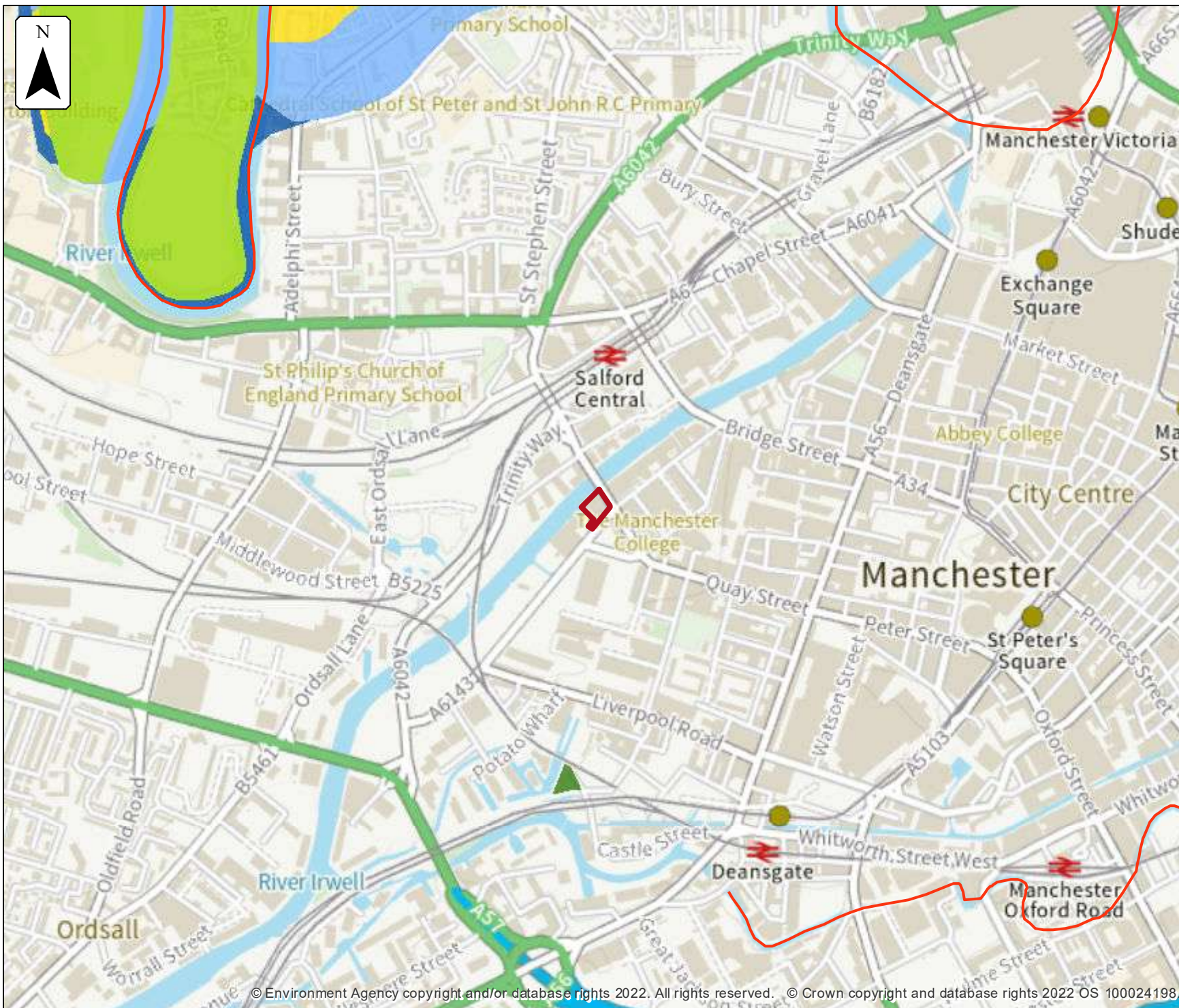
Historic flooding

This map is an indicative outline of areas that have previously flooded. Remember that:

- our records are incomplete, so the information here is based on the best available data
- it is possible not all properties within this area will have flooded
- other flooding may have occurred that we do not have records for
- flooding can come from a range of different sources - we can only supply flood risk data relating to flooding from rivers or the sea

You can also contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

[Download recorded flood outlines in GIS format](#)



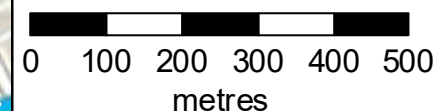
Historic flood map

Location (easting/northing)
383117/398178

Scale
1:10,000

Created
10 Aug 2022

-  Selected area
-  Main river
- Date of flood event
 -  December, 2015
 -  December, 1991
 -  January, 1954
 -  September, 1946
 -  November, 1866



Historic flood event data

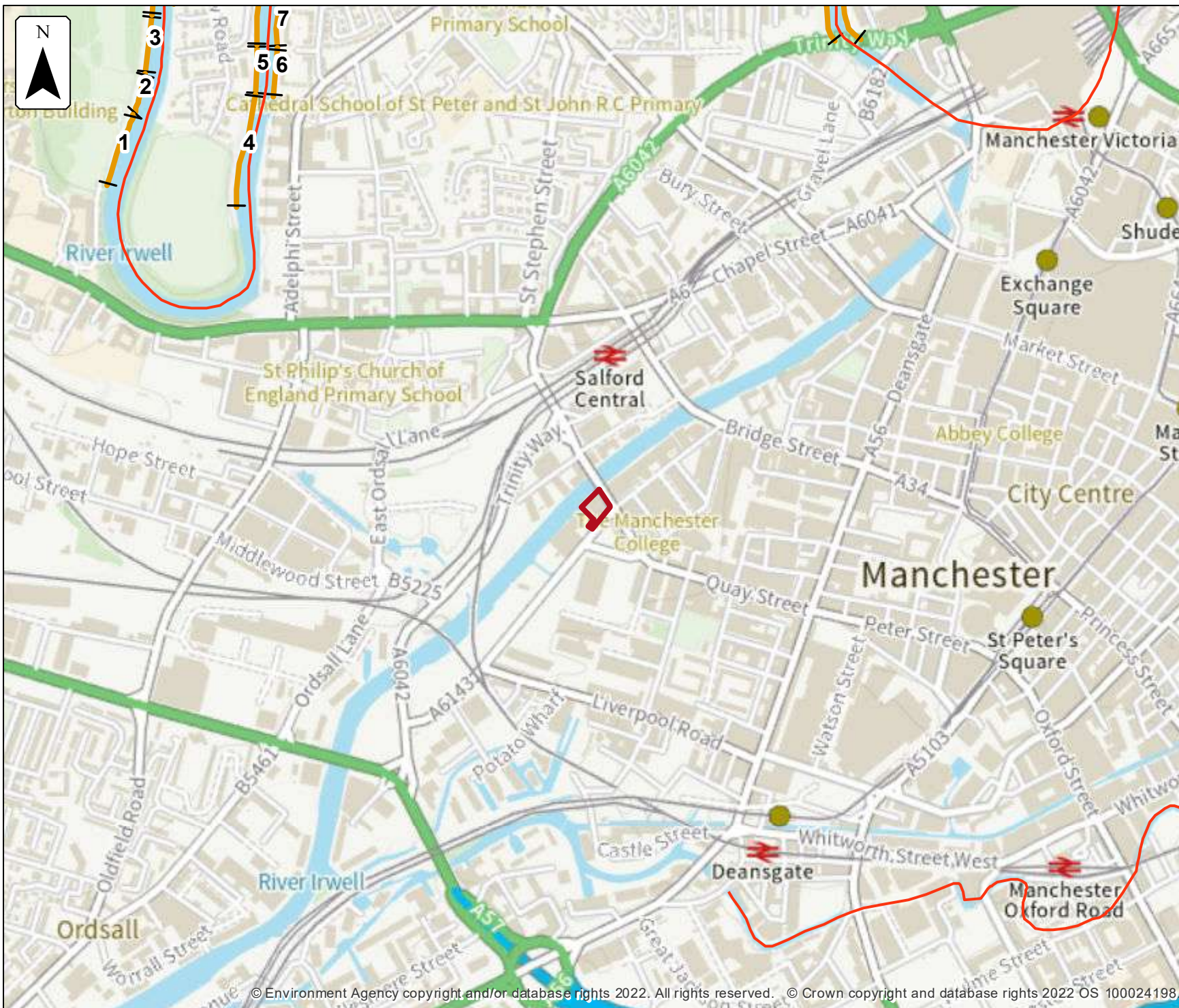
Start date	End date	Source of flood	Cause of flood	Affects location
26 December 2015	26 December 2015	main river	overtopping of defences	No
21 December 1991	22 December 1991	other	other	No
21 January 1954	22 January 1954	main river	channel capacity exceeded (no raised defences)	No
20 September 1946	21 September 1946	main river	channel capacity exceeded (no raised defences)	No
01 November 1866	02 November 1866	main river	channel capacity exceeded (no raised defences)	No

