



Norman Road- Rochdale Drainage Strategy

For 1.618 Architects

Date: 22 September 2022

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DOCUMENT CONTROL SHEET

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1. INTRODUCTION

This report has been prepared by Hydrock Consultants Limited on behalf of 1.618 Architects in support of a Planning Application to be submitted to Rochdale Borough Council for 7 proposed industrial units with car parking and landscaping on Norman Road - Rochdale.

The surface water drainage strategy has been produced in accordance with Rochdale Borough Council Pre-application guidance "PREAPP/00053/22", Building Regulations Approved Document H: drainage and waste disposal and Sewers for Adoption requirements.

This report should be read in conjunction with the following drawings:

- C25654-HYD-XX-XX-DR-C-0500_Proposed Drainage Strategy
- Proposed MicroDrainage Calculations
- PREAPP/00053/22

2. SITE INFORMATION

2.1 Location and Setting

The site is located on Norman Road, Rochdale, with vehicular access from Norman Road located to the east of the development.

The existing site previously held a medium sized structure containing a number of units, these units were previously occupied by an MOT test centre and a Scrapyard. As well as these units, this site has a large external area previously used to store scrap and vehicles. This existing development is in a brownfield state covering an approximate area of 0.4389 Ha. The proposal of this development is to provide 7 new industrial units with associated car parking and landscaping.

The site location is shown in Figure 1, with the full address and Ordnance Survey grid reference provided in Table 1.

Table 1: Site Referencing Information

Site Referencing Information	
Site Address	Norman Road - Rochdale, Sudden, Rochdale, Greater Manchester, England, OL11 4HN
Grid Reference	388735, 412742 SD887127

Figure 1: Site Location



2.2 Topography

A Topographical survey for this site is currently unavailable, therefore LiDAR information has been obtained. The Lidar surface indicates that the site levels fall from a high point of 114.619m at the South Western corner to a low point of 113.511m to the North Eastern corner of the site.

Planning approval is being sought for 7 industrial units with associated car parking and landscaping. The proposed scheme is outlined upon drawing "22/02/08 - Norman Road" which is included within Appendix A.

Details of the proposed development layout have been included within the Planning Application submission.

3. SURFACE WATER STRATEGY

3.1 Existing Site Drainage

United Utilities sewer record information has been provided by Rochdale Borough Council within "PREAPP/00053/22", which indicates that two combined drainage sewers run along Norman Road in a south western direction, before passing through the southern corner of the proposed site. The sewer records also indicate a separate 500mm x 500mm surface water sewer passing beneath the site in a western direction before ultimately discharging into the River Roch to the west

Due to the numerous existing sewers passing beneath the proposed site liaison with United Utilities will be required to discuss build over or diversion requirements to facilitate the proposals. Additionally careful consideration of the site layout and foundation design will be required.

At the time of this drainage strategy, CCTV Drainage survey and Topographical Survey information is unavailable due to the majority of the site being covered with existing scrap and vehicles preventing access to undertake a thorough survey. It is strongly recommended that a CCTV survey is undertaken of the existing public and private drainage infrastructure to confirm the location, levels, condition and suitable for a proposed connection.

Information on the existing private surface water drainage infrastructure is limited at the time of this report. Street imagery indicates a portion of the existing sites surface water run-off is collected via rainwater pipes, and is discharged below ground level. Due to the existing developments impermeable area, there are likely existing connections from rain water pipes and gullies into the United Utilities public drainage.

The Pre-Application advice received from Rochdale Borough Council which contains United Utilities sewer records can be found within Appendix B.

3.2 Existing Discharge Rates

In accordance with Rochdale Borough Council Pre-Application advice;

Our minimum expectation on a brownfield site is a 50% reduction in the rate of discharge for the average annual storm i.e. Qbar 1 in 2.3 year storm.

A review of the existing brownfield run off from the site has been calculated below using the modified rational method in order to comply with the non-statutory technical standards for sustainable drainage systems.

The following parameters were used to calculate the brownfield run-off from the site:

Peak Discharge $Q_p = 2.78 \times C_v \times C_r \times I \times A$ (Modified rational method as recommended by the Wallingford procedure)

Impermeable Area (A) = 0.397 Ha (Existing Impermeable Area)

Average Rainfall Intensity (i) = Based upon figures obtained from MicroDrainage

Routing coefficient (dimensionless) (C_r) = 1.3 (as recommended by the Wallingford procedure)

Volumetric Runoff Coefficient (C_v) = 0.9 (catchment high in hardstanding areas)

Table 4 below summarises the calculated brownfield run-off rates for the 1 year, 30 year and 100 year events.

