



Hydrotec & Engineering Consultants

Develop Design Deliver

Drainage Strategy

**Land between 69-97 Rochdale Road & York
Street**

Bury

November 2024

CLIENT:

I Planning Services

Reference: 24/IPS/drainage/Rochdale Rd/Bury

INSTRUCTION:

Hydrotec and Engineering Consultants was commissioned by I Planning Services to carry out a drainage strategy for the proposed retrospective communal car park development on the land between 69-97 Rochdale Road and York Street, Bury.

SCHEME:

A communal car park development for circa 40cars.

REQUIREMENT:

Surface water drainage strategy for the proposed retrospective communal car park development to assist the planning application's requirement.

DOCUMENT REVIEW & APPROVAL

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Executive Summary

A flood risk assessment (FRA) and surface water drainage strategy were conducted to assist the planning application for the proposed development on the land between 69-97 Rochdale Road and York Street, Bury. The national grid reference number of the development site is SD 81065 10800 (“the Site”). The proposed development is the retrospective communal car park development with associated landscape amenities.

The present FRA and surface water drainage strategy of the Site were made with the available information including the latest Environment Agency’s (EA) flood maps, FEH hydrological data, topographical elevation data (LiDAR and survey), soil map data and sewer maps data of United Utilities.

The present investigation suggests that the Site is in flood zone 1, and therefore, the Site is considered to be out of fluvial and coastal flood risk.

The Site is at a low surface water flood risk - according to the EA’s flood map; moreover, the hydrological and topographical elevation data suggest that the impact of the overland flow from the Site’s surroundings would be minimal. The Site is not at risk of groundwater or reservoir flows. The Site is also not considered to be a foul water flood risk.

The proposed development would not increase the impervious surface area compared to the existing condition. Consequently, the impermeable land of the proposed development would not substantially deteriorate the surface water drainage of the Site itself or its surrounding areas due to the excess surface water runoff.

The soil types beneath the ground would have a good infiltration rate but it would not be suitable for soakaway design due to vehicular movement and space restrictions. However, porous pavements under the parking areas would be installed, attenuating on-site surface water runoff in addition to reasonable water quality measures.

There is no watercourse in close proximity to the Site and there is no surface water sewer drainage network in the surrounding areas. Thus, the outfall of the excess runoff would be discharged to

the existing combined sewer drainage network located under Back Rochdale Road. It should be noted that there is an existing sewer manhole in close proximity to the Site on Rochdale Road.

Thus, excess runoff from the Site would be discharged by gravity flow to the existing sewer manhole. The diameter of the proposed surface water drainage pipes would be 150mm with a slope of 1 in 80 or more to assist in gravity flow.

Therefore, the proposed eco-friendly drainage strategy would assist in a better drainage system compared to the existing condition.

The periodic inspection and maintenance of the proposed drainage features including the water quality of the outfalls would be maintained, and the owner of the Site would be responsible for these services.

The general observation of the United Utilities sewer drainage networks in the surrounding area suggests that the proposed development would not make any significant impact on the existing sewer drainage network systems. However, a confirmation of consent agreement from United Utilities will be obtained before implementing the proposed drainage layout.

The Site would not be a risk to surface water drainage, taking into consideration the proposed drainage strategy and therefore the finished ground floor level of the proposed car park would be at the existing ground level. The access and egress from the Site during any incident would be at Back Rochdale Road located in front of the Site.

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Abbreviations

AEP	Annual Exceedance Probability
CCA	Climate Change Allowance
DWF	Dry Weather Flow
DTM	Digital Terrain Model
EA	Environment Agency
FEH	Flood Estimation Handbook
FRA	Flood Risk Assessment
LiDAR	Light Detection and Ranging
LLFA	Lead Local Flood Authority

LPA	Local Planning Authority
mAOD	meter Above Ordnance Datum
NGR	National Grid Reference
OS Map	Ordnance Survey Map
SuDS	Sustainable Drainage Systems

1 Introduction

The flood risk and sustainable drainage are important aspects of any new and existing development sites. The flood, which is being enhanced in the recent time due to the global climate change effects, could make vulnerable the properties, communities, and many aspects of human life. Therefore, it is important nowadays to assess the flood risk of any new developments; and the National Planning Policy Framework¹ (NPPF) guidelines have given the authority to the Environment Agency² (EA) and local planning authority (LPA) to make sure that any developments should be considered the flood risk assessment from all possible sources for the planning authorisation. These are not only securing the minimum risk at the proposed development site but also reducing the risk to the other existing developments.

Generally, a new development would provide an improvement with better facilities to the users and the communities, but it should also make a satisfaction that the proposed development would not and should not deteriorate to on-site and/or off-site other existing developments in the surrounding areas during its design life. Therefore, it has been a policy of the NPPF, lead local flood authority (LLFA), LPA, water utility companies and other relevant authorities to assess and manage the sustainable surface water drainage systems of all possible sources for a proposed development before granting the planning permission. Thus, the aim of the present flood risk assessment and drainage strategy is to assist planners and designers with the design of blue-green sustainable drainage systems for the proposed communal car park development and reduce the flood risk to other existing developments in the surrounding areas.

1.1 Background of the project site

The proposed development (hereafter “the Site”) is the retrospective communal car park development with associated landscape amenities. According to the NPPF guidelines, the proposed development would therefore be classified as a less vulnerable category in terms of flood risk vulnerability classification³. The Site is located on the land between 69-97 Rochdale Road and York Street, Bury. The national grid reference number (NGR) of the Site is SD 81065

¹ [National Planning Policy Framework - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/262352/nppf-2012.pdf)

² [Flood risk assessments if you're applying for planning permission - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/262352/nppf-2012.pdf)

³ [National Planning Policy Framework - Annex 3: Flood risk vulnerability classification - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/262352/nppf-2012.pdf)

10800. The geographical boundary of the project site lies within Bury Metropolitan Borough Council's remit who is the lead local flood authority (LLFA), providing advice and guidance for sustainable drainage systems (SuDS) for this development site. The existing conditions of the Site comprise a hard and compacted open land surface utilised for car parking facilities. Rochdale Road is located adjacent to the Site's southern boundary and York Street is situated on the eastern boundary. Whereas Back Rochdale Road, which is the main access road to the proposed car park, is located adjacent to the northern boundary. There is no open watercourse in close proximity to the Site, whereas River Roch is located to the southeast, approximately 720m away from the Site and River Irwell is located to the west, approximately 1200m away from the Site. There is a culverted watercourse situated on the west side, approximately 60m away from the Site, and conveying flow southerly.

Noor-Ul-Islam mosque, the main worship users of the proposed car park, is situated opposite the proposed car park, i.e. to the north.

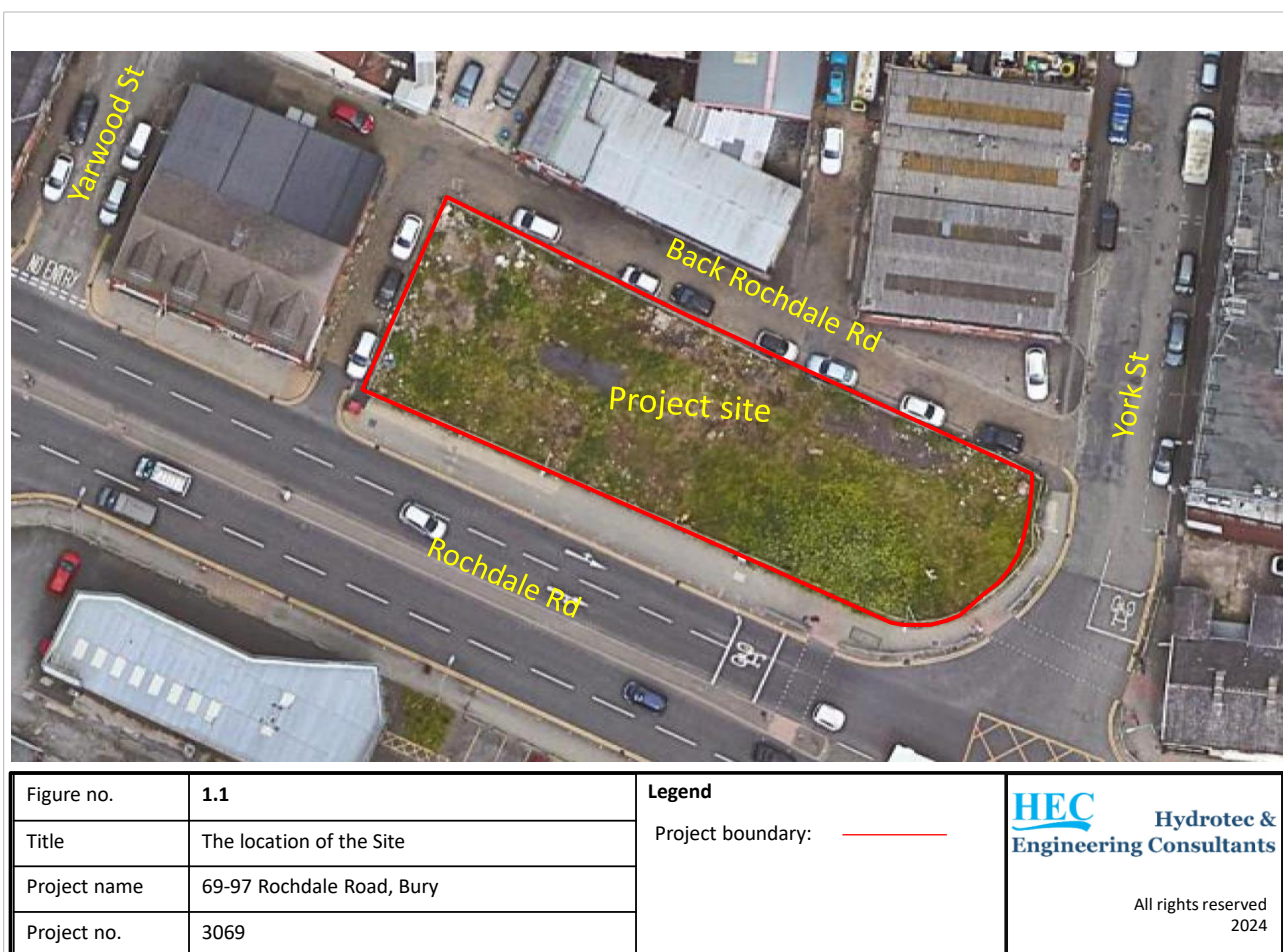


Figure 1.1: The location and existing condition of the proposed development site.

Generally, the surrounding areas consist of mixed commercial and residential buildings. A satellite photograph of the existing condition of the project site is shown in Figure 1.1, and the layout of the proposed development is given in Figure 1.2 in addition to the detailed layouts of the existing and proposed developments in Appendix I. The total land surface of the proposed development is approximately 990m².