Flood defences and attributes

The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is in mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.



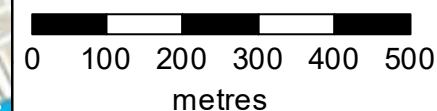
Flood defences

Location (easting/northing)
383117/398178

Scale
1:10,000

Created
10 Aug 2022

-  Selected area
-  Main river
-  Flood defence



Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	71750	Embankment	75	Good	29.52	28.93	
2	89041	Embankment	75	Good	29.04	28.94	
3	89018	Embankment	75	Good	29.01	29.13	
4	88845	Engineered High Ground	75	Good	24.56	22.22	
5	88843	Engineered High Ground	75	Good	22.22	27.99	
6	88844	Engineered High Ground	75	Good	27.10	29.19	
7	88842	Engineered High Ground	75	Good	29.19	23.06	

Any blank cells show where a particular value has not been recorded for an asset.

Modelled data

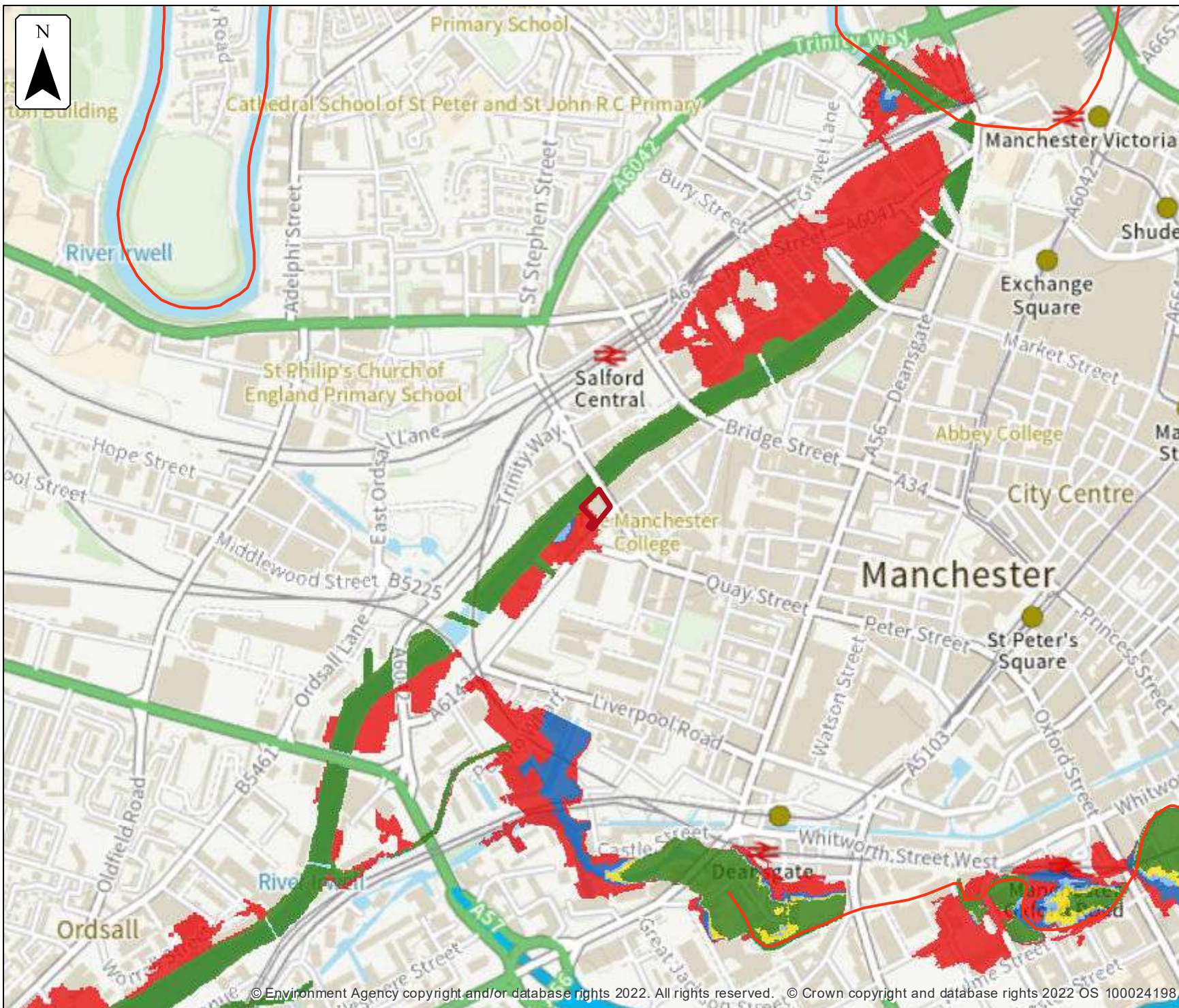
This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.



