



OUGHTIBRIDGE MILL

Breathing New Life into
this Former Industrial Site

Drainage Assessment

March 2016





Development • Planning • Environment

OUGHTIBRIDGE MILL, OUGHTIBRIDGE, SHEFFIELD

DRAINAGE ASSESSMENT

Final Report v1.0

March 2016

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Report Title: **Oughtibridge Mill, Oughtibridge, Sheffield**
Drainage Assessment
Final Report v1.0

Client: CEG

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1 INTRODUCTION

1.1 PURPOSE OF REPORT

Weetwood Services Ltd ("Weetwood") has been instructed by CEG to undertake a drainage assessment for the proposed redevelopment of the former Oughtibridge Mill site, Oughtibridge, Sheffield.

The assessment reviews how the surface water from the site currently drains and how foul water from the previously operational site was managed, and presents illustrative schemes for the management of surface water and foul water from the proposed development. The schemes have been developed for planning purposes and will be subject to further refinement as the development proposals develop.

The assessment has been undertaken in accordance with the requirements of national and local planning policy and should be read in conjunction with the Flood Risk Assessment report prepared by Weetwood, which addresses flood risk for the proposed development (ref: Flood Risk Assessment – Oughtibridge Mill, Oughtibridge, Sheffield; Final Report v1.0, March 2016).

1.2 STRUCTURE OF THE REPORT

The report is structured as follows:

- Section 1** Introduction and report structure
- Section 2** Presents national and local flood risk and drainage planning policy
- Section 3** Provides background information relating to the development site
- Section 4** Provides a wastewater drainage strategy including background information relating to foul water sewerage infrastructure and a foul water drainage assessment for the development proposals including calculations for provisional load estimations, potential connection points based on existing infrastructure and diversions
- Section 5** Provides a surface water drainage strategy that addresses the effect of the proposed development on surface water runoff and presents an illustrative surface water drainage scheme to ensure that surface water runoff is sustainably managed and flood risk is not increased elsewhere.
- Section 6** Presents a summary of the key findings

2 PLANNING POLICY AND GUIDANCE

2.1 NATIONAL PLANNING POLICY

The aim of the NPPF is to ensure that flood risk is taken into account at all stages in the planning process and is appropriately addressed.

2.2 SUSTAINABLE DRAINAGE SYSTEMS GUIDANCE

Planning applications for major developments¹ are required to provide Sustainable Drainage Systems (SuDS) for the management of surface water runoff, unless demonstrated to be inappropriate² or disproportionately expensive³.

Non-statutory technical standards for SuDS were published by DEFRA in 2015. The key points are summarised as following:

- For developments which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body for the in 1 in 1 year rainfall event and the 1 in 100 year rainfall event must be as close as reasonably practicable to the greenfield runoff rate from the development for the same rainfall event, but should never exceed the rate of discharge from the development prior to redevelopment for that event.
- The runoff volume from the developed site for the 1 in 100 year 6 hour rainfall event must not exceed the greenfield runoff volume for the same event, but should never exceed the runoff volume from the development site prior to redevelopment for that event.
- The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30 year rainfall event.
- The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur during a 1 in 100 year rainfall event in any part of: a building (including a basement); or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.
- The design of the site must ensure that, so far as is reasonably practicable, flows resulting from rainfall in excess of a 1 in 100 year rainfall event are managed in exceedance routes that minimise the risks to people and property.

2.3 LOCAL PLANNING POLICY AND GUIDANCE

The drainage assessment has been informed by the following policy:

Sheffield City Council's (SCC) Core Strategy was adopted on 4 March 2009. Policy CS 67 'Flood Risk Management' states, in part, that the extent and impact of flooding will be reduced by:

- a. Requiring that all developments significantly limit surface water runoff;

¹ Developments of 10 dwellings or more; or equivalent non-residential or mixed development (as set out in Article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2010)

² Paragraph 082 (Reference ID: 7-082-20150323) of the Planning Practice Guidance outlines how a sustainable drainage system might be judged to be inappropriate

³ Written Statement (HCWS161) made by the Secretary of State for Communities and Local Government (Mr Eric Pickles) on 18 December 2014

- b. Requiring the use of SuDS or sustainable drainage techniques on all sites where feasible and practicable; and
- c. Promoting sustainable drainage management;

Paragraph 11.21 of the Core Strategy states that surface water must be reduced to 5.0 l/s/ha on all sites over 1 hectare (ha), except on brownfield sites where the developer can prove that there is existing surface water runoff. On such sites, runoff must be reduced by 30%.

Barnsley Metropolitan Borough Council (BMBC) Core Strategy was adopted on 8 September 2011. 'CSP 4 Flood Risk' states, in part, that the extent and impact of flooding will be reduced by:

- Expecting all development proposals on brownfield sites to reduce surface water runoff by at least 30%; and
- Requiring development proposals to use SuDS in accordance with CSP 3.

'CSP 3 Sustainable Drainage Systems' states that:

- All development will be expected to use SuDS;
- Only in exceptional circumstances, where it can be demonstrated that all types of SuDS are impractical, will other drainage management systems be permitted;
- Planning applications must include an assessment to show that SuDS will work and be maintained. Measures should be taken to avoid water contamination and safeguard groundwater supply; and
- Developers will be required to contribute to the maintenance of SuDS.

