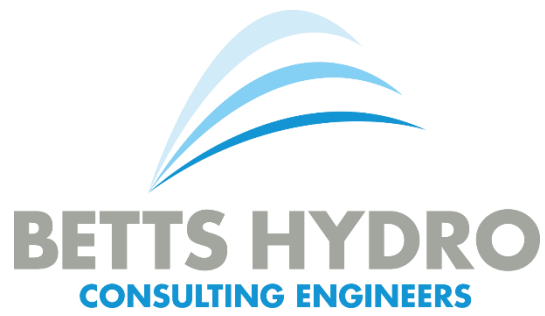
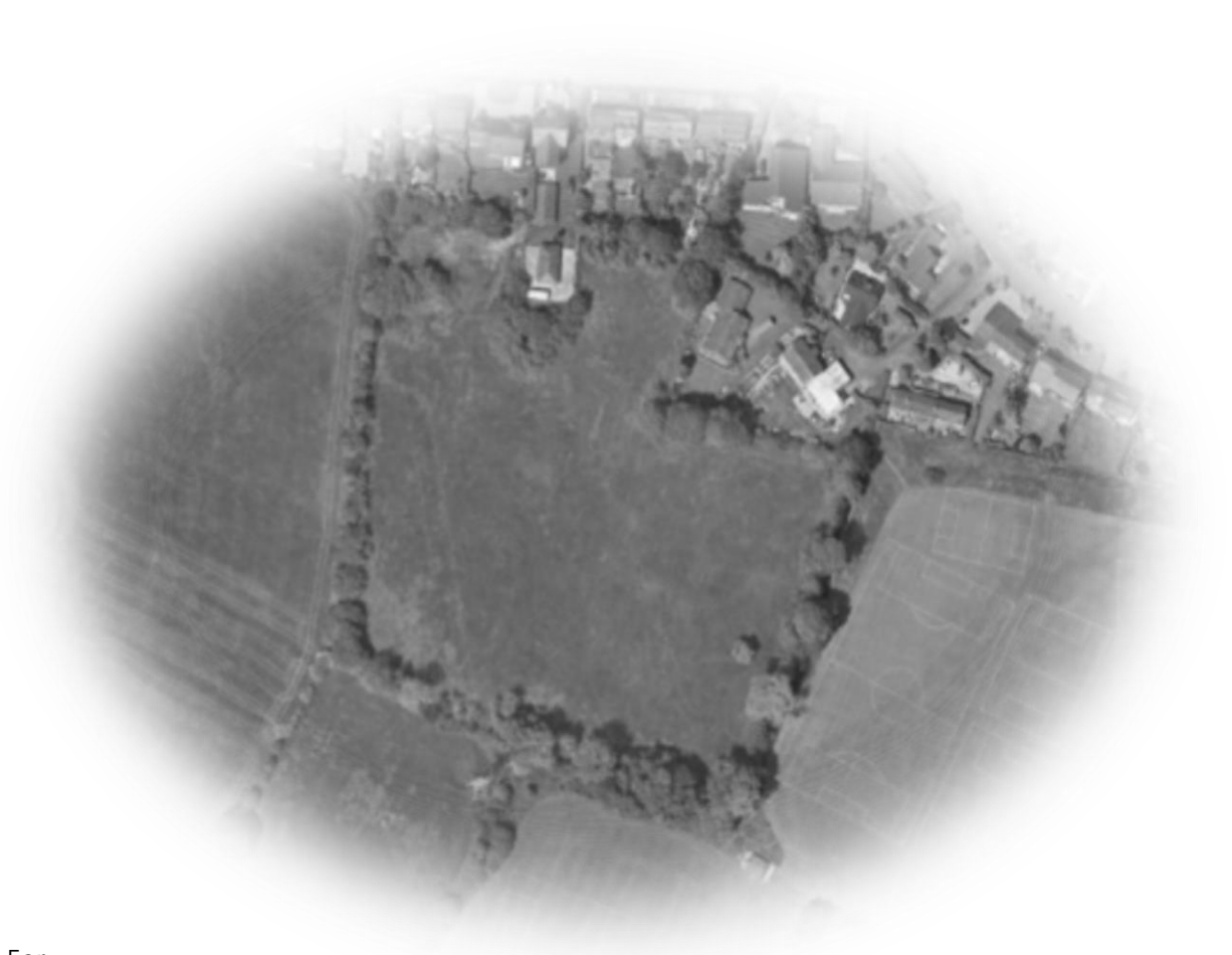




LAND OFF GREENVALE BAMFORD

DRAINAGE MANAGEMENT STRATEGY



For

Wain Homes North West
Kelburn Court
Daten Park
Warrington
WA3 6UT



APRIL 2025

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**LAND OFF GREENVALE
BAMFORD
DRAINAGE MANAGEMENT STRATEGY**

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EXECUTIVE SUMMARY

This Drainage Management Strategy was commissioned by Wain Homes North West, referred to hereafter as 'the client'. This report has been prepared to support an application for the construction of 43no. residential dwellings on land located off Greenvale in Bamford, Rochdale.

This assessment has been completed in accordance with National Planning Policy Framework and Planning Practice Guidance to consider the most appropriate sustainable drainage options for the proposals in line with the Non-Statutory SuDS Standards. The surface water run-off management options have been assessed in accordance with the sustainable drainage hierarchy.

It is understood that at present, the site drains in south-westerly direction with the existing levels, where it ponds in a low-lying area offsite further south-west. Based on the ground conditions identified by the published online datasets and the soil classification; it is understood that infiltration is unlikely to offer a means of managing surface water run-off generated by the site.

The next method is to discharge surface water run-off to a nearby watercourse/ waterbody. The nearest watercourse is Naden Brook (Main River), which is located 500m west of the site. Given the proximity and surrounding topography, this watercourse does not offer a viable drainage option.

Should infiltration not offer a full practical solution at the site, then the alternative is to discharge into the public surface water sewer (300mm dia.) which crosses the site. The proposals are to divert the public surface water sewer through the site. The proposed diversion route is indicated within the Drainage Appraisal prepared by the client.

The proposals are to utilise permeable surfaces across the site where practical, even if a full infiltration solution is not viable. The permeable surfaces will be lined with a connection to the proposed main drainage systems where infiltration rates are not suitable. A below ground pipe network will be utilised for conveyance, and the required onsite attenuation will be provided above ground via 2no. attenuation basins. The specific means are to be determined during the detailed design stage.

In accordance with the SuDS Manual (CIRIA) and the Non-Technical Standards for SuDS (March 2015) all sites should endeavour to achieve as close to pre-development greenfield rates as is viable. Based on the development area, the pre-development greenfield rate (QBar) is calculated to be 21.0/s (based on 7.8l/s/ha). The LLFA (RMBC) will also need to agree to the proposed rates of discharge as part of their consultation.

In terms of foul water management due to existing ground levels within the site, it will be necessary to allow for a pumped drainage solution on this site. Any offsite asset routing works will also need to be considered in terms of consents with the relevant offsite landowners (Highways Authority).

This Drainage Management Strategy has been prepared in consultation with the relevant interested parties. The report is commensurate with the scale and nature of the development and the development is appropriate in accordance with the Non-Statutory Standards.

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Specialist Software

- MicroDrainage WinDES (v.2020.1.3) – Calculation of Greenfield run-off volumes, rates of rainfall and stormwater storage estimates.