No defences exist modelled fluvial extent

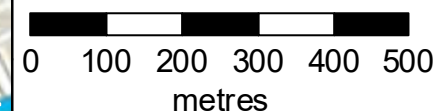
Location (easting/northing)
383117/398178

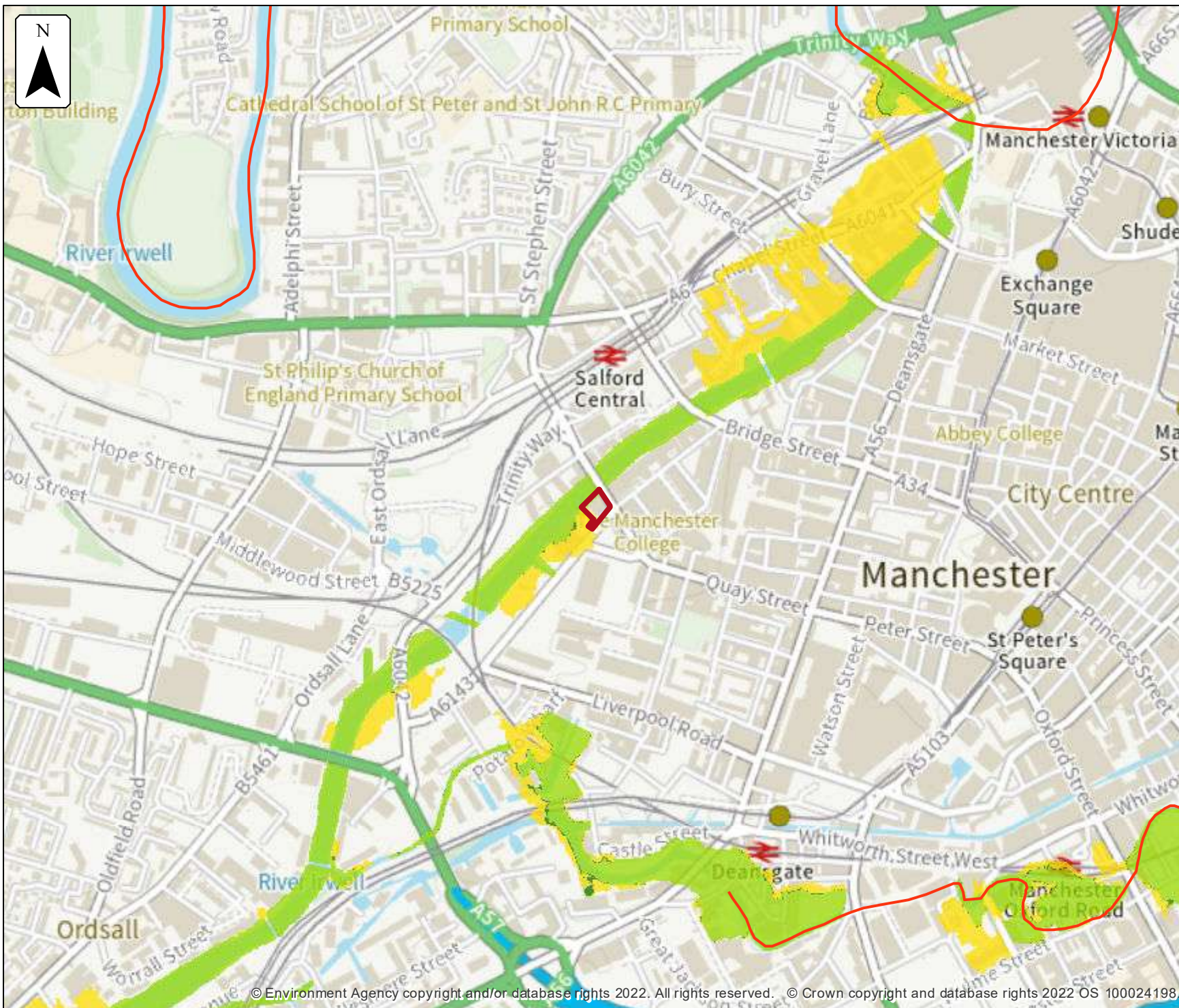
Scale Created
1:10,000 10 Aug 2022

Model name
**Inland Modelling
2015-16: Manchester**

- Selected area
- Main river
- Modelled flood extent
- 2% AEP
- 1.33% AEP
- 1% AEP
- 0.5% AEP
- 0.1% AEP

Flood extents may not be
visible where they overlap
other return periods





No defences exist climate change modelled fluvial extent

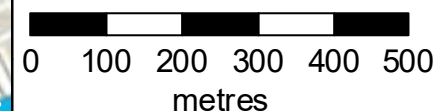
Location (easting/northing)
383117/398178

Scale Created
1:10,000 10 Aug 2022

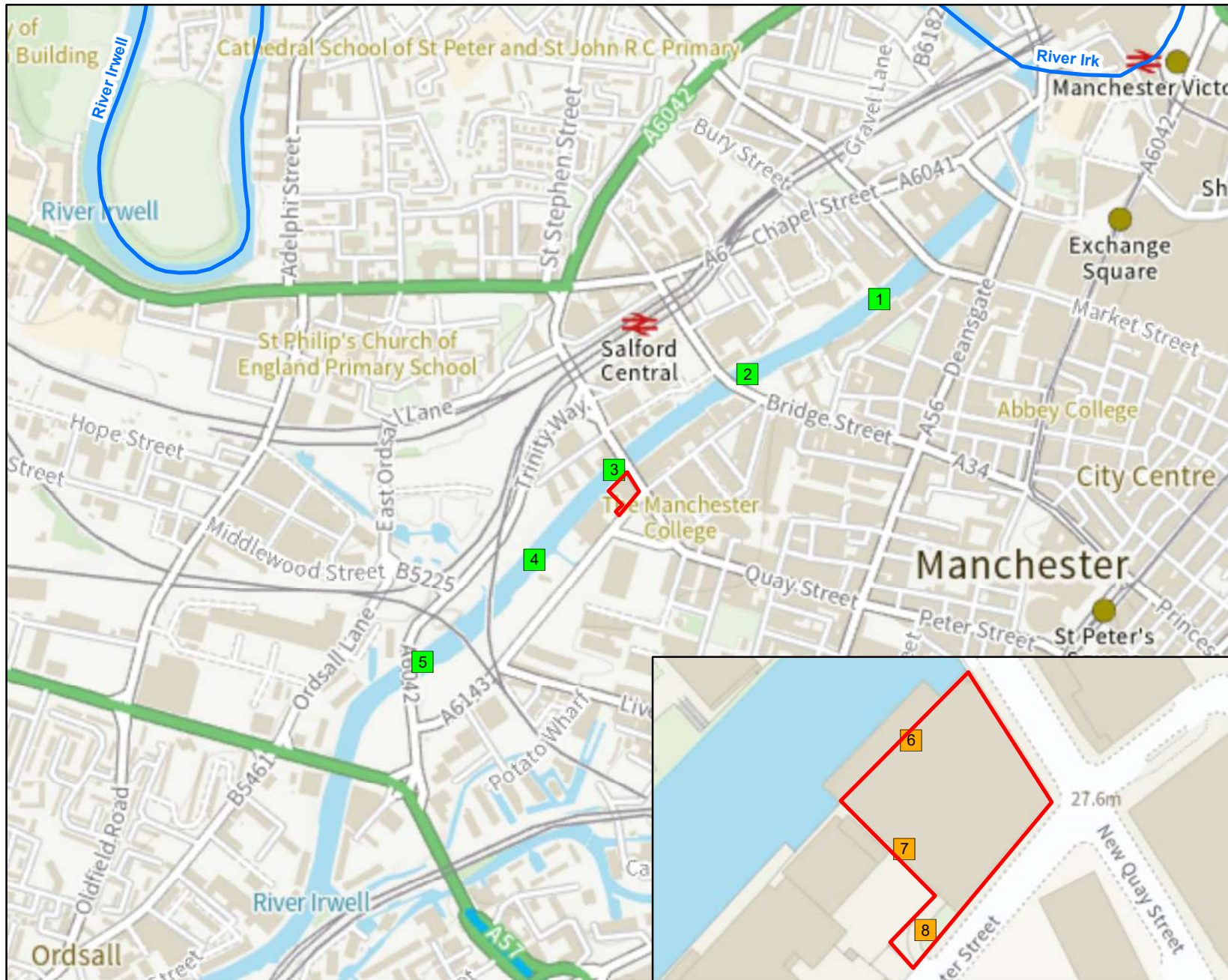
Model name
**Inland Modelling
2015-16: Manchester**

