Local Plan – Regulation 24

Main Modifications Consultation

Responses Received

Part 2 of 5 - Response 88

Rossendale
BOROUGH COUNCIL

Table of Contents

Responses received after 5pm on Friday the 15th of October 2021

Classification of Responses

Response Number	Name	Reference Number	Allocation / Policy Reference (if applicable)	Nature of Response
1	National Highways	Numerous	Numerous	Numerous
2	Historic England	Numerous	Numerous	Numerous
3	Michael Watson (Renaker)	-	HS2.39	Request the allocation of a housing site
4	Carlo Latronico	MM009	H3	Objection
5	Jason & Sarah Menzies	MM009	H3	Objection
6	Ian Francis	PM-05	H34	Map Amendment
7	Deborah Brown & Andrew Morris	MM009	H3	Objection
8	Elizabeth & John Finn	MM009	H3	Objection
9	Public Health Planning	MM038	-	Support
10	Tracey McMahon	MM009	H3	Objection
11	Historic England	Errata	-	-
12	Homes England	-	-	-
13	Katrina & Steven Meager	MM009	H3	Objection
14	J & H Walton	MM009	H3	Objection
15	Nicholas Cousins		H34	Objection
16	Deena Burns	MM009	H3	Objection
17	Sarah & Andrew Hardman	MM009	H3	Objection
18	The Coal Authority	-	-	-
19	Julie Baugh	MM009	H3	Objection
20	Jack Woodworth	MM009	H3	Objection
21	Richard Holt	MM009	H3	Objection
22	Sophie Schofield	MM009	H3	Objection
23	Steve Hughes	MM009	H3	Objection
24	Maybern Planning	Numerous	Numerous	Numerous
25	Catherine Hodge	MM009	H3	Objection
26	Dave Terry	MM009	H3	Objection
27	Chris Brannan	MM009	H3	Objection
28	Chris Baugh	MM009	H3	Objection
29	Jack & Dorothy Norris	MM009	H3	Objection
30	Wendy Grimshaw	MM009	H3	Objection
31	Sharon Rumsam	MM009	H3	Objection
32	Margaret Burton	MM009	H3	Objection
33	Samuel Whittaker	MM009	H3	Objection
34	Mary & Roy Fletcher	MM009	H3	Objection
35	Gillian Whittaker	MM009	H3	Objection

36	The Limey Valley Residents' Association	MM009	H3	Objection
37	David Foxcroft	MM009	H3	Objection
38	Andy Ashworth	MM009	H3	Objection
39	Phil Hackett	MM009	H3	Objection
40	United Utilities	MM048	ENV9	Support
41	Lisa Hunt	MM009	H3	Objection
42	Sport England	MM009	H46	Support
43	David Schofield	MM009	H3	Objection
44	Rossendale Civic Trust	-	-	Rossendale is not capable of sustaining the proposed housing / Farming has not been acknowledged
45	Wesley Mort	MM009	H3	Objection
46	Craig Scott	MM009	H3	Objection
47	Sally Dewhurst	MM009	H3	Objection
48	Mark Booth	MM009	H3	Objection
49	Christine Smithies	MM009	H3	Objection
50	Josh Sutton & Fiona Shaw	MM009	H3	Objection
51	Anne McKown	MM046	ENV7	Query / Support of closing paragraph
52	Home Builders Federation	Numerous	Numerous	Numerous
53	Carol Clement	MM009	H3	Objection
54	Nancy Kelly	MM009	H3	Objection
55	Mason Woods	MM009	H3	Objection
56	Philip & Gillian Amatt	MM009	H3	Objection
57	Dorothy Graham	MM009	H3	Objection
58	Adam Dawson	MM009	H3	Objection
59	Kevin Woods	MM009	H3	Objection
60	Natural England	-	-	-
61	Elizabeth Foy	MM009	H3	Objection
62	John Atherton & Lynne Lomax	MM009	H35	Concerns regarding methane, acid mine water and heavy metals contamination
63	Peter Stansfield	MM009	H3	Objection
64	Dylan Woods	MM009	H3	Objection
65	Sharlyn Mckittrick	MM009	H3	Objection
66	Planware (McDonalds)	MM038	R5	Objection
67	Grane Residents' Association	MM009	H64	Objection
68	Kevin Bent	MM009	H3	Objection
69	Jason Norris	MM009	H3	Objection
70	Kaye Abbott	MM009	H3	Objection
71	Christopher Turner	MM009	H3	Objection
72	Mrs Turner	MM009	H3	Objection
73	Maybern (Westchurch Homes)	Numerous	Numerous	Numerous

74	Morgan Woods	MM009	H3	Objection
75	Marie Charlton	MM009	H64	Objection
76	Jonathan & Sonia Lofthouse	MM009	H3	Objection
77	CBRE (United Utilities)	MM009	Cowm Water Treatment Works (prev. H69)	Gives supporting evidence for the re-instatement of the housing allocation
78	Christine Hereward	MM009	H3	Objection
79	Lead Local Flood Authority	Numerous	Numerous	Numerous
80	Victoria Holt	MM009	H3	Objection
81	CBRE (United Utilities)	MM009	H24	Support
82	Phil Nelson	MM009	H3	Objection
83	Rossendale Primary Care Network	-	-	Request infrastructure or financial support via s106/ CIL
84	SSA Planning (KFC)	MM038	R5	Objection
85	David Graham	MM009	H3	Objection
86	Edenfield Community Neighbourhood Forum	Numerous	Numerous	Numerous
87	Pegasus Group (Taylor Wimpey)	Numerous	Numerous	Numerous
88	Roman Summer	Numerous	Numerous	Numerous
89	Hall Park Residents' Association	MM028	NE2	Numerous
90	Hourigan Connolly	Numerous	Numerous	Numerous
91	Turley (Peel L&P)	Numerous	Numerous	Numerous
Responses received after 5pm on Friday the 15th of October 2021				
92	McDermott Homes	Numerous	Numerous	Numerous
93	Christine Catlin	MM009	H3	Objection
94	Gillian Whitehead	MM009	H3	Objection
95	Michael Bennett	MM009	H3	Objection
96	Chris Ashworth	MM009	H3	Objection
97	Caroline Mitchell	MM009	H3	Objection
98	Campaign to Protect Rural England	Numerous	Numerous	Numerous

ROMANSUMMER

Forward Planning
Rossendale Borough Council
One Stop Shop
Bacup
OL13 0BB

Our ref: G187/L002
Date : 12 October 2021

Dear Sir / Madam

ROSSENDALE LOCAL PLAN
MAJOR MODIFICATIONS AND ADDITIONAL MODIFICATIONS
REPRESENTATIONS ON BEHALF OF TURNBULL & STOCKDALE AND LIZ FAULKNER / GRAHAM MOXON / RUTH TAYLOR

We act for the owners of Edenwood Mill and adjacent land (*Turnbull and Stockdale and Liz Faulkner / Graham Moxon / Ruth Taylor*), and are instructed to provide the following comments in respect of the Council's Schedule of Main Modifications, associated changes to the Policies Map and Additional Modifications, and the Council's response document in respect of changes to the NPPF.

NPPF Implications

The Council has correctly identified that the word 'beautiful' appears in a number of places in the 2021 NPPF, but it does not suggest any changes to the emerging Plan, stating (on page 4) that the Plan 'seeks to achieve beauty' by virtue of policy ENV1.

We suggest that the Council should go one step further, and – mirroring more precisely and positively the wording of the recently revised NPPF – should introduce an explicit reference to the desire to create 'beautiful' environments in Rossendale as part of policy ENV1. We have suggested possible wording below in respect of draft policy ENV1.

Additional Modifications

Our client raises no concerns or comments about any of the Council's AMs.

Major Modifications

MM001 – Spatial Strategy

We suggest that the word 'beautiful' be inserted into the 'Local Plan Vision', because (presumably?) part of that vision is to reflect the NPPF's and the Council's aspiration to create beauty in all developments in Rossendale.

MM004 - Strategic Policy SD2: Urban Boundary and Green Belt

We suggest that the words "where viable" are added, as below :

'Where viable**,** ~~D~~development will also be expected to contribute to compensatory improvements to land elsewhere in the Green Belt, enhancing both its quality and public access.'

We raise this because it is not beyond the realms of possibility that certain developments might not be able to carry the extra cost of compensatory measures. If such additional costs are simply not affordable (and that is demonstrated via the submission of a robust viability appraisal), the Plan should not then be preventing the delivery of good quality developments (and housing that is deemed critical to the Borough's supply) solely on the basis that it is not viable to contribute towards off site compensatory measures.

The addition of the words 'where viable' would not weaken the policy, but simply allow for flexibility going forward in the event of any unavoidable viability issues that might be faced.

MM005 - SD4 Green Belt Compensatory Measures

As above, we suggest that reference is made to viability, as below :

'Where land is to be released for development, and where viable, compensatory improvements to the environmental quality and accessibility of the remaining Green Belt land will be required.'

MM008 - Policy HS2: Housing Site Allocations

We welcome / support the transference of site H63 (Edenwood Mill) to delivery years 1 to 5.

Our clients also continue to support Policy H63, which has been redrafted as part of MMs. We comment below on what we continue to consider to be an omission of land from the allocation, but in terms of the policy itself we wish to make the following comments.

First, the policy lists *some* of the requirements of a future planning application – a Heritage Assessment, a Flood Risk Assessment, a Transport Assessment, an Ecological Assessment and a Tree survey / assessment. While our clients have no issue with these requirements, these are 'givens' for any planning application of the scale / type of this allocation (and indeed all other allocations which also list out the documents). That said, we question whether it is really necessary to list such obvious application documents in a Development Plan policy? There is a national validation checklist in place, and a local one. Documents required by the LPA are on those lists, and will be further flushed out during any pre-application discussions.

In respect of specific requirements of the policy, part 1 seems to assume that Edenwood Mill is capable of being retained and refers to somewhat vague 'suitable mitigation measures'. We are not

clear what the latter is alluding to, and we suggest / request that it is clarified in the interests of all parties.

The policy's explanatory text makes a similar assumption, in stating :

'The capacity of the site allocation is based on the retention and conversion of Edenwood Mill and its associated buildings'

In April 2020, we engaged in pre-application discussions with the LPA and provided a structural report, which pointed to the very poor and dangerous state of the former mill. The mill has been unused for three decades. It is in derelict, deteriorating and dangerous condition. Theft of roofing lead, slates, structural columns and everything else of perceived value, and multiple arson attacks and fires, have accelerated that process and proven impossible to halt.

While its walls are largely intact, those are seriously buckling and much of the roof has collapsed. This is confirmed in the Structural Report prepared by Michael Pooler Ltd (which the Inspector has had sight of), which concludes :

'I consider the viability of conversion and retention of the current industrial complex for the domestic housing market to be unrealistic, not only for the architectural challenges to the existing format but also for the extensive issues of health and safety within the works as a whole. Upgrading and repairing the existing structural layout for today's housing markets would be considerable, and I consider that the costs for any attempted conversion would be excessive and uneconomical in today's climate.'

We have also provided a Viability report (prepared by Nolan Redshaw), which set out 4 development appraisals based on industry recognised standards and assumptions (all pre-Covid). It is self evident from those appraisals that – in realistic commercial terms – there is no prospect whatsoever of Edenwood Mill being retained. The cost of structural repair, restoration and conversion is such that it hugely outweighs the likely level of return, even in the event that the entirety of the land – ie all land, including the omission land (Plot B – see below) that our clients seek to include in the allocation – was to be developed for housing. Nolan Redshaw concluded that:

> The only scheme which would make an acceptable profit and is likely to be attractive to any commercial developer would necessitate the clearance of the site and the development of all land for new housing.

Bear in mind that those appraisals were pre-Covid. It is well known that the cost of construction materials has risen drastically over the past 12 months, so that is a further negative / balancing consideration that ought to be factored in.

With that in mind, we question part 1 of the policy, and whether it has been framed realistically? On the face of it, is appears that the LPA has not read or understood the viability and structural

information provided by our clients in April 2020. We suggest that this matter be revisited from a realistic perspective based on that evidence.

In respect of part 5 of the policy, we engaged positively in the Council's recent *Green Belt Compensation* exercise, when it was put to us that the Edenwood Mill site might contribute towards off site footpath improvements. We responded to that exercise by agreeing in principle that – subject to viability issues – a financial contribution of circa £40,000 towards such measures seemed reasonable enough.

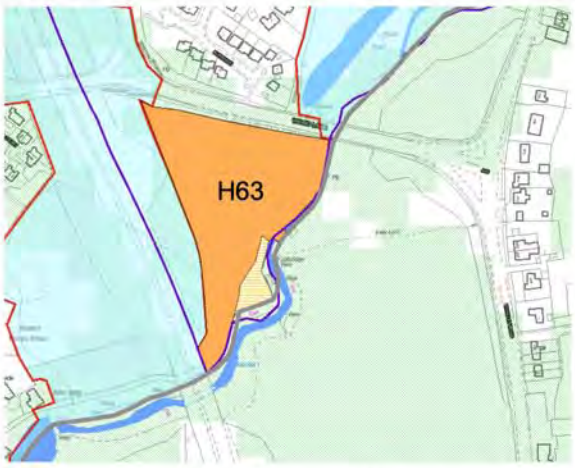
Our clients are therefore surprised to note that the list of possible compensatory contributions has been extended in the new policy, to include Edenfield Cricket Club and the Recreation Ground. We note that other proposed allocations have been presented with the same list.

Our clients understand the concept of Green Belt compensation, and have already accepted that – subject to viability – the Edenwood Mill site might contribute, but they are concerned that the list has grown to cover items that were not previously flagged for this allocation.

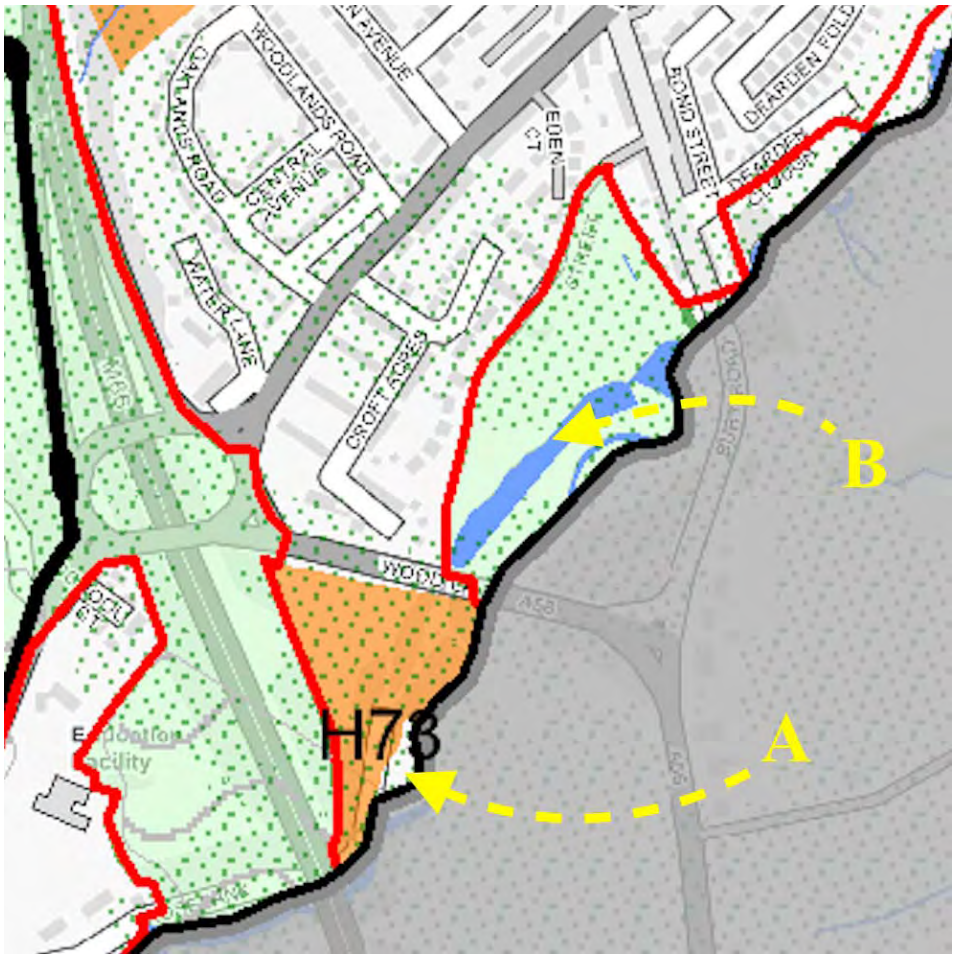
All of the above inevitably comes down to viability, which is why we have suggested the inclusion of references to viability elsewhere.

We note the intent to produce supplementary guidance on compensation measures at a future date, but the reality is that that will take time to produce, and in the meantime – given that developers will wish (quite rightly) to push forward and deliver much-needed housing promptly – our clients are anxious that the references to these compensatory measures are too vague. That is not to suggest that Edenfield Cricket Club or Recreation Ground should not be improved (they should be and our client is fully supportive of that), but rather that the Plan is vague on what exactly this might entail. We consider that such measures (and other compensatory measures) ought to be explained in more detail in the Plan itself, even if more detailed guidance is intended to be produced in a yet-to-be-clarified timeframe.

Cont/d …

Boundary Ref	PM-06	**Previous Boundary ref (if applicable)**	GB(Major)8
Address	Edenwood Mill, Edenfield		
Proposal	New proposed housing allocation boundary at Edenwood Mill, Edenfield		
Map Key			
Submission Version Site Boundary			
Main Modification Site Addition			
Existing Green Infrastructure			
Maps are not at a standard scale			
Crown copyright and database rights [2021]. Ordnance Survey [100023294]			
Reason for change	To include the associated car park within the proposed housing allocation.		

In terms of the schedule of changes to the Policies Map, which shows the extent of the proposed allocation (as above), our clients welcome the inclusion of former car park within the allocation (referred to as 'Parcel A' on the plan below). However, our clients remain disappointed that the full extent of their land is not proposed for release, with reference to 'Parcel B' on the plan below.



We have made representations on Plot 'B' previously, so none of what follows is new to the LPA or Inspector. We request that Plot B is revisited.

We have previously noted that this land (Plot B) comprises a former man-made lodge and adjacent land, which we have suggested is capable of accommodating a modest number of new homes.

The land on the western side of Plot B (to the immediate rear / east of Croft Hey) comprises a wooded embankment and the access track (all owned by Turnbull). We have previously suggested (and continue to suggest) that – through design excellence – this land might accommodate a number of high quality, bespoke, exemplar houses, nestled against the hillside. This will of course be a matter for detailed design and careful consideration of trees and biodiversity, but we previously provided a landscape analysis document and indicative masterplan as part of the pre-application exercise (all of which the Inspector has had sight of and is represented as part of these representations). We also provided a flavour of the type and quality of the small number of exemplar homes we anticipate might be accommodated on that Plot B land.

In our previous representations, we have commented on the extent to which the 'Plot B' land contributes to the purposes of the Green Belt. We revisit that below, and in doing so we continue to question the extent to which it fulfils any of the purposes.

To check the unrestricted sprawl of large built-up areas

The release of this discrete parcel of land (Plot B) as part of a larger allocation H63 will not result in the *'unrestricted sprawl'* of a large built up area. Edenfield is not a *'large built up area'*. The land (as a whole) is an ideal site for release from the Green Belt, for reasons of its self-containment. It is a logical 'flex' extension, which – aside from the Mill itself - lacks overall visibility, and the stream that flanks the eastern edge removes any opportunity for 'urban sprawl' or encroachment. Nor is the land 'open' in true sense, which is the principal attribute of any Green Belt. The lower portion is dominated by the large derelict mill complex, and much of the remainder of the land is wooded and flanked by mature vegetation, which serves to erode any real sense or perception of openness.

To prevent neighbouring towns merging into one another

Edenfield is not a town. It is a village. The release of the site for what will be a modest number of homes will be barely perceptible when considering both the actual and perceived gap between settlements and the steep relief of the land, in this case between the village of Edenfield and the nearest town in that direction - Rochdale (some 6 miles away).

To assist in safeguarding the countryside from encroachment

The large derelict mill complex dominates the immediate setting and fixes the extent of any development. There can and will be no encroachment beyond that. The part of the site that is accessed via Wood Lane is 'sandwiched' between the dual carriageway and the mill complex, and in the context of the adjacent M66 and its infrastructure. That part of the site does not read as true countryside, but rather an unprepossessing gap site flanked by hard, manmade development.

To preserve the setting and special character of historic towns

Edenfield is not a town. It is a village. It can reasonably be described as a historic village, but its historic core is some distance from the subject land. Modern housing flanks its eastern edge (albeit at a much higher level). Building houses on site Parcel B will not impact upon the historic core of the village. It will flank 1970s / 80s housing.

To assist in urban regeneration, by encouraging the recycling of derelict and other urban land

It is very evident that, while the emphasis correctly remains on reusing brownfield land (as is the case for much of allocation H63), there is insufficient brownfield land to accommodate the future needs of Rossendale Borough. It is for that reason the Council is faced with no option but to release sizeable tracts of Green Belt land in order to accommodate its needs. Put simply, there is not sufficient brownfield land to accommodate future needs, and as such it cannot sensibly be suggested that the release of this relatively small, discrete parcel of land (Plot B) might prejudice the use of derelict and other urban land in the Borough.

The above summary suggests to us that Plot B does not serve any true Green Belt purpose, and it is therefore a good, sustainable and obvious 'flex' location and ought to be released as a housing allocation as part of a widened allocation at Edenwood Mill.

To further inform our representations, Square Yard Landscape Architects produced a *Green Belt Study and Preliminary Landscape and Visual Impact Assessment* for the land as part of the pre-application exercise, and prepared both constraints and indicative layout drawings to assist the LPA and Inspector Child in their consideration of the proposed allocation and Plot B.

Square Yard critically appraised the *'Lives and Landscapes'* document that was prepared on behalf of the Council, and in that appraisal they raise questions about certain of the assumptions and conclusions therein (see Square Yard's document entitled *"Appraisal of Previous Landscape Assessment for the Site 'Lives And Landscapes'"*).