Abbreviations & Acronyms

BGS	British Geological Survey
DMS	Drainage Management Strategy
EA	Environment Agency
FEH	Flood Estimation Handbook
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
QBAR	Mean Annual Flood
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
QSE	Quick Storage Estimate
RMBC	Rochdale Metropolitan Borough Council
SuDS	Sustainable Drainage Systems
UU	United Utilities

1.0 INTRODUCTION

1.1 Planning Policy Context

- 1.1.1 All forms of flooding and their impact on the natural and built environment are material planning considerations. The National Planning Policy Framework (NPPF) sets out the Government's objectives for the planning system, and how planning should facilitate and promote sustainable patterns of development, avoiding flood risk and accommodating the impacts of climate change.
- 1.1.2 Government policy with respect to development in flood risk areas is contained within the NPPF and the supporting Planning Practice Guidance (PPG) (refer to extracts in **Appendix A**). This Drainage Management Strategy (DMS) has been completed in accordance with NPPF/PPG to consider the most appropriate sustainable surface water and foul water drainage options for the proposals.
- 1.1.3 The purpose of this report is to ensure that there is no increased flood risk because of the development in line with the NPPF guidance. The use of Sustainable Drainage Systems (SuDS) to manage surface water run-off has also been considered as part of the assessment in line with the Non-Statutory Standards.

1.2 Site Context

- 1.2.1 This DMS has been prepared to support a planning application for the construction of 43no. residential dwellings on land located south of Greenvale in Bamford, Rochdale. The proposals will be complete with access, car parking, external works, boundary fencing, external services, and drainage.

1.3 Consultation

- 1.3.1 The preparation of this report has been undertaken in consultation with the Environment Agency (EA), United Utilities (UU), and Rochdale Metropolitan Borough Council (RMBC). The consultation responses can be seen in **Appendix B, C, and D** respectively.

2.0 EXISTING SITE LOCATION

2.1 Location

- 2.1.1 The site is located Greenvale in Bamford, Rochdale. The nearest Ordnance Survey National Grid Reference is E: 386034, N: 413432 and the nearest postcode is OL11 5QL (see the Location Plan in **Appendix E**). The whole site covers 2.695ha and is edged in red in **Figure 1**.
- 2.1.2 In terms of the surrounding land-use, the site is bound to the north by Greenvale, and to the north-west by a culdesac off Norford Way. The site is surrounded by residential development to the north, and by undeveloped agricultural land to the south, west and east. The closest watercourse to the site is Naden Brook (Main River), located 480m west of the site.



2.2 Existing and Historical Land Use

- 2.2.1 The site is currently undeveloped agricultural land, and comprises of low-density vegetation, with larger shrubs and trees located along the field boundaries. No other historical land uses have been identified during the preparation of this report.

2.3 Topography

- 2.3.1 A topographic survey has been undertaken and is included within **Appendix F** for completeness. The topographic survey identifies that the site falls from a high point of 167.084mAOD in the north, down to a level of 156.215mAOD in the south of the site. The arrows shown in **Figure 1** indicate the general fall across the site.

2.4 Site Walkover

- 2.4.1 A site walkover was also undertaken by Betts Hydro in November 2024. This visit was to confirm the general topography and to understand the natural drainage regimes serving the site. The site photographs from the visit are included in **Appendix G**.

3.0 DEVELOPMENT PROPOSALS

3.1 Nature of the Development

- 3.1.1 This DMS has been prepared to support a planning application for the construction of 43no. residential dwellings on land located off Greenvale in Bamford, Rochdale. The proposals will be complete with access, footpaths, car parking, external works, landscaping, boundary fencing, and drainage. The planning layout is included within **Figure 2** below (see full plan in **Appendix H**).



Figure 2: Proposed Planning Layout (MCK Associates Ltd, 2025)

- 3.1.2 The total site covers 2.695ha and is 100% permeable at present. Based on the above planning layout, the post-development impermeable areas will likely increase to approximately 55% of the development area, which will equate to 1.482ha.

- 3.1.3 Betterment in the form of permeable surfaces opposed to external hardstanding should also be considered where feasible to reduce the surface water run-off. Opportunities to provide soft landscaping on the site would provide added benefits to water quality and ecology. National and local policy identifies that SUDS should be incorporated into new development where feasible to manage surface water run-off generated by new development.
- 3.1.4 There is a requirement to provide maintenance offsets from the public sewers, where they are located onsite. The specific offset needs to be discussed with UU as they vary depending on the size of the infrastructure and the depth at which it is laid. The proposals are to divert the public surface water sewer which crosses the site (subject to consent and agreement from UU).

4.0 SURFACE WATER MANAGEMENT

4.1 Pre-Development Surface Water Run-off

- 4.1.1 The total site covers 2.695ha and is 100% permeable at present. The post-development impermeable areas will likely increase to approximately 55% of the development area, which will equate to 1.482ha. It is understood that at present the site drains with the existing topography in a south-westerly direction where it ponds in a low-lying area offsite to the south-west.
- 4.1.2 The peak rates and volumes of run-off generated by the site have been calculated for the peak events shown in **Table 1**. The surface water run-off rates have been calculated using the FEH Method. The full calculations in **Appendix I** are based on an area of 1ha and these rates and volumes are calculated pro-rata for the site area of 2.695ha.

Dev. Area	Run-Off Rates				Run-Off Volumes	
	1 In 1yr	1 In 30yr	1 In 100yr	QBar	1 In 1yr	1 In 100yr
2.695ha	19.7l/s	38.5l/s	47.2l/s	21.0l/s	267.1cu.m	715.0cu.m

Table 1: Pre-Development Surface Water Run-Off Rates (Betts Hydro, 2025)

4.2 Post Development Surface Water Run-Off

- 4.2.1 Due to the nature of the development proposals, it is understood that the impermeable areas of the site will increase. We have estimated that the post-development impermeable areas will equate to 55% of the development area (this equates to 1.482ha).
- 4.2.2 In accordance with local and national guidance, an additional 10% allowance has been added to the impermeable area to account for urban creep, totalling 65% (equating to 1.752ha). These proposed impermeable areas will, however, be refined as part of the drainage design work based on the specific contributing areas for the main drainage and plot drainage networks. The unrestricted post-development run-off rates generated by this assumed impermeable area are detailed in **Table 2**.

Proposed Imp. Area (+ 10% UC)	Run-Off Rates			Run-Off Volumes	
	1 In 1yr	1 In 30yr	1 In 100yr + 45% CC	1 in 1yr	1 in 100yr
1.752ha	86.6l/s	161.0l/s	300.5l/s	462.8cu.m	1111.5cu.m

Table 2: Post-Development Un-Restricted Run-Off Rates (Betts Hydro, 2025)

- 4.2.3 In accordance with national and local planning policies it is necessary to restrict surface water run-off rates where at all practical to mimic a pre-development greenfield situation. The pre-development rates in this case are detailed in **Table 1**. Full details of the proposed rates of discharge can be found in section 4.6 subsequently.

4.3 Sustainable Drainage Systems (SuDS)

- 4.3.1 In accordance with national and local planning policy, including the Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015) and the SuDS Manual (CIRIA 753), peak surface water discharge rates from new development should be appropriately managed and where possible reduced. To manage surface water run-off policy shows that preference should always be given to Sustainable Drainage Systems (SuDS) over the traditional methods wherever possible and practical.
- 4.3.2 SuDS can (if designed and situated appropriately) address the four key sustainability objectives embedded in planning policy including providing space for water (water quantity), improving water quality and biodiversity, along with providing valuable amenity/recreational space within new development sites. These benefits of SuDS depend on the type of features being proposed, some typical examples relevant to this nature of development are illustrated in **Figure 3**.



