

Flood Risk Assessment

Walshaw Garden Neighbourhood,
Bury

for

HIMOR

civil

structural

earth sciences

strategic land

special projects



17/01/2020




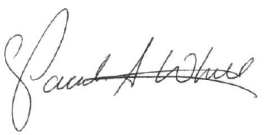

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Revisions	REVISION A GENERAL REVISIONS		14/04/20
Report Reference	4072/HIMOR/FRA/DAE/PAW/17012020		
Report Status	FINAL		



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1.0 Introduction

1.1 Appointment

RoC Consulting has been commissioned by HIMOR, to provide a site specific Flood Risk Assessment to support the allocation of the site through the GMSF for a new Residential Development off Walshaw Lane, Bury and is to be read in conjunction with the Barton Willmore Walshaw Garden Neighbourhood, Bury – Development Framework Report November 2019.

1.2 Report Structure

This report has been written to comply with the national and local planning and guidance policies described in section 2.0. The existing site context is described in terms of topography, geology, hydrogeology, hydrology and existing factual and historical information in section 3.0 of this report.

A description of the development proposal is provided in section 4.0. Section 5.0 records the assessment of relevant flood risk and management measures; off-site impacts and residual risks are then discussed in section 6.0. Section 7.0 details the summary for the FRA.

1.3 Proposed Development

This Flood Risk Assessment relates to the Barton Willmore Walshaw Garden Neighbourhood, Bury – Development Framework Report November 2019 and the part of the draft housing allocation which is controlled by HIMOR referenced within the Executive Technical Summary Ref:4072/ETS and Masterplan Drainage Strategy Report Ref:4072/MDS.

The Walshaw Garden Neighbourhood, Bury is located approx. 2.5km of Bury Town Centre and 15km of Manchester City Centre and sits within the land allocation referred to as Walshaw, Bury (GM 9) for housing in the emerging Greater Manchester Spatial Framework 2019 (GMSF). The Local Planning Authority (LPA) for this area is Bury Council, who are also the Lead Local Flood Authority (LLFA).

The Walshaw Garden Neighbourhood site is in an area comprising greenfield and brownfield land, loosely bounded by the urban areas of Tottington to the north, Woolfold and Elton to the east, Lowercroft to the south and Walshaw to the west.

A site description and boundaries are described within the Barton Willmore Walshaw Garden Neighbourhood, Bury – Development Framework Report November 2019.

In summary, the site is circa 64 hectares (ha), split roughly between 37.5ha residential land and 26.5ha green infrastructure and expected to deliver 1,250 residential dwellings, a primary school, infrastructure works e.g. roads and footpaths etc and green open space.



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The site is currently controlled and being brought forward to support the allocation of the site through the GMSF by 3 developers/land promoters; being Redrow Homes (circa 20.80ha), HIMOR (circa 11.83ha) and VHW Land Partnerships (Walshaw) Limited (circa 28.5ha) and a small site area of land controlled by Bury Council (circa 2.90ha), refer to Appendix A for the Barton Willmore Site Location and Land Ownership Plan.

The land under HIMOR control/ownership is a gross area of circa 11.83ha is available for development. However, the net developable area would be circa 7.54ha. It is anticipated that this area could accommodate circa 261 residential units based on a density of 34.6 properties/ha.

1.4 Aim of the Report

The aim of this report is to undertake a Flood Risk Assessment in accordance with the National Planning Policy Framework (NPPF) and current guidance to support the allocation of the site through the GMSF, specifically for the land under HIMOR control/ownership.

The detail and complexity of a Flood Risk Assessment should reflect the level of risk to the site. The NPPF is the official document and together with local planning standards regulates the assessment of flood risks and their appropriate mitigations to the planning process.

This report assesses flood risk to the site and any impact on flood risk to the local neighbourhood as a result of the development proposals.

This report is intended to provide information and present proposals relating to the following:

- The existing topography, geology and hydrogeology across the development
- The existing surface and foul water drainage systems within the vicinity of the site
- Identify existing overland flow paths
- Assess the risk of flooding due to fluvial, tidal, groundwater, surface water, flows from surcharged sewers and risks for other possible sources

In accordance with the NPPF, the Masterplan Drainage Strategy Report Ref:4072/MDS will provide information and present the outline foul and surface water drainage strategies for the development site, including climate change over the longer term of the development and gives priority to the use of sustainable drainage systems.

As part of the development of this FRA, information has been obtained from United Utilities (UU). A review has been carried out of the online Environment Agency (GOV.UK) mapping information.

The flood mapping information contained within this report has been obtained from the Environment Agency online flood maps and JBA Consulting flood maps via Envirocheck.



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1.5 Limitations

This report has been prepared for exclusive use by HIMOR for the purpose of assisting them in evaluating the potential risk of flooding associated with the site in support of the allocation of the land at Walshaw Bury (GM 9) for housing.

A separate Masterplan Drainage Strategy for the masterplan area has been developed by RoC Consulting Ref:4072/MDS to support the allocation of the site through the GMSF. A further site-specific drainage strategy for HIMOR will be required to support future detailed/reserved matters applications.

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RoC Consulting has endeavoured to assess all information provided to them during this appraisal. The report summarises from several external sources and cannot offer any guarantees or warranties for the completeness or accuracy of information relied upon.

The Flood Risk Assessment addresses the flood risk posed to and from the proposed development, the extent of which is shown on the Barton Wilmore Concept Masterplan within Appendix B and outlined in section 4.0. This report has been undertaken with the assumption that the site will be developed in accordance with the above proposals without significant change. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Hydraulic modelling of the existing ordinary watercourses, or any intrusive investigation works (Soakaway testing) have not been completed for the site and it is therefore recommended that these are carried out prior to detailed design stage. It is also recommended that a drainage investigation survey is commissioned when the drainage proposals have been developed further to establish the precise alignment, level and condition of any existing land drainage/culverts that may be affected by the development proposal.

2.0 Policy & Guidance

In carrying out our assessment and preparing this report, regard has been taken of the provisions of the development plans and a range of other material considerations. However, it is the Governments National Planning Policy Framework, Bury's Strategic and Preliminary Flood Risk Assessments (PFRA/ SFRA), CIRIA Guidance and the Non-Statutory Technical Standards for SUDS which provides the most up to date and specific guidance on the scope of Flood Risk Assessments.

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published in England in March 2012, updated in July 2018 and most recently revised in February 2019.

The key aim of the NPPF is to ensure sustainable development through the planning process, taking into account the risks from climate change, flood risk and coastal change to avoid inappropriate development in areas at risk and directing development away from areas of high risk.

It advises that where development is necessary in areas of high risk, it should be safe, and that flood resilience should also be incorporated into the design. It also advises of the fact that new developments should not increase flood risk elsewhere and new developments should aid in mitigating flood risk to the wider area.

The NPPF's advice on climate change, flood and coastal change is set out in section 14 paragraphs 148-169, with the approach to planning for flood risk between paragraphs 155-165.

A Technical Guidance document was published in March 2012 to support the NPPF, which provided guidance on how flood risk should be assessed during the planning and development process. This document has been replaced online at www.gov.uk by the Planning Practice Guidance.

2.2 Planning Practice Guidance – Climate Change, Flood Risk & Coastal Change

Guidance for climate change was updated in March 2019 and flood risk and coastal change in March 2014.

The guidance is split into categories including 'climate change' and 'flood risk and coastal change'. Within these categories the requirements are identified.

The document gives guidance on how climate change should be assessed and accounted for within the context of the development:



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- River basin district
- Allowance Category: A factor dependent upon the usage of the development
- The likely development life span

For further guidance, it is recommended that the Environment Agency (EA) be contacted with regards to the 'main river' and areas with critical drainage problem catchments and the Lead Local Flood Authority in all other locations.

The document gives guidance on how flood risk should be assessed and accounted for within the context of the development:

- Flood zones - Table 1
- Flood risk vulnerability classification - Table 2
- Flood risk vulnerability and flood zone compatibility - Table 3
- The sequential test - if required
- The exception test - if required

2.3 Flood and Water Management Act 2010

This Flood Risk Assessment and Preliminary Drainage Strategy has been prepared in consultation with regulatory bodies and third parties. The views, advice and recommendations provided by the regulatory bodies and third parties represent their current standards and procedures.

The Flood and Water Management Act 2010 received Royal Assent on the 8th April 2010. This Act provides duties on the Environment Agency, Local Authorities, developers and other bodies to manage flood risks. The Act has significant planning and design implications for developers.

The main areas affecting developers are:

- The LLFA became responsible for developing, maintaining and applying local flood risk strategy, which must be consistent with national strategy and have input from the designated 'Flood Management Authorities' (FMA), which in addition to the council/unitary authority normally include the EA and local water company
- The LLFA is required to approve and may adopt sustainable urban drainage systems (SUDS). The LLFA may be either a Unitary or County Council
- Non-statutory technical standards have been produced by Defra for England and the Welsh government for Wales. There is a requirement that SUDS will be designed and constructed in accordance with these which are consistent with the SUDS Manual. A practice guidance document was produced by the LASOO advisory group in support of the Non-Statutory



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technical standards. In August 2019, LASOO was replaced with the Association of SUDS Authorities (ASA), the 'standards' remain current.

A number of local authorities have also produced their own policy and guidance:

- The SUDS approval process is with the LLFA and the planning authority as part of the planning application. It should be noted that not all planning authorities are the LLFA and as such approval would be required from both authorities.

2.4 Bury, Rochdale & Oldham Strategic Flood Risk Assessment 2009

Local Planning Authorities are required to produce Local Development Frameworks (LDF), which are a portfolio of local development documents that collectively deliver the spatial planning strategy for the authority area.

The LDF's undergo a Sustainability Appraisal which assists Planning Authorities in ensuring their policies fulfil the principles of sustainability. Strategic Flood Risk Assessments (SFRA) are one of the documents to be used as the evidence base for planning decisions and are a component of the sustainability appraisal process. Therefore, SFRA's should be used in the review or production of LDF's.

SFRA's assess the risk associated with all types of flooding and provides the information required to identify the amount of development permitted in an area; how the drainage systems in the area should function and how the risks in vulnerable areas can be reduced and/or mitigated. The National Planning Policy Framework states that Regional Planning Bodies (RPB's) or Local Planning Authorities should prepare SFRA's in consultation with the Environment Agency.

Bury, Rochdale and Oldham Councils in partnership with JBA Consulting, produced the Level 1 and Level 2 SFRA across four separate report volumes in 2009.

The SFRA indicates that the site is not located within Flood Zones 2 or 3 and there are no specific risks to the site area indicated within the SFRA.

2.5 Bury Preliminary Flood Risk Assessment 2011

The Flood Risk Regulations (the Regulations), which came into force on the 10th December 2009, and the Flood & Water Management Act (FWMA) which gained Royal Assent on the 8th April 2010 require all unitary authorities (such as Bury Council) as designated Lead Local Flood Authorities to prepare a number of key documents including a Preliminary Flood Risk Assessment (PFRA) which focuses on local flood risk from surface water, groundwater, ordinary watercourses and canals.

The table below shows the elements of work required under the regulations.

Stage	Assessment of Plan	Description
1.0	Prepare a preliminary assessment report	The PFRA should focus on local flood risk from surface water, groundwater, ordinary watercourses and canals
2.0	Determination and identification of flood risk areas	Flood risk areas are of significant risk identified on the basis of the findings of the PFRA, national criteria set by the UK Government secretary of state and guidance provided by the Environment Agency
3.0	Prepare flood hazard maps and flood risk maps in relation to each relevant flood risk area	The hazard and risk maps will show the likely extent depth, direction, speed of flow and probability of possible floods and their consequences
4.0	Prepare a flood risk management plan in relation to each relevant flood risk area	The flood risk management plans will set out what the risk management objectives are, the measures proposed to achieve those objectives and how the measures are to be implemented

The PFRA completes the first two stages in the process. The identification of flood risk areas will establish where the final two stages of preparing hazard and risk maps and flood risk management plans are required.

The PFRA, maps and plans form part of the local Flood Risk Management Strategy that Bury Council as acting LLFA are required to prepare under the Flood and Water Management Act. This strategy sets out how the LLFA will manage local flood risk in their area and will cover areas not identified as being significant flood risk under the regulations.

2.6 Greater Manchester Surface Water Management Plan 2012

The Greater Manchester Surface Water Management Plan (SWMP), 2012, assessed surface water flood risk across the sub-region.

The initial work undertaken indicated that there were 37 hotspots in Bury, which represent 8% of the Greater Manchester total. Hotspots help to identify the areas at risk, focussing on the receptors rather than where the flood water has come from.



In Bury, three key hotspot areas were identified as requiring further investigation:

- Water Street, Radcliffe
- Gypsy Brook, Bury
- Ramsbottom

None of the above are within close vicinity to the proposed site.

2.7 Bury Local Flood Risk Management Strategy 2018

As Lead Local Flood Authority, Bury Council has a duty to develop, maintain, apply and monitor a strategy for local flood risk management. The local strategy will complement and support the National Flood and Coastal Risk Management Strategy, published by the Environment Agency (2011) and updated in August 2019.

The Bury Local Flood Risk Management Strategy (2018) updates the previous 2014 strategy and focuses on local flood risk from surface water, groundwater and ordinary watercourses but also considers flooding from rivers. It identifies responsibilities for flooding within the Borough and the action plan identifies flood management actions designed to address flood risk.

The objectives of the strategy are to:

- Gain a strategic understanding of flood risk from all sources in Bury
- Manage the likelihood of flooding within the Borough
- Help Bury residents to manage their own risk
- Ensure that new development in Bury reduces rather than increases flood risk
- Take a sustainable approach to flood risk management within the Borough, which balances economic, environmental and social benefits with flood risk policies and programmes
- Improve flood preparation, warning and post flood recovery
- Endeavour to direct flood risk funding to areas most at need or where solutions will be most effective

2.8 CIRIA Guidance

2.8.1 C624 Development & Flood Risk

The CIRIA Guidance publication “C624 Development and Flood Risk – Guidance for the Construction Industry” defines 3 levels of FRA which can be undertaken:

- Level 1 – Screening Study
- Level 2 – Scoping Study





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- **Level 3 – Detailed Study**

For this proposed development, a Level 2 Scoping Study Flood Risk Assessment combined with an overarching drainage statement is considered appropriate because of the size of the development.

For all references to SUDS documents and National Standards guidance relating to SUDS refer to the Masterplan Drainage Strategy Report Ref:4072/MDS which informs the surface water drainage strategy.

3.0 Site Context

The site is located to the south of Scobell Street and north of Walshaw Road in the Walshaw area of Bury approximately 2.5km to the northwest of the town centre.

The site is centred around NGR: SD 78073 12048 with an approximate nearest postcode of BL8 3DE. The total red line site application boundary is 11.83ha.

A Barton Willmore Site Location and Land Ownership Plan can be located in Appendix A

3.1 Site Characterisation / Land Use

Land at Walshaw Bury Development Area and FRA requirement		Area schedule: The gross site area is 11.83ha with a net site area of 7.54ha, which will provide approx. 261 dwellings, including primary and secondary roads, pedestrian routes and open green spaces.
Existing Surfacing and Current Use		The site is currently greenfield undeveloped land in the form of fields separated by hedgerows and ditches and is designated as Green Belt. There are also Ordinary Watercourses, Issues and Sinks present across the site.
Boundaries	North	Residential development and Scobell Street.
	South	Greenfield land, Walshaw Brook.
	East	Existing greenfield land.
	West	Greenfield land, Residential development, including Copthorne Cattery off Church Street.
Access	Vehicles	There is currently no vehicular access to the site.
	Pedestrians/Cycles	There are public rights of way within the site.

A Barton Willmore Concept Masterplan for the site can be located in Appendix B.





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3.2 Topography

A topographic survey of the development site has been undertaken, a copy of which can be located in Appendix C. Ordnance Survey Contour data has also been obtained. These sources of information have been used to identify the existing falls and overland flow routes within the development site and has been indicated on RoC Sketch 4072/SK102 which can be also be located in Appendix C.

The topography of the site splits the site into three distinct areas, the west from Church Street falling south and east to an ordinary watercourse, the central from a high point midway behind the existing residential falling south and west to an ordinary watercourse and the east falling from the high point midway behind the existing residential falling south and east.

Levels range from circa 132m AOD on the western boundary adjacent to Church Street, sloping east towards the ordinary watercourse which runs north south from circa 129m to 123m AOD at Walshaw Brook. The high point midway behind the existing residential at circa 126m AOD sloping west to the ordinary watercourse, south to circa 126m AOD and east to circa 119m AOD.

3.3 Geology

Reference to the online British Geological Survey (BGS) map for the site indicates the following ground model:

Bedrock Geology: Pennine Lower Coal Measures – Mudstone, Siltstone, and Sandstone. Interbedded with Cannel Rock (South Lancashire) – Sandstone. Sedimentary bedrock formed approximately 319 million years ago in the Carboniferous Period

Superficial Deposits: Predominantly Devensian – Diamicton Till, with a small area of Glaciofluvial Deposits, Devensian – Sand and Gravel in the Western area of the site that encompasses the Eastern most pond / lake. Superficial Deposits formed up to 2 million years ago in the Quaternary Period

Soilscape England describes the soils as 'slowly permeable, seasonally wet acid loamy and clayey with impeded drainage.

3.4 Hydrogeology

Reference to the DEFRA 'Magic Map' online Aquifer Designation Map indicates that the underlying Superficial deposits are classed as Secondary (undifferentiated).

Reference to the DEFRA 'Magic Map' online Aquifer Designation Map indicates that the underlying Bedrock Geology is described as a Secondary A aquifer.





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Secondary A aquifers are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

Secondary Undifferentiated has been assigned in cases where it has not been possible to attribute category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

3.5 Ground Water Protection Zones

The Environment Agency have defined Source Protection Zones (SPZs) for 2,000 groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. The maps show three main zones (inner, outer and total catchment) and a fourth zone of special interest, which the Environment Agency occasionally applies, to a groundwater source.

The proposed development site is not identified by the Environment Agency as being located within a source protection zone.

Within the SPZs the Environment Agency seek to restrict certain potentially polluting activities, with the most onerous restrictions applied to Zone 1.

The development of the site would be undertaken in a manner to ensure that no contamination of groundwater occurred.

3.6 Watercourses, Land Drainage and other Waterbodies

There are several surface water features present within or in close proximity to the site.

Walshaw Brook runs adjacent to the site's south western boundary flowing in a south easterly direction. Walshaw Brook is depicted on google maps, the flood screening report (refer to Appendix E) and Environment Agency flood mapping as having connectivity with the two western most pond/lake features present towards the south of the site.

A tributary to Walshaw Brook is indicated within the western area of site flowing north south, issuing from south of Scobell Street and sinking before presumably outfalling to Walshaw Brook.

Walshaw Brook is an ordinary watercourse and there is currently no modelled flood data available.

To the north of Scobell Street, in close proximity to the site's northern boundary an unnamed watercourse is present which flows through the existing residential area from west to east before becoming culverted approximately 50m to the west of Camberley Close.





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United Utilities records identify the culvert turning and flowing in a north easterly direction. There is no evidence to suggest that it enters the proposed development site.

3.7 Existing Flood Defences and other Structures

There are no flood defences within close proximity to the proposed development site.

3.8 Existing Public Sewers

United Utilities Sewer Records show that the highways surrounding the development site are well served by a network of existing sewers (refer to Appendix D), these include:

- 375mm & 450mm diameter Combined Sewer in Scobell Street
- 225mm diameter Surface Water Sewer in Scobell Street
- 375mm diameter Combined Sewer in Church Street
- A foul water pumping station and pumping main is indicated serving Copthorne Cattery off Church Street

There are no recorded public sewers located within the site boundary.

3.9 Existing Private Sewers

No information relating to any private drainage was available for review at the time of writing this report. It is considered likely that there will be private drainage not identified on the public sewer records, however whether this extends into the site boundary at any point is unknown.

There are no records of land drainage to review, although these may exist to drain the fields to the local ditch/watercourse network.

Further investigation work will be required prior to detailed design stage to establish the alignment, level and condition of all existing drainage within the site boundary.

3.10 Historical Flood Records

Internet based research would appear to suggest that Scobell Street, to the north of the site, has suffered from flooding in the past. This area has also been identified as suffering from both surface water and surcharged sewer flooding in the Bury Local Flood Risk Management Strategy.

In addition, Walshaw Road has also been identified as suffering from historic flooding. This is believed to have been associated with a blocked culvert running under Elton Primary School's playing fields which is some distance away from the development site.





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The Bury Local Flood Risk Management Strategy notes that during the 2015 Boxing Day floods which occurred in Bury Scobell Street to the north of the site and the area around Elton High School to the south of the site were identified as being within the flood extents.

No other historic flooding incidents have been identified in the vicinity of the site.

3.11 Flood Mapping

3.11.1 EA Flood Zone Map

The Environment Agency Flood Map indicates that the proposed development is located in Flood Zone 1 (low risk).

This is land designated as having a less than 0.1% annual probability of flooding from rivers or the sea in any year (less than a 1 in 1000 annual probability of flooding).

Flood zone designations ignore the presence of any flood defences and only considers flooding from fluvial and tidal sources. However, the maps do not take into account for flood risk from such small watercourses where the catchment size is less than 3km².

Walshaw Brook at Walshaw Road from the UK Centre for Ecology and Hydrology FEH Web Service indicates the catchment to be 2.15km² and as such no modelling by the EA will have been undertaken.

3.11.2 British Geological Survey

The British Geological Survey flood data indicates that the site contains no inland geological indicators of flooding. However, there are areas identified which have potential for groundwater flooding to occur at the surface.

3.11.3 EA/NRW Surface Water Mapping

The JBA flood mapping data indicates that the site has areas that are potentially susceptible to pluvial flooding in the 30, 100 and 1000 year return periods from Scobell Street to the north, that flows in a southerly direction through/along the site's eastern boundary off-site to the lakes/ponds and existing water features e.g. Walshaw Brook, Elton Brook and their tributaries.



4.0 Development Proposals

4.1 Nature of the Development

The total site area boundary under the control/ownership of HIMOR is circa 11.83ha of which 7.54ha is gross developable site area.

The gross developable site area comprises mainly greenfield and is located to the north east of the masterplan site. A Barton Willmore concept masterplan for the site can be found in Appendix B which illustrates the location and land ownerships.

The proposed development comprises the construction of circa 261 residential units spread across an approximate total development area of 7.54 hectares, an assumed density of approximately 34.6 dwellings per hectare (dph).

For the purposes of this report and based upon the areas provided in the Barton Willmore masterplan, it been assumed that 60% of the net development area will be impermeable (roof, paved areas, roads and footpaths etc) including a 10% allowance for urban creep resulting in 7.54 hectares of positively drained area. The proposed use of SUDS techniques outlined in the RoC Consulting Masterplan Drainage Strategy Report Ref:4072/MDS, are to be further developed at detailed design stage and to meet any reserved planning matters that will allow for flexibility in the percentage.

4.2 Proposed Levels

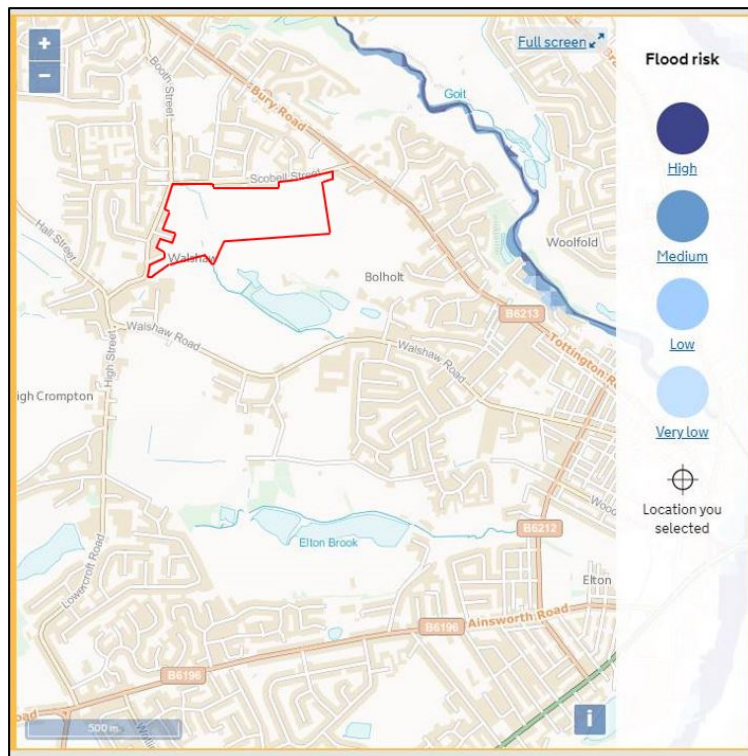
At the time of writing, a site levels strategy was not available for the proposed development. However, it is anticipated that there will be no major changes in the existing site topography and therefore finished levels will remain broadly as existing with some levelling out of peaks and troughs as required to facilitate construction and minimise bulk earthworks movements.

Refer to Appendix C for the RoC Consulting Sketch 4072/SK102 'Existing Topography' which indicates current contour levels based on the existing O.S Data.

5.0 Sources of Flood Risk

5.1 Fluvial Flood Risk

Information relating to fluvial flood risk at the site has been obtained via JBA flood mapping (details of which can be found in Appendix E) and Environment Agency online flood mapping.



Examination of the Environment Agency online flood map above and JBA flood maps indicates that the site is located within Flood Zone 1. Flood Zone 1 is defined within the NPPF as a site to have less than a 1 in 1000 (<0.1%) probability of river or coastal flooding in any one year.

As discussed in section 3.6 there are several surface water features located within close proximity to the development site.





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Walshaw Brook is presently an open watercourse adjacent to the site's southern boundary flowing in a south easterly direction before being culverted to pass beneath the junction of Walshaw Road and the private access road serving the Country Club/Hotel etc north of Elton High School. It is believed that Walshaw Brook has connectivity with the two western most pond/lake features towards the site's southern boundary. As referenced in section 3.11.1 no hydraulic modelling will have been undertaken due to the catchment size being less than 3km² and the watercourse not falling under Environment Agency jurisdiction.

The pluvial flood maps can be used as a reasonable proxy to determine the potential risk of fluvial flooding from small watercourses and the Landmark data indicates that there may be a risk of flooding with an overland pathway present across the Western portion of the site.

In order to accurately quantify the flood risk at the site, hydraulic modelling of Walshaw Brook will be undertaken at detailed design stage which will help inform the development proposals. This is not perceived to be a significant constraint on the site.

Immediately north of the site adjacent to Scobell Street an unnamed watercourse is present which flows through the existing residential area from west to east becoming culverted prior to Camberley Close. United Utilities sewer records indicate the culvert heading in a north easterly direction

These features are all ordinary watercourses and fall under the jurisdiction of the Lead Local Flood Authority Bury Council.

Given the topography of the site and the level of these water features it is considered that the risk of flooding to the proposed development from these is low. The tributaries within the development site appear to be located at existing field boundaries and are therefore expected to be land drainage ditches which will become redundant as the land parcels are developed.

Any existing watercourse or ditches within the site that are to be retained will be provided with appropriate standoff distances to ensure that development is kept clear of any potential flooding and access is provided for maintenance.

There are no identified existing fluvial flooding issues with Walshaw Brook within the site boundary.

Subject to the recommended hydraulic modelling being undertaken and based on the currently available online information the risk of fluvial flooding is assessed as **Low**.

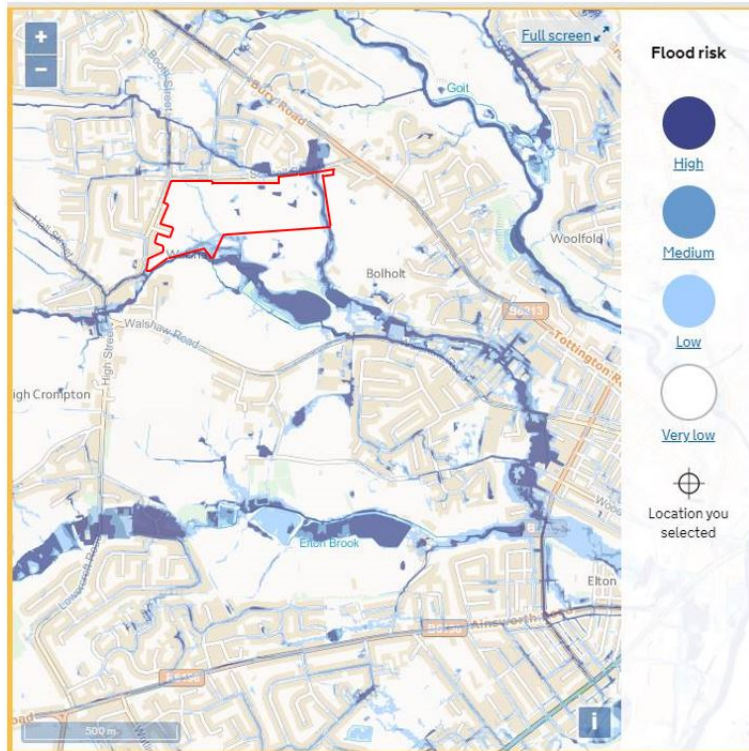
5.2 Pluvial Flood Risk

Pluvial flooding is defined as flooding resulting from rainfall generated overland flow before run-off enters any watercourse or sewer.