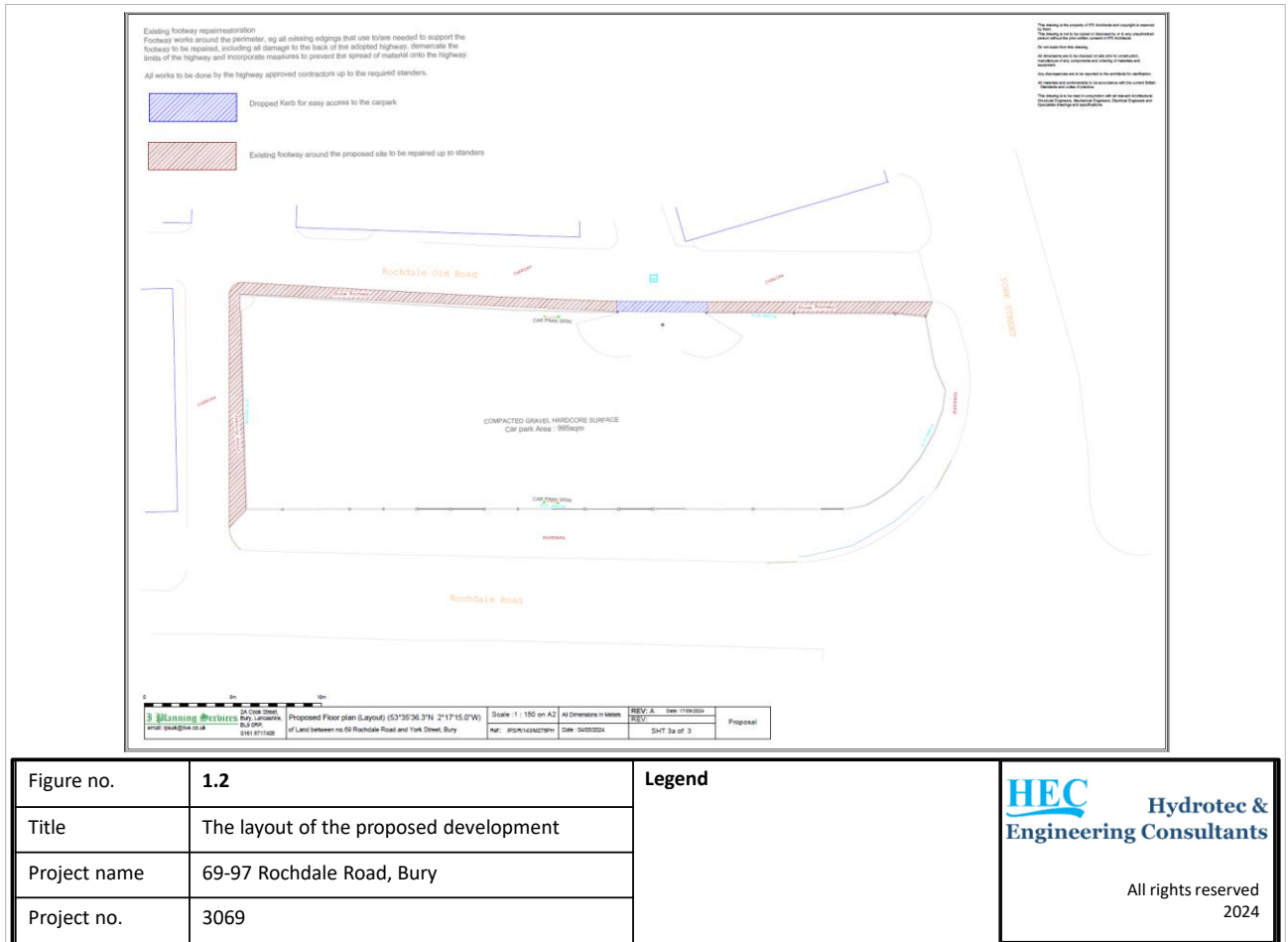


Figure 1.2: The layout of the proposed development.

2 Potential sources of the flood risk

The proposed development is the retrospective application for a communal car park with associated landscape amenities; thus, it is a requirement by LLFA to ensure the provision of appropriate flood risk assessment and sustainable drainage of the surface water within the

development, to promote safe and resilient communities, assisting by Environment Agency⁴ (EA) and LLFA.

2.1 Fluvial and coastal flood risk

The Environment Agency's flood map⁵ indicates that the Site is located in flood zone 1, a risk of flooding less than 0.1% AEP (Annual Exceedance Probability), i.e. less than 1 in 1000-year flood event for the fluvial or coastal flows (Figure 2.1).

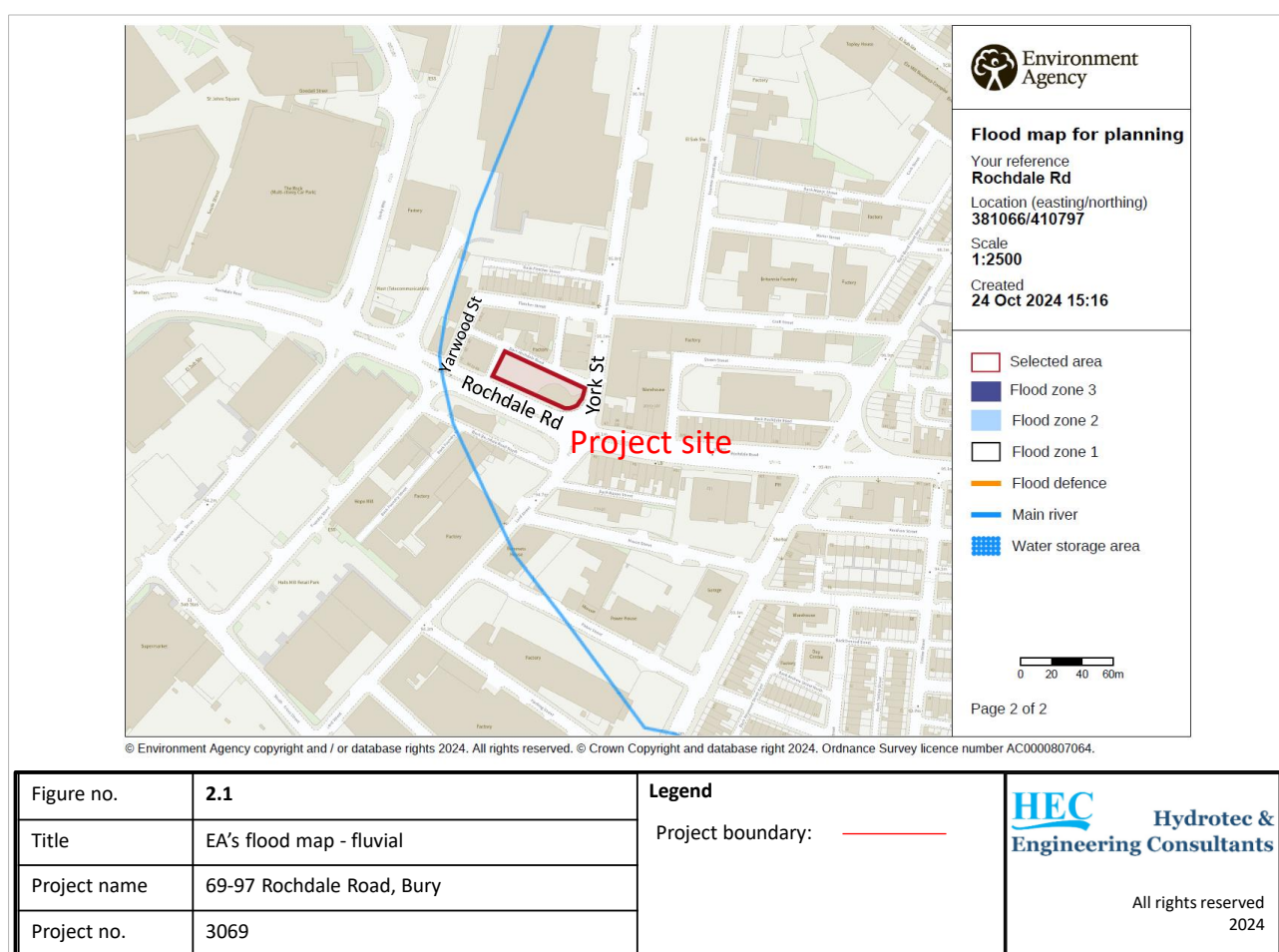


Figure 2.1: The fluvial and coastal flood risk at the Site - flood zone 1, the land having flood risk less than 0.1% AEP fluvial or coastal flows (reference – EA's flood map⁶).

⁴ [Flood risk assessments if you're applying for planning permission - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/flood-risk-assessments-if-youre-applying-for-planning-permission)

⁵ [Flood map for planning - GOV.UK \(flood-map-for-planning.service.gov.uk\)](https://www.gov.uk/government/publications/flood-map-for-planning)

⁶ [Flood map for planning - GOV.UK \(flood-map-for-planning.service.gov.uk\)](https://www.gov.uk/government/publications/flood-map-for-planning)

Therefore, the proposed development site is considered to be out of either fluvial or coastal flows. In addition, the EA's flood map⁷ suggests that the Site is not a flood risk from the reservoir or groundwater flows (Figure 2.2), however, the land adjacent to the Site could be a flood risk from the reservoir or groundwater flows when river levels are normal.