Figure 3: SuDS Photographs (SusDrain, 2012)

- 4.3.3 Whilst opportunities should also be taken to provide soft landscaping where at all possible on site to assist in minimising surface water run-off. Promoting SuDS to deal with surface water at the source, will limit the required attenuation and in turn reduce the volume of surface water in the nearby watercourse and sewer infrastructure. In accordance with the Non-Statutory Technical Standards for Sustainable Drainage Systems and the SuDS Manual (CIRIA 753), the proposed SuDS features are discussed below in terms of hierarchy of use.
- 4.3.4 Due to the levels along the southern boundary, It is proposed that permeable surfacing and bio-filtration techniques be included within the plots along this boundary, where practical, to provide opportunity for natural uptake but also added benefits to the water quality of run-off generated in these areas. It is also recommended to incorporate these features across the wider site where feasible. If infiltration is not viable, then a connection into the main drainage systems is needed, but the presence of the permeable surfaces will allow the first 5mm of rainfall to be dealt with at source as identified in the SuDS Manual (CIRIA 753).
- 4.3.5 There may also be scope to incorporate rainwater collection butts and/or rain garden style raised planters (as illustrated in **Figure 3**) to provide added water quality, amenity,

and biodiversity benefits. In terms of stormwater storage, attenuation will be provided above ground via 2no. attenuation basins.

- 4.3.6 Detailed design should confirm suitability for incorporation of SuDS following more detailed analysis of levels, ground conditions and attenuation needs. If designed appropriately SuDS features such as those proposed can aid with attenuation and provide added benefits in terms of water quality, biodiversity, and amenity value.

4.4 Methods of Surface Water Management

- 4.4.1 There are three methods that have been reviewed for the management and discharge of surface water. These may be applied individually or collectively to form a complete strategy and should be applied in the order of priority listed below:

-  Discharge via infiltration
-  Discharge to watercourse
-  Discharge to the public sewerage system

4.5 Discharge via Infiltration

- 4.5.1 Any impermeable areas that can drain to soakaway or an alternative method of infiltration would significantly improve the sustainability of any new surface water system. The published online datasets have been reviewed to consider how favourable the underlying strata is to support a potential infiltration-based solution at the site.
- 4.5.2 The Cranfield Soil and AgriFood Institute (CSAI), Soilscape viewer identifies the soils to be 'slowly permeable wet very acid upland soils with a peaty surface'. The British Geology Survey (BGS) mapping data indicates that the bedrock geology consists of Old Lawrence Rock (sandstone), with superficial deposits of Devensian Till. The underlying strata (noted above) appears to suggest that underlying permeability is medium to high, and an SPR value of 0.367 suggests that the underlying soils have a low/medium permeability (0.1 is very high and 0.5 is very low).
- 4.5.3 To confirm whether infiltration rates at the site would promote the use of permeable surfacing and other infiltration solutions, it is recommended that Soakaway Testing (to BRE365) is undertaken at an early stage. Based on the ground conditions identified by the published datasets, infiltration is unlikely to offer a fully viable drainage management solution for the wider proposals.
- 4.5.4 The proposals are still to utilise permeable surfaces in external areas where an engineerable solution can be achieved, even if a full infiltration solution is not viable. The permeable surfaces themselves will be lined with a connection to the proposed main drainage serving the new development. The presence of the permeable surfaces will still allow the first 5mm of rainfall to be dealt with at source as identified in the SuDS Manual (CIRIA 753).

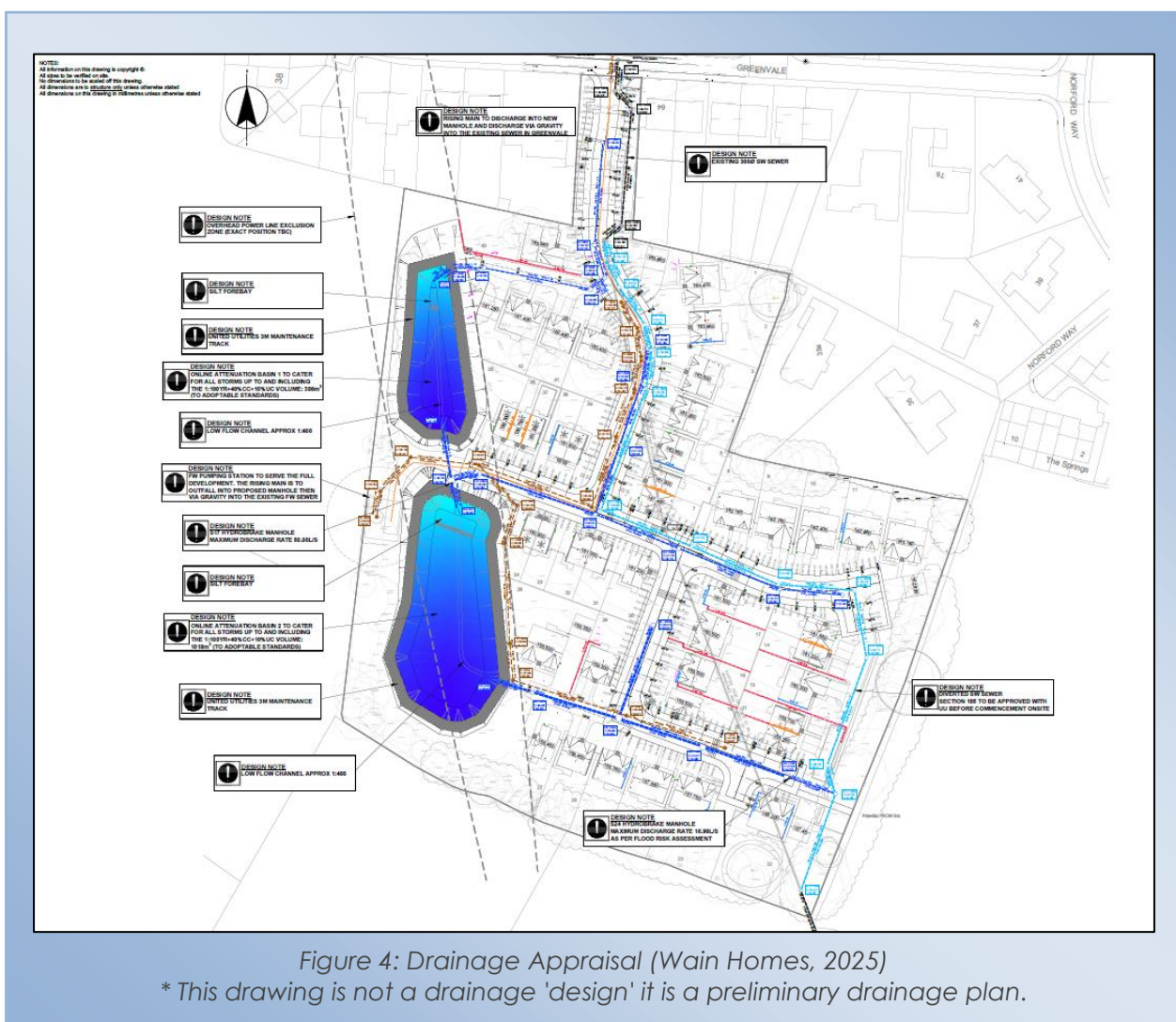
4.6 Discharge to Watercourse/Waterbody

- 4.6.1 The next method is to discharge surface water run-off to a nearby watercourse/waterbody. The nearest watercourse is Naden Brook (Main River), which is located

500m west of the site. Given the proximity and surrounding topography, this watercourse does not offer a viable drainage option. Should infiltration not offer a full drainage solution for the site, then the fallback option would be to discharge to public surface water sewer, subject to formal consents and further design work to confirm constraints for this approach.