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It is usually associated with high intensity rainfall events but can also occur with low intensity rainfall or melting snow where ground is saturated, frozen, developed or otherwise has low permeability resulting in overland flow and ponding in depressions in the topography. Large catchment areas are particularly prone to this type of flooding.



The Environment Agency pluvial flood map above and JBA pluvial flood maps in Appendix E indicate that areas of the site are potentially susceptible to pluvial flooding. However, these are generally limited to the alignment of existing water features e.g. Walshaw Brook, and the existing lake/pond features.

A number of existing noteworthy surface water overland flow flood routes have been identified from this data.

- The first originates to the north and east of the site and appears to be associated with a low point in Scobell Street which is prone to pluvial flooding. Pluvial flooding from this area appears to flow from Scobell Street along/through the site's eastern boundary in a southern direction and end up off-site in the pond/lake to the south of the Best Western Hotel is further discussed in section 5.6
- The second of these flow paths is located in the western area of the site that originates south of Scobell Street and flows south towards the junction with Walshaw Brook



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- The third of these flow paths is to the south east boundary of the site and appears to originate from the alignment of Walshaw Brook and around the western most pond/lake features.

The data used in this flood mapping will be based on coarse level data and can be considered indicative only. Although, there appears to be 'issues' visible on the EA's flood maps and the Scobell Street flooding is highlighted in the SFRA, this is further discussed in section 5.6.

The topography generally drains towards Walshaw Brook and provision for existing overland flow routes will be made at the detailed design stage.

As mentioned in section 3.1, no hydraulic modelling has been undertaken for Walshaw Brook as its catchment is less than 3km². It is recommended that in order to accurately quantify the flood risk at the site, survey works including hydraulic modelling of Walshaw Brook should be undertaken which will help confirm the flood risk which may be fluvial and inform any mitigation requirements that may be required for the site development proposals.

Consideration will also be given at detail design stage for the introduction of additional cut-off ditches or trenches to reduce the impact of potential overland flows from off-site on the development. The only flows that are therefore likely to be present on site are from direct rainfall on proposed areas of hardstanding.

The surface water drainage strategy for this site is explored in detail and can be referenced as part of the RoC Consulting Masterplan Drainage Strategy Report Ref:4072/MDS, which informs that the proposed new development will be served by a new surface water drainage network and underground/surface attenuation which will be designed to accommodate surface water flows within the site for up to and including the 100 year plus 40% climate change storm event.

The recommended mitigation measures that are to be put in place should reduce this risk to either low or medium. Overland flow paths for off-site pluvial flows and exceedance events on-site should be catered for within the detailed design/levels strategy. This in conjunction with a new drainage system would be sufficient to mitigate the risk to an acceptable **Low** level.

5.3 Tidal Flood Risk

The site is not considered to be at risk of tidal flooding due to its inland location.

5.4 Groundwater Flood Risk

In general terms, groundwater flooding can occur from three main sources, raised water tables, seepage and percolation, and groundwater recovery or rebound.





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If groundwater levels are naturally close to the surface, then this can present a flood risk during intense rainfall. Having reviewed groundwater flood maps from the British Geological Survey (refer to Appendix E) they indicate that the site contains no inland geological indicators of flooding and that some areas of the site have potential for groundwater flooding to occur at the surface and of property situated below ground level.

The Bury Local Flood Risk Management Strategy identifies that the land in general is shown to be at varying risk from $\geq 25\%$ to $< 50\%$ and $> 75\%$ risk of groundwater flooding.

An intrusive investigation should be undertaken at detailed design stage to establish exact ground water levels and how they fluctuate seasonally. If required, measures would need to be introduced into the drainage scheme to deal with high groundwater to ensure that flooding to property does not occur. Given the proposed development is primarily residential, it is unlikely that any basements will be provided and therefore there will be no property located below ground level.

It is considered that any groundwater issues can be mitigated as required, subject to further investigation, at the detailed drainage design stage. The risk to the site from groundwater flooding is therefore considered **Low**.

5.5 Artificial Source – Canal Flood Risk

Generally, canals are owned and operated by the Canals & Rivers Trust (CRT). Water levels are regulated between normal and statutory levels by means of weirs and sluice gates and whilst a breach or overtopping of the structure is unlikely, the possible flood risk needs to be assessed.

The nearest canal to the site is the Manchester, Bolton and Bury canal which is circa 2.25km to the south east.

The risk of flooding from canals is considered **Low**.

5.6 Artificial Source – Sewer Flood Risk

United Utilities have responded to the pre-development enquiry made for the site, which can be found in Appendix C together with a copy of the sewer record maps.

The response from United Utilities has not mentioned the historic flooding issues north of Scobell Street. However, we have had discussions with United Utilities and they have advised, that they think the flooding is down to a number of issues, including a lack of maintenance of the existing culverts to the brook running alongside Scobell Street, in addition to the drainage connected from a development to the north and highway drainage into the sewer, when both should have been installed to discharge to the watercourse.

It is understood that some maintenance has been undertaken e.g. gully cleaning etc, but as yet we have not received confirmation from United Utilities on what proposals or timescales are being



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investigated and/or being put forward to address the flooding issues. This section will be updated as information becomes available.

With reference to section 3.10 and section 5.2 above, given the topography of the site and the surrounding area it is possible that flooding from surcharged public sewers would impact on the proposed development site as any excess flow would follow the existing site topography. However, as described above in section 5.2 suitable mitigation measures at detail design stage would ensure that the properties in the new development would not be at risk.

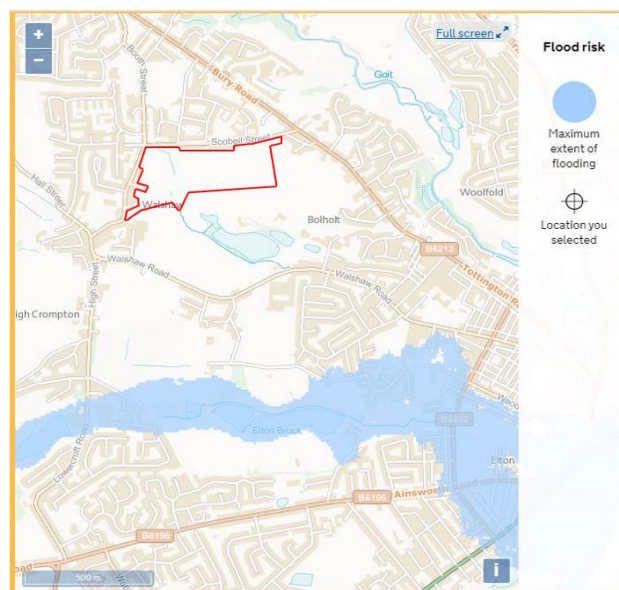
As referenced within the RoC Consulting Masterplan Drainage Strategy Report Ref:4072/MDS, the new development proposed site surface water drainage system will be designed to maintain surface water flows below ground for up to and including the 1 in 30 year return period as a minimum. Flows above this and up to 100 year plus 40% allowance for climate change will be retained safely within the site.

Taking the above into consideration and the response received from United Utilities, it is considered that the risk of flooding to the site from surcharged sewers can be managed and therefore be considered as **Low**.

5.7 Artificial Source – Reservoir Flood Risk

As identified in earlier sections of this report, a number of ponds/lakes/reservoirs are located towards the site’s southern boundary. At the time of writing this report no known flooding is understood to have occurred which is directly attributable to these features and, given the surrounding topography, any flooding would flow away from the site and not impact on the proposed development.

Review of the below Environment Agency reservoir flood map indicates that the site is not at risk of reservoir flooding.



The risk of flooding from reservoirs is considered **Low**.

5.8 Flood Risk Overview

Source	Likelihood and Compatibility
Fluvial	Low
Coastal: Sea and Estuarine	N/A
Pluvial / Surface Water	Low – Detailed design/levels strategy mitigation to reduce flooding from ordinary watercourse north of Scobell Street, Walshaw Brook and associated tributaries from high to low risk
Groundwater	Low – Further investigation and development Masterplan to reduce from medium to low risk.
Artificial Sources (Canal/Reservoir)	Low
Sewer Flooding	Low - Detailed design/levels strategy mitigation to reduce potential flooding from surcharged sewers north of Scobell Street to low Risk
Historic Flooding	Detailed design/levels strategy mitigation to reduce flooding from ordinary watercourse north of Scobell Street from high/medium to low risk

5.9 Flood Risk Vulnerability Classification

The proposed development is primarily residential and can be considered as ‘More Vulnerable’ within Table 2: Flood Risk Vulnerability Classification in the NPPF. This type of development would be wholly appropriate for Flood Zone 1.

Flood risk vulnerability classification (see table 2)	Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓
	Zone 3a	Exception Test required	✓	x	Exception Test required
	Zone 3b functional floodplain	Exception Test required	✓	x	x

Key: ✓ Development is appropriate.
x Development should not be permitted.

Table 3: Flood risk Vulnerability and flood zone ‘compatibility’
*‘Technical Guidance to the National Planning Policy Framework (NPPF)’**



6.0 Residual Risks and Impacts

6.1 Flood Risk Management Measures

The surface water drainage strategy for the new development site within the RoC Consulting Masterplan Drainage Strategy Report Ref:4072/MDS ensures that surface water run-off from the proposed development would not exceed the existing greenfield scenario and a betterment would be provided for larger return periods.

As a result of these restricted flow rates and increase in impermeable area proposed in the form of source and site control measures, any new private drainage system will be designed in accordance with current design guidance and standards and attenuation will be provided below ground and on the surface for up to the 100 year return period storm event with a 40% allowance for climate change.

The use of SUDS control measures, with the proposed controlled release of surface water to Walshaw Brook will help to minimise the flood risk impact on the downstream watercourse network.

Finished site levels will be engineered to provide positive drainage where required and prevent ponding. The accumulation of standing water will therefore not occur and thus not pose a risk.

Gradients of the hardstanding areas, where possible, will be designed to fall away from buildings such that any overland flow resulting from extreme events would be channelled away from entrances.

As the site and surrounding areas are located within Flood Zone 1, it is considered that access and egress should not be affected during flooding.

6.2 Off Site Impacts

To ensure that the proposed development will not increase flood risk elsewhere, surface water drainage discharge rates will be restricted. This restricted discharge in conjunction with surface water attenuation on site will mitigate against flood risk to other land.

By reducing the post development peak run-off to greenfield rates prior to its point of discharge into Walshaw Brook, this will reduce the potential for surface water flooding on the downstream network.



6.3 Residual Risks

The development and its drainage system will be designed to cope with the intense storm events up to and including the 100-year return period rainfall event with a 40% allowance for climate change. If an extreme rainfall event exceeds the design criteria for the drainage network, it is likely that there will be some overland flows which are unable to enter the system and existing overland flows which we are aware of.

Any overland flows generated by the proposed development would be directed away from the adjacent existing properties surrounding the site and towards the highway network where it can follow natural flow paths.

The existing flood risk to the development site from the overland flows from identified pluvial and sewer flooding north of Scobell Street remains a risk until, United Utilities and Bury Council have agreed on measures to resolve these current issues. Until then, mitigation measures are required to be brought forward at detail design stage to maintain current flood paths and minimise flood risk to properties within the development site.

The predicted pluvial flood risk from Walshaw Brook and its tributaries cannot be defined at this stage. However, as recommended, further investigation and hydraulic modelling of the Brook and the tributaries at detailed design stage will inform what if any mitigation works are required to manage any potential fluvial/pluvial flood risk.

6.4 Pollution Control

As proposed, surface water discharge from the site is to ground/watercourse, suitable pollution control measures are required to safeguard the local environment.

The SUDS Manual provides guidance on the requirements of the number and types of treatment 'trains' required to provide suitable water quality prior to discharge to watercourses.

Depending on the type of SUDS provided, the drainage strategy will provide appropriate levels of treatment to protect the local environment in line with the SUDS guidance.

Surface water run-off from roof and pavement areas is classified as low hazard and requires little treatment other than consideration for the interception of airborne detritus.

Run-off from large car parking areas, heavily trafficked roads and service yards etc, is classified as medium hazard and requires one or two types of treatment such as:

- Sump outlets to road gullies and linear drainage channels
- Suitably specified separators to BS and EA PPG Guidelines





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- Catchpit manholes
- Combinations of various SUDS Techniques
- Approved proprietary treatment systems

The proposed surface water discharge from the proposed development will be low to medium hazard.

Suitable maintenance of the drainage systems is also required to ensure that the systems operate efficiently and reduce the risk of pollution.

7.0 Summary

It is anticipated that the site (part of GM Allocation 9) could accommodate up to 261 residential properties, access roads, footpaths and landscaping on a net area of 7.54 Hectares.

Information has been sourced from the online GOV.UK Long Term Flood Risk Information, Envirocheck ProMap, United Utilities Asset Management and the Bury Council SFRA and Maps Report, Bury Local Flood Risk Management Strategy.

The site is in an area identified as having a 'low' probability of fluvial flooding on the Environment Agency Flood Map in section 5.1 and is located in Flood Zone 1.

The NPPF requires planning applications be accompanied by a Flood Risk Assessment for developments of 1 hectare or greater and/or more than 10 properties in Flood Zone 1.

The Flood Risk Assessment has reviewed all sources of flood risk to both the proposed development and to existing adjacent properties as a result of the development proposals, including fluvial, tidal, pluvial, groundwater, sewers and flooding from artificial sources.

Flood Risk Overview:

- Fluvial – Low subject to hydraulic modelling
- Pluvial/Surface Water – Low with development masterplan mitigation
- Groundwater – Low with further investigation and development masterplan mitigation
- Artificial Sources (Reservoirs & Canals) – Low
- Sewers – Low

A review of the known historic flood events suggests that the development site is at risk from pluvial flooding from the unnamed watercourse and sewers to the north of Scobell Street, which due to existing topography directs overland flows north-south adjacent to the eastern boundary of the site towards Walshaw Road to the south.

United Utilities have been consulted via a pre-development application, the response on points of connection and discharge and a copy of the sewer record maps are located in Appendix D.

The RoC Consulting Masterplan Drainage Strategy Report Ref:4072/MDS confirms that proposed development will be served using a separate system of foul and surface water drainage. The surface water system will meet the requirements of the National and Local Standards for the drainage 'hierarchy' and will not increase flood risk to the development site and local neighbourhood. The foul water system will discharge to the public sewerage system and location points agreed with United Utilities.





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The Flood Risk Assessment is considered to be commensurate with the development proposals and in summary, the development can be considered appropriate for Flood Zone 1 in accordance with the NPPF guidelines.

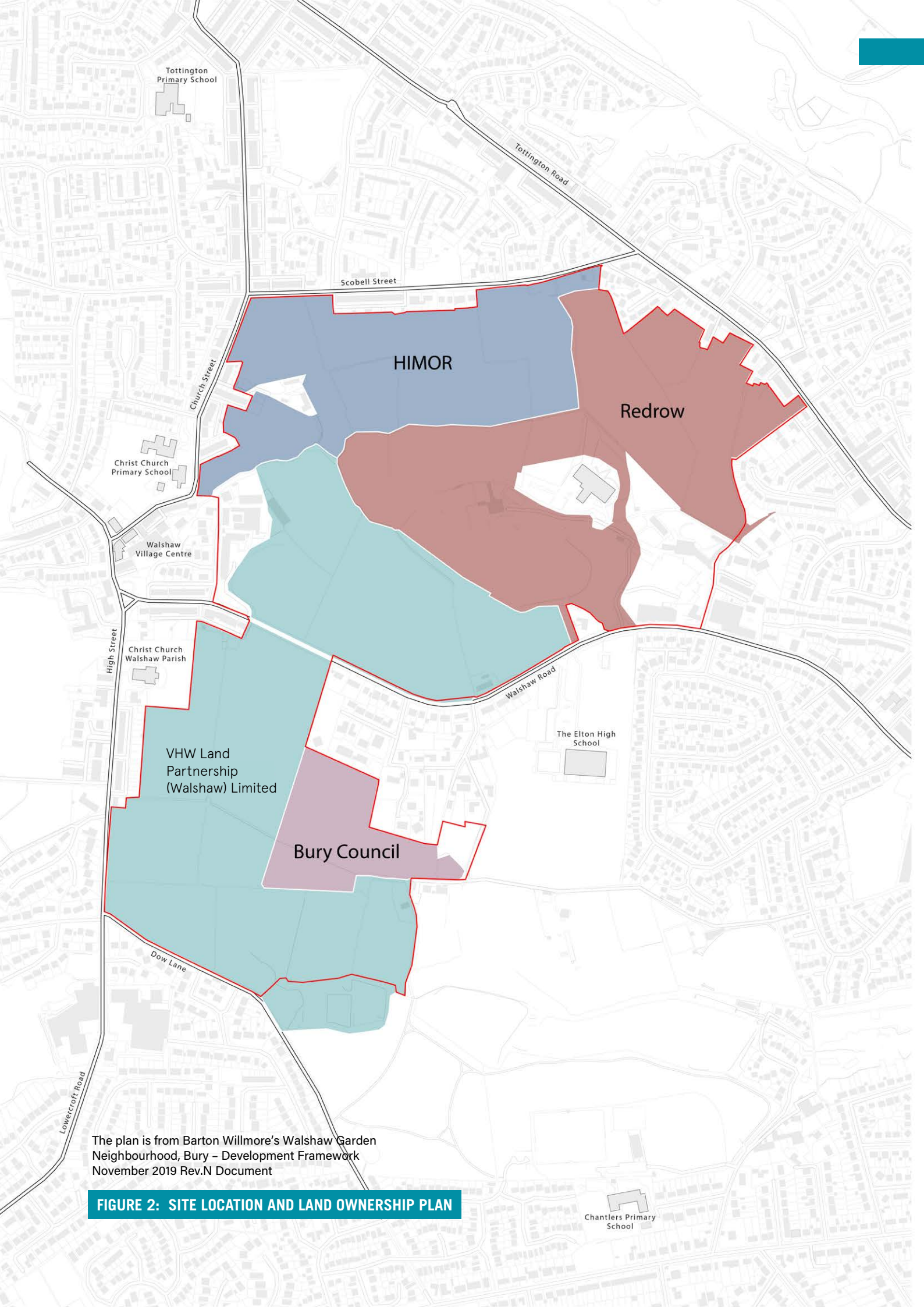
The development will be accessible for emergency access and egress during times of extreme flooding events as the site is developed through the master planning and design development stages. Consideration of layout and levels will be required to take into account to mitigate the existing pluvial flooding issues associated with off-site flows entering the site via Scobell Street.

Subject to the implementation of the recommendations as set out above and within the RoC Consulting Masterplan Drainage Strategy Report Ref:4072/MDS, the development should not be precluded on flood risk grounds.



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APPENDIX A – SITE LOCATION & LAND OWNERSHIP PLAN



The plan is from Barton Willmore's Walshaw Garden Neighbourhood, Bury - Development Framework November 2019 Rev.N Document

FIGURE 2: SITE LOCATION AND LAND OWNERSHIP PLAN



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APPENDIX B – CONCEPT MASTERPLAN

FIGURE 10: CONCEPT MASTERPLAN



	SITE BOUNDARY		PUBLIC OPEN SPACE
	PEDESTRIAN/CYCLE LINK		EXISTING/PROPOSED TREE PLANTING
	DEVELOPMENT BLOCK		PROPOSED LINK ROAD
	SCHOOL DROP OFF AREA		FOCAL SPACE
	WATERBODY		PROPOSED VEHICLE ACCESS
	DRAINAGE CHANNEL		PROPOSED EMERGENCY ACCESS
	CONTOURS & HEIGHTS		RETAINED DEVELOPMENT
	POTENTIAL PLAY AREA		



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APPENDIX C – EXISTING TOPOGRAPHY PLAN

SURVEY ORIENTATED TO REAL TIME GPS
0m 10m 20m 30m 40m
SCALE BAR 1:500

NOTES AND AMENDMENTS
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 THE AVERAGE SPREAD.
THE DROP LINE LAYER DENOTES THE TREES EXTREMITY

REVISIONS

REV	DESCRIPTION	DRAWN	CHKD	DATE

Topographical Survey Legend

BL	BLK	BLK	BLK	BLK	BLK	BLK	BLK
BR	BRK	BRK	BRK	BRK	BRK	BRK	BRK
BS	BSK	BSK	BSK	BSK	BSK	BSK	BSK
BT	BTM	BTM	BTM	BTM	BTM	BTM	BTM
CA	CAK	CAK	CAK	CAK	CAK	CAK	CAK
CB	CBK	CBK	CBK	CBK	CBK	CBK	CBK
CC	CCM	CCM	CCM	CCM	CCM	CCM	CCM
CD	CDK	CDK	CDK	CDK	CDK	CDK	CDK
CE	CEM	CEM	CEM	CEM	CEM	CEM	CEM
CF	CFM	CFM	CFM	CFM	CFM	CFM	CFM
CG	CGM	CGM	CGM	CGM	CGM	CGM	CGM
CH	CHM	CHM	CHM	CHM	CHM	CHM	CHM
CI	CIK	CIK	CIK	CIK	CIK	CIK	CIK
CJ	CJM	CJM	CJM	CJM	CJM	CJM	CJM
CK	CKM	CKM	CKM	CKM	CKM	CKM	CKM
CL	CLM	CLM	CLM	CLM	CLM	CLM	CLM
CM	CMK	CMK	CMK	CMK	CMK	CMK	CMK
CN	CNM	CNM	CNM	CNM	CNM	CNM	CNM
CO	COM	COM	COM	COM	COM	COM	COM
CP	CPK	CPK	CPK	CPK	CPK	CPK	CPK
CQ	CQM	CQM	CQM	CQM	CQM	CQM	CQM
CR	CRM	CRM	CRM	CRM	CRM	CRM	CRM
CS	CSM	CSM	CSM	CSM	CSM	CSM	CSM
CT	CTM	CTM	CTM	CTM	CTM	CTM	CTM
CU	CUK	CUK	CUK	CUK	CUK	CUK	CUK
CV	CVM	CVM	CVM	CVM	CVM	CVM	CVM
CW	CWM	CWM	CWM	CWM	CWM	CWM	CWM
CX	CXM	CXM	CXM	CXM	CXM	CXM	CXM
CY	CYM	CYM	CYM	CYM	CYM	CYM	CYM
CZ	CZM	CZM	CZM	CZM	CZM	CZM	CZM
DA	DAK	DAK	DAK	DAK	DAK	DAK	DAK
DB	DBM	DBM	DBM	DBM	DBM	DBM	DBM
DC	DCM	DCM	DCM	DCM	DCM	DCM	DCM
DD	DDM	DDM	DDM	DDM	DDM	DDM	DDM
DE	DEM	DEM	DEM	DEM	DEM	DEM	DEM
DF	DFM	DFM	DFM	DFM	DFM	DFM	DFM
DG	DGM	DGM	DGM	DGM	DGM	DGM	DGM
DH	DHM	DHM	DHM	DHM	DHM	DHM	DHM
DI	DIK	DIK	DIK	DIK	DIK	DIK	DIK
DJ	DJM	DJM	DJM	DJM	DJM	DJM	DJM
DK	DKM	DKM	DKM	DKM	DKM	DKM	DKM
DL	DLM	DLM	DLM	DLM	DLM	DLM	DLM
DM	DMK	DMK	DMK	DMK	DMK	DMK	DMK
DN	DNM	DNM	DNM	DNM	DNM	DNM	DNM
DO	DOM	DOM	DOM	DOM	DOM	DOM	DOM
DP	DPK	DPK	DPK	DPK	DPK	DPK	DPK
DQ	DQM	DQM	DQM	DQM	DQM	DQM	DQM
DR	DRM	DRM	DRM	DRM	DRM	DRM	DRM
DS	DSM	DSM	DSM	DSM	DSM	DSM	DSM
DT	DTM	DTM	DTM	DTM	DTM	DTM	DTM

BENCH MARK INFORMATION

A: ADJUSTED OSM
D: DRAINAGE
G: GPS
V: VRS GPS

SURVEY STATIONS

STATION	Easting	Northing	Height
31	377948.249	412161.097	126.902
31A	377876.459	412156.268	130.149
31B	377829.559	412151.790	132.459
31C	377799.100	412074.597	134.004
31D	377742.183	411846.554	134.664
31E	377748.771	411894.864	131.768
31F	377745.100	411846.091	130.661
32	378073.328	412165.020	122.431
33	378205.999	412371.466	119.976
34	378301.830	412393.428	118.816
35	378377.713	412323.770	120.893
SE13	378705.709	411984.362	112.959
JLP1	378421.576	411630.574	113.185

JLP S r o i n

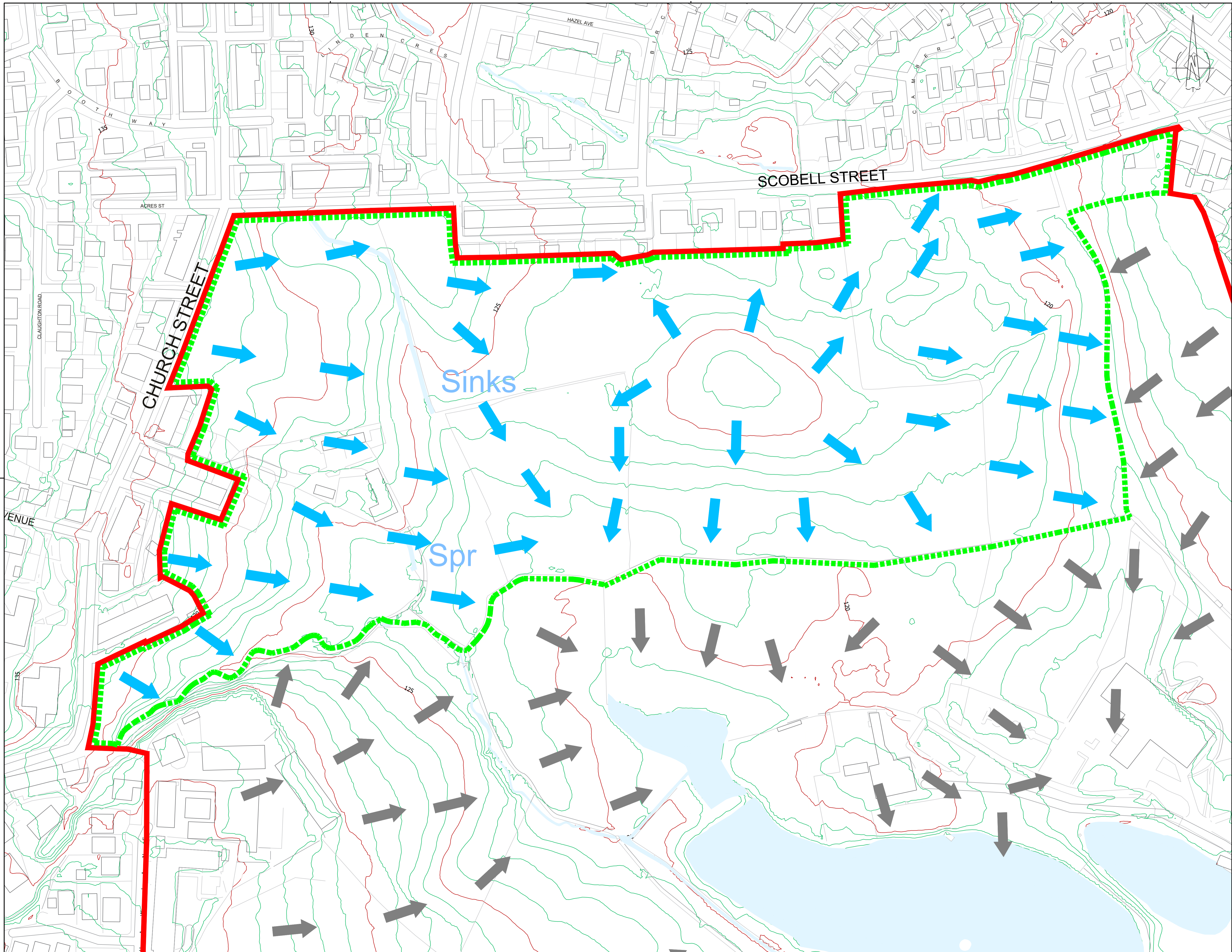
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PROVISIONS

Scale 1:500
Date 03.12.2011

SCALE	SHEET NO.	No. OF SHEETS	DATE	REVISION
1:500	1	2	03.12.2011	

DRAWING NUMBER
S112101



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NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE ROC FLOOD RISK ASSESSMENT REPORT AND MASTERPLAN DRAINAGE STRATEGY REPORT.
3. THE INFORMATION SHOWN ON THIS DRAWING IS INDICATIVE ONLY AND SUBJECT TO FURTHER CONSULTATION AND DETAILED DESIGN.
4. CONTOURS ARE BASED ON OS INFORMATION PROVIDED BY BARTON WILLMORE.