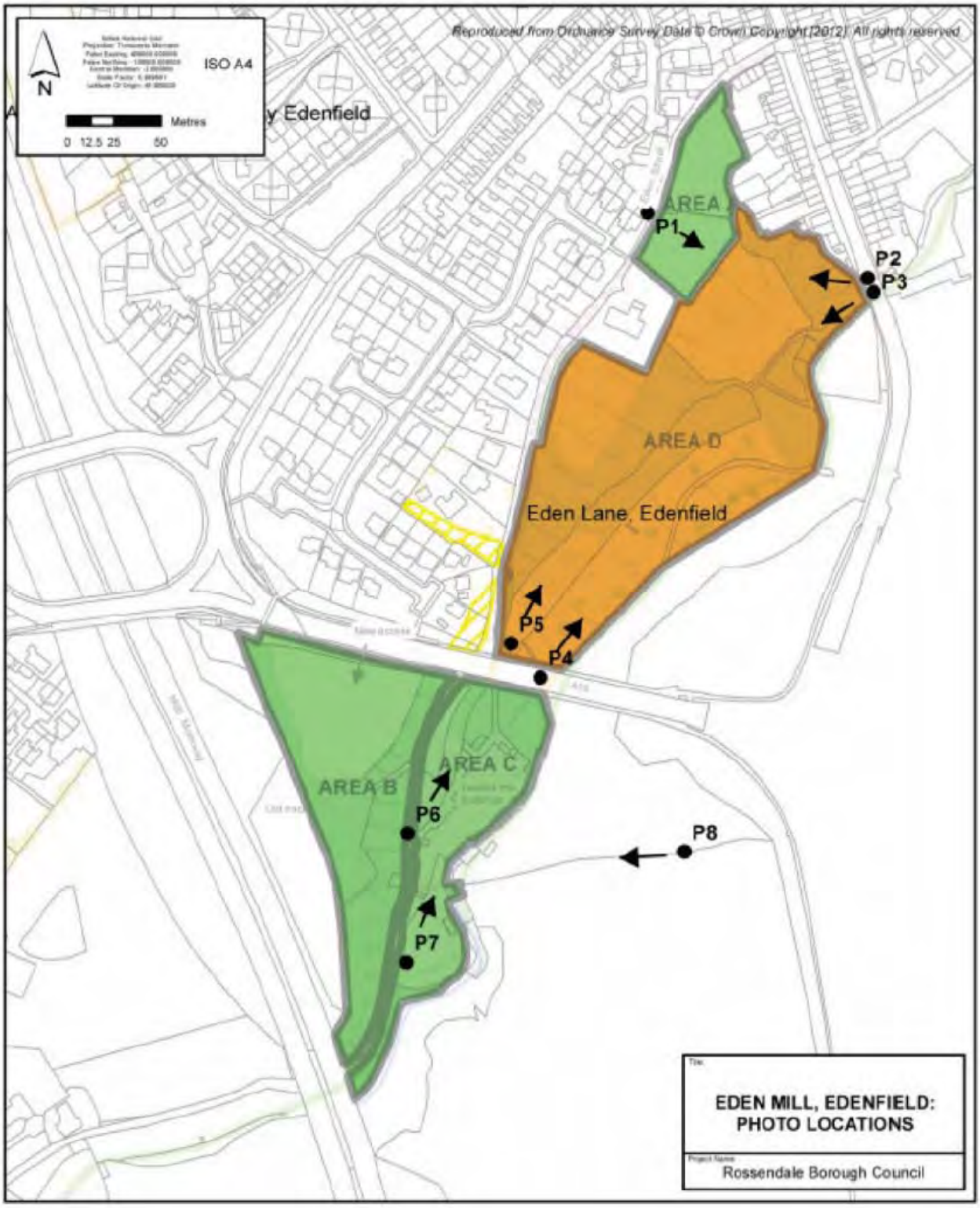
Square Yard consider the entirety of our clients' land, but focus in particular on 'Plot B', which is referred to as 'Area D' in the *Lives and Landscapes* assessment extract on the following page.

Square Yard noted that, since Lives and Landscapes was produced, 'Area A' on the plan on the following page has been developed for housing.

Based on the guidance set out in *'Guidance for Landscape and Visual Assessment 3rd Edition'*, Square Yard have suggested that the site as a whole (including Plot B / Area D) has a **Low** susceptibility to change because :

- It is located within the Settled Valleys LCA and within the Town and Fringe Classification. Key characteristic of both designations included modern residential housing areas.
- The site is comprised in the main of the previous mill pond and could be considered Brownfield or Previously Developed Land under the definition outline in the NPPF.

- The site is bounded on two sides by existing residential development and recent allocations to the south west of the site assumes further development of that nature.
- Existing built form is evident in all views towards and within the site including both residential development and the infrastructure (bridge) features.



As such, Square Yard considers that the site's susceptibility to change (particularly in the form of residential development) is **Low**. It suggests that residential development will not be out of context with either the wider landscape character area or with its location at the town fringe. Residential development does (or will) exist on three sides of Plot B and as such the proposed development as indicated on the enclosed indicative masterplan would not be out of context with adjacent land uses.

Square Yard considers that the site has a **Medium/Low** Landscape Value. It is noted that the land has no formal landscape designations at national, regional or local level. It has no official designations in terms of biodiversity or habitat value such as SSSI, Nature Reserves etc. It is not a 'valued landscape' in NPPF terms. While there are some mature trees on the site, those are sporadic and, although of some value in visual amenity terms, are in poor condition as individual specimens. Vegetation across the site comprises mainly of self-seeded saplings and extensive areas of brambles. These are neither high quality visually nor ecologically.

It is suggested that built form on the site comprises the mill pond, dilapidated stone walls, modern security fencing (of poor visual value) and low-quality agricultural fencing. There are no rare or particularly high value elements of built form on the site. The majority of such elements are detrimental to the visual amenity at site level. The site has no notable sense of tranquillity, with road infrastructure both highly visible and audible across the whole area.

Square Yard point to the positive effects that housing development could deliver when considered against the baseline position, such as :

- Improved permeability and public access to the site, with notable improvements to functionality, access and safety of the public environment.
- The removal of a variety of unsightly and unsafe items from the site, improving visual amenity and safety for site users.
- Improved passive surveillance of the site, helping to alleviate evident anti-social behaviour (noted in particular to the area beneath the overpass bridge).
- The introduction of a high quality landscape scheme and habitat management provision which will generate an uplift in visual amenity and biodiversity value over the baseline.

Mirroring our own consideration of the land against Green Belt purposes (as summarised earlier), Square Yard suggested that, based on its analysis of the baseline environment, its recommendation is that 'Area D' ('Plot B') should be considered appropriate for residential development subject to appropriate design and mitigation measures. It suggests that the existing line of the proposed Green Belt allocation seems illogical, given the existing boundaries of the landscape character area and settlement edge. Given that adjacent sites are (or will be) developed for residential development, Area D sits more logically in context with the settlement to the north and west than with the rural area to the south and east. The exclusion of Area D from the housing allocation would therefore create an odd and inappropriate 'indent' in the settlement edge.

It is therefore suggested that the line of the Green Belt would be better placed following the stream/brook along the eastern boundary of Area D as it does on the adjacent sites. The topography of the valley and line of the watercourse provide a logical edge to the Green Belt. Even

with this minor 'flex' in the settlement edge there remains extensive open land to the south and east to continue to support the 5 main functions of the Green Belt.

Indicative Masterplan and Site Capacity

On the basis of its landscape analysis, and informed by the technical advice of Highways Solutions (access matters) and Betts Hydro (drainage and flood risk), Square Yard produced 2 reports and 3 drawings that accompany these papers, namely :

- Preliminary Landscape and Visual Appraisal
- Appraisal of 'Lives and Landscapes'
- Drawing ref: YD2_EW_SP001 – Site Red Line Boundary Plan
- Drawing ref: YD2_EW-CP001 – Site Constraints Plan
- Drawing ref: YD2_EW-MP001 – Indicative Masterplan

For the convenience of the Inspector and interested parties, all of the above are re-submitted in support of these representations, and we request be revisited.

The indicative masterplan indicates realistic locations for housing, access arrangements and areas retained for parking, open space and tree / ecological mitigation management. That plan suggests that, if the entirety of the land was to be allocated for housing, its capacity would be **circa 66 dwellings** (not 47 as suggested in the current allocation) with ample space for amenity open space and retained woodland / ecological measures.

The ultimate housing figure will of course depend on precise design, layout and density, but these representations (when read in the round with the supporting information) demonstrate quote clearlt that our clients' land is readily capable of accommodating in the region 66 dwellings.

Our client accordingly objects again to the proposed ongoing Green Belt designation of Plot B and requests its allocation for housing as an extension to site H63. Plot B does not fulfill any of the purposes of Green Belt when it is considered in its own right, and particularly given the proposed release of adjacent land. Plot B will be left as little more than an 'indent' in the newly formed settlement boundary, and that will serve no meaningful or logical purpose.

While we acknowledge that all of this has been presented previously and that the LPA – in its pre-application letter – has disagreed in respect of Plot B, we consider that the Council is wrong. Due consideration has not been given to the suite of documentation that supported that pre-application request.

We therefore request that this matter is revisited by both the LPA and the Inspector. More sensitive, open and prominent Green Belt land, that better serves the purposes of Green Belt designation than Plot B, is proposed to be released elsewhere in Edenfield. The allocation of Plot B for a modicum of housing would enable the reduction of other, more sensitive Green Belt allocations in Edenfield.

MM040 - Strategic Policy ENV1: High Quality Development in the Borough

We suggest the introduction of the following wording at the outset of the policy :

'Reflecting NPPF 2021 and the Council's ambition to create beautiful buildings, spaces and places throughout Rossendale, all proposals for new development in the Borough will be expected to …'

This is a design-focused policy and yet no explicit mention is made about design / architectural quality? We suggest therefore that an additional criterion is added to capture this, along the lines of:

'Demonstration of respect for the specifics of the site, its context and the contribution the proposal will make (in terms of its architecture, lay out and landscaping) towards the creation of beautiful buildings, spaces and places'

In respect of criterion (p), is it really necessary / reasonable that all 'major' developments are required to provide a Health Impact Assessment? This seems to be an onerous requirement that ought to be reserved for developments of genuinely larger scale (as opposed to all 'major' developments, which would include, for example, housing schemes of just 10 units).

We trust that the above comments and the enclosed documents will be given due consideration, and if the LPA or the Inspector require any further information or wish to discuss matters, please do not hesitate to contact Richard Gee at the above offices.

Yours faithfully
Roman Summer Associates Ltd

Richard Gee
Director

GRAEME IVES
HERITAGE PLANNING

Heritage Briefing

Land Off Wood Lane, Edenfield

Turnbull and Stockdale Ltd

March 2020

CONTENTS

1.0 Introduction

1.1 This Heritage Briefing has been prepared on behalf of Turnbull and Stockdale Ltd to consider the potential heritage value of Edenwood Mill, located on land off Wood Lane, Edenfield (the 'appraisal site') in respect to a proposed housing allocation in the emerging Rossendale Borough Council Local Plan.

1.2 Proposed housing allocation H73 incorporates the derelict Edenwood Mill, which principally comprises an early C19th range constructed of stone and an early C20th phase that is constructed of brick. The proposed allocation would require the removal of the mill buildings. Two additional parcels of land are also proposed for inclusion in the current draft allocation, comprising a small area of land immediately to the east of the mill and a larger area of land to the north of the A56, which cuts across the valley on a concrete viaduct immediately to the north of the mill.

1.3 The mill buildings are in a derelict condition. The mill is not included on the 'national list' as a 'designated heritage asset' and is not identified on the Rossendale Borough Council website as a heritage asset. However, during the recent Local Plan EiP the Inspector raised a question as to whether the mill could have 'heritage value' and whether this should inform the proposed allocation.

1.4 This Heritage Briefing therefore provides an initial appraisal of the mill buildings with reference to the relevant policies and definitions of the National Planning Policy Framework (NPPF), guidance contained in the Planning Practice Guide (PPG) and the associated Historic England guidance on Managing Significance in Decision-Taking in the Historic Environment Good Practice Advice in Planning: 2 (2015).

1.5 The NPPF places the following requirements on applicants:

"In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understanding the potential impact of the proposals on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation." (NPPF Paragraph 189)

1.6 This Heritage Briefing provides a proportionate description of Edenwood Mill, which has been informed by an initial site visit, desk-top research and an Historic Environment Record (HER) search. Chapter 2 identifies the heritage assets that could be relevant to the proposed housing allocation and Chapter 3 describes their significance, proportionate to their importance.

2.0 The Relevant Heritage Assets

Introduction

2.1 The NPPF defines a heritage asset as follows:

"A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing)."

Designated Heritage Assets

2.2 The NPPF confirms that designated heritage assets comprise, World Heritage Sites, scheduled monuments, listed buildings, protected wreck sites, registered parks and gardens, registered battlefields and conservation areas.

2.3 The 'national list' (www.HistoricEngland.org.uk) was reviewed on 23rd March 2020. The national list identifies all designated heritage assets with the exception of conservation areas, which are generally designated by Local Planning Authorities (LPAs). There were no designated heritage assets identified on the national list either within or adjoining the proposed allocation site. The nearest designated heritage assets are a small cluster of listed buildings off Stobbins Vale Road, approximately 900 metres south west of Edenwood Mill and separated from the proposed allocation site by the M66 and the topography of the Irwell Valley. A further isolated listed building at Gap Farm, off Bury Old Road, was identified approximately 1,000 metres south-east of Edenwood Mill. Again, the sense of separation is accentuated by the topography of the eastern side of the Irwell Valley.

2.4 The Rossendale Borough Council website was consulted on 23rd March 2020 to identify the location of any relevant conservation areas. The Chatterton and Strongstry Conservation Area is located to the west of the proposed allocation. However, it is physically separated by the M66 corridor, which is quite well enclosed with mature tree cover to the south of the junction with the A56. The landform between Bolton Road North and the River Irwell, which contains most of the conservation area, descends from east to west into the valley floor, and the proposed allocation site is well contained in the secondary valley of the Dearden Brook. It is therefore considered that neither the setting or significance of the conservation area would be affected by the proposed allocation. There are no other conservation areas located within the vicinity of the proposed allocation site.

Non-Designated Heritage Assets

2.5 Historic England guidance on Decision-Taking in the Historic Environment Good Practice Advice Note 3 (2015) advises that non-designated heritage assets may be identified through the following mechanisms:

"Non-designated heritage assets include those that have been identified in a Historic Environment Record, in a local plan, through local listing or during the process of considering the application."

2.6 Rossendale Borough Council does not appear to have published a 'local list' of locally interesting heritage assets and instead their website directs potential inquiries to the Historic Environment Record.

2.7 The Lancashire HER was consulted on 20th March 2020 and identifies the following 'monuments' associated with the proposed allocation site:

Table 2.1: HER Monuments Relevant to the Proposed Allocation Site

HER Reference:	Site Name:
PRN 8329	Wells shown on 1st Edition OS Map.
PRN 8330	Edenwood Mill

2.8 Given the inclusion of Edenwood Mill on the HER, the mill has been identified as a non-designated heritage asset for the purposes of this Heritage Briefing.

3.0 The Significance of the Heritage Assets

Introduction

3.1 The NPPF defines significance (for heritage policy) as:

"The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance."

3.2 The setting of a heritage asset is defined by the NPPF as follows:

"The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral."

3.3 The National Planning Practice Guide (NPPG) further advises, that:

"The extent and importance of setting is often expressed by reference to visual considerations. Although views of or from an asset will play an important part, the way in which we experience an asset in its setting is also influenced by other environmental factors such as noise, dust and vibration from other land uses in the vicinity, and by our understanding of the historic relationship between places."

3.4 Historic England guidance on The Setting of Heritage Assets Historic Environment Good Practice Advice in Planning Note 3 (Second Edition, 2017) confirms that:

"Setting is not itself a heritage asset, nor a heritage designation, although land comprising a setting may itself be designated. Its importance lies in what it contributes to the significance of the heritage asset or to the ability to appreciate that significance."

3.5 The Historic England Good Practice Advice Note provides a non-exhaustive checklist of potential attributes of setting, concerning the 'physical surroundings' and 'experience of the asset', that may help to elucidate the contribution of setting to significance and have been used to help inform this Heritage Statement.

3.6 The description of the significance of the heritage assets, provided below, is proportionate to their importance and the likely impact of the proposed development on their significance, including their setting.

The Historic Development of the Appraisal Site and Adjoining Area

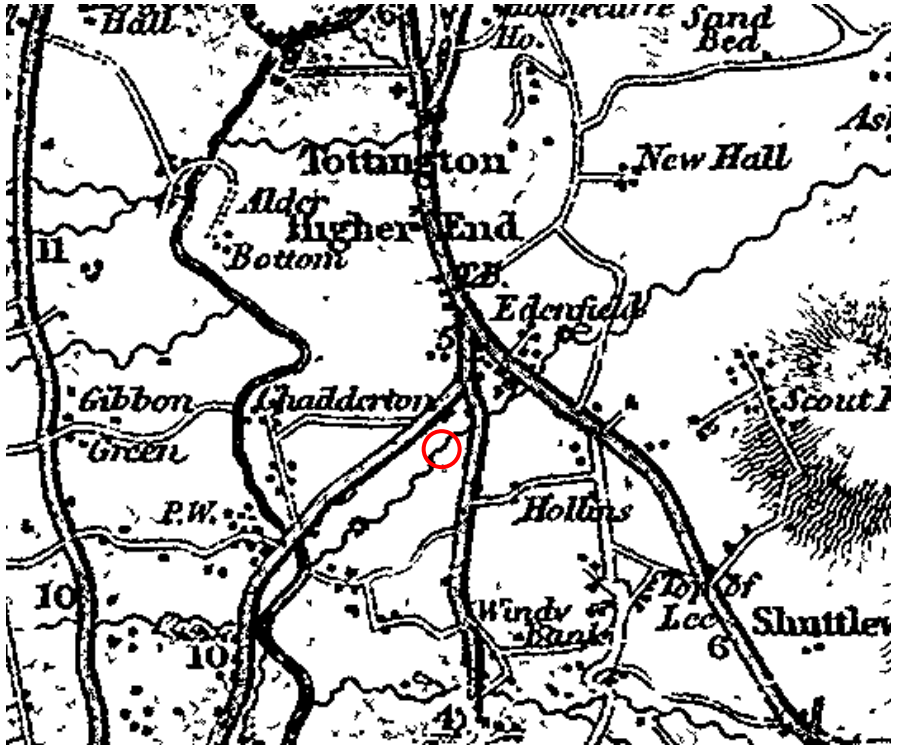
3.7 The wider context of the Wood Lane area changed considerably during the C20th, particularly in respect to highway infrastructure and therefore the urban morphology of the area is summarised below to help gain an understanding of the setting of the heritage assets.

3.8 In this context, Historic England's guidance on The Setting of Heritage Assets Historic Environment Good Practice Advice in Planning Note 3 (Second Edition) (2017) advises:

"Settings of heritage assets change over time. Understanding this history of change will help to determine how further development within the asset's setting is likely to affect the contribution made by setting to the significance of the heritage asset. Settings of heritage assets which closely resemble the setting at the time the asset was constructed or formed are likely to contribute particularly strongly to significance but settings which have changed may also themselves enhance significance, for instance where townscape character has been shaped by cycles of change over the long term. Settings may also have suffered negative impacts from inappropriate past developments and may be enhanced by the removal of the inappropriate structures."

3.9 The HER report, below, advises that Edenwood Mill was constructed between 1796-1806, however it is not identifiable on Hennet's Map of Lancashire (1829) albeit that map is at a large scale that by no-means identified every building.

Figure 3.1: Hennett's Map of Lancashire (1829)

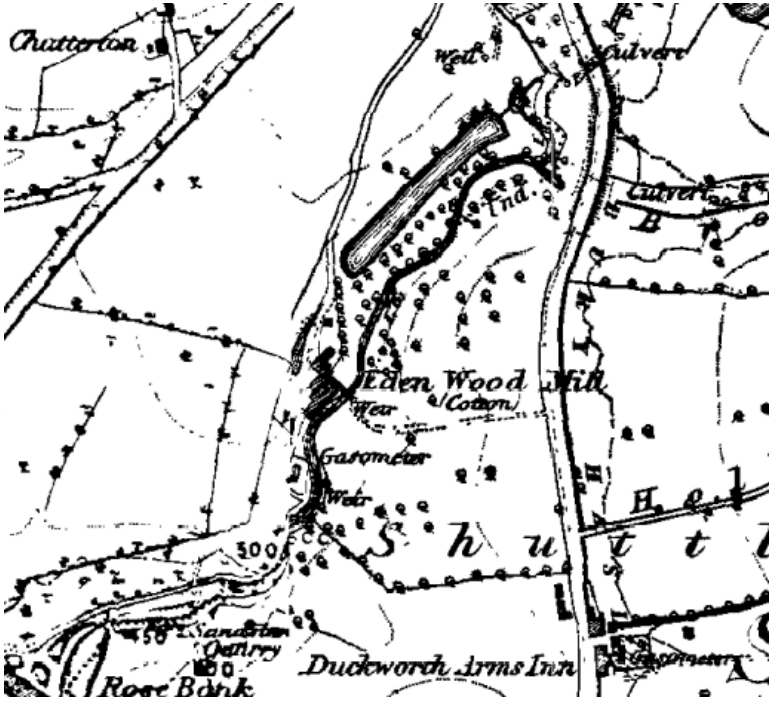


3.10 Greenwood's Map of Lancashire (surveyed 1818 and published in 1830) is similarly detailed, although it does not actually name 'Edenfield'.

3.11 'Eden Wood Mill' is clearly identified on the Ordnance Survey Map of 1851 as a cotton mill, with a linear mill pond to the north and a gasometer to the south of the mill. The 1851 map is not as detailed as the 1893 Ordnance Survey Map, and suggests that the mill

buildings adopted a slightly different alignment to the detail shown in 1893. If this was correct, it would suggest that the existing stone mill building was constructed between 1851 and 1893 and may have superseded the original mill of the early C19th. However the difference could also be explained by the cartography.

