

CROMPTON AVENUE, ROCHDALE

Flood Risk Assessment

April 2024 – REV B

Tempus

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Ref: 9806/FRA/001



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1 INTRODUCTION

Tempus Design and Build have prepared a Flood Risk Assessment (FRA) for a residential development at land off Crompton Avenue, Rochdale for Lancet Homes Limited. This FRA has been undertaken to inform the planning application for the proposed development.

This Flood Risk Assessment (FRA) report has been prepared to the requirements of the:

- National Planning policy Framework, 2021 (NPPF);
- National Planning Practice Guidance (NPPG);
- Bury, Rochdale and Oldham Strategic Flood Risk Assessment Level 1 (November 2009);
- Bury, Rochdale and Oldham Strategic Flood Risk Assessment Level 2 (November 2009);
- Rochdale Borough's Strategy for Flood Risk Management 2014-2024 (March 2014)

The Environment Agency (EA), Rochdale Borough Council and the Lead Local Flood Authority (LLFA) of Rochdale Borough Council, need to be satisfied that the drainage principles of the proposed development will address the risk of flooding to the development site; will ensure that the drainage is maintained to prevent flooding; and in turn not to increase the risk of flooding to neighbouring land and property.

2 NATIONAL POLICY AND WATER MANAGEMENT GUIDANCE

2.1 National Planning Policy Framework (NPPF) and National Planning Practice Guidance (NPPG)

The Government's national policies on development and flood risk are set out in The National Planning Policy Framework (NPPF) and the National Planning Practice Guidance (NPPG). The NPPF and NPPG set out the regional and local requirements, to ensure that flood risk is taken into account at all stages in the planning process, avoiding inappropriate development in areas at risk of flooding and directing development away from areas at highest risk.

The risk based approach of the NPPF requires that a Sequential Test is used to guide the decision-making process by steering development to areas with the lowest probability of flooding where feasible.

NPPG, Paragraph 030, outlines that the objectives of this FRA are to establish whether a proposed development is likely to be affected by current or future flooding from any source; whether it will increase flood risk elsewhere; whether the measures proposed to deal with these effects and risks are appropriate; whether the evidence for the local planning authority to apply (if necessary) the Sequential Test; and whether the development will be safe and pass the Exception Test, if applicable.

2.2 Flood and Water Management Act

The Flood and Water Management Act takes forward some of the proposals from three previous strategy documents published by the UK Government – Future Water (2008), Making Space for Water (2008) and the UK Government's response to the Sir Michael Pitt's Review of the summer 2007 floods. In doing so it gives the EA a strategic overview role for flood risk and gives local authorities responsibility for preparing and putting in place strategies for managing flood risk from groundwater, surface water and ordinary watercourses in their areas.

3 SITE SETTING AND DESCRIPTION

3.1 Site Location

The site is approximately 1.5km to the south east of Rochdale town centre. The site is bounded by housing to the west, an area of vegetation to the north west, sheltered housing accommodation to the north east and fields to the south and south east.

The co-ordinates of the centre of the site are approximately: Easting: 390744, Northing: 411210 (SD907112 / SD9074411210).

A proposed development plan can be found in Appendix A.

3.2 Existing Site

The existing site which is roughly rectangular in shape, is covered with grass, rough vegetation and some shrubs and trees around the perimeter. The site slopes from south to north, with access from the gate on Crompton Avenue.

A topographical survey can be found in Appendix B.

3.3 Proposed Development

The proposal is for a new housing development and associated parking and garden spaces. The plots are generally of a traditional detached layout with private parking to the front or sides. The plots each have gardens to the rear and/or sides.

The proposed development plan can be found in Appendix A.

3.4 Topography

The site topography shows a slope from south east to north west. The high point approaching the south easter boundary is approximately 152.25m AOD, the low point is approximately 141.00m AOD. The gradient is approximately 1 in 12.

The topographical survey can be found in Appendix B.

3.5 Ground Conditions

Ground conditions were investigated by bEk Enviro Ltd (BEK) and presented in their Site Investigation & Ground Assessment report ref BEK-22081-2 dated August 2022. The ground conditions encountered were described as described below

Topsoil

Topsoil was identified in all but one of the trial pits, to a maximum depth of 0.4m bgl.

Made Ground

Made ground deposits were identified only in two locations at depths up to 0.6m bgl. The made ground was seen to comprise grass over brown slightly silty slightly gravelly fine to medium SAND (Gravel is fine to coarse subangular to subrounded of mixed lithologies. Rare brick fragments).

Natural Strata

The natural superficial strata were encountered beneath the made ground or topsoil in all locations, and comprised grey silty very gravelly cobbly fine to coarse SAND (Gravel and cobbles are fine to coarse subrounded of sandstone) in Trial Pit No TP1 only, and orange-brown gravelly fine to medium SAND (Gravel is fine to coarse subrounded of sandstone) in all other locations.

Bedrock

The investigation did not identify the presence of bedrock within any exploratory hole location. The report has records of the bedrock geology underlying the site to be of the Pennine Lower Coal Measures Formation – mudstone, siltstone and sandstone’ and the ‘Old Lawrence Rock – Sandstone’.

Groundwater

Groundwater observations were noted within Trial Pit No TP1 to TP3. The ground was noted to be damp at depths of 1 m to 2.2 m bgl in the northern part of the site. Trial pits in the southern part of the site were dry to the depths excavated.

3.6 Waterbodies / Rivers / Canals

The nearest surface water feature to the site is the culvert adjacent Broad Lane, which is a tributary of Sudden Brook.

There is a 450mm diameter public combined sewer beneath Broad Lane which runs from north east to south west, joining a 525mm diameter combined sewer within Harlotte Street, before heading north west. The invert level of manhole 6304, within Broad Lane to the north of the proposed site is recorded as 138.07m AOD. Manhole 6305 which is downstream of manhole 6304, is not provided with an invert level within the United Utilities sewer records.

4 FLOOD RISK AND HYDROLOGY

Detailed flood information can be found in Appendix C.

4.1 Flooding from Rivers and Sea

The maps show the site to lie within Flood Zone 1; defined within Table 1 (paragraph 065) in the NPPG as land having a less than 1 in 1000 annual probability of river or sea flooding:

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. 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)

Table 2 (paragraph 066) of the NPPG defines the flood risk vulnerability classification of various types of development. The proposed development classes as 'More Vulnerable':

Essential infrastructure

- Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk; Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood; Wind turbines.

Highly vulnerable

- Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding; Emergency dispersal points; Basement dwellings; Caravans, mobile homes and park homes intended for permanent residential use; Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').

More vulnerable

- Hospitals; Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels; Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels; Non-residential uses for health services, nurseries and educational establishments; Landfill* and sites used for waste management facilities for hazardous waste; Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Less vulnerable

- Police, ambulance and fire stations which are not required to be operational during flooding; Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure; Land and buildings used for agriculture and forestry; Waste treatment (except landfill* and hazardous waste facilities); Minerals working and processing (except for sand and gravel working); Water treatment works which do not need to remain operational during times of flood; Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.

Table 3 (paragraph 067) of the NPPG compares the flood risk vulnerability and flood zone 'compatibility' and advises on whether the considered development is appropriate.

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:

✓ Development is appropriate

X Development should not be permitted.

Given the development site is within Flood Zone 1 and is classified as more vulnerable, Table 3 indicates the development is appropriate:

4.2 Flood Risk from Surface Water

The majority of the site has a very low risk of surface water flooding. The mapping suggests that no risk of flooding to the majority of the site will occur in the 1 in 1000 year return period. A very small amount of flooding is indicated on the 1000 year return map, to the northern section of the site and is considered insignificant both in area and depth.

The post development site will have the levels re-worked and incorporate a positive drainage system to convey surface water flows and ensure that the post development surface water flood risk is further reduced.

4.3 Flooding from Reservoirs

The maps show the site not to be at risk from flooding reservoirs.

4.4 Historic Flooding

The maps show the site to have no recorded historic flooding events.

5 SURFACE WATER MANAGEMENT PRINCIPLES

The surface water for the development site is to be managed so that it adheres to current regulations and local authority requirements.

5.1 National Planning Policy Guidance (NPPG)

Guidance is set out in the NPPG to which the surface water management of the development is to conform to the following:

- Paragraph 051 states, the drainage is to be designed to control surface water run off close to where it falls and mimic natural drainage as closely as possible, will provide opportunities to reduce the causes and impacts of flooding, and will remove pollutants from urban run-off at source;
- An assessment will be carried out as stated in Paragraph 079 on whether a sustainable drainage system should be considered depending on the proposed development and its location;
- And Paragraph 080 where the aim of the surface water management will be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable: into the ground (infiltration); to a surface water body; to a surface water sewer, highway drain, or another drainage system; to a combined sewer.

5.2 Run-Off Destination

Surface water run-off is to discharge to one or more of the following in the order of priority shown:

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

5.3 The Management Train

A concept fundamental to implementing a successful SuDS scheme is the management train. This is a sequence of SuDS components that serve to reduce run-off rates and volumes and reduce pollution. The hierarchy of techniques that are to be used for the surface water management of the development are:

- Prevention – Prevention of run-off by good site design and reduction of impermeable areas;
- Source Control – Dealing with water where and when it falls (e.g. infiltration techniques);
- Site Control – Management of water in the local area (e.g. swales, detention basins);
- Regional Control – Management of run-off from sites (e.g. balancing ponds, wetlands).

5.4 Design Principles

The design principles for the surface water management of the development will be to:

- Ensure that people, property and critical infrastructure are protected from flooding;
- Ensure that the development does not increase flood risk off site;
- Ensure that SuDS can be economically maintained for the development.

5.5 Peak Surface Water Flow

The peak surface water flow from the post development site is not to exceed 5 litres per second, as requested by United Utilities in their pre-development enquiry response ref. 02327155 (See Appendix D). To reduce the risk of flooding due to the development, the post development surface water run-off is to be restricted and attenuated.

5.6 Volume Control

Should infiltration methods not be suitable, and it is not possible to achieve pre-development run-off volume, then it will be demonstrated that the increased volume will not increase flood risk on or off site.

5.7 Flood Risk

The drainage system will be designed so that, unless an area is designed to hold and/or convey water, flooding does not occur on any part of the site for a 1 in 30-year rainfall event.