-  Selected area
-  Main river
- Modelled flood extent
 -  1.0% AEP (+30%)
 -  1.0% AEP (+35%)
 -  1.0% AEP (+70%)

Flood extents may not be
visible where they overlap
other return periods



Detailed Flood Map centred on Stanley Street, Manchester, M3 5EN.
Created on 02/10/2022 [GMMC274769SW / HXEA15MG761F]



1:10,001



Legend

- Site Location
- Model Measurements
- 2D Measurements
- Main River

Map Reference	Model Node Reference	Easting	Northing	Data	Latchford 3 Gates Closed Scenario		Latchford 1 Gate Closed Scenario	Normal Operation										
					1 % AEP (1 in 100 year)	0.1 % AEP (1 in 1000 year)	1 % AEP (1 in 100 year)	20 % AEP (1 in 5 year)	10 % AEP (1 in 10 year)	4 % AEP (1 in 25 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)
1	ea013_0251_IRWZ01_1653	383568	398519	Modelled Water Level (m aodN)	25.05	27.16	25.05	23.77	24.07	24.48	24.71	24.85	25.05	25.55	25.65	26.80	25.43	27.11
				Modelled Flow (cumecs)	495.46	760.35	495.46	310.12	351.20	411.12	445.04	466.32	495.46	573.09	588.83	742.87	552.65	762.89
2	ea013_0251_IRWZ01_1361	383335	398386	Modelled Water Level (m aodN)	25.03	27.14	25.03	23.74	24.03	24.45	24.69	24.84	25.03	25.55	25.65	26.81	25.42	27.10
				Modelled Flow (cumecs)	495.60	770.10	495.60	310.19	351.28	411.22	445.16	466.46	495.60	573.24	588.99	744.53	552.84	773.13
3	ea013_0251_IRWZ01_1113	383099	398218	Modelled Water Level (m aodN)	24.55	26.31	24.55	23.40	23.67	24.04	24.26	24.38	24.55	24.97	25.05	26.02	24.87	26.28
				Modelled Flow (cumecs)	495.71	770.29	495.71	310.25	351.35	411.30	445.27	466.57	495.71	573.36	589.13	744.57	552.99	773.43
4	ea013_0251_IRWZ01_0882	382959	398059	Modelled Water Level (m aodN)	24.26	26.18	24.26	23.14	23.39	23.75	23.97	24.09	24.26	24.69	24.78	25.84	24.59	26.14
				Modelled Flow (cumecs)	495.82	759.65	495.82	310.32	351.41	411.38	445.39	466.68	495.82	573.50	589.26	739.39	553.14	764.51
5	ea013_0251_IRWZ01_0597	382761	397878	Modelled Water Level (m aodN)	23.98	25.77	23.98	22.91	23.14	23.49	23.70	23.82	23.98	24.41	24.49	25.48	24.31	25.74
				Modelled Flow (cumecs)	495.95	768.42	495.95	310.41	351.49	411.49	445.52	466.81	495.95	573.68	589.44	743.74	553.33	771.80

Map Reference	Model Node Reference	Easting	Northing	Data	Normal Operation											Latchford 1 Gate Closed Scenario	Latchford 3 Gates Closed Scenario	
					20 % AEP (1 in 5 year)	10 % AEP (1 in 10 year)	4 % AEP (1 in 25 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year)	0.1 % AEP (1 in 1000 year)
6	2D Measurements	383107	398196	Modelled Water Level (m aodN)	23.36	23.62	23.99	24.21	24.33	24.50	24.92	25.00	25.99	24.82	26.26	24.50	24.50	26.29
7		383105	398168	Modelled Water Level (m aodN)									25.93		26.22			26.25
8		383111	398147	Modelled Water Level (m aodN)									25.93		26.22			26.25

Model data taken from Manchester Ship Canal 2016

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

Climate Change Scenario - 30%, 35% and 70% increases in flow calculated for the 2080's (2070 - 2115). Please see <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances> for more information regarding the new climate change guidance. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

Notes: For the Manchester Ship Canal Model, we provide the following three scenarios:
1. Normal Operation: All sluice gates operate automatically to maintain a navigable ponded water level upstream of each set of sluice gates. During times of high flow the gates are opened automatically to allow excess water pass downstream. During extreme conditions the sluice gates can be manually overridden to extend the opening heights.
2. Latchford 1 Gate Closed Scenario: This scenario represents a single operational sluice gate at Latchford Locks fixed closed. Therefore, only operational movements from 2 active sluice gates.The model setup removes the gate from PID controller setup and an IED file is used to define the sluice gate as fixed in the closed position.
3. Latchford 3 Gates Closed Scenario: This scenario has been defined as the removal of operational rules at all three sluice gates at Latchford Locks, thus, all gates are fixed in the closed position resulting in no regulation of upstream water levels. The model setup removes each of the gates from PID controller setup and an IED file is used to define sluice gates fixed in the closed position.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