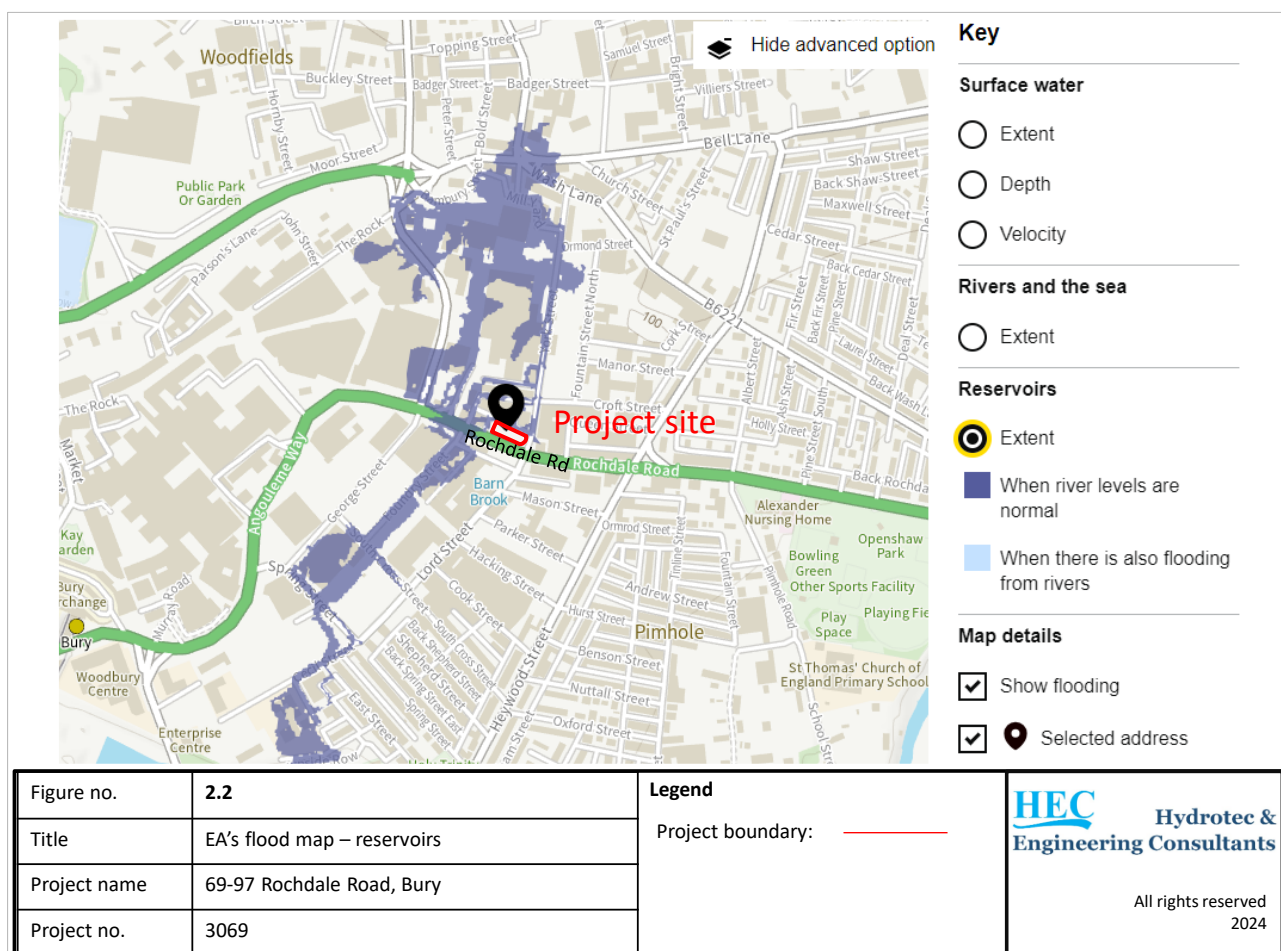


Figure 2.2: Groundwater/reservoir flow at the Site – a low flood risk against the groundwater or reservoir flows (reference – EA's flood map⁸).

2.2 Surface water drainage

The guidance of the Environment Agency and LLFA based on the national planning policy framework⁹ (NPPF) recommends avoiding the increase in surface water flooding through

⁷ [Check the long term flood risk for an area in England - GOV.UK \(flood-warning-information.service.gov.uk\)](https://www.gov.uk/flood-warning-information.service.gov.uk)

⁸ [Check the long term flood risk for an area in England - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

⁹ Op. cit.

requirements for sustainable drainage systems (SuDS) and minimising the impervious surface area. Moreover, the NPPF para 167 suggests that “when determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment.” Therefore, the surface water drainage measures should have a neutral or better effect on the risk of flooding both on and off the site, taking into account rain falling on the site and runoff from adjacent areas.

NPPF, LLFA and EA’s guidance takes a presumption against development in a 1 in 30-year hydrological event to the surface water drainage. Development should only be allowed in an area at risk from a 1 in 100-year (with climate change allowance (CCA)) if surface water drainage is manageable without any major risk to the development itself or other surrounding areas. It should be shown that in such cases surface water flows can be contained within the development and any flooding flood volumes do not affect third-party lands, flood the property, or obstruct the key access/egress routes.

Therefore, to achieve the guidance’s requirements for the surface water drainage at the Site, the surface water flooding mechanism at the on-site and off-site was assessed with appropriate consideration.

The EA’s surface water flood map¹⁰ (Figure 2.3) indicates that the Site would stay at a low flood risk to surface water drainage (i.e. a low risk means that each year this area has a chance of flooding of between 0.1% AEP and 1% AEP). Therefore, the Site would be considered a low hazard to surface water drainage.

Generally, the surface water overland flow is highly affected by the topographical features which define hydrological sub-catchments. For a better understanding of the surface water runoff around the Site, the hydrological sub-catchments were obtained from the Flood Estimation Handbook¹¹ (FEH22) and the data are presented in Figure 2.4.

¹⁰ [Your long term flood risk assessment - GOV.UK \(check-long-term-flood-risk.service.gov.uk\)](https://www.gov.uk/check-long-term-flood-risk)

¹¹ [Map - FEH Web Service \(ceh.ac.uk\)](https://www.ceh.ac.uk/map)

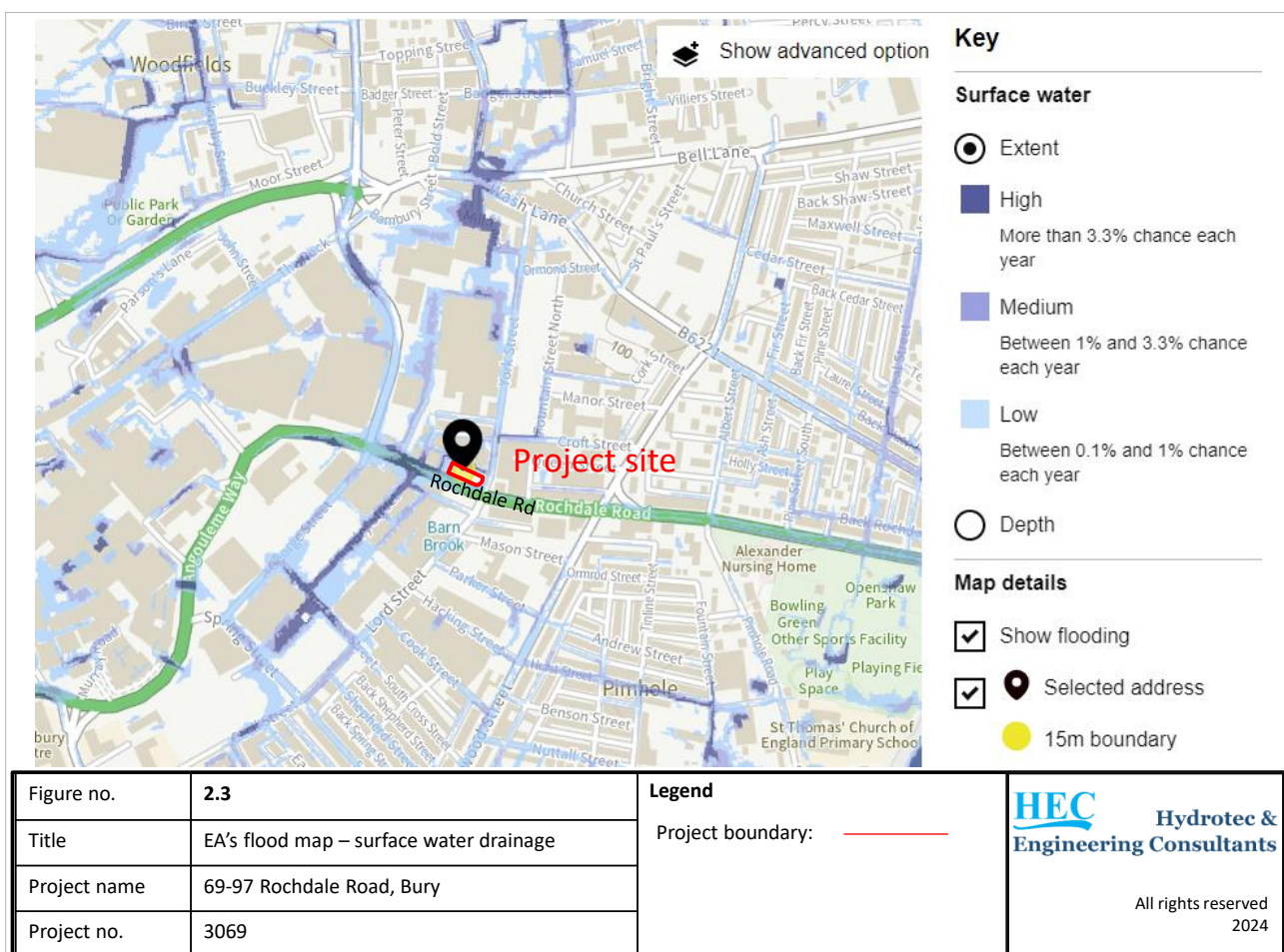


Figure 2.3: Surface water drainage at the Site – a low flood risk against the surface water flow (reference – EA's flood map¹²).

The hydrological sub-catchments that could have a possible impact on the Site are presented in Figure 2.4, and the indicative flow paths of the surface water runoff are shown in the blue arrow lines. The Site is located in a hydrological sub-catchment which drains the overland flow southeasterly into River Roch located in the southeast, approximately 750m away. Surface water runoff from the upstream of the Site, i.e. approximately 0.05km² surface area of this sub-catchment, would pass towards the Site. Thus, this relatively small upstream surface area would not have a significant impact on the Site. Moreover, the existing infrastructures and drainage networks would intercept most of the overland flow in the upstream sub-catchment. Thus, a very limited overland flow would reach the Site from upstream; consequently, the Site would not be impacted by the off-site surface water runoff.

¹² [Check the long term flood risk for an area in England - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/check-the-long-term-flood-risk-for-an-area-in-england)

The adjacent sub-catchment located on the west side would convey the overland flow southwesterly through local drains and would not have any contribution to the overland flow towards the Site. Another adjacent sub-catchment located on the north side would drain the overland flow southerly through local drains into River Roch and would stay away from any overland contribution to the Site. The sub-catchment located on the northeast side would convey the overland flow laterally into River Roch and would stay away from any overland flow to the Site. The northern sub-catchment would convey the surface water runoff through the local drains and discharge to River Roch located far north. Finally, the two far western sub-catchments would convey the surface water runoff into River Irwell and would stay out of the Site. Thus, the effective overland flow contribution to the Site from the adjacent areas would be minimal.