The drainage system will also be designed so that, unless an area is designed to hold and/or convey water, flooding does not occur during a 1 in 100-year rainfall event in any part of a building (including a basement) or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.

The design of the site will ensure that flows resulting from rainfall more than a 1 in 100-year rainfall event are managed in exceedance routes that avoid risk to people and property both on and off site.

5.8 Pollution

The SuDS design for the development site will ensure that the quality of any receiving water body is not adversely affected and preferably enhanced in accordance with Ciria SuDS Manual C753, Chapter 4.

5.9 Designing for Exceedance

The development site design will be such that when SuDS features fail or are exceeded, exceedance flows do not cause flooding of properties on or off site. This will be achieved by designing suitable ground exceedance or flood pathways, and run-off will be completely contained within the drainage system (including areas designed to hold or convey water) for all events up to a 1 in 30-year event. The design of the site ensures that flows from rainfall more than a 1 in 100-year rainfall event are managed in exceedance routes that avoid risk to people and property both on and off site.

6 SURFACE WATER RUN-OFF DESTINATION

The destination of the surface water run-off from the development site has been assessed against the prioritisation set by the guidance from NPPG Paragraph 80. The feasibility of the surface water run-off to the priority receptors are as follows:

Run_off Destination	Feasible	Description
Discharge to Ground	No	Infiltration testing was undertaken by bEk Enviro Ltd on 15 th June 2022. Results indicate that the site is unsuitable for soakaways, as a practical infiltration rate could not be determined during the period of the investigation.
Discharge to Surface Water Body	Yes	An existing surface water feature exists to the north east of the site adjacent Broad Lane, which is a tributary of Sudden Brook. The feature comprises an uncovered drainage ditch prior to entering into a grated culvert adjacent the track to the north east of the site. It is intended, subject to discussion with the land owner, that discharge to the water course will be feasible.
Discharge to Surface Water Sewer	No	No surface water sewers with sufficient capacity or depth, exist within the vicinity of the site to enable a connection.
Discharge to Highway Drain or Other	No	Not acceptable to discharge to highway drain given the available options.
Discharge to Combined Water Sewer	Yes - Alternative Method	Subject to agreement with the adjacent land owner, discharge will be to the existing water body to the north east of the site. A potential option of drainage to the existing combined sewer does exist, with attenuated and flow restricted discharge. Rates would need agreement with United Utilities, although a rate of 5l/sec as per the pre development enquiry response ref 02327155 is assumed.

7 SuDS FEASIBILITY

To reduce surface water run-off, SuDS methods can be used in the development.

SuDS methods as per the Sustainable Drainage System (SuDS) hierarchy, and the Non-Statutory Technical Standards for Sustainable Drainage Systems – March 2015, that can be used are detailed below:

Component Type	Description	Placement	Collection Mechanism
Green roofs	Planted soil layers on the roof of buildings that slow and store runoff	Building integrated	Surface
Rainwater harvesting systems	Systems that collect runoff from the roof of a building or other paved surface for use	Building – above/below ground storage	Point
Infiltration systems/ Soakaways	Systems that collect and store runoff, allowing it to infiltrate into the ground.	Open Space	Point
Proprietary treatment systems	Subsurface structures designed to provide treatment of runoff.	Open space	Point
Filter strips	Grass strips that promote sedimentation and filtration as runoff is conveyed over the surface.	Open space	Lateral
Filter drains	Shallow stone filled trenches that provide attenuation, conveyance and treatment of runoff.	Open space	Lateral
Swales	Vegetated channels (sometimes planted) used to convey and treat runoff.	Street/open space	Lateral
Bioretention systems	Shallow landscaped depressions that allow runoff to pond temporarily on the surface, before filtering through vegetation and underlying soils.	Street/open space	Point
Trees	Trees within soil-filled tree pits, tree planters or structural soils used to collect, store and treat runoff.	Street/open space	Point
Pervious pavements	Structural paving through which runoff can soak and subsequently be stored in the sub-base beneath, and/or allowed to infiltrate into the ground below.	Street/open space	Surface
Attenuation storage tanks	Large, below ground voided spaces used to temporarily store runoff before infiltration, controlled release or use.	Street/open space	Point
Detention basins	Vegetated depressions that store and treat runoff.	Open space	Point
Ponds and wetlands	Permanent pools of water used to facilitate treatment or runoff – runoff can also be stored in an attenuation zone above the pool	Open space	Point

The feasibility of above SuDS methods for the site are summarised in the table below:

SuDS Method	Feasible for Use on Subject Site	Comments
Green roofs	No	Green roofs not practical for sloping roof traditional dwellings
Rainwater harvesting systems	No	Capacity of rainwater harvesting tanks will not be available if occupiers do not use the volume of water stored
Infiltration systems/ Soakaways	No	Site is underlain by impermeable soils with a potentially high water table.
Proprietary treatment systems	No	No requirement for contaminant removal
Filter strips	No	Very little landscaping to successfully incorporate filter strips
Filter drains	No	Very little landscaping to successfully incorporate filter drains
Swales	No	Very little soft landscaping capable of accommodating swales
Bioretention systems	No	The site layout does not lend itself to a bioretention area
Trees	No	Tree pits will provide very limited storage volume
Pervious pavements	No	Permeable paving may be suitable as a means of infiltration but will rely on management of the surface which could lead to silting and poor drainage
Attenuation storage tanks	Yes	A solution incorporating oversized pipes/storage structures can be used beneath the car parking areas and shared driveways
Detention basins	No	The site layout does not lend itself to a detention basin
Ponds and wetlands	Yes	It is intended that a small pond area to the north of the site be utilised to provide improved water quality as part of a combined approach.

8 BELOW GROUND DRAINAGE STRATEGY

This chapter outlines the initial proposed drainage strategy. This is subject to detailed design but forms the outline principles proposed for the surface water drainage.

8.1 Climate Change

With the anticipated design life of the development, 40% allowance for climate change should be adopted in accordance with Table 2 of the NPPG for climate change allowances.

8.2 Surface Water Drainage Network

The surface water drainage network will be designed to convey the flows to the existing water course to the north east of the site. Alternative a flow restricted connection would be feasible to the existing combined public sewer in Broad Lane.

8.3 Surface Water Run-Off Rate

The surface water run-off from the entire development site will be restricted to a maximum rate of 5 l/s. The pre-development enquiry response from United Utilities can be found at Appendix D.

8.4 Surface Water Attenuation

Ciria SuDS Manual 2015, Paragraph 10.2.4 states that: 'Exceedance flows (i.e. flows in excess of those for which the system is designed) should be managed safely in above-ground space such that risks to people and property are acceptable'.

And PPS25 Practice Guidance Paragraph 5.51 previously stated that: 'For events with a return-period in excess of 30 years, surface flooding of open spaces such as landscaped areas or car parks is acceptable for short periods, but the layout and landscaping of the site should aim to route water away from any vulnerable property and avoid creating hazards to access and egress routes. No flooding of property should occur as a result of a one in 100-year storm event (including an appropriate allowance for climate change)'.

The system will be designed to attenuate all flows up to the 1 in 100 + 40% CC event below ground. The volume of storage requirement for the above event is approximately 415m³. This is based on 0.46ha of the 1.05ha site being positively drained hard-standing.

Calculations for the surface water attenuation volume can be found in Appendix E.

9 DESIGN EXCEEDANCE FLOW ROUTES

If an extreme storm greater than the enhanced 1 in 100-year were to occur, or the maintenance of the SuDS features is not carried out, flooding may occur from the network.

The surface water would flow to the low points of the site, which are to the north.

Exceedance routes would be routed via the proposed road network, toward the open space area to the north of the proposed site.

10 POLLUTION PREVENTION

The source of any potential pollutants will be from the surface water run-off from the building roofs and external hard-standing areas. There are little pollutants from the roof areas, and therefore no pollutant control for the run-off from these areas is required. The hardstanding is primarily private driveway and therefore there is no requirement for petrol interceptors given the low likelihood of pollution. A SUDS pond will be incorporated into the design to allow for some improvement of the surface water run off quality and also to allow for rainfall interception for shorter and less intense storm events.

11 CONCLUSION / SUMMARY

The proposed / post development surface water drainage will be designed to meet NPPF and local authority requirements.

11.1 SuDS Principles

All feasible SuDS methods, and surface water discharge destinations have been assessed, with the feasible SuDS methods being adoptable oversized pipes.

11.2 Peak Flow Control

The surface water run-off volume should be restricted so that it is no greater than 5 litres per second.

11.3 Flood Risk within the Development

No flooding should occur within the network during the 1 in 1-year; 1 in 30-year storm event.

11.4 Construction

Care is to be taken so as not to increase the off site flood risk during construction.

Temporary drainage measures should be agreed with the LLFA / UU including the use of any silt removal plant.

11.5 Flood Risk

The site is within Flood Zone 1 and is classed as more vulnerable therefore development is appropriate.