KEY

- 5m CONTOUR LINE
- 1m CONTOUR LINE
- OVERLAND FLOW ROUTE
- OFFSITE OVERLAND FLOW ROUTE
- RED LINE BOUNDARY
- LAND OWNERSHIP BOUNDARY

01	17/01/20	FIRST ISSUE	RM	DAE
REV.	DATE	DETAILS	DRN.	CHK.

INFORMATION

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DRAWN	DATE	SCALE
RM	17.01.20	1:1,000
CHECKED	DATE	THE ABOVE SCALES APPLY WHEN PLOTTED AT A SIZE --DO NOT SCALE--
DAE	17.01.20	
APPRVD.	DATE	EMAIL FOR DRAWINGS
PAW	17.01.20	info@rocconsulting.com

CLIENT
HIMOR

PROJECT TITLE
WALSHAW GARDEN NEIGHBOURHOOD BURY

DRAWING TITLE
EXISTING TOPOGRAPHY & OVERLAND FLOW ROUTES SHEET 2 OF 3

PROJECT No.	DRAWING No.	REV.
4072	SK102	01



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APPENDIX D – UNITED UTILITIES INFORMATION

Wastewater pre-development enquiry



This form is for all first time enquiries you may have when planning your development.

If your enquiry relates to advice on **connection points and discharge rates**, please complete all sections, providing as much information as you have available. You will notice some fields are marked as optional, all other fields are mandatory.

For **all other enquiries**, please complete Sections 1, 2, 7 and 8.

When answering the yes/no questions please mark an 'x' in the appropriate box.

All enquiries must be accompanied by a site location plan, clearly identifying the site boundary.

Once completed, please return this form by email to WastewaterDeveloperServices@uuplc.co.uk or post to United Utilities Developer Services, Grasmere House, Second Floor, Lingley Mere Business Park, Lingley Green Avenue, Great Sankey, Warrington WA5 3LP.

We aim to respond to enquiries within 15 working days from receipt of your completed enquiry form.

Section 1: About you						
	Applicant			Agent (if applicable)		
Name				Reece McGuinness		
Company's name				ROC Consulting		
Home or company address (including postcode)				Commercial Wharf 6 Commercial Street Manchester		
Contact telephone number (a mobile number is fine)				0161 214 5390		
Email				reece.mcguinness@roccoconsulting.com		
What is your enquiry	Surface and foul water discharge limitations + connections					
Who should we send the enquiry response to?	Applicant	<input type="checkbox"/>	Agent	<input checked="" type="checkbox"/>	Both	<input type="checkbox"/>
Section 2: About your site						
Site name	Land at Walshaw Bury (Himor Land)					
Site Address (or nearest main road)	Nearest Main Road: Scobell Street / Church Street					
Site grid reference (mid point)	X:	378066	Y:	412063		
Approx. number of dwellings	263					
Total site area (hectares)	11.73					
Site name	Land at Walshaw Bury (Himor Land)					
Development area (hectares) (Optional)	7.98					
Estimated onsite date (Optional)						
Estimated first occupation (Optional)						
Does the site have planning permission	Full	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Application submitted	<input type="checkbox"/>	Planning ref (if applicable)
	Outline	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Application submitted	<input type="checkbox"/>	Planning ref (if applicable)
Have you approached us about this site previously?	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>		If yes, please provide Ref No. and/or contact details	

Section 3: Your site drainage strategy

Type of site	GREENFIELD (Go to Q 3.1) <input checked="" type="checkbox"/> BROWNFIELD (Go to Q 3.2) <input type="checkbox"/>
3.1 Greenfield site (Optional)	Confirmed attachment:
Please provide full calculations to show existing greenfield run off rates	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
3.2 Brownfield site (Optional)	Confirmed attachment:
Please provide a plan showing existing foul water drainage from this site to the public sewer network (including location of existing drains, pipe sizes and points of connection)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Please provide a plan showing the existing surface water drainage from this site to the public sewer network, including location of existing drains, pipe sizes and points of connection	Yes <input type="checkbox"/> No <input type="checkbox"/>
Will this development produce trade effluent?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Separate approval must be obtained for the discharge to the public sewer of any trade effluent from a factory, manufacturing or commercial process. You can apply for consent through a retailer of wastewater services who will apply to us on your behalf. A list of retailers can be found via the Market Operator here: www.mosl.co.uk/members/member-list A copy of the consent will be needed for you to make a sewer connection application.	Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, to which sewer?	

Section 4: Foul water connection

Are you proposing to use an existing connection to the public sewer?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
If Yes , please provide manhole number or grid reference number If no , please provide the proposed flow rate and connection points (litres per second)	12.2l/s MH2101
Is the foul water discharge to be pumped?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Section 5: Surface water connection

If you are proposing to connect surface water to a public sewer, please attach evidence that all options for Sustainable Urban Drainage Systems (SUDs) have been explored in accordance with part H of the Building Regulations 2010.

Details of SUDs can be found at http://www.ciria.com/sudsdesign_guidance.htm

How do you propose to drain surface water from the site?	SUDs (Go to Section 6) <input checked="" type="checkbox"/> Discharge to public sewer (Go to Q5.1) <input checked="" type="checkbox"/>
5.1 Does the site have existing surface water connections to the public sewer?	Yes (Go to Q5.2) <input type="checkbox"/> No (Go to Q5.3) <input checked="" type="checkbox"/>
5.2 Proposed surface water discharging to public sewer via existing connection	
Are you proposing to use an existing connection?	Yes <input type="checkbox"/> No (Go to Q5.3) <input checked="" type="checkbox"/>
If yes , please provide manhole number or grid reference number & proposed flow rates	Split between SUDs & sewer not yet known (MH2101)
5.3 Proposed surface water discharging to public sewer via a new connection	
Have you completed a flood risk assessment in support of your planning application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is the surface water to be controlled? (Optional)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is the surface water to be pumped?(Optional)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Section 6: Development details (Optional)

Is the development part of a larger site that will be developed in phases or will be subject to separate planning applications? If yes , please provide details below.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>						
Phase number	1	2	3	4	5	6	7
Start date on site							
Anticipated date of first occupation							
Anticipated completion date							
No. of dwellings							
Sustainability code for dwellings							
Public houses and/or restaurants	No. of seats						
	Floor space (m ²)						
Hotels: Total No. of beds							
Schools: Total No. of pupils							
Hospitals: Total No. of beds							
Retail units: Total No. of units							
Office space: Total No. of units							
Industrial / manufacturing: Total No. of units							
Other: Foul water (litres per second)							

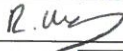
Section 7: Supporting information

Please confirm you have included all supporting information in relation to your enquiry

Site location plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Site boundary	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Proposed drainage layout plan (optional)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Indicative layout plan (optional)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Calculations in support of proposed flow rates or run off rates (optional)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Flood risk assessment (if appropriate)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Section 8: Declaration

I understand that the submission of this form is to be treated as a preliminary enquiry and the information may be subject to change. In particular, I understand that the information United Utilities Water Limited provides in response is valid only in conjunction with the information provided in relation to this enquiry, any changes to regulation or development layout will invalidate our response.

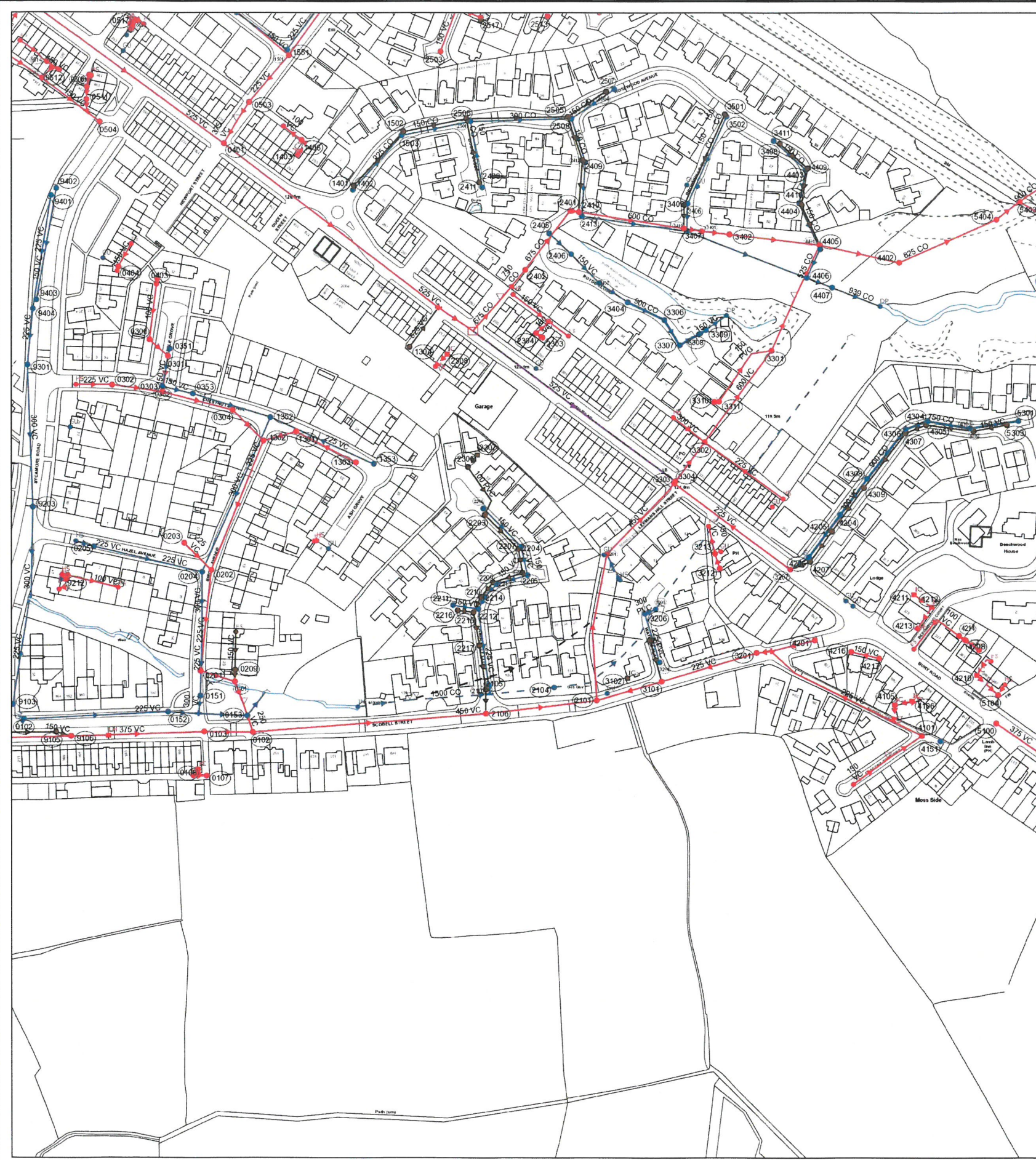
Name	Reece McGuinness	Signature	
Company	ROC Consulting	Date	0 2 0 1 2 0 2 0

UU use only

Date received	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	UUW Ref No	\
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**About us**

United Utilities is the North West's water company. We keep the taps flowing and toilets flushing for seven million customers every day. From Crewe to Carlisle, we work hard behind the scenes to help your life flow smoothly.



Retho	Cover	Func	Invert	Size	Size y	Shape	Mat	Length	Grid	Retho	Cover	Func	Invert	Size	Size y	Shape	Mat	Length	Grid
3501	125.51	FO	123.48	150		CO	CO	55.44241	1 m 15	3501	125.51	FO	123.48	150		CO	CO	55.44241	1 m 15
3502	125.49	FW	123.82	150		CO	CO	53.25423	1 m 15	3502	125.49	FW	123.82	150		CO	CO	53.25423	1 m 15
3401	122.04	CO	116.41	600		CO	CO	15.34446	1 m 15	3401	122.04	CO	116.41	600		CO	CO	15.34446	1 m 15
3411	123.74	BW	122.1	150		CO	CO	23.98211	1 m 15	3411	123.74	BW	122.1	150		CO	CO	23.98211	1 m 15
3410	123.65	FO	123.53	150		CO	CO	20.05049	1 m 15	3410	123.65	FO	123.53	150		CO	CO	20.05049	1 m 15
3412	123.3	BW	119.57	150		CO	CO	28.16523	1 m 11	3412	123.3	BW	119.57	150		CO	CO	28.16523	1 m 11
4403	123.27	FO	121.19	150		CO	CO	18.8174	1 m 15	4403	123.27	FO	121.19	150		CO	CO	18.8174	1 m 15
4404	121.36	BW	116.97	150		CO	CO	25.44138	1 m 11	4404	121.36	BW	116.97	150		CO	CO	25.44138	1 m 11
4405	121.36	BW	116.97	150		CO	CO	24.80179	1 m 4	4405	121.36	BW	116.97	150		CO	CO	24.80179	1 m 4
4406	121.36	BW	116.97	150		CO	CO	17.50477	1 m 10	4406	121.36	BW	116.97	150		CO	CO	17.50477	1 m 10
4407	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4407	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4408	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4408	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4409	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4409	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4410	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4410	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4411	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4411	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4412	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4412	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4413	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4413	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
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4418	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4418	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4419	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4419	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4420	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4420	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4421	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4421	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4422	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4422	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4423	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4423	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4424	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4424	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4425	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4425	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4426	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4426	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4427	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4427	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4428	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4428	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4429	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4429	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4430	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4430	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4431	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4431	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4432	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4432	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4433	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4433	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4434	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4434	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4435	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4435	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4436	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4436	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4437	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4437	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4438	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4438	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4439	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4439	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4440	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4440	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4441	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4441	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4442	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4442	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4443	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4443	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4444	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4444	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4445	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4445	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4446	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4446	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4447	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4447	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
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4449	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4449	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4450	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4450	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4451	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4451	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4452	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4452	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
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4457	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4457	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4458	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4458	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4459	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4459	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52
4460	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52	4460	121.36	BW	116.97	150		CO	CO	14.30364	1 m 52

LEGEND

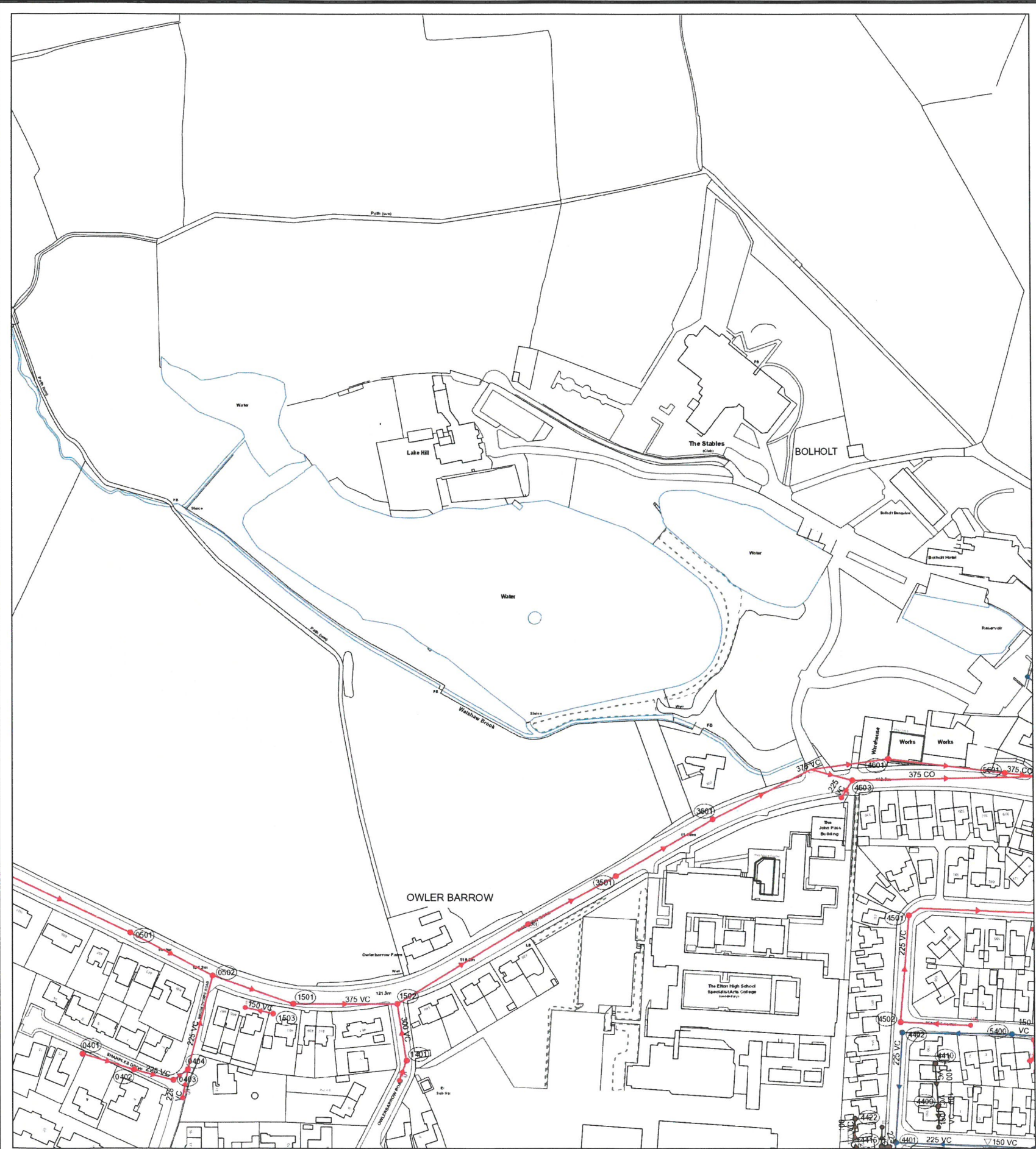
Abandoned	Foul	Surface Water	Combined	Public Sewer
Private Sewer	Section 104	Rising Main	Sludge Main	Overflow
Water Course	Highway Drain	All point assets follow the standard colour convention: red - combined brown - foul blue - surface water purple - overflow	Side Entry Manhole	Outfall
Screen Chamber	Inspection Chamber	Bifurcation Chamber	Lamp Hole	T Junction / Saddle
Catchpit	Valve Chamber	Vent Column	Vortex Chamber	Penstock Chamber
Network Storage Tank	Sewer Overflow	Ww Treatment Works	Ww Pumping Station	Septic Tank
Control Kiosk	Change of Characteristic	Manhole Function	Sewer Shape	Sewer Material

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

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Address or Site Reference:
467 WALSHAW ROAD,
BURY,
BL8 3AA

OS sheet SD7812SW
Number:
Scale:



RefNo	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grid
5400	116.79	SW	115.07	225		VC	VC	61.0082	1 m 24
5400	116.79	SW	115.07	225		VC	VC	61.0082	1 m 24
4502	114.18	CO	112.29	225		VC	VC	60.20737	1 m 87
4502	114.18	CO	112.29	225		VC	VC	60.20737	1 m 87
4501	114.56	CO	111.84	225		VC	VC	60.27272	1 m 86
4501	114.56	CO	111.84	225		VC	VC	60.27272	1 m 86
4603	112.92	CO	109.34	375		CO	CO	100.0984	1 m 84
4601	111.83	CO	109.42	375		CO	CO	20.17738	1 m 87
4601	111.83	CO	109.42	375		VC	VC	65.89046	1 m 107
4418	112.17	FO	110.03	150		VC	VC	6.59352	1 m 107
4418	112.17	FO	110.03	150		VC	VC	6.59352	1 m 107
4415	113.45	SW	111.75	300		VC	VC	11.03855	1 m 107
4401	113.85	SW	111.75	300		VC	VC	61.07373	1 m 107
4402	114.15	SW	112.85	225		VC	VC	42.1289	1 m 80
4402	114.15	SW	112.85	225		VC	VC	62.1289	1 m 80
4410	114.15	FO	112.85	100		VC	VC	24.20906	1 m 80
4409	114.15	FO	112.85	100		VC	VC	11.70707	1 m 80
4409	114.15	FO	112.85	100		VC	VC	11.70707	1 m 80
9501	128.11	CO	125.75	375		VC	VC	86.33076	1 m 81
9401	128.32	CO	126.14	225		VC	VC	30.36445	1 m 43
9401	128.32	CO	126.14	225		VC	VC	30.36445	1 m 43
9401	128.32	CO	126.14	225		VC	VC	30.36445	1 m 43
9401	128.32	CO	126.14	225		VC	VC	30.36445	1 m 43
0501	128.95	CO	124.22	375		VC	VC	51.88449	1 m 89
0501	128.95	CO	124.22	375		VC	VC	51.88449	1 m 89
0501	128.95	CO	124.22	375		VC	VC	51.88449	1 m 89
0501	128.95	CO	124.22	375		VC	VC	51.88449	1 m 89
0402	127.8	CO	125.43	225		VC	VC	22.80351	1 m 17
0402	127.8	CO	125.43	225		VC	VC	22.80351	1 m 17
0402	127.8	CO	125.43	225		VC	VC	22.80351	1 m 17
0402	127.8	CO	125.43	225		VC	VC	22.80351	1 m 17
0402	127.8	CO	125.43	225		VC	VC	22.80351	1 m 17
0403	127.14	CO	124.11	225		VC	VC	10	1 m 14
0403	127.14	CO	124.11	225		VC	VC	10	1 m 14
0403	127.14	CO	124.11	225		VC	VC	10	1 m 14
0404	126.91	CO	123.22	225		VC	VC	54.81788	1 m 322
0404	126.91	CO	123.22	225		VC	VC	54.81788	1 m 322
0503	125.85	CO	122.62	375		VC	VC	47.75882	1 m 87
0502	125.85	CO	122.62	375		VC	VC	47.75882	1 m 87
1503	124.13	CO	120.03	375		VC	VC	15.83225	1 m 57
1501	124.13	CO	120.03	375		VC	VC	58	1 m 57
1501	124.13	CO	120.03	375		VC	VC	58	1 m 57
1502	121.27	CO	116.95	375		VC	VC	85.75546	1 m 74
1502	121.27	CO	116.95	375		VC	VC	85.75546	1 m 74
1401	122.4	CO	117.52	300		VC	VC	32.38827	1 m 95
1401	122.4	CO	117.52	300		VC	VC	32.38827	1 m 95
2501	117.64	CO	114.51	375		VC	VC	55.9464	1 m 89
2501	117.64	CO	114.51	375		VC	VC	55.9464	1 m 89
3501	117.64	CO	0	375		VC	VC	0	375
3501	117.64	CO	0	375		VC	VC	0	375
3501	117.64	CO	0	375		VC	VC	0	375

LEGEND

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 blue - surface water
 brown - foul purple - overflow

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

MANHOLE FUNCTION

FC Foul
 SW Surface Water
 CO Combined
 OV Overflow

SEWER SHAPE

CI Circular TR Trapezoidal
 EG Egg AR Arch
 OV Oval BA Barrel
 FT Flat Top HO HorseShoe
 RE Rectangular UN Unspecified
 SQ Square

SEWER MATERIAL

AC Asbestos Cement
 BR Brick
 PE Polyethylene
 RP Reinforced Plastic Matrix
 CO Concrete
 CSB Concrete Segment Bolted
 CSU Concrete Segment Unbolted
 CC Concrete Box Culverted
 PSC Plastic / Steel Composite
 GRC Glass Reinforced Plastic
 DI Ductile Iron
 PVC Polyvinyl Chloride
 CI Cast Iron
 S Spun Iron
 ST Steel
 VC Vitified Clay
 PP Polypropylene
 PF Pitch Fibre
 MAC Masonry Coursed
 MAR Masonry Random
 U Unspecified

Address or Site Reference:
 467 WALSHAW ROAD,
 BURY,
 BL8 3AA

OS sheet SD7811NW
Number:
Scale: 1:1250 **Date:** 19/04/2018
Nodes: 51
Sheet: 8 of 8
 Printed by: Property Searches

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

From: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Sent: 06 January 2020 13:14
To: Reece McGuinness; Wastewater Developer Services
Subject: RE: File Transfer: 4072 - Land at Walshaw Bury Pre-Development Enquiry (HIMOR) - 4200029694

Dear Customer

We have carried out an assessment of your application which is based on the information provided; this pre development advice will be valid for 12 months

Foul will be allowed to drain to the public combined sewer network at an unrestricted rate. The connection(s) to the public sewer can be at a point(s) convenient to yourself

Surface water from this site should drain to either soak away/infiltration system or directly to watercourse. Discharge rates and consents must be discussed and agreed with all interested parties.

If you require any further guidance please follow <http://www.unitedutilities.com/builders-developers.aspx>

If you need a make further enquiry relating to this matter please send your enquiry to WastewaterDeveloperServices@uuplc.co.uk Please quote your DEXXXX/42XXXXXXX/GEXXXX reference number

Please Note:- enquiries sent to any other United Utilities e-mail address will be deleted.

Connection Application

Although we may discuss and agree discharge points & 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

<http://www.unitedutilities.com/connecting-public-sewer.aspx>

Please be aware that on site drainage must be designed in accordance with Building Regulations, National Planning Policy, Planning Conditions and local flood authority guidelines, we would recommend that you liaise and make suitable agreements with the relevant statutory bodies.



Neil O'Brien
Wastewater Pre-Development Engineer
Great Manchester Area
Developer Services & Metering
Customer Services
T: 01925 679410
unitedutilities.com

From: Reece McGuinness [mailto:reece.mcguinness@roconsulting.com]
Sent: 24 December 2019 12:33
To: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Subject: File Transfer: 4072 - Land at Walshaw Bury Pre-Development Enquiry (HIMOR) - Land at Walshaw, Bury

IMPORTANT: Click a link below to access files associated with this transmittal that came in through the RoC Consulting Info Exchange web site.

[Download all associated files](#)

Additional links:

[Reply to All](#)

Project Name: Land at Walshaw, Bury

Project Number: 4072

From: Reece McGuinness

To: WastewaterDeveloperServices@uuplc.co.uk

CC: David Eato; Paul White (RoC Consulting)

Subject: 4072 - Land at Walshaw Bury Pre-Development Enquiry (HIMOR)

Sent via: Info Exchange

Expiration Date: 1/23/2020

Date:

Remarks: Dear Sir/Madam,
Please find attached pre-development enquiry for the above site.
Also attached is a plan indicating layout and an ownership plan. this pre-development enquiry relates to the HIMOR land.