2.4 FLOOD DEFENCE CONSENT

Flood defence consent is required before the commencement of any works in, over, or under a main river to ensure that any works do not increase flood risk, damage flood defences, or harm the environment, fisheries, or wildlife (Water Resources Act 1991). For main rivers in England, responsibility for consenting rests with the Environment Agency (EA).

Undertaking activities controlled by local Byelaws (made under the Water Resources Act 1991) also requires the relevant consent. Byelaws typically include erecting an obstruction with 8 metres of a main river or erecting structures within the floodplain.

2.5 RELEVANT DOCUMENTS

The drainage assessment has been informed by the following documents:

- Strategic Flood Risk Assessment (SFRA) Level 1, SCC, July 2008
- SFRA Level 1, BMBC, September 2010
- Preliminary Flood Risk Assessment, BMBC, July 2011
- South Yorkshire Interim Local Guidance for SuDS, June 2015
- DEFRA's Non-Statutory Technical Standards for Sustainable Drainage Systems, March 2015

3 SITE DETAILS AND PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The 13.79 hectare (ha) site is located at the former Oughtibridge Mill site, Oughtibridge at Ordnance Survey (OS) National Grid Reference SK 302 940, as illustrated in **Figure 1**.

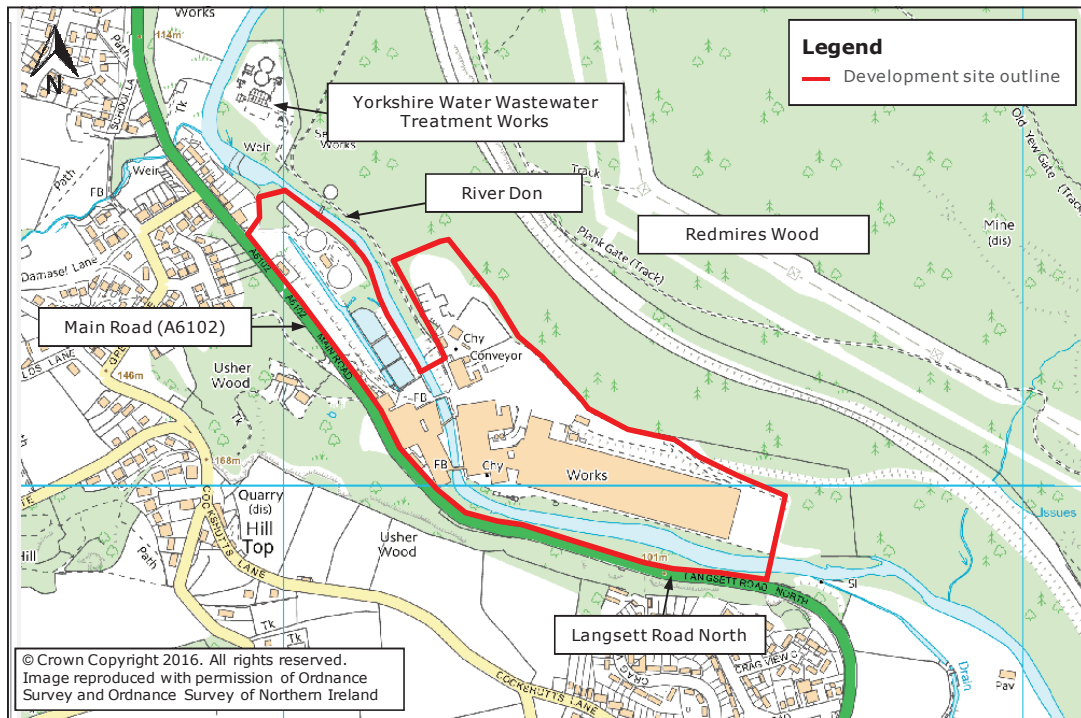


Figure 1: Site Location

3.2 EXISTING AND PROPOSED DEVELOPMENT

The existing site comprises of industrial units and large areas of hardstanding associated with the former paper manufacturing facility located at the site. It is understood that the buildings adjacent to Main Road/Langsett Road North, two bridges, and the mill race/ponds have been demolished within the past 18 months.

The development proposals entail the demolition of existing buildings and structures and erection of residential development (Use Class C3) with means of site access including a new vehicular bridge and a pedestrian/cycle bridge across the River Don, and associated landscaping and infrastructure works. Access to the site will remain via Main Road/Langsett Road North. A parameters plan is shown in **Appendix A**.

The NPPF Planning Practice Guidance (Reference ID: 7-066-20140306) classifies residential development as 'more vulnerable' land use.

3.3 WATERBODIES IN THE VICINITY OF THE SITE

The River Don, a designated main river, flows in a south-easterly direction through the centre of the site.

3.4 GROUND CONDITIONS

An intrusive site investigation (SI) has been undertaken by Sirius Geotechnical and Environmental Limited in December 2015/January 2016.

The SI indicates that the site is underlain by variable depths of made ground. Variable granular and cohesive made ground soils were recorded within the north and north western site areas, to maximum depths of approximately 6.0 m bgl. It is understood that made ground was tipped within the northern portion of the site between approximately 1960 and 1990, whilst infilling of typically cohesive made ground has only recently been completed within the north western site area. Made ground depths within the south western and mill areas range between 0.35 m and >6.0 m, with granular ash rich / demolition rubble materials generally predominating within these areas.

The made ground is predominantly underlain by partly organic, compressible cohesive superficial alluvial soils. Residual Millstone Grit soils were recorded between approximately 0.4 m and 10.0 m bgl, in turn underlain by competent mudstone or sandstone bedrock.