Table 2: Modified Rational Method Flow rates

Storm Event (Years)	Rainfall Intensity mm/hr (15min tc)	Brownfield Discharge Rate (ls)
1	25.674	34.24
QBar 2.3	33.359	44.49
30	62.737	83.66
100	80.865	107.84

3.3 Proposed Site Discharge

To satisfy the requirements advised by Rochdale Borough Council within the Pre-Application response, it is proposed the development achieves a minimum 50% betterment on the existing brownfield run off rate for a QBar 1 in 2.3 year storm event as described above, with surface water run-off restricted to a flow of 20l/s for all storm events up to and including the 1 in 100 year +40% climate change allowance.

The table below summarises the proposed run off rates that are to be achieved within the varying storm events and the betterments this achieves;

Table 3: Proposed Discharge Rates

Storm Event	Brownfield Discharge Rate (l/s)	Proposed Discharge Rate Achieved (l/s)	Betterment Achieved (%)
1 Yr Event	34.24	16.4	52
2 Tr Event	44.49	17.5	61
30 Yr Event	83.66	19.9	76
100 Yr Event	107.84		
100 Yr Event + CC		19.9	82

For the purpose of determining cover levels for this drainage exercise, an approximate plateau level for the proposed development have been determined as 113.50m based up LiDAR survey data. The proposed site layout for the industrial units allows for car parking, landscaping, and footpaths, which is the proposed location for the surface water attenuation tank and manholes. The existing vehicular access from Norman Road to the east to the south is to be maintained.

The proposed development has an impermeable catchment area of 0.397 Hectares, which will be collected via rainwater pipes, channel drains and road gullies. Attenuation to the measure of approximately 86m³ will be required to store proposed run off from this catchment area, before discharging via a new connection to the existing surface water sewer within the site, before ultimately discharging to the River Roch to the west via an existing outfall. It is advised that the existing developments drainage infrastructure is CCTV surveyed following site clearance to determine the existing drainage discharge regime and where an existing connection is available.

The surface water drainage attenuation has been modelled using MicroDrainage for a range of events including the 1 in 1year, 1 in 30year and 1 in 100year + 40% climate change event.

The model indicates no flooding of occurs during a 1 in 100 year plus climate change event within the surface water network. Where surface water flooding occurs during exceedance events, this is to be stored within valleys formed within the external yard and car park areas, before discharging through channel drains once the storm subsides.

The Proposed Drainage Layout can be found in Appendix C.

The proposed drainage MicroDrainage calculations can be found within Appendix D.

3.4 Hierarchy of Drainage Discharge

A hierarchy for the preferred discharge of surface water states that surface water runoff should be disposed of in the following order of preference:

Surface water runoff not collected for use must be discharged to one or more of the following in the order of priority shown:

1. into the ground (infiltration).
2. to a surface water body.
3. to a surface water sewer, highway drain or other drain.
4. to combined sewer:

The feasibility of each discharge method is outlined below:

1. At the time of this report infiltration testing has not been undertaken on the existing site. Whilst testing should be undertaken to confirm what rates are achievable on site, infiltration is currently deemed unsuitable for discharge of surface water due to the requirement of infiltration measures to be located 5m away from existing structures. Numerous existing sewers are located beneath the site, which will have easements associated with them, limiting the available external space to facilitate infiltration structures.
2. The nearest existing watercourse to the development is the River Roch, located approximately 124m to the north west of the development. United Utilities sewer records indicate an existing 500x500mm surface water sewer running through the proposed site discharging into the River Roch. It is therefore proposed that the site is to utilise the existing surface water sewer to discharge run-off, before ultimately discharging into the River Rock to the North west.
1. Sewer record information indicates an existing 500x500mm surface water sewer running through the proposed site discharging into the River Roch. It is therefore proposed that the site is to utilise the existing surface water sewer to discharge run-off, before ultimately discharging into the River Rock to the North west.
3. United Utilities sewer records indicates that combined sewers can be seen on either side of the proposed site. One of which runs down Norman Road, under the site and then off into a south west direction. As there are no foul chamber located in the area, we are proposing to discharge the foul drainage into a combined chamber, located south of the site.

While final outfall locations will be determined in the detailed design stage, a Pre-Development Enquiry should be submitted to United Utilities to commence discussions.

The Proposed Drainage Layout can be found in Appendix C.

3.5 Suitability of SuDS Features

The following SuDS features have been considered during the design process, the table states which features have been incorporated and which have been excluded and reasons for their exclusion.