APPENDIX A

Site Proposals

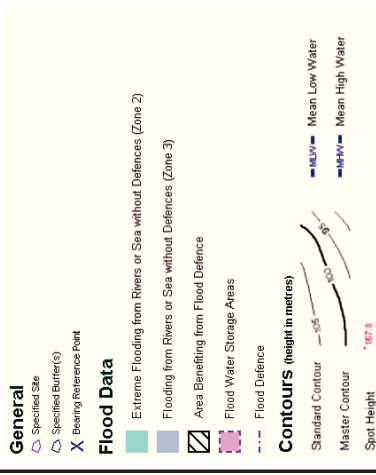
APPENDIX B

Topographical Survey

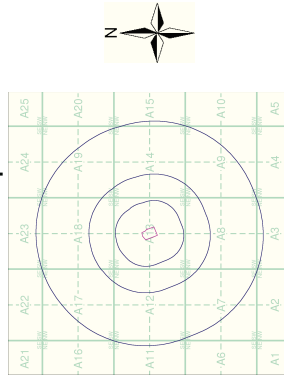
APPENDIX C

Flood Maps

EANRW Flood Data Map (1:10,000)



EANRW Flood Data Map - Slice A



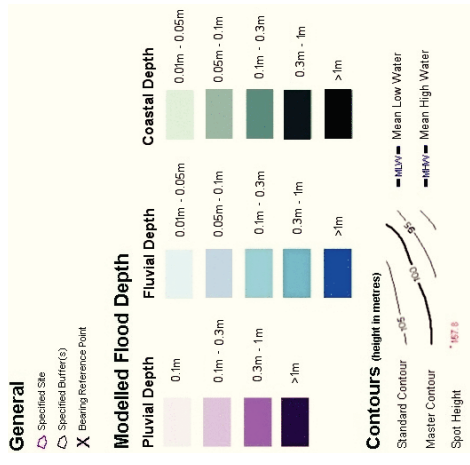
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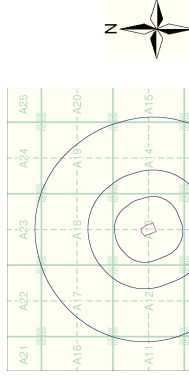
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JBA 75 Year Return Flood Map (Undeformed) - Slice A

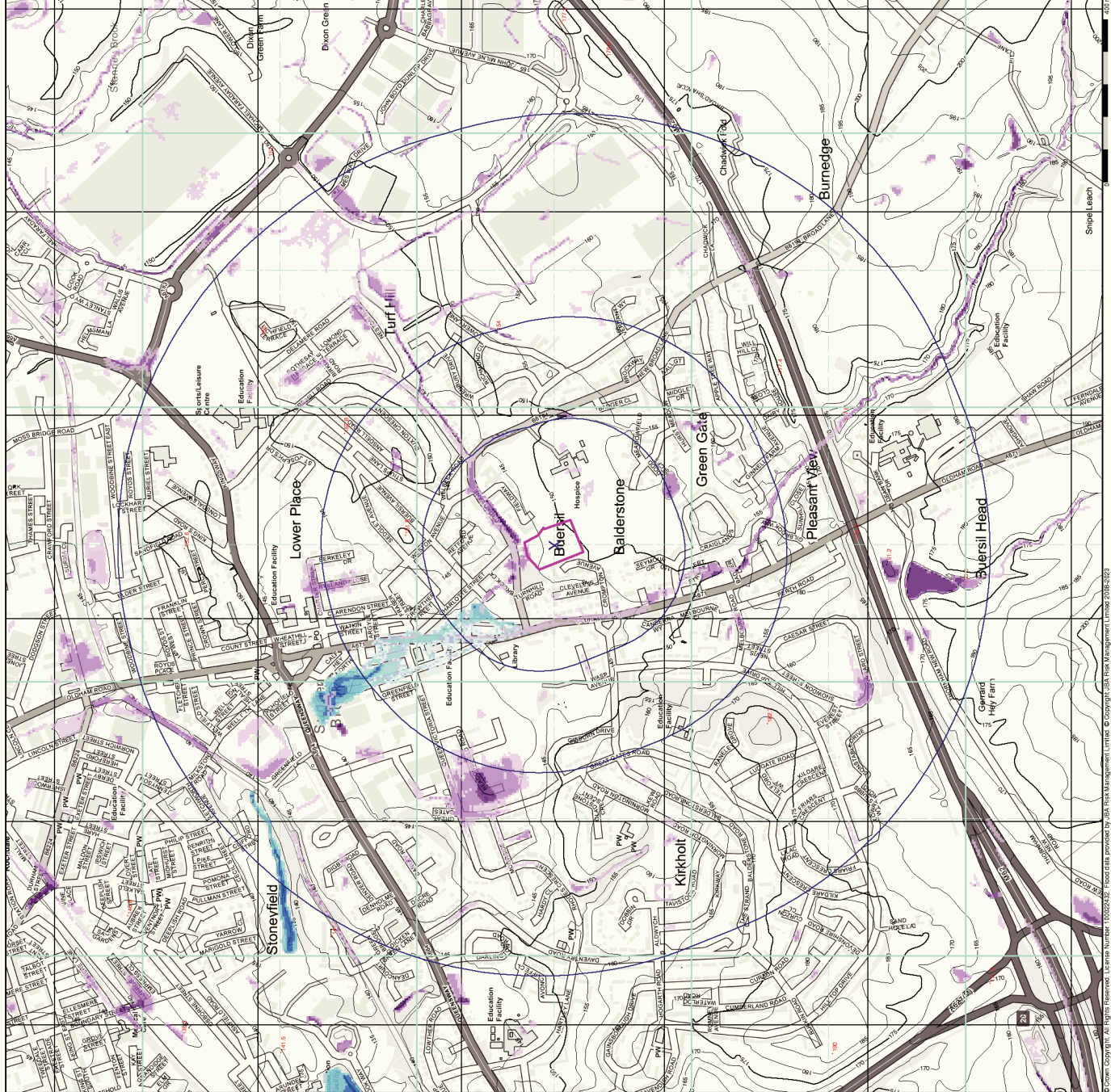


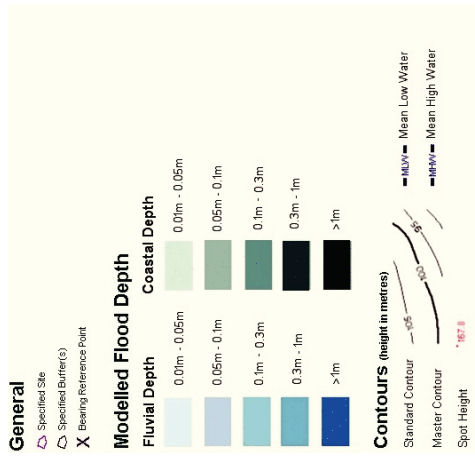
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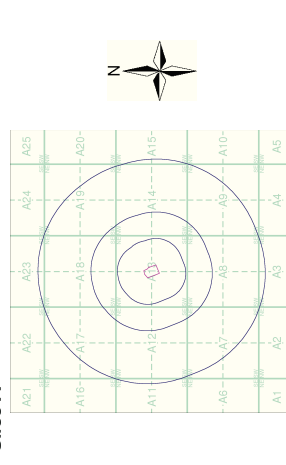
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JBA 100 Year Return Flood Map (Undefended) - Slice A



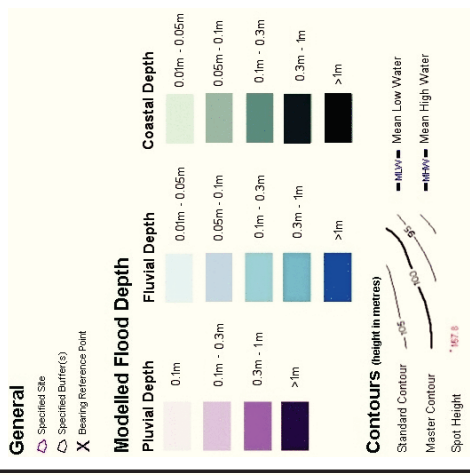
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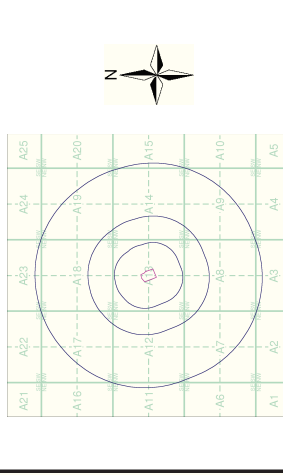
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JBA 200 Year Return Flood Map (Undeferred) - Slice A