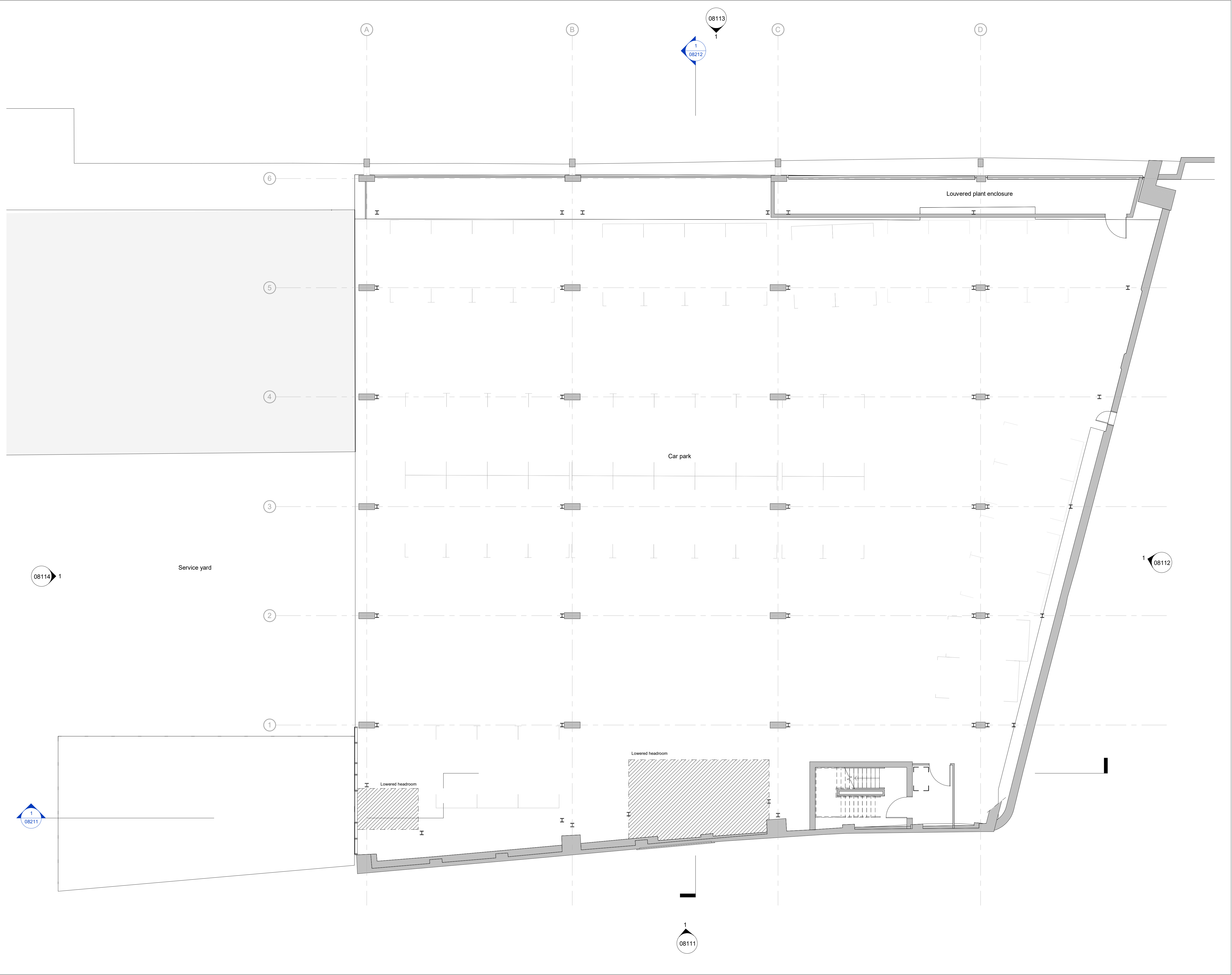
Help and advice

Contact the Greater Manchester Merseyside and Cheshire Environment Agency team at inforequests.gmmc@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for

APPENDIX J

DEVELOPMENT PROPOSALS



Notes

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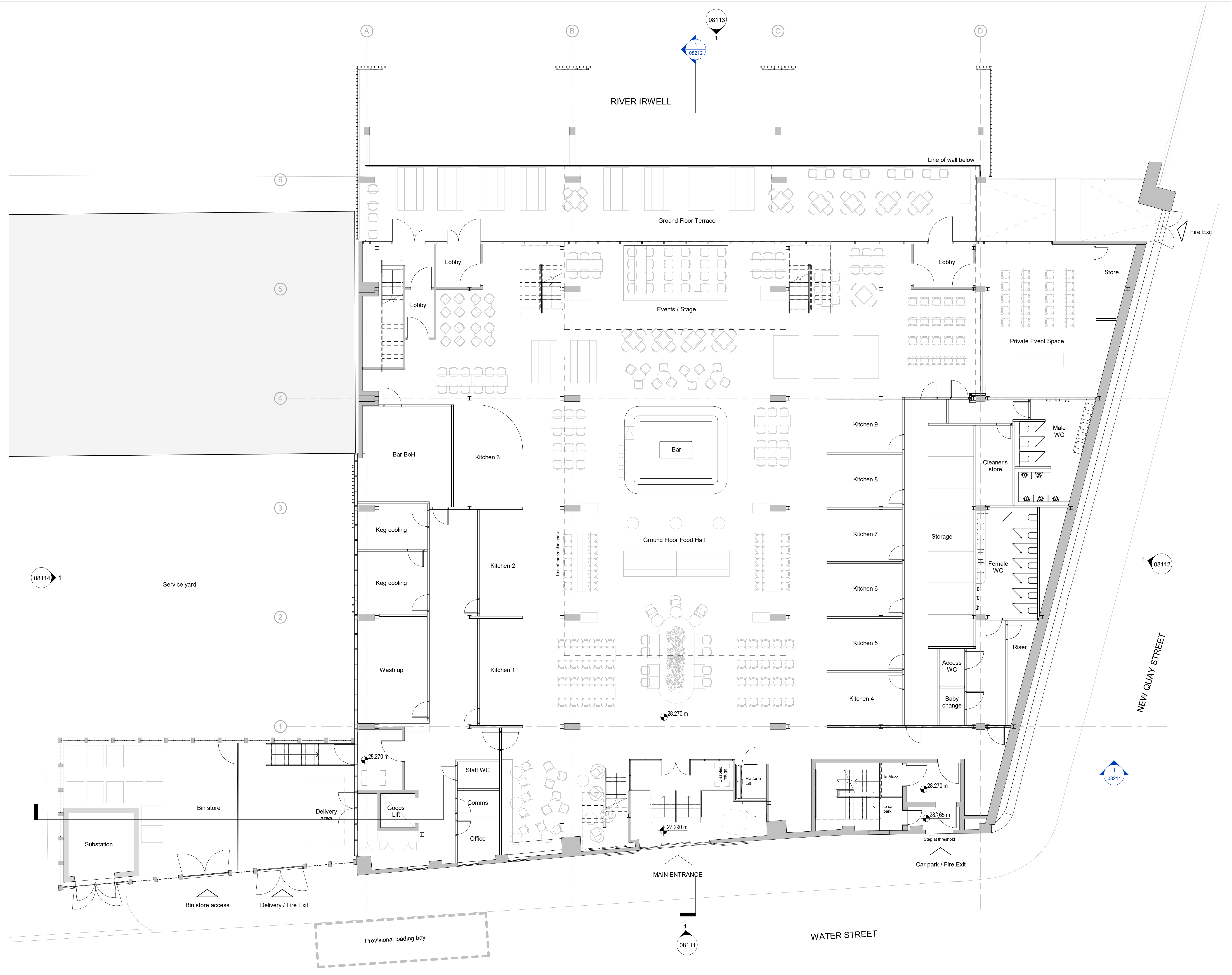
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Revisions				
Status				
PLANNING				
Client				
ALLIED LONDON				
Project				
SHIPYARD WATER STREET MANCHESTER				
Title				
Level 00 Proposed GA plan				
Scale	Size	Date	Drawn	Checked
1 : 100	A1	22/07/22	GL	NS