Table 4: Suitability of SuDS Features

SuDS Feature	Incorporated within design	Reasoning
Green Roofs / BluRoofs	No	Greenroof systems have been Excluded as they are not suitable for industrial development and the likely low structural capacity of the proposed buildings.
Attenuation Pond (Above Ground)	No	Attenuation ponds have been excluded for the site due to lack of available space within the development.
Rainwater Harvesting	No	Rainwater harvesting is not effective for this type of development where there are a limited number of toilets/ uses for harvested water.
Infiltration Methods	No	Infiltration was ruled out due to the lack space. Infiltration methods require a distance of 5m away from any proposed/existing building. This cannot be achieved on this development.
Raingardens/Bio-retention areas	No	Excluded due to the lack of external space available.
Filter strips and swales	No	Excluded due to the lack of external space available.
Permeable Paving	Yes	Due to space constraints to allow for infiltration, any permeable surfacing will not infiltrate, and will require lining with perforated underdrains to collect run-off. Porous bloc paving may be incorporated within light duty parking areas of the proposals to provide surface water treatment.
Below ground attenuation systems / Oversized Pipework	Yes	Below ground attenuation will be achieved through the use of below ground cellular attenuation crates within the communal garden.

3.6 Whole Life Maintenance of the Network

Failures or blockages within the drainage network could cause flooding. To enable the water treatment process to occur as intended and to reduce the risk of flooding the drainage network shall require maintenance.

All proposed drainage is to remain as private drainage elements and is to be the responsibility of a management company. The maintenance strategy and responsibilities are to be in accordance with the CIRIA SuDS Manual C753, as set out in the table below.

Table 5: General Maintenance of the Network

Component to be maintained	Actions	Frequency	Responsibility of:
Site wide external areas	Site to be generally kept free from litter and debris which may enter the drainage system.	On-going	Occupier / Owner/ site management team
Roof gutters	Check roof gutters for sediment, plant debris etc and clean as necessary	Annually	Occupier / Owner/ site management team
General network inc. pipes/ manholes/ catchpits/ gullies/ channel drains	Manholes covers to be lifted and inspected for sediment build up, remove as required	Annually	Occupier / Owner/ site management team

Table 6: General Maintenance of Attenuation Tanks (CIRIA SuDS Manual C753)

Operation and maintenance requirements for attenuation storage tanks		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter- remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually or as requested
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

4. FOUL WATER DRAINAGE

It is proposed that foul drainage from the new development is to drain to proposed manholes within the external area of the property, before ultimately discharging into an existing combined chamber located to the south west of the site, inside the site boundaries.

A non-return valve should be provided at the outfall to ensure surcharging from the public sewer does not enter the private drainage network.

5. CONCLUSIONS

In summary, this development is to be drained individually into separate surface water and foul networks located within the site. The Surface water drainage will ultimately discharge into an existing surface water sewer that runs beneath the site and then discharges into the River Roch. Surface water flows are to be restricted to 20l/s achieve a minimum 50% betterment on the QBar 1 in 2.3 year event in accordance with Rochdale Borough Council advice. A HydroBrake flow control chamber will be provided to ensure the proposed discharge rate for this development is restricted for all storm events including and up to a 1 in 100 year +40% climate change, with below ground storage with a volume of 86m³ to provide attenuation .

Foul drainage will discharge into an existing public combined chamber located on site.

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Appendix A - Proposed Site Layout

Reference	Title
580-P-01 - Option 2	Proposed Site Layout

Option 2



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Any discrepancies on this drawing or between drawings are to be reported to this office.

Unless specifically specified these drawings are not to be used for construction purposes or placing of any orders.

Do not scale from this drawing.

- Unit 1 - 335 sqm / 2,960 sqft
- Unit 2 - 350 sqm / 3,767 sqft
- Unit 3 - 300 sqm / 3,230 sqft
- Unit 4 - 300 sqm / 3,230 sqft
- Unit 5 - 300 sqm / 3,230 sqft
- Unit 6 - 152 sqm / 1,636 sqft
- Unit 7 - 190 sqm / 2,045 sqft

7 No. Units
Total Area - 1,927 sqm / 20,742

Total No. Car Parking - 39

Option 2

- ☐ FEASIBILITY
- ☒ PLANNING APPROVAL
- ☐ BUILDING REGULATIONS
- ☐ TENDER
- ☐ CONSTRUCTION

PROJECT

Norman Road

SHEET

Site Plan

CLIENT
S Suleman

Project number	Scale (@ A3)	
580	1 : 500	
DRAWING No	Date	REV
P-01	08/02/22	A



80a Stamford New Rd, Altrincham, Cheshire,
WA14 1BS
Web: www.1618architects.com
Tel: 0161 928 6622

Appendix B - Existing Drainage Layout

Reference	Title
PREAPP-00053-22 Norman Road	Rochdale Borough Council Pre-Application Advice

ECONOMY DIRECTORATE

PLANNING AND DEVELOPMENT

Daniela Ripa
Interim Head of Planning Services

Number One Riverside, Smith Street,
Rochdale, OL16 1XU

Telephone: 0300 303 8873

Email:
development.management@rochdale.gov.uk

Our Ref: PREAPP/00053/22

Enquiries to: Rachel Carney
Direct Line: 01706 924342
Date: 13th June 2022

Mr Mohammed Afaq

By Email Only

Dear Mr Afaq,

Application No:	PREAPP/00053/22
Application	Pre-Application
Proposal:	Demolition of existing MOT centre and scrapyard and erection of 7no. industrial units with car parking and landscaping
Location:	Norman Road, Rochdale

I write further to your enquiry for the erection of seven industrial units to replace an existing MOT centre and scrap yard. I note that you have paid for the pre-application enquiry service that includes a meeting. Following receipt of this letter please contact me and I can arrange for a telephone meeting to discuss your proposals.