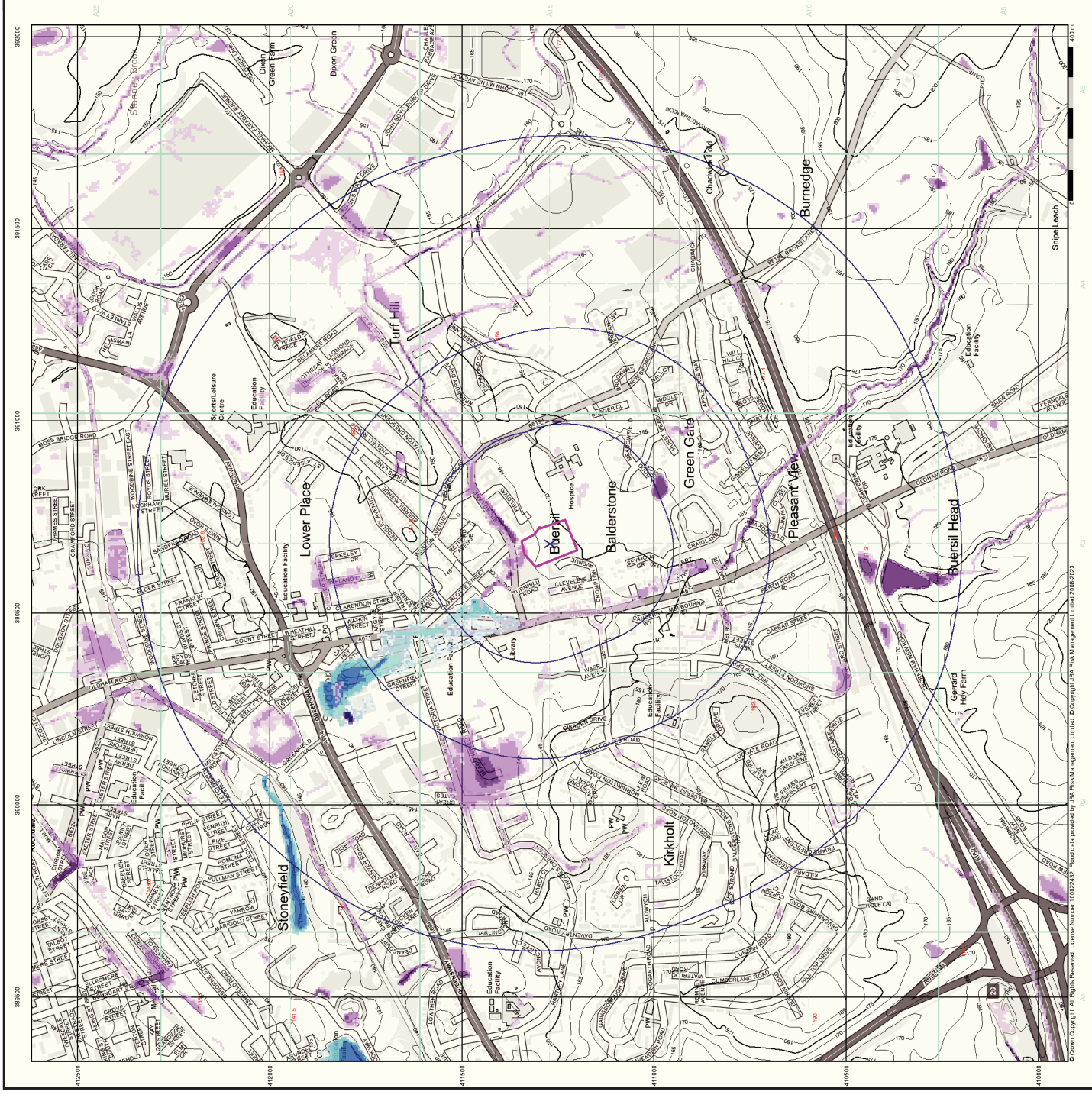


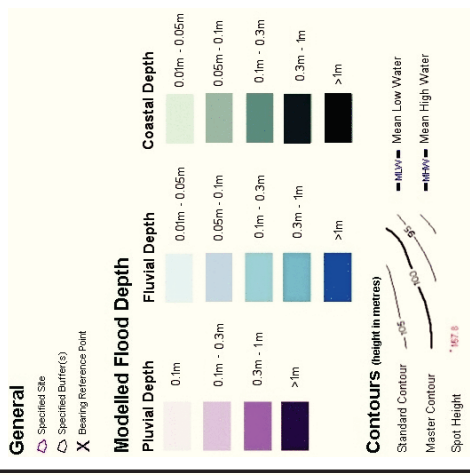
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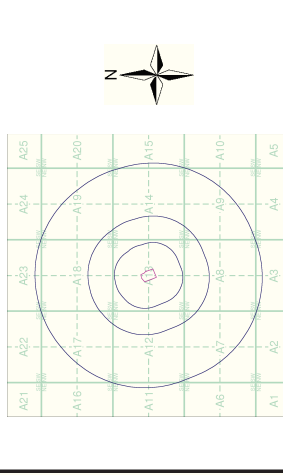
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JBA 1000 Year Return Flood Map (Undeformed) - Slice A

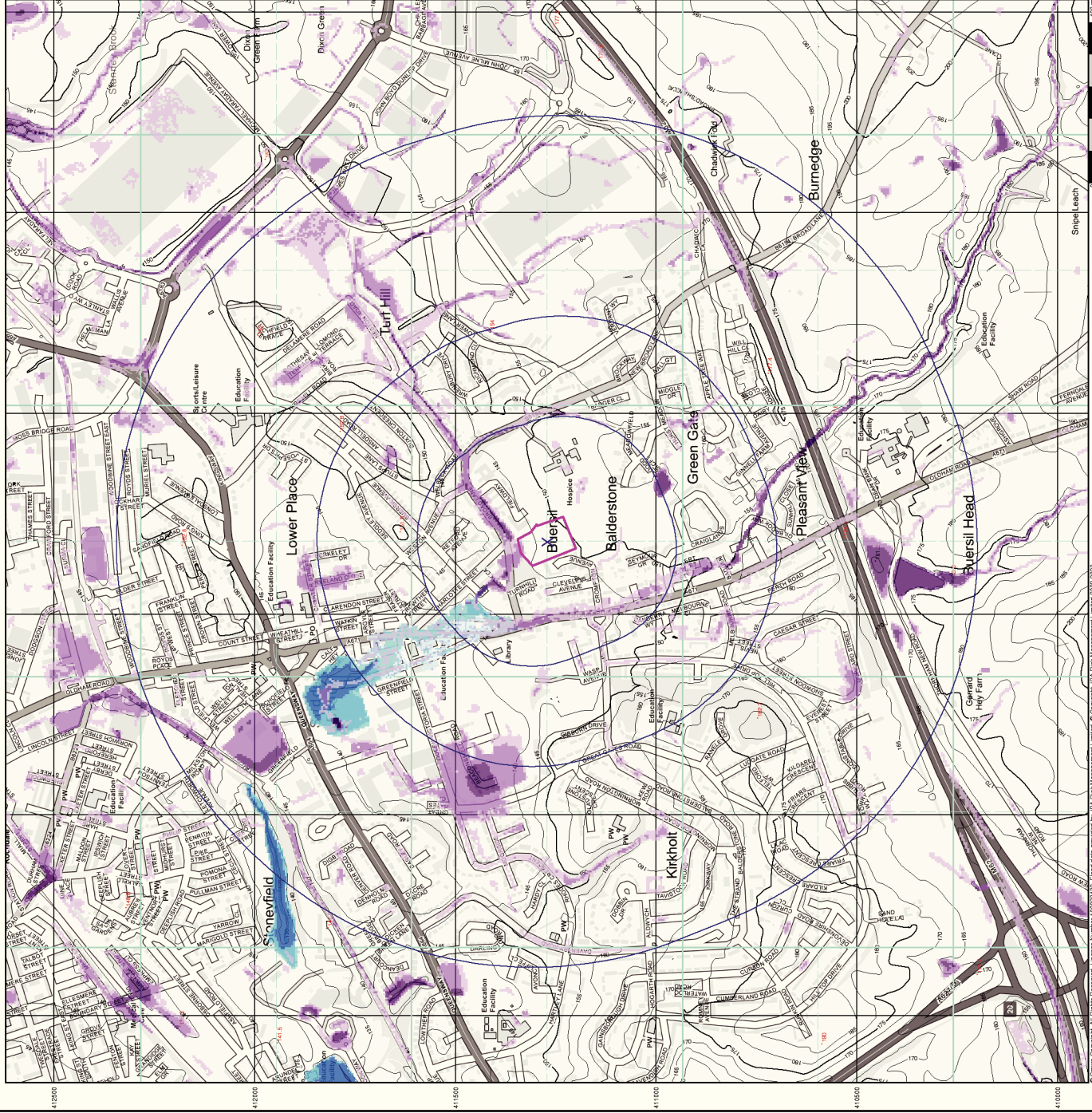


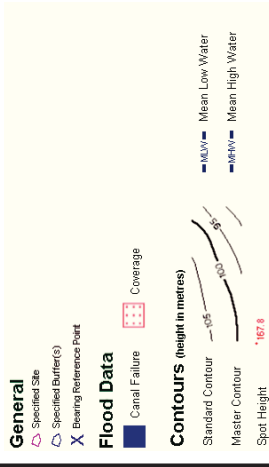
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 Site Area (Ha): 1.06
 Search Buffer (m): 1000

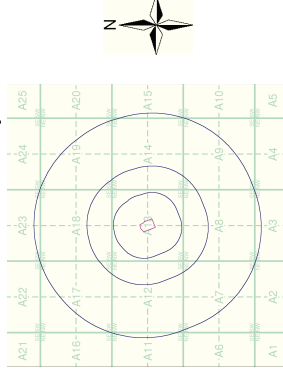
Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB





JBA Canal Failure Flood Map - Slice A



Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB



General
 Specified Site
 Specified Buffer(s)
 Bearing Reference Point

Surface Water Depth



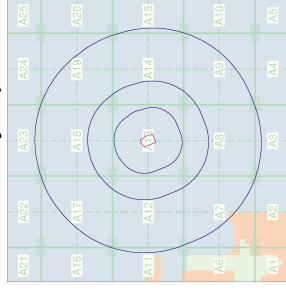
Contours (height in metres)



Suitability



EA/NRW Suitability Map - Slice A



Order Details

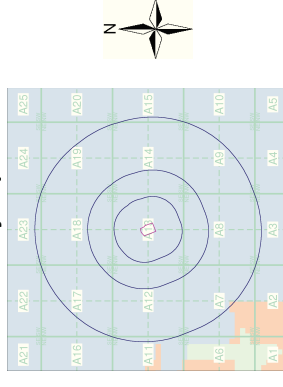
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 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB



EA/NRW Suitability Map - Slice A

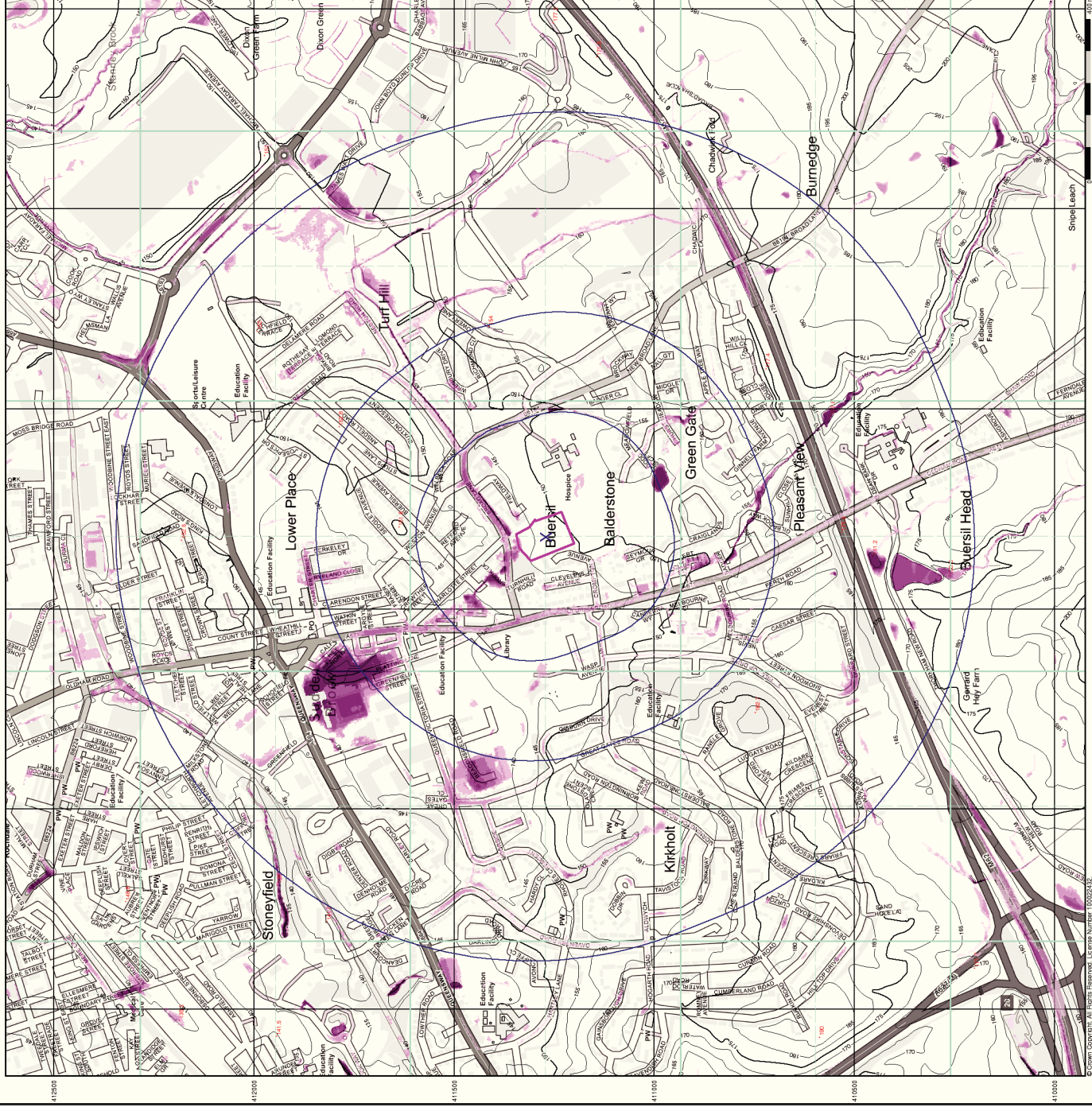


Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
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 Search Buffer (m): 1000