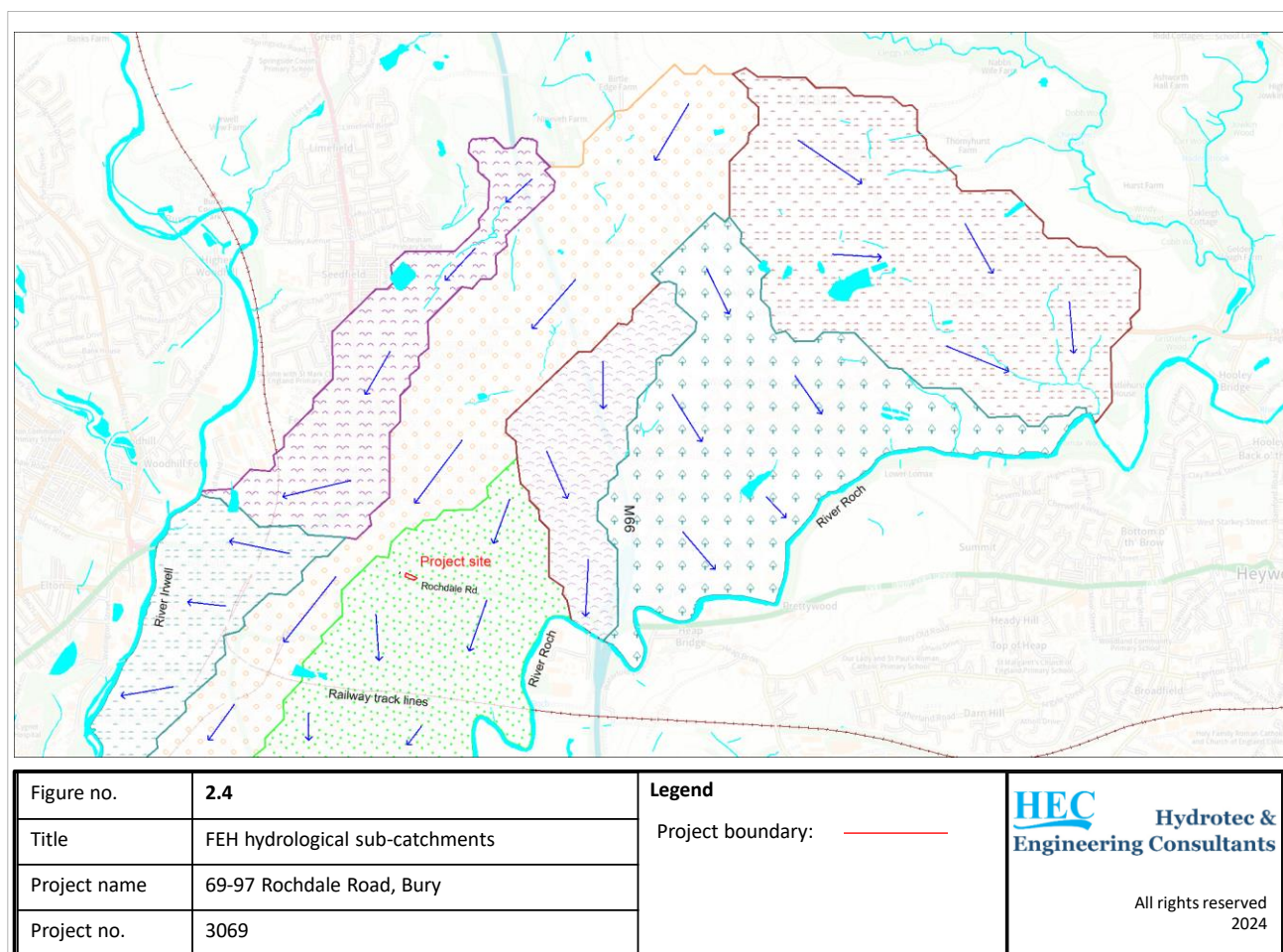


Figure 2.4: The hydrological sub-catchments around the Site (indicative overland flow paths in blue arrow lines); reference of the FEH22¹³.

¹³ op. cit.

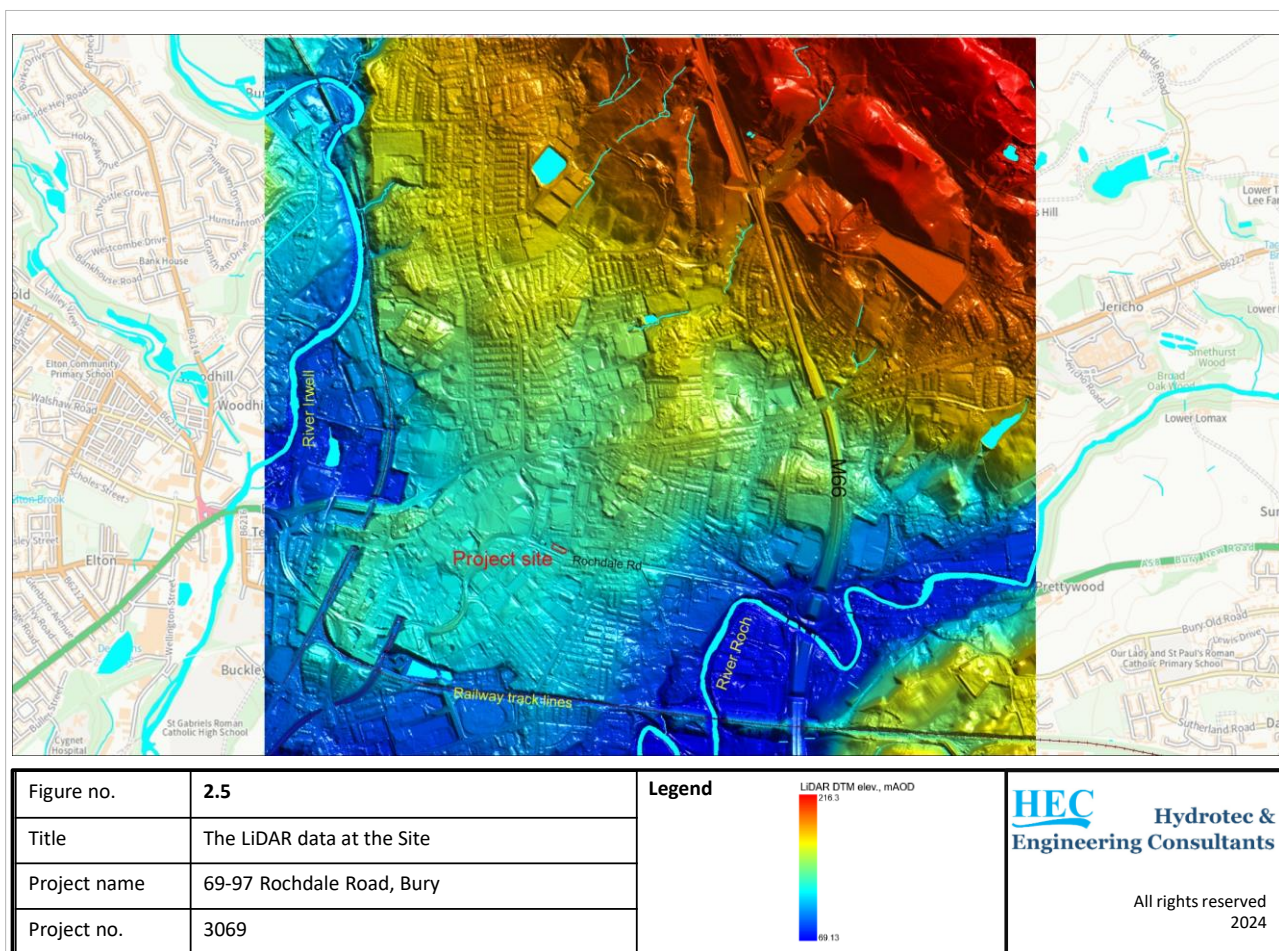


Figure 2.5: The LiDAR topographical elevation at the Site.

The intensity and magnitude of the overland flow and path on the ground surface would have a significant effect due to the ground elevation. Therefore, for an understanding of the complexity of the overland flow mechanisms, the topographical elevation at the Site was assessed based on the recent LiDAR¹⁴ (Light Detection and Ranging) DTM (Digital Terrain Model) data (Figure 2.5) and topographical survey data (see Appendix II).

Topographical survey data in Appendix II indicate that the existing ground level at the Site is mostly flat. The ground elevation at the Site varies approximately from 62.0mAOD to 61.3mAOD.

¹⁴ [Defra Data Services Platform](#)

The LiDAR elevation data suggest that the ground level in the far northern area is relatively higher and declines to the south. However, most of the overland flow from the northern area would be channelised by the local drains and discharged to River Roch and River Irwell. Therefore, only a part of this area, particularly the adjacent to the northern side, would contribute to surface water runoff towards the south. However, as mentioned earlier, the overland flow from the upstream would be intercepted by the existing infrastructures and drainage networks; subsequently, there would be a very minimal impact on the Site from the upstream runoff.

Therefore, the contributing surface water runoff from the off-site to the Site would be relatively low. Subsequently, the Site would not be considered any off-site surface water flood risk. Thus, the surface water runoff generated at the proposed car park would mainly be from the rainfall on the Site. Subsequently, a drainage strategy for this excess-generated surface water runoff would be required and managed by sustainable drainage systems (SuDS), according to the LLFA guidance.

2.3 Sewer flood risk

The proposed development is the retrospective development of a communal car park with associated landscape amenities. Therefore, the proposed development would not generate foul water flow by the users.

The sewer drainage network data (see also Appendix III) obtained from United Utilities indicate that the existing sewer drainage network systems around the Site are combined, i.e. conveying surface and foul water flow through the same pipe in gravity flow. There is an existing 300mm in diameter sewer under Back Rochdale Road and conveys the flow westerly. There is a manhole located in front of the entrance of the proposed car park. Thus, it would be suitable to discharge the excess runoff by the proposed car park into them. Moreover, there is a 533mmx914mm sewer located under York Street conveying flow southerly to Rochdale Road's sewer. There is a manhole located in close proximity to the northeast corner of the proposed development. Thus, this would be a secondary option to discharge the excess runoff into them.

There are no details of the cover and invert levels of the manholes in the United Utilities sewer drainage network. Therefore, a CCTV sewer drainage survey would be carried out in order to get

information on the existing condition of sewer pipes including the cover and invert levels of the manhole on Back Rochdale Road.

The general observation of the sewer drainage networks in the surrounding areas suggests that the proposed development would not be a sewer flood risk.

3 Drainage strategy and attenuation storage requirement

The proposed development is the retrospective construction of a communal car park with associated landscape amenities. The proposed development is therefore classified as a less vulnerable category - according to the NPPF flood risk vulnerability classification¹⁵.

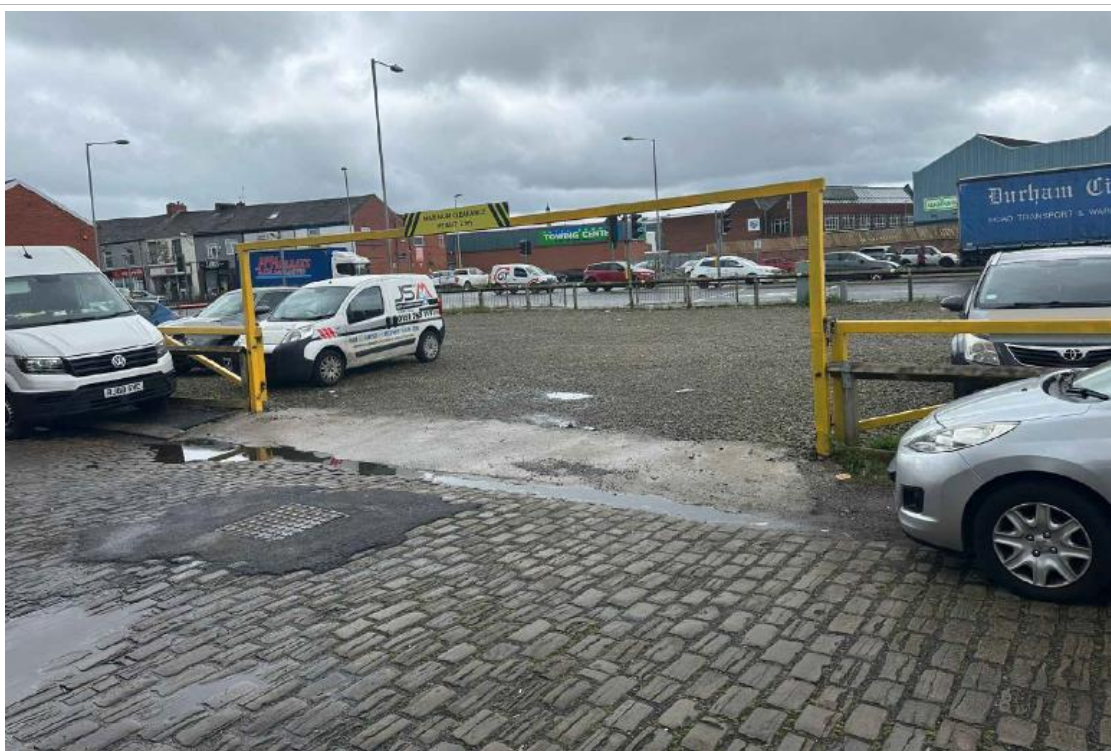


Figure no.	3.1	Legend	 All rights reserved 2024
Title	Existing ground surface at the Site		
Project name	69-97 Rochdale Road, Bury		
Project no.	3069		

Figure 3.1: The photograph of the existing ground surface condition at the Site.