Principle of development

The proposal site is within a mixed employment zone where saved UDP policy EC/3 is relevant alongside Core Strategy Policies E2 and E3. These policies promote the increase of jobs and prosperity in the area and require the protection of existing employment zones.

The Council note that the existing use of the site is as an MOT Centre and scrap yard. The last planning application submitted on the site was in 2008 (application 08/D50744) which was for use of the site for vehicle dismantling. Prior to that an application was submitted in 2005 for industrial development.

Given the existing use of the site and its land allocation within a mixed employment zone, it is considered that the principle of redeveloping the site with seven industrial units is acceptable.

Design

Policies P1 and P3 require high quality design in new development. The requirements for high quality design is also clearly set out in the NPPF and paragraph 133 states that development that is not well designed should be refused.

The current use of the site, which includes a scrap yard and the storage that is associated with such a use, is characteristic of the surrounding area but it is also of low quality design and harmful to the general amenity of the area. Through removal of this use and the introduction of new industrial units and associated landscaping, the appearance of the site would be significantly improved and tidied up. It is however still important to ensure that the units themselves are appropriate in terms of their scale and design, taking into account existing character and amenity.

The proposal includes the erection of seven industrial units that would comprise three detached units and four adjoining units. The proposed plans show that these would be of a fairly standard design comprising metal clad units which include coloured panels to give character and feature to the individual units as well as a contemporary appearance. These units are considered to be acceptable in terms of their general design and layout and it is considered that units of this type or similar would be supported.

Noise/disturbance

Policy G9 of the Council's Core Strategy requires that development will reduce all forms of pollution in the area, and to this extent new development should not have impacts that lead to an unacceptable increase in air, water, noise, light or other pollution.

Given the existing land use and the surrounding industrial uses as well as the distance to the nearest residential properties, it is considered that a noise impact assessment would not be required for validation purposes. Please note though that consultations will be undertaken with the Council's Public Protection Officer as part of any future application and they will consider impacts on noise and any other pollution impacts associated with the development. Dependant on the proposed end use of the industrial units, a noise assessment may be required as part of the applications consideration and/or noise conditions may be imposed on any approval.

Highways and Access

Policy DM1 of the Core Strategy requires that all development provide satisfactory vehicular access with adequate parking, manoeuvring and servicing arrangements, taking into account the proposed use and location.

Policy T2 of the Council's adopted Core Strategy also sets out the type and scale of development that require a Transport Assessment (TA) and Travel Plan (TP). The relevant sections of policy T2 are copied below:

- i. Residential developments of 80 units or more;*
- ii. All schools and Further Education Institutions (including extensions);*
- iii. Developments located in, or having an impact on, Air Quality Management Areas (AQMA);*
- iv. Areas where the Council has defined initiatives or targets to reduce traffic, restrict development growth, promote public transport, walking and cycling or measures to*

promote low emissions and tackle poor air quality;

v. Areas where the local transport infrastructure is inadequate e.g. sub-standard roads, poor pedestrian / cycle access or public transport provision; and

vi. Areas where additional development traffic is likely to increase accidents or conflicts between motorised and non-motorised users, particularly children, the elderly or people with impaired mobility.

c. We will also expect developments to be supported by a Transport Assessment (TA) and Travel Plan (TP) if forecast trips exceed the indicative thresholds set out in DfT Guidance on Transport Assessments or any of the following thresholds:

i. 100 or more vehicle movements per day (24 hours);

ii. 60 or more person trips in any peak hour (between 07-00 & 10-00 and / or 16-00 & 19-00);

iii. 30 or more vehicle movements in any hour;

iv. More than 20 Heavy Goods Vehicles (over 7.5 tonnes) movements per day;

v. Any goods vehicle movement between midnight and 6am;

vi. Any significant abnormal loads; and

vii. 50 or more car parking spaces are proposed.

d. We will require a Transport Statement for smaller developments that exceed the guidance on Transport Assessment thresholds or:

i. Generate 50 to 99 vehicle movements per day (24 hours);

ii. Generate 30 to 59 person trips in any peak hour (between 07-00 & 10-00 and / or 16-00 & 19-00);

iii. Generate 20 to 29 vehicle movements in any single hour;

iv. Generate up to 20 Heavy Goods Vehicles (over 7.5 tonnes);

v. Propose 10 to 49 parking spaces; or

vi. Consist of 50 to 79 residential units.

The Council's Highway Service have reviewed the proposal and in addition to the above, they have advised that there are a number of highway issues that will need clarification with any future application.