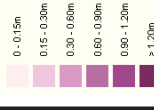
Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB



General
 Specified Site
 Specified Buffer(s)
 Bearing Reference Point

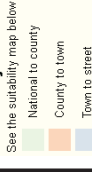
Surface Water Depth



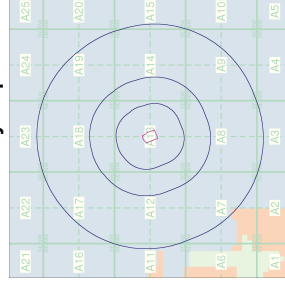
Contours (height in metres)



Suitability



EA/NRW Suitability Map - Slice A

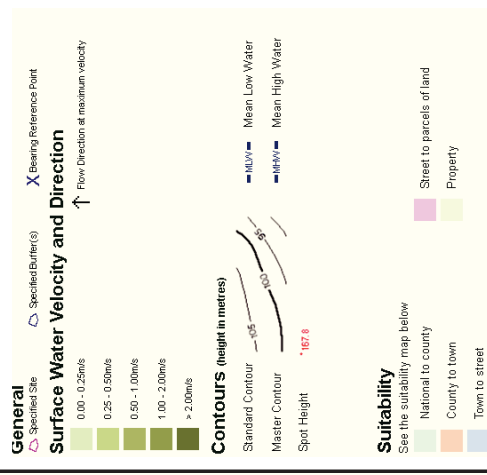


Order Details

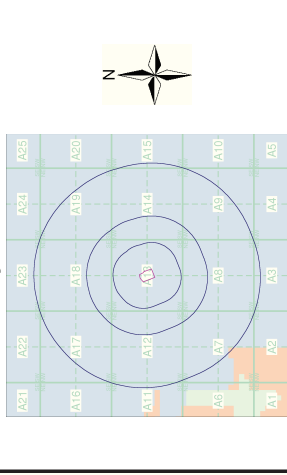
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 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB



EANRW Suitability Map - Slice A



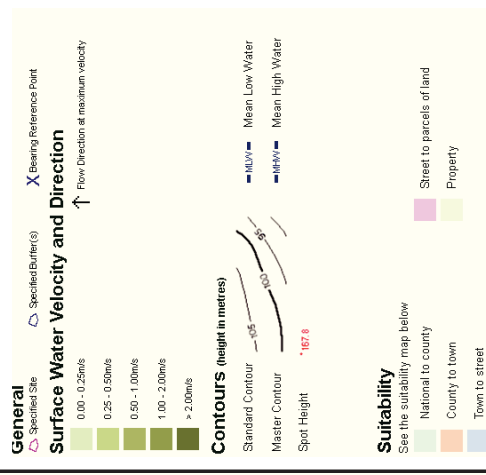
Order Details

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 Customer Ref: 9806/FRA/001
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 Slice: A
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 Search Buffer (m): 1000

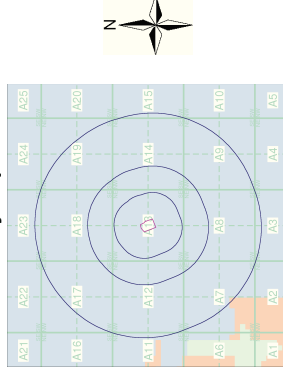
Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB





EA/NRW Suitability Map - Slice A

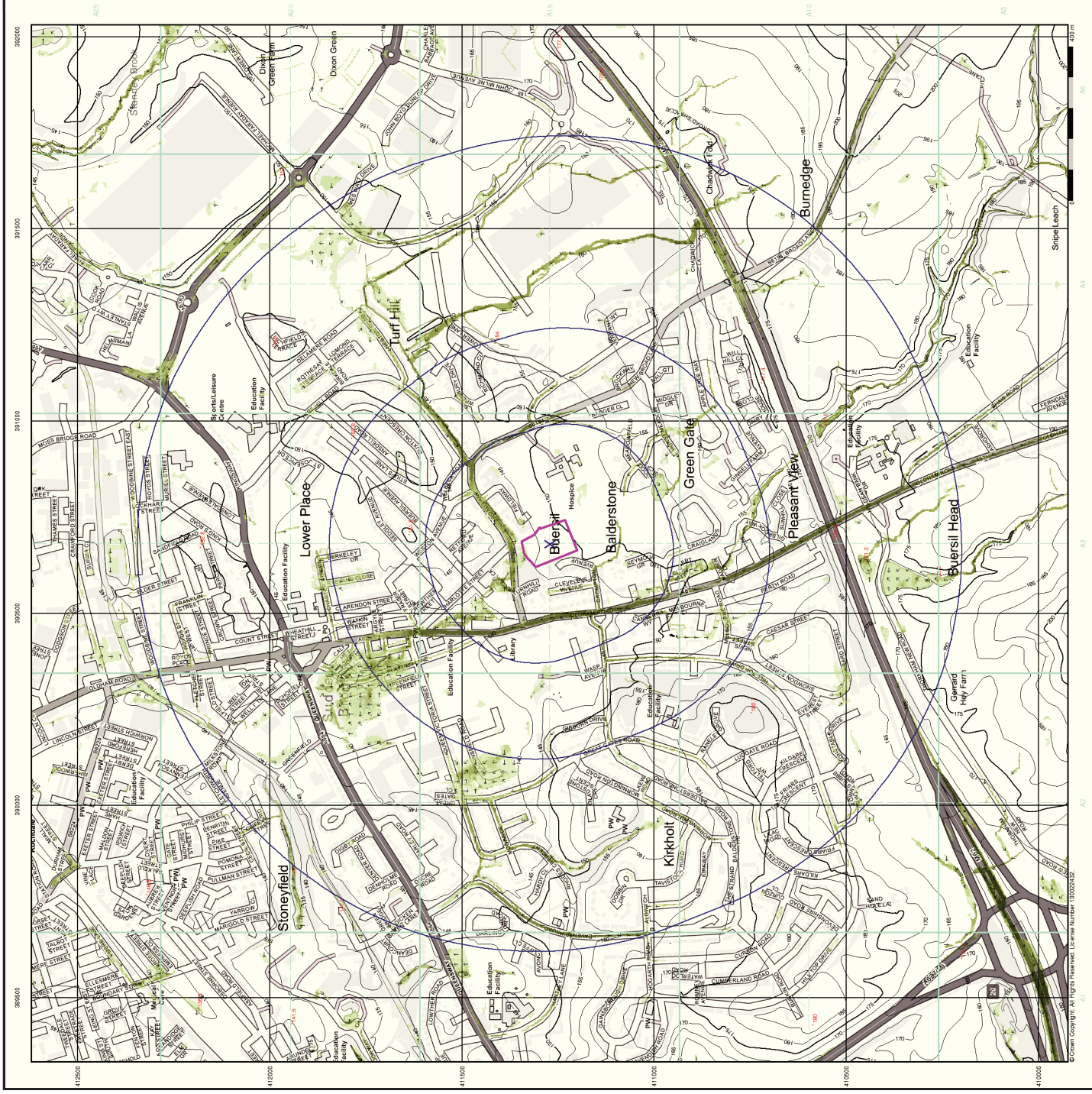


Order Details

Order Number: 308420853_1_1
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Site Details

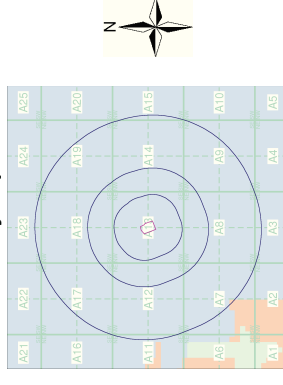
, 27, Crompton Avenue, Rochdale, OL16 4PB



EANRW Surface Water 1000 Year Return Velocity and Flow Direction Map (1:10,000)