3.5 SITE LEVELS

A topographic survey of the site was undertaken by Met Geo-Environmental in November 2015 and is provided in **Appendix B**. This information has been utilised to develop a digital elevation model as illustrated in **Figure 2**.

Site levels generally range from 107 to 94 metres Above Ordnance Datum (m AOD), with levels generally sloping down towards the River Don.

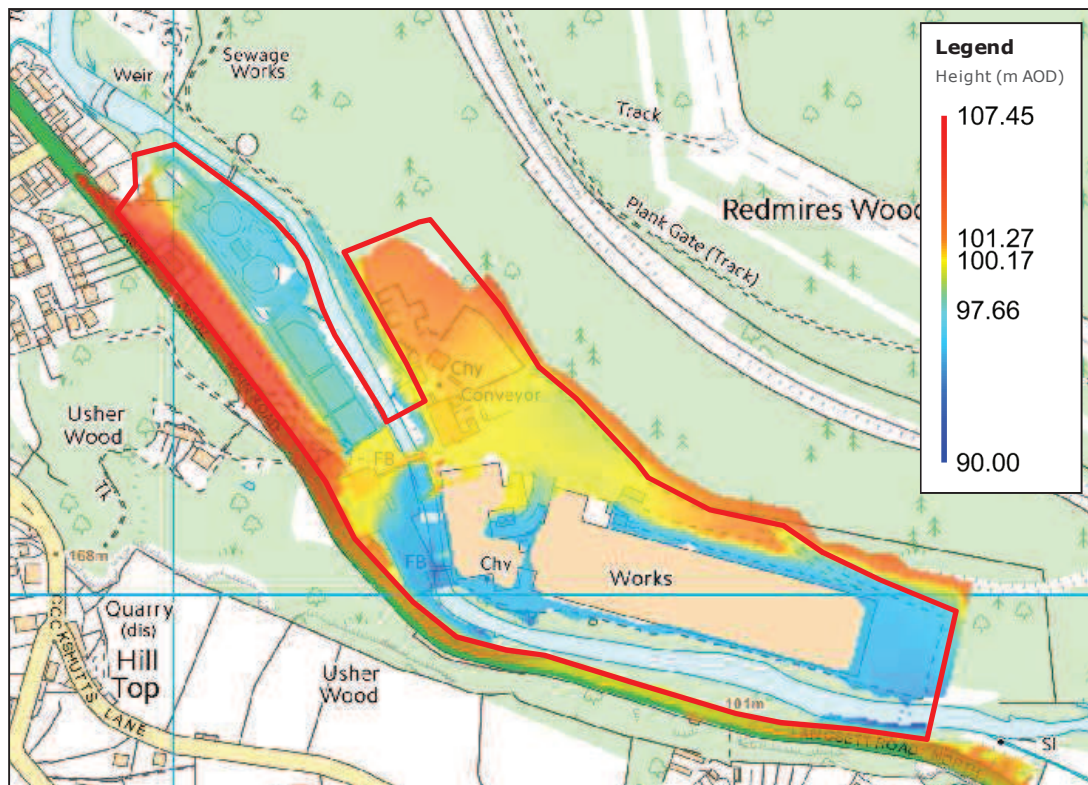


Figure 2: Digital Elevation Model

4 WASTEWATER MANAGEMENT

4.1 APPROACH

A strategy for the management of foul water from the redeveloped site has been informed by an assessment of existing sewerage infrastructure provision in the vicinity of the site and the projected service demand of the proposed development.

4.2 EXISTING WASTEWATER INFRASTRUCTURE

Yorkshire Water (YW) utility records (see **Appendix C** and extract in **Figure 6**) indicate the following public sewers in the vicinity of the site:

- A 225 mm diameter combined sewer located adjacent to the existing entrance to the site. The sewer flows in a north-westerly direction to YW's Wharncliffe Side Wastewater Treatment Works (WWTW) approximately 80m north of the site.
- A 125 mm rising main is located in Main Road/Langsett Road North. The sewer flows in a south-easterly direction towards Middlewood WWTW.