¹⁵ [National Planning Policy Framework - Annex 3: Flood risk vulnerability classification - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/national-planning-policy-framework-annex-3-flood-risk-vulnerability-classification-guidance)

At present, almost all existing ground surfaces on the Site are covered by compacted gravel and utilised for car parking, see also a recent photograph in Figure 3.1. The total surface area of the proposed development site is approximately 990m². Thus, all surfaces on the Site would generate surface water runoff, flow around the Site and drain off, particularly on Back Rochdale Road.

Therefore, the proposed development would not increase excess surface water runoff; consequently, the proposed development would not have any detrimental impact on the surrounding area by the generated surface water runoff compared to the existing conditions. Moreover, the layout of the proposed development would reduce the impact of the excess surface water runoff. However, to comply with the NPPF's local plan policy and LLFA guidelines, the development proposal should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. Subsequently, some measures for the generated surface water runoff would be taken to manage on-site.

One of the main objectives of the surface water attenuation storage is that during the storm event, the generated surface water runoff within the Site would be retained on-site for some time. Therefore, the peak flow in the watercourses and/or drainage networks would not be increased substantially to ease the flood risk in the downstream. However, it is an acceptable policy of the LLFA with regard to the greenfield runoff rate to allow some discharge from the development site into the nearby watercourses and/or drainage network systems to reduce the cost and land space for the attenuation storage within the development site.

To assess the feasibility of the attenuation for the generated surface water runoff through underground infiltration, the soil types beneath the Site were assessed based on the Soils map data of Cranfield University¹⁶. Generally, soil types beneath the Site are freely draining and slightly acid-loamy soils (Figure 3.2) and, therefore, the infiltration rate of the soils beneath the Site would be relatively good. However, due to the space constraints and vehicles' movement on the Site, it would not be appropriate to implement a soakaway design to attenuate the excess surface water. In addition, the surroundings of the Site would pose a risk to the groundwater flow and therefore the underground attenuation storage would be susceptible to the groundwater flow.

¹⁶ <https://www.landis.org.uk/>

Thus, it would not be sustainable for a longer period for attenuating through underground infiltration.



Figure 3.2: The soil types beneath the Site – freely draining and slightly acid-loamy soils (reference - Soilscapes map data of Cranfield University¹⁷).

At present, all the on-site surface water runoff is discharged to the nearby overground. The proposed development would not increase impermeable land. Thus, to comply with the NPPF’s local plan policy and LLFA guidelines and to improve the sustainability of the wider drainage systems, environmental impact and local biodiversity in the surrounding areas – in the proposed surface water drainage strategy - there would be porous pavements in the car parking bays and ACO drains to intercept the runoff on the Site (see an example of ACO drain in Appendix V).

¹⁷ [Soilscapes soil types viewer - National Soil Resources Institute. Cranfield University \(landis.org.uk\)](https://landis.org.uk/)

The porous pavement in the car park would have some reasonable water quality measures in addition to the surface water attenuation.

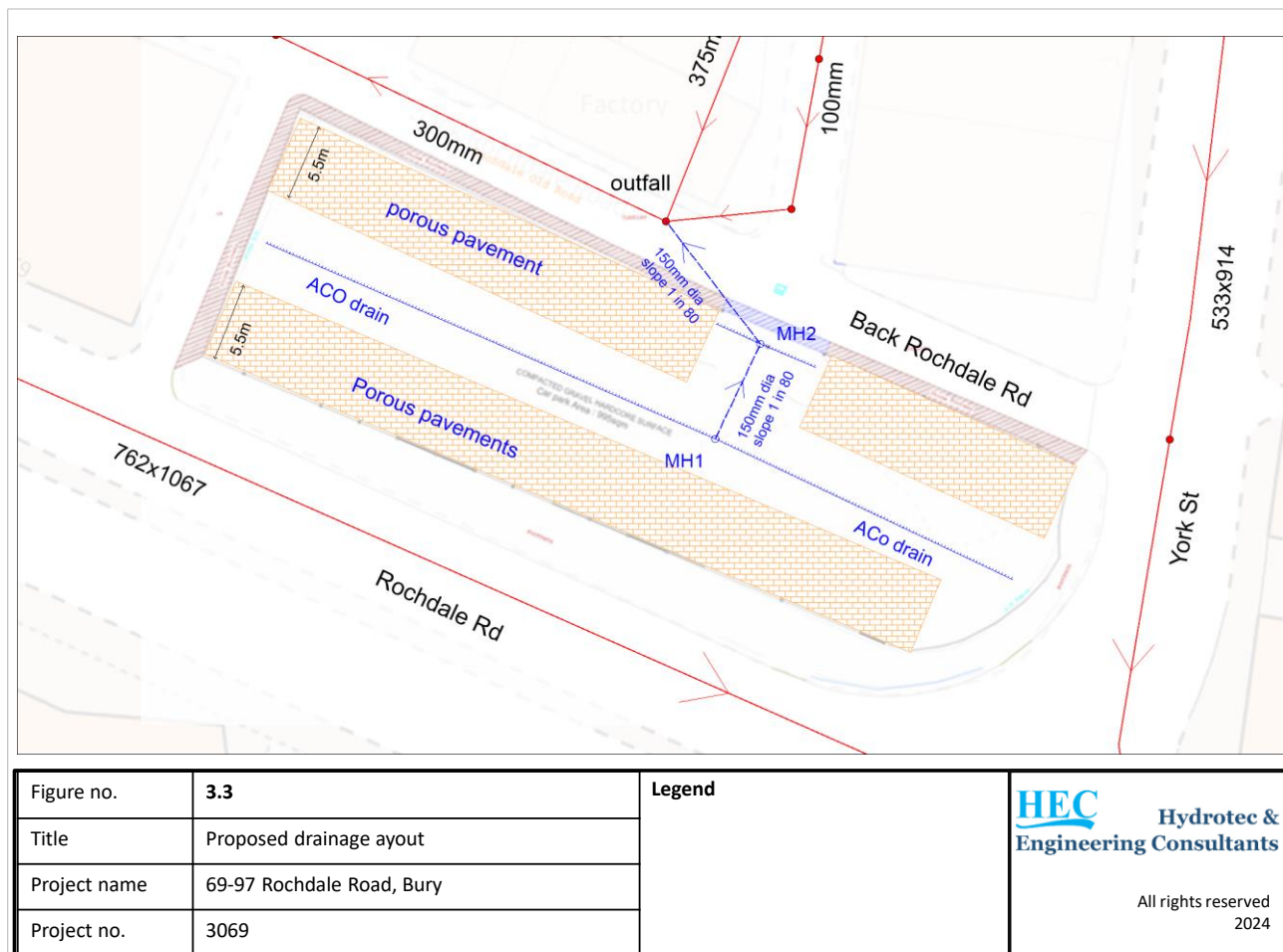


Figure 3.3: The layout of the proposed drainage strategy.

There is no watercourse in close proximity to the Site and it would not be feasible to attenuate excess runoff by a detention pond. There is no surface water sewer drainage network in close proximity to the Site. Thus, the excess surface water runoff would be discharged to the existing combined sewer under Back Rochdale Road.

The total surface area of the porous pavements (see an example of pervious pavement in Appendix VI) would be approximately 550m². The proposed SuDS features and drainage layout are shown in Figure 4.1, see also in Appendix IV for more details. The diameter of the drainage pipe would be 150mm and the gradient of the pipe would be 1 in 80 or more to assist in gravity flow.

The general observation of the sewer drainage networks in the surrounding areas suggests that the proposed development would not significantly impact the existing sewer drainage network systems.

It should, however, be noted that consent for a confirmation of the agreement from the United Utilities will be obtained before the construction of the drainage layout.

4 Finished floor level and access/egress from the Site

The proposed development, which is the retrospective construction of a communal car park with associated landscape amenities, is classified as a less vulnerable category, according to the NPPF flood risk vulnerability classification¹⁸.

The Site would not have a flood risk from fluvial and/or coastal flows. Moreover, the surface water drainage would have a low risk and would have a minimal impact on the Site. Therefore, the finished ground floor level of the proposed car park would be the same as the existing ground floor level, i.e. approximately 61.3mAOD.

There would not be any issues with access and egress from the proposed car park during evacuation and emergency vehicles' movement. Back Rochdale Road, which is located in front of the access to the Site, would be used as an access and egress during any unexpected incident.

5 Management and maintenance plan of drainage infrastructures

The landowner of the proposed car park would be legally responsible for the management of the proposed SuDS systems including a periodic inspection and maintenance of the SuDS features and drainage infrastructures within the Site for effective and efficient performance during the design life of the development. The recommended maintenance schedules for the proposed SuDS systems are outlined below.