EANRW Suitability Map - Slice A

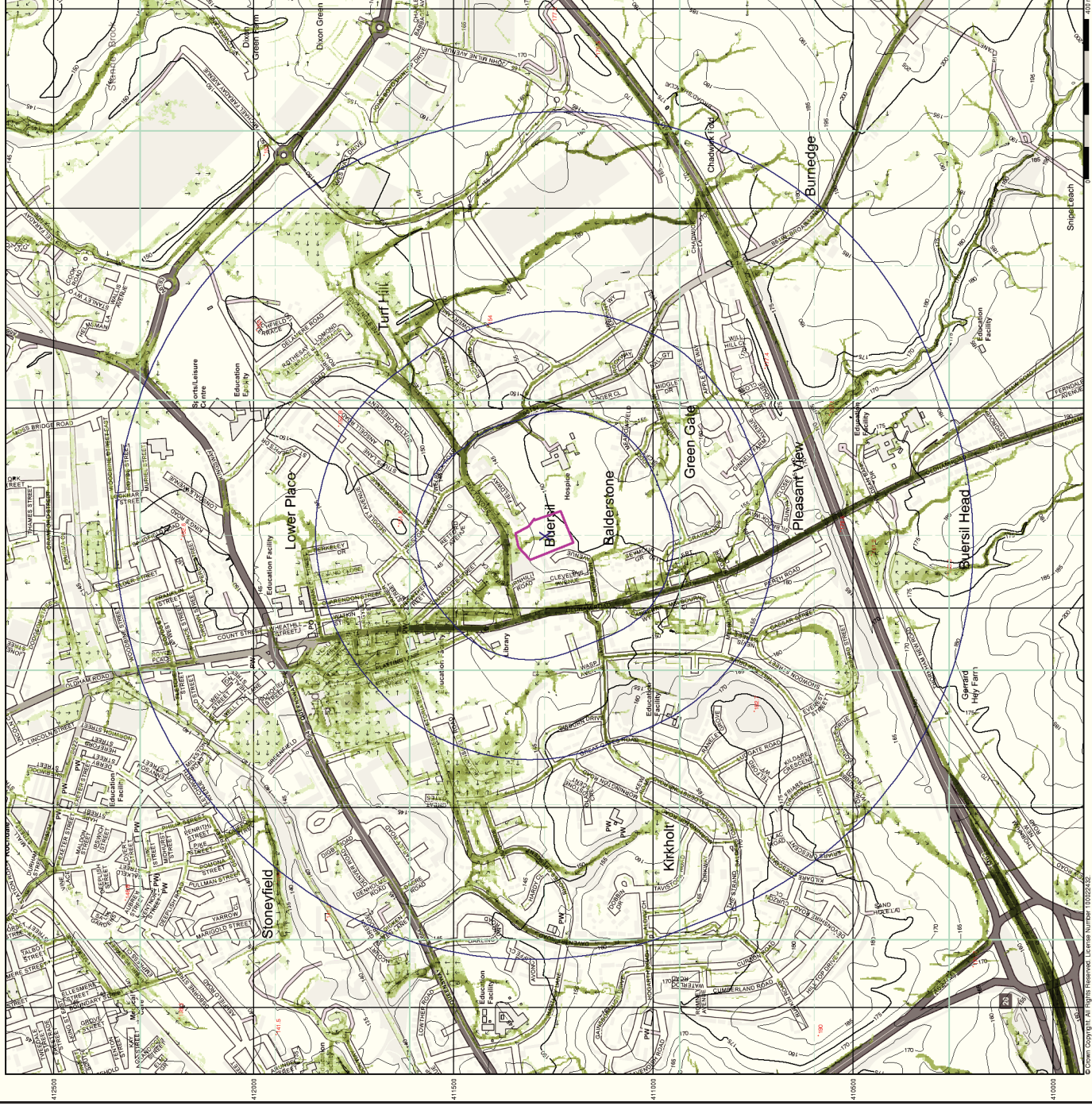


Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB



General
 Specified Site
 Specified Buffer(s)
 Bearing Reference Point

Surface Water Hazard Rating

Low (0.5 - 0.75)
 Moderate (0.75 - 1.25)
 Significant (1.25 - 2.0)
 Extreme (>2.0)

Contours (height in metres)

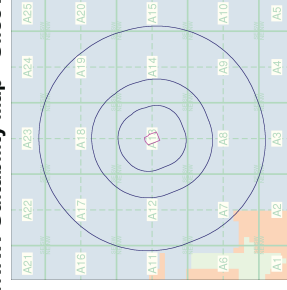
Standard Contour
 Master Contour
 Spot Height
 Mean Low Water
 Mean High Water

Suitability

See the suitability map below
 National to county
 County to town
 Town to street

Street to parcels of land
 Property

EA/NRW Suitability Map - Slice A

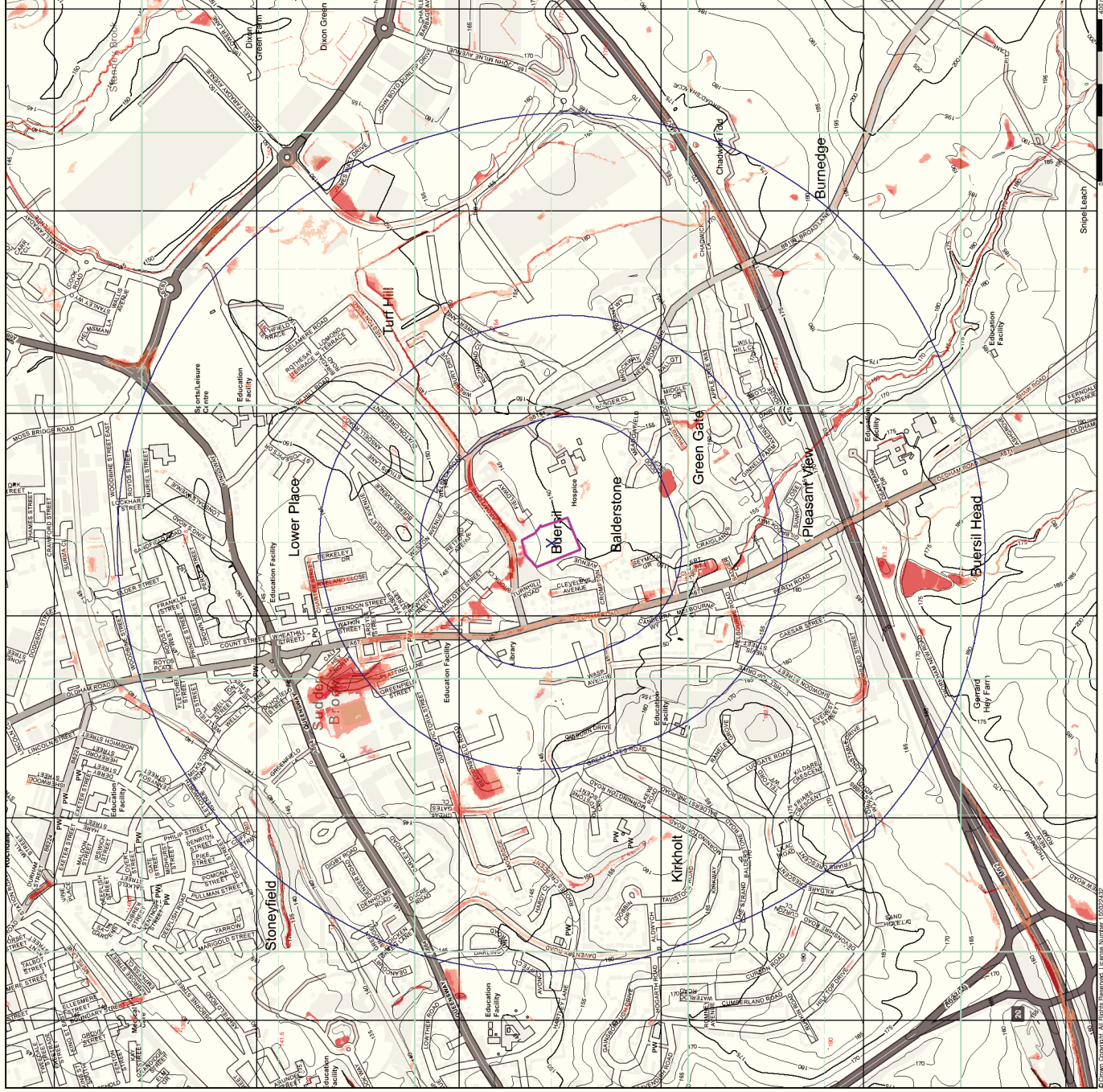


Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

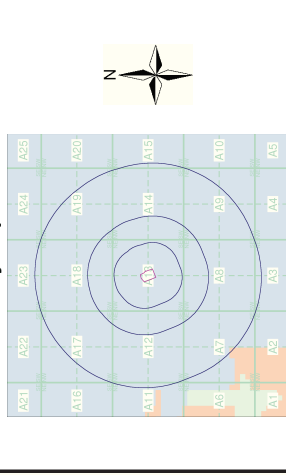
, 27, Crompton Avenue, Rochdale, OL16 4PB



EA/NRW Surface Water 100 Year Return Hazard Rating Map (1:10,000)