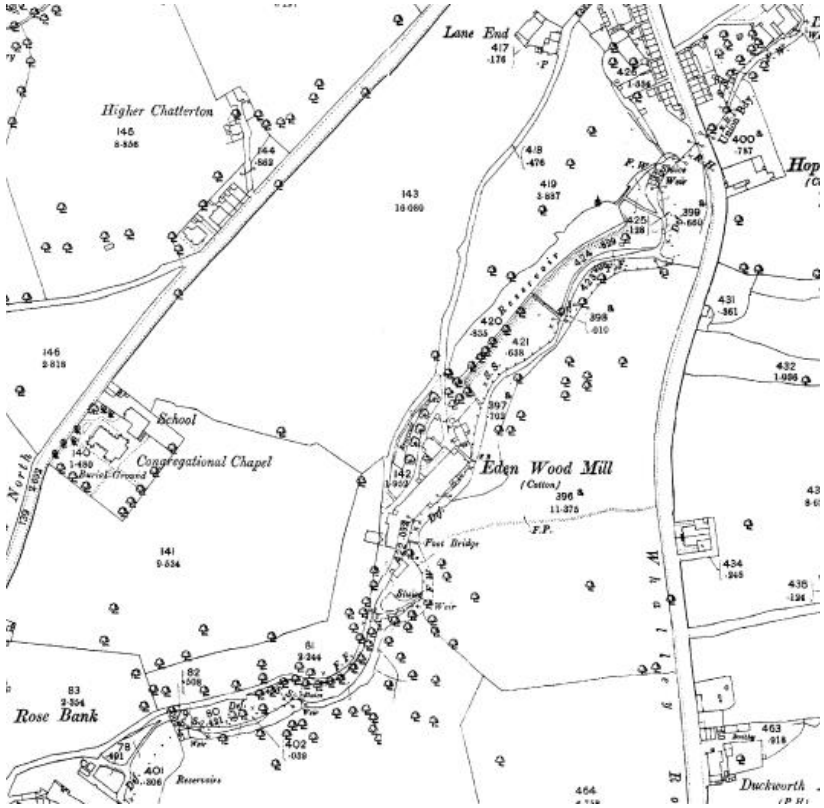
Figure 3.2: Ordnance Survey Map 1851 (1:10,560)



3.12 The 1893 Ordnance Survey map confirms that the mill had been substantially extended by that time with a linear range that projected north-east from the earlier stone element, the alignment of which conformed to that found on site today. The southern (stone) range of the mill formed an 'L' shaped plan with a small western wing connected to the main range with an archway that crossed the lane.

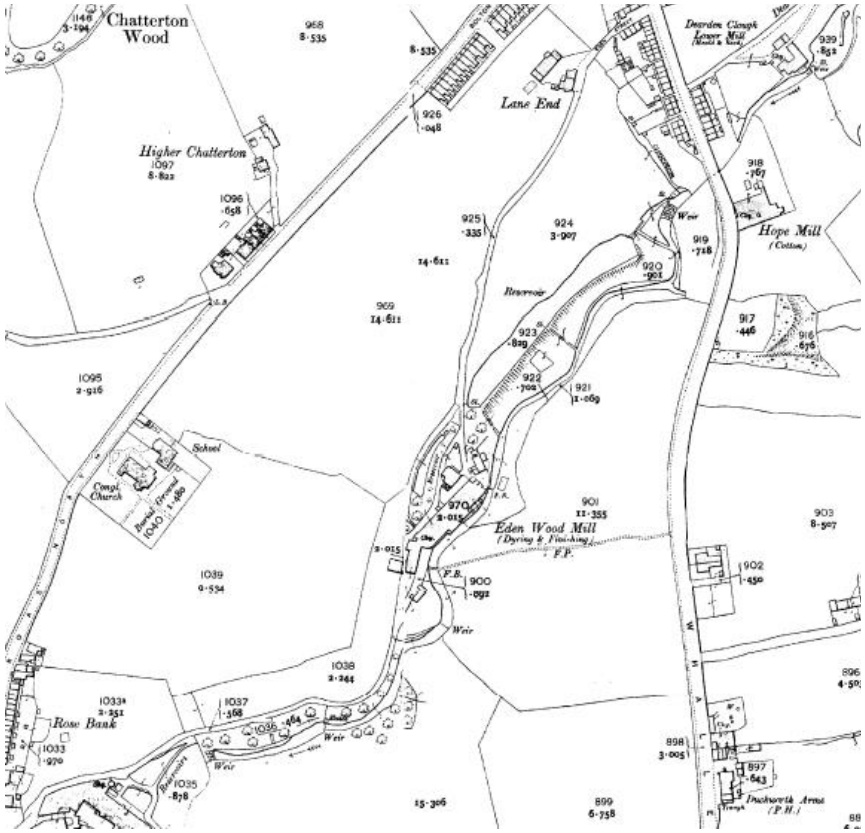
3.13 More widely, further urban development had taken place, including terraces of houses to the north and a Congregational Chapel and school to the west.

Figure 3.3: Ordnance Survey Map 1893 (1:2,500)



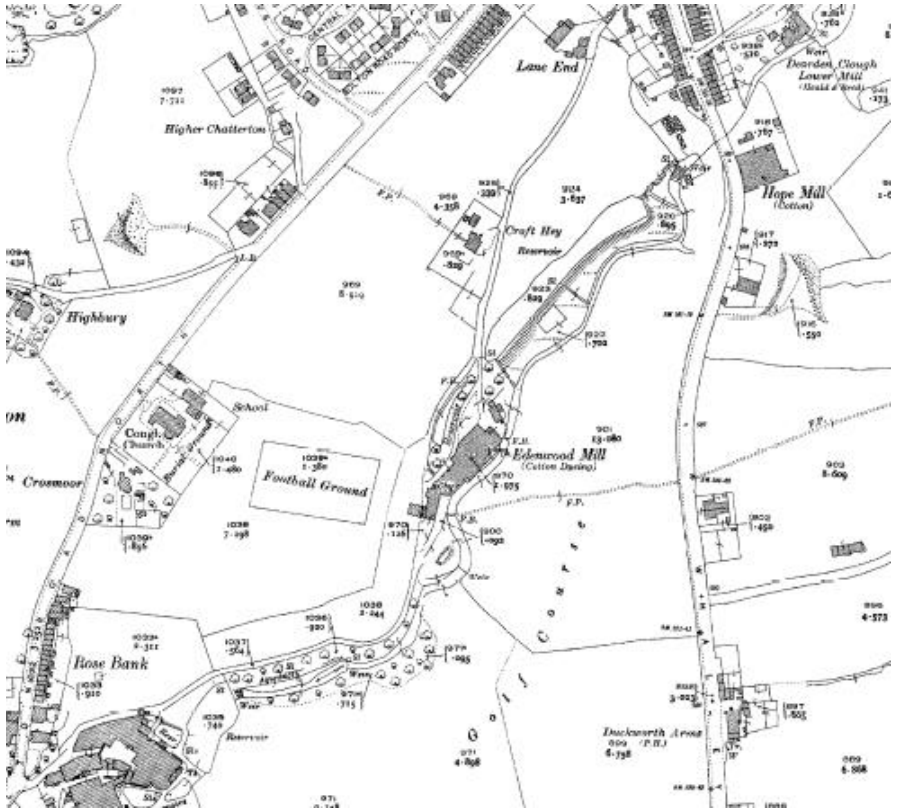
3.14 The tall brick chimney appears to be drawn on the 1893 map but is not labelled, however by 1910 it is clearly identified. The mill complex is also referred to as 'dyeing and finishing' rather than as a 'cotton' mill, which is specified on the 1851 and 1893 maps. The 1910 map also indicates that the archway that crossed over the lane from the stone mill building had been removed by that time.

Figure 3.4: Ordnance Survey Map 1910 (1:2,500)



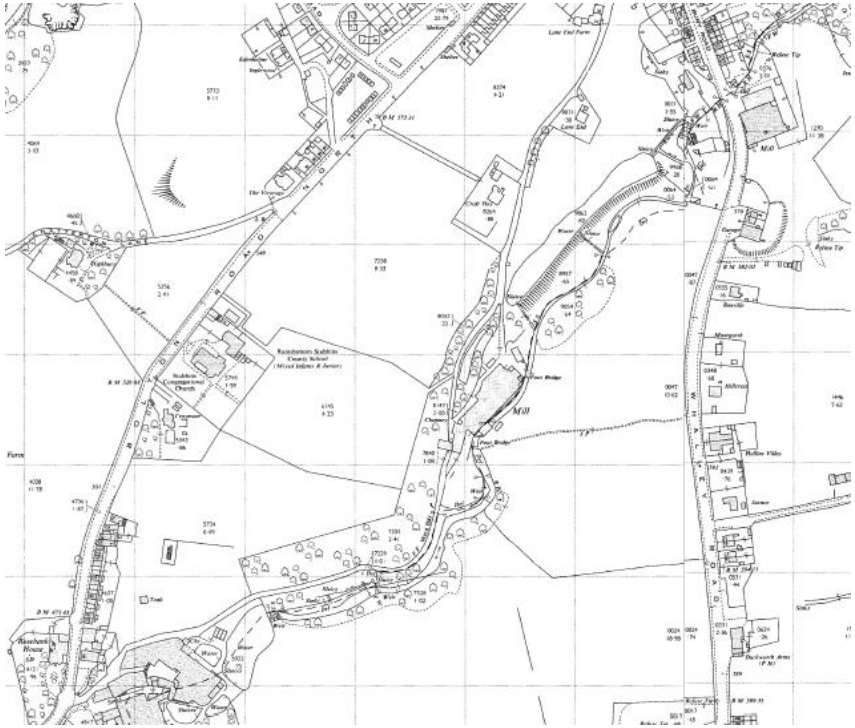
3.15 The footprint of the mill appears to have evolved by 1929 with an extension of the north-western part of the mill that extended the building slightly towards the lower reservoir and required the removal of a detached inverted 'L' shaped building. Edenwood Mill was referred to as a 'cotton dyeing' mill at that time. A football pitch had been constructed to the west of the mill complex and a golf course occupied the eastern side of Dearden Brook.

Figure 3.5: Ordnance Survey Map 1929 (1:2,500)



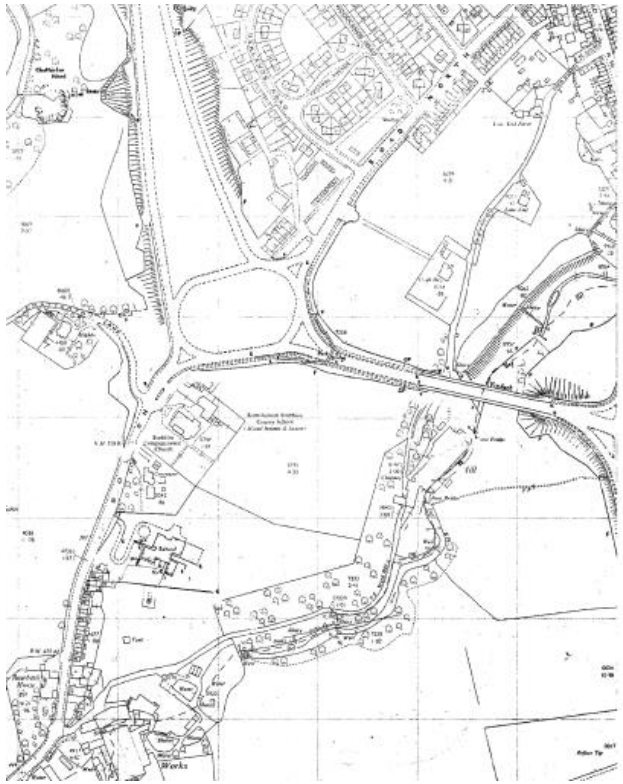
3.16 By 1963 a small wing of the mill had been extended across the brook, and the footprint of the mill adjoining the brook had changed slightly. To the west the football pitch had been removed and the former Congregational School had become the Ramsbottom Stubbins County School.

Figure 3.6: Ordnance Survey Map 1963 (1:2,500)



3.17 The Ordnance Survey Map of 1973 confirms that the footprint of the mill remained unchanged at that time. However, highly significant changes were taking place within the vicinity of Edenwood Mill with the construction of the M66, the associated junction to the A56 and the viaduct that carries the A56 across the Dearden Brook valley between the mill and mill reservoir.

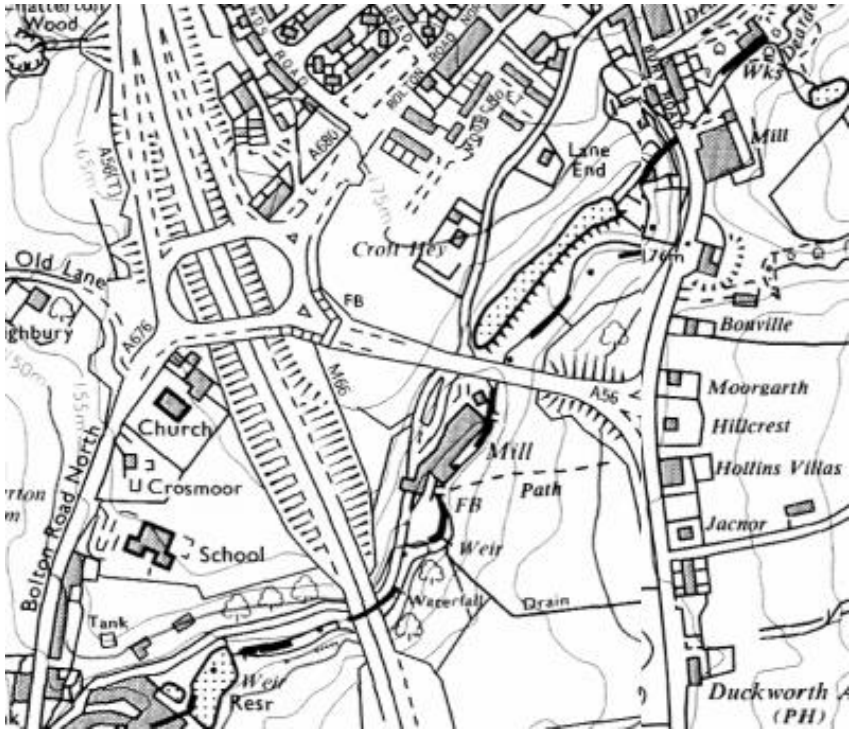
Figure 3.7: Ordnance Survey Map 1973 (1:2,500) (partially complete)



3.18 The Ordnance Survey Map of 1982-87 confirms the construction of the highway infrastructure that is located close to the north and west of Edenwood Mill. The mill complex has since been vacant for

a considerable period. In 2006 planning permission (Reference: 2014/513) was granted for the conversion of the mill into residential apartments. That scheme involved the demolition of the chimney, part of the brick phase constructed over the watercourse and the replacement of the pitched roof over the brick element. The Officer's Report to the Development Control Committee (dated 10th July 2006) did not refer to heritage as a material consideration.

Figure 3.8: Ordnance Survey Map 1982-87 (1:10,000)



3.19 Since that time the condition of the mill has deteriorated significantly, which is illustrated by a recent aerial view of the roof.

Figure 3.9: Aerial Photograph (Google Earth Pro, 2019)

Significance of the Non-Designated Heritage Assets

Edenwood Mill (HER Reference: PRN 8330)

Heritage Value

3.20 The HER entry describes the mill as follows:

"Cotton mill built between c.1796 and 1806; shown as a finishing and dyeing mill on OS 25 inch map 1910; still extant although now empty and derelict.

Eden Wood Cotton Mill is shown on the OS first edition 1:10,560 map of 1851 with a large millpond to the north and a gasometer to the south. It was significantly increased in size between that date and the production of the 1893 1:2,500 mapping. The layout of the extended mill seems similar to the 1910 1:2,500 mapping but as noted below it had changed function.

Eden Wood Cotton Mill was built between c. 1796-1806, and is shown on the Ordnance Survey first edition 1:10,560 map with a large millpond to the north and gasometer to the south. By the 1850s, the mill was occupied by the firm of Anderton and Co., cotton manufacturers, also of Fountain Mill in Accrington. However, this firm was dissolved by mutual consent in 1854, and the mill was run thereafter by Peter Hindle (Preston Guardian 24 June 1854). By the time of the Ordnance Survey map of 1911 [dated 1910] it was labelled as a dyeing and finishing mill. It is shown on the current 1:10,000 sheet. Now empty and derelict (2013) – subject to some vandalism and arson, see images on the web. Some interest in demolition and redevelopment.

A pre-app meeting held with the owners/agents on behalf of Eddenwood Mill, Edenfield, Rossendale …. The OAN Mills Survey report identifies it as at risk, in very bad condition and of medium significance (total floor space = 3124m – all vacant). I have attached the minutes of that meeting held with colleagues from DC and forward planning and it looks as though this could be another mill up for demolition in the near future. I haven't had chance to make a site visit yet but I am concerned that the heritage significance is being overlooked and wanted to flag it up as a candidate for further investigation before we can a…. notification of demolition on it. Colleagues feel that as a minimum we would seek to condition a building survey on the site. I believe the significance elements relate to an early stone-built mill (i.e. C19) which has hood moulding to some of the windows. Later elements include a vast brick-built extension and chimneys (the latter being visible from the M66 as an identifiable landmark at the local authority boundary between Rossendale and Bury). Pevsner refers to the mill in his Lancashire North Buildings of England series as a cotton mill and one of the few remaining traces of industry in this particular area of the valley. The mill is unlisted, does not lie within a conservation area but is within the green belt. However, it is considered to be a brownfield site …. (taken from email correspondence with the LPA Conservation Officer dated 10th May 2013)."

3.21 It is not clear what evidence has been used to suggest such an accurate date for the construction of the first phase of the mill (1796-1806), the available cartographic evidence has not provided that information and there is no reference identified in the HER

report. Pevsner Buildings of England Lancashire: North (Hartwell and Pevsner, 2009) simply advises *"… Started in the early C19, which may be the date of the stone part with heavy hood-moulds. Later brick chimney and extensions. …"*

3.22 The above correspondence contained in the HER suggests that the most significant part of the mill is the earlier stone phase. This is reiterated in Pevsner, which principally refers to the early C19th phase. The stone phase is constructed with chisel faced stone blocks. The windows have plain ashlar sills, arches and architraves and incorporate an unusual canted stone hood-moulds, which may suggest a slightly later date, with stone modillioned brackets to the eaves gutter.

Figure 3.10: The southern gable of the early C19th phase

Figure 3.11: The western elevation of the single storey range to the lane

3.23 The mill has clearly been subject to deterioration, which has resulted in the loss of elements such as parts of the roof structure. Part of the elevation facing the stream also shows signs of structural instability. The ground floor of the early stone phase has also been subject to adaptation with a series of concrete block walls inserted to sub-divide the space.

Figure 3.12: Roof collapse to the early C19th range (www.28dayslater.co.uk)

Figure 3.13: Collapsed trusses in the early C19th range (luigidawn.blogspot.com)

3.24 The late C19th brick range incorporates a single line of iron columns. However, surprisingly for this period the floor does not appear to comprise a fire-proof construction.

Figure 3.14: The interior of the late C19th brick phase

3.25 The brick phase of the building appears to have been subject to incremental extension between 1910 and 1929 and again between 1929 and 1963. The later phase of extensions included the short range that projects over the brook. The brick phases did not incorporate any significant architectural detailing, for example to the eaves or window openings and the exterior simply incorporates a series of brick piers, a simple concrete coping and simple

concrete forms to the lintels and sills of the windows. The window frames have been lost and the later range has also been subject to adaptation with concrete block walls.

Figure 3.15: The range spanning Dearden Brook (c.1929-63)

3.26 Historically, Edenwood Mill has an association with Turnbull and Stockdale Ltd, a company renowned for its block printing, which enjoyed a resurgence during the Arts and Crafts period, and for their high-quality shadow-tissue printing technique (The Beauty of Experiment, Sykas and Belford, 2013).

3.27 William Turnbull established his print works in Bury in 1881 and then entered into partnership to form Turnbull and Stockdale Ltd in 1882. The company grew rapidly and in 1896 acquired the Rosebank Printworks and nearby Edenwood Mill.

3.28 The company's association with Edenwood Mill is therefore considerably later than the original stone mill range and also post-dates the initial brick phase that appears to have been constructed by 1893.

3.29 Several studies have been undertaken since the mid 1980s to established the extent of survival and condition of textile mills in the Greater Manchester area. This work culminated in the Greater Manchester Historic Mills Survey (2017), which was supplemented by the Lancashire Textile Mills Stage 2 Survey and Buildings at Risk Survey (Oxford Archaeology, 2018).

3.30 The Lancashire Textile Mills Buildings at Risk survey was based on site surveys that were conducted in 2012. It identified Edenwood Mill as having 'medium significance' in respect to potential historic value:

"Medium Significance: important at local to borough level, including locally listed buildings; may include altered parts of listed buildings or modern alterations. Buildings should be retained wherever possible."

3.31 The 2012 on-site survey categorised the mill as being in 'very bad' condition, based on the Historic England Buildings at Risk guidance (1998), which defines 'very bad' as follows:

"Very Bad: a building where there has been structural failure, or where there are clear signs of structural instability; (where applicable) there has been loss of significant areas of the roof covering, leading to major deterioration of the interior; or where

there has been a major fire or other disaster affecting most of the building."

3.32 The on-site survey is now eight years out of date and based on current social media images the mill has clearly deteriorated significantly since that survey was undertaken. The Historic England Buildings at Risk methodology does not have a condition category beyond 'very bad', however it is clear that the deterioration anticipated due, particularly, to the roof condition in 2012 has been realised, leading to major losses of historic fabric.

The Contribution of Setting and the Appraisal Site to Significance

3.33 The most important aspects of the setting of Edenwood Mill are the Dearden Brook and mill pond. The mill was located in an isolated location between Edenfield and the valley floor of the River Irwell apparently to take advantage of the water course of this secondary valley.

Figure 3.16: The mill pond to the north of Edenwood Mill

3.34 The setting of Edenwood Mill changed incrementally during the C19th and early C20th, with the gradually development of Edenfield and associated buildings such as the Congregational Church. However, during the late C20th the setting of Edenwood Mill changed markedly with the construction of the M66, associated junction and the viaduct that carries the A56. Residential development has also extended towards the mill from Rosebank. However, the association with the brook and mill pond is still clearly evident.

Summary

3.35 In summary, Edenwood Mill is identified on the HER for the purposes of the NPPF and Historic England guidance regarding non-designated heritage assets. The Lancashire Mills Survey also identified the building as having local to borough level significance.