¹⁸ [National Planning Policy Framework - Annex 3: Flood risk vulnerability classification - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612722/National_Planning_Policy_Framework_-_Annex_3_Flood_risk_vulnerability_classification_-_Guidance.pdf)

Table 5.1: Operation and maintenance requirements for filter drains.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter (including leaf litter) and debris from the filter drain surface, access chambers and pre-treatment devices.	Monthly or as required
	Inspect filter drain surface, inlet/outlet pipework and control system for blockages, clogging, standing water and structural damage.	Monthly
	Inspect pre-treatment systems, inlet and perforated pipework for silt accumulation and establish appropriate silt removal frequencies.	Six monthly
	Remove the sediment from pre-treatment devices.	Six monthly or as required
Occasional maintenance	Remove or control tree roots where they are encroaching on the sides of the filter drain, using the recommended methods.	As required
	At locations with high pollution loads, remove the surface of the geotextile and replace, and replace the overlying filter medium.	Five yearly, or as required
	Clear perforated pipework of blockage.	As required

Table 5.2: Operation and maintenance requirements for pervious pavements.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over the whole surface).	Once a year, after autumn leaves fall or reduced frequency as required based on site-specific observation of clogging or manufacturer's recommendation - pay particular attention to areas where water runs onto the pervious surface from

Maintenance schedule	Required action	Typical frequency
		adjacent impermeable areas as this area is most likely to collect the most sediment.
Occasional maintenance	Stabilise and mow contributing and adjacent areas.	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required – once per year on less frequently used pavement
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving.	As required
	Remedial work to any depressions, rutting, and cracked or broken blocks considered detrimental to the structural performance or a hazard to users and replace lost jointing material.	As required
	Rehabilitation of surface and upper substructure by remedial sweeping.	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging).
Monitoring	Initial inspection	Monthly for three months after installation.
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action.	Three monthly, 48 hours after large storms in the first six months.
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually
	Monitor inspection chambers	Annually

6 Conclusions

A flood risk assessment and surface water drainage strategy were conducted to assist the sustainable drainage systems (SuDS) design for the proposed development on the land between 69-97 Rochdale Road and York Street, Bury. The proposed development is the retrospective communal car park development with associated landscape amenities. The Site lies within Bury Metropolitan Borough Council's remit who is the LLFA, providing advice and guidance for sustainable drainage systems for this development site.

The present flood risk assessment and drainage strategy to assist the planning application's requirement were made with available information including the latest EA's flood maps data, FEH hydrological data, topographical elevation data (LiDAR and survey), soil map data, sewer network data of United Utilities.

The present investigation suggests that the Site is in flood zone 1 and, therefore, the Site is considered to be out of fluvial and coastal flood risk.

The proposed development site is a low risk from the surface water flow - according to the EA's flood map¹⁹. Moreover, the hydrological and topographical elevation data around the Site indicate that the impact of the surface water runoff from the surrounding areas would be minimal. Thus, the surface water attenuation storage requirement for the Site would only be the generated overland flow by the surface area of the proposed development, and the overland flow from the surrounding areas was not considered. In addition, the Site is not at risk to the groundwater or reservoir flows.

The proposed development would not increase impervious area compared to the existing condition; consequently, it would not increase the surface water runoff by the on-site. However, the proposed development would rather improve the surface water drainage sustainability through the proposed drainage strategy and layout of the development. Thus, the surface water attenuation storage requirement for the Site would be the generated overland flow by the proposed car park.

¹⁹ Op.cit.

The soil types beneath the Site are freely draining and slightly acid-loamy soils with reference to the Soilsmap map data²⁰. Therefore, the infiltration rate beneath the Site would be good. However, due to vehicular movement and space restrictions, it would not be suitable to attenuate surface water by implementing of soakaway design at the Site. Moreover, the surroundings of the Site are susceptible to the groundwater flow; subsequently, it would not be sustainable to attenuate excess surface water through underground storage tanks.

There is no watercourse in close proximity to the Site and it would not be feasible to attenuate in a detention pond. There is no existing surface water sewer drainage network in the adjacent area. Therefore, part of the surface water runoff would be attenuated through porous pavement in the car parking bays. The remaining excess runoff would be discharged to the existing sewer drainage network located on Back Rochdale Road. There would be ACO drains and drainage pipes to assist in containing the flow for outfalls.

The proposed drainage pipes would be 150mm in diameter and 1 in 80 or more slope to assist in gravity flow.

The general observation of the United Utilities' sewer drainage networks in the surrounding areas suggests that the proposed development would not make any significant impact on the existing sewer drainage network systems. However, a confirmation of consent agreement from United Utilities will be obtained before the construction of the proposed drainage layout.

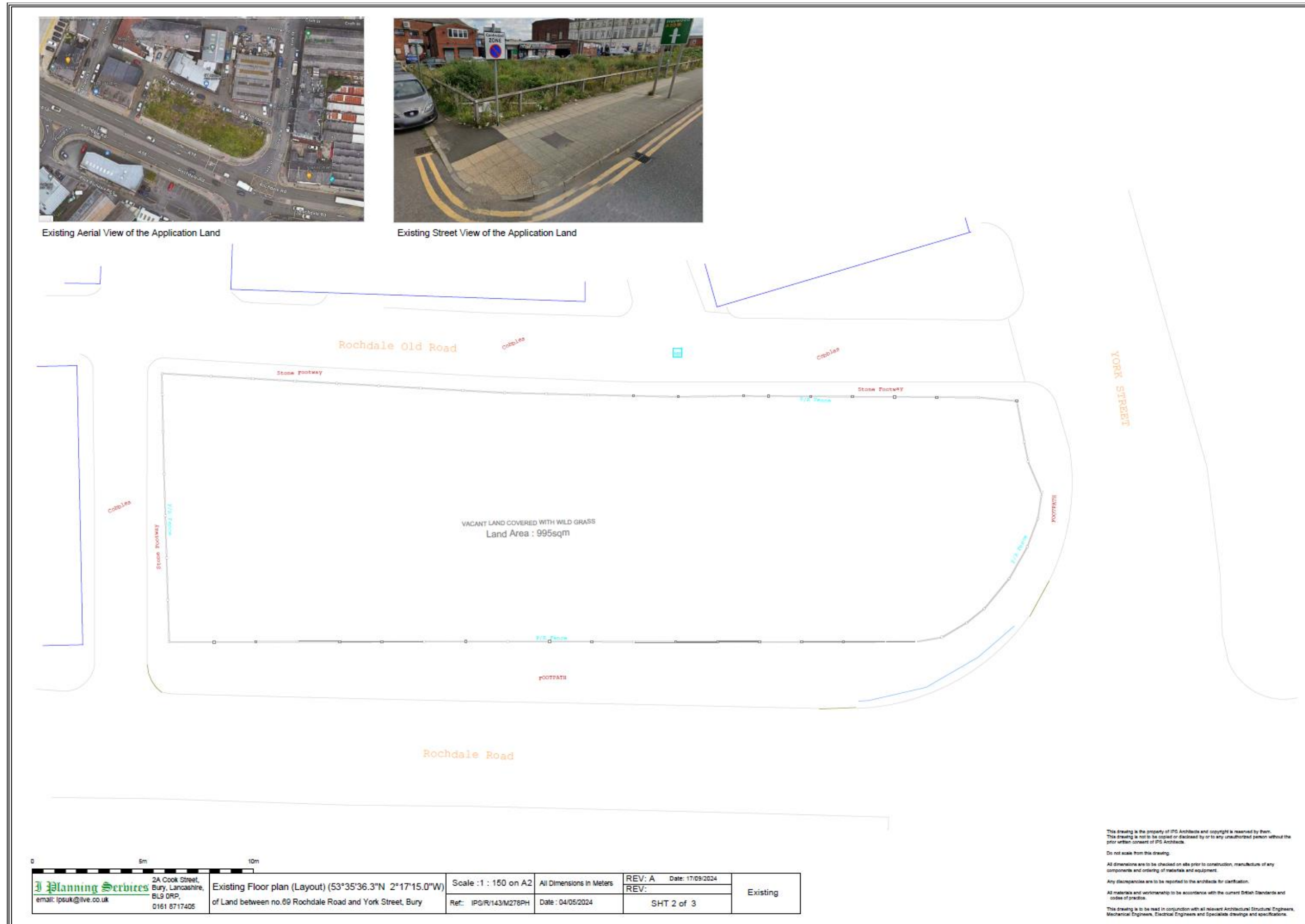
Thus, the proposed surface water drainage strategy would be sustainable during the design life of the development and would significantly improve the surface water drainage sustainability, environment and local biodiversity, and water quality compared to the existing conditions.

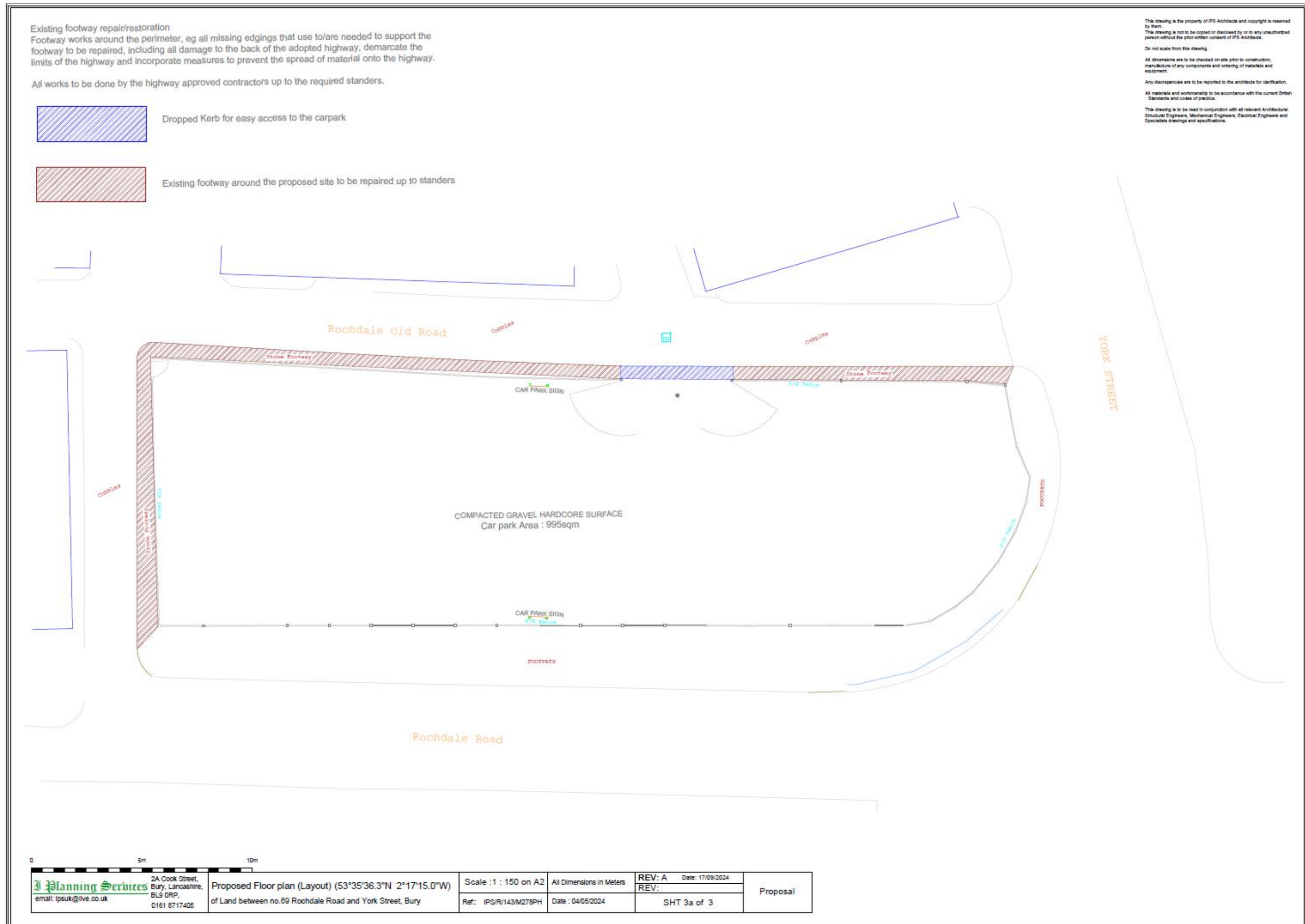
The periodic inspection and maintenance of the drainage features would be done, and the landowner of the development site would be responsible for the maintenance of the proposed drainage features for effective and efficient operation including the water quality outfalls.