EA/NRW Suitability Map - Slice A

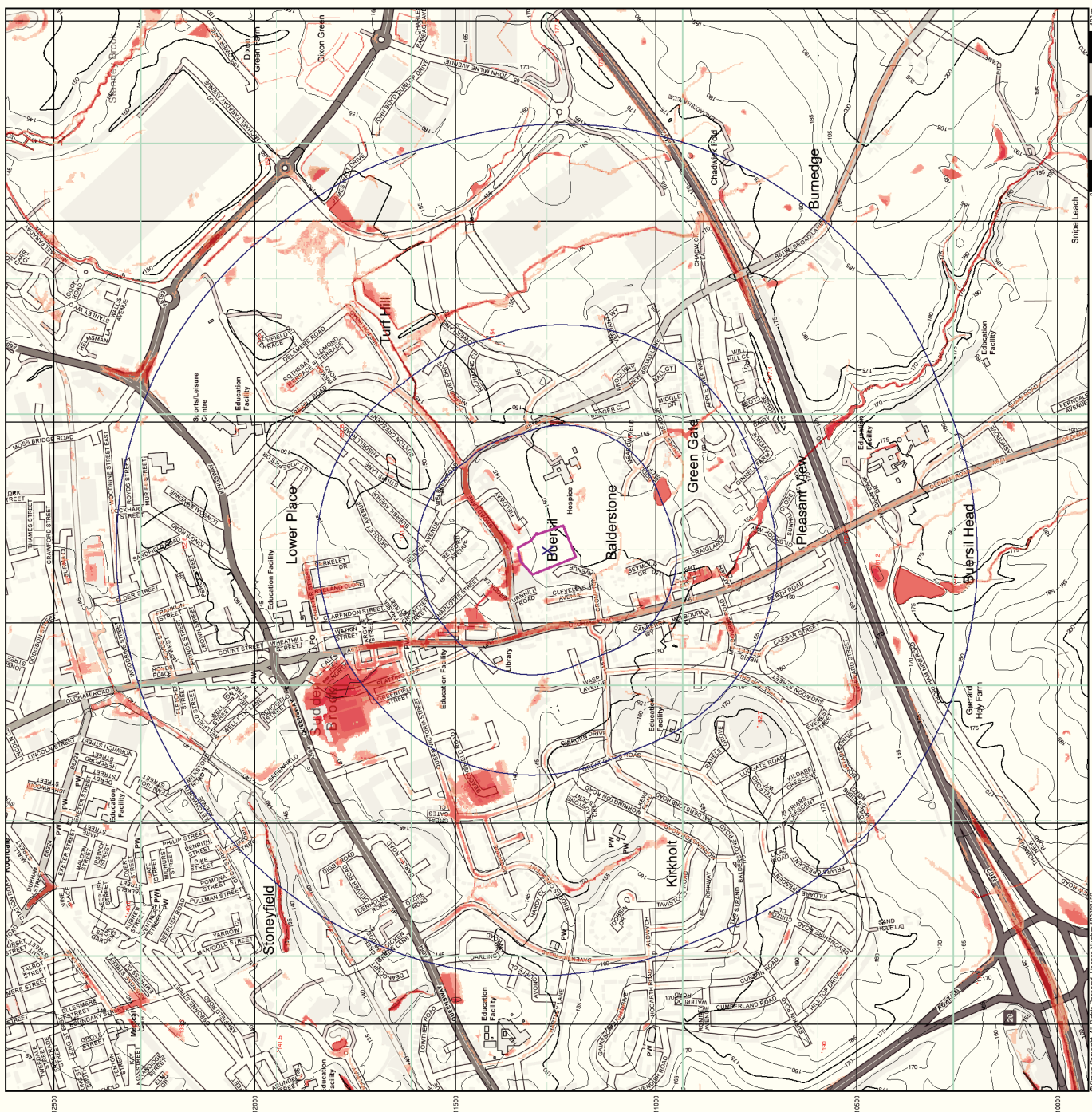


Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

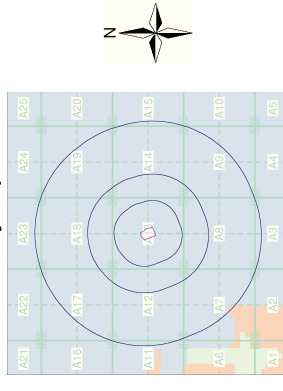
Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB





EA/NRW Suitability Map - Slice A

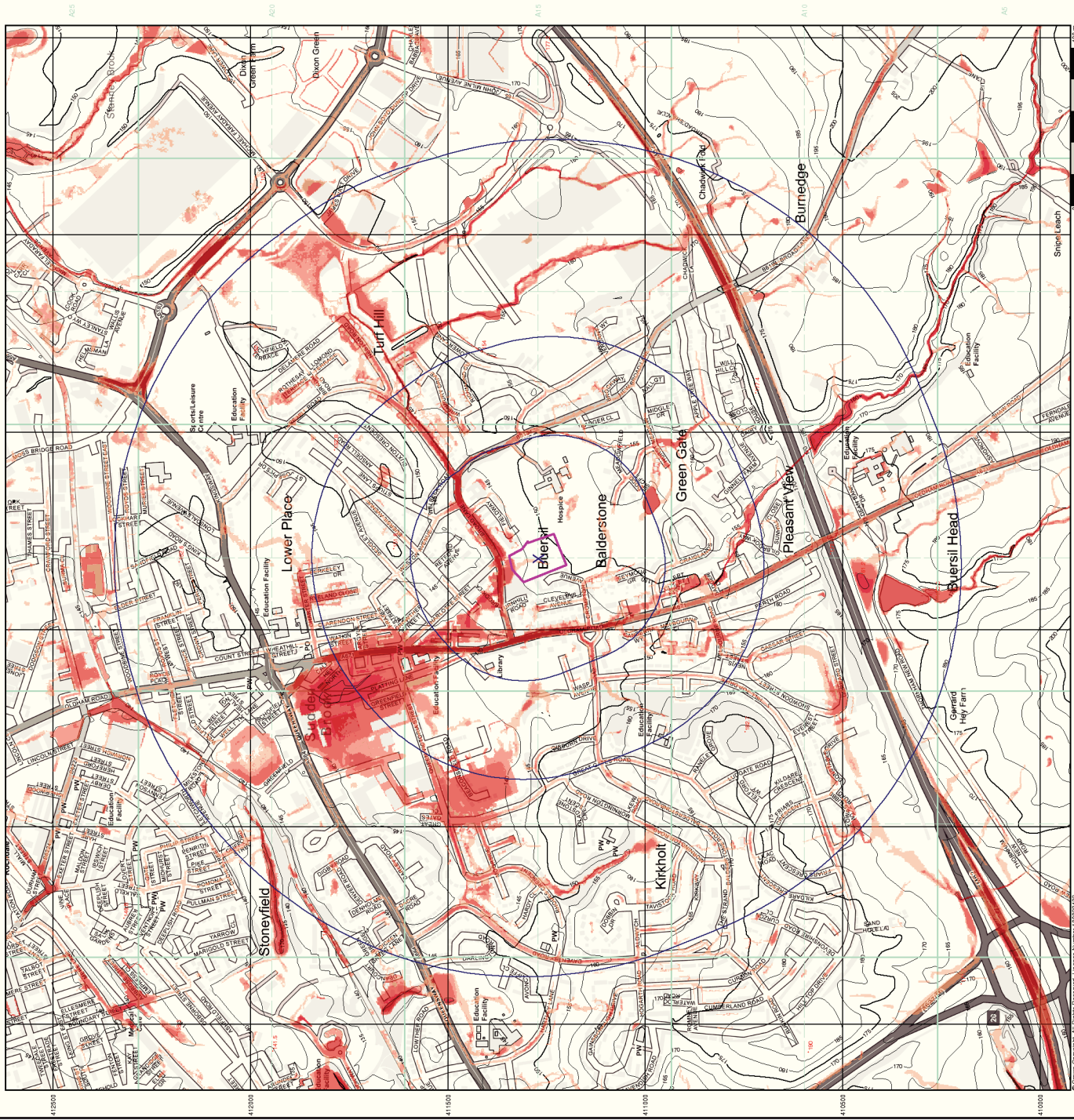


Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
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 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

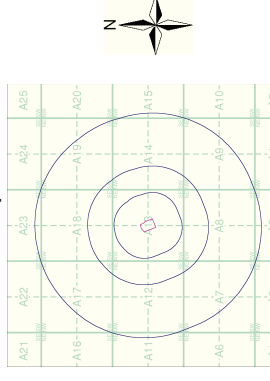
, 27, Crompton Avenue, Rochdale, OL16 4PB



OS Water Network Lines Map (1:10,000)



OS Water Network Map - Slice A



Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB



General

- Specified Site
- Specified Buffer(s)
- Beating Reference Point
- Map ID

Historic Flood Events Data

- Channel Capacity Exceeded (no raised defences)
- Channel Capacity Exceeded /Surface Water
- Groundwater/High Water Table
- Local Drainage/Surface Water
- Mechanical Failure
- Obstruction/Blockage - Bridge
- Obstruction/Blockage - Channel
- Obstruction/Blockage - Culvert
- Obstruction/Blockage - Debris Screen
- Operational Failure/Breach of Defence
- Other
- Overtopping of Defences
- Surface Water
- Unknown

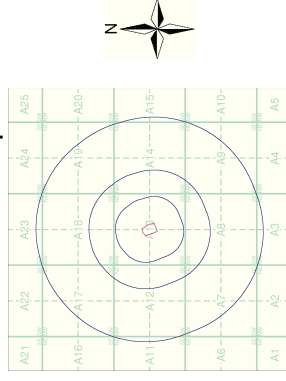
Contours (height in metres)

- Standard Contour
- Master Contour
- Spot Height

Contours

- Mean Low Water
- Mean High Water

EANRW Historic Flood Map - Slice A



Order Details

Order Number: 308420853_1_1
 Customer Ref: 9806/FRA/001
 National Grid Reference: 390680, 411270
 Slice: A
 Site Area (Ha): 1.06
 Search Buffer (m): 1000

Site Details

, 27, Crompton Avenue, Rochdale, OL16 4PB



APPENDIX D
United Utilities Pre-Development
Enquiry Response

Paul Blezard

From: Michael Blakeley
Sent: 24 June 2022 10:17
To: Paul Blezard
Cc: Heath Broadbent; Owen Ridgway; James Gunning
Subject: FW: Pre Development Enquiry for: Crompton Avenue, Rochdale UU Reference Number : 02327155

FYI

From: wastewaterdeveloperservices@uuplc.co.uk <wastewaterdeveloperservices@uuplc.co.uk>
Sent: 24 June 2022 10:09
To: Michael Blakeley <mike@tempusdesignandbuild.co.uk>
Subject: Pre Development Enquiry for: Crompton Avenue, Rochdale UU Reference Number : 02327155

Good morning Michael,

Pre Development Enquiry for: Crompton Avenue, Rochdale UU Reference Number : 02327155

We have carried out an assessment of your application which is based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your drainage strategy will need to be reviewed by other competent authorities as part of the planning process, and we advise that you carry out the necessary site investigations to confirm the viability of your proposals.

If your investigations require access to our public sewer network, we ask that you contact our network engineers with a request for an access certificate via our main contact telephone number 0345 6723 723 or refer to the link below:

<https://www.unitedutilities.com/builders-developers/working-near-our-assets/>

Foul Water

Foul flow from this site will be allowed to drain into the public foul water/combined sewer system.

Our preferred point of discharge would be to the 525mm diameter public combined sewer within Broad Lane located to the North of your proposed development at an unrestricted rate.

If you are able to identify an alternative, more suitable point of discharge, we request that you contact us at your earliest convenience so that we can assess suitability.

In accordance with our infrastructure plans we may ask you to change your point of connection. Therefore please contact us when you are ready to formalise your drainage proposals, we would suggest before you submit for Full Planning.

Surface Water

All surface water flow from the proposed development should drain in-line with the drainage hierarchy, as outlined in Paragraph 80, (Reference ID: 7-080-20150323), of the National Planning Practice Guidance. We also recommend you prioritise the use of multi-functional sustainable drainage systems for the management of surface water in accordance with national planning policy.

Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.
This is outlined as follows, in order of priority:

1. **into the ground (infiltration);**
2. **to a surface waterbody;**
3. **to a surface water sewer or highway drain;**
4. **to a combined sewer.**

For guidance, The [North West SuDS Pro-Forma](#) provides information on the appropriate evidence required at each stage of the hierarchy, to demonstrate how each level has been discounted.

The Lead Local Flood Authority has responsibility for all surface water drainage concerns and their input to your proposal is critical. You should also consider whether it is necessary to discuss your proposal with the Environment Agency, or Internal Drainage Board (if operating in your area).