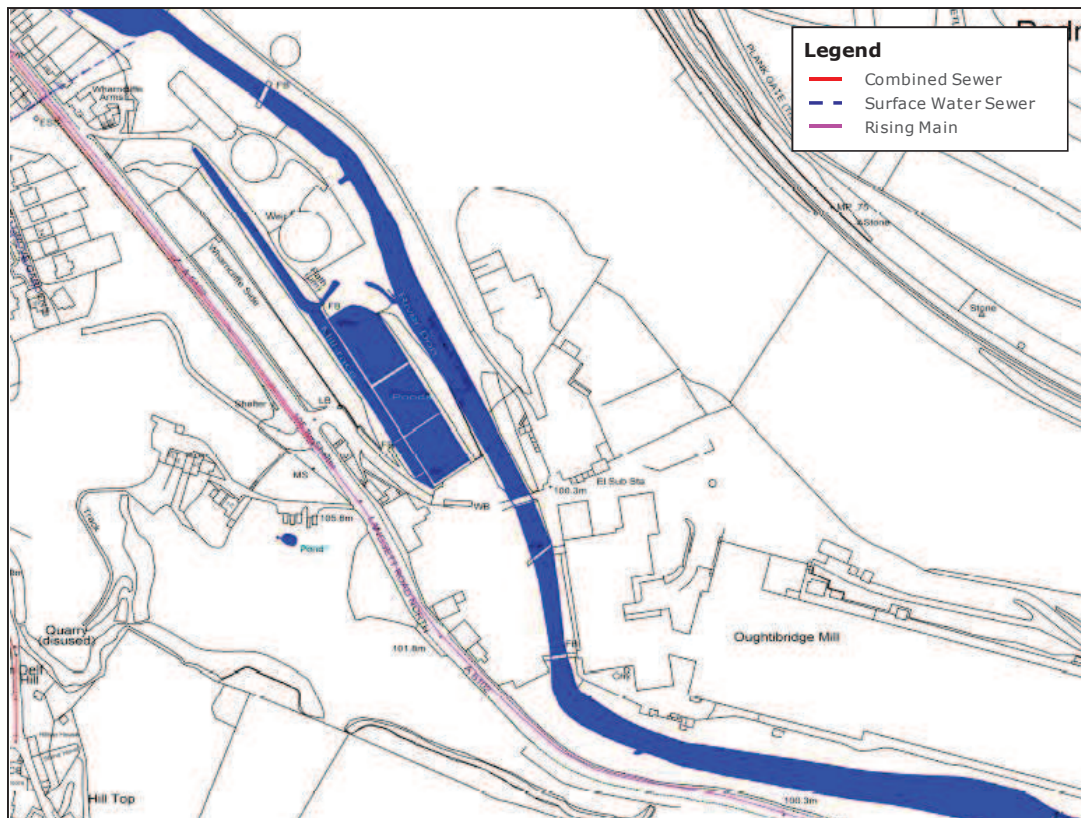


Figure 3: Public Sewers Network

A survey of the on-site drainage infrastructure was undertaken by Invek Surveys Ltd in December 2015 (**Appendix D**). The survey indicates a network of private foul water sewers across the site and a private rising main in the existing site access road. Foul flows are shown to discharge into the head of the aforementioned 225 mm diameter combined sewer.

4.3 WASTEWATER DRAINAGE ASSESSMENT

4.3.1 Load Estimate (Foul Flow Rate)

YW has calculated⁴ the potential peak foul flow from the proposed development to be 5.7 l/s.

4.3.2 Point of Connection

YW has confirmed, by way of a letter dated 2 February 2016 (see **Appendix E**), that there is existing capacity in the local foul sewerage network to receive and treat foul flows from the developed site and that that foul water should discharge into the 225 mm combined sewer in Main Road.

4.3.3 Infrastructure Requirements

Site levels and local topography indicate that foul water from the development would need to be pumped to the proposed point of connection in Main Road.

It is anticipated that two pumping stations would be required. The requirement for and location of the pumping station would be confirmed during detailed design of the foul drainage network.

4.3.4 Off-Site Infrastructure Reinforcement

YW has confirmed that no off-site reinforcement of the sewer network or receiving WWTW is required to facilitate the proposed development.

4.4 DIVERSIONS, EASEMENTS & RIGHTS OF WAY

YW has advised (**Appendix E**) that it benefits from a right of way through the site and along an access track adjacent to the north of the River Don. This provides direct access to Wharncliffe Side WWTW.

According to the public sewer maps, no public foul water infrastructure is located on site. As such, there should be no constraints to the proposed development due to diversionary works or easements.

It is assumed that any private foul water sewers serving the site will be removed.

Asset records show public sewers are located in the section of road where the proposed site access, including the proposed footbridge, will be located. Due care and appropriate work methods should be exercised when considering any proposed excavation works in these areas.

4.5 ODOUR ASSESSMENT

YW has advised by way of a letter dated 2 February 2016 (**Appendix E**) that a 400 m easement should be provided from Wharncliffe Side WWTW to minimise the risk of odour, noise and nuisance. This easement is a standard recommendation made in the absence of any outputs from detailed odour modelling.

⁴ Based on up to 336 residential dwellings. This has since been reduced to up to 320 residential dwellings, and thus peak flows would reduce slightly.

An odour assessment has been undertaken to assess the potential for odours emitted from the WWTW to adversely affect amenity on the proposed development. This is reported separately by AMEC Foster Wheeler (see **Appendix F**). The findings indicate that there should be no significant detriment to amenity within the area of the proposed development and that nuisance from odour is not expected.

5 SURFACE WATER MANAGEMENT

5.1 EXISTING SEWERAGE INFRASTRUCTURE

YW utility records (see extract in **Figure 3** and **Appendix C**) indicate a 225 mm diameter surface water sewer crossing the northern tip of the site and discharging into the River Don.

YW has advised (**Appendix E**) that no buildings or other obstructions are to be erected within 3.0 m, nor trees planted within 5.0 m of the centre line of the aforementioned sewer.

5.2 SURFACE WATER DRAINAGE AT THE EXISTING SITE

The drainage survey (**Appendix D**) confirms that the surface water runoff from the majority of impermeable surfaces is directed to the River Don via 12 outfalls. There are no on-site surface water attenuation storage facilities, and the surface water runoff discharges to the river at unrestricted rates.

Based on site topography and ground conditions, surface water runoff from permeable surfaces would be expected to flow overland towards the River Don and/or slowly infiltrate where conditions allow.

5.2.1 Surface Water Runoff Rates

The peak discharge rates of surface runoff from the impermeable surfaces have been calculated based on:

- The Modified Rational Method; and
- The conveyance capacity of the on-site drainage system (as determined by the drainage survey) utilising the Colebrook-White equation with the Darcy-Weisbach formula (**Appendix G**).