4.7 Discharge to the Public Sewer Network

- 4.7.1 UU sewer records have identified the nearest public sewer suitable for a surface water connection crosses the site (see sewer records in **Appendix C**). Should infiltration not offer a full practical solution at the site, then the alternative is to discharge into the public surface water sewer (300mm dia.) which crosses the site as illustrated in **Figure 4** (see full plan in **Appendix J**).
- 4.7.2 Given the nature of the development, the proposals are to divert the public surface water sewer (subject to consent from United Utilities) and re-route this through the development proposals in a location suitable to allow future development to take place. Discussion with UU will need to be undertaken for agreement, and to ensure there are no additional requirements in terms of diverting the public surface water sewer network.



- 4.7.3 The proposals are still to utilise permeable surfaces across the site where practical, even if a full infiltration solution is not viable. The permeable surfaces will be lined with a connection to the proposed main drainage systems where infiltration rates are not suitable. The presence of the permeable surfaces will still allow the first 5mm of rainfall to be dealt with at source in accordance with the SuDS Manual (CIRIA 753).
- 4.7.4 Detailed design will need to be carried out to confirm whether a site wide gravity solution can be achieved, at this time this is anticipated to be the case. It is understood that no offsite works will be required to form a connection to the public surface water sewer onsite.
- 4.7.5 Consent and formal agreement will be required from UU for any works to the public sewers crossing the site. Early discussion will be needed to identify any additional capacity constraints. A pre-development enquiry has been submitted to United Utilities; however, a response is currently outstanding (see correspondence in **Appendix C**).

Proposed Discharge Rates

- 4.7.6 In accordance with the SuDS Manual (CIRIA) and the Non-Technical Standards for SuDS (March 2015) all sites should endeavour to achieve as close to pre-development greenfield rates as is viable. Based on the development area, the pre-development greenfield rate (QBar) is calculated to be 21.0l/s (based on 7.8l/s/ha). The LLFA (RMBC) and United Utilities will also need to agree to the proposed rates of discharge as part of their consultation.
- 4.7.7 Restricting the rate of discharge will generate a requirement to provide onsite stormwater storage for the extreme rainfall events. The stormwater storage figures quoted in **Table 3 (Appendix K)** are estimates only based on a maximum discharge rate of 21.0l/s. Detailed design in due course will determine with accuracy the attenuation requirements considering engineering constraints and hydraulics.

Prop. Imp. Area (1.752ha)	1 In 1yr	1 In 30yr	1 In 100yr + 45% CC
Restricted Run-Off Rate	21.0l/s	21.0l/s	21.0l/s
Est. Stormwater Storage Volume	183cu.m-370cu.m	519cu.m-822cu.m	1214cu.m-1978cu.m

Table 3: Estimated Stormwater Storage Requirements (Betts Hydro, 2025)

- 4.6.8 The surface water scheme for the development will need to be designed to cater for the surface water run-off generated in the events up to and including the 1 in 100yr return period event with 45% allowance for climate change. A below ground pipe network will be utilised for conveyance, and the required onsite attenuation will be provided above ground via 2no. attenuation basins. The specific means are to be determined during the detailed design stage.

4.8 Climate Change

- 4.8.1 There are indications that the climate in the UK is changing significantly, and it is widely believed that the nature of climate change will vary greatly by region. Expert opinion indicates the likelihood that future climate change would produce more frequent short

duration and high intensity rainfall events with the addition of more frequent periods of long duration rainfall.

- 4.8.2 It is believed that the impact of climate change means there is likely to be a long-term increase in the average sea levels, with an expectation that sea levels will rise gradually. An increase in flood water levels means that future flooding events will occur more frequently and will have a greater impact.
- 4.8.3 In light of the future uncertainties Climate Change should be accounted for within the design of all new developments. Climate change factors have been considered and any increase in the level of flood risk (to the site) from climate change is likely to be related to the increase in rainfall intensity and duration and its impact upon the surface water drainage system.
- 4.8.4 In accordance with the Irwell Management Catchment peak rainfall allowances, the upper end allowance (**Table 4**) for the 2070's has been utilised (based on 100yr design life).

PROJECTIONS	TOTAL POTENTIAL CHANGE ANTICIPATED FOR THE 2070'S
Upper End Allowance	45%
Central Allowance	30%

Table 4: Change to Peak Rainfall Compared to 1981-2000 Baseline (Environment Agency, 2025)

5.0 FOUL WATER MANAGEMENT

- 5.1 UU sewer records have identified a public foul water sewer within Greenvale to the north of the site (sewer records included in **Appendix C**). The proposals are to discharge foul water generated by the development to the public foul water sewer network within Greenvale to the north of the site, as shown previously in **Figure 4**.
- 5.2 Given the understanding of current ground levels and the location of the neighbouring public foul water compatible network, a pumped solution will likely be required.
- 5.3 Based on the proposals for the construction of 43no. residential dwellings, the approximate peak foul water flows generated by the site have been calculated at 2.0/s, based on 4000 litres per dwelling per 24 hours as per the guidance contained within Sewers for Adoption.
- 5.4 Detailed design will need to confirm the exact point of outfall, although as noted a pumped solution and the associated onsite infrastructure (pumping station and offsets) will need to be allowed for within the planning proposals.
- 5.5 Any offsite asset routing works will need to be considered in terms of consents with the relevant offsite landowners (Highways Authority). Furthermore, design criteria (offsets) for both United Utilities and the LLFA should be considered when locating any pumping station infrastructure within the wider site extents.
- 5.6 Consent for work to the public sewer network will be required from UU at an early stage, this includes consent for the proposed rates of discharge and the points of connection. A pre-development enquiry with UU has been undertaken; however, a response is currently outstanding (see correspondence in **Appendix C**).

6.0 SUMMARY AND CONCLUSIONS

- 6.1 The key focus of this assessment is on the sustainable management of surface water run-off to ensure no increased flood risk results from the development proposals. The surface water run-off management options have been assessed in accordance with the sustainable drainage hierarchy.
- 6.2 It is understood that at present, the site drains in south-westerly direction with the existing levels, where it ponds in a low-lying area offsite further south-west. Based on the ground conditions identified by the published online datasets and the soil classification; it is understood that infiltration is unlikely to offer a means of managing surface water run-off generated by the site.
- 6.3 The next method is to discharge surface water run-off to a nearby watercourse/ waterbody. The nearest watercourse is Naden Brook (Main River), which is located 500m west of the site. Given the proximity and surrounding topography, this watercourse does not offer a viable drainage option.
- 6.4 Should infiltration not offer a full practical solution at the site, then the alternative is to discharge into the public surface water sewer (300mm dia.) which crosses the site. The proposals are to divert the public surface water sewer through the site. The proposed diversion route is indicated within the Drainage Appraisal prepared by the client.
- 6.5 The proposals are to utilise permeable surfaces across the site where practical, even if a full infiltration solution is not viable. The permeable surfaces will be lined with a connection to the proposed main drainage systems where infiltration rates are not suitable. The presence of the permeable surfaces will still allow the first 5mm of rainfall to be dealt with at source in accordance with the SuDS Manual (CIRIA 753).
- 6.6 A below ground pipe network will be utilised for conveyance, and the required onsite attenuation will be provided above ground via 2no. attenuation basins. The specific means are to be determined during the detailed design stage.
- 6.7 In accordance with the SuDS Manual (CIRIA) and the Non-Technical Standards for SuDS (March 2015) all sites should endeavour to achieve as close to pre-development greenfield rates as is viable. Based on the development area, the pre-development greenfield rate (QBar) is calculated to be 21.0l/s (based on 7.8l/s/ha). The LLFA (RMBC) will also need to agree to the proposed rates of discharge as part of their consultation.
- 6.8 In terms of foul water management due to existing ground levels within the site, it will be necessary to allow for a pumped drainage solution on this site. Any offsite asset routing works will also need to be considered in terms of consents with the relevant offsite landowners (Highways Authority).
- 6.9 This Drainage Management Strategy has been prepared in consultation with the relevant interested parties. The report is commensurate with the scale and nature of the development and the development is appropriate in accordance with the Non-Statutory Standards.