The Local Planning Authority are the determining authority for any application for planning permission and the appropriate authority for determining cost viability of a proposed drainage scheme, such assessments are outside of the jurisdiction of United Utilities.

Infiltration

Surface water runoff generated from this development should discharge to the ground via infiltration system where feasible.

A detailed evidence based feasibility assessment must be carried out in line with Chapter 25 of the CIRIA SuDS Manual 2015 to determine whether infiltration is a suitable method of surface water disposal.

Particular attention must be paid to Ground Water Source Protection Zones to ensure that the risk of pollution to these valuable resources is not compromised. Details can be obtained from the government website:

<https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs#find-groundwater-spzs>

If your site is in a Groundwater Source Protection Zone, you should have regard to the Environment Agency's approach to Groundwater Protection. Information on this is available via the link below:

<https://www.gov.uk/government/publications/groundwater-protection-position-statements>

Please note that such a location could have implications for the principle of your development and the need for additional mitigating measures to protect the groundwater environment and public water supply in the detailed design of your site.

Waterbody

If an evidence based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you contact the Lead Local Flood Authority and/or Environment Agency to discuss a point of discharge to the open ordinary watercourse located northeast of the proposed site.

We would encourage you to identify and engage with any third party landowner and riparian owner to agree access and discharge rights to the water body if this is not in your ownership.

Highway Drainage

If an evidence based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you investigate the possibility of draining surface water to the highway drain where this ultimately discharges to a watercourse, by contacting the relevant Highway Authority.

Public Sewer

In accordance with the hierarchy of drainage options within the National Planning Practice Guidance, both discharge to ground via infiltration and discharge to a waterbody should be discounted prior to consideration of discharging surface water to the public sewer system. Evidence should be provided to demonstrate how these have been discounted, as outlined in the North West SuDS pro-forma.

Once evidence is provided as outlined above, United Utilities will consider a connection to the 225mm diameter public surface water sewer within Crompton Avenue located southwest of the proposed site at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities request that any agreed rate does not exceed 5l/s.

As a Water Company, we have no obligation to accept highway drainage into our public sewer network. However, should your proposals include runoff from highways, we would request that consideration is given to SuDS components that deliver source control are incorporated within the design of the scheme to reduce the volume and frequency of discharges of these flows to the public sewer.

Levels

For low-lying sites, (where the ground level of the site or the level of a basement is below the ground level at the point where the drainage connects to the public sewer), care should be taken to ensure that the property is not at increased risk of flooding. If these circumstances exist, we recommend that you contact us to discuss further. It could affect the detailed design of your site and result in the need to incorporate appropriate mitigating measures in your drainage scheme.

Land drainage / Overland flows / track drainage

United Utilities have no obligation, and furthermore we do not accept land drainage, overland flows or track drainage into the public sewerage network under any circumstances

Existing Wastewater Assets Crossing the Site

We have reviewed our records and can confirm that there does not appear to be any charted public sewers located within the boundary of proposed development. However, due to the accuracy of the records and the public sewer transfer legislation in 2011, not all public sewers are shown on our records so we would ask that you proceed with caution and carry out your own site investigation works. If any uncharted sewers are identified while carrying out your works we would ask that you contact United Utilities at the earliest opportunity so that we can offer guidance and update our records.

Existing Water Assets Crossing the Site

It is the developer responsibility to identify utilities on-site. Where clean water assets are shown on our records, we recommend that you contact our Water Pre-Development Team, via the following email address: DeveloperServicesWater@uuplc.co.uk. Further information for this service can be found on our website via the link below:

<https://www.unitedutilities.com/builders-developers/larger-developments/pre-development/water-pre-dev/>

Connection Application

Although we may discuss and agree discharge points and rates in principle, please be aware that you will have to apply for a formal sewer connection. This is so that we can assess the method of construction, Health & Safety requirements and to ultimately inspect the connection when it is made. Details of the application process and the form itself can be obtained from our website by following the link below:

<https://www.unitedutilities.com/builders-developers/wastewater-services/sewer-connections/sewer-connection/>

We recommend that the detailed design should confirm the locations of all utilities in the area and ensure that any proposed drainage solution considers routing and clash checks where required.

If we can be of any further assistance please don't hesitate to contact us further.

Sewer Adoptions

You have indicated on your application form that you intend to put the sewers forward for adoption (including any SuDS components that can come within the meaning of a sewer).

United Utilities assess adoption applications based on the current Design & Construction Guidance and local practices which have now replaced 'Sewers For Adoption 6th Edition'.

We recommend that you submit a pre design assessment to the sewer adoption mailbox (SewerAdoptions@uuplc.co.uk) stating pre design assessment in the title

Please refer to links below to obtain further guidance:

<https://www.unitedutilities.com/builders-developers/larger-developments/wastewater/sewer-adoptions/>

Site drainage must be designed in accordance with Building Regulations, National Planning Policy, and local flood authority guidelines, we would recommend that you speak and make suitable agreements with the relevant statutory bodies.

If you intend to put forward your wastewater assets for adoption by United Utilities, the proposed detail design will be subject to a technical appraisal by an Adoption Engineer as we need to be sure that the proposals meets the requirements set out in the Design & Construction Guidance. The proposed design should give consideration to long term operability and give United Utilities a safe and cost effective proposal for the lifetime of the assets. In these cases, we strongly recommend that no construction commences until the detailed drainage design, submitted as part of the Section 104 application, has been assessed and accepted in writing by United Utilities. Any work carried out prior to the technical assessment being approved is done entirely at the developer's own risk and could be subject to change.

SuDS

If your development proposal incorporates any SuDS component(s) which interact with a sewer network you plan on offering for adoption to United Utilities; contact should be made with our technical team at your earliest convenience, please complete the 'Section 104 pre-application form : ' and include as much relevant detail as you can. These discussions can help prevent delays later in the development process.

Section 104 Pre application form (1b)

As per the sewerage sector guidance, all SuDS should be designed in accordance with the standards within the Design & construction guidance & the CIRIA SuDS manual (C753)

Codes For Adoption

The new Codes for Adoption are outlined on the Water UK Website. The link below takes you to their webpage:

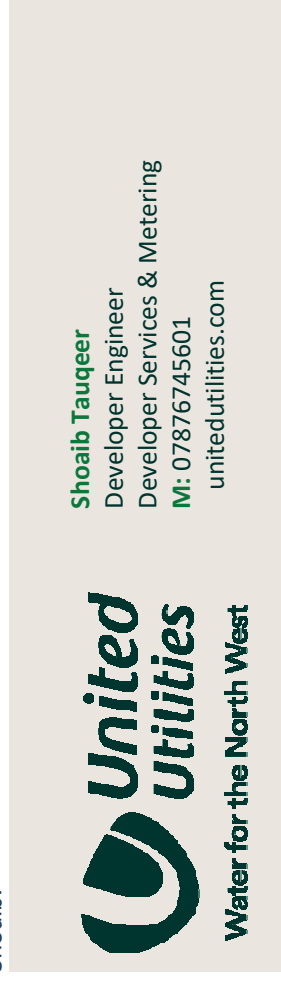
<https://www.water.org.uk/technical-guidance/developers-services/codes-for-adoption/>

A free copy of the new Design & Construction Guidance can be downloaded via the link below:

<https://www.water.org.uk/sewage-sector-guidance-approved-documents/>

Many thanks and kind regards,

Shoaib.



If you have received a great service today why not tell us?

Visit: unitedutilities.com/wow

Did you know we now have a live chat facility available to you Mon to Friday 8 -5pm. You just click on the orange live chat box on our webpage and one of our advisors will be ready to chat to you and help you with your enquiry <https://www.unitedutilities.com/builders-developers/> or you can email us at developerserviceswater@uuplc.co.uk

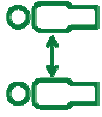
Coronavirus | Prevent the spread



Wash your
hands



Disinfect
common surfaces



Practise social
distancing



FEVER +
COUGH

Stay home if you
have symptoms

[Click for our message to customers](#)

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

From: Michael Blakeley [mike@tempusdesignandbuild.co.uk]

Sent: 22/06/2022 16:11

To: wastewaterdeveloperservices@uuplc.co.uk

Subject: FW: PROPOSED DEVELOPMENT AT CROMPTON AVENUE, ROCHDALE

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

Hi

There may be some confusion on my previous email below . The proposed development should read Crompton Avenue, Rochdale and not Mossylea Close.

APPENDIX E

SW Attenuation Volume Calculations

Site Details	
Latitude:	53.59799° N
Longitude:	2.14244° W
Reference:	1358801107
Date:	Apr 26 2022 10:56

Site characteristics

Methodology

estimator:	IH124
Q _{BAH} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics	Default	Edited
SOIL type:	1	1
SPR:	0.1	0.1

Hydrological characteristics	Default	Edited
Rainfall 100 yrs 6 hrs:	--	70
Rainfall 100 yrs 12 hrs:	--	94.08
FEH / FSR conversion factor:	1.12	1.12
SAAR (mm):	1137	1137
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.3	0.3
Hydrological region:	10	10
Growth curve factor 1 year:	0.87	0.87
Growth curve factor 10 year:	1.38	1.38
Growth curve factor 30 year:	1.7	1.7
Growth curve factor 100 years:	2.08	2.08
Q _{BAR} for total site area (l/s):	0.31	0.31
Q _{BAR} for net site area (l/s):	0.26	0.26

* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q_{BAR} and other flow rates will have been reduced accordingly.

Design criteria

We use cookies on this site to enhance your user experience

Ok, I agree

More in

By clicking the **Accept** button, you agree to us doing so.

Site discharge rates	Default	Edited	Estimated storage volumes	Default	Edited
1 in 1 year (l/s):	5	5	Attenuation storage 1/100 years (m³):	415	415
1 in 30 years (l/s):	5	5	Long term storage 1/100 years (m³):	0	0
1 in 100 year (l/s):	5	5	Total storage 1/100 years (m³):	415	415

This report was produced using the storage estimation tool developed by HRWallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at <http://uksuds.com/terms-and-conditions.htm>. The outputs from this tool have been used to estimate storage volume requirements. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

We use cookies on this site to enhance your user experience

By clicking the Accept button, you agree to us doing so.

Ok, I agree

More info