The proposal will likely result in a substantial amount of HGV movements generated and information will be required to demonstrate that these movements can be accommodated within any such development. An application will therefore be required to show that any access road into and around the development can accommodate the swept path of those vehicles. Plans will also be required to show service areas and how each unit can be accessed for loading or unloading purposes. At this stage an indicative plan of the units has been provided. Highway Services have advised that this proposed layout cannot accommodate HGV movements and the required unit servicing. Unit 7 which has a proposed access off Corporation Road does not appear to have any internal turning space for larger vehicles and this may lead to such vehicles reversing long distances, contrary to road safety. Bin storage areas and how they are access must also be identified on any future plans.

In regards other matters, the submitted plans indicate 40 car parking spaces. Highway Services have advised that this provision is likely adequate for the size of the development and we welcome the potential vehicle charging points. The proposal site also has an established industrial use and as such, Highway Services have advised that they would not envisage any undue impact on highway capacity or road safety. They have however advised that they would

not support adoption of the internal access roads.

Ecology and Trees

The proposed site is located immediately adjacent to a greenspace corridor to its south and southwest and this comprises a wooded area.

Policy G6 of the Council's Core Strategy requires that development protect and improve green infrastructure and where trees are to be removed, these should be replaced on a 2:1 ratio. Policy G7 also requires that site and features of biodiversity are given full and appropriate recognition and protection and the NPPF under chapter 15 requires that planning decisions contribute to and enhance the natural environment. Existing biodiversity should also be protected and enhanced and provide net gains for biodiversity.

The Greater Manchester Ecology Unit (GMEU) have been consulted on your proposals and have advised that any future application should include a Tree Survey and Tree Protection Plan, with the particular aim of retaining and protecting the aforementioned tree belt which forms the south south-eastern boundary with the site. Tree Surveys must be carried out by a suitably qualified person, in accordance with British Standard BS5837 (2012).

An application will also need to include a Preliminary Ecological Appraisal (Extended Phase I Survey) which includes an assessment of impacts on the SSSI/SAC Impact Zone from the Rochdale Canal. Detail of proposed biodiversity net gains, e.g. bird/bat boxes will also be required.

In addition to the above, it is noted that the Design and Access Statement identifies the tree belt as a site future development. You are advised that an application for similar development within the green space corridor would likely not be supported and GMEU have advised that tree losses would be resisted in this area.

Contamination

Policy G9 requires that development reduces all forms of pollution in the borough that that all risks associated with contaminated land are identified and appropriately managed, this is particular relevant for this site given the current land use. A Phase I Contaminated Land report will therefore be required with the submission of any planning application on the site. A further Phase II intrusive site investigation should be submitted if this is identified as necessary within the Phase I appraisal.

Drainage and flooding

Policy G8 of the Core Strategy requires that new development does not lead to any form of increased flooding locally or further downstream, does not impeded natural water and flood risk management, is not detrimental to existing or potential flood storage areas, contributes where possible to alleviating existing flood risk, is itself well protected from flood risk and ensures prudent use of water resources.

The proposed development site is located within Flood Zone 2 and therefore a Flood Risk Assessment will be required with any application. Information on sustainable drainage systems

will also be required and as a major development (proposing development of more than 1,000m²) a sequential test is also needed to demonstrate that the development could not be accommodated on a site at lower risk of flooding.

Guidance on the above is available through the following link [Review individual flood risk assessments: standing advice for local planning authorities - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/review-individual-flood-risk-assessments-standing-advice-for-local-planning-authorities)

The Councils Drainage Officer has been consulted on your proposals. Their advice is appended.

Coal Mining

The proposal site falls partly within the defined Development High Risk Area and therefore there are coal mining features and hazards which need to be considered in relation to development proposals.

The Coal Authority have been consulted on your proposal and advised that a coal seam is conjectured to outcrop immediately to the north of the proposed site, dipping in a southerly direction beneath the site. This seam may have been subject to historic unrecorded mining activity. Voids and broken/disturbed ground associated with such workings can pose a risk of ground instability and may give rise to the emission of mine gases.

Given the above, any planning application for the proposed development will need to be accompanied by a Coal Mining Risk Assessment (CMRA).

Summary

The principle of developing this site with an industrial development is considered to be acceptable. However there are concerns raised about the current scale and layout and in particular, the provision of adequate serving and turning space is likely to necessitate a reduction in the proposed number of units.