7.0 RECOMMENDATIONS

- 7.1 To confirm whether infiltration rates at the site would promote the use of permeable surfacing and other infiltration solutions, it is recommended that Soakaway Testing (to BRE365) is undertaken at an early stage.
- 7.2 By keeping the finished floor levels elevated relative to the externals, this should help create an overland flood flow route in the event of a breach or any other source of flooding that could lead to overland flow.
- 7.3 Any overland flows generated by the development must be carefully controlled. Safe avenues directing overland flow away from any existing and proposed buildings are advised.
- 7.4 To minimise the flood risk to the neighbouring properties it is recommended that the surface water run-off generated by the proposals be managed effectively with the peak rates of run-off being restricted to the equivalent of the pre-development situation (with betterment where required).
- 7.5 The proposed onsite surface water drainage system will need to be sized to contain up to and including the 1 in 100yr return period storm event with a 45% allowance for climate change being contained onsite.
- 7.6 Detailed design will need to confirm the exact point of outfall although as noted a pumped solution (and the associated onsite infrastructure) may need to be considered within the planning proposals for foul water.
- 7.7 Any offsite works to accommodate the drainage proposals will need to be discussed with the relevant parties during the detailed design stage.
- 7.8 As with any drainage system, blockages within either the foul or surface water system have the potential to cause flooding or disruption. It is important that should any drainage systems not be offered for adoption to either the Water Company or the Local Authority then an appropriate maintenance regime should be scheduled with a suitably qualified management company for these private drainage systems.
- 7.9 If an extreme rainfall event exceeds the design criteria for the drainage system it is likely that there will be some overland flows that are unable to enter the system, it is important that these potential overland flows are catered for within the proposed development site if the capacity of the drainage system is exceeded.

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Technical Guidance to the National Planning Policy Framework, CLG (2019).

Web-based References

Bingmaps – <http://www.bing.com/Maps/>

British Geological Survey – <http://www.bgs.ac.uk/opengeoscience/home.html>

Chronology of British Hydrological Events – www.dundee.ac.uk/

CIRIA – <http://www.ciria.org/>

Cranfield University – <http://www.landis.org.uk/soilscapes/>

Environment Agency – www.environment-agency.gov.uk/

FloodProBE – <http://www.floodprobe.eu/>

Flood Forum – <http://www.floodforum.org.uk/>

Google Maps – <http://maps.google.co.uk/>

Rainfall Climate Change Allowance - <https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall>

Streetmap – <http://www.streetmap.co.uk/>

United Utilities - <https://www.unitedutilities.com/>

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APPENDIX A: NPPF + PPG EXTRACTS

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14. Meeting the challenge of climate change, flooding and coastal change

161. The planning system should support the transition to net zero by 2050 and take full account of all climate impacts including overheating, water scarcity, storm and flood risks and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

Planning for climate change

162. Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating and drought from rising temperatures⁶¹. Policies should support appropriate measures to ensure the future health and resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.
163. The need to mitigate and adapt to climate change should also be considered in preparing and assessing planning applications, taking into account the full range of potential climate change impacts.
164. New development should be planned for in ways that:
- a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through incorporating green infrastructure and sustainable drainage systems; and
 - b) help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings in plans should reflect the Government's policy for national technical standards.
165. To help increase the use and supply of renewable and low carbon energy and heat, plans should:
- a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, and their future re-powering and life extension, while ensuring that adverse impacts are addressed appropriately (including cumulative landscape and visual impacts);

⁶¹ In line with the objectives and provisions of the Climate Change Act 2008.

- b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
 - c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.
166. In determining planning applications, local planning authorities should expect new development to:
- a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
 - b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.
167. Local planning authorities should also give significant weight to the need to support energy efficiency and low carbon heating improvements to existing buildings, both domestic and non-domestic (including through installation of heat pumps and solar panels where these do not already benefit from permitted development rights). Where the proposals would affect conservation areas, listed buildings or other relevant designated heritage assets, local planning authorities should also apply the policies set out in chapter 16 of this Framework.
168. When determining planning applications for all forms of renewable and low carbon energy developments and their associated infrastructure, local planning authorities should:
- a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and give significant weight to the benefits associated with renewable and low carbon energy generation and the proposal's contribution to a net zero future;
 - b) recognise that small-scale and community-led projects provide a valuable contribution to cutting greenhouse gas emissions;
 - c) in the case of applications for the repowering and life-extension of existing renewable sites, give significant weight to the benefits of utilising an established site.
169. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

Planning and flood risk

170. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where

development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

171. Strategic policies should be informed by a strategic flood risk assessment, and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards.
172. All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. They should do this, and manage any residual risk, by:
 - a) applying the sequential test and then, if necessary, the exception test as set out below;
 - b) safeguarding land from development that is required, or likely to be required, for current or future flood management;
 - c) using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and
 - d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations.
173. A sequential risk-based approach should also be taken to individual applications in areas known to be at risk now or in future from any form of flooding, by following the steps set out below.
174. Within this context the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test.
175. The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk).
176. Applications for some minor development and changes of use⁶² should also not be subject to the sequential test, nor the exception test set out below, but should still meet the requirements for site-specific flood risk assessments set out in footnote 63.

⁶² This includes householder development, small non-residential extensions (with a footprint of less than 250m²) and changes of use; except for changes of use to a caravan, camping or chalet site, or to a mobile home or park

177. Having applied the sequential test, if it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied. The need for the exception test will depend on the potential vulnerability of the site and of the development proposed, in line with the Flood Risk Vulnerability Classification set out in Annex 3.
178. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. To pass the exception test it should be demonstrated that:
- a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and
 - b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.
179. Both elements of the exception test should be satisfied for development to be allocated or permitted.
180. Where planning applications come forward on sites allocated in the development plan through the sequential test, applicants need not apply the sequential test again. However, the exception test may need to be reapplied if relevant aspects of the proposal had not been considered when the test was applied at the plan-making stage, or if more recent information about existing or potential flood risk should be taken into account.
181. 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 assessment⁶³. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:
- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;
 - b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;
 - c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;

home site, where the sequential and exception tests should be applied as appropriate.

⁶³ A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

- d) any residual risk can be safely managed; and
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

182. Applications which could affect drainage on or around the site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity, as well as benefits for amenity. Sustainable drainage systems provided as part of proposals for major development should:
- a) take account of advice from the Lead Local Flood Authority;
 - b) have appropriate proposed minimum operational standards; and
 - c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development.

Coastal change

183. In coastal areas, planning policies and decisions should take account of the UK Marine Policy Statement and marine plans. Integrated Coastal Zone Management should be pursued across local authority and land/sea boundaries, to ensure effective alignment of the terrestrial and marine planning regimes.
184. Plans should reduce risk from coastal change by avoiding inappropriate development in vulnerable areas and not exacerbating the impacts of physical changes to the coast. They should identify as a Coastal Change Management Area any area likely to be affected by physical changes to the coast, and:
- a) be clear as to what development will be appropriate in such areas and in what circumstances; and
 - b) make provision for development and infrastructure that needs to be relocated away from Coastal Change Management Areas.
185. Development in a Coastal Change Management Area will be appropriate only where it is demonstrated that:
- a) it will be safe over its planned lifetime and not have an unacceptable impact on coastal change;
 - b) the character of the coast including designations is not compromised;
 - c) the development provides wider sustainability benefits; and
 - d) the development does not hinder the creation and maintenance of a continuous signed and managed route around the coast⁶⁴.