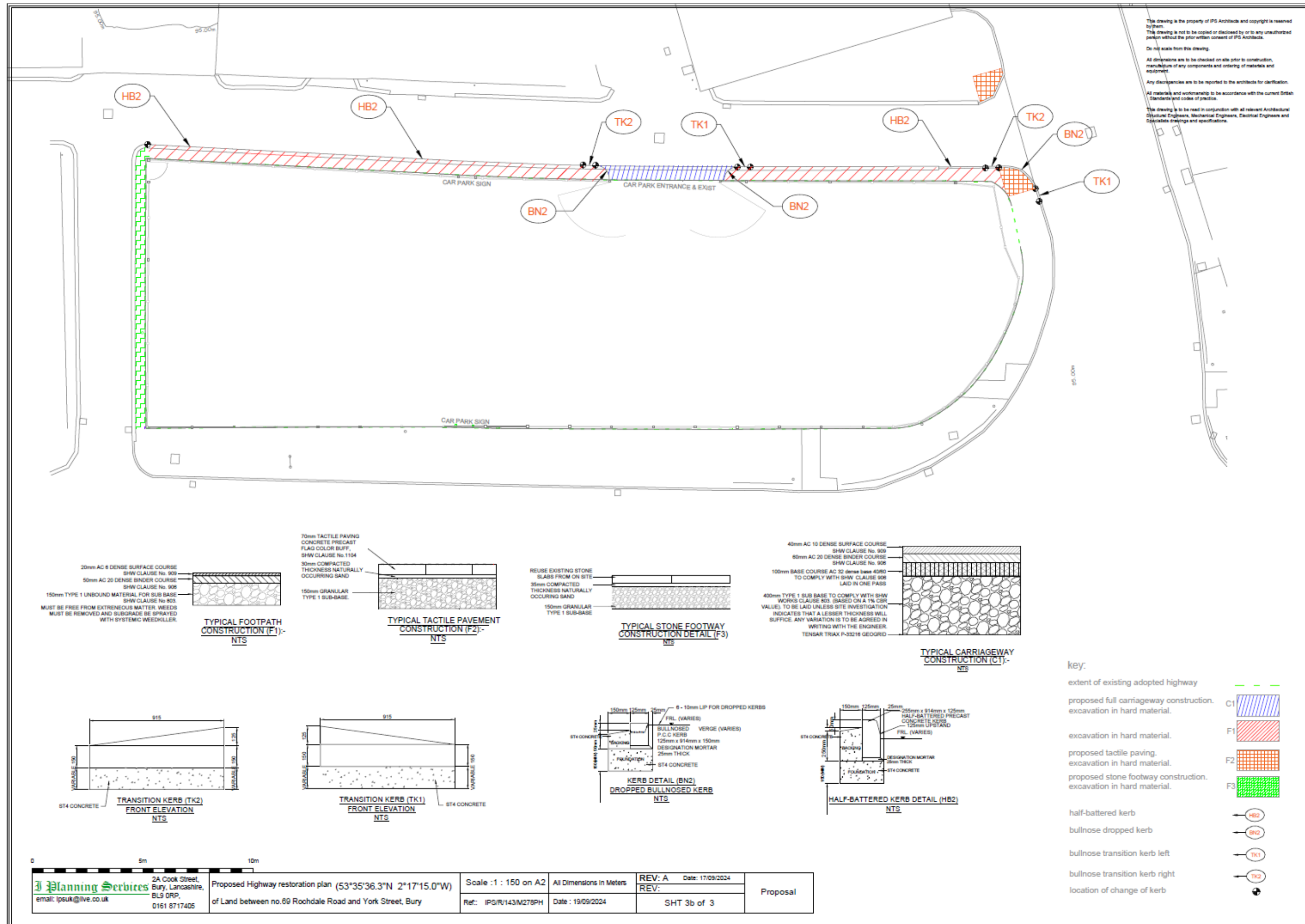
²⁰ Op.cit.

The Site is not considered to be a surface water flood risk, taking into account the proposed surface water drainage strategy. Therefore the finished ground floor level of the proposed car park would be on the existing ground level, i.e. approximately 61.3mAOD. The access and egress from the Site during any unexpected incident would be at Back Rochdale Road located in front of the excess of the car park.

Appendix I: The layout of the existing and proposed developments.







Introduction:

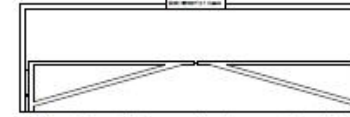
This application is proposing a change of use from a vacant land to a car park by creating 40 parking bays, to serve community and facilitate the local mosque users. This was a vacant land from long time, mostly over grown grass and wild bushes. This land was protected with wooden fence at all four sides with no access, the existing fence height was 850mm. This change of use improved the land's appearance by removing the over grown bushes and grass and changing the surface to COMPACTED GRAVEL on HARDCORE, the existing fence remains as it is there is no change to it, other than, it has been removed to create the access. The parking bay has been identified by the parking bay number displayed on the fence, to guide drivers to park correctly. The access has been created by installing a height limit metal gates frame with lockable gates, finish in yellow colour to make it more visible for drivers. Two car park signs have been installed to guide the car park users. A new pedestrian access gate has been installed on the North West corner for easy access and safety.



Photograph of the new pedestrian access for the car park



Elevation of Car park entrance & exist while gates open @ Scale 1:100

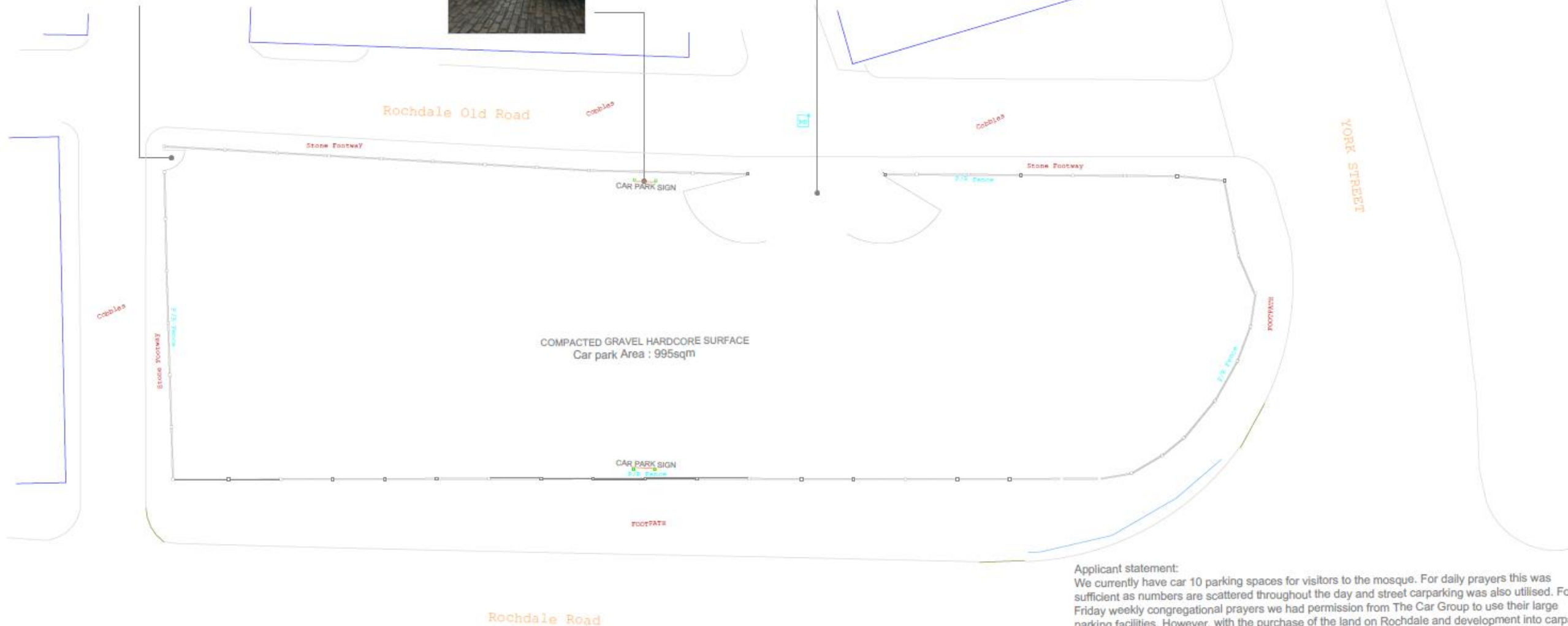


Elevation of Car park entrance & exist while gates shut @ Scale 1:100



Photograph of the car park entrance & exist

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This drawing is not to be copied or disclosed by or to any unauthorized person without the prior written consent of IPS Architects.
Do not scale from this drawing.
All dimensions are to be checked on site prior to construction, manufacture of any components and ordering of materials and equipment.
Any discrepancies are to be reported to the architect for clarification.
All materials and workmanship to be in accordance with the current British Standards and codes of practice.
This drawing is to be read in conjunction with all relevant Architectural Structural Engineers, Mechanical Engineers, Electrical Engineers and Specialist drawings and specifications.



Applicant statement:

We currently have car 10 parking spaces for visitors to the mosque. For daily prayers this was sufficient as numbers are scattered throughout the day and street carparking was also utilised. For Friday weekly congregational prayers we had permission from The Car Group to use their large parking facilities. However, with the purchase of the land on Rochdale and development into carpark this has alleviated demand on street parking and on the The Car Group. We have also split Friday prayers into two separate times to reduce the amount of traffic in the area at one time.

Prior to the development of the land, it was derelict and an eyesore for those commuting to Bury. It was regularly used as a dumping ground for rubbish and had a large rat population. Prior to the council fencing the land, it was used for many years as an informal carpark by locals and businesses.

This is a retrospective application, as we have cleared the land of the overgrowth, graveled the ground and installed signs. Furthermore, CCTV and lighting has been installed on the adjacent buildings facing the carpark for security purposes.