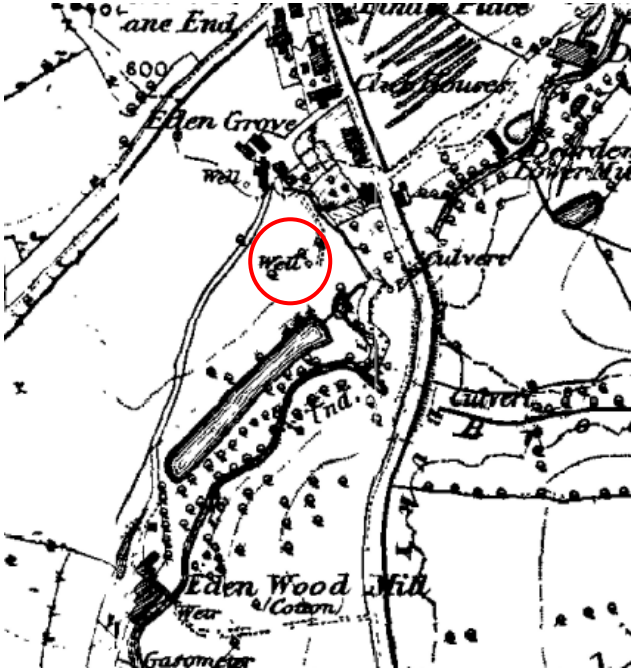
3.36 However, given the chronology of construction, limited interest of the later brick phases and their subsequent extension and adaptation, it is considered that only the early C19th phase, with its stonework construction and detailing, has sufficient 'heritage value' to be considered as a non-designated heritage asset for the purposes of the NPPF.

Well (HER Reference: 8329)

Heritage Value

3.37 The HER confirms that the well, located just beyond the northern edge of the proposed allocation site, was illustrated on the first edition Ordnance Survey map of 1851. The HER confirms that the evidence for the structure is 'documentary', suggesting that the record has not been subject to field work.

Figure 3.17: Extract from the 1851 Ordnance Survey Map (PRN 8329 encircled)



3.38 The Ordnance Survey map confirms that two wells were located between 'Eden Grove' and the mill pond and that a further individual well was located within Eden Grove. Later maps, including that of 1893, do not refer to any wells in that area, although the 1963 Ordnance Survey map refers to 'sinks' in a similar location.

3.39 However, the location of the wells, if they still exist, is outside the extent of the proposed allocation, and located adjoining an area of existing development to the north of the mill pond. Therefore, the proposed allocation is considered not to impact on the potential heritage value of the assets if they exist as anything more than an historic record.

4.0 Heritage Considerations

Heritage Value

4.1 Rossendale Borough Council has not published a 'local list', however Edenfield Mill is identified on the Lancashire HER, one of the means by which 'non-designated heritage assets' may be identified in accordance with the relevant Historic England guidance.

4.2 The HER contains an extract of correspondence from the Borough Council Conservation Officer, in May 2013, which indicates that the significant elements of the building were restricted to the early stone phase rather than the later brick phases of the complex. That seems consistent with the references in Pevsner and the understanding of the building on-site. The correspondence from 2013 also seems to anticipate the removal of the mill.

4.3 Since that time, and the on-site survey conducted for the Lancashire Mills Survey (2012), the buildings have clearly deteriorated further. 'State of Repair' is not normally a criterion for assessing significance (for example in the DCMS Principles of Selection for Listing Buildings,2011). However, there can be no doubt that the rapid deterioration and loss of fabric has eroded the potential architectural value of the building.

Policy Considerations

4.4 Paragraph 185 of the NPPF, states that in respect to plan making:

"Plans should set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. This strategy should take into account:

a) the desirability of sustaining and enhancing the significance of heritage assets, and putting them to viable uses consistent with their conservation;
b) the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;
c) the desirability of new development making a positive contribution to local character and distinctiveness; and
d) opportunities to draw on the contribution made by the historic environment to the character of a place."

4.5 In respect to proposals affecting heritage assets, paragraph 192 of the NPPF requires that:

"In determining applications, local planning authorities should take account of:

a) the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
b) the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and

c) the desirability of new development making a positive contribution to local character and distinctiveness.

4.6 In respect to non-designated heritage assets, NPPF paragraph 197 states:

"The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset."

4.7 In considering the potential viable use of the mill this Heritage Review should be read in conjunction with the following:

- Updated Structural Report (Michael Pooler Associates)
- Viability Appraisal (Nolan Redshaw)
- Planning Report (Roman Summer Associates)

4.8 In this context NPPF paragraph 199 may provide a relevant way forward:

"Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted."

14th April 2020

Turnbull and Stockdale Ltd.

[redacted]

EDENWOOD MILL, EDENFIELD, ROSSENDALE

FLOOD RISK SCOPING AND SUSTAINABLE DRAINAGE STATEMENT

We have undertaken an initial desk-based review of flood risks at the site which encompasses the former Edenwood Mill curtilage in Rossendale. The purpose of this exercise [redacted]ry sources of flood risk both to and from the development onsite. [redacted]ent has also considered the potential options for managing both [redacted]ater flows should the site be redeveloped for residential purposes. Furthermore, the assessment identifies any development considerations and constraints that are associated with both flood risk and drainage at the site.

SITE CONTEXT & INITIAL CONSULTATIONS

The site comprises of the former Edenwood Mill and its surrounding curtilage, accessed from the A56. The nearest Ordnance Survey National Grid Reference (OS NGR) is E:379761, N:418441 and the nearest postcode is BL0 0LW (see location plan in Appendix A). The site neighbours the M66 on its south-eastern boundary and runs beneath Wood Lane (A56) to the north. The development parcel is illustrated by the indicative red edge in Figure 1 on the subsequent page.

The site currently consists of low to high-density vegetation, trees and shrubbery located adjacent to the boundaries and the Main River (Dearden Brook) that crosses the site in multiple locations. Dearden Brook is also understood to be culverted in sections through and adjacent to the site boundaries. Except for the derelict façade of the former Edenwood Mill building most of the site is undeveloped and consists of undeveloped areas. There are also multiple ponds, sluices and weirs running adjacent to the Main River as a result of the former land-use on the site.

The existing access is from Wood Lane to the north, however the site slopes quickly down towards the former Mill building and the adjacent watercourse which was previously used by the Mill for daily activities. A full topographic survey has been provided (included within Appendix B) and shows that the site falls from its north/north-western boundaries at a level of 171.0mAOD to 162.0mAOD, down towards the Main River where levels range from 154.0mAOD to 151.0mAOD.

Initial consultations with the Environment Agency (EA), United Utilities (UU), Lancashire County Council (LCC) and Rossendale Bourgh Council (RBC) have been carried out to ascertain whether there are any historical records of flooding at the site. Consultations responses RBC, the EA and UU thus far, all of which confirm that they held no historical records of flooding at the development site. These consultations have been used to support this assessment and can be seen in Appendix C, D and E. A response from LCC has not been received, but this is often the case given that LLC typically consider these requests as pre-application advice, thus a charged service to provide a response.

[redacted]

[redacted]

Figure 1: Site Location and Features (Betts Hydro, 2020)

DEVELOPMENT PROPOSALS

At this time the planning layout is being developed and not available for inclusion. The purpose of this exercise was to identify the potential flood risks to site and in turn any development considerations that must be made to accommodate those risks. Furthermore, this initial assessment was to enable a sustainable means of managing both foul and surface water flows (that would be generated by any future development) to be identified. This early consideration ensures that sustainable drainage systems can be allowed for within the initial concept designs.

[redacted]

[redacted]
[redacted]
[redacted]pposals will be residential in nature and given the proximity of the Main River to the [redacted]s a requirement to consider flood risk and other development constraints as the [redacted]als are developed. Residential dwellings are classified as 'More Vulnerable' within the Planning Practice Guidance. Planning guidance notes that certain development types are only suitable for locating within high flood risk areas if there is enough justification and the development can be safeguarded for its design life. The subsequent sections will briefly consider the flood risks identified and any required mitigation measures, along with identifying any development considerations as a result.

FLOOD RISK SUMMARY

[redacted]e the key findings of the initial review, this is not a detailed Flood [redacted]ut an initial desk-based exercise to determine flood risks and potential mitigation measures which might impact upon the development proposals or initial design works. An initial review of the flood mapping datasets has been undertaken to identify the key development considerations; these will need to be considered in more detail as part of any future FRA. Table 1 below provides a summary.

Table 1: Key Flood Sources and Level of Risk (Betts Hydro, 2020)

SOURCE OF POTENTIAL FLOOD RISK	RISK RATING		COMMENT
Tidal	🟢	Low	The open coast is located 45km west of the site and the Ribble Estuary is over 40km to the north-west of the site. The potential flood risks to the site directly from tidal sources is low.
Fluvial *Main Rivers* *Ordinary Watercourses* *Land Drainage Features*	🟡	Low, Medium & High	The nearest Main River (Dearden Brook) is a tributary of the River Irwell which runs adjacent to the wider site next to the old Edenwood Mill building. This watercourse flows into the Irwell less than 500m to the south-west of the site. There are multiple culverts, ponds, weirs and sluices associated with Dearden Brook including features that are located within the wider site extents. Due to the proximity of these watercourse features to the site, there is shown to be some flood risks associated within the wider site extent. Based on the National Flood Mapping, the majority of site is shown to be at little risk from fluvial flooding, although those areas directly adjacent to the existing watercourse are shown to be at medium to high risk. The degree and scale of flood risks will be discussed subsequently, although fluvial flood risks at the sites are considered to pose the primary threat to the proposals.
Groundwater	🟢	Low	Based on the general mapping, the site is underlain by a Secondary A bedrock Aquifer with Secondary (undifferentiated) superficial deposits. The site is also located within a medium to low Groundwater Vulnerability Zone. No records of historic flooding at the site due to groundwater has been identified during consultations therefore the risk from groundwater flooding is low.

[redacted]

SOURCE OF POTENTIAL FLOOD RISK		RISK RATING		COMMENT
Surface Water / Pluvial			Low, Medium & High	The National Flood Mapping shows most of the site is not at risk from surface water flooding. The low-lying river corridor on the eastern boundary is however shown be varied risk from surface water flooding, form very low to high. This mapping is generalised and applies direct rainfall to the highest locations within a catchment to show where at rainfall (run-off) would direct and convey in a variety of scenarios. Mapping extracts have been appended to this summary note (Appendix C) and overlaid onto the topographic survey for context. The potential flood risks from surface water/pluvial flooding will need to be considered in more detail as part of a full FRA in due course.
Artificial Sources	Reservoirs		Medium	The National Flood Mapping shows that part of the site is also at risk from reservoir flooding should a breach or failure occur in any of the nearest reservoir(s). This is due to the low-lying river corridor that is present within the site which will act as a conduit during a potential breach event. Although, the likelihood of a breach occurring is very low (due to regular maintenance and regulatory inspections), the low-lying areas would potentially be susceptible to flood depths between 0.3m and 2m. The potential flood risks and any required mitigation will need to be considered as part of a full FRA.
	Canals		Low	The site is located more than 10km from the nearest three canals (Rochdale Canal to the south-east, Manchester Bolton and Bury disused canal to the south-west and the Leeds and Liverpool Canal to the north). There is no potential flood risk to the site from canals, due to the proximity from site.
	Sewers		Low	There are public sewers shown to cross the site, however consultation with United Utilities have not identified any historic records of sewer flooding onsite or within the vicinity.

Based on this initial data review, the primary sources of flood risk to the development site are from fluvial, surface water and reservoir flooding, as summarised above. The potential flood risk from these sources will be considered in more detail as part of a full Flood Risk Assessment. The following section will focus on the primary flood risks that require mitigation to be implemented to ensure the residential proposals remain safe for their design life.

Fluvial Flood Risks

Information relating to flood risk has been obtained from the Environment Agency (EA) and from the Gov.uk website. The EA's Flood Zone Map for Planning confirms that the site is located within Flood Zones 1, 2 and 3 (appended in Appendix C). The Shapefiles have been obtained from the government website and overlaid with the site geography to create an overlay plan; an extract is shown within Figure 2. Flood Zone 1 is an area considered to be at little or no flood risk from fluvial or tidal sources. Food Zone 2 is an area at 'low' to 'medium' risk of flooding from fluvial/tidal sources in the undefended 1 in 1000yr return period event. Flood Zone 3 is an area considered at 'medium' to 'high' flood risk from rivers and/or the sea in the undefended 1 in 100yr fluvial return period event or the undefended 1 in 200yr

[redacted]

[redacted]vent. In this case, given the site proximity from the coast it is understood that the risk [redacted]n the fluvial scenario.

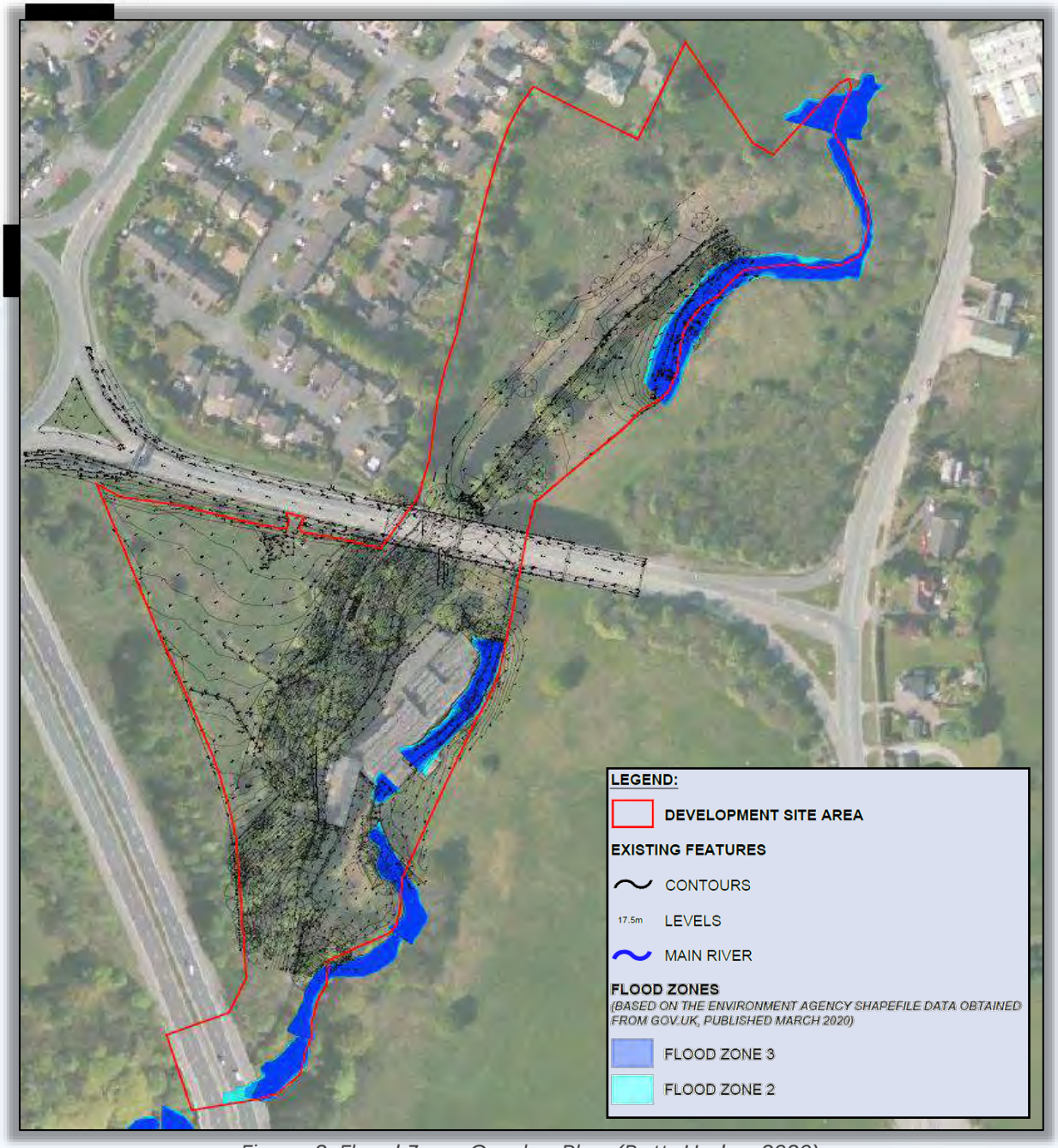


Figure 2: Flood Zone Overlay Plan (Betts Hydro, 2020)

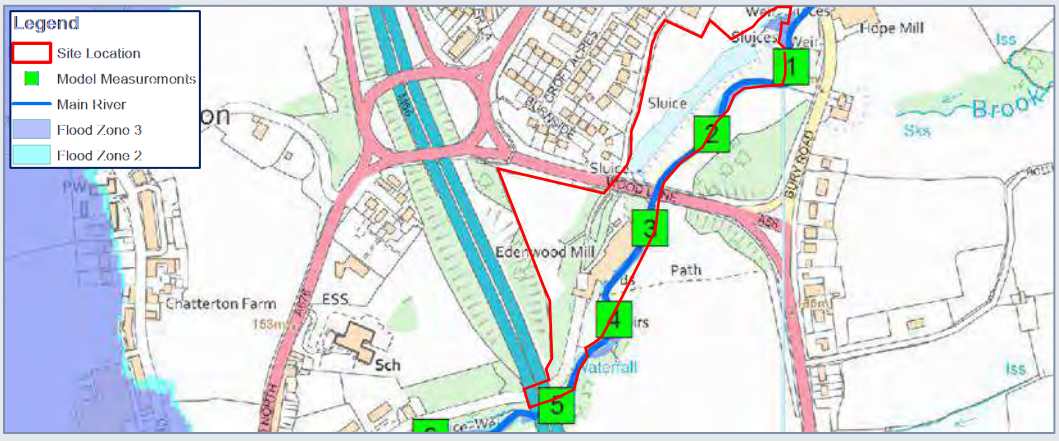
Given the location of Dearden Brook, one of the primary sources of flood risk to the development is fluvial. As noted previously the site is mostly at no risk from fluvial flooding and those areas that are shown to be at risk are located within or directly adjacent to

[redacted]
[redacted]
[redacted]en Brook where is flows in proximity of the site. The EA has been consulted in order to [redacted]tter understanding of the potential flood risk at the site and they provided [redacted]ed in-channel top water levels for Dearden Brook (see Table 2 below).

The predicted flood water levels are based on the modelling works carried out as part of the Dearden Brook 2009 Model Study which considers the undefended scenarios (as there are no key flood risk defence infrastructure in the vicinity of the site. The modelling as noted in Table 2, has considered various return period events for the fluvial scenarios, including two allowances for Climate Change (CC) which confirm to the new requirements for modelling climate change impacts. No water levels are available within the site itself but as the site is [redacted]s includes the main channel, it is acceptable to use the in-channel [redacted]re confirmed to be the most up-to-date, to assess the flood risk at [redacted]included in Appendix C).

Table 2: Model data taken from Deardon Brook 2009 Study (EA, 2020)

MAP REFERENCE		MODELLED UNDEFENDED RETURN PERIOD EVENT(S)					MITIGATION
		5% AEP (1 in 20yr	1% AEP (1 in 100yr)	1% AEP (1 in 100yr) + 35% CC	1% AEP (1 in 100yr) + 70% CC	0.1% AEP (1 in 1000yr)	Minimum Finished Floor Level (FFL)
1	MODELLED WATER LEVEL (MAOD)	160.34	160.43	160.56	160.66	160.61	161.16
2		158.22	158.82	159.33	159.62	159.26	159.93
3		155.06	155.25	155.51	155.74	155.63	156.11
4		152.80	152.96	153.14	153.30	153.25	153.74
5		144.96	145.10	145.27	145.41	145.35	145.87



EA Data Review

The EA have provided the water level information for the design events including the 1 in 100yr, 1 in 100yr plus Climate Change (CC) and the 1 in 1000yr return period events. In terms of CC, the EA have considered both a 35% increase in flow and 70% increase in flow in accordance with the current guidelines for CC modelling. Given the modelling data

[redacted]

[redacted]

[redacted]ed by the EA and the existing ground levels onsite, the site is potentially at risk in all [redacted]cenarios to varying degree. The predicted top water levels will vary at each node [redacted] and as there are 6no. nodes in proximity of the site, this section will consider an those nodes that are directly adjacent to surveyed areas of the site (Nodes 2, 3 and 4).

In terms of the upstream Node (2) the existing ground levels nearby are at the lowest approximately 158.2mAOD. When the predicted Top Water Levels (TWLs) are compared to the existing ground levels there is the potential for out of channel flooding to occur. Although flooding is likely to occur in all events, this will be contained within the immediate area as ground levels rise quickly from the top of bank into the main development area, which will [redacted]or flooding to the main development area. Furthermore, the [redacted]uire and 8m offset to be included from the watercourse top of bank [redacted]et area also provides an opportunity for the development to be further offset from the potential flood risks associated with Dearden Brook.

Figure 3: Northern Floodplain Overlay Plan showing 8m offset (Betts Hydro, 2020)

An indicative 8m offset line (purple dashed line) has been illustrated on the Flood Zone Overlay plan based on the underlying topographic survey as illustrated in Figure 3. This shows that the extents of the out of channel flooding associated with the 1 in 100yr (Flood Zone 3) and the 1 in 1000yr (Flood Zone 2) return period events do not extend past the required offset (purple line shown in Figure 3). The Environment Agency have also provided

[redacted]

[redacted] the modelled floodplain extents for the 1 in 100yr plus Climate Change based on [redacted] up to mate modelling, this is represented by the lighter blue extent shown in Figure [redacted] previous page. The predicted floodplain extents do not extend pass the proposed offset from the watercourse and therefore providing the watercourse offset is incorporated into the planning proposals the proposed residential development will not be located within those parts of the wider site that would be prone to some flooding in the extreme events.