⁶⁴ As required by the Marine and Coastal Access Act 2009.

186. Local planning authorities should limit the planned lifetime of development in a Coastal Change Management Area through temporary permission and restoration conditions, where this is necessary to reduce a potentially unacceptable level of future risk to people and the development.

(<http://www.legislation.gov.uk/ukxi/2015/596/article/4/made>) to require planning permission to be sought in each case.

Paragraph: 075 Reference ID: 7-075-20220825

Revision date: 25 08 2022

How can neighbourhood plans and neighbourhood development/community right to build orders take account of coastal change?

In any instance where a Neighbourhood Area is proposed in a Coastal Change Management Area, careful attention should be paid to the guidance on [what development would be appropriate in such an area](#), including whether [time-limiting planning permissions](#) are needed. The local planning authority will need to be consulted about existing and anticipated levels of risk, and the types of development that may or may not be appropriate.

See related policy in [paragraphs 170 to 173 of the National Planning Policy Framework](#) (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change>).

Paragraph: 076 Reference ID: 7-076-20220825

Revision date: 25 08 2022

Flood Zone and flood risk tables

- Table 1: Flood Zones
- [National Planning Policy Framework Annex 3 - Flood risk vulnerability classification](#) (<https://www.gov.uk/guidance/national-planning-policy-framework/annex-3-flood-risk-vulnerability-classification>)
- [Table 2: Flood risk vulnerability and flood zone 'incompatibility'](#)

Paragraph: 077 Reference ID: 7-077-20220825

Revision date: 25 08 2022

Table 1: Flood Zones

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 Medium Probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual

Flood Zone	Definition
	probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the [Strategic Flood Risk Assessment](https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment) (<https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment>) when considering location and potential future flood risks to developments and land uses.

Paragraph: 078 Reference ID: 7-078-20220825

Revision date: 25 08 2022

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

Notes to table 2:

- This table does not show the application of the [Sequential Test](#) which should be applied first to guide development to the lowest flood risk areas; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and [Exception Tests](#) do not need to be applied to those developments set out in [National Planning Policy Framework footnote 56](#) (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change>). The Sequential and Exception Tests should be applied to 'major' and 'non major' development;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

“†” In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

“*” In Flood Zone 3b (functional floodplain) essential infrastructure that has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;

- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

Paragraph: 079 Reference ID: 7-079-20220825

Revision date: 25 08 2022

Site-specific flood risk assessment: Checklist

1 - Development site and location

You can use this section to describe the site you are proposing to develop. It would be helpful to include, or make reference to, a location map which clearly indicates the development site.

- a. Where is the development site located? (e.g. postal address or national grid reference)
- b. What is the current use of the site? (e.g. undeveloped land, housing, shops, offices)
- c. Which Flood Zone (for river or sea flooding) is the site within? (i.e. Flood Zone 1, Flood Zone 2, Flood Zone 3). As a first step, you should check the [Flood Map for Planning \(https://flood-map-for-planning.service.gov.uk/\)](https://flood-map-for-planning.service.gov.uk/). Check the Strategic Flood Risk Assessment for the area available from the local planning authority to identify if the site is within Flood Zone 1 but at increased risk of flooding in future due to climate change
- d. Also check the Strategic Flood Risk Assessment to identify if there are any other sources of flooding that may affect the site now or in the future.

2 - Development proposals

You can use this section to provide a general summary of the development proposals. It would be helpful to include, or make reference to, an existing block plan and a proposed block plan, where appropriate.

- a. What are the development proposal(s) for this site? Will this involve a change of use of the site and, if so, what will that change be?
- b. In terms of vulnerability to flooding, what is the vulnerability classification of the proposed development? See [National Planning Policy Framework Annex 3 \(https://www.gov.uk/guidance/national-planning-policy-framework/annex-3-flood-risk-vulnerability-classification\)](https://www.gov.uk/guidance/national-planning-policy-framework/annex-3-flood-risk-vulnerability-classification) for an explanation of the vulnerability classifications.
- c. What is the expected or estimated lifetime of the proposed development likely to be (e.g. 100 years or 75 years)? See [paragraph 006](#) of this guidance for further advice on how to assess the lifetime of developments for flood risk and coastal

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APPENDIX B: EA INFORMATION & CORRESPONDENCE

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Hannah Buchanan

From: Hannah Buchanan
Sent: 18 September 2023 10:22
To: GMMC Info Requests
Subject: Flood Risk Information Request - Products 4, 5, 6, & 7
Attachments: Location Plan.pdf

To whom it may concern,

Greenvale, Bamford, Rochdale

Please could you confirm whether you have any information (Products 4, 5, 6, & 7) that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached), including details of historical flooding and specific drainage requirements; this would be greatly appreciated. If there are any other specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind Regards,

Hannah Buchanan BSc (Hons) MSc GradCIWEM
Graduate Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

hannahbuchanan@betts-associates.co.uk
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APPENDIX C: UU CORRESPONDENCE

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Hannah Buchanan

From: wastewaterdeveloperservices@uuplc.co.uk
Sent: 11 November 2024 10:33
To: Hannah Buchanan
Subject: RE: United Utilities - Our reference - 04651854 Greenvale, Bamford, Rochdale [Filed 11 Nov 2024 10:40]
Attachments: OL11 5QL.pdf
Categories: Filed by Mail Manager

Good Morning Hannah,

Please note that United Utilities Water Limited (U UW) can only record and check flooding events which are reported to us, and we have to comply with our Regulators instructions on the qualification of flooding events. Our response does not include:

- any sewer flooding events caused by blockages or collapses which are the result of third-party actions, natural events or other actions over which U UW has no control and not a facet of sewer capacity; or
- any historical sewer flooding events that have been resolved from investment in our infrastructure.

Please note that our modelling data is indicative, and only representative of the 1:100year storm event.

Please see attached file of the sewers in this area, we have no incidents of flooding on this site.

And our plans are indicative and that everything will need to be check on site for confirmation.

Regards,



James Darlington
Developer Engineer
Developer Services & Metering
T: 01925 429095
M: 07917096253
unitedutilities.com

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----- Original Message -----

From: wastewaterdeveloperservices@uuplc.co.uk [wastewaterdeveloperservices@uuplc.co.uk]
Sent: 11/11/2024 08:55
To: hannahbuchanan@betts-associates.co.uk
Subject: United Utilities - Our reference - 04651854 Greenvale, Bamford, Rochdale

Good Morning

Thank you for contacting United Utilities

Your query has been logged to an engineer who will respond on or before 14/11/2024

Kind Regards

If you feel you have received a good service from myself, please can you take two minutes to fill in the survey below. This will be much appreciated



Visit: <https://unitedutilities.thewowawards.co.uk/nominate>



Olivia Morley

Customer Advisor Advanced
Developer Services & Metering
Customer Services
unitedutilities.com

Tel: 0345 072 6067 Option 2 for
Wastewater Services)

Direct Tel:

----- Original Message -----

From: Hannah Buchanan [hannahbuchanan@betts-associates.co.uk]

Sent: 07/11/2024 16:44

To: wastewaterdeveloperservices@uuplc.co.uk

Subject: RE: 04651854 Sewer Flood Risk Information Request

Good afternoon,

I received the below response from your team last year, and the project has been on hold until now since then. I noticed the response says “no current record / we do have (a) current record”. Please could you confirm whether there is or isn’t records of flooding in proximity of this site?