The lower of the two values has been taken to determine the existing peak discharge rates from the impermeable surfaces (as summarised in **Appendix G**).

Greenfield runoff rates from permeable surfaces and impermeable surfaces which are not shown to be positively drained have been calculated using the ICP SUDS method within MicroDrainage (**Appendix H**).

The total peak runoff rates from the existing site determined from the above are presented in **Table 1**.

Table 1: Peak Runoff Rate - Existing Site (13.79 ha)

Annual probability of rainfall event	Peak Runoff Rate (l/s)		
	Impermeable area (approx. 4.81 ha)	Permeable area (approx. 8.98 ha)	Total
1 in 1	378.9	21.5	400.4
1 in 30	897.3	44.0	941.3
1 in 100	1081.9	52.1	1134.0

5.3 SURFACE WATER DRAINAGE AT THE DEVELOPED SITE

5.3.1 Disposal of Surface Water

In accordance with the NPPF Planning Practice Guidance⁵, surface water runoff should be disposed of according to the following hierarchy:

1. Into the ground (infiltration)
2. To a surface water body
3. To a surface water sewer, highway drain, or another drainage system
4. To a combined sewer

As discussed in **Section 3.4**, ground conditions at the site comprise of (potentially contaminated) made ground. As such, disposal of surface water by infiltration is not assessed to be appropriate.

It is therefore proposed to direct all runoff from impermeable surfaces of the redeveloped site to the River Don thereby replicating the existing drainage arrangements and mimicking natural drainage mechanisms.

5.3.2 Post Development Impermeable Area

To facilitate the development of an illustrative drainage scheme, the proposed development has been divided into four drainage areas A to D, with area C being divided into three sub-areas (C1 to C3), as illustrated in **Figure 4**.



Figure 4: Drainage Areas

⁵ Paragraph 080, Reference ID: 7-080-20150323

The proposed development platform for Areas A to D is approximately 8.50 ha. It has been estimated⁶ that approximately 3.65 ha will comprise of impermeable surfaces following redevelopment of the site as follows: Area A = 0.68ha; Area B = 0.44ha; Area C = 2.0ha (C1 = 0.70ha; C2 = 0.77ha; C3 = 0.53ha) and Area D = 0.53ha.

5.3.3 Peak Flow Control

The peak flow rates calculated for the existing site (**Table 1**) have been utilised to calculate the discharge rate for the development platform area (8.5 ha), as shown in **Table 2**.

In accordance with local policy and as agreed with the EA⁷, the peak flow rates have been reduced by 30% (as presented in **Table 2**). The peak flow rates for the redeveloped site are presented in **Table 3**.

Surface water runoff from impermeable surfaces will be restricted to the peak flow rates calculated for the impermeable areas as highlighted in bold/italics in **Table 3** and **Table 4**.

Table 2: Peak Runoff Rate Development Platform (8.5 ha) – Existing Site

Annual probability of rainfall event	Peak Flow Rate (l/s)			30% Reduction
	Impermeable areas (4.81 ha)	Permeable areas (3.69 ha)	Total	
1 in 1	378.9	8.9	387.8	271.5
1 in 30	897.3	18.0	915.3	640.7
1 in 100	1081.9	21.4	1103.3	772.3

Table 3: Peak Runoff Rate - Redeveloped Site (8.5 ha)

Annual probability of rainfall event	Peak Flow Rate (l/s)		
	Impermeable areas (3.65 ha)	Permeable areas (4.85 ha)	Total
1 in 1	259.9	11.6	271.5
1 in 30	616.9	23.8	640.7
1 in 100 + CC	744.2	28.1	772.3

⁶ Drainage areas A to C: Urban Drainage, 3rd Edition, Section 11.3.2, page 247; Drainage area D based on parameters plan (Appendix A)

⁷ Gary Cliff (Environment Agency) confirmed a 30% reduction was acceptable during a pre-application meeting on 17 February 2016

Table 4: Peak Runoff Rates for Redeveloped Site – Drainage Areas A to D

Annual probability of rainfall event	Peak Flow Rate (l/s)						Total
	A	B	C1	C2	C3	D	
1 in 1	48.4	31.3	49.8	54.8	37.8	37.8	259.9
1 in 30	114.9	74.4	118.3	130.1	89.6	89.6	616.9
1 in 100 + CC	138.6	89.7	142.7	157.0	108.1	108.1	744.2

5.3.4 Volume Control

Following redevelopment, impermeable areas will be reduced by approximately 25%. As such, the runoff volume from the redeveloped site will be significantly less than the runoff volume prior to development.

5.3.5 Managing Surface Water within the Development

Based on the development proposals, the required storage volume has been sized to store surface water runoff from the 1 in 100 annual probability rainfall event including a 30% increase in rainfall intensity in order to allow for climate change.

The surface water storage facilities have been modelled using the Detailed Design module of MicroDrainage Source Control (**Appendix I**).

Based on the peak runoff rates provided in **Table 4**, the approximate storage volumes required for each drainage area are as follows:

- Drainage Area A: 96 m³
- Drainage Area B: 64 m³
- Drainage Area C1: 98 m³
- Drainage Area C2: 108 m³
- Drainage Area C3: 76 m³
- Drainage Area D: 76 m³

The above storage volumes do not take into account the storage capacity provided within the on-site surface water pipe conveyance system and additional source and site control SuDS features. As such, the volumes would be expected to change at detailed design.