Kind regards

Reece McGuinness

Strategic Land Graduate Engineer

T 0161 214 5390

www.roconsulting.com



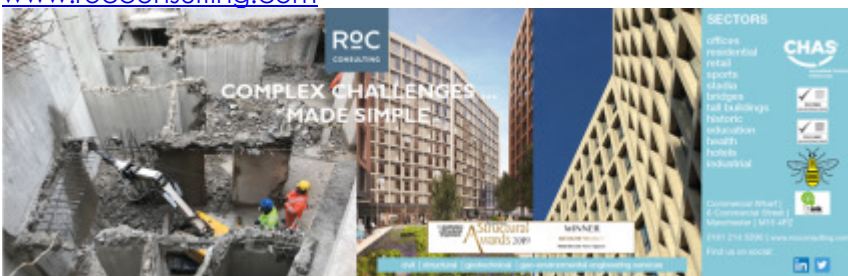
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Transferred Files

NAME	TYPE	DATE	TIME	SIZE
Transmittal - 00001.pdf	PDF File	12/24/2019	12:37 PM	190 KB
30860-MR-M-02I-Block Layout-A1 PT 1.2500-01-01.jpg	JPEG Image	12/24/2019	12:05 PM	6,446 KB
30860-MR-M-04-Land Ownership Plan-A1 PT 1.2500-01.jpg	JPEG Image	12/24/2019	12:06 PM	12,405 KB
Himor Pre Development Enquiry.pdf	PDF File	12/24/2019	12:22 PM	1,457 KB

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Kind regards
Reece McGuinness
Strategic Land Graduate Engineer
 T 0161 214 5390
www.rocconsulting.com



EMGateway3.uuplc.co.uk made the following annotations

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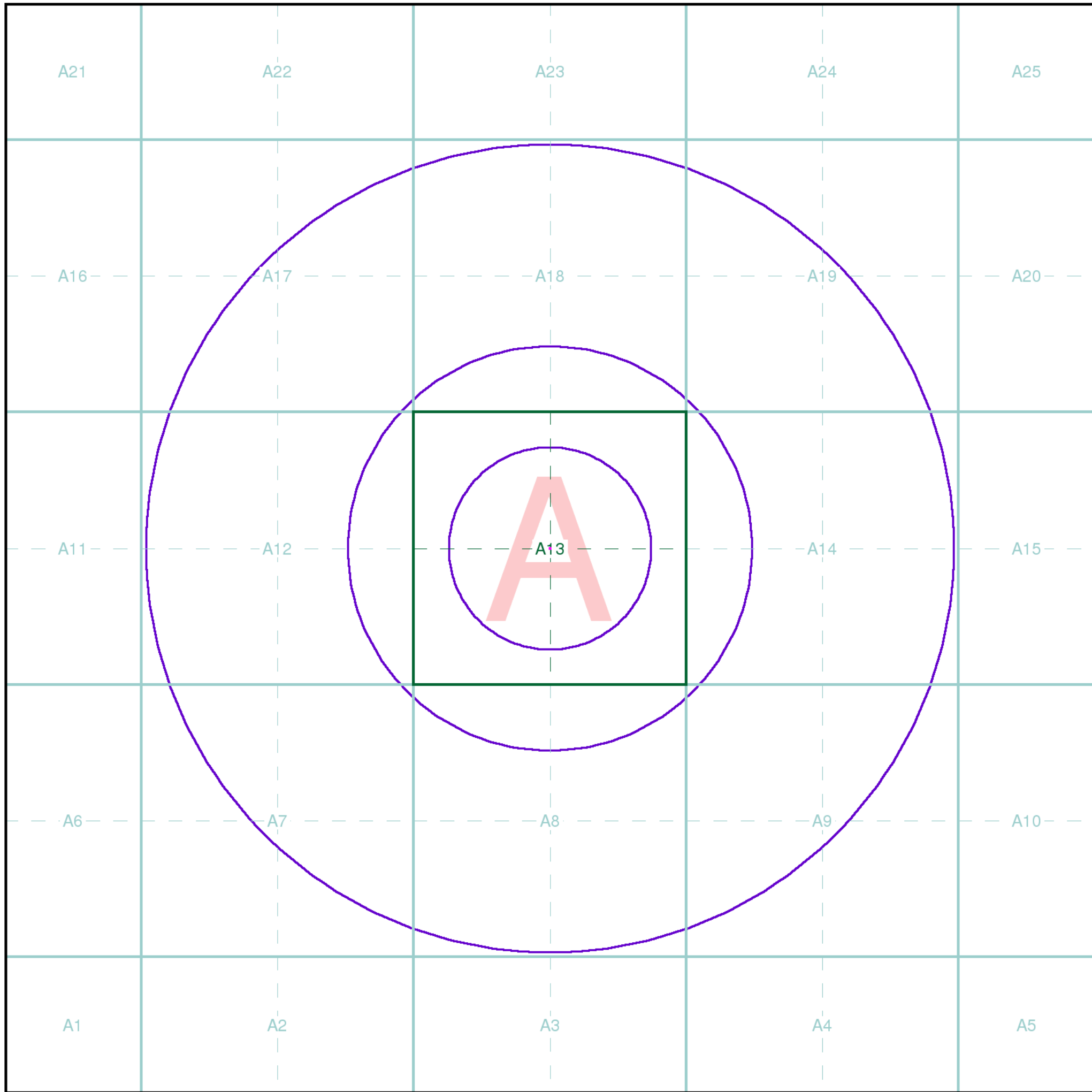
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MADE SIMPLE**

APPENDIX E – FLOOD SCREENING REPORT



Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Prepared For

RoC Consulting
Commercial Wharf
Manchester

Client Details

Mr A James, TYPETHREE DESIGN, Warrington Business Centre, 67 Bewsey Street, Warrington, Cheshire, WA2 7JQ

Order Details

Order Number: 163324975_1_1
Customer Ref: 180418
National Grid Reference: 378090, 411530
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Walshaw Road, Bury, BL8 3AA

Full Terms and Conditions can be found on the following link:
<http://www.landmarkinfo.co.uk/Terms/Show/515>

Envirocheck[®] Report:

Flood Screening Report Datasheet

Order Details:

Order Number:

163324975_1_1

Customer Reference:

180418

National Grid Reference:

378090, 411530

Slice:

A

Site Area (Ha):

0.01

Search Buffer (m):

1000

Site Details:

Walshaw Road

Bury

BL8 3AA

Client Details:

Mr A James

TYPETHREE DESIGN

Warrington Business Centre

67 Bewsey Street

Warrington

Cheshire

WA2 7JQ

Report Section and Details	Page Number
Summary	-
<p>The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer(s) selected. For ease of reference, the report is broken down into seven sections of data.</p>	
EA / NRW / CEH Flood Data	-
<p>This section details data from the Environment Agency/Natural Resources Wales and the Centre for Ecology and Hydrology.</p> <p>The EA/NRW data is reported to a distance of 250m from the edge of the site polygon and details both Zone 2 (extreme) and Zone 3 flood extents, as well as flood defences, flood water storage areas and areas benefiting from flood defences.</p> <p>The CEH data is reported to a distance of 250m from the edge of the site polygon and covers flood data for Scotland, divided into levels based on the frequency and magnitude of a predicted 100 year term.</p> <p>All data sets within this section are plotted and feature on the EA / NRW / CEH Flood Data (1:10,000) map. For added value, OS Contour data is also plotted, detailing contours, spot heights and land water boundaries.</p>	
JBA Flood Data	1
<p>This section contains the Comprehensive Flood Map ("CFM") data from JBA Risk Management Limited. The data is based upon the likelihood of a flood occurrence for up to 4 flood return periods depending on the type of flooding; these being 75 years, 100 years, 200 years and 1000 years. Each layer being modelled at a 5m cell resolution.</p> <p>Each return period is depicted on a separate 1:10,000 scale map and reports features to a distance of 250m in the datasheet from the edge of the site polygon.</p> <p>For each return period the following three sources of flooding are identified, surface water or pluvial flooding, undefended river flooding or fluvial flooding and undefended coastal flooding. In each case the extent of the flooding source is displayed with the associated depth range.</p> <p>In addition, a 1:10,000 scale map depicting flooding from a Canal Failure and a coverage check for this dataset is included.</p> <p>Where coverage exists, information is reported in the datasheet where the site could be affected by flooding that results from a dam breach.</p> <p>For added value, OS Contour data is also plotted, detailing contours, spot heights and land water boundaries.</p>	
BGS Flood Data	6
<p>This section contains two BGS data sets; namely Geological Indicators of Flooding and Groundwater Flooding Susceptibility, both of which report features out to a possible 1000m, with coverage in England, Wales and Scotland.</p> <p>Each data set is plotted on a separate BGS Flood Data (1:50,000) map.</p>	
GeoSmart Information Groundwater Flood Data	12
<p>This section contains data provided by GeoSmart Information who, building on their expertise, have developed algorithms and calibrated predictions of the risk of groundwater flooding occurring in Great Britain. The resulting map, classifies groundwater flood risk for each 5m x 5m into four categories, negligible, low, moderate and high. These classifications are based on the level of risk, combining severity and uncertainty that a site will suffer groundwater flooding within a return period of about 200 years.</p>	
OS Water Network Data	15
<p>This section details the MasterMap Water Network data sourced from the Ordnance Survey. The OS MasterMap Water Network data details a network representing the watercourse within Great Britain.</p> <p>The OS Water Network Lines data set details the approximate central alignment of a watercourse, including rivers, lakes and canals.</p> <p>The OS Water Network Nodes data set details features that represent a river's source, end, a junction where three or more links meet, and places where the real world related attribution changes; for example a watercourse becoming tidal.</p> <p>The data sets within this section are plotted and feature on the OS Water Network Map (1:10,000) . For added value, OS Contour data is also plotted, detailing contours, spot heights and land water boundaries.</p>	

EA/NRW Historic Flood Events Data	-
<p>This section details Historic Flood data sourced from the Environment Agency/Natural Resources Wales and from data held by Landmark. The EA/NRW Historic Flood Events data is reported to a distance of 1000m from the edge of the site polygon and details recorded historic flood events from 1703 to October 2008. The data also contains information on the source and cause of the flood, and how the flood outline was established.</p> <p>Also included in this section is Landmark's Historical Flood Liabilities data set, which identifies areas that are liable to flood based on systematic analysis of historical mapping dating back to the mid 19th century.</p> <p>Both data sets within this section are plotted and feature on the EA/NRW Historical Flood (1:10,000) map. For added value, OS Contour data is also plotted, detailing contours, spot heights and land water boundaries.</p>	
EA/NRW RoFRS Data	29
<p>This section details the Risk of Flooding from Rivers and Sea (RoFRS) data sourced from the Environment Agency/Natural Resources Wales and is reported to a distance of 1000m from the edge of the site polygon. The RoFRS data provides an indication of areas of land at risk of flooding from rivers and the sea. These areas of land, called impacted cells, are represented as 50 metre squares, or smaller areas where a square is intersected by a river or coastline.</p> <p>The average height information of the impacted cell, modelled river and sea levels and information about over 200,000 flood defences are used as inputs to a computer flood model run by the Environment Agency/Natural Resources Wales. The model compares the probability that the flood defences will overtop or breach and the distance of the impact cell from the river or the sea for 40 scenarios for probabilities of between 100% to 0.1%.</p> <p>The results are then consolidated to calculate a single probability category for each impacted cell. These results have been validated by local staff using their local knowledge and expertise. RoFRS is a national flood risk assessment and does not contain information about property thresholds. Due to variations in the input data and the performance of the computer flood model at particular locations, the resulting category of an impacted cell should only be used at a specific study scale. In certain areas it would only be appropriate to compare risks between towns and counties whereas in other areas they would be more suitable for understanding risk at a street level. The level of suitability for a particular cell is indicated by the cell's suitability scale.</p> <p>The data within this section is plotted and feature on the EA/NRW RoFRS Data (1:50,000) map. This dataset is not available in Scotland.</p>	
Flood Insurance Risk Data	30
<p>This section contains flood risk data from Crawford and Company. This dataset is not plotted on any of the associated Flood maps.</p> <p>Crawford & Co have generated an Insurance Claims rating for Flood Risk. The risk is determined by comparing the number of flood insurance claims made to the number of properties in the postcode sector. The data will also include flood claims from domestic accidents or blocked drains, as well as flooding from river or tidal events. Flood insurance claim ratings are reported for the site only.</p>	
Data Currency	31
Data Suppliers	34
Useful Contacts	35

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
EA / NRW / CEH Flood Data					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
JBA Flood Data					
JBA 75 Year Return (undefended) - Pluvial	pg 1		29	n/a	n/a
JBA 75 Year Return (undefended) - Fluvial				n/a	n/a
JBA 75 Year Return (undefended) - Coastal				n/a	n/a
JBA 100 Year Return (undefended) - Fluvial				n/a	n/a
JBA 100 Year Return (undefended) - Coastal				n/a	n/a
JBA 200 Year Return (undefended) - Pluvial	pg 2		32	n/a	n/a
JBA 200 Year Return (undefended) - Fluvial				n/a	n/a
JBA 200 Year Return (undefended) - Coastal				n/a	n/a
JBA 1000 Year Return (undefended) - Pluvial	pg 3		30	n/a	n/a
JBA 1000 Year Return (undefended) - Fluvial				n/a	n/a
JBA 1000 Year Return (undefended) - Coastal				n/a	n/a
JBA Canal Failure					
JBA Dam Break	pg 5			1	1
BGS Flood Data					
BGS Geological Indicators of Flooding					
BGS Groundwater Flooding Susceptibility	pg 6	1	24	15	90
GeoSmart Information Groundwater Flood					
GeoSmart Information Groundwater Flood Risk	pg 12	1	2	3	35
OS Water Network Data					
OS Water Network Lines	pg 15		4	21	63
OS Water Network Nodes	pg 24		2	18	63
EA/NRW Historic Flood Events Data					
Historic Flood Events					
Historical Flood Liabilities					
EA/NRW RoFRS Data					
RoFRS - Risk of Flooding from Rivers and Sea	pg 29				6
Flood Insurance Risk Data					
Postcode Sector Flood Insurance Claim Ratings	pg 30	1	n/a	n/a	n/a

Report Version v53.0

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	196	2	378086 411330
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	196	2	378095 411330
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	200	2	378125 411330
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	201	2	378100 411325
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	202	2	378135 411330
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (SE)	206	2	378240 411390
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	211	2	378086 411315
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	211	2	378095 411315
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	219	2	378125 411310
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	223	2	378230 411695
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13NE (NE)	223	2	378240 411685
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	223	2	378245 411680
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	224	2	378225 411700
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	226	2	378200 411720
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	226	2	378180 411730
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	226	2	378190 411725
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	227	2	378170 411735
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	227	2	378210 411715
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	227	2	378255 411675
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	228	2	378160 411740
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 1.0m	A13NE (NE)	233	2	378250 411690
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	235	2	378130 411755

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13NE (N)	240	2	378135 411760
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	241	2	378140 411760
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13NE (N)	244	2	378130 411765
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	245	2	378135 411765
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13NE (NE)	245	2	378275 411680
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	248	2	378115 411280
	JBA 75 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	249	2	378125 411280
	JBA 75 Year Return (undefended) - Fluvial None				
	JBA 75 Year Return (undefended) - Coastal None				
	JBA 100 Year Return (undefended) - Fluvial None				
	JBA 100 Year Return (undefended) - Coastal None				
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	191	2	378130 411340
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	195	2	378125 411335
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	196	2	378086 411330
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	196	2	378095 411330
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	201	2	378100 411325
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	202	2	378135 411330
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (SE)	205	2	378225 411375
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (SE)	206	2	378240 411390
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	211	2	378086 411315
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	211	2	378095 411315
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	219	2	378235 411685
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	219	2	378125 411310

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	220	2	378230 411690
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13NE (NE)	223	2	378245 411680
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	223	2	378250 411675
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (SE)	224	2	378280 411415
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	224	2	378195 411720
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	224	2	378225 411700
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	225	2	378205 411715
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	225	2	378220 411705
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	225	2	378165 411735
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	226	2	378215 411710
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	226	2	378190 411725
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	228	2	378145 411745
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (SE)	228	2	378290 411425
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (SE)	231	2	378295 411430
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 1.0m	A13NE (NE)	233	2	378250 411690
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	235	2	378130 411755
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	238	2	378120 411760
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	242	2	378115 411765
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	246	2	378110 411770
	JBA 200 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	248	2	378115 411280
	JBA 200 Year Return (undefended) - Fluvial None				
	JBA 200 Year Return (undefended) - Coastal None				
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	191	2	378090 411335

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	191	2	378130 411340
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	196	2	378086 411330
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	196	2	378095 411330
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	201	2	378100 411325
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (SE)	202	2	378225 411380
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	202	2	378135 411330
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	211	2	378095 411315
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	211	2	378086 411315
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	214	2	378125 411315
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	219	2	378240 411680
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13NE (NE)	219	2	378235 411685
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	220	2	378165 411730
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	220	2	378195 411715
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	220	2	378205 411710
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	221	2	378190 411720
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	221	2	378220 411700
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	222	2	378215 411705
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	223	2	378160 411735
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13NE (NE)	223	2	378245 411680
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	223	2	378120 411305
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (SE)	224	2	378255 411380
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	224	2	378185 411725

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	225	2	378150 411740
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 1.0m	A13NE (NE)	226	2	378245 411685
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (NE)	234	2	378265 411675
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	237	2	378115 411760
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13SE (S)	238	2	378120 411290
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.1m and Less than or equal to 0.3m	A13NE (N)	246	2	378100 411770
	JBA 1000 Year Return (undefended) - Pluvial Flood Depth: Greater than 0.3m and Less than or equal to 1.0m	A13SE (S)	248	2	378115 411280
	JBA 1000 Year Return (undefended) - Fluvial None				
	JBA 1000 Year Return (undefended) - Coastal None				
	JBA Canal Failure Coverage Coverage: This area has not been mapped for risk of flooding from canal or aqueduct failure or breach.	A13NE (NE)	0	2	378086 411525
	JBA Canal Failure None				
	JBA Dam Break Coverage Coverage: This area has been mapped for flooding from dam or reservoir embankment failure or breach.	A13NE (NE)	0	2	378086 411525
	JBA Dam Break Assessment: This area is regarded as being at some risk of flooding in the event of an instantaneous catastrophic breach of dam or reservoir embankment. Flooded Area Size: 500475m2	A8NW (S)	342	2	378055 411185
	JBA Dam Break Assessment: This area is regarded as being at some risk of flooding in the event of an instantaneous catastrophic breach of dam or reservoir embankment. Flooded Area Size: 245250m2	A9NW (SE)	767	2	378630 410985

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	0	3	378086 411525
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	15	3	378100 411525
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	65	3	378150 411525
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	70	3	378150 411500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	83	3	378050 411600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	86	3	378000 411525
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	100	3	378150 411450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	114	3	378000 411450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	118	3	378200 411500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (N)	125	3	378086 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	126	3	378086 411400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	130	3	378050 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	137	3	378200 411600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	137	3	378200 411450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	141	3	378150 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	152	3	378000 411400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (E)	165	3	378250 411525
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (E)	167	3	378250 411500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	170	3	378200 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (N)	176	3	378100 411700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (N)	187	3	378150 411700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (SW)	196	3	378000 411350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	207	3	378250 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (SE)	207	3	378250 411400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (N)	226	3	378100 411750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	256	3	377900 411350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	336	3	377750 411525
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	344	3	377750 411600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	365	3	378450 411525
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	379	3	377750 411350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	387	3	378400 411750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	390	3	378300 411200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	393	3	377700 411600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	405	3	377750 411300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (NW)	447	3	377700 411750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (SE)	457	3	378450 411250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	466	3	378550 411500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	470	3	377650 411350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	475	3	378100 412000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	492	3	377600 411600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	501	3	378350 411100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	512	3	377800 411950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	522	3	378300 411050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SW (NE)	523	3	378450 411900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (NE)	527	3	378500 411850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SW (SE)	540	3	378550 411250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	543	3	377950 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	551	3	378250 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SW (NE)	559	3	378500 411900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (NE)	567	3	378550 411850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (S)	568	3	378300 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	575	3	377700 411100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	576	3	378086 410950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	579	3	378150 410950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (NE)	588	3	378350 412050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	592	3	377950 410950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12NE (W)	599	3	377500 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SW (NE)	599	3	378450 412000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	599	3	378250 410950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SW (E)	608	3	378650 411300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (NE)	612	3	378400 412050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	613	3	378400 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	622	3	377850 410950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	626	3	378086 410900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	626	3	378100 410900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SW (NE)	639	3	378450 412050

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	640	3	377950 410900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	646	3	377600 411100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (N)	647	3	378250 412150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (NE)	656	3	378400 412100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	669	3	377850 410900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (NE)	674	3	378700 411800
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	684	3	377550 411100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (W)	697	3	377400 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NW (SE)	702	3	378550 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SW (NE)	707	3	378650 411950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A17SE (NW)	716	3	377550 412000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SW (NE)	720	3	378700 411900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18NE (N)	725	3	378100 412250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18NE (N)	728	3	378150 412250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	739	3	377450 411150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12NW (W)	757	3	377350 411700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (NW)	759	3	377400 411850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	765	3	377450 411100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NW (W)	770	3	377350 411750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SW (NE)	772	3	378600 412100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NW (SE)	772	3	378650 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18NE (N)	775	3	378086 412300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SW (NW)	782	3	377400 411900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NW (SW)	782	3	377400 411150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	786	3	377550 410950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	794	3	377450 411050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (W)	796	3	377300 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NW (SW)	807	3	377400 411100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	821	3	377500 410950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (E)	824	3	378900 411650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (NE)	831	3	378850 411850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A17NE (NW)	846	3	377650 412250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NW (SE)	847	3	378750 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	857	3	377500 410900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (E)	860	3	378900 411800
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18NW (N)	876	3	378050 412400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NW (SW)	876	3	377350 411050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NE (SE)	887	3	378800 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NE (SW)	892	3	377450 410900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SW (NW)	894	3	377300 411950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A17SW (NW)	895	3	377400 412100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (W)	903	3	377200 411700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NW (SW)	904	3	377350 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12NW (W)	914	3	377200 411750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SE (NE)	919	3	378900 411950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14NE (E)	924	3	378950 411850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7SE (SW)	928	3	377450 410850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SE (NE)	928	3	378850 412050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (E)	942	3	379000 411750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A19SE (NE)	943	3	378950 411900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17NE (NW)	956	3	377700 412400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NW (W)	963	3	377150 411750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7SW (SW)	963	3	377400 410850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A19SE (NE)	969	3	378900 412050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A9NE (SE)	970	3	378900 411000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9SW (SE)	973	3	378600 410700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18NE (N)	975	3	378100 412500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12NW (W)	976	3	377150 411800
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18NE (N)	982	3	378200 412500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SW (NW)	983	3	377200 411950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18NE (N)	989	3	378250 412500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (E)	991	3	379050 411750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9SW (SE)	991	3	378550 410650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A19SE (NE)	997	3	378900 412100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Negligible Risk Risk Details: There is a negligible risk of groundwater flooding in this area and any groundwater flooding incidence has a chance of less than 1 in 100 (<1%) probability of occurrence.</p>	A13NE (NE)	0	2	378086 411525
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A13NE (N)	246	2	378110 411770
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A13NE (N)	250	2	378095 411775
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A13NE (N)	261	2	378100 411785
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A13NE (N)	266	2	378105 411790
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A13NE (N)	271	2	378110 411795
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Negligible Risk Risk Details: There is a negligible risk of groundwater flooding in this area and any groundwater flooding incidence has a chance of less than 1 in 100 (<1%) probability of occurrence.</p>	A14SW (SE)	724	2	378749 411236
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	767	2	378630 410985
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	768	2	378625 410980
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	771	2	378630 410980
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	782	2	378645 410980
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	811	2	378680 410975
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	814	2	378675 410965
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	817	2	378650 410935
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	832	2	378700 410965
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A9NW (SE)	839	2	378710 410965

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A9NW (SE)	868	2	378730 410945
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A9NW (SE)	876	2	378750 410955
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A9NW (SE)	879	2	378745 410945
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A9NW (SE)	890	2	378760 410945
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A19SE (NE)	935	2	378930 411925
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A19NW (NE)	945	2	378455 412395
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A19NW (N)	946	2	378445 412400
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A14NE (E)	965	2	378990 411860
	GeoSmart Information Groundwater Flood Data Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A19SE (NE)	966	2	378955 411945
	GeoSmart Information Groundwater Flood Data Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A19NW (NE)	971	2	378505 412400
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A14NE (E)	973	2	379000 411855
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A14NE (E)	975	2	379010 411835
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A19NW (NE)	977	2	378520 412400
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A19NW (NE)	979	2	378515 412405
	GeoSmart Information Groundwater Flood Data Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A14NE (E)	980	2	379010 411850
	GeoSmart Information Groundwater Flood Data Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.	A14NE (E)	982	2	379010 411855

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A19NW (NE)	982	2	378520 412405
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A14NE (E)	982	2	379015 411840
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A19NW (NE)	984	2	378525 412405
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A14NE (E)	987	2	379025 411825
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Moderate Risk Risk Details: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A19SE (E)	992	2	379005 411895
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A19SE (E)	993	2	379005 411900
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A19NW (NE)	993	2	378525 412415
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A19NW (NE)	997	2	378535 412415
	<p>GeoSmart Information Groundwater Flood Data</p> <p>Risk: Low Risk Risk Details: There is a low risk of groundwater flooding in this area with a chance of greater than 1 in 100 (>1%) probability of occurrence.</p>	A19NW (NE)	1000	2	378530 412420

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 237.0 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13NE (NE)	204	4	378187 411701
2	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 8.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13NE (NE)	222	4	378256 411666
3	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 75.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13NE (NE)	222	4	378259 411664
4	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 105.6 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13NE (NE)	223	4	378254 411671
5	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 213.2 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13NW (N)	267	4	378060 411791
6	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 63.4 Watercourse Level: On ground surface Primacy: 2 Permanent: True Catchment Name: Mersey	A13NW (N)	267	4	378060 411791
7	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 2.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13NE (NE)	289	4	378333 411674
8	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 85.2 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13NE (NE)	289	4	378333 411674
9	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 381.0 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A13SW (S)	305	4	378010 411231

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 111.8 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A13SW (S)	315	4	378008 411220
11	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 337.9 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A13NE (E)	346	4	378407 411651
12	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 37.2 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NE (S)	384	4	378088 411142
13	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 50.3 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A8NE (S)	417	4	378087 411108
14	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 274.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18SW (NW)	424	4	377902 411907
15	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 58.4 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18SW (NW)	428	4	377918 411919
16	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 223.0 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (NW)	444	4	377718 411773
17	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 25.8 Watercourse Level: Underground Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (NW)	444	4	377718 411773
18	OS Water Network Lines Watercourse Name: Elton Brook Watercourse Form: Inland river Watercourse Length: 558.9 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NE (S)	449	4	378134 411080

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 60.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	455	4	378003 411078
20	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 59.2 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	458	4	378059 411069
21	OS Water Network Lines Watercourse Name: Elton Brook Watercourse Form: Inland river Watercourse Length: 25.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	458	4	378059 411069
22	OS Water Network Lines Watercourse Name: Elton Brook Watercourse Form: Inland river Watercourse Length: 4.0 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	467	4	378083 411059
23	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 250.6 Watercourse Level: Underground Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (NW)	468	4	377693 411780
24	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 244.7 Watercourse Level: Underground Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (NW)	468	4	377693 411780
25	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 72.0 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A18SW (N)	472	4	377929 411970
26	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 9.1 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	503	4	378034 411026
27	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 14.6 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	509	4	378016 411021

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
28	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 41.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	511	4	378037 411017
29	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 16.0 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	511	4	378003 411021
30	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 84.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	525	4	377997 411009
31	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 149.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18SW (N)	534	4	377947 412040
32	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 2.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	539	4	377913 411015
33	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 7.4 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	539	4	377913 411015
34	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 377.9 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A8NW (S)	542	4	377906 411015
35	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 116.6 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (W)	603	4	377508 411697
36	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 144.2 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A9NW (SE)	655	4	378487 411008

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
37	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 24.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18SE (N)	661	4	378157 412182
38	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 855.2 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A18SE (N)	661	4	378157 412182
39	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 8.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A14NW (E)	661	4	378741 411604
40	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 37.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18SE (N)	663	4	378125 412187
41	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 56.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18SE (N)	668	4	378096 412193
42	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 6.9 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A14NW (E)	670	4	378750 411604
43	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 39.2 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A14NW (E)	677	4	378757 411604
44	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 10.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18NW (N)	688	4	378044 412211
45	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 386.6 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18NW (N)	695	4	378036 412218

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 48.6 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	706	4	377405 411709
47	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 36.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (NW)	706	4	377458 411848
48	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 167.3 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A14NE (E)	715	4	378796 411600
49	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 178.2 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A17SE (NW)	718	4	377472 411897
50	OS Water Network Lines Watercourse Name: Elton Brook Watercourse Form: Inland river Watercourse Length: 3.9 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A9NW (SE)	731	4	378619 411027
51	OS Water Network Lines Watercourse Name: Elton Brook Watercourse Form: Inland river Watercourse Length: 4.9 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A9NW (SE)	734	4	378623 411025
52	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 9.9 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (NW)	737	4	377423 411848
53	OS Water Network Lines Watercourse Name: Elton Brook Watercourse Form: Inland river Watercourse Length: 206.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A9NW (SE)	739	4	378627 411023
54	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A9NW (SE)	739	4	378624 411020

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
55	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 134.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NE (NW)	747	4	377416 411854
56	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 91.6 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A14SE (SE)	748	4	378775 411236
57	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 8.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	752	4	377361 411722
58	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 42.2 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	760	4	377352 411723
59	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 11.4 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	790	4	377319 411714
60	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 32.0 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	800	4	377310 411720
61	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Reservoir Watercourse Length: 328.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A7NE (SW)	806	4	377536 410936
62	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 75.7 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	828	4	377286 411738
63	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 54.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	828	4	377286 411738

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
64	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 46.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A9NW (SE)	855	4	378715 410947
65	OS Water Network Lines Watercourse Name: Walshaw Brook Watercourse Form: Inland river Watercourse Length: 34.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A14NE (E)	864	4	378949 411531
66	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 111.4 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	870	4	377254 411779
67	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 28.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A9NE (SE)	882	4	378764 410962
68	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 675.2 Watercourse Level: Underground Primacy: 1 Permanent: True Catchment Name: Mersey	A14SE (E)	883	4	378968 411502
69	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 56.3 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A9NE (SE)	891	4	378779 410966
70	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	902	4	377210 411739
71	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 119.6 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	906	4	377206 411739
72	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 12.4 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	906	4	377206 411739

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
73	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 217.1 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	913	4	377197 411732
74	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 144.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	913	4	377197 411732
75	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 123.9 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A18NE (N)	915	4	378343 412402
76	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 6.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A9NE (SE)	916	4	378822 410981
77	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 195.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A9NE (SE)	922	4	378828 410980
78	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 57.6 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A18NE (N)	925	4	378389 412399
79	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 101.6 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A19NW (NE)	952	4	378465 412398
80	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 67.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A12NW (W)	954	4	377173 411803
81	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 17.6 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A17NE (N)	960	4	377734 412418