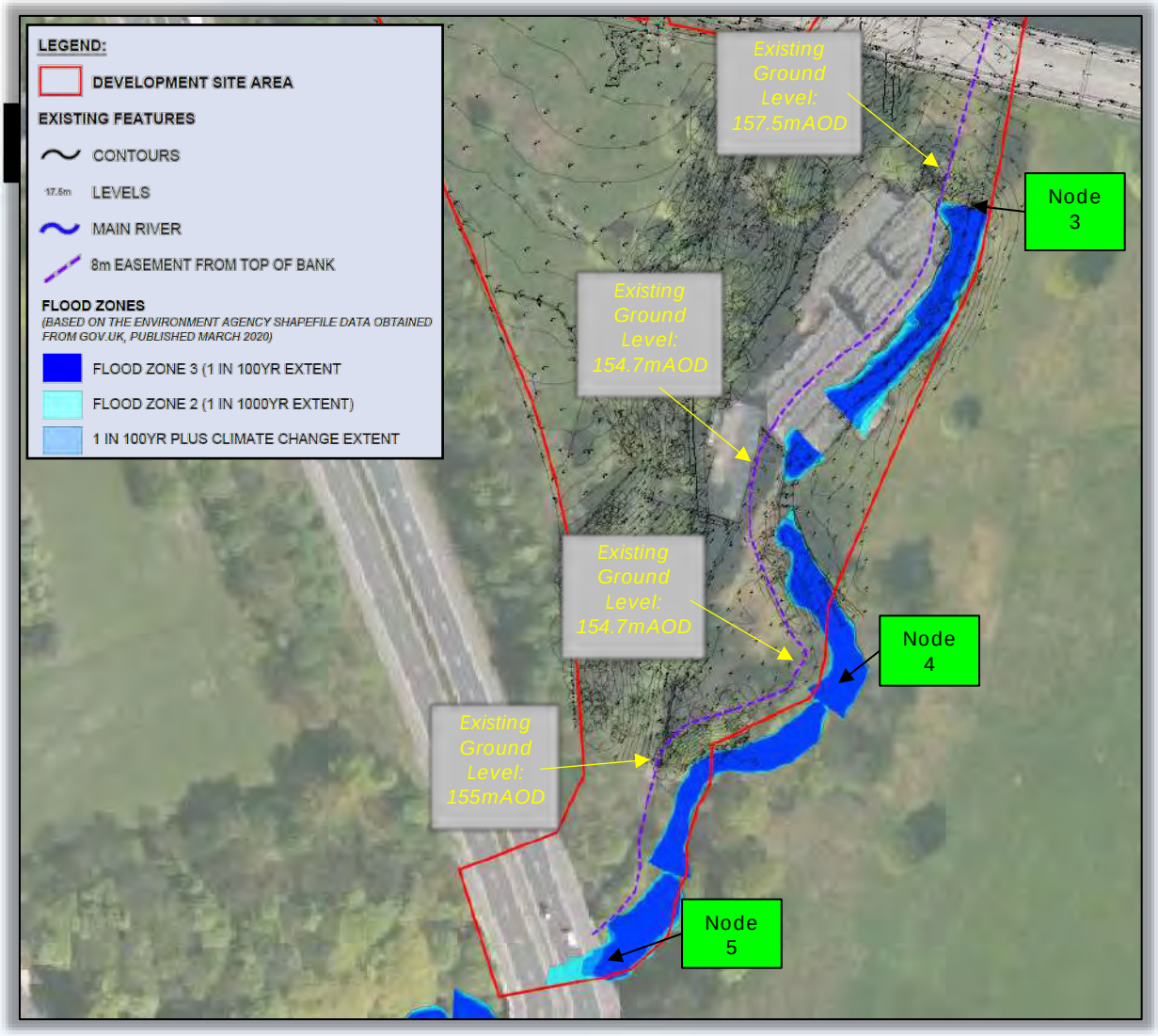


Figure 4: Southern Floodplain Overlay Plan showing 8m offset (Betts Hydro, 2020)

When the other watercourse nodes adjacent to the site are considered the same can be said. When the TWLs from Node No.3 are compared to the existing ground levels the potential flooding would mostly remain in channel for up to and including the 1 in 100yr return period event (see Figure 4 for floodplain extents. Some minor out of channel flooding would occur like with the upstream nodes in the more extreme events, although as ground

[redacted]

[redacted]se quickly from the top of bank, the actual extent of out of channel flooding would [redacted]al. When the 8m offset from the watercourse is considered, the predicted [redacted]ain extents for the key events are again shown to be contained within this designated offset area (see Figure 4) meaning there would be no flooding to the proposed residential areas providing the 8m offset is incorporated into the planning layout.

In terms of the downstream Node (No. 4), the existing ground levels nearby are at the lowest approximately 154.4mAOD. When the TWLs in channel are compared to the existing ground levels on the site there is no flooding within the main development area in any of the return period events. Furthermore, when the existing ground levels near to the extent of the 8m [redacted]e ground levels raise to 154.7mAOD and as shown in Figure 4 there [redacted]outside of the 8m offset extents in the range of events considered.

As the topographic survey does not extend to Node Location 1 (upstream of site) or Node 5 (downstream), a levels comparison for these nodes cannot be undertaken. It is assumed however, given the similarities between the findings at Nodes 2,3 and 4 that these off-survey locations would follow a similar approach, this is illustrated better in Figures 3 and 4 where the extents of flooding is not shown to extend into the site past the proposed 8m offset from the watercourse banks (centerline).

Safeguarding Future Development

As discussed previously, the PPG identifies that certain types of development would not be acceptable if located in high risk areas, unless they can be safeguarded for their design life. In terms of planning policy, there will be a requirement to ensure safeguarding new development considers the potential impacts of climate change. The typical requirement for residential development is to ensure it remains flood free for the design event which should include allowance for Climate Change. Normally, the proposed finished floor levels would be raised 600mm above the predicted onsite top water levels in the design event.

The design event for residential development is typically the 1 in 100yr plus 35% climate change event for areas primarily at risk from fluvial sources that are not considered to be particularly sensitive. In terms of Finished floor levels these would typically be raised 600mm above the predicted top water level in the design event. If we reconsider the three nodes looked at previously and apply a 600m to the predicted TWLs it will give a steer as to the potential design criteria for future residential proposals across the site.

- In the upstream part of site (Node 2), the TWL in the 1 in 100yr plus 35% CC event is 159.33mAOD and when a 600mm freeboard is applied this gives a finished floor level of the site to be 159.93mAOD.
- In the central part of the site (Node 3), the TWL in the 1 in 100yr plus 35% CC event is 155.51mAOD and when a 600mm freeboard is applied this gives a finished floor level in this part of the site to be approximately 156.11mAOD.
- Finally, for the downstream areas (Node 4), the TWL in the 1 in 100yr plus 35% CC event is 153.14mAOD and when a 600mm freeboard is applied this gives a finished floor level in this part of the site to be 153.74mAOD.

[redacted]g Policy states that levels raising within Flood Zone 3 would need to be supported by [redacted]hat flood risk elsewhere would not increase. If raising levels here to safeguard the [redacted]pment results in any increase in flood risk elsewhere then there is a requirement to provide compensatory flood storage. Compensation can only be provided in areas that are not currently located in the Flood Zone 3 extent. It would therefore be recommended that the planning layout steer the main development away from the river corridor and the neighboring Flood Zone 3 extents. Where levels raising on the site is required Flood Zone 3 then there is a requirement to consider the compensatory floodplain storage. Providing the 8m offset is incorporated into the planning layout, then the proposed development would not be located within Flood Zone 3 extents.

[redacted]tion conversations with the Environment Agency can be carried [redacted]ish to get agreement on proposals prior to submission of any subsequent planning proposals.

Surface Water Flood Risks

The site is also shown to be susceptible to other flood risk sources including surface water or pluvial flows. Surface water flooding occurs when rainwater is unable to drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. Most of the site is at none or very little risk from surface water flooding based on the national flood risk modelling datasets.

There are some areas that are at medium to high flood risk particularly along the eastern site boundary (see Figure 5). Those areas on site at highest risk are also shown on the topographic survey to correspond with the naturally low-lying areas associated with Dearden Brook. These low-lying areas would be susceptible to ponding in the extreme and prolonged rainfall events as the surrounding ground levels are elevated in comparison, natural conveyance in the downstream system may be limited due to natural capacity.

The surface water flood risk mapping is indicative of locations onsite where natural flow or conveyance routes would be present, these natural features need to be considered within the wider development proposals. The long-term flood risk mapping provide on the government data website shows that the site would be susceptible to between 300-900mm of surface water flooding in those areas at medium risk. Depths would be less in those areas at low risk and greater in those areas at highest risk. Due to the existing ground levels through the site the predicted surface water flood velocities onsite are more than 0.25m/s. These depths and velocities need to be considered when a proposed planning layout is being developed, as any natural flow routes must be carefully controlled and safe continued avenues of flow, must be provided.

The risks associated with surface water can be mitigated for through appropriate levels design and provision of space for water within the planning proposals. Figure 5 therefore shows where the areas onsite at highest risk of surface water flooding would occur by overlaying the governments surface water flood risk map and the topographic survey to help steer the future proposals on the site. The potential flood risk will be considered further as part of a full Flood Risk Assessment.

[redacted]

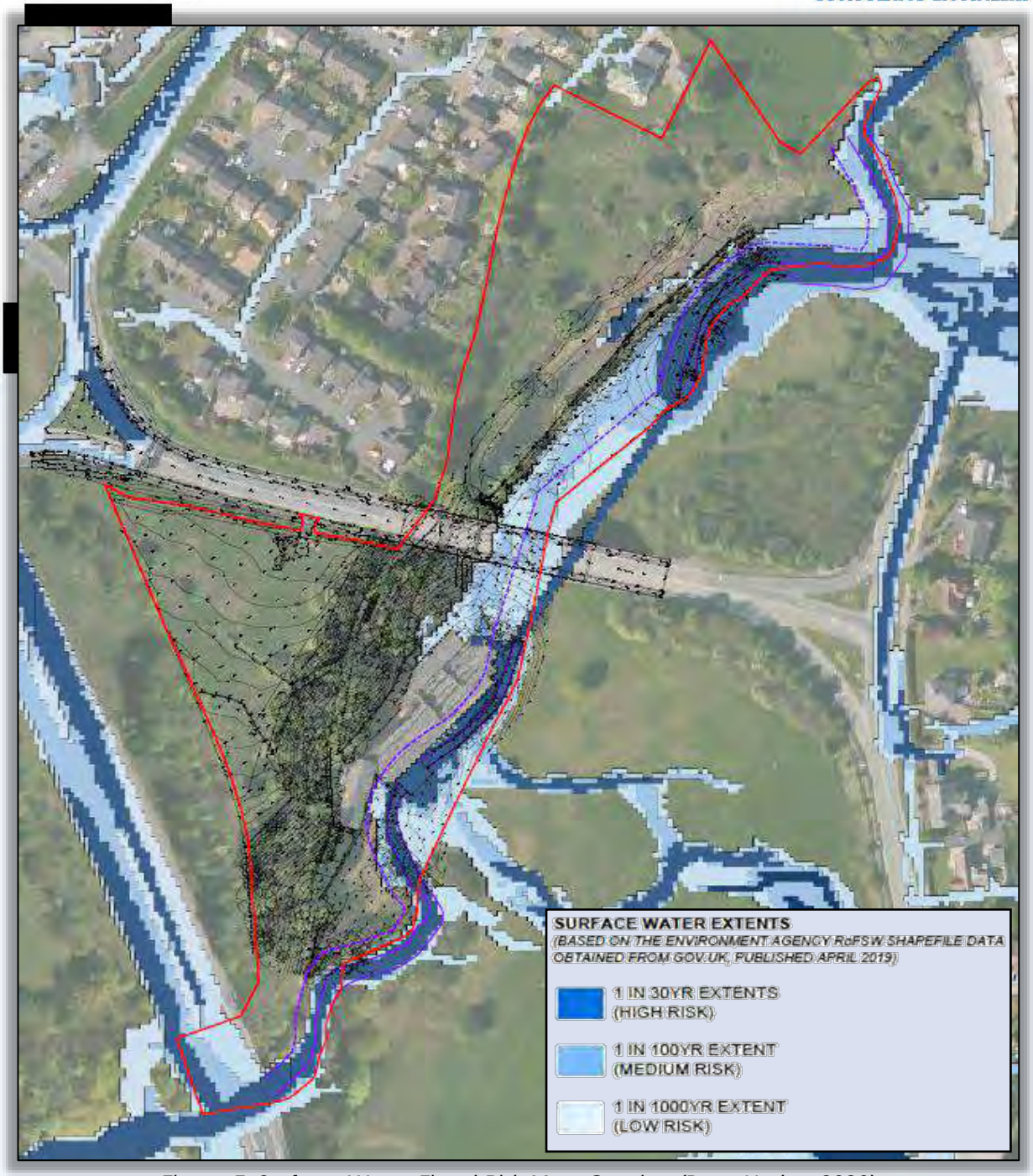


Figure 5: Surface Water Flood Risk Map Overlay (Betts Hydro, 2020)

Development Constraints & Considerations

Dearden Brook is located within the site and based on the current mapping this watercourse is currently shown to have out of channel flooding in some of the modelled events, thus meaning the extents of Flood Zone 2 and 3 encroach out of channel is some locations.

[redacted]

[redacted]
[redacted]
[redacted]residential development is proposed within Flood Zone 3 there is a requirement for [redacted]ion Test to be undertaken by an appropriately qualified professional. Furthermore, [redacted]esidential development is proposed within Flood Zone 2, there is a need for the planning application to be supported by a Sequential Test that has considered the identified flood risks. In the case of the site, the majority is located within Flood Zone 1 and residential would be acceptable here subject to any mitigation measures required to ensure it remains safe for its design life. Any residential development being proposed should adopt an intra-sequential approach be steered to those areas within the site that are at least flood risk (Flood Zone 1). If residential development was to be proposed within Flood Zone 2 or 3 then the planning tests noted above would need to be applied.

[redacted]ent to ensure safeguarding new development and the typical [redacted]al development is to ensure it remains flood free for the design event which should include allowance for Climate Change. Normally, the proposed finished floor levels would be raised 600mm above the predicted onsite top water levels in the 1 in 100yr plus 35% climate change. As the predicted water levels vary along the watercourse route and the site is bordered by a long stretch of the watercourse the finished floor levels will vary depending on the dwelling's location in relation to the watercourse route. Based on the information considered within this assessment the minimum finished floor level for development proposed in the northern part of site will be 159.93mAOD. As we move to the central part of site (near the existing Mill building) the finished floor level would be 156.11mAOD and in the southern part of the site the finished floor level will be 153.74mAOD.

Flood resilience measures can also be considered as safeguarding measures in part and can be built into new development to provide valuable property level resilience. Measures include raising electricals and utilities above the ground floor level, using water compatible materials for flooring at ground floor level, horizontal plaster boards rather than vertical (to allow for easier replacement) and the use of non-return flap valves on external incoming drainage runs. These will be considered in more detail in due course as the design is finalised.

In terms of this Dearden Brook, the Environment Agency will require an 8m no build offset to be included into any future planning proposals to allow for any future required maintenance of this watercourse by them. The 8m offset should provide clear, unimpeded access meaning no building, fence line, boundary walls or privately owner areas can be located within 8m of the top of bank into the site. An indicative offset line is shown on the Flood Zone overlay Plan based on the estimated Top of Bank illustrated on the topographical survey for the site, see Appendix C).

As noted, the UU public combined sewer crossed the development site and United Utilities will require this asset to be accounted for within any planning layout, diversion may be possible subject to early discussion with UU. Where diversion is not practical then any proposed planning layout will need to allow for an offset from the centreline of the sewer on both sides. Early discussion with UU is recommended as the offset/easement can vary depending on asset depth and size.

Blue/green corridors should be incorporated within the design for the site to account for any natural flood flow or conveyance routes associated with surface water/ pluvial flood risks to allow flows to continue as they exist at present. Alternatively, any natural flows through the

[redacted] need to be intercepted and conveyed through the development proposals to their [redacted] fall locations.

There is an existing Mill Pond present on the site and currently little information is present for the nature and function that this feature currently plays in flood management for the surroundings areas. The proposals will be to shorten this mill pond where possible to account for the development in this part of the site. Further investigation of the inlets and outlets of this existing feature will be required to understand whether it can be shortened and the best mechanisms to carry this work out. Furthermore, early discussion will be needed with the Environment Agency to ascertain whether this former Mill Pond is now used within the [redacted] management benefit. Consent for changes to the Mill pond may [redacted] Lead Local Flood Authority therefore discussion early in the design process would be recommended to identify any constraints for future development.

Given the vulnerability, any subsequent planning application for residential development at the site will need to be supported by a full Flood Risk Assessment which considers the potential risks and identifies mitigation that will safeguard the proposals for their lifetime, considering Climate Change. It is also recommended that early discussion and/or pre-application advice is undertaken with the Environment Agency to identify any potential constraints with the proposals.

SURFACE WATER MANAGEMENT

The following section will look at the potential surface water management options, this is not a detailed drainage design, but a strategic overview of the opportunities based on sustainable drainage hierarchy. In terms of surface water management, national and local planning policies identify that surface water run-off generated by new development is required to be managed in an appropriate and sustainable way.

Existing Drainage Situation

This section will consider how the site currently manages surface water/pluvial run-off, this is a desk-based assessment only, based on the available information and is a desk-based assessment only. At present most of the site is undeveloped and therefore permeable, there is some impermeable areas remaining from its former use as a mill, including the main façade adjacent to the watercourse. The pluvial run-off generated on the undeveloped areas would typically discharge to ground over time in low-lying areas, however given the falls across the site it is more likely that flows from most rainfall events naturally convey with the topography toward Dearden Brook on the south/south-eastern boundaries.

The mill and surrounding hardstanding areas would have historically discharge run-off to Dearden Brook given is location. Given that most of the mill and surrounding hardstanding has become derelict and unusable, it is assumed that any previous drainage systems would not likely be fully functioning. During extreme and prolonged rainfall events/occasions where existing systems are exceeded, there is again the potential for overland flow to direct any excess run-off naturally towards the watercourse.

Pre-Development Run-off Rates

Based on the total site area being 3.150ha, the pre-development greenfield rate (QBar) is calculated to be 55.5l/s using the FEH Statistical Method (see calculations summary in

[redacted]dix F). This equates to 17.6l/s/ha. The peak rates and volumes of run-off generated by [redacted] at present have been calculated for the peak events using the FEH Statistical [redacted], as shown in Table 3.

Table 3: Pre-Development Run-Off Rates based on Greenfield Scenario (Betts Hydro, 2020)

Site Area	Run-Off Rates				Run-Off Volumes	
	1 In 1 Year	1 In 30 Year	1 In 100 Year	QBar	1 In 1 Year	1 In 100 Year
3.150ha	48.3l/s	94.3l/s	115.4l/s	55.5l/s	524.3cu.m	1308.1cu.m

[redacted]Proposed Drainage Strategy

[redacted]uDS Manual (CIRIA 753) and the Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015), states surface water run-off generated by new development should discharge firstly to ground (via infiltration) to minimise discharge to downstream watercourses and sewers. Where infiltration is not practical or viable, discharge to a watercourse system should be considered. Finally, where the first two means of managing surface water have been explored and are evidenced as not feasible, surface water run-off can, subject to agreements, discharge into a suitable sewer network.

This section will consider the options for surface water management assessed in accordance with the sustainable drainage hierarchy: discharging to ground, to a watercourse or finally to the public sewer network in that order of priority. A Drainage Opportunities Plan has been prepared (extract in Figure 6) which illustrates these options (see full plan in Appendix G).

Discharge to Ground

The sustainable drainage hierarchy notes the primary means of managing surface water is to discharge to ground (infiltrate) where ground conditions allow. The online published geology data identifies the soils in the region to be made up of slowly permeable, seasonally wet loamy and clayey soils. The underlying bedrock is made up of mudstones and siltstones with Devensian tills at superficial level. Based on the published datasets, it is unlikely that infiltration onsite will provide a feasible drainage solution, based on impermeable nature of the underlying strata. The soil factor for the area has also been identified to be 0.5 (based on the FEH catchment data), which suggest the soils in the region are not porous (based on a scale of 0.1 to 0.5, with 0.5 being impermeable).

Based on the ground conditions identified by the published online datasets, infiltration would not be considered a feasible option for managing surface water run-off generated by future development. To confirm the specific infiltration rates, further investigation in the form of Soakaway Testing (to BRE365) may need to be commissioned prior to detailed drainage design once planning approval is granted in due course.

Discharge to a Watercourse

Given that infiltration is unlikely to provide a feasible option for managing surface water run-off, we have considered the alternatives. The next option in the sustainable drainage hierarchy should be to discharge surface water run-off to a nearby watercourse or waterbody. The nearest watercourse is Dearden Brook, which flows adjacent to the eastern

[redacted]

[redacted]undary, Dearden Brook is understood to be both open channel and culverted in [redacted]rough and adjacent to the site boundaries. The watercourse flows in a south-[redacted] direction to outfall into the River Irwell less than 500m from the site boundary.

In terms of this Dearden Brook, the EA will require an 8m no build offset to be included into any future planning proposals to allow for any future required maintenance of this watercourse by them. The 8m offset should provide clear, unimpeded access meaning no building, fence line, boundary walls or privately owner areas can be located within 8m of the top of bank into the site. An indicative offset line is shown on the Floodplain Overlay Plan based on the features identified in the topographical survey, see Appendix B).

[redacted]

Figure 6: Proposed Drainage Strategy Plan (Betts Hydro, 2020)

[redacted]

[redacted]

[redacted]oposals for surface water management at the site will be to mimic the pre-[redacted]ent situation and discharge surface water run-off at a restricted rate to the [redacted]urse which runs through the site, as illustrated within Figure 6. Subject to consent and detailed design. Restricting the rate will generate a requirement to provide onsite attenuation, the specifics of which will be determined during detailed design in due course.

Detailed design will need to refine the strategy, based on engineering constraints and layout changes. It is likely that a gravity solution will be possible given the current falls across the site, but this will be confirmed during the next stage, as the planning layout is developed. Consent for works to the Main River network including new outfalls or changes to the existing [redacted]hs will be required from the Environment Agency in the form of an [redacted]rly discussion would also be recommended with the Lead Local [redacted]ire County Council) who are responsible for agreeing discharge rates from new development to waterbodies.

Proposed Rates of Discharge

In terms of surface water proposals, policy states that new development should consider minimising the surface water run-off generated by impermeable areas and restricting run-off from new development to mimic a pre-development greenfield equivalent where at all practical. Based on the total site area of 3.150ha, the pre-development greenfield rate (QBar) is calculated to be 55.5l/s this is derived based on 17.6l/s/ha as calculated using the FEH Statistical Method (see calculations summary in Appendix F).