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SHIPYARD
WATER STREET
MANCHESTER

Title

Level 01
Proposed GA plan

Scale

Size

Date

Drawn

Checked

1 : 100

A1

08/02/22

GL

NS

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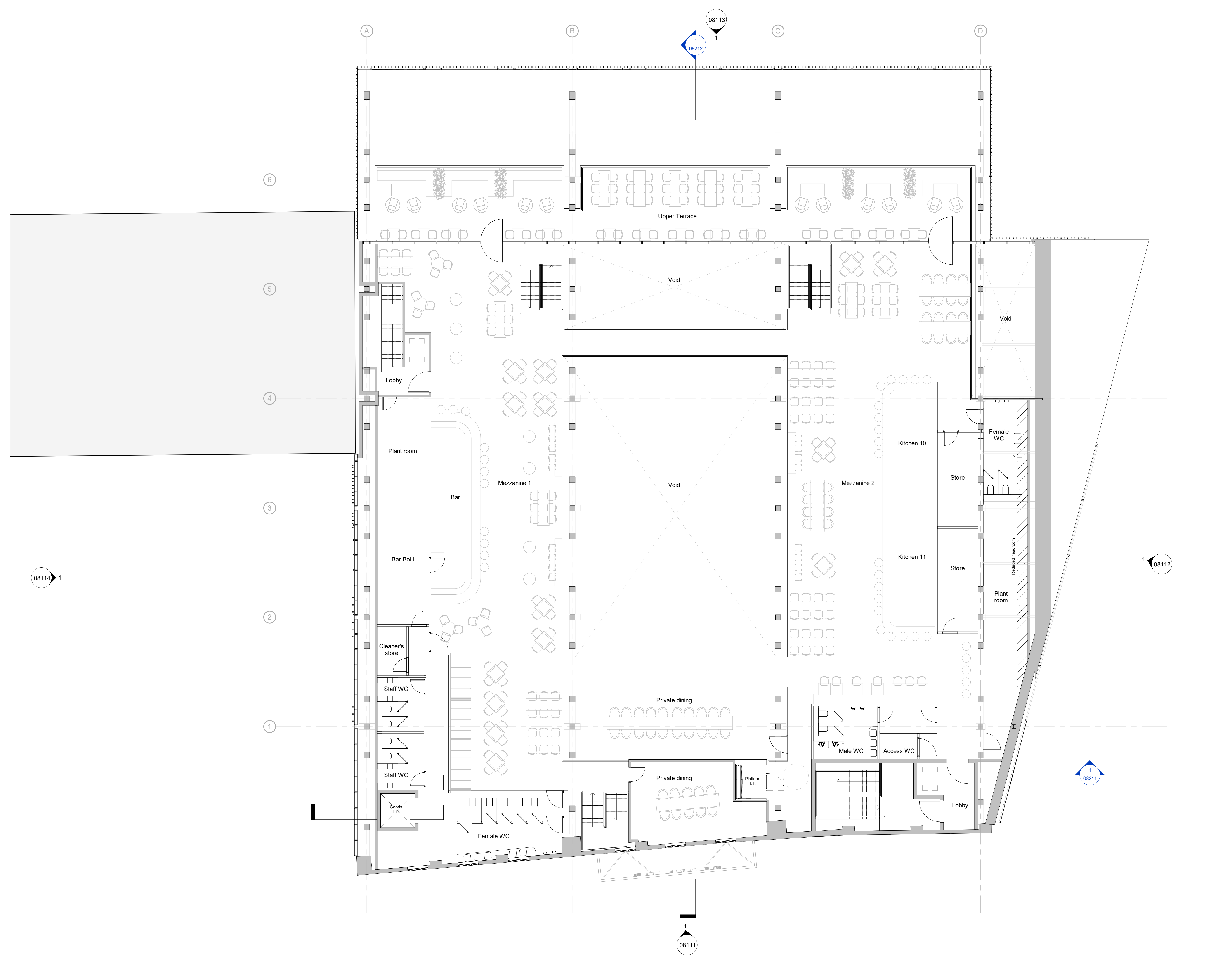
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Revisions				
Status PLANNING				
Client ALLIED LONDON				
Project SHIPYARD WATER STREET MANCHESTER				
Title Level M1 Proposed GA plan				
Scale	Size	Date	Drawn	Checked
1 : 100	A1	08/02/22	GL	NS
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Drawing No.				
Rev.				

KEY

- ① Existing windows retained and made good
If refurbishing is not possible, replace with a new window to match existing.
- ② Existing brickwork retained, cleaned and made good.
- ③ New metal canopy in black and free standing signage
- ④ New timber sliding shutters
- ⑤ New entrance with curtain wall and sliding doors in black grey
- ⑥ New metal framed screen to service yard in black grey
- ⑦ New metal service yard and substation door in black grey
- ⑧ New metal fire exit gate in black grey
- ⑨ New metal roof fascia in black grey
- ⑩ New painted signage and artwork
- ⑪ New brickwork within existing window openig
- ⑫ New extract air discharge
- ⑬ New extract louvre



Notes

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Project

SHIPYARD
WATER ST, MANCHESTER

Title

Proposed South-East Elevation
Water Street

Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/21	GL	NS

Drawing No.

200097-3DR-ZZ-DR-A-08111

Rev.

Notes

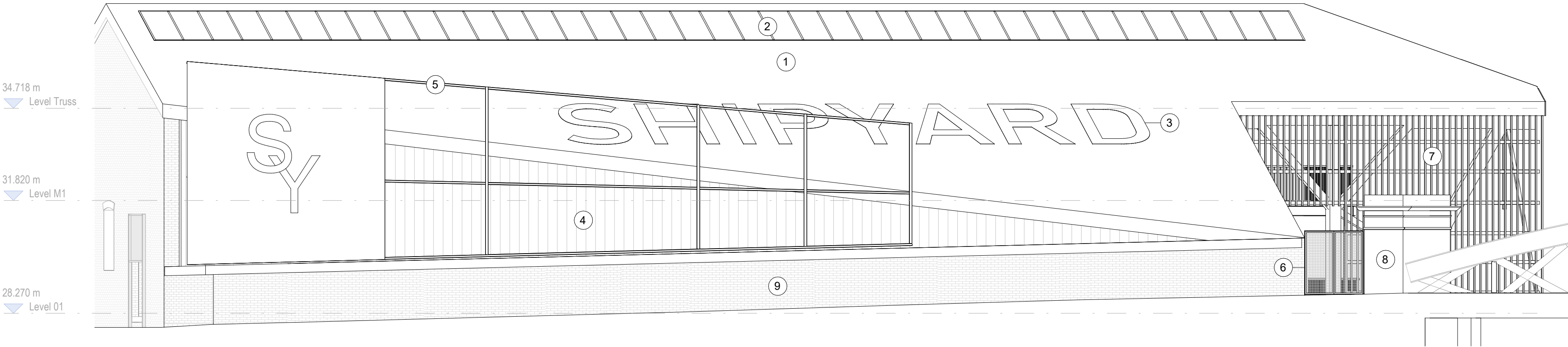
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KEY