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
82	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 8.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A17SW (NW)	963	4	377262 412025
83	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 14.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A17SW (NW)	969	4	377261 412033
84	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 233.8 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A17NE (NW)	974	4	377643 412392
85	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 74.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A19SE (NE)	989	4	378957 411991
86	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Lake Watercourse Length: 5.7 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A19SE (NE)	992	4	378993 411926
87	OS Water Network Lines Watercourse Name: Not Supplied Watercourse Form: Inland river Watercourse Length: 14.9 Watercourse Level: Not Supplied Primacy: 1 Permanent: True Catchment Name: Mersey	A19SE (NE)	996	4	378998 411923
88	OS Water Network Lines Watercourse Name: Goit Watercourse Form: Inland river Watercourse Length: 262.5 Watercourse Level: On ground surface Primacy: 1 Permanent: True Catchment Name: Mersey	A19SE (NE)	997	4	378981 411961
89	OS Water Network Nodes Hydronode Junction Category:	A13NE (NE)	222	4	378259 411664
90	OS Water Network Nodes Hydronode Pseudo Category:	A13NE (NE)	223	4	378254 411671
91	OS Water Network Nodes Hydronode Junction Category:	A13NW (N)	267	4	378060 411791
92	OS Water Network Nodes Hydronode Junction Category:	A13NE (NE)	289	4	378333 411674
93	OS Water Network Nodes Hydronode Source Category:	A13NE (NE)	290	4	378332 411676

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
94	OS Water Network Nodes Hydronode Source Category:	A13NE (NE)	299	4	378247 411776
95	OS Water Network Nodes Hydronode Outlet Category:	A13NE (N)	309	4	378106 411833
96	OS Water Network Nodes Hydronode Pseudo Category:	A13SW (S)	315	4	378008 411220
97	OS Water Network Nodes Hydronode Pseudo Category:	A13NE (E)	346	4	378407 411651
98	OS Water Network Nodes Hydronode Source Category:	A13SW (SW)	368	4	377762 411351
99	OS Water Network Nodes Hydronode Pseudo Category:	A8NE (S)	384	4	378088 411142
100	OS Water Network Nodes Hydronode Pseudo Category:	A8NE (S)	417	4	378087 411108
101	OS Water Network Nodes Hydronode Junction Category:	A18SW (NW)	428	4	377918 411919
102	OS Water Network Nodes Hydronode Junction Category:	A12NE (NW)	444	4	377718 411773
103	OS Water Network Nodes Hydronode Source Category:	A8NW (S)	455	4	378003 411078
104	OS Water Network Nodes Hydronode Pseudo Category:	A8NW (S)	458	4	378059 411069
105	OS Water Network Nodes Hydronode Pseudo Category:	A8NW (S)	467	4	378083 411059
106	OS Water Network Nodes Hydronode Junction Category:	A8NE (S)	468	4	378086 411058
107	OS Water Network Nodes Hydronode Junction Category:	A12NE (NW)	468	4	377693 411780
108	OS Water Network Nodes Hydronode Pseudo Category:	A18SW (N)	472	4	377929 411970
109	OS Water Network Nodes Hydronode Pseudo Category:	A8NW (S)	503	4	378034 411026
110	OS Water Network Nodes Hydronode Junction Category:	A8NW (S)	511	4	378037 411017
111	OS Water Network Nodes Hydronode Source Category:	A8NW (S)	511	4	378017 411020
112	OS Water Network Nodes Hydronode Pseudo Category:	A8NW (S)	511	4	378003 411021
113	OS Water Network Nodes Hydronode Junction Category:	A8NW (S)	525	4	377997 411009

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
114	OS Water Network Nodes Hydronode Pseudo Category:	A18SW (N)	534	4	377947 412040
115	OS Water Network Nodes Hydronode Junction Category:	A8NW (S)	539	4	377913 411015
116	OS Water Network Nodes Hydronode Source Category:	A8NW (S)	542	4	377913 411012
117	OS Water Network Nodes Hydronode Pseudo Category:	A8NW (S)	542	4	377906 411015
118	OS Water Network Nodes Hydronode Pseudo Category:	A12NE (W)	603	4	377508 411697
119	OS Water Network Nodes Hydronode Source Category:	A9NW (SE)	655	4	378487 411008
120	OS Water Network Nodes Hydronode Pseudo Category:	A14NW (E)	661	4	378741 411604
121	OS Water Network Nodes Hydronode Pseudo Category:	A18SE (N)	661	4	378157 412182
122	OS Water Network Nodes Hydronode Pseudo Category:	A18SE (N)	663	4	378133 412186
123	OS Water Network Nodes Hydronode Source Category:	A18SW (N)	666	4	377874 412156
124	OS Water Network Nodes Hydronode Pseudo Category:	A18SE (N)	668	4	378096 412193
125	OS Water Network Nodes Hydronode Pseudo Category:	A14NW (E)	670	4	378750 411604
126	OS Water Network Nodes Hydronode Pseudo Category:	A14NW (E)	677	4	378757 411604
127	OS Water Network Nodes Hydronode Pseudo Category:	A18NW (N)	688	4	378044 412211
128	OS Water Network Nodes Hydronode Pseudo Category:	A18NW (N)	695	4	378036 412218
129	OS Water Network Nodes Hydronode Pseudo Category:	A12NW (W)	706	4	377405 411709
130	OS Water Network Nodes Hydronode Pseudo Category:	A12NE (NW)	706	4	377458 411848
131	OS Water Network Nodes Hydronode Pseudo Category:	A14NE (E)	715	4	378796 411600
132	OS Water Network Nodes Hydronode Pseudo Category:	A17SE (NW)	718	4	377472 411897
133	OS Water Network Nodes Hydronode Pseudo Category:	A9NW (SE)	731	4	378619 411027

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
134	OS Water Network Nodes Hydrone Node Pseudo Category:	A9NW (SE)	734	4	378623 411025
135	OS Water Network Nodes Hydrone Node Pseudo Category:	A12NE (NW)	737	4	377423 411848
136	OS Water Network Nodes Hydrone Node Pseudo Category:	A9NW (SE)	739	4	378624 411020
137	OS Water Network Nodes Hydrone Node Junction Category:	A9NW (SE)	739	4	378627 411023
138	OS Water Network Nodes Hydrone Node Pseudo Category:	A12NE (NW)	747	4	377416 411854
139	OS Water Network Nodes Hydrone Node Source Category:	A14SE (SE)	748	4	378775 411236
140	OS Water Network Nodes Hydrone Node Pseudo Category:	A12NW (W)	752	4	377361 411722
141	OS Water Network Nodes Hydrone Node Pseudo Category:	A12NW (W)	760	4	377352 411723
142	OS Water Network Nodes Hydrone Node Pseudo Category:	A12NW (W)	790	4	377319 411714
143	OS Water Network Nodes Hydrone Node Pseudo Category:	A12NW (W)	800	4	377310 411720
144	OS Water Network Nodes Hydrone Node Pseudo Category:	A7NE (SW)	806	4	377536 410936
145	OS Water Network Nodes Hydrone Node Outlet Category:	A14SE (E)	811	4	378842 411235
146	OS Water Network Nodes Hydrone Node Junction Category:	A12NW (W)	828	4	377286 411738
147	OS Water Network Nodes Hydrone Node Source Category:	A9NW (SE)	855	4	378715 410947
148	OS Water Network Nodes Hydrone Node Pseudo Category:	A14NE (E)	864	4	378949 411531
149	OS Water Network Nodes Hydrone Node Pseudo Category:	A12NW (W)	870	4	377254 411779
150	OS Water Network Nodes Hydrone Node Source Category:	A17SW (NW)	877	4	377311 411936
151	OS Water Network Nodes Hydrone Node Pseudo Category:	A14SE (E)	883	4	378968 411502
152	OS Water Network Nodes Hydrone Node Pseudo Category:	A9NW (SE)	885	4	378758 410951
153	OS Water Network Nodes Hydrone Node Pseudo Category:	A9NE (SE)	891	4	378779 410966

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
154	OS Water Network Nodes Hydronode Source Category:	A17SW (NW)	895	4	377323 411992
155	OS Water Network Nodes Hydronode Pseudo Category:	A12NW (W)	902	4	377210 411739
156	OS Water Network Nodes Hydronode Junction Category:	A12NW (W)	906	4	377206 411739
157	OS Water Network Nodes Hydronode Junction Category:	A12NW (W)	913	4	377197 411732
158	OS Water Network Nodes Hydronode Pseudo Category:	A9NE (SE)	916	4	378822 410981
159	OS Water Network Nodes Hydronode Junction Category:	A9NE (SE)	922	4	378828 410980
160	OS Water Network Nodes Hydronode Pseudo Category:	A18NE (N)	925	4	378389 412399
161	OS Water Network Nodes Hydronode Source Category:	A18NE (N)	938	4	378281 412442
162	OS Water Network Nodes Hydronode Pseudo Category:	A19NW (N)	952	4	378446 412406
163	OS Water Network Nodes Hydronode Pseudo Category:	A12NW (W)	954	4	377173 411803
164	OS Water Network Nodes Hydronode Pseudo Category:	A17NE (N)	960	4	377734 412418
165	OS Water Network Nodes Hydronode Outlet Category:	A17SW (NW)	963	4	377262 412025
166	OS Water Network Nodes Hydronode Pseudo Category:	A17SW (NW)	969	4	377261 412033
167	OS Water Network Nodes Hydronode Pseudo Category:	A17NE (N)	975	4	377721 412430
168	OS Water Network Nodes Hydronode Source Category:	A17SW (NW)	982	4	377249 412039
169	OS Water Network Nodes Hydronode Source Category:	A19SE (NE)	989	4	378957 411991
170	OS Water Network Nodes Hydronode Pseudo Category:	A19SE (NE)	992	4	378993 411926
171	OS Water Network Nodes Hydronode Pseudo Category:	A19SE (NE)	996	4	378998 411923

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Risk of Flooding from Rivers and Sea (RoFRS) Flood Risk: Low - Less than 1 in 100 (1%) but greater than or equal to 1 in 1,000 (0.1%) Assessment: chance in any given year Suitability Scale: County to Town Source: Environment Agency, Head Office	A19SE (NE)	966	1	378955 411945
	Risk of Flooding from Rivers and Sea (RoFRS) Flood Risk: Low - Less than 1 in 100 (1%) but greater than or equal to 1 in 1,000 (0.1%) Assessment: chance in any given year Suitability Scale: National to County Source: Environment Agency, Head Office	A19SE (NE)	966	1	378953 411950
	Risk of Flooding from Rivers and Sea (RoFRS) Flood Risk: Low - Less than 1 in 100 (1%) but greater than or equal to 1 in 1,000 (0.1%) Assessment: chance in any given year Suitability Scale: County to Town Source: Environment Agency, Head Office	A14NE (E)	969	1	379003 411834
	Risk of Flooding from Rivers and Sea (RoFRS) Flood Risk: Medium - Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) Assessment: chance in any given year Suitability Scale: National to County Source: Environment Agency, Head Office	A19SE (NE)	993	1	378957 412000
	Risk of Flooding from Rivers and Sea (RoFRS) Flood Risk: Medium - Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) Assessment: chance in any given year Suitability Scale: National to County Source: Environment Agency, Head Office	A19SE (NE)	994	1	379000 411914
	Risk of Flooding from Rivers and Sea (RoFRS) Flood Risk: High - Greater than or equal to 1 in 30 (3.3%) chance in any given year Assessment: Suitability Scale: County to Town Source: Environment Agency, Head Office	A19SE (NE)	995	1	378976 411967








Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Postcode Sector Flood Insurance Claim Ratings Insurance Rating: Low Flood Insurance Claim Rating Postcode Sector: BL8 1	A13NE (NE)	0	2	378086 411525

EA / NRW / CEH Flood Data	Version	Update Cycle
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2018	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2018	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	February 2018	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	February 2018	Quarterly
Flood Defences Environment Agency - Head Office	February 2018	Quarterly
EA / NRW Surface Water Flood Data	Version	Update Cycle
Surface Water 1 in 30 year Flood Depth Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Depth Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Depth Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 30 year Flood Velocity Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Velocity Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Velocity Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 30 year Flood Flow Direction 25m Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Flow Direction 25m Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Flow Direction 25m Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 30 year Flood Hazard Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Hazard Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Hazard Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified

JBA Flood Data	Version	Update Cycle
JBA 75 Year Return (undefended) - Pluvial JBA Risk Management Limited	December 2017	Annually
JBA 75 Year Return (undefended) - Fluvial JBA Risk Management Limited	December 2017	Annually
JBA 75 Year Return (undefended) - Coastal JBA Risk Management Limited	December 2017	Annually
JBA 100 Year Return (undefended) - Fluvial JBA Risk Management Limited	December 2017	Annually
JBA 100 Year Return (undefended) - Coastal JBA Risk Management Limited	December 2017	Annually
JBA 200 Year Return (undefended) - Pluvial JBA Risk Management Limited	December 2017	Annually
JBA 200 Year Return (undefended) - Fluvial JBA Risk Management Limited	December 2017	Annually
JBA 200 Year Return (undefended) - Coastal JBA Risk Management Limited	December 2017	Annually
JBA 1000 Year Return (undefended) - Pluvial JBA Risk Management Limited	December 2017	Annually
JBA 1000 Year Return (undefended) - Fluvial JBA Risk Management Limited	December 2017	Annually
JBA 1000 Year Return (undefended) - Coastal JBA Risk Management Limited	December 2017	Annually
JBA Canal Failure JBA Risk Management Limited	October 2017	Annually
JBA Dam Break JBA Risk Management Limited	October 2017	Annually
BGS Flood Data	Version	Update Cycle
BGS Geological Indicators of Flooding British Geological Survey - National Geoscience Information Service	February 2011	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified
GeoSmart Information Groundwater Flooding Data	Version	Update Cycle
GeoSmart Information Groundwater Flood Risk GeoSmart Information Ltd	November 2017	Bi-Annually
OS Water Network Data	Version	Update Cycle
OS Water Network Lines Ordnance Survey	January 2018	Quarterly
OS Water Network Nodes Ordnance Survey	January 2018	Quarterly
EA/NRW Historic Flood Events Data	Version	Update Cycle
Historic Flood Events Environment Agency - Head Office	November 2017	Quarterly
Historical Flood Liabilities Landmark Information Group Limited	December 1999	Not Applicable

EA/NRW Risk of Flooding from Rivers and Sea (RoFRS)	Version	Update Cycle
RoFRS - Risk of Flooding from Rivers and Sea Environment Agency - Head Office	March 2017	Annually
Flood Insurance Risk Data	Version	Update Cycle
Postcode Sector Flood Insurance Claim Ratings Crawford and Company	January 2018	Quarterly

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Natural Resources Wales	
Centre for Ecology and Hydrology	 <p>Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
British Geological Survey	 <p>British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
GeoSmart Information	
JBA Risk Management	

Contact	Name and Address	Contact Details
1	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
2	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9966 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk
3	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
4	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409

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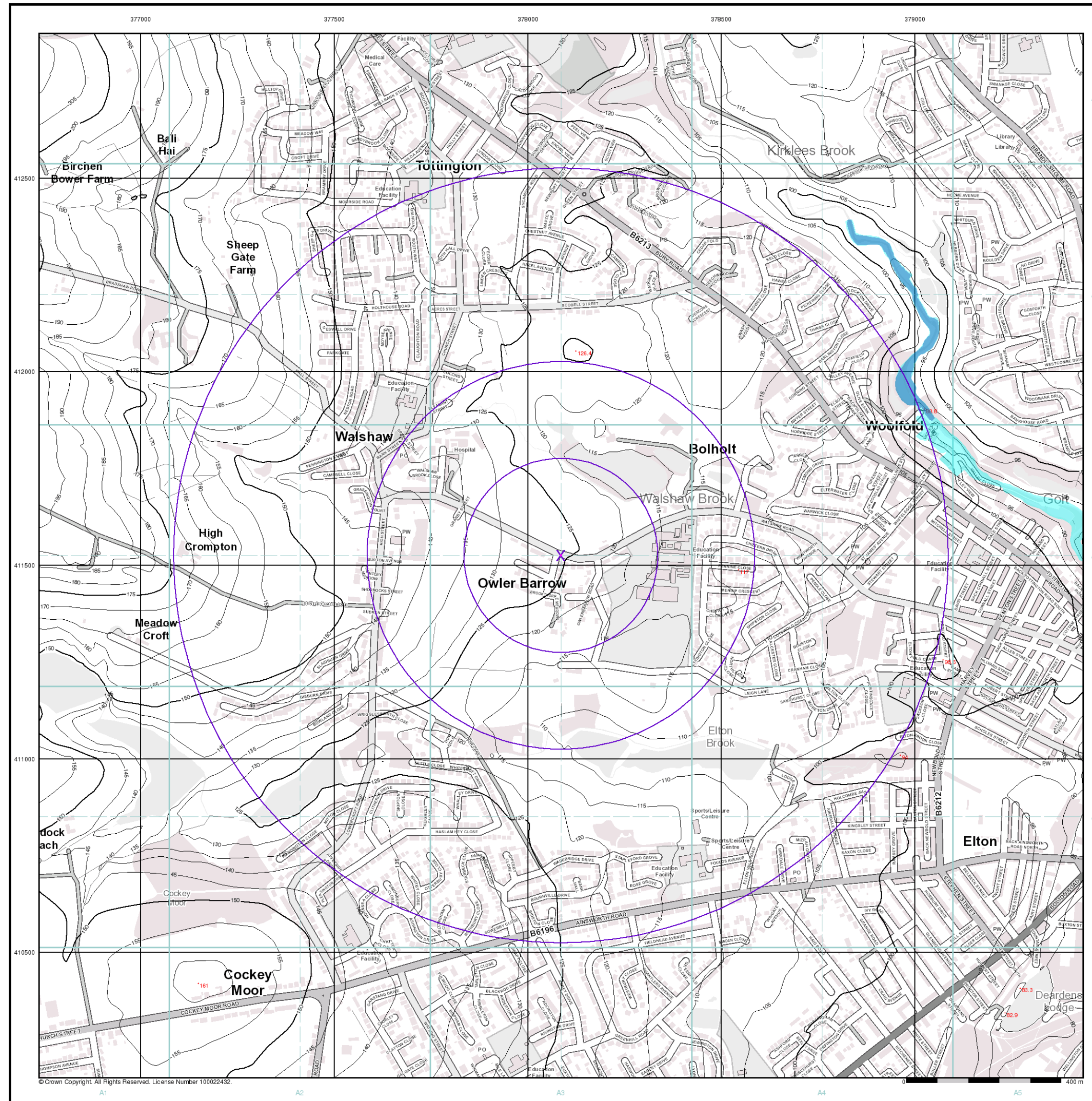
JBA Flood Data Information

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EANRW Flood Data Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

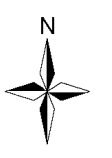
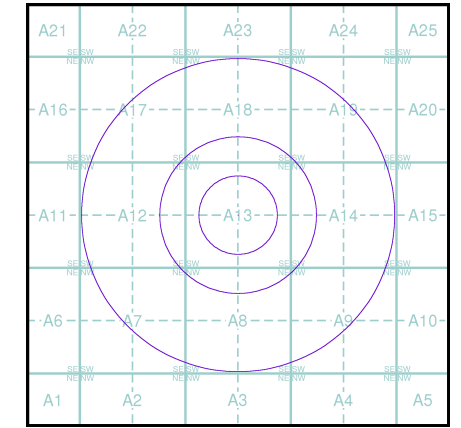
Flood Data

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Contours (height in metres)

- Standard Contour 105 Mean Low Water
- Master Contour 100 Mean High Water
- Spot Height 167.8

EANRW Flood Data Map - Slice A



Order Details

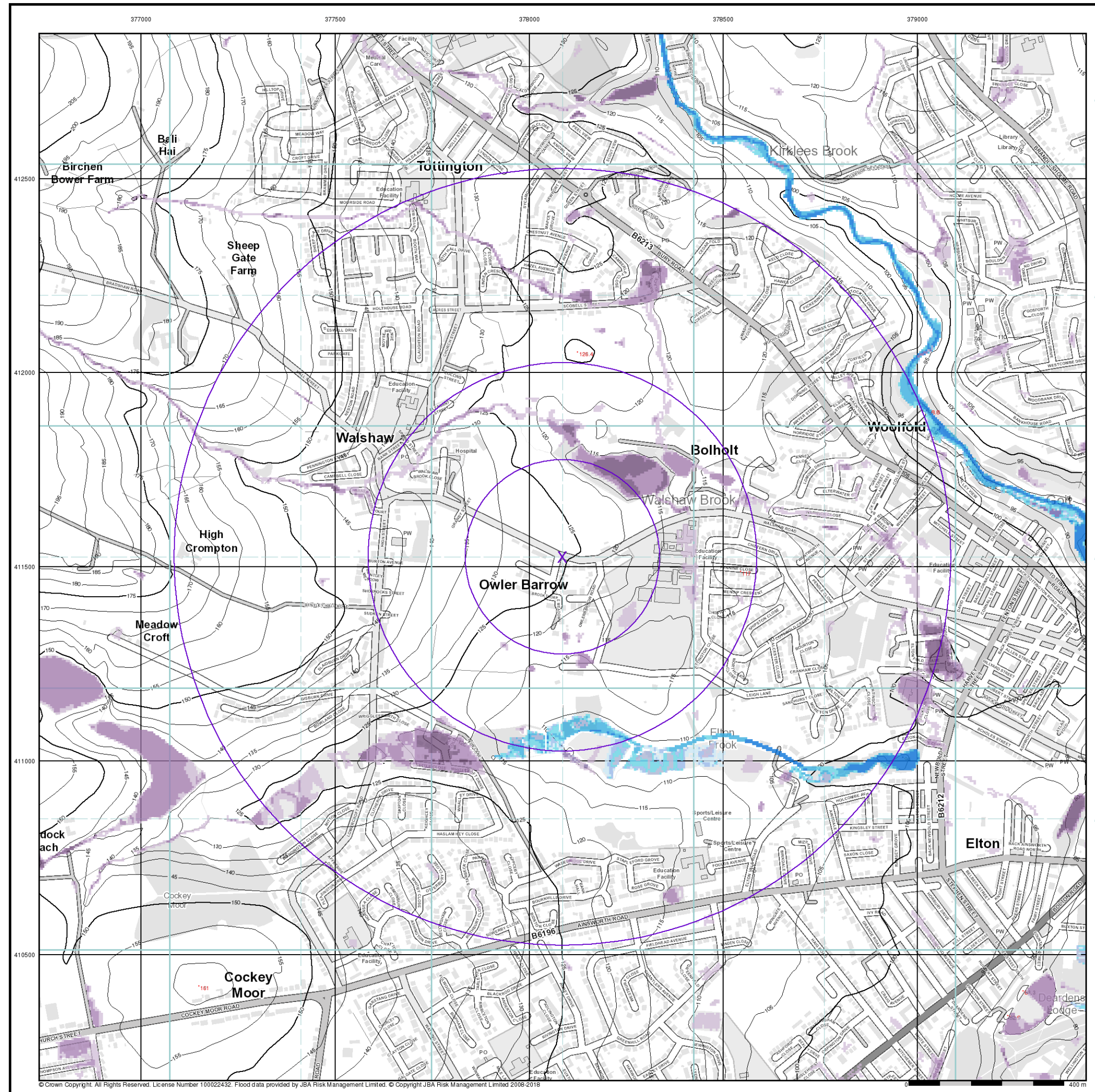
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 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Walshaw Road, Bury, BL8 3AA

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 Web: www.envirocheck.co.uk



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JBA 75 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

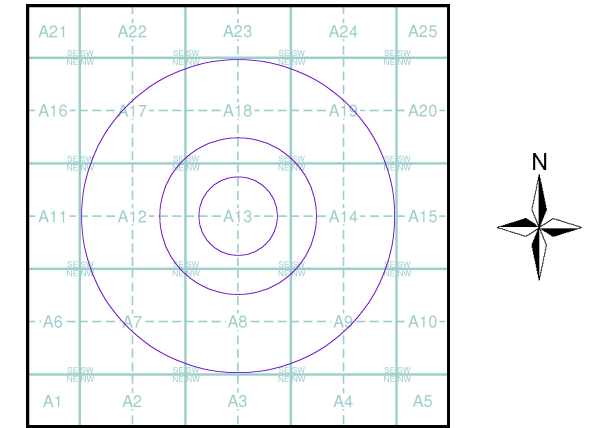
Modelled Flood Depth

Pluvial Depth	Fluvial Depth	Coastal Depth
0.1m	0.01m - 0.05m	0.01m - 0.05m
0.1m - 0.3m	0.05m - 0.1m	0.05m - 0.1m
0.3m - 1m	0.1m - 0.3m	0.1m - 0.3m
>1m	0.3m - 1m	0.3m - 1m
	>1m	>1m

Contours (height in metres)

- Standard Contour 105
- Master Contour 100
- Spot Height 167.8
- Mean Low Water
- Mean High Water

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



Order Details

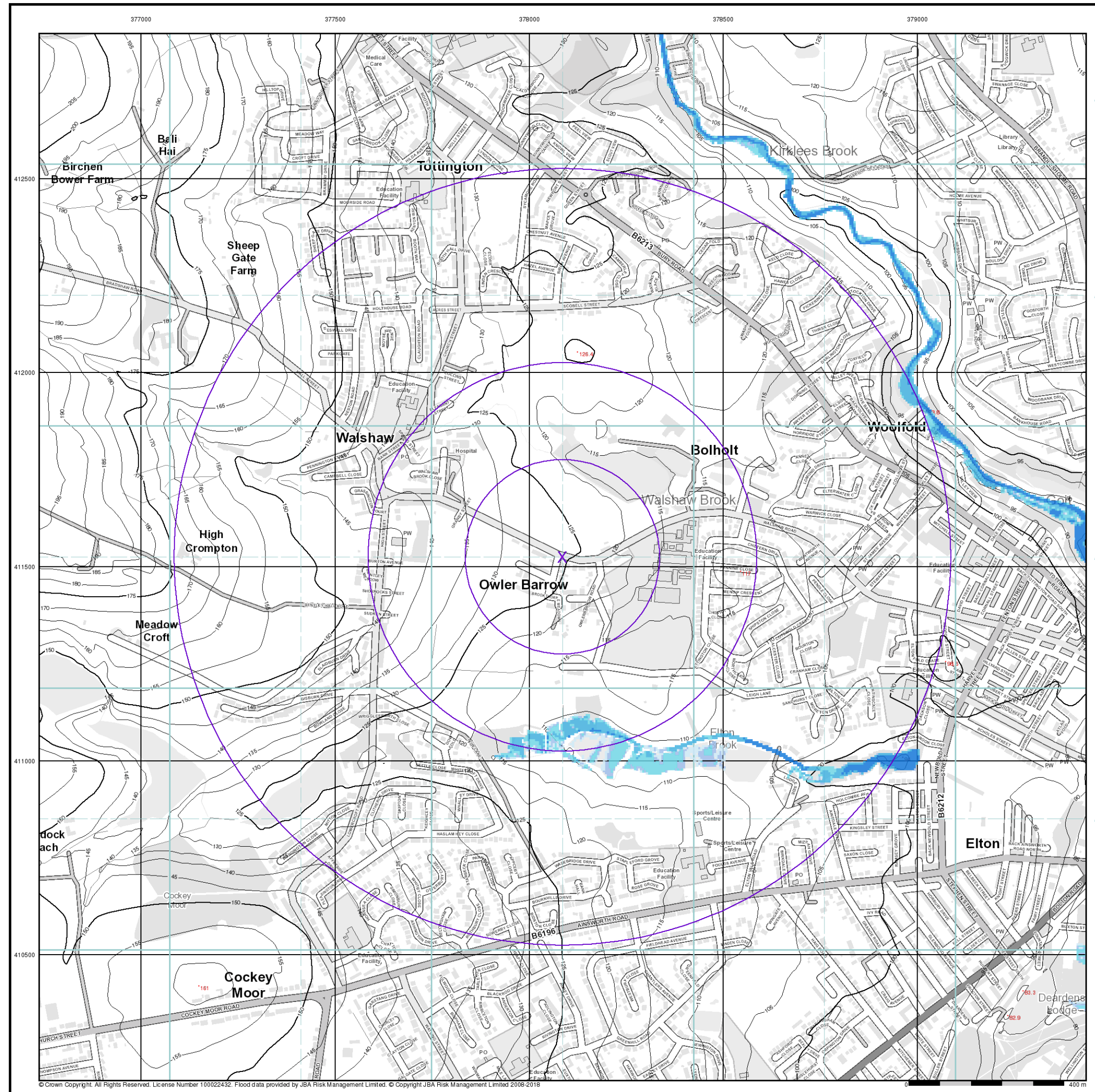
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 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Walshaw Road, Bury, BL8 3AA

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JBA 100 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

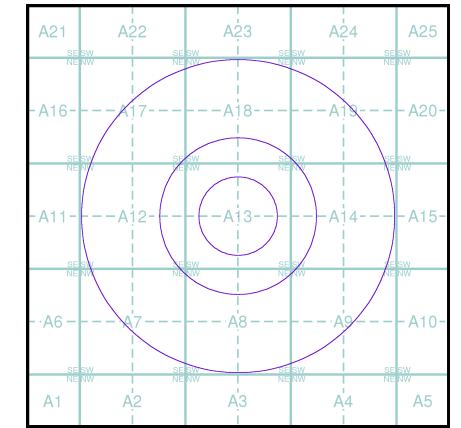
Modelled Flood Depth

Fluvial Depth	Coastal Depth
0.01m - 0.05m	0.01m - 0.05m
0.05m - 0.1m	0.05m - 0.1m
0.1m - 0.3m	0.1m - 0.3m
0.3m - 1m	0.3m - 1m
>1m	>1m