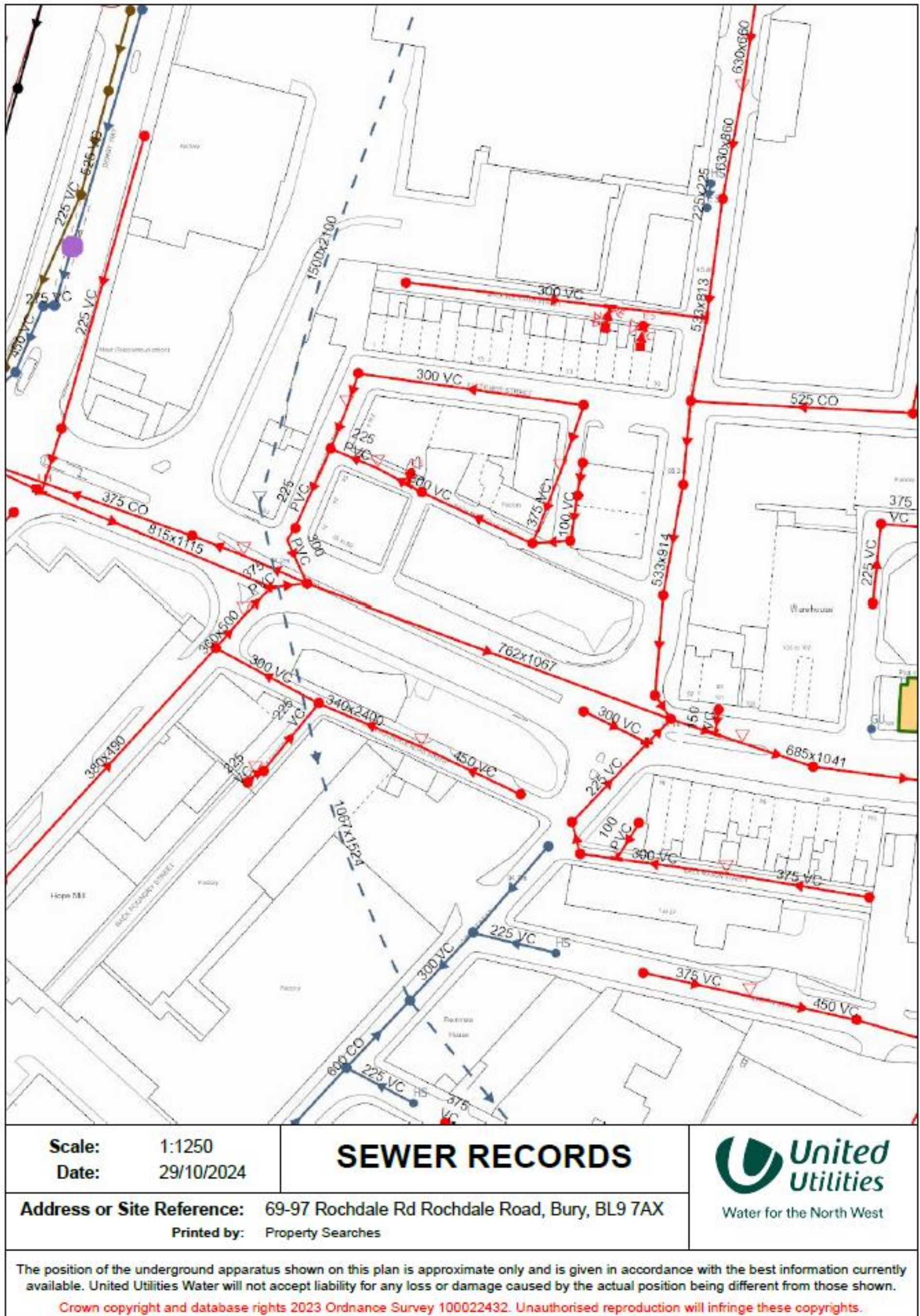
Planning Services
2A Cook Street,
Bury, Lancashire,
BL9 0RP,
0161 8717405
email: ipsuk@live.co.uk

Proposed Floor plan (Layout) (53°35'36.3"N 2°17'15.0"W)
of Land between no.69 Rochdale Road and York Street, Bury

Scale : 1 : 150 on A2	All Dimensions in Meters	REV: A REV:	Date: 17/09/2024
Ref: IPS/R/143/M278PH	Date : 04/05/2024	SHT 3 of 3	

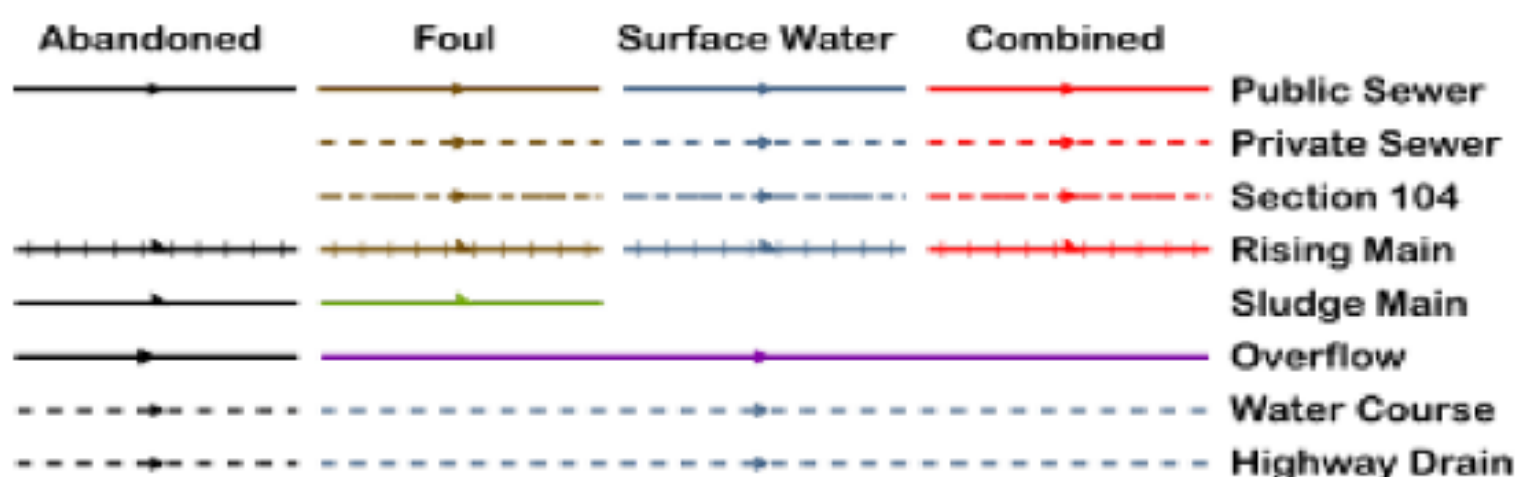
Proposal

Appendix III: Sewer drainage network data at the Site, reference to United Utilities.





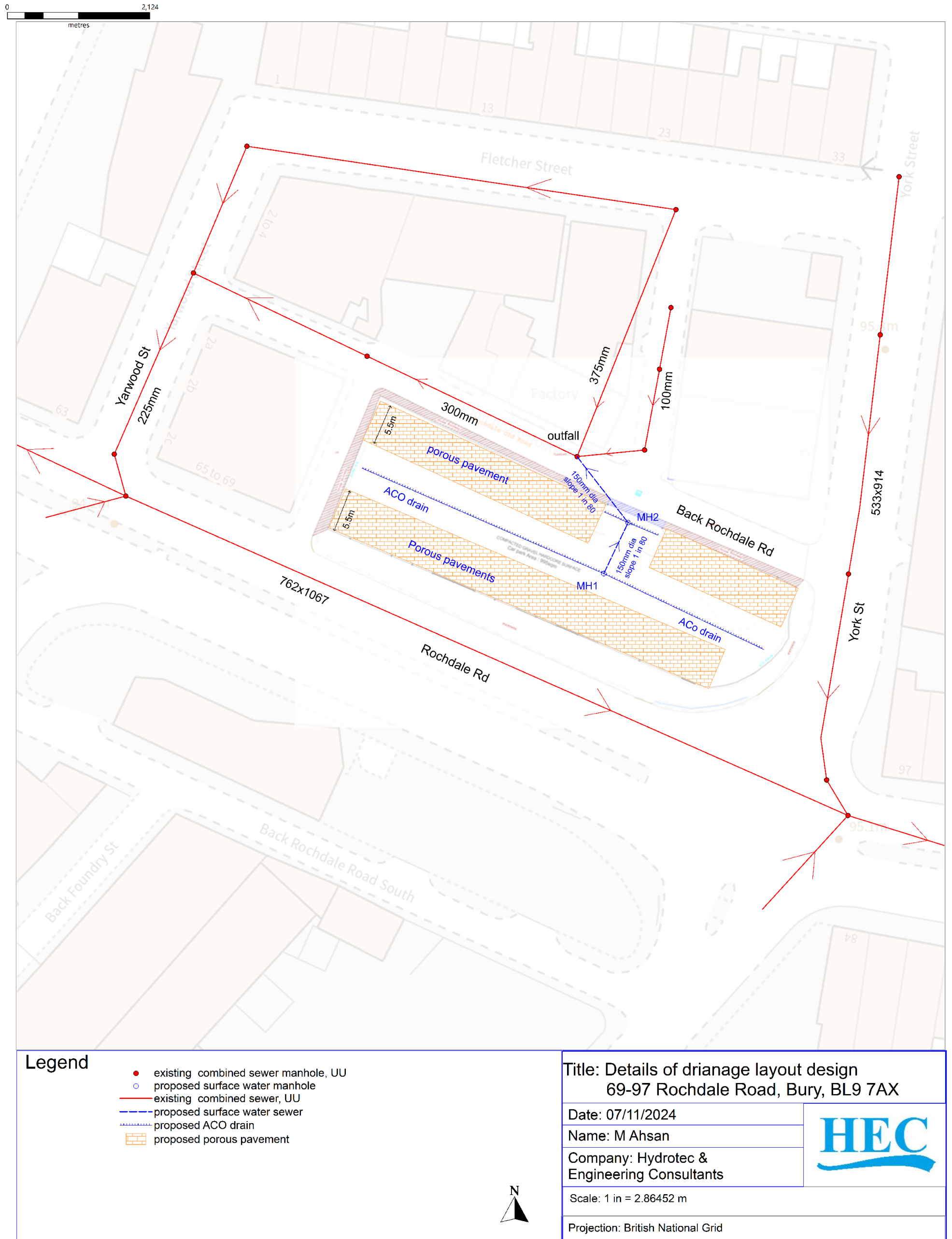
Wastewater Symbolology



All point assets follow the standard colour convention: red – combined brown - foul
blue – surface water purple - overflow

Manhole	Side Entry Manhole
Head of System	Outfall
Extent of Survey	Screen Chamber
Rodding Eye	Inspection Chamber
Inlet	Bifurcation Chamber
Discharge Point	Lamp Hole
Vortex	T Junction / Saddle
Penstock	Catchpit
Washout Chamber	Valve Chamber
Valve	Vent Column
Air Valve	Vortex Chamber
Non Return Valve	Penstock Chamber
Soakaway	Network Storage Tank
Gully	Sewer Overflow
Cascade	Ww Treatment Works
Flow Meter	Ww Pumping Station
Hatch Box	Septic Tank
Oil Interceptor	Control Kiosk
Summit	DNM Network Monitoring Point
Drop Shaft	Change of Characteristic
Orifice Plate	

Appendix IV: The layout of the proposed drainage strategy at the Site.



Appendix V: A typical ACO drain (channel drainage).



Appendix VI: A typical cross-section of a pervious paving system.