Attenuation storage could be provided in a number of ways and may include a combination of above and below ground storage facilities, such as geo-cellular storage, attenuation tanks, permeable surfaces, swales, filter stripes, filter drains and detention basins.

The type, sizing and location of the storage facilities will be identified as the development proposals progress and will be confirmed at the detailed design stage.

5.4 MAINTENANCE OF SUDS

SuDS elements within the curtilage of the site would be the responsibility of the owner of the site. Surface water pipes built to adoptable standards (Sewers for Adoption 7th Edition) may be adopted by YW (the sewerage undertaker), whilst SuDS in open spaces may be adopted by the local authority or maintained by a management company.

5.5 SUMMARY

The existing drainage system serving the site has been analysed in order to determine the allowable runoff rates for the proposed development. These rates have been used to calculate indicative attenuation storage volumes.

It is anticipated that the attenuation storage would be provided by a mix of devices including sustainable (SuDS) facilities, and that the facilities would be distributed across the site to enable the phased delivery of the development and the integration of the facilities into the development.

The allowable runoff rates are significantly less than existing peak runoff rates from the site, thereby reducing flood risk elsewhere in accordance with planning policy. Also, runoff volumes from the site will be significantly reduced due to the reduction in the area of impermeable surfaces.

The type, sizing and location of the storage facilities will be identified as the development proposals progress and will be confirmed at the detailed design stage.

6 SUMMARY

A drainage assessment has been undertaken of a brownfield site located at Oughtibridge Mill, Oughtibridge near Sheffield.

The assessment reviews how surface water from the site currently drains and how foul water from the previously operational site was managed, and presents illustrative schemes for the management of surface and foul water from the proposed development.

The schemes have been developed for planning purposes and will be subject to further refinement as the development proposals develop.

The assessment has been undertaken in accordance with the requirements of national and local planning policy and should be read in conjunction with the Flood Risk Assessment report prepared by Weetwood, which addresses flood risk for the proposed development (ref: Flood Risk Assessment – Oughtibridge Mill, Oughtibridge, Sheffield; Final Report v1.0, March 2016).

A summary of the principal findings and proposals is provided below.

Foul Water Drainage

- Yorkshire Water (YW) has confirmed that there is capacity in the local foul sewer network and wastewater treatment works (WWTW) to receive, convey and treat foul flows from the proposed development.
- It is anticipated that two on-site pumping stations would be required to pump foul water to the approved connection point on the 225 mm combined sewer in Main Road/Langsett Road North.
- According to YW public sewer records, there is no foul sewerage infrastructure located within the site boundary.
- Wharnccliffe Side WWTW is located approximately 80 m north of the site. An odour assessment demonstrates that there should be no significant detriment to amenity within the area of the proposed development and that nuisance from odour is not expected. As such, residential land-use would be acceptable as set out on the illustrative masterplan for the development.

Surface Water Drainage

- A drainage survey confirms that surface water from the majority of impermeable surfaces is currently directed to the River Don via an on-site drainage system via 12 outfalls. There are no on-site surface water attenuation storage facilities and the surface water runoff discharges to the river at unrestricted rates.
- Disposal of surface water from the redeveloped site by infiltration is not feasible due to the presence of made ground and potentially contaminated soils. It is therefore proposed to continue to dispose of surface water to the River Don.

- The proposed surface water drainage strategy reduces surface water runoff rates leaving the site by a minimum of 30%. Following redevelopment, there will also be a reduction in the volume of runoff leaving the site due to a 25% reduction in impermeable surfaces. The betterment delivered by the development will reduce flood risk elsewhere.
- The attenuation storage could be provided by a combination of above and below ground storage facilities, including cellular storage, attenuation tanks, permeable surfaces, swales, filter stripes, filter drains and detention basins.
- Surface water pipes built to adoptable standards (Sewers for Adoption 7th Edition) may be adopted by the sewerage undertaker (YW).
- Options for maintenance of SuDS facilities in open spaces include by Sheffield City Council or by a private management company.