Contours (height in metres)

- Standard Contour -105 Mean Low Water
- Master Contour -100 Mean High Water
- Spot Height *167.8

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



Order Details

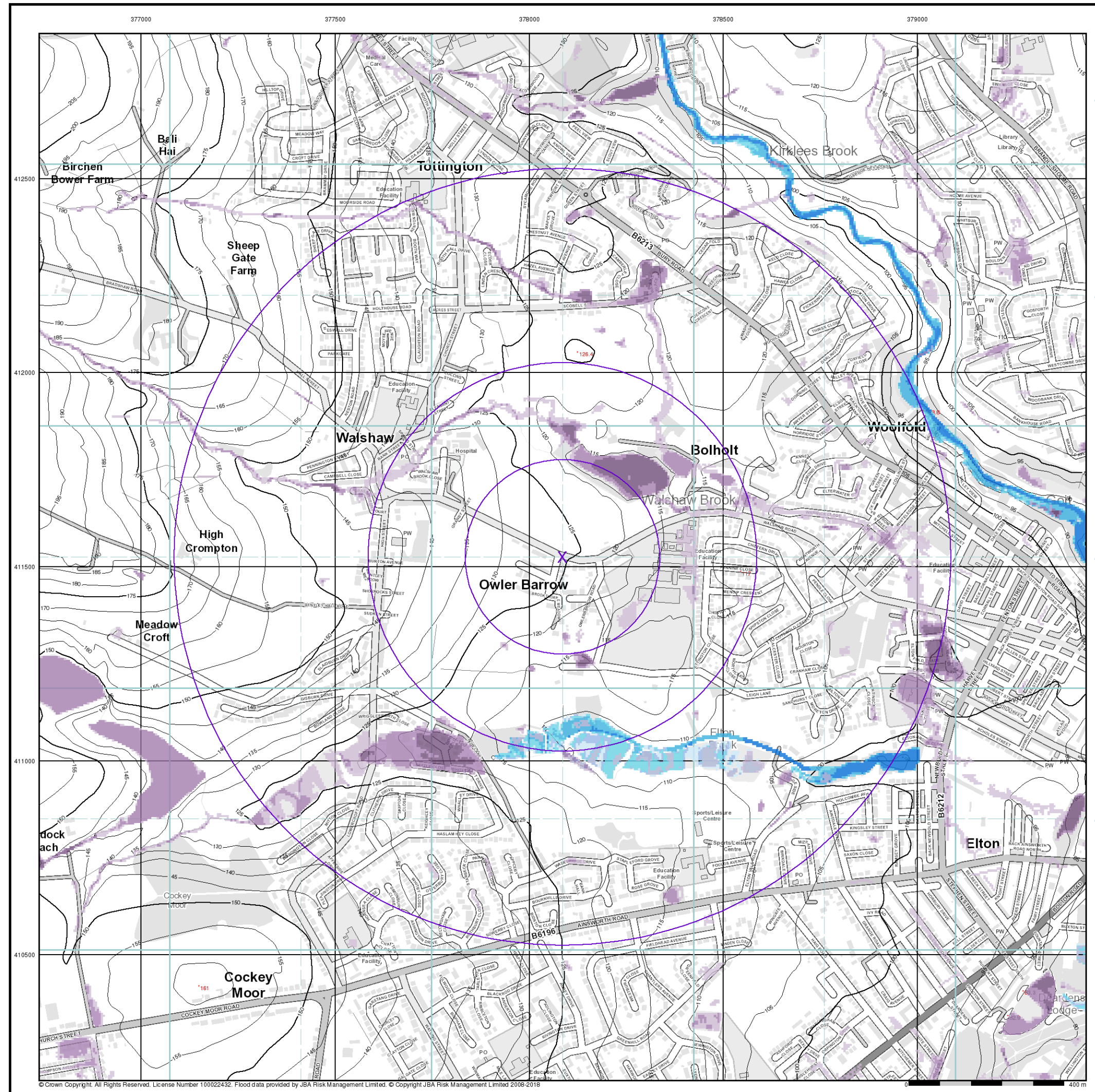
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 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Walshaw Road, Bury, BL8 3AA

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 Web: www.envirocheck.co.uk



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JBA 200 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

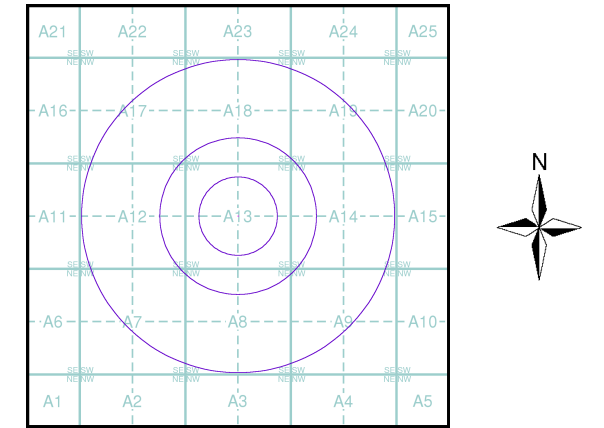
Modelled Flood Depth

Pluvial Depth	Fluvial Depth	Coastal Depth
0.1m	0.01m - 0.05m	0.01m - 0.05m
0.1m - 0.3m	0.05m - 0.1m	0.05m - 0.1m
0.3m - 1m	0.1m - 0.3m	0.1m - 0.3m
>1m	0.3m - 1m	0.3m - 1m
	>1m	>1m

Contours (height in metres)

- Standard Contour 105
- Master Contour 100
- Spot Height 167.8
- MLW Mean Low Water
- MHW Mean High Water

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



Order Details

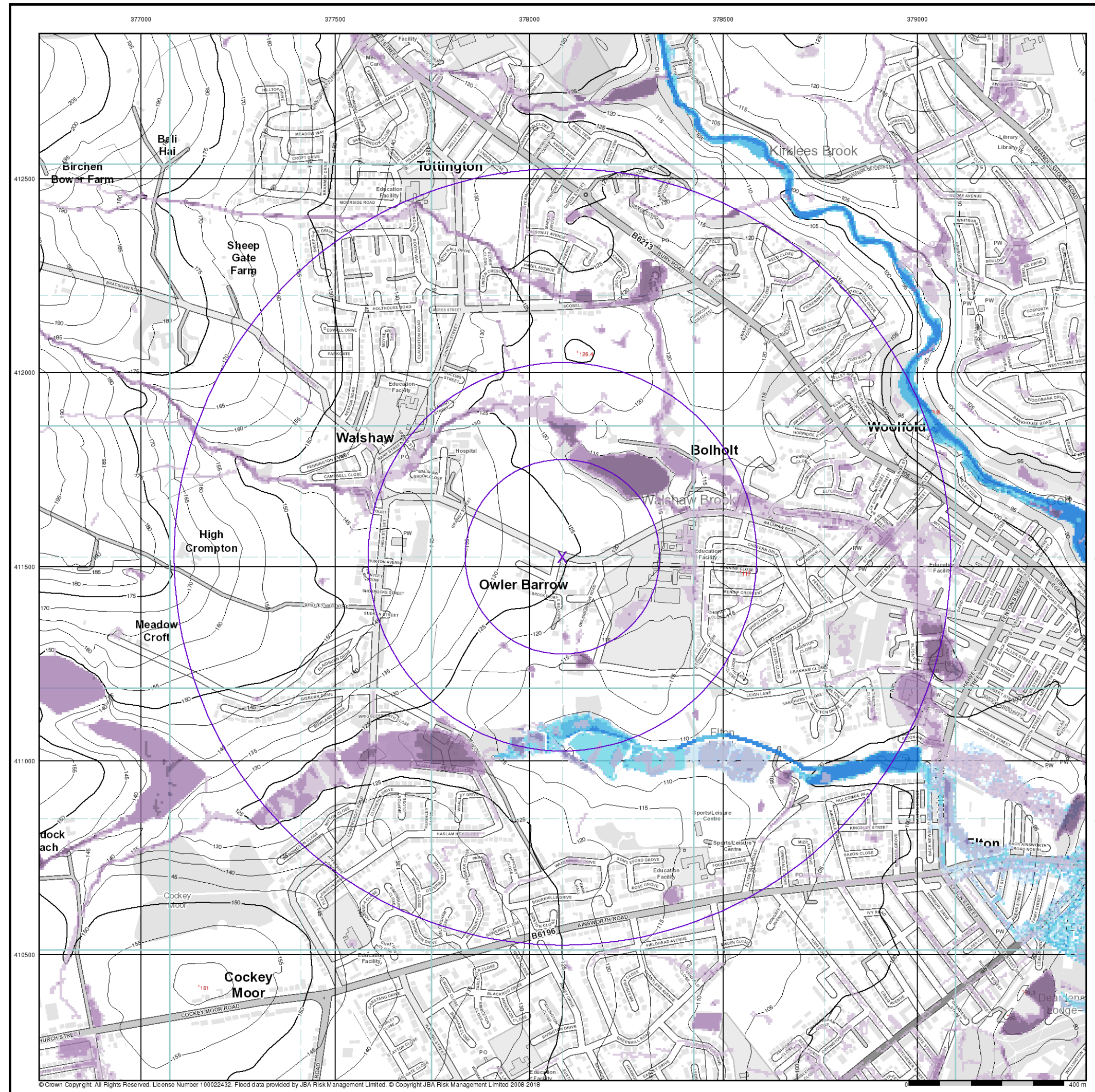
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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JBA 1000 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

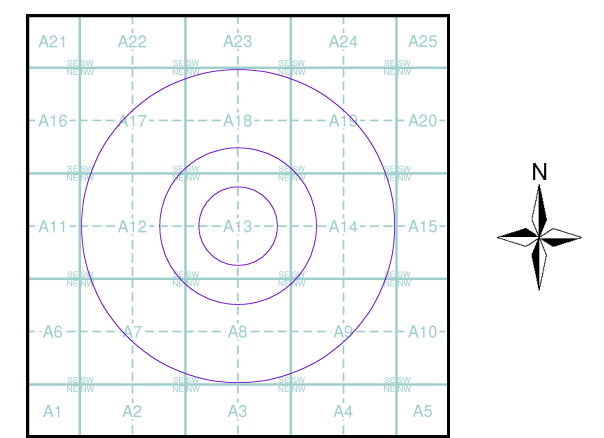
Modelled Flood Depth

Pluvial Depth	Fluvial Depth	Coastal Depth
0.1m	0.01m - 0.05m	0.01m - 0.05m
0.1m - 0.3m	0.05m - 0.1m	0.05m - 0.1m
0.3m - 1m	0.1m - 0.3m	0.1m - 0.3m
>1m	0.3m - 1m	0.3m - 1m
	>1m	>1m

Contours (height in metres)

- Standard Contour 105
- Master Contour 100
- Spot Height 167.8
- Mean Low Water
- Mean High Water

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



Order Details

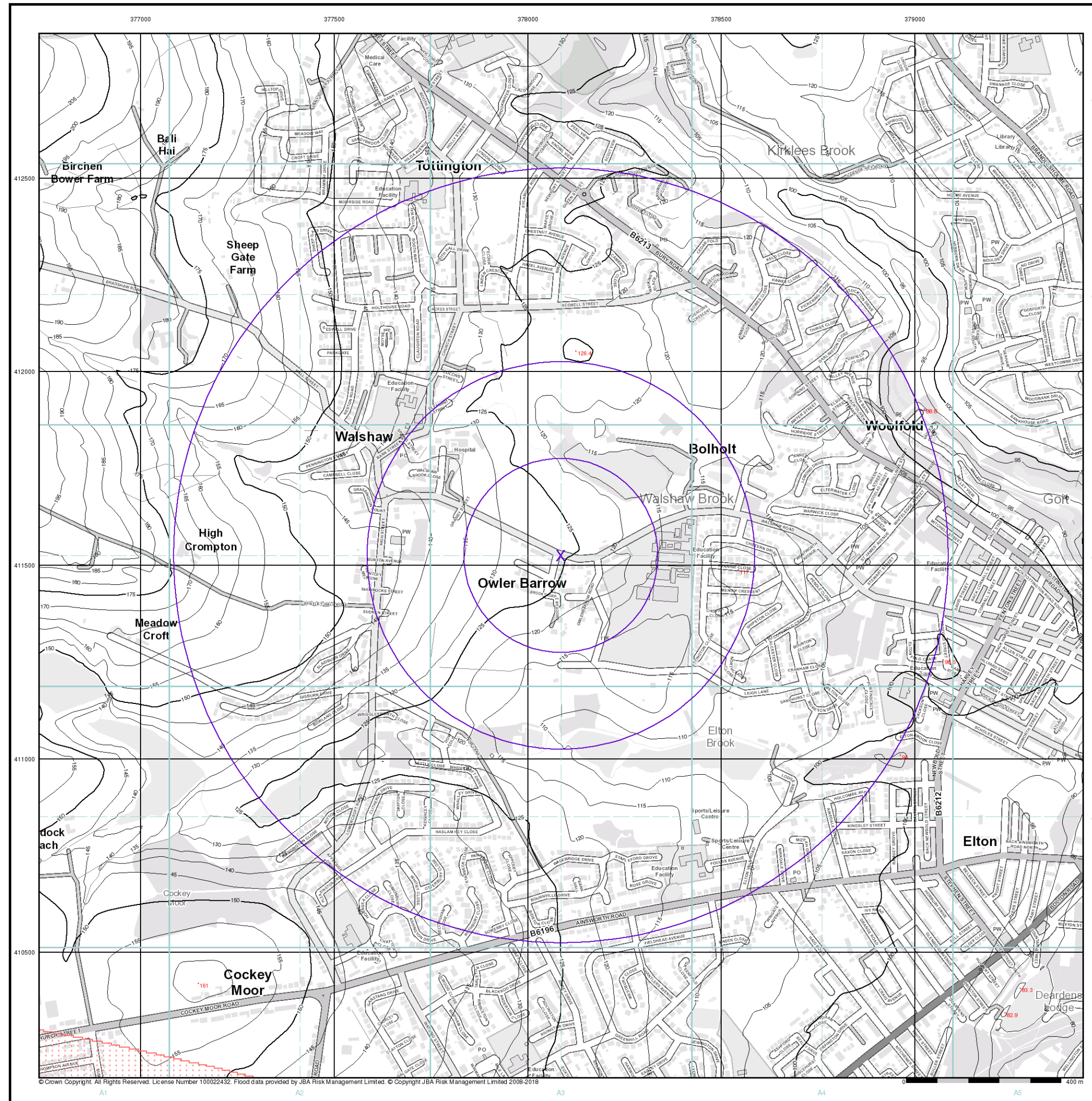
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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JBA Canal Failure Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

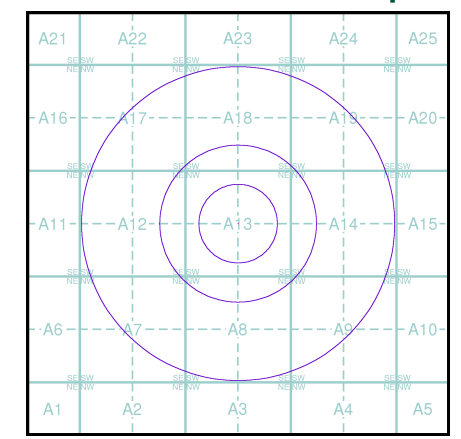
Flood Data

- Canal Failure
- Coverage

Contours (height in metres)

- Standard Contour 105 MLW Mean Low Water
- Master Contour 100 MHW Mean High Water
- Spot Height *167.8

JBA Canal Failure Flood Map - Slice A



Order Details

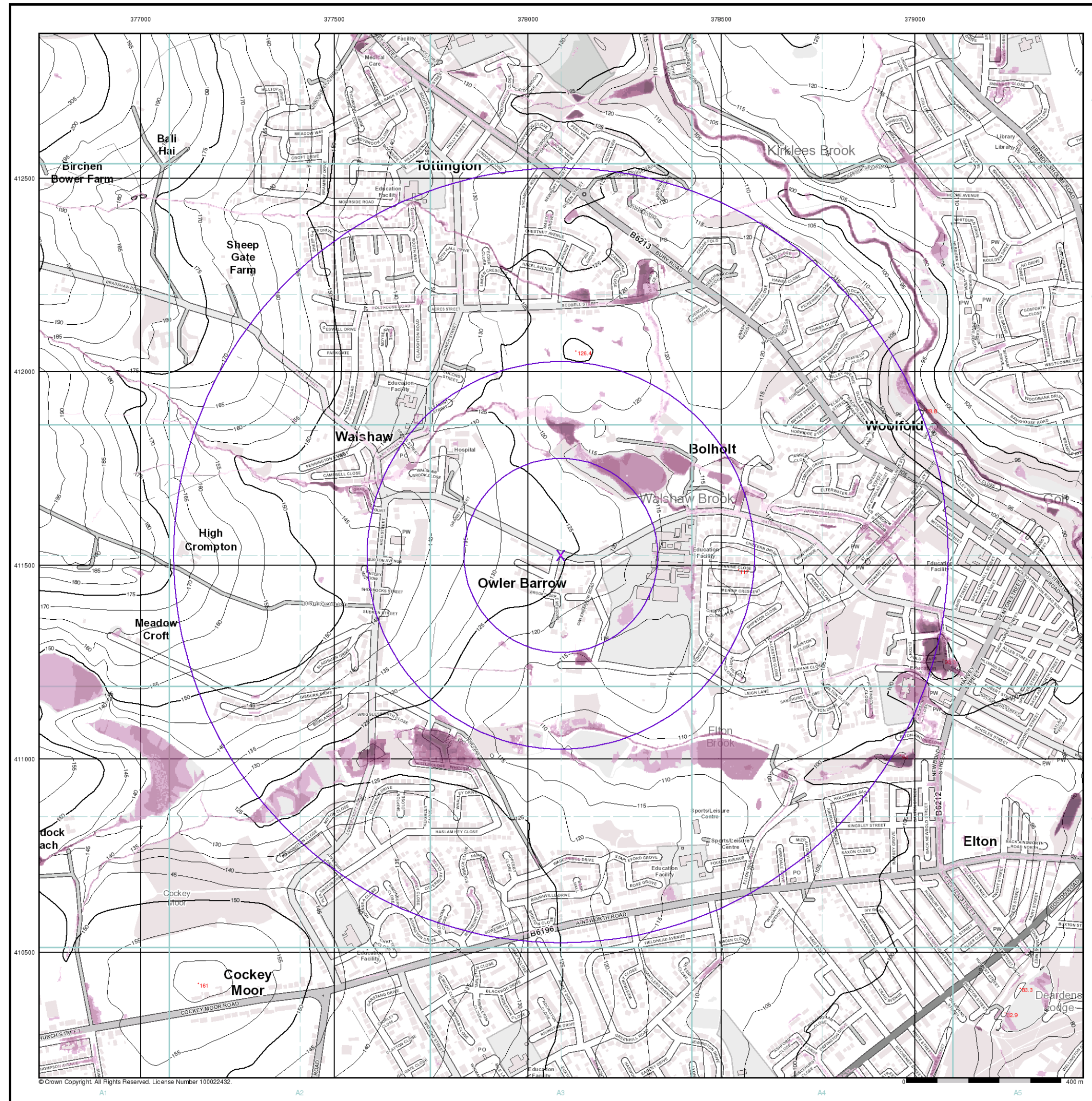
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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EANRW Surface Water 30 Year Return Depth Map (1:10,000)

General
 Specified Site (purple dot) Specified Buffer(s) (purple circle) Bearing Reference Point (purple 'X')

Surface Water Depth

0 - 0.15m
0.15 - 0.30m
0.30 - 0.60m
0.60 - 0.90m
0.90 - 1.20m
> 1.20m

Contours (height in metres)

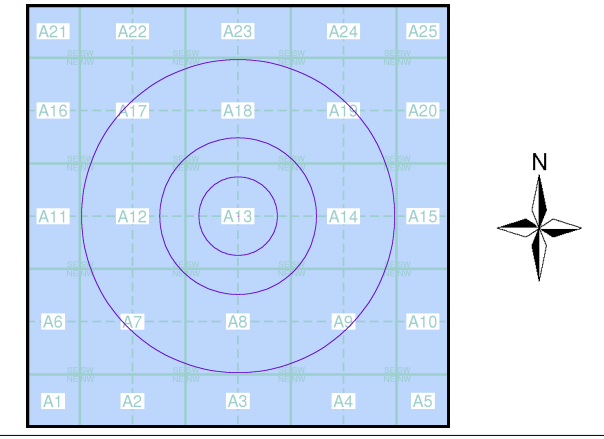
Standard Contour: 105, 100, 95
 Master Contour: 105, 100, 95
 Spot Height: *167.8

MLW Mean Low Water
 MHW Mean High Water

Suitability
 See the suitability map below

National to county	Street to parcels of land
County to town	Property
Town to street	

EANRW Suitability Map - Slice A

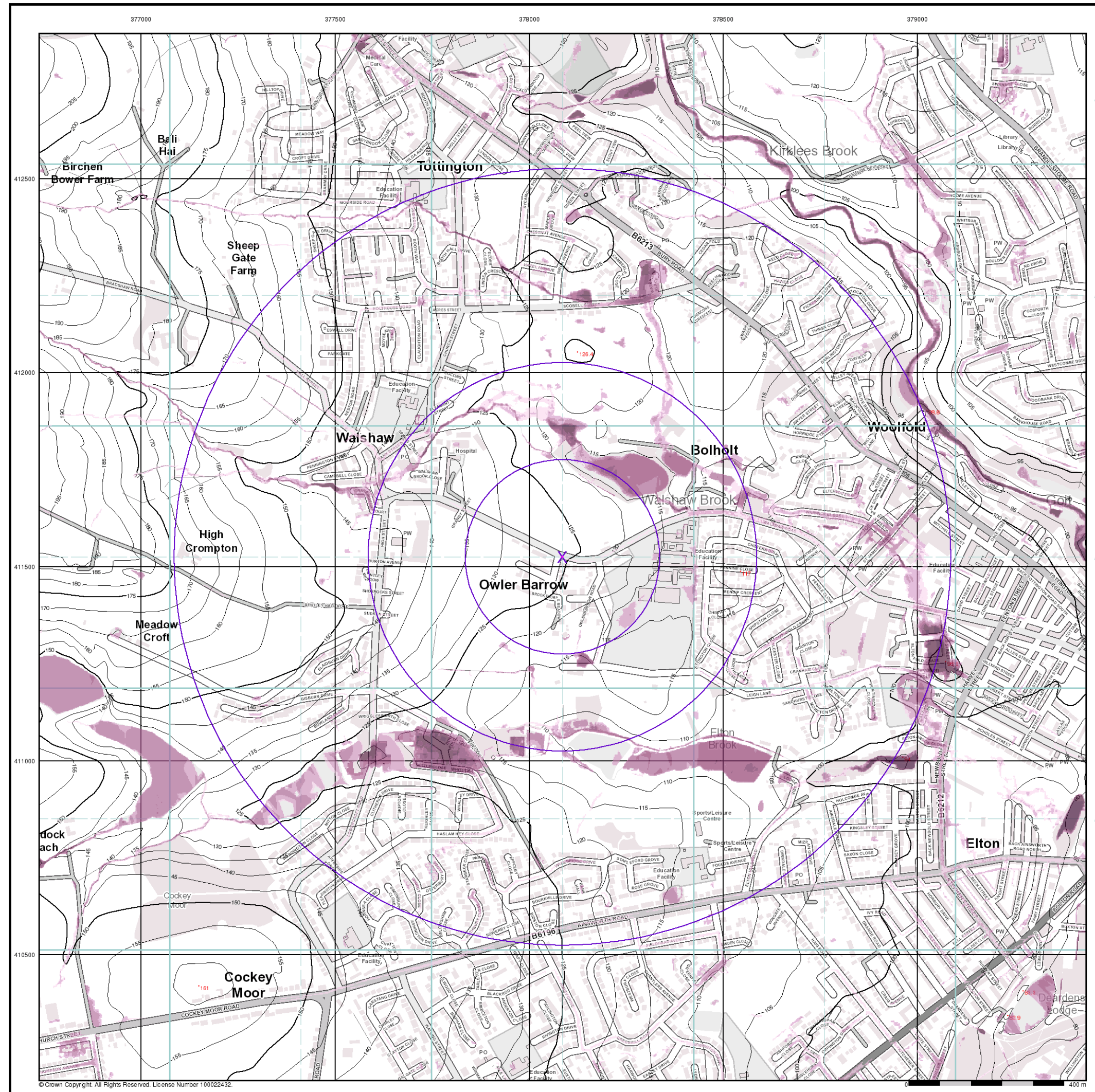


Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details
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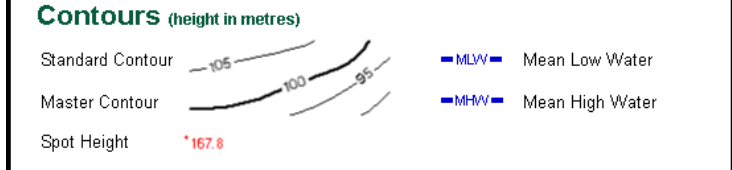


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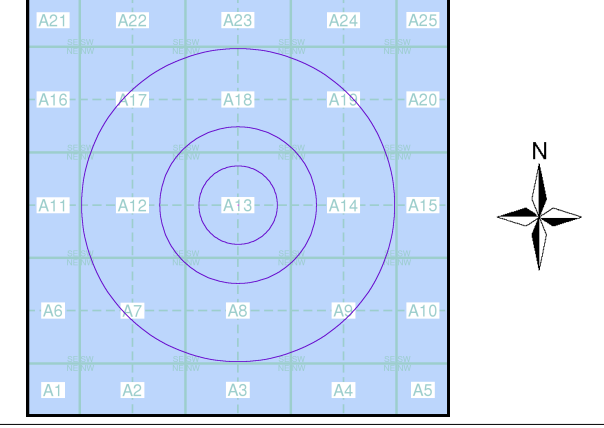
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EANRW Surface Water 100 Year Return Depth Map

General
 Specified Site (pink dot) Specified Buffer(s) (purple circle) Bearing Reference Point (X)



EANRW Suitability Map - Slice A



Order Details
 Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

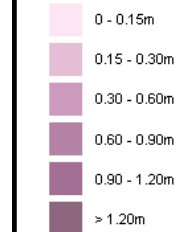
Site Details
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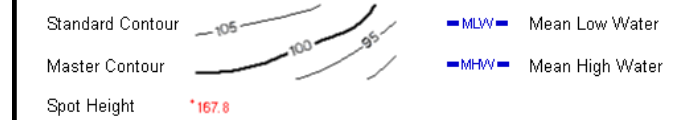
EANRW Surface Water 1000 Year Return Depth Map (1:10,000)

General
 Specified Site (pink dot) Specified Buffer(s) (purple circle) Bearing Reference Point (X)

Surface Water Depth



Contours (height in metres)

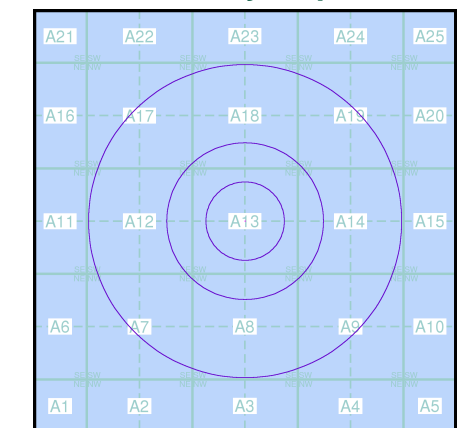


Suitability

See the suitability map below

- National to county (light green)
- County to town (orange)
- Town to street (blue)
- Street to parcels of land (pink)
- Property (yellow)