As the proposals would be to restrict surface water run-off to mimic a pre-development greenfield situation, there will be a requirement to provide onsite surface water attenuation to ensure no increased risk to others results from the proposals to increase impermeable area. The stormwater storage figures quoted in Table 4 are estimates only, based on the available information, this will be refined in due course as part of the full assessment once a layout is developed. It has been assumed that post-development impermeable areas will increase to 50% of the total site area, to calculate the stormwater storage requirements.

Table 4: Estimated Stormwater Storage Requirements (Betts Hydro, 2020)

Post-Development Impermeable Area (1.575ha)	1 In 1 Yr Event	1 In 30 Yr Event	1 In 100 Yr Event + 40% CC
Restricted Run-Off Rate	55.5l/s	55.5l/s	55.5l/s
Estimated Storage Volume	50cu.m-144cu.m	251cu.m-410cu.m	597cu.m-885cu.m

The overall the surface water drainage regime will need to be designed to manage the run-off generated in the storm events up to and including the 1 in 100-year return period event with 40% allowance for climate change. It would be beneficial to implement SuDS features including Swales, ponds, permeable surfaces and bio-filtration where at all feasible to reduce the volume of run-off generated by the proposals and provide benefits in terms of conveyance and attenuation. Detailed design will need to consider SuDS in more detail once the final layout is fixed and drainage routing can be considered given the constraints in terms of existing assets on the site.

[redacted]

[redacted]

Discharge to Public Sewer Asset

[redacted] Utilities (UU) sewer records identify the nearest public sewer assets to be the [redacted]combined sewer that runs through the development site from Wood Lane to the north, down to Rosebank in the south-western corner (see sewer records in Appendix D). Given the proximity of the watercourse there are no proposals at this time to discharge surface water run-off generated by the development to the public sewer network. Should discharge to the watercourse not be feasible then there may be scope to outfall some surface water to the public sewer network, subject to discussion with UU prior. It is likely that any discharge to the public sewer would need to be significantly reduced compare to the current proposals and there would be an inherit increase in required onsite attenuation. As [redacted]mbined sewer crossed the development site and United Utilities will [redacted]ccounted for within any planning layout, diversion may be possible subject to early discussion with UU. Where diversion is not practical then any proposed planning layout will need to allow for an offset from the centreline of the sewer on both sides. Early discussion with UU is recommended as the offset/easement can vary depending on asset depth and size.

FOUL WATER MANAGEMENT

This scoping letter has also considered the potential opportunities for dealing with foul water flows generated by the future development. As noted previously the nearest public sewer assets to be the public combined sewer that runs through the development site from Wood Lane to the north, down to Rosebank in the south-western corner (see sewer records in Appendix D). Give the location of the public sewer asset within the site curtilage the proposals for foul water management will be to connect flows generated by the new development into the pubic combined sewer. There may be existing connections present from the former Mill building, however these have not been confirmed and are unlikely to be suitable to serve the entire new development being proposed give the scale.

Detailed design will be required to confirm feasibility of the strategy and to confirm whether a full gravity connection can be achieved however, based on the existing ground levels it is assumed that this will be possible. Any proposed rates of discharge will need to conform to the guidance contained within Sewers for Adoption (based on 4000 litres per dwelling per 24 hours). Discussion with UU will identify any mor stringent design criteria upon consultation. Detailed design will need to consider the existing UU sewer (its depths and location) where it crosses the potential route of any plot drainage or internal proposed connections. It may be that multiple connections are required to serve the proposed development to limit the depth on the proposed drainage system. A pre-development enquiry, for agreement in principle with UU, can be undertaken at a later stage to confirm if this strategy would be feasible once a planning layout is available.

CONCLUSIONS

This Flood Risk and Sustainable Drainage Strategy Statement has identified the key considerations in terms of flood risk and drainage at the site. The findings of this desk-based exercise are that the potential flood risks are either very low or can be sufficiently catered for through the implementation of mitigation measures including appropriate spatial planning within the layout. The incorporation of a sustainable and appropriate surface water and foul water management regime for any future development can also be

[redacted]

[redacted]
[redacted]
[redacted]ed in accordance with planning policy. This summary also identifies areas where [redacted]rk is required to accommodate the future planning application, including the [redacted]tion of a full Flood Risk Assessment in due course to support the proposals.

I trust that the above information summarises the flood risk and drainage considerations at the site and illustrates that the site can be residentially developed providing appropriate design and mitigation is implemented to safeguard against the primary risks identified. If you have any further queries or require further information, please do not hesitate to contact us.

Yours sincerely

[redacted]

Kirsty Williams *BSc(Hons) GradCIWEM*
Flood Risk Analyst

BETTS HYDRO

Attached:

Appendix A – Location Plan
Appendix B – Topographic Survey
Appendix C – EA Correspondence & Data
Appendix D – United Utilities Correspondence & Data
Appendix E – Lancashire County Council and Rossendale Bourgh Council Correspondence & Data
Appendix F – Surface Water Calculations and Quick Storage Estimates
Appendix G – Drainage Opportunities Plan

[redacted]

[redacted]

APPENDIX A – LOCATION PLAN

[redacted]

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LOCATION PLAN

Edenwood Mill, Edenfield, Rossendale

OS X (Eastings)	379761
OS Y (Northings)	418441
Nearest Post Code	BL0 0LW
Lat (WGS84)	N53:39:43 (53.662059)
Long (WGS84)	W2:18:28 (-2.307751)
Lat,Long	53.662059,-2.307751
Nat Grid	SD797184 / SD7976118441
mX	-256897
mY	7071967

[redacted]

APPENDIX B – TOPOGRAPHIC SURVEY

[redacted]

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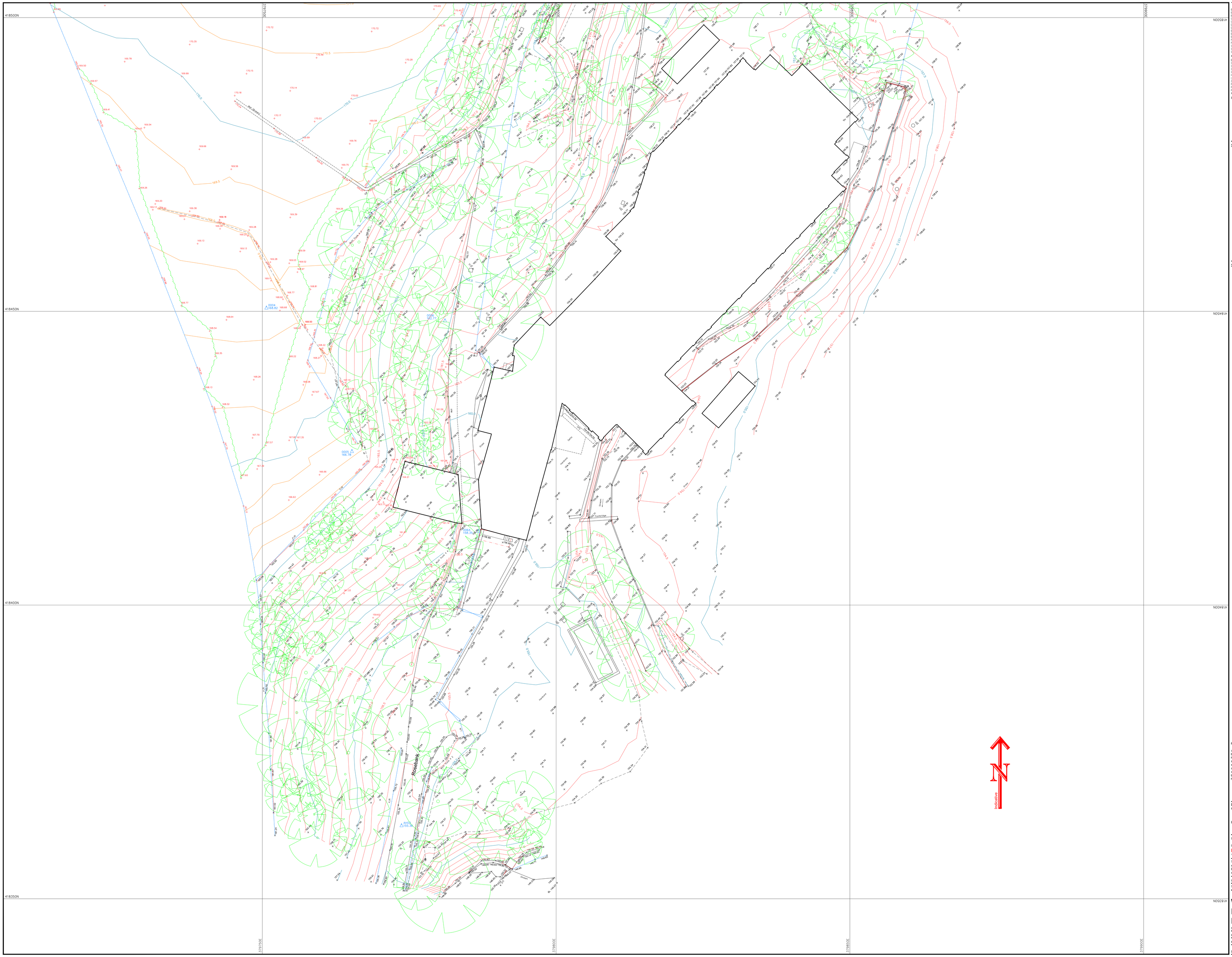

Topographical Survey Legend

B	Bollard	h	Height	RWP	Rain Water Pipe		Level Prefix Descriptions
BS	Bus Stop	Hyd	Hydrant	SP	Soil Pipe	AL	Arch Level
BT	Telecommunications IC	IC	Inspection Cover	SPS	Stone Paving Slabs	BL	Bed Level
CPS	Concrete Paving Slabs	JB	Junction Box	ST	Stop Tap	CL	Cover Level
CTV	Cable Television Cover	KO	Kerb Outlet	Stay	Cable Stay	EL	Eaves Level
DP	Downpipe	LB	Letter Box	SV	Stop Valve	FL	Floor Level
DR	Drain	LP	Lamp Post	TCB	Telephone Call Box	IL	Invert Level
Elec	Electrical IC	Mkr	Utility Marker	TL	Traffic Light	OL	Overhead Cable Level
EP	Elec. Pole	MP	Mile Post	TP	Telegraph Pole	PL	Parapet Level
ER	Earth Rod	NP	Name Plate	TPS	Tactile Paving Slabs	RL	Roof/ridge Level
FP	Flagpole	P	Post	VP	Vent Pipe	SL	Soffit Level
FT	Floodlight	PM	Parking Meter	WM	Water Meter	Spr	Arch Springing Level
G	Gully	RE	Rodding Eye	WO	Water Outlet	TF	Top Of Fence Level
GP	Gate Post	RS	Road Sign	UTL	Unable To Lift	TW	Top Of Wall Level
GV	Gas Valve	RTW	Retaining Wall			Thr	Threshold Level
						WL	Water Level

Fence Annotation

B/W	Barbed Wire
C/B	Closed Boarded
C/I	Corrugated Iron
C/L	Chain Link
C/P	Concrete Panel
H/R	Hand Rail
I/R	Iron Railings
O/B	Open Boarded
P/C	Post & Chain
P/R	Post & Rail
P/W	Post & Wire
W/M	Wire Mesh

C/L Fence
Safety Barrier
Gate
Stile
Hedge
Limit of Foliage & Tree Canopy
50.00 Spot Level
SSL1 50.00 Survey Control Station (coordinated point)
Tree
MT Multi Trunk

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

Survey Station Coordinates

Stn	Easting	Northing	Level
AH02	379773.69	418362.52	155.36
0001	379871.20	418530.59	175.21
0002	379774.41	418537.83	172.16
0003	379769.35	418503.33	171.20
0004	379750.70	418450.65	168.82
0005	379765.25	418426.23	166.78
0006	379781.08	418448.48	162.77
0007	379797.25	418506.05	165.82
0008	379826.43	418539.42	166.12
0009	379864.15	418549.89	161.48
0010	379912.33	418579.97	161.86
0011	379935.14	418614.71	158.47
0012	379927.83	418635.63	164.24
0013	379901.19	418644.92	167.32
0014	379865.92	418567.79	164.22
001A	379707.02	418577.60	169.87
006A	379786.76	418412.65	158.35
011A	379956.55	418634.65	159.12

Sheet Layout

Please note:

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Head and Registered Office
Survey Systems Ltd
Willow Bank House
Old Road
Handforth • Wilmslow
Cheshire SK9 3AZ
Tel. 01625 533444
Fax 01625 526815
mail@survsys.co.uk
www.survsys.co.uk

Levels are related to **OSGB15**
Value **n/a**

Coordinates are related to **National Grid** (GPS)

Scale **1:200**

0 2 4 6 8 10 12 14 16 18
metres

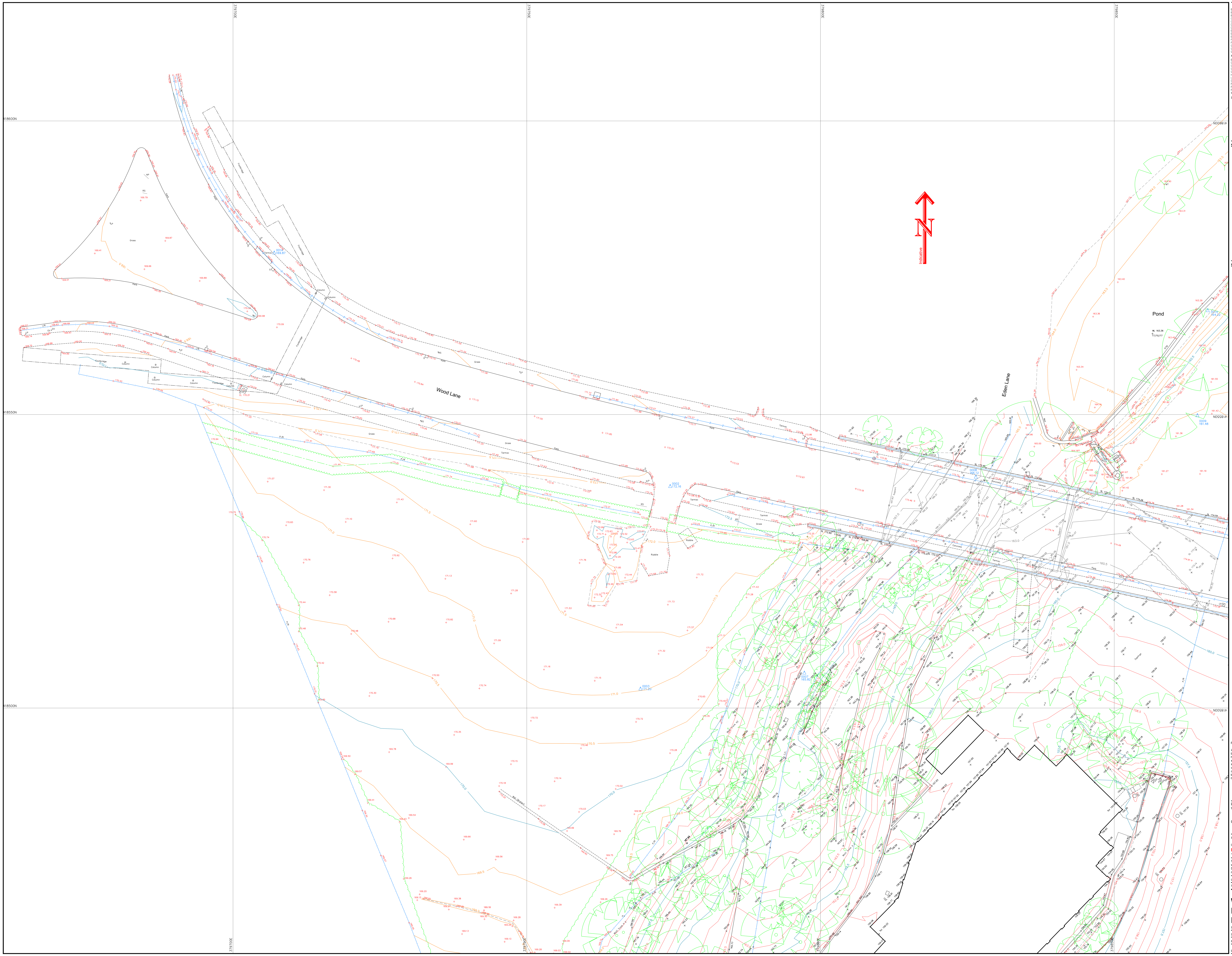
Client Nolan Redshaw Limited

Title

Topographical Survey
Wood Lane
Ramsbottom
BL0 0EX

Surveyed JB ZP AF
Drawn PG AG
Date October 2017
Checked AG
File name 7653B
Revision No.
Sheet size A0
Drawing No. **SSL:7653B:200:3:3**

SURVEYsystems



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Fence Annotation

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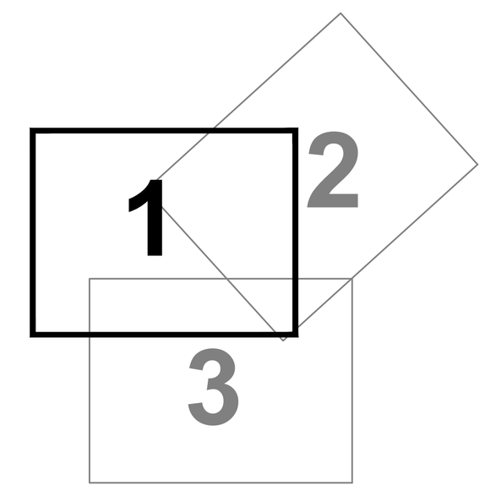
Sheet Layout



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Fax 01625 526815
mail@survsys.co.uk
www.survsys.co.uk

Levels are related to **OSGB15**
Value **n/a**

Coordinates are related to **National Grid** (GPS)

Scale **1:200**
0 2 4 6 8 10 12 14 16 18 metres

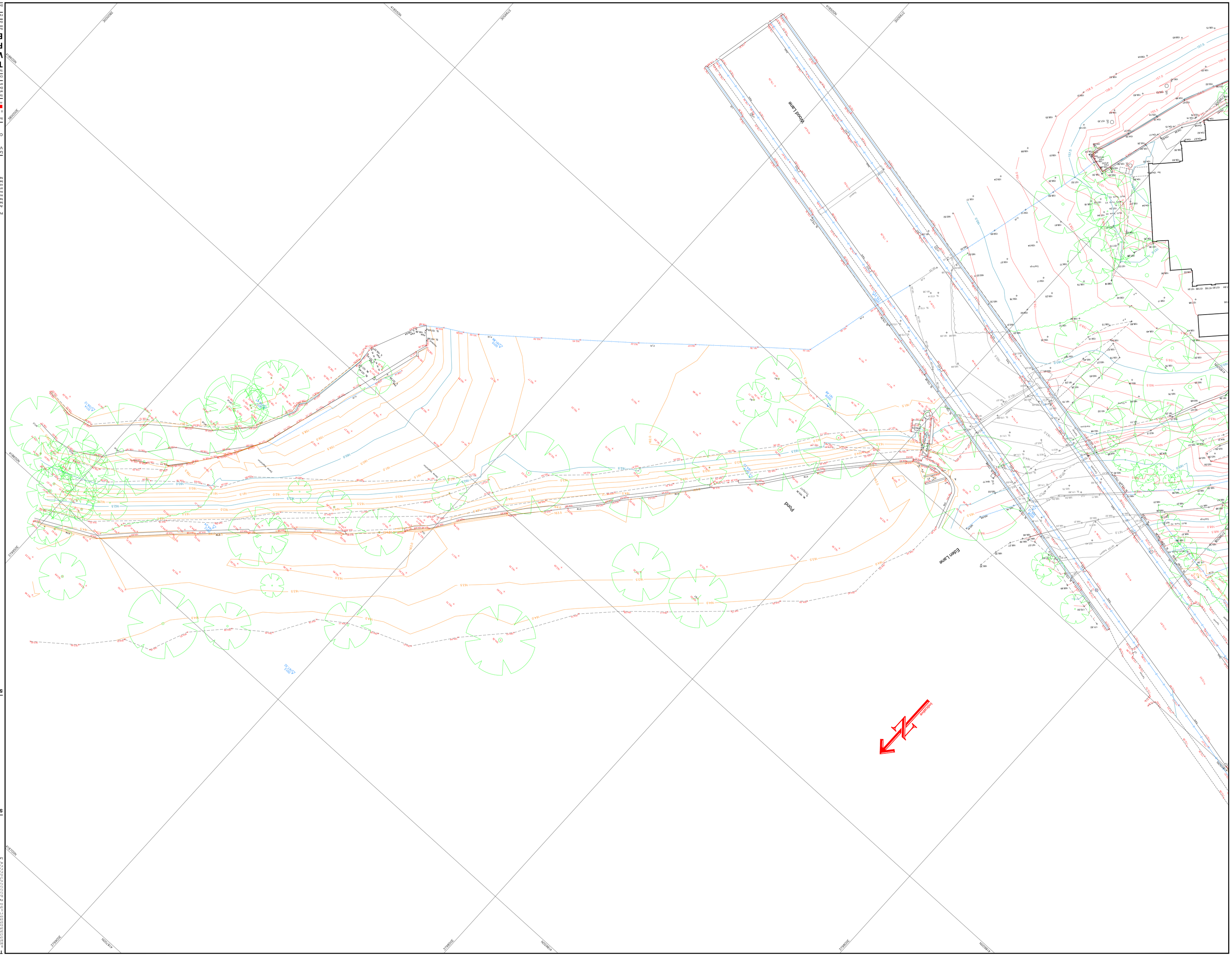
Client Nolan Redshaw Limited

Title
Topographical Survey Wood Lane Ramsbottom BL0 0EX

Surveyed	JB ZP AF	Drawn	PG AG
Date	October 2017	Checked	AG
File name	7653B	Revision No.	Sheet size A0

Drawing No. **SSL:7653B:200:1:3**

SURVEYsystems



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Value **n/a**

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Scale **1:200**
0 2 4 6 8 10 12 14 16 18
metres

Client Nolan Redshaw Limited

Title
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Surveyed JB ZP AF
Drawn PG AG
Date October 2017
Checked AG
File name 7653B
Revision No.
Sheet size A0
Drawing No. **SSL:7653B:200:2:3**

SURVEYsystems

[redacted]

APPENDIX C – EA CORRESPONDENCE & DATA

[redacted]