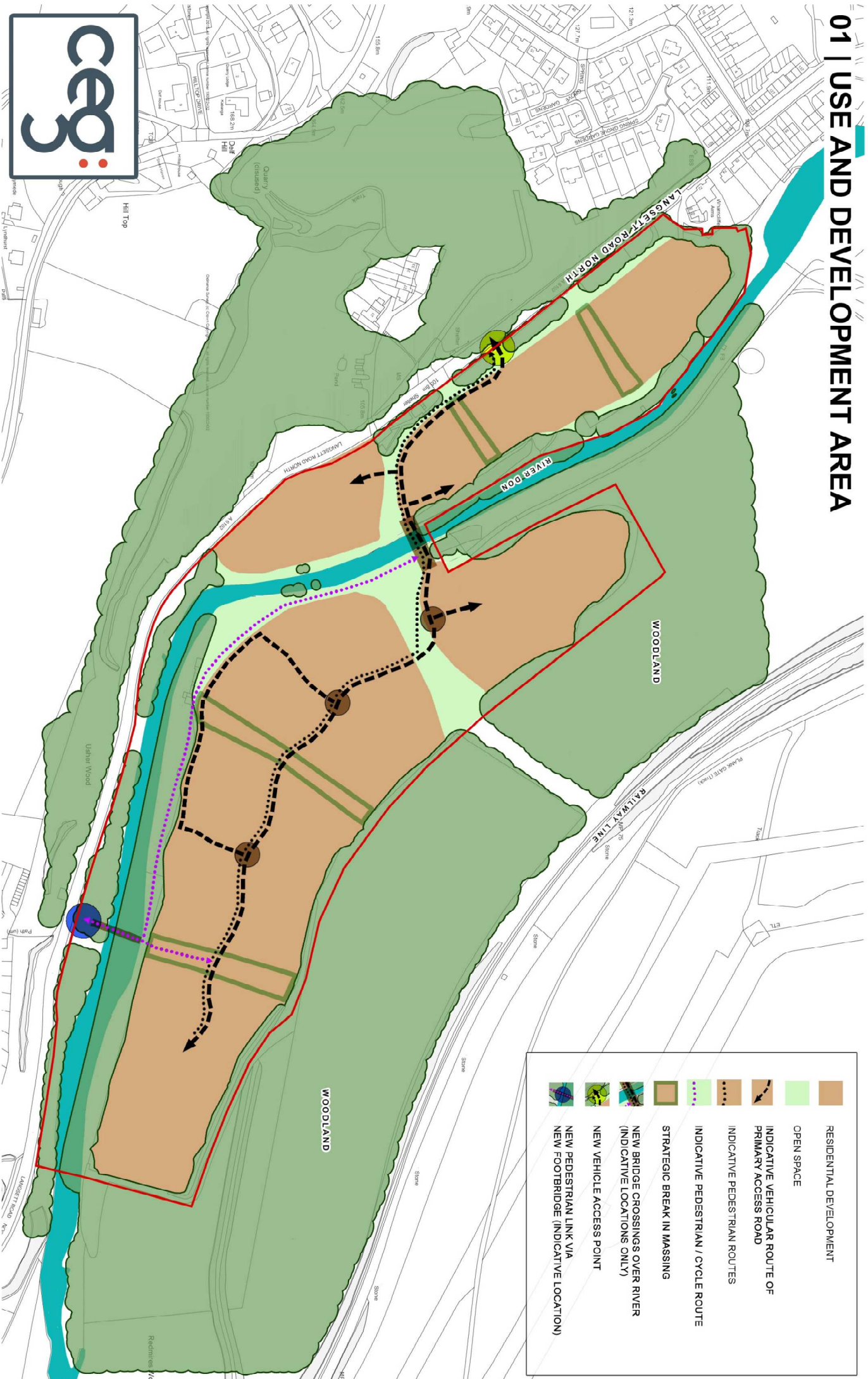
Conclusion

This drainage assessment has demonstrated that surface water from impermeable surfaces and foul water from the developed site can be sustainably managed in accordance with local and national planning policy and guidance.

APPENDIX A:

Parameters Plan

	RESIDENTIAL DEVELOPMENT
	OPEN SPACE
	INDICATIVE VEHICULAR ROUTE OF PRIMARY ACCESS ROAD
	INDICATIVE PEDESTRIAN ROUTES
	INDICATIVE PEDESTRIAN / CYCLE ROUTE
	STRATEGIC BREAK IN MASSING
	NEW BRIDGE CROSSINGS OVER RIVER (INDICATIVE LOCATIONS ONLY)
	NEW VEHICLE ACCESS POINT
	NEW PEDESTRIAN LINK VIA NEW FOOTBRIDGE (INDICATIVE LOCATION)



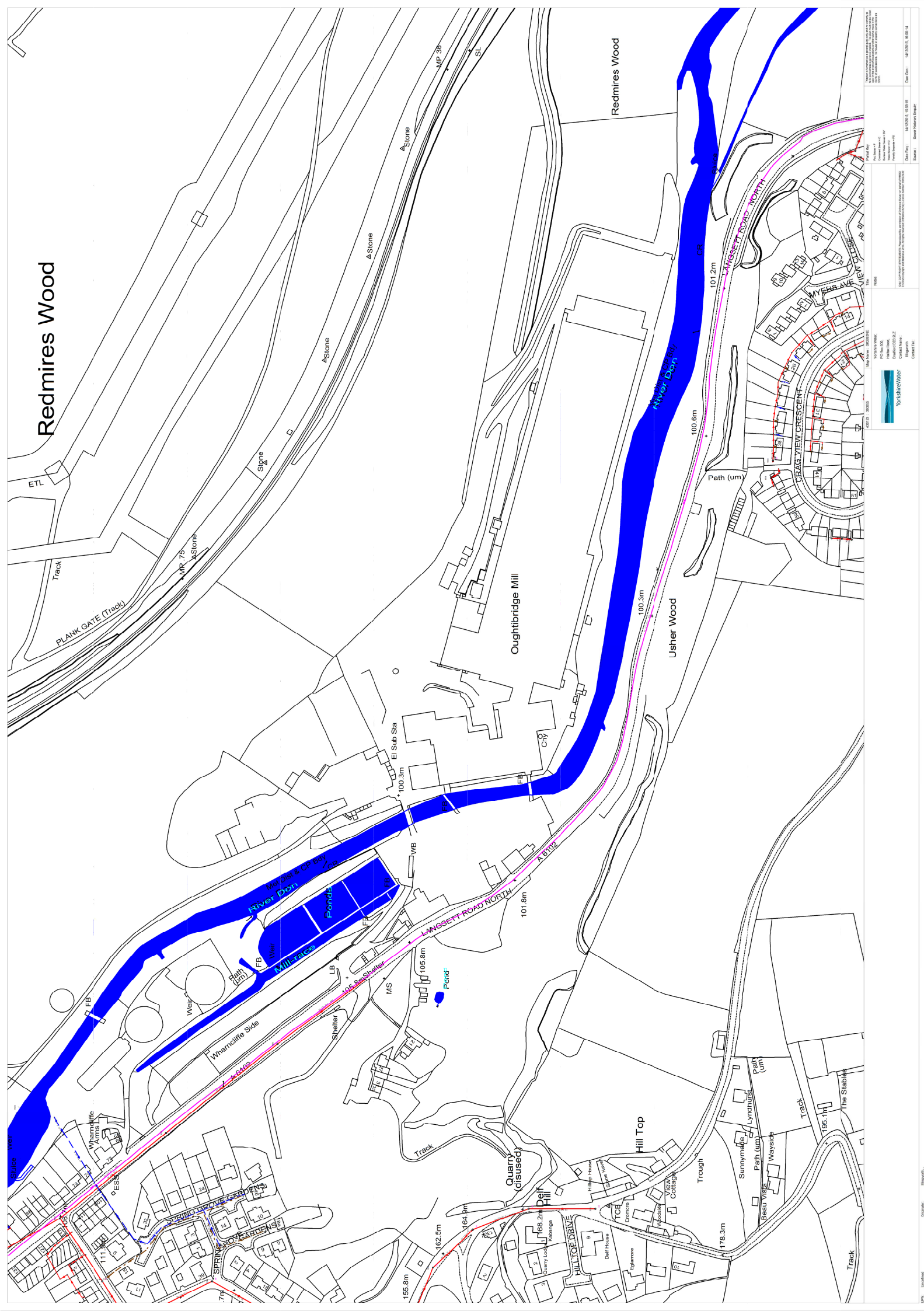
APPENDIX B:

Topographic Survey

APPENDIX C:

Yorkshire Water Sewer Records

Redmires Wood



APPENDIX D:

On-site Drainage Survey

APPENDIX E:

Correspondence with Yorkshire Water

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London
EC1M 6EJ

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Developer Services
Sewerage Technical Team
PO BOX 52
Bradford
BD3 7AY

For the attention of Keely Bonser

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Fax: (01274) 372 834

Your Ref:
Our Ref: R019067

Email:
[Technical.Sewerage@yorkshirewater](mailto:Technical.Sewerage@yorkshirewater.co.uk)
.co.uk
For telephone enquiries ring:
Robert Illingworth on 0345 120
8482

Date: 02/02/2016

Dear Sirs,

Oughtibridge Mill, Sheffield - Pre-Planning Residential Sewerage Enquiry on
R028288

My understanding is that trade flows went to sewer under a trade consent of
1 l/s a max volume of 2m3 between 09:00: 1700.

I'll accept the employment number of 161. Flow pp of 100 l/pp. This should be
averaged over the operating hours (correct me if I'm wrong please, the mill didn't
operate 24 hrs?).

The two flows equate to 1.5 l/s.

The potential peak flows from your development of 336 dwellings is 5.7 l/s.
The volume to come off goes from 18.1 m3/day to 164.64m3/day.

Both these measures are greatly in excess of the previous site usage.

But, having reviewed all other sources of information I have available I've come
to the conclusion that the 225 mm diameter public foul sewer in Main Road is
capable of accommodating the anticipated flows from your proposals.

If you have any other queries please get in touch.

Yours faithfully
(Embedded image moved to file: pic28442.jpg)

Robert Illingworth
Senior Engineer
Developer Services

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For the attention of Keely Bonser

Tel: 0345 120 8482
Fax: (01274) 372 834

Your Ref:
Our Ref: R019067

Email:
[Technical.Sewerage@yorkshirewater](mailto:Technical.Sewerage@yorkshirewater.co.uk)
.co.uk
For telephone enquiries ring:
Robert Illingworth on 0345 120
8482

Date: 18/01/2016

Dear Sirs,

Oughtibridge Mill, Sheffield - Pre-Planning Residential Sewerage Enquiry on
R028288

Further to my previous correspondence I have received comment from my Treatment
colleagues, copied below.

"The anticipated domestic foul flows can be accommodated at the WWTW, however it is
imperative that a separate outfall is provided for surface water.

Part of the site lies within 400m of Wharnccliffe Side waste water treatment works
and it is likely that future occupiers would encounter smell/fly nuisance. I
therefore feel that no properties should be built within 400m of the works."

Foul water may therefore discharge to Wharnccliffe Side WWTW, however the public
sewer network does not appear to have adequate capacity available to accommodate
the anticipated foul water discharge from this proposal site.

Further information regarding the discharges from the site in its current/previous
usage will better inform this decision. Details of any trade flows, domestic flows
or surface water flows that have or will be surrendered which returns capacity to
the public sewer network, in particular the 225 mm diameter public combined sewer
in Main Road adjacent the site should be submitted for our consideration.

Failing this a feasibility study, carried out under section 98 of the Water
Industry Act 1991 and at the developers expense, will be required to determine

suitable foul connection points, any available capacity in the public sewer network, together with any likely costs and timescales for any potential upgrading works required. For further information, an application should be made in writing to the address above.

Additionally no properties should be built within 400 metres of Wharncliffe Side WWTW, in the interests of minimising the risk of odour, noise and nuisance to future residents.

Should you wish to discuss this matter further please call our office on the above number.

Yours faithfully

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Robert Illingworth
Senior Engineer
Developer Services