Should you wish to progress to a formal application, I would recommend that the following supporting information be provided:

- Completed application form and fee
- Full plans and elevations and site sections
- Transport Statement and Travel Plan (depending on the scale of development and expected travel movements as set out in policy T2 of the Core Strategy)
- Tree Survey and Tree Protection Plan
- Biodiversity Statement
- Preliminary Ecological Appraisal (Extended Phase I Survey) including impact on Rochdale Canal SAC/SSSI
- Crime Impact Statement
- Energy and Climate Change Adaptation Statement
- Phase I Contaminated Land Report and possibly a Phase II Report (depending on the results of the Phase I)
- Flood Risk Assessment and Sequential Test
- Sustainable Drainage Assessment and Sustainable Urban Drainage (SuDS) Pro-

Forma

- Coal Mining Risk Assessment
- Noise Impact Assessment (depending on proposed end use)
- Design and Access Statement
- Planning/Supporting Statement

Please also see the Council's Local List for the Validation of Planning Applications [Validation of Planning Applications – Local List \(rochdale.gov.uk\)](https://www.rochdale.gov.uk/Validation-of-Planning-Applications-Local-List). This provides additional information on the validation process and requirements.

Please note that any advice provided above is an informal opinion only and is made without prejudice to any formal determination which may be given in the event of an application being submitted. In particular, it does not constitute a formal decision of the Council with regard to any future planning applications, which will be subject to wider consultation and publicity, and provides no guarantee of a future decision.

I hope this is of assistance, however, if you have any questions please do not hesitate to contact me using the details above.

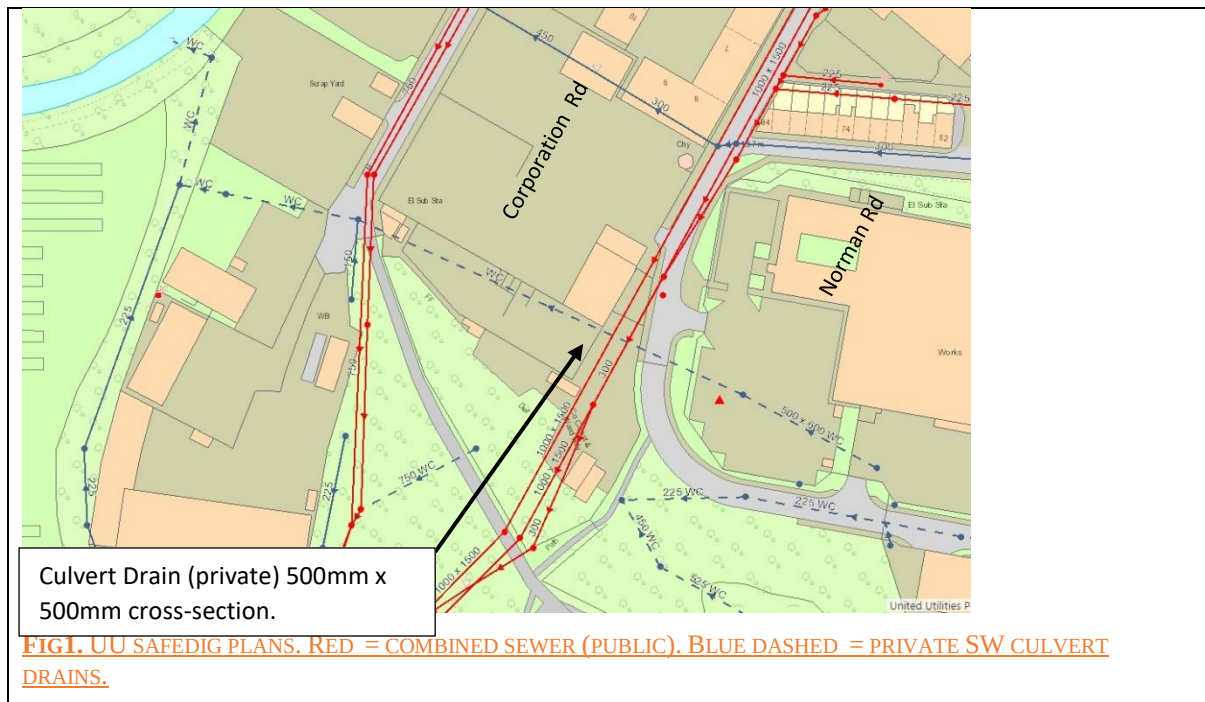
Yours Sincerely

Rachel Carney
Senior Planning Officer

APPENDIX – Advice from Council's Drainage Officer

DRAINAGE OFFICER COMMENTS

The following screenshot from United Utilities sewer plans show that there appears to be a large Surface water pipe running through the site, bringing drainage water from the adjacent site to the east. This means that the site can use this pipe to discharge attenuated surface water to river, but the Applicant will need to consider foundations of the buildings or consider diverting the culvert around the edge of the site.



FOUL WATER SEWERAGE CONNECTION

For the buildings, the Applicant will need to seek a foul water discharge consent agreement from United Utilities (UU).

FLOOD & DRAINAGE GUIDANCE

Our minimum expectation on a brownfield site is a 50% reduction in the rate of discharge for the average annual storm i.e. Qbar 1 in 2.3 year storm.