EANRW Suitability Map - Slice A

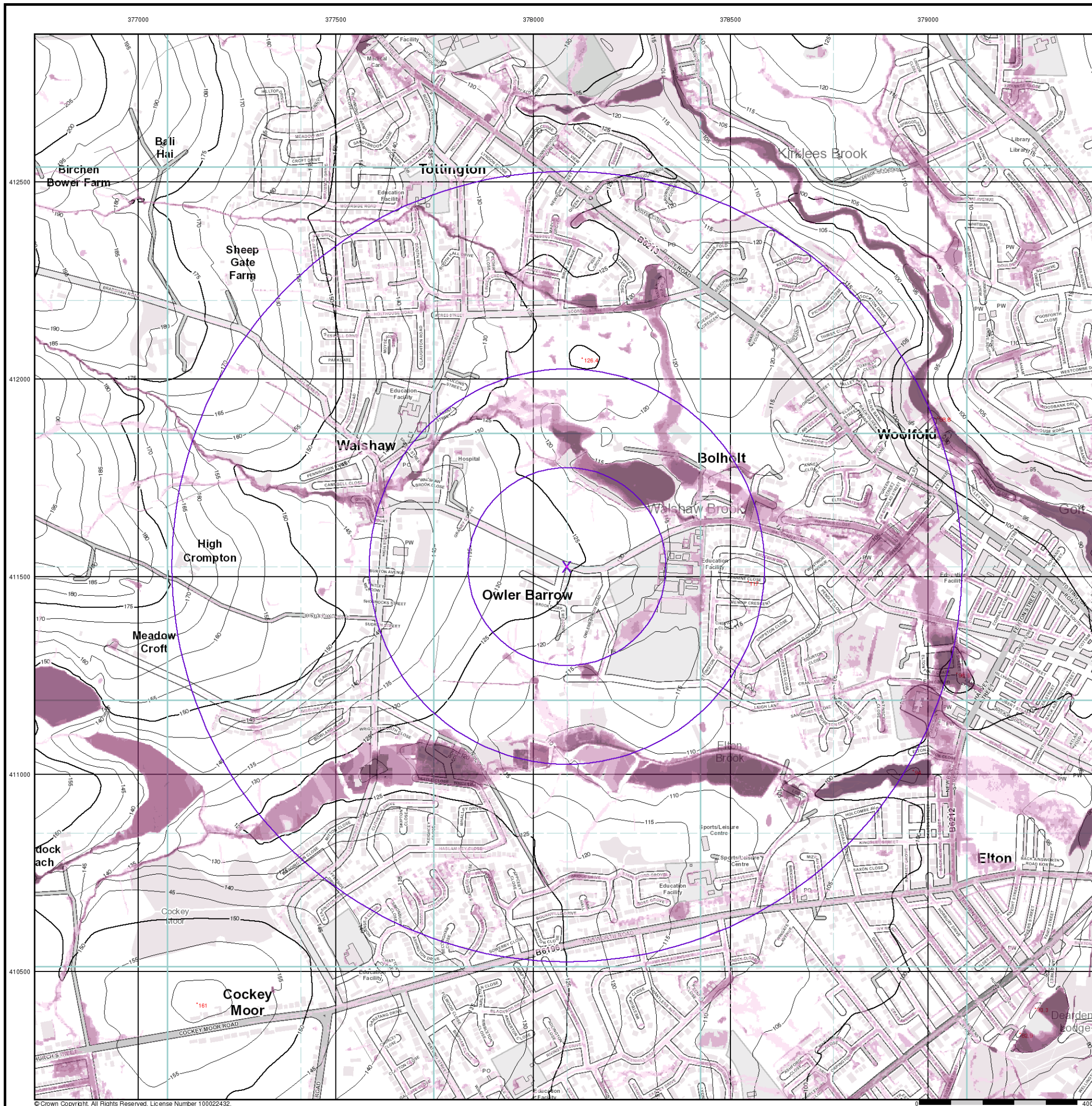


Order Details

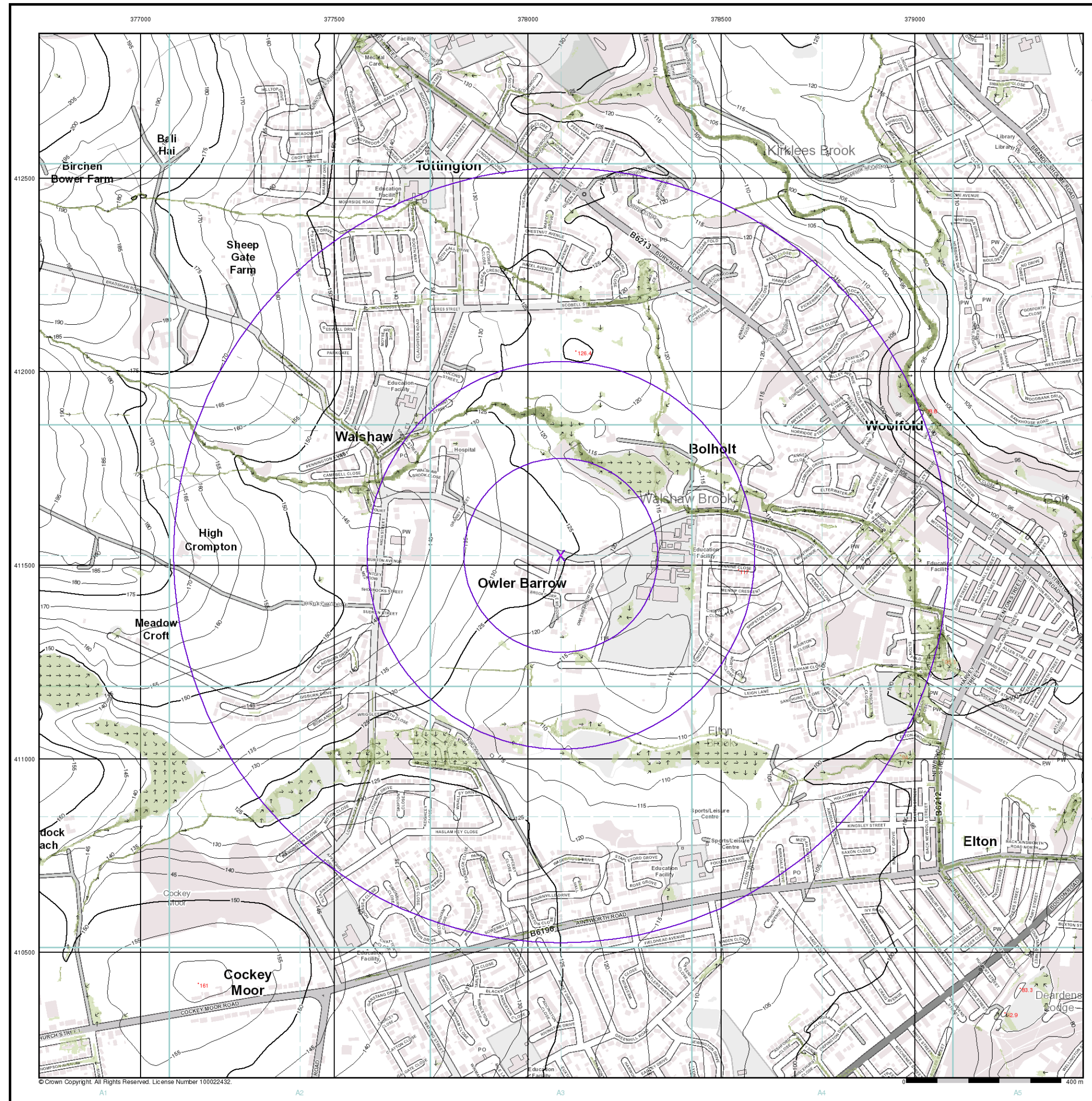
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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EANRW Surface Water 30 Year Return Velocity and Flow Direction Map (1:10,000)

General
 Specified Site (Purple X) Specified Buffer(s) (Purple Circle) Bearing Reference Point (Purple X)

Surface Water Velocity and Direction

0.00 - 0.25m/s	↑ Flow Direction at maximum velocity
0.25 - 0.50m/s	
0.50 - 1.00m/s	
1.00 - 2.00m/s	
> 2.00m/s	

Contours (height in metres)

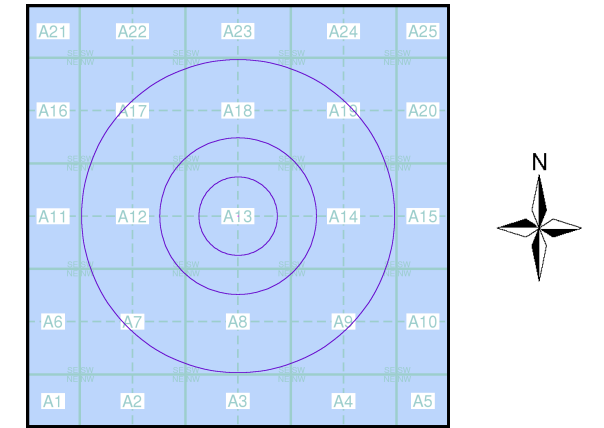
Standard Contour: 105, 100, 95
 Master Contour: 105, 100, 95
 Spot Height: *167.8

MLW - Mean Low Water
 MHW - Mean High Water

Suitability
 See the suitability map below

National to county	Street to parcels of land
County to town	Property
Town to street	

EANRW Suitability Map - Slice A

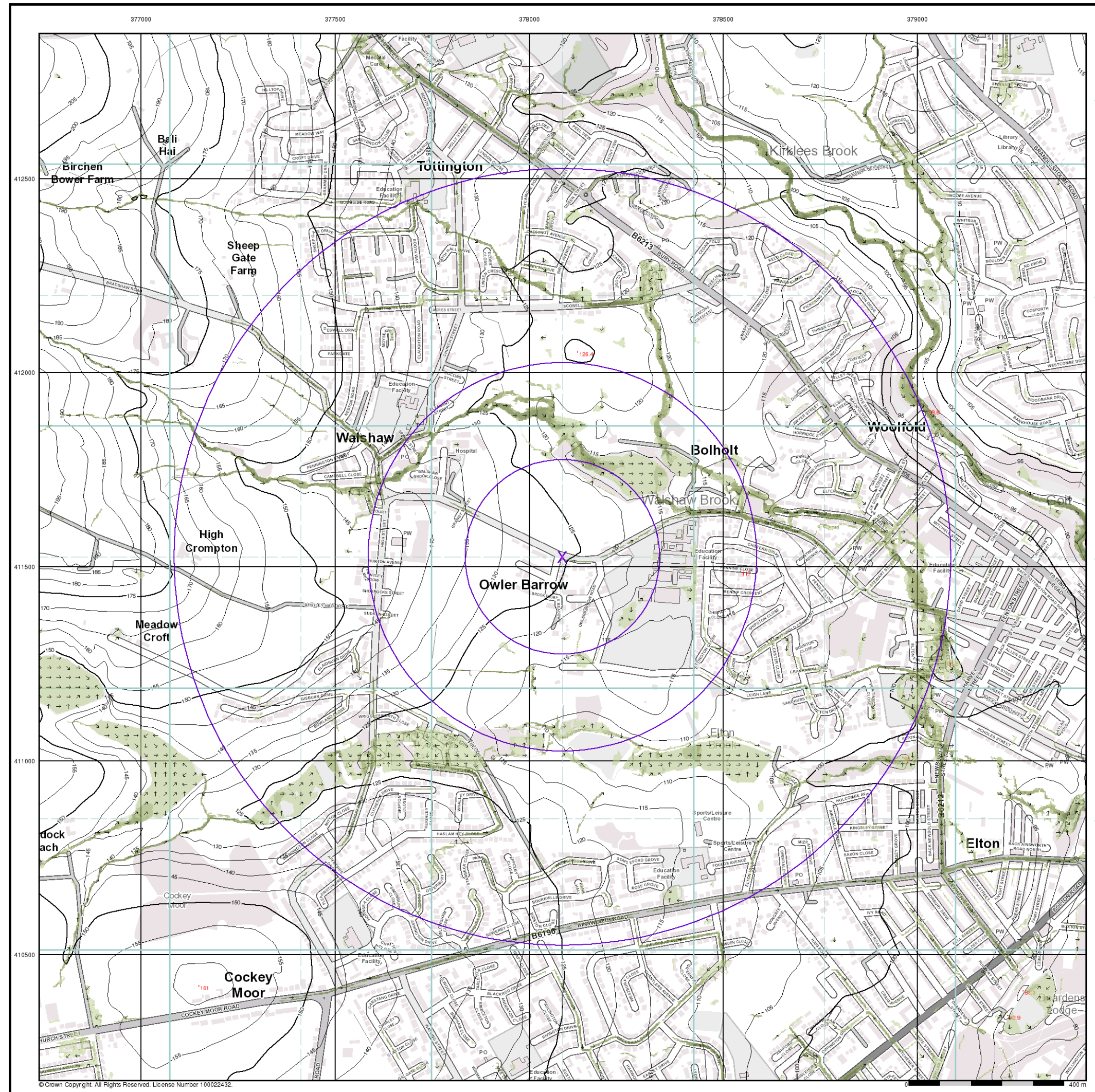


Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details
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EANRW Surface Water 100 Year Return Velocity and Flow Direction Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Surface Water Velocity and Direction

- 0.00 - 0.25m/s
- 0.25 - 0.50m/s
- 0.50 - 1.00m/s
- 1.00 - 2.00m/s
- > 2.00m/s

Flow Direction at maximum velocity

Contours (height in metres)

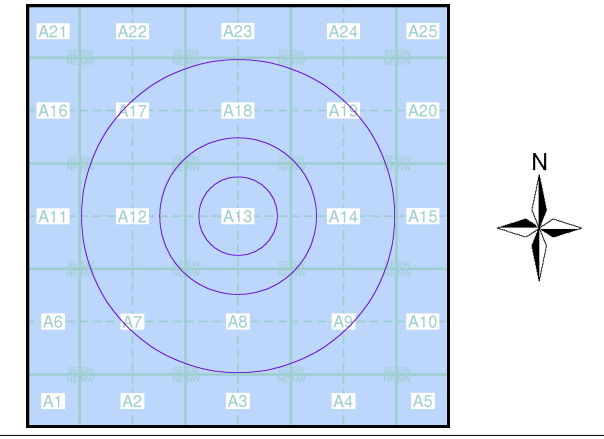
- Standard Contour
- Master Contour
- Spot Height: *167.8
- MLW - Mean Low Water
- MHW - Mean High Water

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EANRW Suitability Map - Slice A

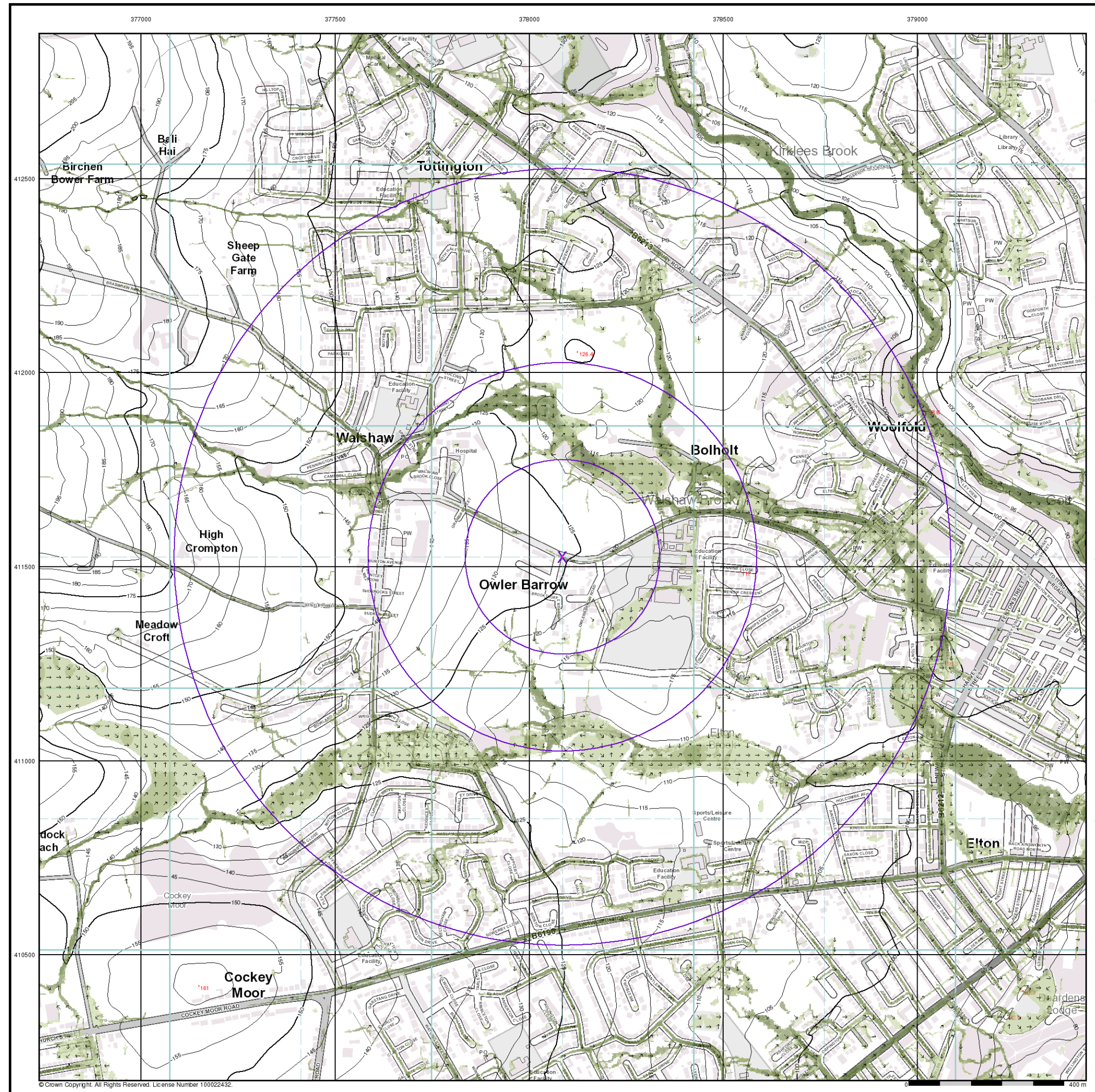


Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

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

General
 Specified Site (pink circle) Specified Buffer(s) (purple circle) Bearing Reference Point (X)

Surface Water Velocity and Direction

0.00 - 0.25m/s	↑ Flow Direction at maximum velocity
0.25 - 0.50m/s	
0.50 - 1.00m/s	
1.00 - 2.00m/s	
> 2.00m/s	

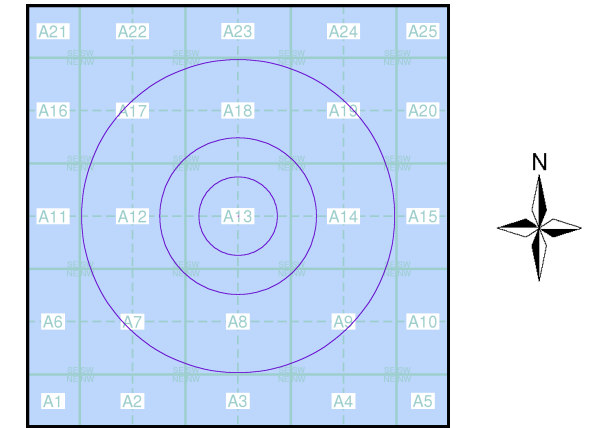
Contours (height in metres)

Standard Contour (105, 100, 95) — MLW — Mean Low Water
 Master Contour — MHW — Mean High Water
 Spot Height *167.8

Suitability
 See the suitability map below

National to county	Street to parcels of land
County to town	Property
Town to street	

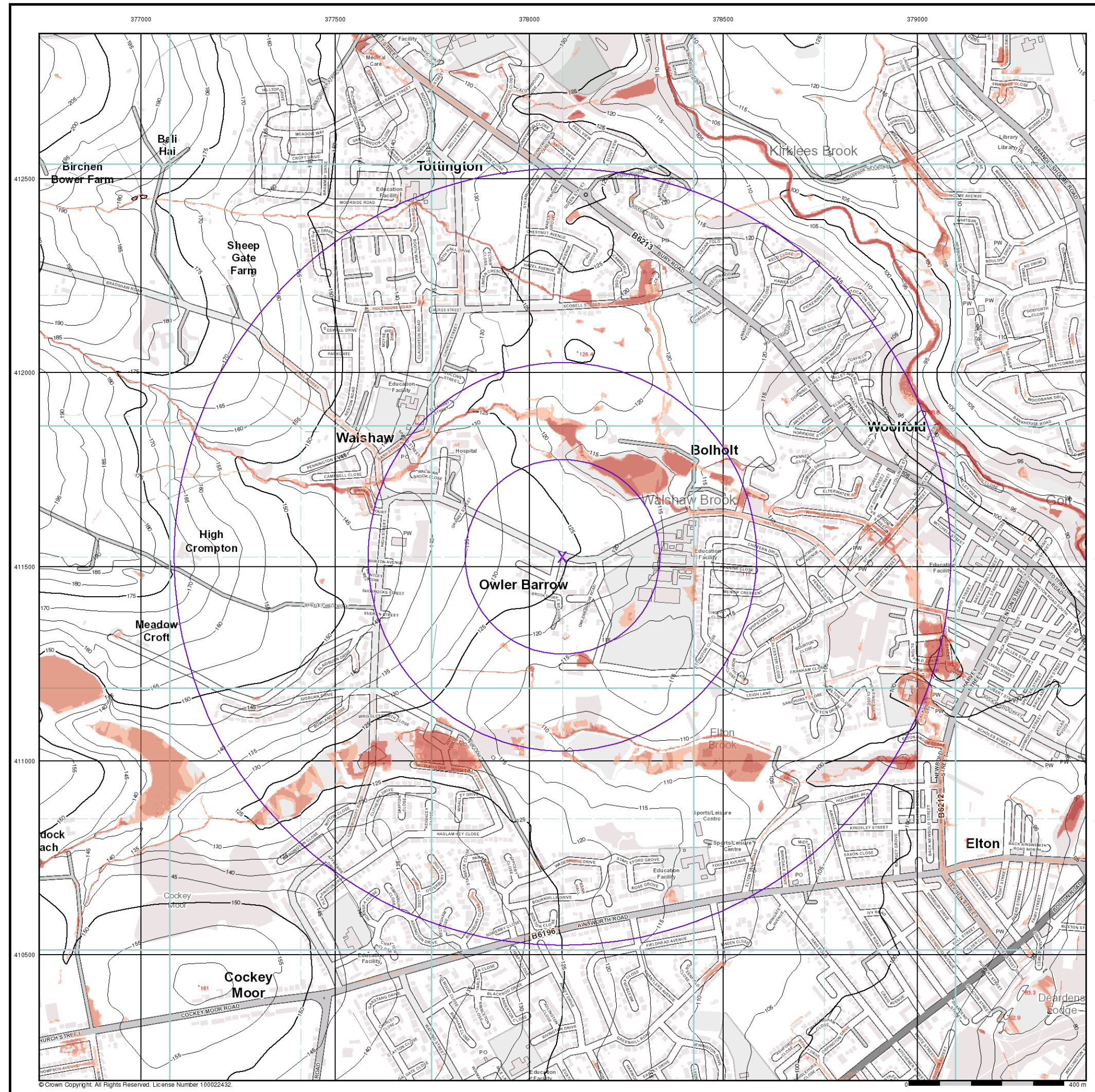
EANRW Suitability Map - Slice A



Order Details
 Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details
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E/NRW Surface Water 30 Year Return Hazard Rating Map (1:10,000)

General
 Specified Site (pink circle) Specified Buffer(s) (purple circle) Bearing Reference Point (X)

Surface Water Hazard Rating

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

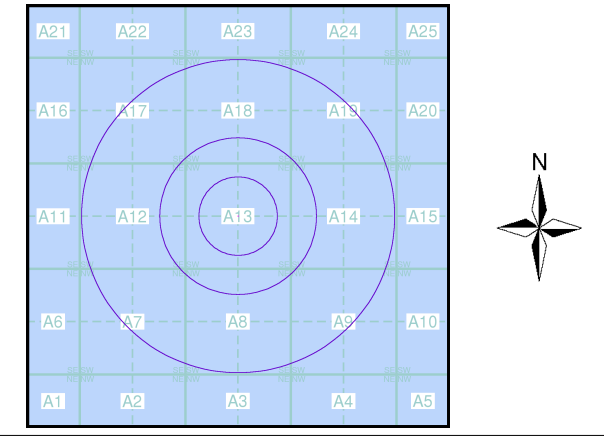
Contours (height in metres)

- Standard Contour (105, 100, 95)
- Master Contour (105, 100, 95)
- Spot Height (*167.8)
- MLW Mean Low Water
- MHW Mean High Water

Suitability
 See the suitability map below

- National to county (light green)
- County to town (orange)
- Town to street (blue)
- Street to parcels of land (pink)
- Property (yellow)

E/NRW Suitability Map - Slice A



Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details
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E/ANRW Surface Water 100 Year Return Hazard Rating Map (1:10,000)

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)

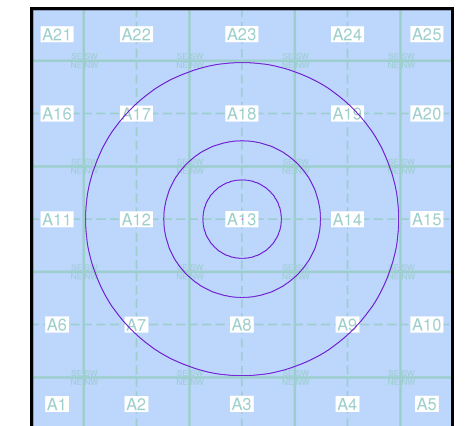
- Standard Contour
- Master Contour
- Spot Height *167.8
- MLW Mean Low Water
- MHW Mean High Water

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

E/ANRW Suitability Map - Slice A

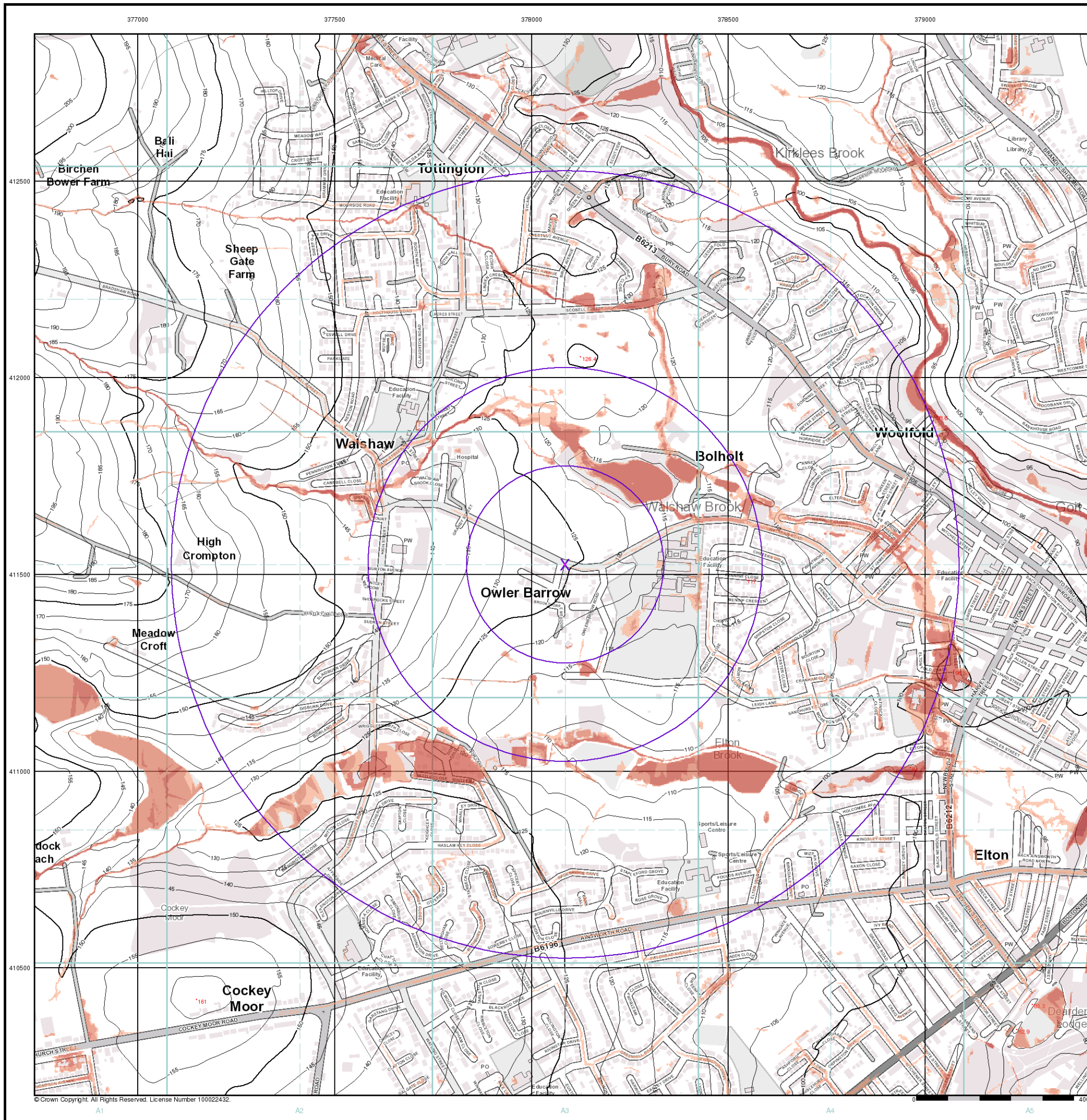


Order Details

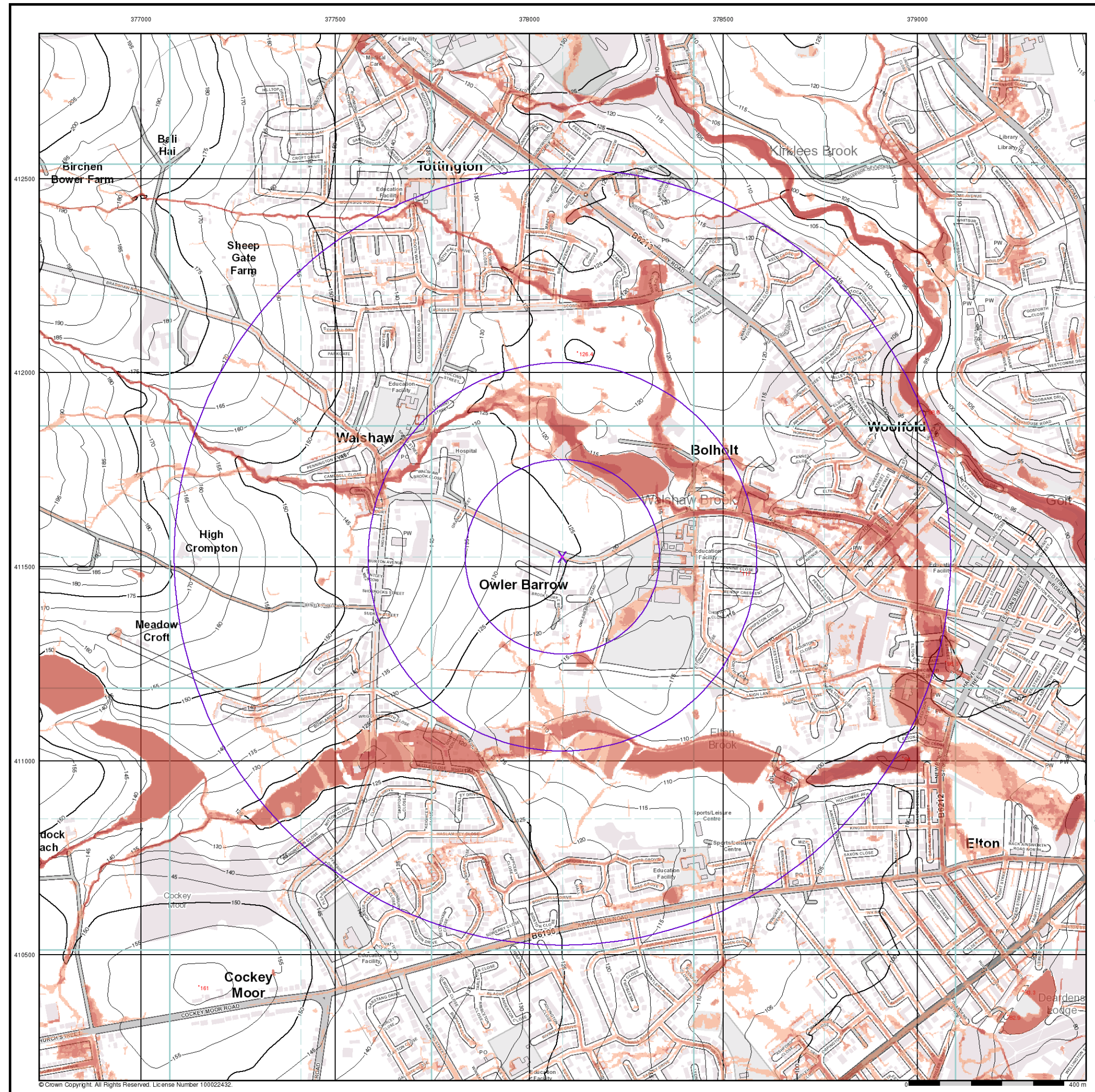
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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E/NRW Surface Water 1000 Year Return Hazard Rating Map (1:10,000)