- 1 New ribbed metal roof finish in black grey
- 2 New framed roof skylights
- 3 New painted signage
- 4 New timber cladding to external wall
- 5 Existing advertising board frame reused
- 6 New metal secondary entrance gate in black grey
- 7 New timber canopy
- 8 Existing bridge pier retained
- 9 Existing brick wall made good



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WATER ST, MANCHESTER

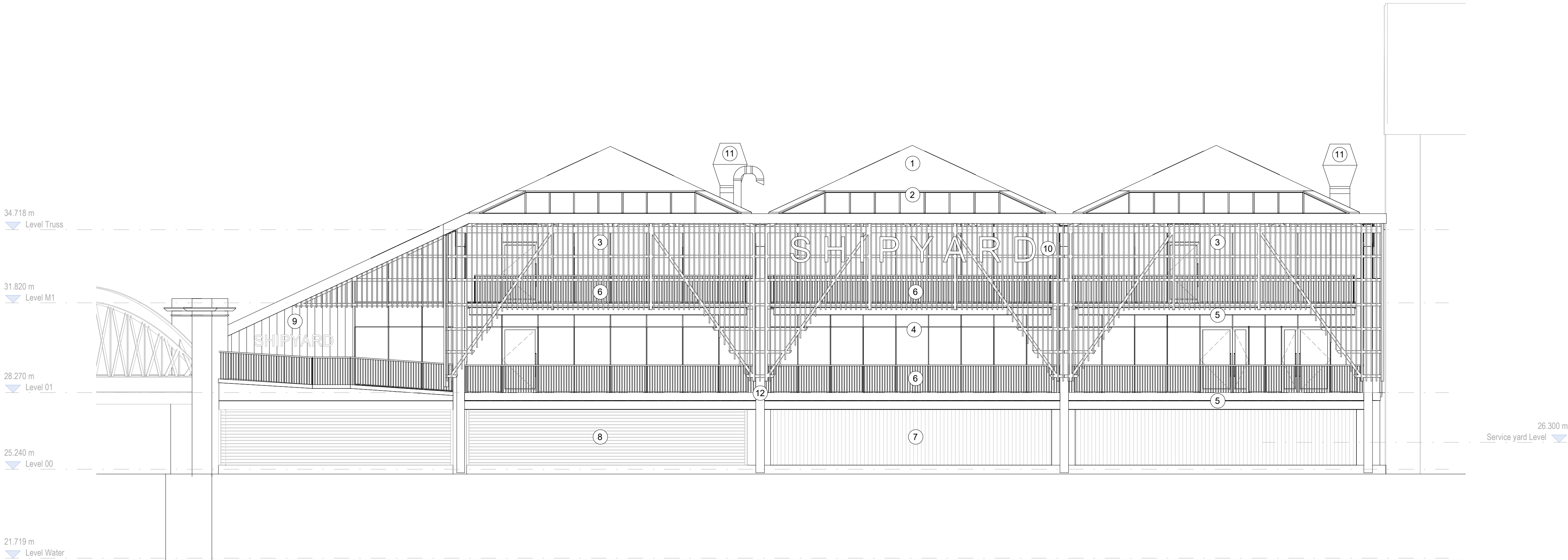
Title
Proposed North-East Elevation
New York Street

Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/21	GL	NS

Drawing No.	Rev.
200097-3DR-ZZ-DR-A-08112	

KEY

- 1 New ribbed metal roof finish in black grey
- 2 New framed roof skylights
- 3 New slatted timber cladding in line with the original form
- 4 New curtain wall glazing and access doors in black grey
- 5 New external terrace with composite decking
- 6 New metal balustrade in black grey
- 7 New timber cladding in dark grey
- 8 New metal louvre screen in black grey
- 9 New painted signage
- 10 New signage in black fixed to the face of timber cladding
- 11 New extract air discharge
- 12 Existing structure to be retained and made good



Notes

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WATER ST, MANCHESTER

Title
Proposed North-West Elevation
River Irwell

Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/21	GL	NS

Drawing No.	Rev.
200097-3DR-ZZ-DR-A-08113	

KEY

- 1 New ribbed metal roof finish in black grey
- 2 New framed roof skylights
- 3 New curtain wall with solid metal panels in mid grey
- 4 New metal louvre in curtain wall in dark grey
- 5 New slatted timber cladding in line with the original form
- 6 New metal balustrade in black grey
- 7 New extract air discharge
- 8 Existing structure to be retained and made good
- 9 New metal framed screen to service yard in black grey
- 10 Existing ground floor car park



Notes

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Title

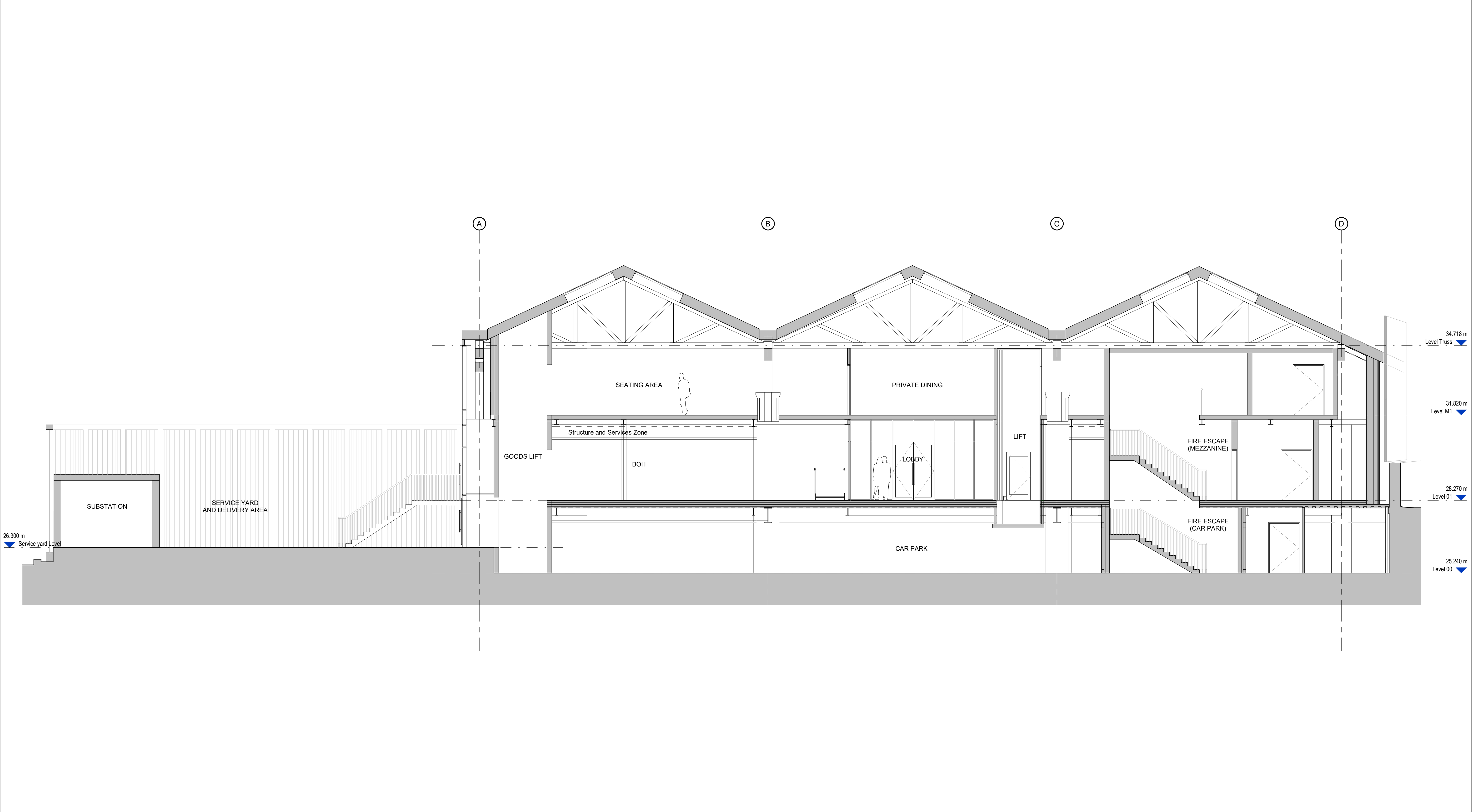
Proposed South-West Elevation
Service Yard