The minimum practical flow control value that can be applied using a vortex flow control is 5 l/s so that the outlet diameter of the flow control does not block.

An example calculation of 50% runoff reduction is provided below; alternative methods can be accepted. We don't know the site's current footprint, so the actual site footprint should be used:-

Rational Method - Runoff calcs - SMcCann RBC

From CIRIA C753 "The SuDS Manual"

Convert from sq.m. to hectares	5000	sq.m.
Brownfield area (existing and will also be part of development) (hectares)	0.5	
Greenfield area	0	
Total area	0.5	hectares
<u>Qbar (YR 2.3 mean annual)</u>		
Rainfall Intensity (mm/hr)	25	
Rational Runoff calculation ($2.78CiA = C_v \times \text{rainfall rate} \times \text{Area}$) (l/s)	31.3	
Brownfield area 50% runoff reduction	15.6	
Add former greenfield area to become impermeable (l/s). $C = 0.3$	0.0	
Max permitted future discharge to sewer (l/s)	<u>15.6</u>	

In accordance with the National Planning Policy Framework (NPPF) and the National Planning Practice Guidance (NPPG), the site should be drained in the most sustainable way. The drainage scheme for the development shall be in accordance with the National Planning Policy Framework (NPPG) hierarchy, in the following order of priority:

- into the ground (infiltration);
- to a surface water body;
- to a surface water sewer, highway drain, or another drainage system;
- to a combined sewer.

CLIMATE CHANGE ALLOWANCE - SURFACE WATER RUNOFF CALCULATIONS

The UK's National Planning Policy Framework (NPPF) requires new developments to take account of the effects of climate change. Table 5 of the NPPF indicates increases in peak rainfall intensity of up to 30% by 2085.

Following the flooding events experienced nationally in 2015, new climate change allowances and criteria were introduced by the Environment Agency in February 2016. This recommends that a 40% upper end climate change allowance should be used to assess the potential flood risk implications arising from the critical duration design rainfall event. New development drainage and attenuation features will take account of this potential 40% increase in order to mitigate surface water flooding within the proposed development.

REDUCING RUNOFF FROM PAVED AREAS

To reduce attenuation storage volume required in a site, permeable paving could be part of the solution.

A permeable pavement allows rainwater to drain through the gaps or pores in the paving and into the voids within the sub-base (approx. 30%) where water is temporarily stored until it gradually soaks into the sub-soil. Permeable paving works well for soils with permeability better than 1×10^{-6} m/s but can also work for soil permeability's between 1×10^{-8} and 1×10^{-6} m/s. Permeability testing on site is necessary; this should be carried out in accordance with BRE digest 365. It may be possible to find this on the web, or you can ask for a copy from the Authority's Drainage & Flooding Officer.

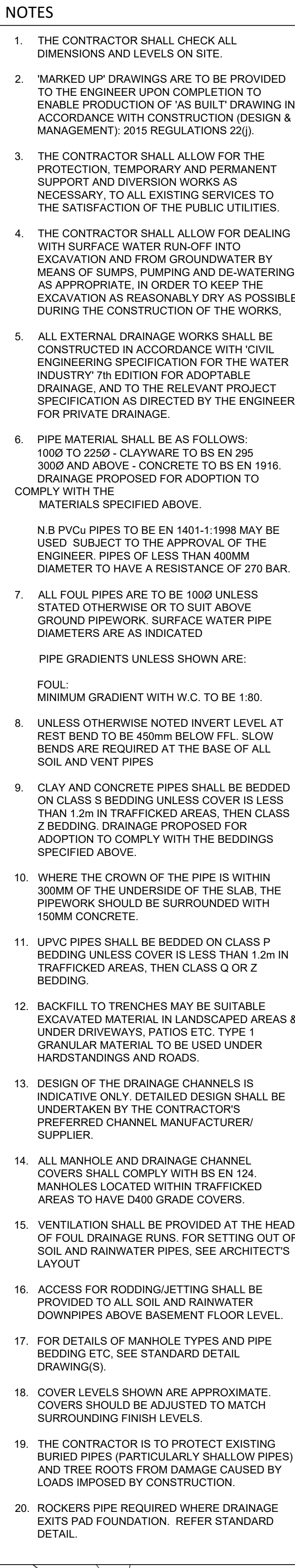
Permeable tarmac/ asphalt and permeable block paving are appropriate SUDs methods.

Details of high quality permeable paving and permeable tarmac suited to heavy vehicle (or light) loading can be found online. The subbase to any permeable paving must be open graded gravels with reduced amount of fines (not zero fines); suppliers of permeable block paving often supply suitably graded gravels that can be compacted yet retain 30% voids.

The installation of such driveways is better done by approved contractors who have certification / training provided by suppliers.