Kind Regards,

Hannah Buchanan *BSc (Hons) MSc GradCIWEM*

Graduate Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

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From: wastewaterdeveloperservices@uuplc.co.uk <wastewaterdeveloperservices@uuplc.co.uk>

Sent: 20 September 2023 13:17

To: Hannah Buchanan <hannahbuchanan@betts-associates.co.uk>

Subject: 04651854 Sewer Flood Risk Information Request

Hi Hannah

'I can confirm that we have no current record / we do have (a) current record(s)] of sewer flooding within the vicinity of the proposed development.

Please note that United Utilities Water Limited (U UW) can only record and check flooding events which are reported to us and we have to comply with our Regulators instructions on the qualification of flooding events to place on the register.

Our response does not include:

- 1. any sewer flooding events caused by blockages or collapses which are the result of third party actions, natural events or other actions over which U UW has no control and not a facet of sewer capacity; or*
- 1. any historical sewer flooding events that have been removed from the register as a result of investment in our infrastructure.*

As with all development sites, we recommend you liaise with our water and wastewater engineers by contacting our Developer Services team so the details of your development proposal can be considered further. Details can be found at the following link.

<https://www.unitedutilities.com/services/builders-developers/>

Should you require any further information please do not hesitate to contact me.'

Kind regards Jill



Jill Ellis
Customer Advisor Advanced
Developer Services & Metering
Customer Services
Direct Tel: 01925 233 064
Tel: 0345 072 6067
[unitedutilities.com](https://www.unitedutilities.com)

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----- Original Message -----

From: Hannah Buchanan [hannahbuchanan@betts-associates.co.uk]

Sent: 18/09/2023 10:20

To: wastewaterdeveloperservices@uuplc.co.uk

Subject: Sewer Flood Risk Information Request

To whom it may concern,

Greenvale, Bamford, Rochdale

Please could you confirm whether you have any information that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached), including details of historical flooding and specific drainage requirements; this would be greatly appreciated. If there are any other specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind Regards,

Hannah Buchanan BSc (Hons) MSc GradCIWEM

Graduate Flood Risk Analyst

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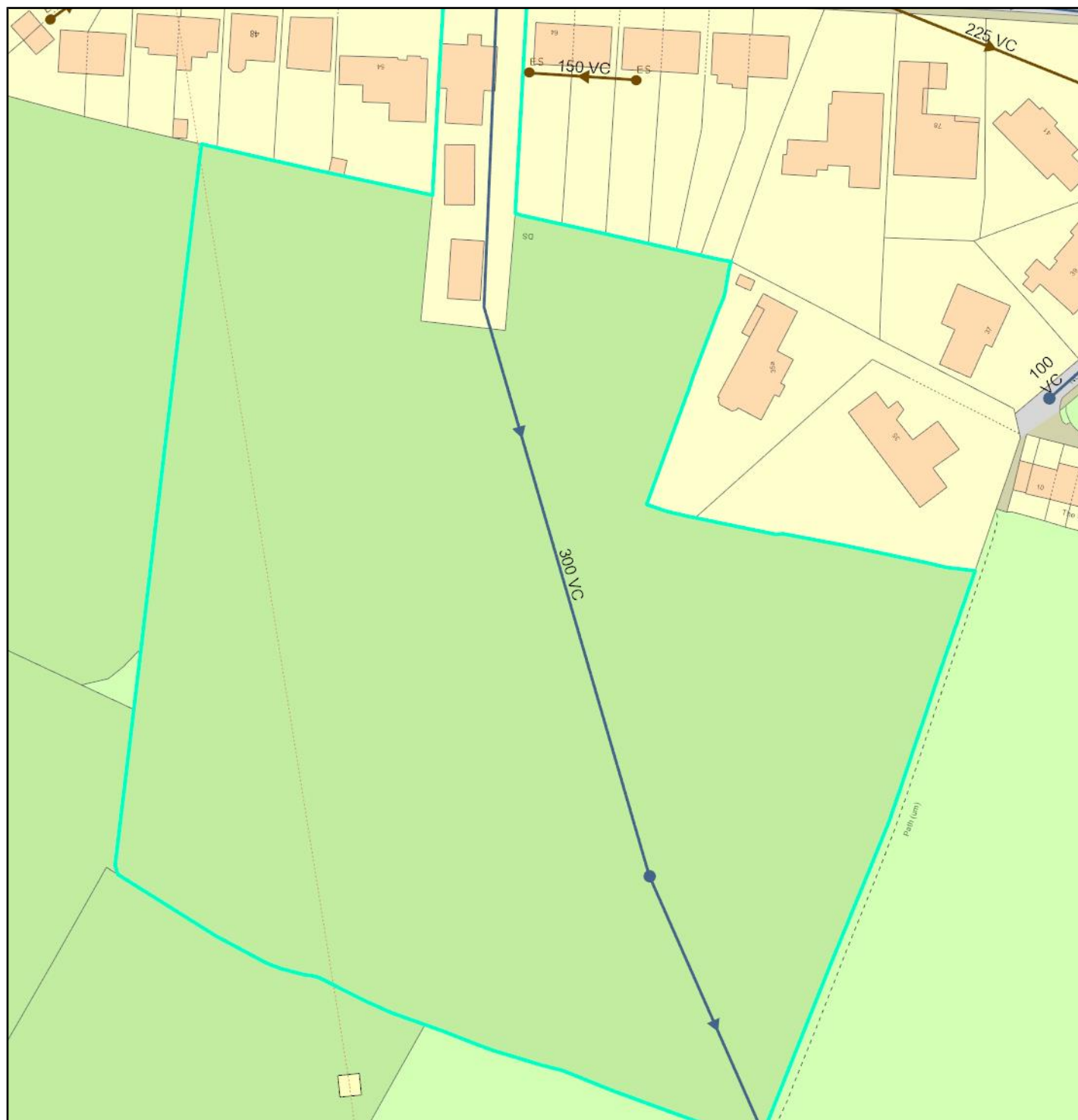
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Chadwick Barn Farm 58 Greenvale, Bamford, Rochdale, OL11 5QJ



The position of underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. The actual positions may be different from those shown on the plan and private pipes, sewers or drains may not be recorded. United Utilities Water PLC will not accept any liability for any damage caused by the actual positions being different from those shown.

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Wastewater Symbolology

Abandoned	Foul	Surface Water	Combined	
				Public Sewer
				Private Sewer
				Section 104
				Rising Main
				Sludge Main
				Overflow
				Water Course
				Highway Drain

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	
Drop Shaft	Change of Characteristic
Orifice Plate	

APPENDIX D: LPA/LLFA CORRESPONDENCE

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Hannah Buchanan

From: Kate Fletcher <Kate.Fletcher@Rochdale.Gov.uk> on behalf of Development Management <development.management@rochdale.gov.uk>
Sent: 25 September 2023 09:48
To: Hannah Buchanan
Subject: FW: Historic Flood Risk and Information Request

Hello Hannah

After seeking advice from an officer, he states that. If you are making queries in the interest of developing the site, I would recommend that their client submit a request for pre-application advice, where all matters including flood risk can be explored in more detail.

Matters of Flood Risk are typically considered by The Environment Agency who may hold additional detail to what we do. They operate a chargeable pre-application service which they may wish to consider.

I hope this helps
Kind Regards
Kate

Kate Fletcher
Senior Technical Admin Officer
Planning & Development



☎ 01706 924306
✉ kate.fletcher@rochdale.gov.uk

Rochdale Borough Council
Floor 3, Number One Riverside
Smith Street, Rochdale, OL16 1XU

To access our services go to www.rochdale.gov.uk
For news, events and social media updates go to www.rochdale.gov.uk/newsandevents

Please consider the environment before printing this email.