Scale	Size	Date	Drawn	Checked
1 : 100	A1	26/08/22	GL	NS

Drawing No.

200097-3DR-ZZ-DR-A-08114

Rev.



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SHIPYARD
WATER ST, MANCHESTER

Title
Proposed GA Section A-A

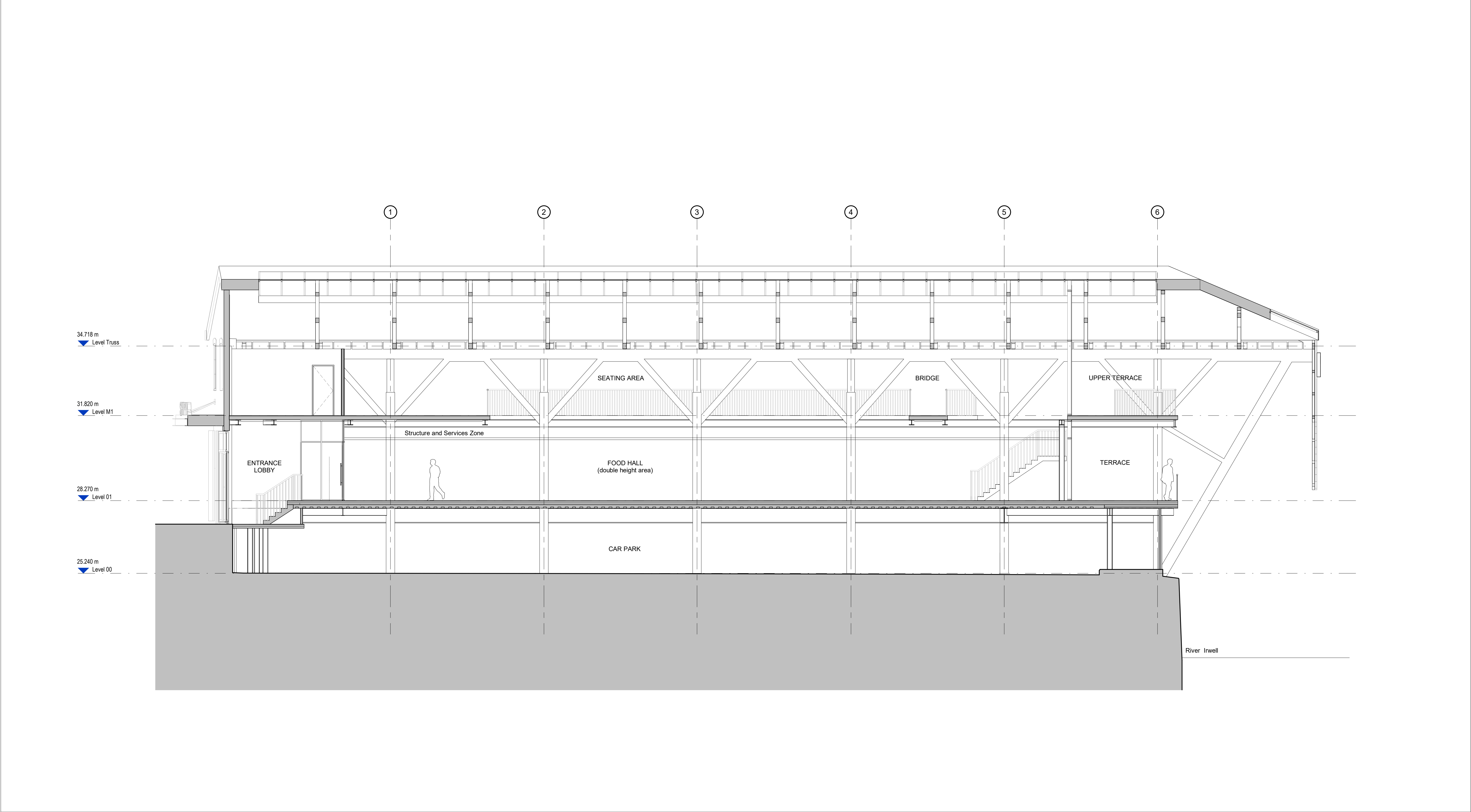
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Drawing No. 200097-3DR-ZZ-DR-A-08211

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Project
SHIPYARD
WATER ST, MANCHESTER

Title
Proposed GA Section B-B

Scale	Size	Date	Drawn	Checked
1 : 75	A1	29/03/22	GL	NS

Drawing No.	Rev.
200097-3DR-ZZ-DR-A-08212	

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APPENDIX K

EXISTING SURFACE WATER RUNOFF ESTIMATE

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
FSR Region	England and Wales	Additional Storage (m³/ha)	0.0
M5-60 (mm)	17.000	Check Discharge Rate(s)	✓
Ratio-R	0.400	1 year (l/s)	33.3
Summer CV	0.750	30 year (l/s)	77.0
Winter CV	0.840	100 year (l/s)	96.7
Analysis Speed	Normal	Check Discharge Volume	✓
Skip Steady State	✓	100 year 360 minute (m³)	98

Storm Durations

15	60	180	360	600	960	2160
30	120	240	480	720	1440	2880

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	0	0	0

Pre-development Discharge Rate

Site Makeup	Brownfield	Time of Concentration (mins)	4.00
Brownfield Method	MRM	Betterment (%)	0
Contributing Area (ha)	0.200	Q 1 year (l/s)	33.3
PIMP (%)	100	Q 30 year (l/s)	77.0
CV	0.900	Q 100 year (l/s)	96.7

Pre-development Discharge Volume

Site Makeup	Brownfield	CV	0.900	Betterment (%)	0
Brownfield Method	MRM	Return Period (years)	100	PR	0.900
Contributing Area (ha)	0.200	Climate Change (%)	0	Runoff Volume (m³)	98
PIMP (%)	100	Storm Duration (mins)	360		