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Megan Berry

From: Megan Berry
Sent: 13 March 2020 14:01
To: 'CMBLNC Info Requests'
Subject: Product 4,5,6 & 7
Attachments: LOCATION PLAN.pdf

F.A.O Flood Risk, Drainage and/or Planning department

To whom it may concern

Edenwood Mill, Rossendale

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

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

Kind Regards

Megan Berry BSc(Hons) GradCIWEM
Graduate Flood Risk Analyst

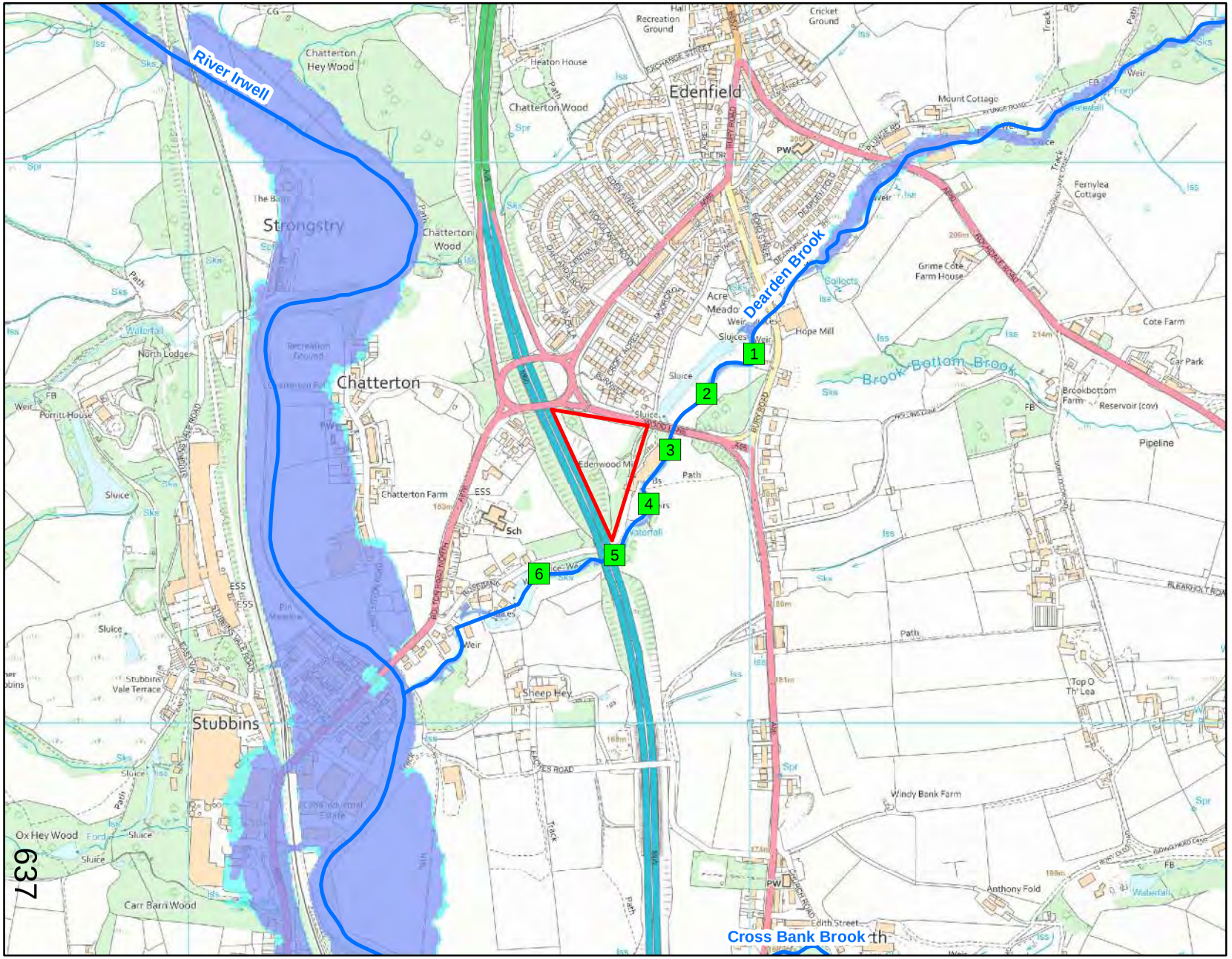
BETTS HYDRO
Consulting Engineers

[redacted]

www.betts-associates.co.uk

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

Detailed Flood Map centred on Edenwood Mill, Rossendale, BL0 0LW. Created on 19/03/2020 [GMMC165579CC]



Environment Agency

1:10,001

N

Legend

- Site Location
- Model Measurements
- Main River
- Flood Zone 3
- Flood Zone 2

637

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

					Undefended				
Map Reference	Model Node Reference	Easting	Northing	Data	5 % AEP (1 in 20 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.1 % AEP (1 in 1000 year)
1	ea013_ Model_DEAD01_0991n	380007	418658	Modelled Water Level (m aodN)	160.34	160.43	160.56	160.66	160.61
				Modelled Flow (cumecs)	5.41	7.38	9.97	12.55	11.25
2	ea013_ Model_DEAD01_0857	379924	418587	Modelled Water Level (m aodN)	158.22	158.82	159.33	159.62	159.26
				Modelled Flow (cumecs)	8.23	11.23	15.15	19.08	17.15
3	ea013_ Model_DEAD01_0732	379857	418485	Modelled Water Level (m aodN)	155.06	155.25	155.51	155.74	155.63
				Modelled Flow (cumecs)	8.23	11.23	15.15	19.08	17.15
4	ea013_ Model_DEAD01_0614	379819	418391	Modelled Water Level (m aodN)	152.80	152.96	153.14	153.30	153.25
				Modelled Flow (cumecs)	9.38	12.73	17.17	21.63	19.45
5	ea013_ Model_DEAD01_0508n	379756	418297	Modelled Water Level (m aodN)	144.96	145.10	145.27	145.41	145.35
				Modelled Flow (cumecs)	9.39	12.73	17.17	21.62	19.45
6	ea013_ Model_DEAD01_0351	379622	418267	Modelled Water Level (m aodN)	136.74	136.91	137.24	137.48	137.36
				Modelled Flow (cumecs)	9.38	12.73	17.17	21.62	19.45

Model data taken from Deardon Brook 2009 Study

AEP - Annual Exceedence Probability

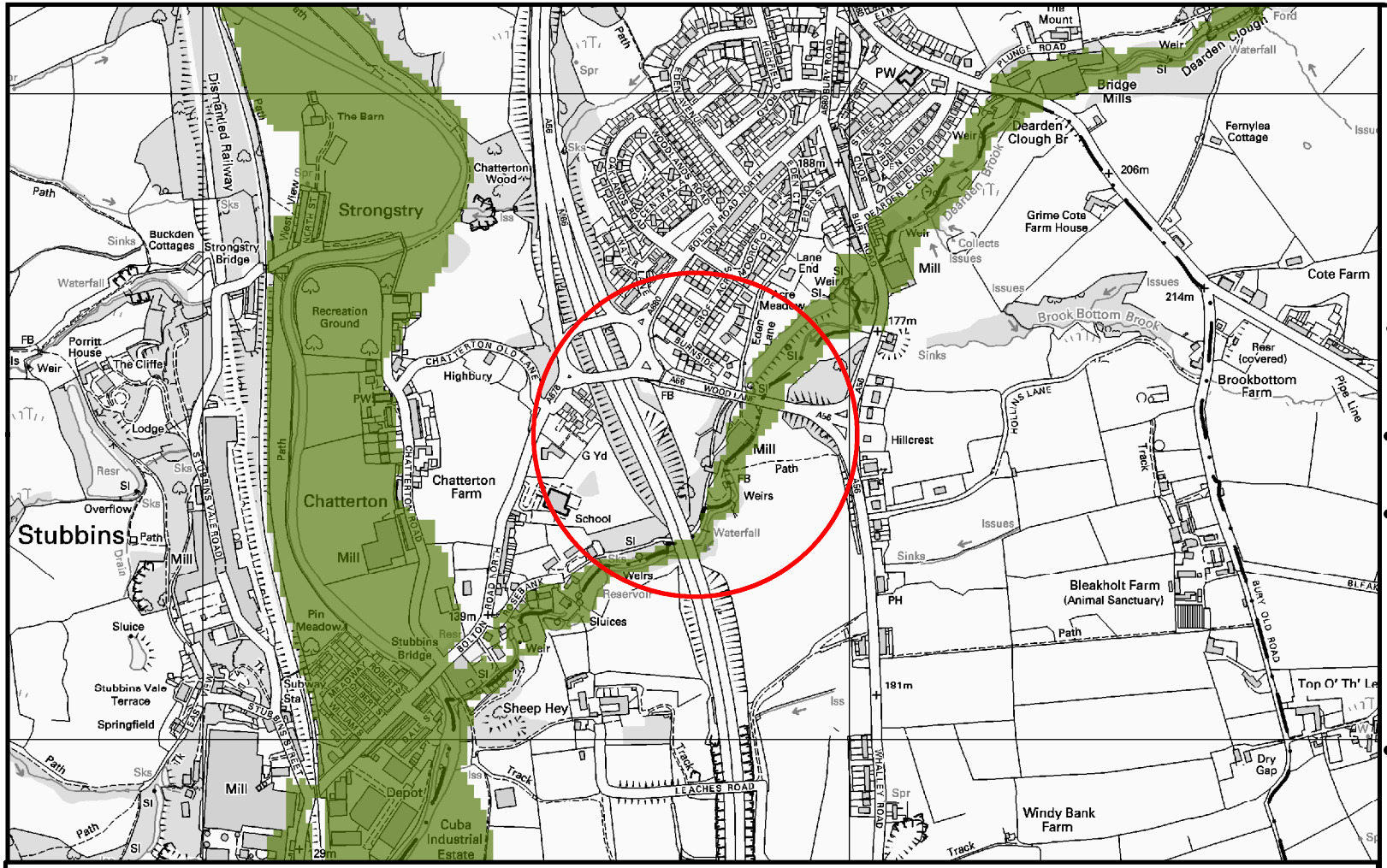
m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

Notes: *Climate Change Scenario - 35% and 70% increases in flow calculated for the 2080's (2070 - 2115). Please see https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances for more information regarding the new climate change guidance. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

Reservoir Flood Map

Environment Agency
Asiantaeth yr Amgylchedd



The area within the red circle could be at risk of flooding from the following reservoirs:

Reservoir Name	Reservoir Owner	Location	Local Authority	Environment Agency Office
Scout Moor	United Utilities Water plc	382540, 419670	Lancashire	Environment Agency - Greater Manchester, Merseysid

639

Note - this map provides a general indication of the largest area that might be flooded if a reservoir were to fail and release the water it holds. It is taken from a national assessment and displays a worst case scenario. The map is only intended as a guide and is not a prediction of what will happen.

Important

- This map has been produced for emergency planning purposes and displays a worst case scenario.
- It is not suitable for use at an individual property scale due to the method used.
- This map does not give any information on the likelihood of reservoir flooding or on the depth or speed of floodwaters. It also does not include any smaller reservoirs (which hold less than 25,000 cubic metres of water) or reservoirs commissioned or registered after Spring 2009.
- The information should not be interpreted as stating that the location you are interested in will or won't actually flood, but simply that it is in or not in an area that could be affected by reservoir flooding as shown on the maps.

Maximum extent of flood

1:10,000

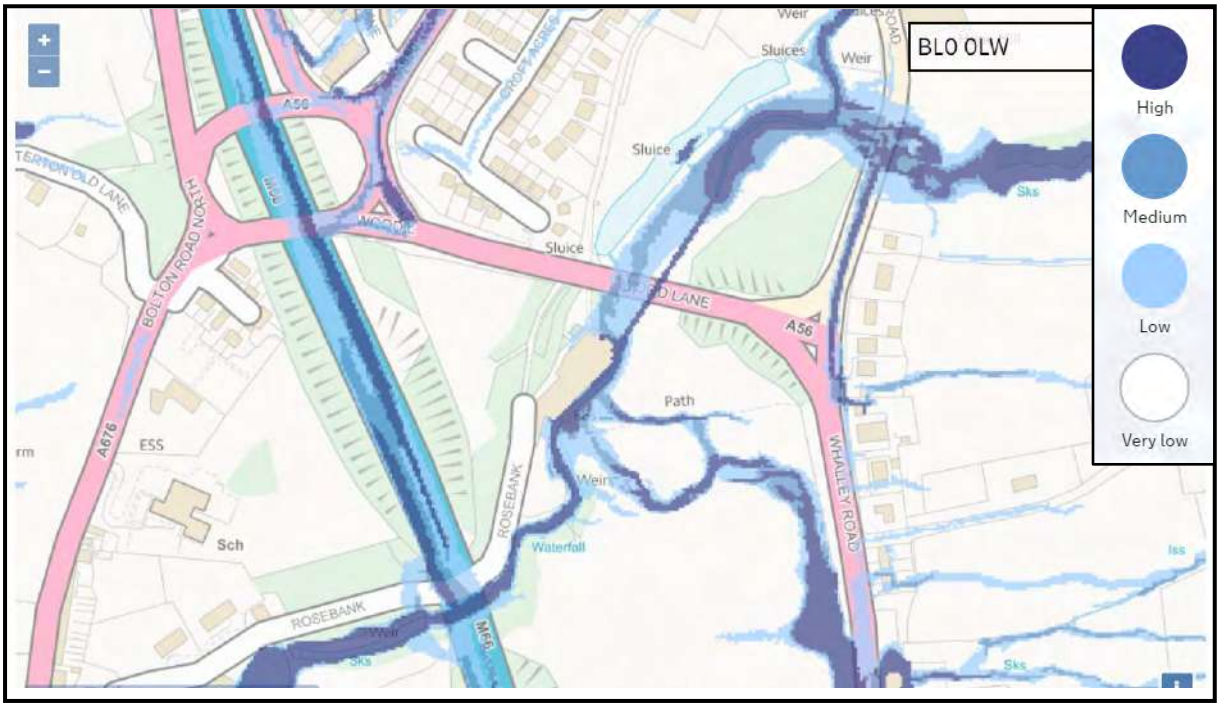
NATIONAL FLOOD MAPPING

BETTS HYDRO
CONSULTING ENGINEERS

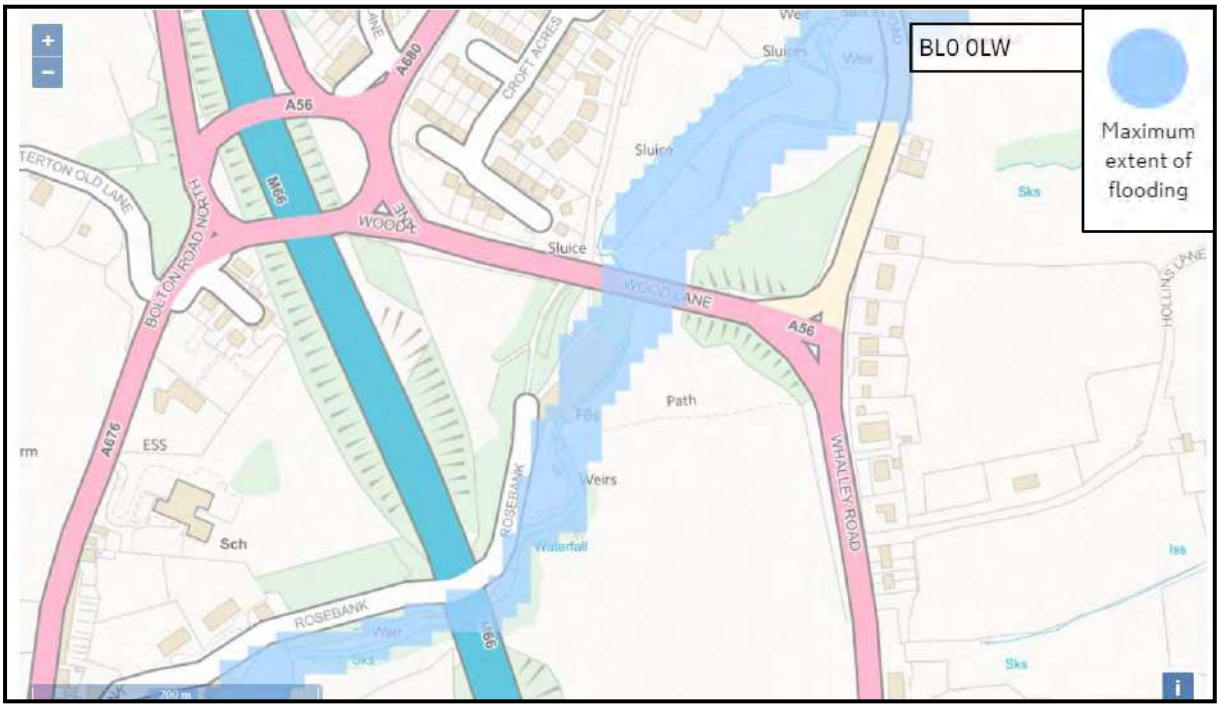
Flood Map for Planning

Long Term Flood Risk – Rivers or Sea

Long Term Flood Risk – Surface Water



Long Term Flood Risk - Reservoirs



DO NOT SCALE

LEGEND:

- DEVELOPMENT SITE AREA

EXISTING FEATURES

- CONTOURS
- 17.5m LEVELS
- MAIN RIVER
- 8m EASEMENT FROM TOP OF BANK

FLOOD ZONES
(BASED ON THE ENVIRONMENT AGENCY SHAPEFILE DATA OBTAINED FROM GOV.UK, PUBLISHED MARCH 2020)

- FLOOD ZONE 3 (1 IN 100YR EXTENT
- FLOOD ZONE 2 (1 IN 1000YR EXTENT)
- 1 IN 100YR PLUS CLIMATE CHANGE EXTENT

The EA Main River is understood to be culverted between these upstream and downstream open channel sections. The required offset will still be required here, but from the centerline of the culvert and not the Top of Bank. As the exact routing of the culvert is not known at this time, it has been assumed that the culverted length runs close to the site boundary and an 8m offset has been applied to link the upstream and downstream watercourse lengths.

REV	DATE	BY	DESCRIPTION	CHK
B	06.04.20	KW	UPDATED TO SUIT RDN COMMENTS	RDN
A	01.04.20	KW	PRELIMINARY FOR REVIEW	RDN

DRAWING STATUS: PRELIMINARY

BETTS HYDRO
CONSULTING ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 289041 enquiries@betts-associates.co.uk

TURNBULL AND STOCKDALE LTD

PROJECT:
EDENWOOD MILL
RAMSBOTTOM, BURY

TITLE:
FLOODPLAIN OVERLAY PLAN
(BASED ON THE MARCH 2020 EA DATA)

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
APRIL 2020	1:800 @ A0	KW	RDN

PROJECT No:	DRAWING No:	REV:
HYD510	100	C

DO NOT SCALE

LEGEND:

DEVELOPMENT SITE AREA

EXISTING FEATURES

CONTOURS

17.5m LEVELS

MAIN RIVER

SURFACE WATER EXTENTS

(BASED ON THE ENVIRONMENT AGENCY RoFSW SHAPEFILE DATA OBTAINED FROM GOV.UK, PUBLISHED APRIL 2019)

1 IN 30YR EXTENTS (HIGH RISK)

1 IN 100YR EXTENT (MEDIUM RISK)

1 IN 1000YR EXTENT (LOW RISK)

REV	DATE	BY	DESCRIPTION	CHK
A	01.04.20	KW	PRELIMINARY FOR REVIEW	RDN

DRAWING STATUS: PRELIMINARY

BETTS HYDRO
CONSULTING ENGINEERS
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 280041 enquiries@betts-associates.co.uk

TURNBULL AND STOCKDALE LTD

PROJECT:
EDENWOOD MILL
RAMSBOTTOM, BURY

TITLE:
SURFACE WATER FLOOD RISK MAP
(BASED ON THE MARCH 2020 EA DATA)

DATE:	SCALE @ SIZE:	DRAWN:	CHECKED:
APRIL 2020	1:800 @ A0	KW	RDN

PROJECT No:	DRAWING No:	REV:
HYD510	101	B

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[redacted]

APPENDIX D – UNITED UTILITIES CORRESPONDENCE & DATA

[redacted]

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Megan Berry

From: Wastewater Developer Services [redacted]
Sent: 16 March 2020 10:34
To: Megan Berry
Subject: RE: Sewer Flood Risk

Hi

'I can confirm that we have no current record of sewer flooding on our DG5 register within the vicinity of the proposed development. The DG5 register is a register of properties that have flooded as a result of hydraulic inadequacy of the public sewer network.

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

Our response does not include:

- *any sewer flooding events caused by blockages or collapses which are the result of third party actions, natural events or other actions over which UUW has no control and not a facet of sewer capacity; or*

- *any historical sewer flooding events that have been removed from the register as a result of investment in our infrastructure.*

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

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

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

Please find enclosed our response

Thanks sue

United Utilities
Water for the North West

Sue King
Customer Services Advanced
Developer Services & Metering
Customer Services
[redacted]
unitedutilities.com

If you have received a great service today why not tell us?
Visit: unitedutilities.com/wow

Visit: *https://unitedutilities.thewowawards.co.uk/nominate*

Please note that as from the 1 April 2019 the fee for the administration of a Building Over Agreement will be £139.00 (this fee is none vatable) http://www.unitedutilities.com/build-over-sewer.aspx).

Please send postal applications to the following address:

Wastewater Developer Services and Planning, 2nd floor Grasmere House, Lingley Mere Business Park, Lingley Green Ave, Great Sankey, Warrington WA5 3LP

Any applications sent to Gatewarth Industrial Estate will result in delays in your application.