From: Environmental Management <environmental.management@rochdale.gov.uk>
Sent: 19 September 2023 16:25
To: Development Management <development.management@rochdale.gov.uk>
Subject: RE: Historic Flood Risk and Information Request

Hi Kate,

This is the attachment, please let me know if it still has not come through.
Thankyou .

Regards

Karla
Customer Service Advisor

Rochdale Borough Council
Floor 1, Number One Riverside
Smith Street, Rochdale, OL16 1XU
To access our services go to www.rochdale.gov.uk
For news and social media updates go to www.rochdale.gov.uk/news

From: development.management@rochdale.gov.uk
Sent: Tuesday, September 19, 2023 12:58 PM
To: Environmental.Management@Rochdale.Gov.UK
Subject: RE: Historic Flood Risk and Information Request

Hi Rabiah, do you have the attachment at all?

Thanks
Kate

Kate Fletcher
Senior Technical Admin Officer
Planning & Development



☎ 01706
924306
✉ kate.fletcher@rochdale.gov.uk

Rochdale Borough Council
Floor 3, Number One Riverside
Smith Street, Rochdale, OL16 1XU

To access our services go to
www.rochdale.gov.uk
For news, events and social media updates go to
www.rochdale.gov.uk/newsandevents

Please consider the environment before printing this email.

From: Environmental Management <Environmental.Management@Rochdale.Gov.UK>
Sent: 19 September 2023 12:16
To: Development Management <development.management@rochdale.gov.uk>
Subject: FW: Historic Flood Risk and Information Request

Afternoon,

Please see below

Thanks

Rabiah
Customer Service Advisor (Contact Centre)
Information, Customers & Communities

Rochdale Borough Council
Floor 1, Number One Riverside
Smith Street, Rochdale, OL16 1XU

To access our services go to

www.rochdale.gov.uk

For news, events and social media updates go to

www.rochdale.gov.uk/newsandevents

Please consider the environment before printing this email.

From: Council Mailbox <council@rochdale.gov.uk>

Sent: 18 September 2023 12:53

To: Hannah Buchanan <hannahbuchanan@betts-associates.co.uk>

Cc: Environmental Management <Environmental.Management@Rochdale.Gov.UK>

Subject: Re: Historic Flood Risk and Information Request

Good Afternoon

Thank you for your email, your email has been passed to the relevant service who will assist you with your enquiry.

Regards

Rochdale Council

From:

hannahbuchanan@betts-associates.co.uk

Sent: Monday, September 18, 2023 10:23 AM

To:

council@rochdale.gov.uk

Subject: Historic Flood Risk and Information Request

:CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

To whom it may concern,

Greenvale, Bamford, Rochdale

Please could you confirm whether you have any information that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached), including details of historical flooding and specific drainage requirements; this would be greatly appreciated. If there are any other specific requirements that you

require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind Regards,

Hannah Buchanan

BSc (Hons) MSc GradCIWEM

Graduate Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY

Chester +44 (0)1244 289041

hannahbuchanan@betts-associates.co.uk

www.betts-associates.co.uk

CIVIL | STRUCTURAL | GEO-ENVIRONMENTAL | HYDROLOGY | FLOOD RISK MANAGEMENT
SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL

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APPENDIX E: LOCATION PLAN

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LOCATION PLAN

Greenvale, Bamford, Rochdale

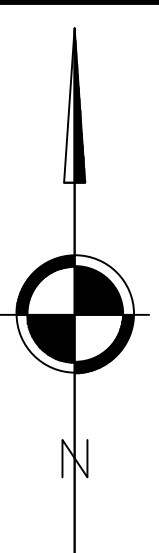


OS X (Eastings)	386034
OS Y (Northings)	413432
Nat Grid	SD860134 / SD8603413432
Nearest Post Code	OL11 5QL
Lat (WGS84)	N53:37:02 (53.61724358865183)
Long (WGS84)	W2:12:45 (-2.2125958835149233)
Lat, Long (WGS84)	53.61724358865183,-2.2125958835149233
Lat (OSGB36)	N53:37:01 (53.617011035206254)
Long (OSGB36)	W2:12:40 (-2.2111475770717584)
Lat, Long (OSGB36)	53.617011035206254,-2.2111475770717584



APPENDIX F: TOPOGRAPHICAL SURVEY

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Topographical Survey Legend

BL	Liter bin	TL	Tie line
BH	Bore Hole	TP	Telegraph pole
BS	Bus stop	TPS	Tactile paving slabs
BT	British Telecom	TS	Traffic signal light
CP	Concrete paving slabs	TV	Television cover
DR	Drain	VP	Vent pipe
EL	Electrical ic	WM	Water meter
EP	Electric pole	WO	Wash Out
ER	Earth rod	U/L	Unable to lift
ER	Fence annotation		
FR	Fire Hydrant	B/W	Barbed wire
FP	Flagpole	C/B	Closest boarded
FT	Floodlight	C/I	Corrugated iron
G	Gully	C/L	Chain-link
GP	Gate post	C/P	Concrete panel
GV	Gas valve	H/R	Hard rail
IC	Inspection cover	I/R	Iron railings
JB	Junction box	O/B	Open boarded
KO	Kerb outlet	P/C	Post & chain
LB	Lamp post	P/R	Post & rail
LP	Lamp post	P/W	Post & wire
M	Utility marker	W/M	Wire mesh
MP	Manhole		Level prefix descriptions
MW	Monitoring Well	AL	Arch level
NP	Name plate	BL	Bed level
P	Post	CL	Cover level
PM	Parking meter	EH	Eaves level
RE	Rodding eye	FL	Floor level
RS	Road sign	IL	Invert level
RWP	Rain water pipe	PL	Parapet level
SP	Sign post	RH	Roadbridge level
ST	Stop tap	SL	Soft level
SB	Service Box	SP	Arch springing level
SV	Stop valve	TP	Top of pipe/culvert
T	Telephone call box	WH	Wall height
TH	Trail Hole	WL	Water level

BENCH MARK INFORMATION

All levels relate to O.S (Newlyn) Datum, Established using network RTK. Survey plotted on a plane local grid, orientated to National Grid.

NOTES

ONLY MANHOLES AND SERVICES VISIBLE AT TIME OF SURVEY SHOWN

DRAINAGE INFORMATION MUST BE CHECKED AND VERIFIED WITH LOCAL AUTHORITY RECORDS PRIOR TO WORK COMMENCING

Levels defining edge of carriageway are observed at channel (bottom of kerb). Unless otherwise stated.

TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE AVERAGE SPREAD.

THE DRIP LINE LAYER DENOTES THE TREES EXTREMITY

SURVEY STATIONS

stn1	386042.064	413577.433	166.588
stn2	386094.536	413574.292	166.871
stn3	386012.736	413579.170	166.851
stn4	386041.525	413542.326	164.713
stn4a	386027.542	413542.908	164.455
stn5	386037.311	413515.133	164.128
stn6	386059.945	413489.302	164.260
stn7	386051.742	413434.339	161.111

REVISIONS

REV	DESCRIPTION	SURVEYED	DRAWN	DATE

JLP Surveying

JLP Surveying Consultants Ltd,
Suite 45 Rodney House,
King Street,
Wigan
WN1 1BT
Tel - 01942 243113
Fax - 01942 492230
Mobile - 07710 428498
EMAIL - peterhouston@jlpurveyors.com

PROJECT
Greenvale
Rochdale

DRAWING TITLE
Topographical Land Survey

SCALE	SHEET SIZE	No. of SHEETS	DATE	REVISION
1:500	A1	1	18.08.2023	

DRAWING NUMBER
S23-0849

APPENDIX G: SITE PHOTOGRAPHS

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