Appendix C - Proposed Drainage Layout

Reference	Title
C25654-HYD-XX-XX-DR-C-0500	Proposed Drainage Layout



Date Plotted : Sep 22, 2022 - 7:00pm, Plotted By : LUKEPILSBURY

Appendix D - Proposed Drainage Calculations

Reference	Title
Surface Water Calculations	Proposed Surface Water Calculations

Hydrock Consultants Ltd		Page 3																																																																								
.	Norman Road																																																																									
.	Proposed SW Calculations																																																																									
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Date 21/09/2022	Designed by L W Pilsbury																																																																									
File	Checked by																																																																									
Innovyze	Network 2020.1.3																																																																									
Online Controls for Storm Hydro-Brake® Optimum Manhole: 8, DS/PN: 1.007, Volume (m³): 3.4 Unit Reference MD-SHE-0182-2000-2100-2000 Design Head (m)2.100 Design Flow (l/s)20.0 Flush-Flo™Calculated ObjectiveMinimise upstream storage ApplicationSurface Sump AvailableYes Diameter (mm)182 Invert Level (m)111.303 Minimum Outlet Pipe Diameter (mm)225 Suggested Manhole Diameter (mm)1800 Control Points Head (m)Flow (l/s) Design Point (Calculated)2.10019.9 Flush-Flo™0.61319.9 Kick-Flo®1.28915.8 Mean Flow over Head Range-17.4 The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated <table><tr><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td></tr><tr><td>0.100</td><td>6.4</td><td>1.200</td><td>17.2</td><td>3.000</td><td>23.6</td><td>7.000</td><td>35.5</td></tr><tr><td>0.200</td><td>16.4</td><td>1.400</td><td>16.4</td><td>3.500</td><td>25.4</td><td>7.500</td><td>36.7</td></tr><tr><td>0.300</td><td>18.3</td><td>1.600</td><td>17.5</td><td>4.000</td><td>27.1</td><td>8.000</td><td>37.9</td></tr><tr><td>0.400</td><td>19.3</td><td>1.800</td><td>18.5</td><td>4.500</td><td>28.7</td><td>8.500</td><td>39.0</td></tr><tr><td>0.500</td><td>19.7</td><td>2.000</td><td>19.5</td><td>5.000</td><td>30.2</td><td>9.000</td><td>40.1</td></tr><tr><td>0.600</td><td>19.9</td><td>2.200</td><td>20.4</td><td>5.500</td><td>31.6</td><td>9.500</td><td>41.2</td></tr><tr><td>0.800</td><td>19.6</td><td>2.400</td><td>21.2</td><td>6.000</td><td>33.0</td><td></td><td></td></tr><tr><td>1.000</td><td>18.9</td><td>2.600</td><td>22.1</td><td>6.500</td><td>34.3</td><td></td><td></td></tr></table> ©1982-2020 Innovyze			Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	6.4	1.200	17.2	3.000	23.6	7.000	35.5	0.200	16.4	1.400	16.4	3.500	25.4	7.500	36.7	0.300	18.3	1.600	17.5	4.000	27.1	8.000	37.9	0.400	19.3	1.800	18.5	4.500	28.7	8.500	39.0	0.500	19.7	2.000	19.5	5.000	30.2	9.000	40.1	0.600	19.9	2.200	20.4	5.500	31.6	9.500	41.2	0.800	19.6	2.400	21.2	6.000	33.0			1.000	18.9	2.600	22.1	6.500	34.3		
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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.269
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	19.000	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	1, 2, 30, 100
Climate Change (%)	0, 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1 15	Winter	1	+0%	100/15	Summer			112.790
1.001	2 15	Winter	1	+0%	100/15	Summer			112.715
1.002	3 15	Winter	1	+0%	100/15	Summer			112.613
1.003	4 15	Winter	1	+0%	100/15	Summer			112.490
1.004	5 15	Winter	1	+0%	100/15	Summer			112.211
2.000	6 15	Winter	1	+0%	100/60	Winter			112.768
2.001	7 15	Winter	1	+0%	100/15	Winter			112.696
2.002	8 15	Winter	1	+0%	100/15	Summer			112.589
3.000	9 15	Winter	1	+0%	100/15	Summer			112.799
3.001	10 15	Winter	1	+0%	30/15	Summer			112.207
2.003	9 15	Winter	1	+0%	30/15	Summer			112.156
2.004	10 15	Winter	1	+0%	30/15	Summer			112.103
1.005	6 15	Winter	1	+0%	30/15	Summer			111.960
4.000	12 15	Winter	1	+0%	100/60	Winter			112.770
5.000	13 15	Winter	1	+0%	100/15	Summer			112.779
5.001	14 15	Winter	1	+0%	30/15	Summer			112.187
5.002	15 15	Winter	1	+0%	30/15	Summer			112.089
5.003	16 15	Winter	1	+0%	30/15	Summer			111.952
5.004	17 15	Winter	1	+0%	30/15	Summer			111.861

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