General
 ● Specified Site ○ Specified Buffer(s) X 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)

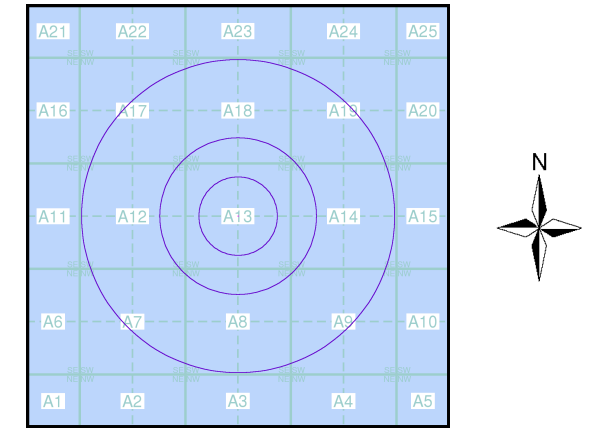
Contours (height in metres)

- Standard Contour
- Master Contour
- Spot Height *167.8
- MLW — Mean Low Water
- MHW — Mean High Water

Suitability
 See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

E/NRW Suitability Map - Slice A



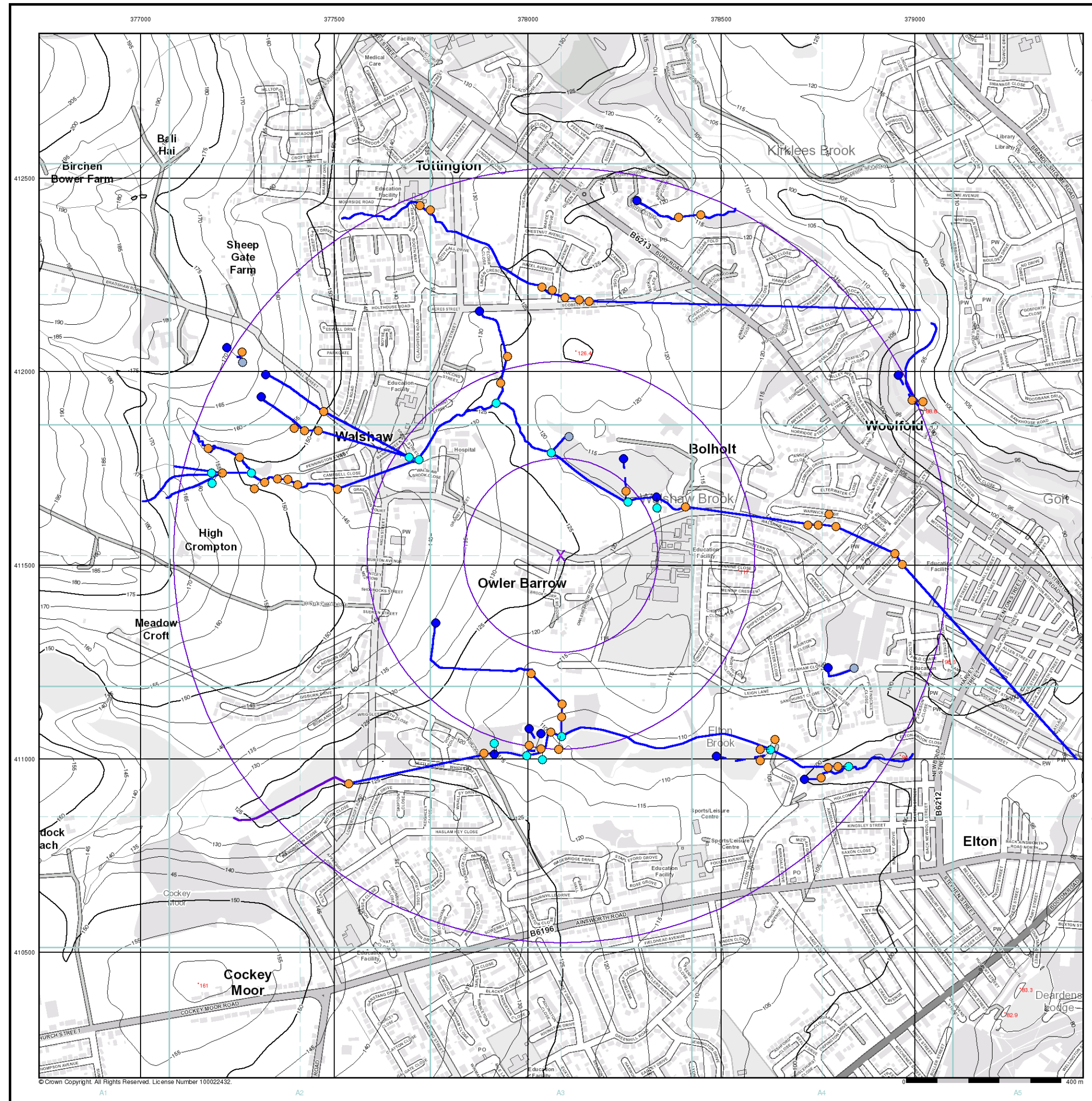
Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

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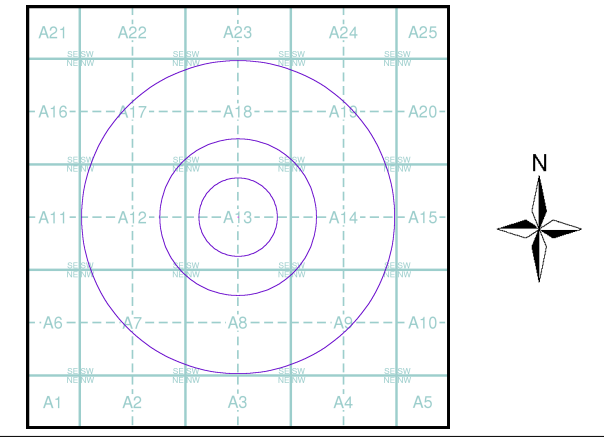
OS Water Network Lines Map (1:10,000)

- General**
- Specified Site
 - Specified Buffer(s)
 - ✕ Bearing Reference Point

- OS Water Network Data**
- | | |
|----------------|---------------------------|
| — Canal | — Drain |
| — Reservoir | — Other |
| — Foreshore | — Lake |
| — Marsh | — Transfer |
| — Tidal River | — Lock Or Flight Of Locks |
| — Inland River | — Sea |
| ● Junction | ● Source |
| ● Outlet | ● Other |
| ● Pseudo | |

- Contours (height in meters)**
- Standard Contour — 105 — MLW — Mean Low Water
- Master Contour — 100 — MHW — Mean High Water
- Spot Height *167.3

OS Water Network Map - Slice A



Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details
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EANRW Historic Flood Map (1:10,000)

General

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

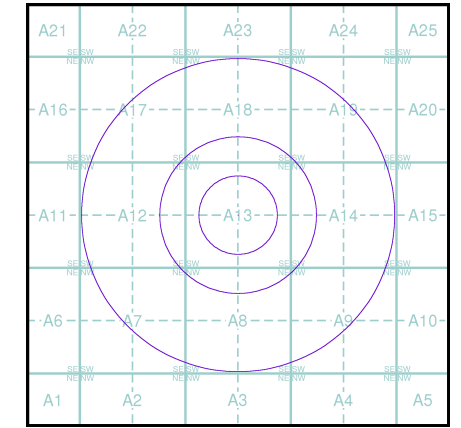
Historic Flood Events Data

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

Contours (height in metres)

- Standard Contour 105 MLW Mean Low Water
- Master Contour 100 MHW Mean High Water
- Spot Height *167.8

EANRW Historic Flood Map - Slice A

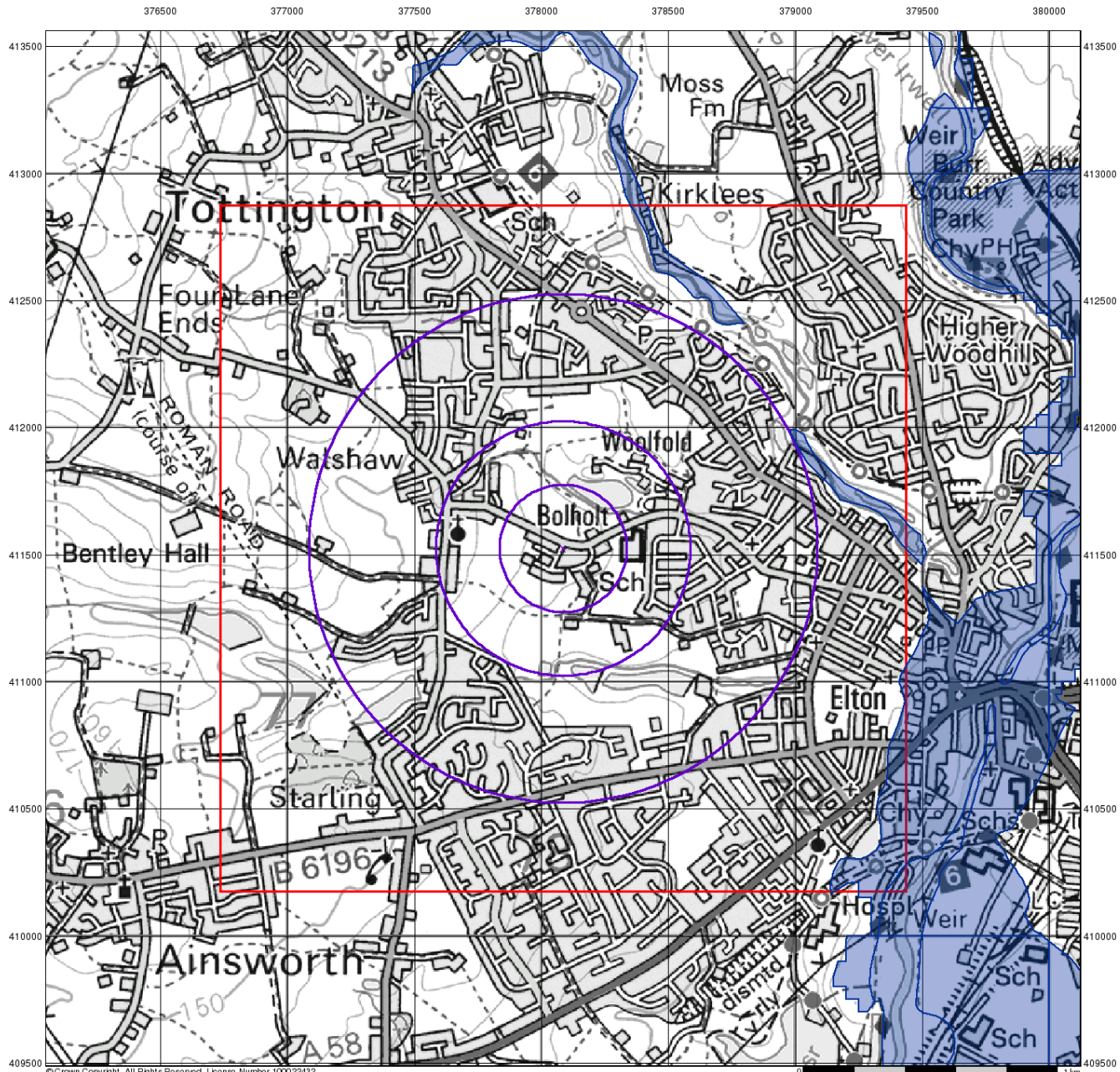


Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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BGS Flood Data (1:50,000)

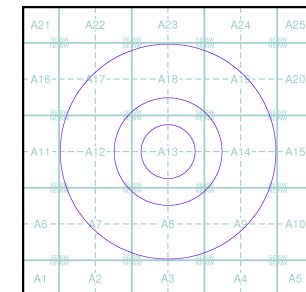
General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Slice
-  Map ID

BGS Geological Indicators of Flooding

-  Coastal
-  Inland
-  Bodies of Water

BGS Flood Data Map - Slice A



Order Details

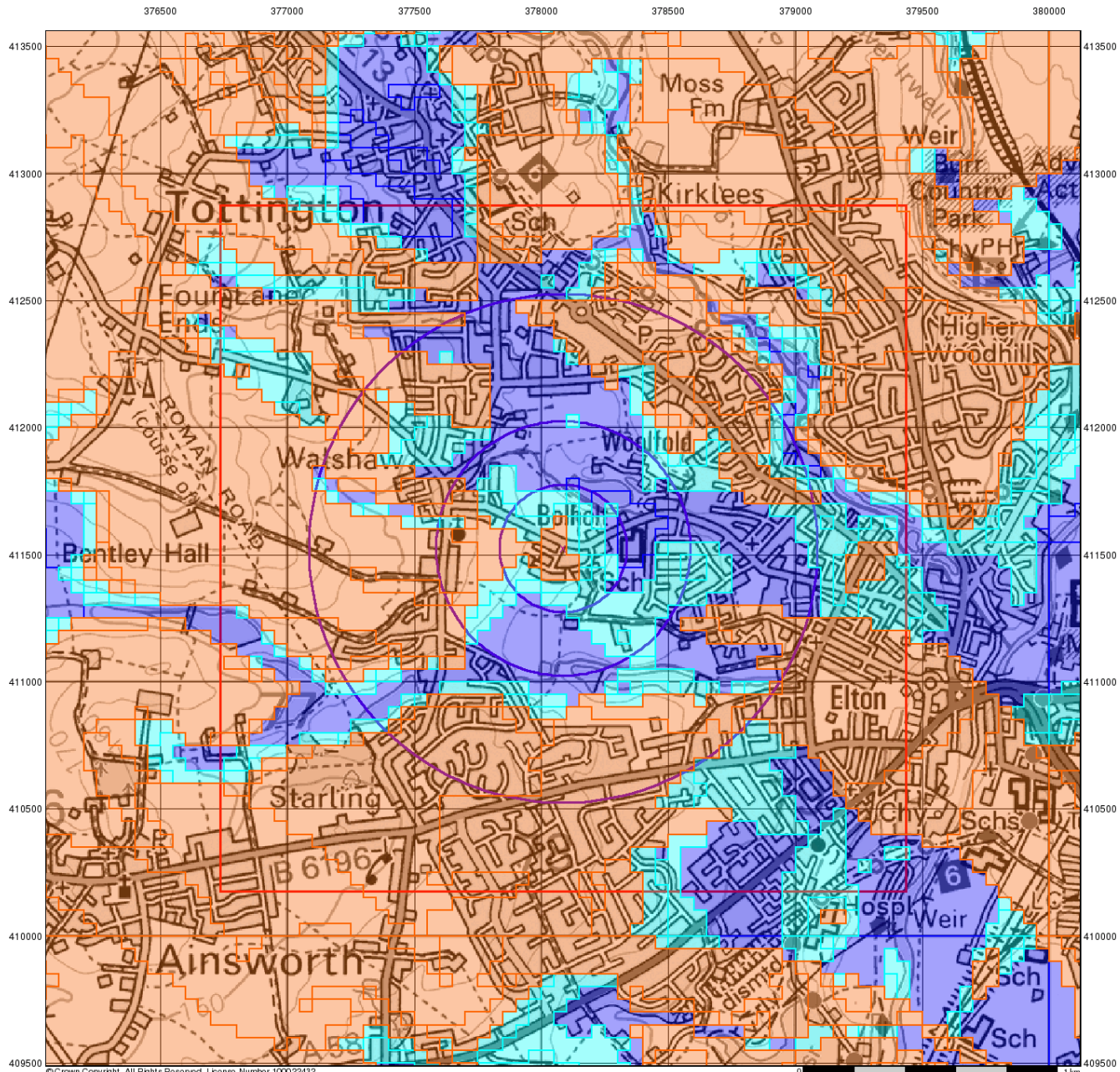
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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BGS Flood Data (1:50,000)

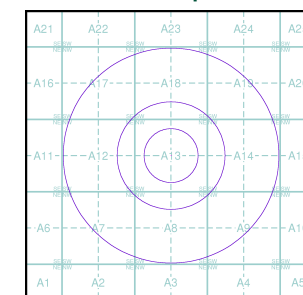
General

- ◇ Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point
- Slice
- B Map ID

BGS Groundwater Flooding Susceptibility

- Potential for Groundwater Flooding to Occur at Surface
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Limited Potential for Groundwater Flooding to Occur

BGS Flood Data Map - Slice A



Order Details

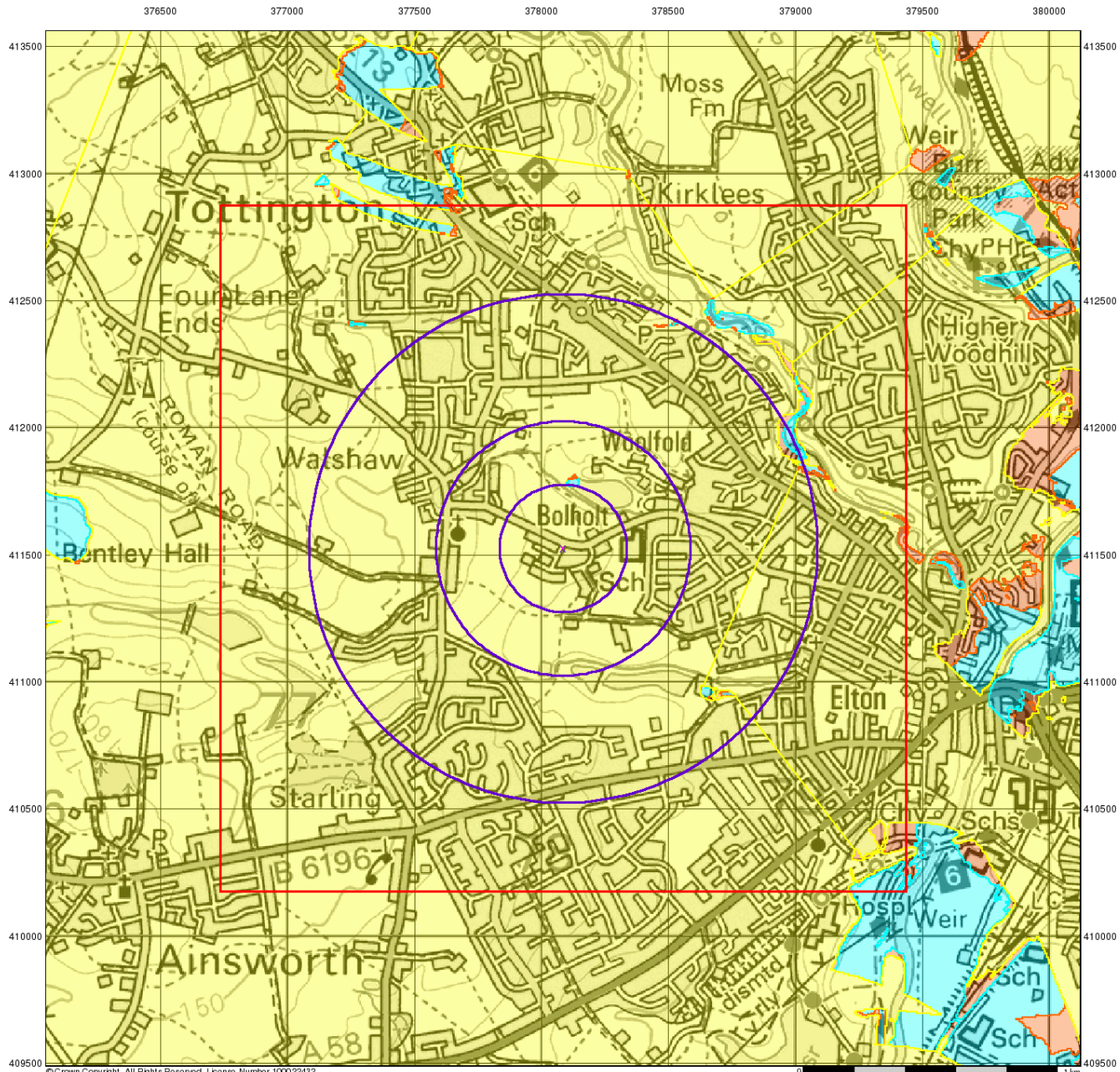
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
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Site Details

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0 1 km

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GeoSmart Information Groundwater Flood Map (1:50,000)

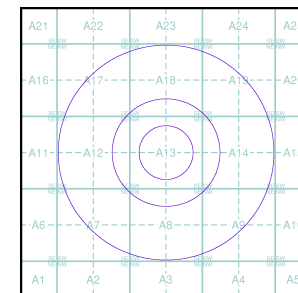
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice

GeoSmart Information Groundwater Flooding Risk

- High Risk
- Moderate Risk
- Low Risk
- Negligible Risk

GeoSmart Information Groundwater Flood Map - Slice A



Order Details

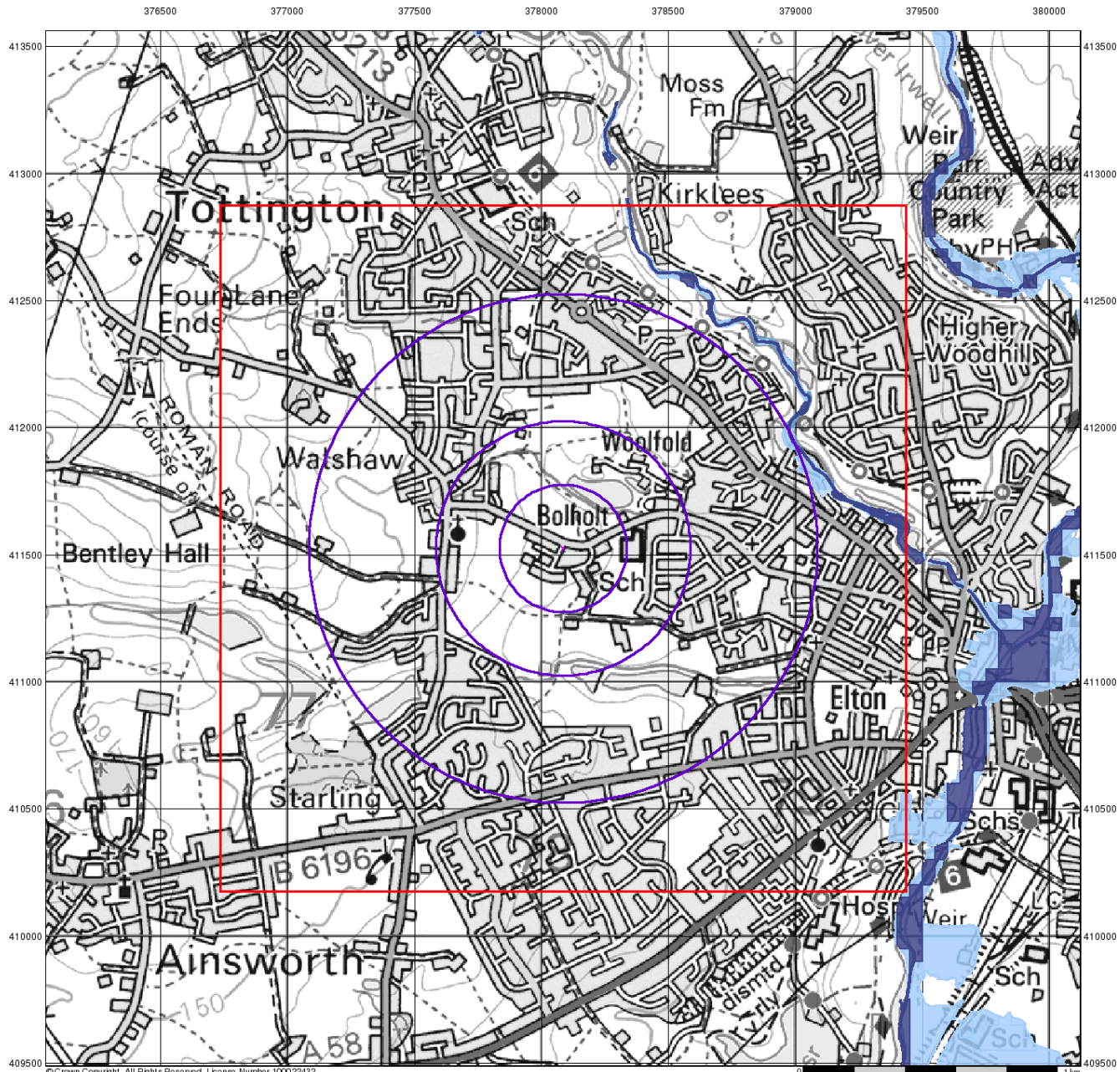
Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Walshaw Road, Bury, BL8 3AA

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EA/NRW RoFRS Data (1:50,000)

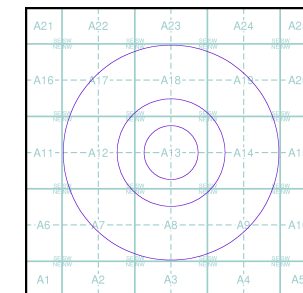
General

- ◊ Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point
- Slice
- Map ID

Risk of Flooding from Rivers and Sea (RoFRS)

- High Risk
- Medium Risk
- Low Risk
- Very Low Risk

EA/NRW RoFRS Data Map - Slice A



Order Details

Order Number: 163324975_1_1
 Customer Ref: 180418
 National Grid Reference: 378090, 411530
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

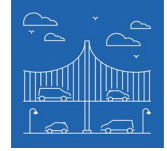
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