From: Megan Berry [redacted]
Sent: 13 March 2020 14:02
To: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Subject: Sewer Flood Risk

F.A.O Flood Risk, Drainage and/or Planning department

To whom it may concern

Edenwood Mill, Rossendale

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

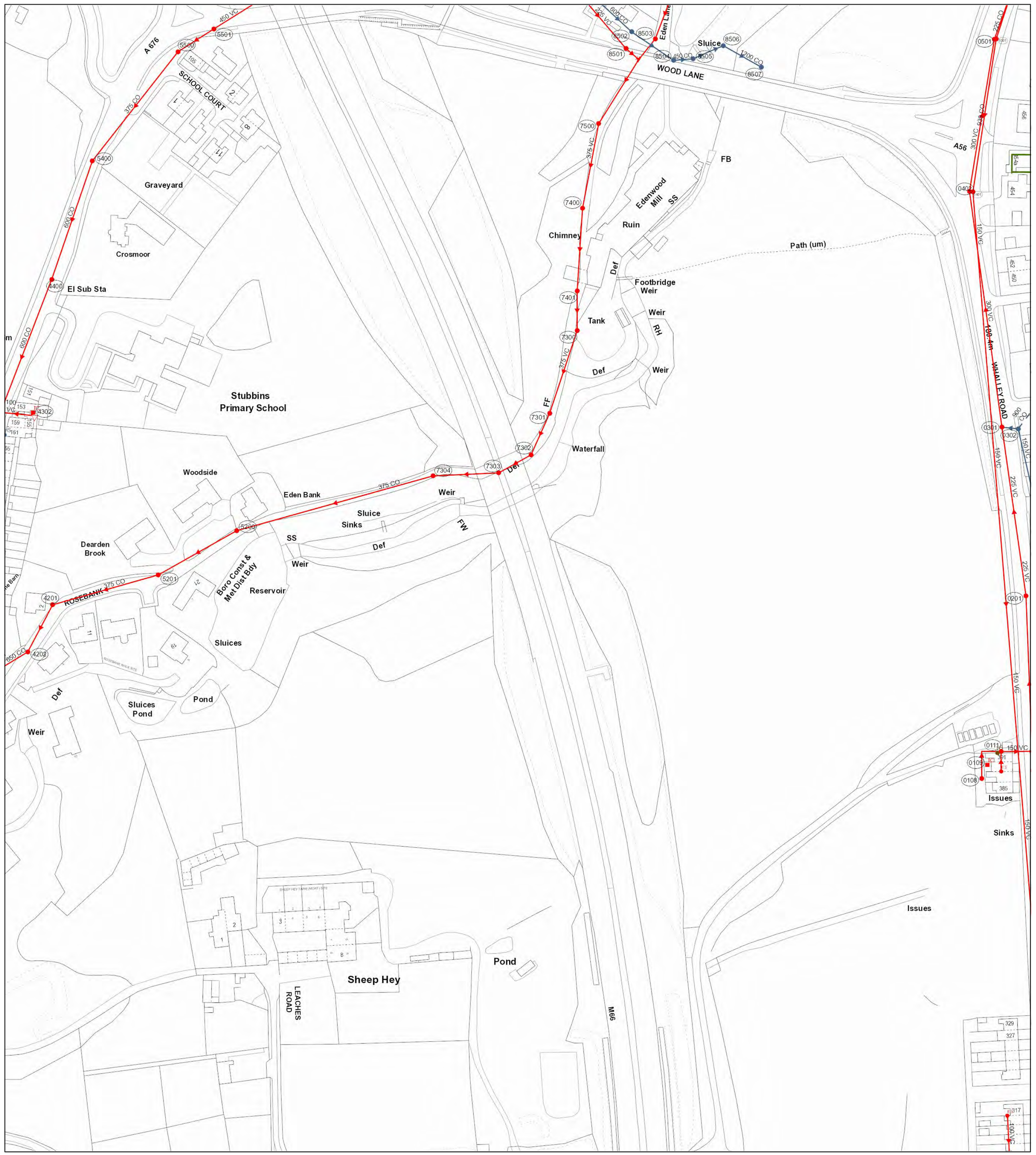
Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind Regards

Megan Berry BSc(Hons) GradCIWEM
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

[redacted]



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Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
7401	157.92	CO	154.85	375			VC	21.99	1 in 31
8506	174.38	SW	168.2	1200			CO	24.37311	1 in 3
8506	174.38	SW	168.2	1200			CO	24.37311	1 in 3
7304	150.3	CO	148.69	375			CO	113.2161	
5400	160.54	CO	0	600			CO	69.55703	
5400	160.54	CO	0	600			CO	69.55703	
5400	160.54	CO	0	600			CO	69.55703	
5400	160.54	CO	0	600			CO	69.55703	
6500	169.14	CO	166.23	450			VC	77.45193	1 in 17
0201	179.77	CO	176.9	225			VC	94.60806	
0201	179.77	CO	176.9	225			VC	94.60806	
7301	154.49	CO	152.41	375			CO	25.16544	1 in 11
8504	164.77	SW	162.33	450			CO	11.00768	1 in 5
8504	164.77	SW	162.33	450			CO	11.00768	1 in 5
4202		CO	0	650			CO	47.98594	
4202		CO	0	650			CO	47.98594	
7302	152.2	CO	150.1	375			CO	20.53497	1 in 25
7303	151.44	CO	149.26	375			CO	36.55908	1 in 64
0401	179.61	CO	0	300			VC	85.63256	
0401	179.61	CO	0	300			VC	85.63256	
0401	179.61	CO	0	300			VC	85.63256	
0401	179.61	CO	0	300			VC	85.63256	
7501	173.48	CO	170.6	225			VC	47.74464	1 in 9
4201	140.85	CO	0	375			CO	29.58611	
4201	140.85	CO	0	375			CO	29.58611	
0302		SW	0	300			VC	9.044888	
0302		SW	0	300			VC	9.044888	
7300	155.67	CO	153.91	375			VC	48.43977	1 in 32
4400	154.91	CO	152.8	600			CO	93.01508	1 in 16
4400	154.91	CO	152.8	600			CO	93.01508	1 in 16
8501	166.21	CO	162.56	225			VC	9.308619	
8501	166.21	CO	162.56	225			VC	9.308619	
0501	177.92	CO	0	939			CO	85.79931	
0501	177.92	CO	0	939			CO	85.79931	
0501	177.92	CO	0	939			CO	85.79931	
0501	177.92	CO	0	939			CO	85.79931	
0301	181.06	CO	0	300			VC	132.1809	
0301	181.06	CO	0	300			VC	132.1809	
7400	162.7	CO	160.7	375			VC	46.09772	1 in 11
7400	162.7	CO	160.7	375			VC	46.09772	1 in 11
7500	165.84	CO	164.17	375			VC	47.85019	1 in 14
7500	165.84	CO	164.17	375			VC	47.85019	1 in 14
8503	169.14	CO	167.38	375			VC	56.57967	1 in 18
8503	169.14	CO	167.38	375			VC	56.57967	1 in 18
8502	169.36	SW	164.43	450			CO	28.12741	1 in 14
8502	169.36	SW	164.43	450			CO	28.12741	1 in 14
8505	161.84	SW	159.88	600			CO	9.73617	
8505	161.84	SW	159.88	600			CO	9.73617	
0601	176.46	CO	0	225			CO	77.00215	
7502	173.51	SW	170.41	450			CO	21.4222	1 in 18
5501	165.28	CO	161.59	450			VC	23.58264	
5501	165.28	CO	161.59	450			VC	23.58264	
5200	145.49	CO	0	375			CO	49.86509	
0202	179.31	SW	178.56	150			VC	81.77113	
5201	43.53	CO	0	375			CO	60.99515	
5500	165.19	CO	161.49	375			CO	77.02045	
5500	165.19	CO	161.49	375			CO	77.02045	
8508		CO	0	375			VC	29.73719	
0108		CO		150			VC	25.85381	
0108		CO		150			VC	25.85381	
0101	180.48	CO	178.29	225			VC	97.01445	1 in 70
0501	177.92	CO	175.25	300			VC	76.73353	
0501	177.92	CO	175.25	300			VC	76.73353	
0501	177.92	CO	175.25	300			VC	76.73353	
0501	177.92	CO	175.25	300			VC	76.73353	
0111		CO		150			VC	17.26191	
0111		CO		150			VC	17.26191	
0402		CO	0	150			VC	459.6828	
0402		CO	0	150			VC	459.6828	
0402		CO	0	150			VC	459.6828	
0402		CO	0	150			VC	459.6828	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

LEGEND

Abandoned · Foul · Surface Water · Combined

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- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:
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- 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
- Orifice 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
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	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 Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

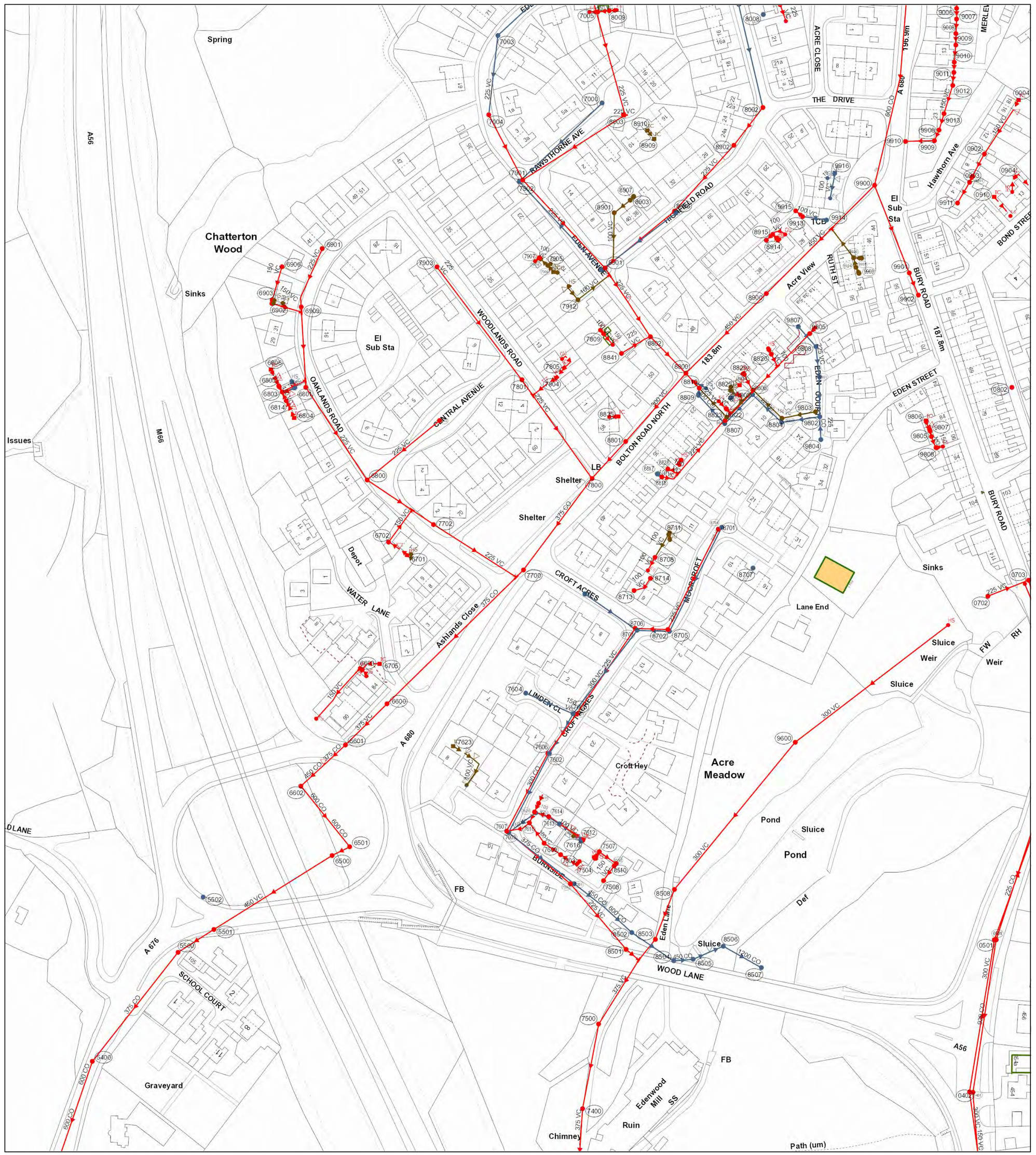
1 BURNSIDE,
RAMSBOTTOM,
BURY,
BL0 0LW

OS sheet Number: SD7918SE
Scale: 1:1250 **Date:** 16/03/2020
Nodes: 71
Sheet: 3 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities — helping life flow smoothly



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Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
9807		SW		225			VC	14.71466	
9904		FO		0			VC	5.391082	
8506	174.38	SW	168.2	1200			CO	24.37311	1 in 3
8506	174.38	SW	168.2	1200			CO	24.37311	1 in 3
5400	160.54	CO	0	600			CO	69.55703	
5400	160.54	CO	0	600			CO	69.55703	
5400	160.54	CO	0	600			CO	69.55703	
5400	160.54	CO	0	600			CO	69.55703	
9914		SW		100			VC	13.49592	
9013		CO		150			VC	9.436214	
9013		CO		150			VC	9.436214	
8703	178.41	CO	175.28	225			VC	57.51566	1 in 36
9906		FO		0			VC	20.37014	
8806	185	SW	182.08	225			CO	22.27692	1 in 0.124236692
7802	178.91	CO	176.85	225			CO	52.07399	1 in 21
8002	191.88	CO	189.84	225			VC	26.33297	1 in 26
9803	185.26	FO	183.6	150			VC	19.07852	1 in 24
7700		CO	0	375			CO	106.0148	
7907		CO		100			VC	3.148397	
7003	186.1	SW	184.43	225			VC	44.44016	
0501	177.92	CO	0	939			CO	85.79931	
0501	177.92	CO	0	939			CO	85.79931	
0501	177.92	CO	0	939			CO	85.79931	
0501	177.92	CO	0	939			CO	85.79931	
8901		FO		100			VC	26.93691	
7603	173.31	CO	171.11	225			VC	45.8451	1 in 98
8802	183.48	CO	181.66	300			VC	28.3227	
8904	186.76	SW	186.07	225			VC	1.287012	1 in 2
8904	186.76	CO	185.44	225			VC	49.77958	1 in 16
8503	169.14	CO	167.38	375			VC	56.57967	1 in 18
8503	169.14	CO	167.38	375			VC	56.57967	1 in 18
8903		FO		100			VC	11.36393	
7701	177.93	SW	175.95	225			VC	35.41064	1 in 107
5501	165.28	CO	161.59	450			VC	23.58264	
5501	165.28	CO	161.59	450			VC	23.58264	
8907		FO		100			VC	2.804727	
7800	179.66	CO	0	375			CO	63.45002	
8810	183.3	CO	181.22	300			CO	11.11234	1 in 278
6601	170.6	CO	167.48	375			CO	16.48629	1 in 69
8702	178.85	CO	175.87	225			VC	18.11866	1 in 33
7615		SW		150			VC	18.75337	
6702		CO		150			VC	22.17616	
8508		CO	0	375			VC	29.73719	
7004	185.03	CO	183.35	225			VC	40.76597	
8902	190.62	CO	188.66	225			VC	49.47145	1 in 16
9900	192.26	CO	0	450			VC	52.42579	
8818		CO		100			VC	6.587531	
0401	179.61	CO	0	300			VC	85.63256	
0401	179.61	CO	0	300			VC	85.63256	
0401	179.61	CO	0	300			VC	85.63256	
0401	179.61	CO	0	300			VC	85.63256	
6814		CO		150			VC	5.552941	
7612		SW		100			VC	7.253696	
7601	176.17	CO	173.64	225			CO	27.09523	1 in 37
7604	175.57	SW	174.13	150			VC	28.5847	1 in 357
6600	171.83	CO	0	375			VC	32.63338	
8501	166.21	CO	162.56	225			VC	9.308619	
8501	166.21	CO	162.56	225			VC	9.308619	
8905	186.73	SW	185.34	225			VC	52.04446	1 in 24
7602	175.03	CO	172.88	225			VC	14.42368	1 in 29
8705	178.85	SW	176.13	225			VC	17.98723	1 in 36
8706	178.39	SW	175.57	300			VC	58.42431	1 in 36
8502	169.36	SW	164.43	450			CO	28.12741	1 in 14
8502	169.36	SW	164.43	450			CO	28.12741	1 in 14
0601	176.46	CO	0	225			CO	77.00211	
7502	173.51	SW	170.41	450			CO	21.4222	1 in 18
7005		CO		150			VC	4.718808	
6903		CO		150			VC	1.926526	
9908		CO		150			VC	6.421124	
9908		CO		150			VC	6.421124	
7912		FO		100			VC	22.34039	
5500	165.19	CO	161.49	375			CO	77.02045	
5500	165.19	CO	161.49	375			CO	77.02045	
6902		CO		150			VC	17.22617	
7605	176.08	SW	173.88	300			VC	12.47063	1 in 35
8512		CO		150			VC	10.05247	
9006		CO		150			VC	5.879464	
9006		CO		150			VC	5.879464	
9008		CO		150			VC	6.311298	
9008		CO		150			VC	6.311298	
9600	168.29	CO	165.27	300			VC	105.6769	
9913		CO		100			VC	4.900246	
8803	184.41	SW	182.18	225			CO	22.40865	1 in 224
8801	181.17	CO	0	300			VC	27.68199	
8801		CO	175.38	225			VC	61.46682	1 in 57
9900	192.26	CO	188.87	450			VC	84.88818	
8807	184.2	SW	181.36	300			VC	21.53787	1 in 0.12019573
0903		CO		150			VC	13.3525	
0903		CO		150			VC	13.3525	
8901	184.42	CO	182.4	225			VC	23.01485	1 in 58
8808		SW		225			VC	16.96131	
7614		CO		100			VC	8.254749	
8915		CO		100			VC	4.758903	
6805		CO		150			VC	3.666494	
7000	188.26	SW	186.54	225			VC	63.30919	1 in 20
9901	189.59	CO	0	450			VC	13.12391	
9901	189.59	CO	0	450			VC	13.12391	
9905		FO		0			VC	4.44809	
8900	186.5	CO	0	450			VC	62.94061	
6906		CO		150			VC	19.1878	
0902		CO		150			VC	13.92618	
0902		CO		150			VC	13.92618	
9009		CO		150			VC	9.634622	
9009		CO		150			VC	9.634622	
7801	181.44	CO	178.6	225			VC	67.18076	1 in 48
9909		CO		150			VC	16.21008	
9909		CO		150			VC	16.21008	
7903	181.96	CO	179.4	225			VC	78.34604	1 in 98
8009		CO		150			VC	6.329395	
9012		CO		150			VC	16.33142	
9012		CO		150			VC	16.33142	
8510		CO		150			VC	1.702509	
9808		CO		150			VC	3.936361	
9808		CO		150			VC	3.936361	
7400	162.7	CO	160.7	375			VC	46.09772	1 in 11
7400	162.7	CO	160.7	375			VC	46.09772	1 in 11
6800	176.4	CO	174.26	225			VC	44.52306	1 in 111
7606	175.08	SW	173.25	300			CO	49.55611	1 in 28
8505	161.84	SW	159.88	600			CO	9.73617	
8505	161.84	SW	159.88	600			CO	9.73617	
0703	178.77	CO	0	225			VC	50.489	
0703	178.77	CO	0	225			VC	50.489	
8701	181.06	CO	178.44	225			VC	62.36869	1 in 25
7507		CO		100			VC	11.26395	
8838		CO		100			VC	6.681192	
7607	173.35	SW	171.33	375			CO	46.25078	1 in 119
8003	188.33	CO	186.56	225			VC	1.00005	
9801	186.13	SW	184.6	225			CO	22.09109	1 in 8
7901	184.9	CO	183.05	225			VC	66.96857	1 in 108
6602	170.48	CO	166.99	600			CO	43.26177	1 in 59
8817		SW		100			VC	3.191998	
6500	169.14	CO	166.23	450			VC	77.45193	1 in 17
7702	176.02	CO	173.86	225			VC	54.42157	
8809	183.4	SW	181.23	300			CO	4.018968	1 in 402
0901		CO		150			VC	3.79913	
0901		CO		150			VC	3.79913	
8504	164.77	SW	162.33	450			CO	11.00768	1 in 5
8504	164.77	SW	162.33	450			VC	11.00768	1 in 5
7501	173.48	CO	170.6	225			VC	47.74464	1 in 9
8826		CO		100			VC	7.477227	
7613		SW		100			VC	14.497	
7900	184.45	SW	183.12	225			VC	66.99783	1 in 209
8822		CO		100			VC	3.431729	
9807		CO		150			VC	4.149951	
9807		CO		150			VC	4.149951	
7809		CO		150			VC	8.139008	
8708		CO		100			VC	8.23381	
8704	181.1	SW	178.72	225			VC	64.64924	1 in 25
6803		CO		150			VC	14.42368	
6901	178.58	CO	176.43	225			VC	34.77676	1 in 34
9802	185.26	SW	182	225			CO	21.32247	
9903		FO		0			VC	3.892691	
9007		CO		150			VC	8.185202	
9007		CO		150			VC	8.185202	
8711		FO		100			VC	14.79185	
9804	184.29	SW	182.4	225			CO	12.79601	1 in 128
0301	181.06	CO	0	300			VC	132.1809	
0301	181.06	CO	0	300			VC	132.1809	
7905		FO		100			VC	5.54158	
8800	183.28	CO	0	300			VC	50.61761	
9010		CO		150			VC	5.60001	
9010		CO		150			VC	5.60001	
7500	165.84	CO	164.17	375			VC	47.85019	1 in 14
7500	165.84	CO	164.17	375			VC	47.85019	1 in 14
6909		CO	175.38	225			VC	44.90551	1 in 98
9011		CO		150			VC	7.348543	
9011		CO		150			VC	7.348543	
9805		CO		150			VC	6.601088	
9805		CO		150			VC	6.601088	
6501	169.54	CO	166.19	600			CO	10.92561	
7611		CO		150			VC	5.287374	
9805		CO		225			VC	67.43763	
7610		CO		150			VC	13.86442	
0704		CO	0	225			VC	23.86041	
0702		CO	0	225			VC	24.24109	
0702		CO	0	225			VC	24.24109	
8808	184.25	FO	181.8	225			VC	22.16831	1 in 0.12329427
0501	177.92	CO	175.25	300			VC	76.73353	
0501	177.92	CO	175.25	300			VC	76.73353	
0501	177.92	CO	175.25	300			VC	76.73353	
0501	177.92	CO	175.25	300			VC	76.73353	
8805	185	FO	182.54	150			VC	20.981	1 in 32
0402		CO	0	150			VC	459.6828	
0402		CO	0	150			VC	459.6828	
0402		CO	0	150			VC	459.6828	
0402		CO	0	150			VC	459.6828	
8804	184.5	FO	182.8	150			VC	22.3326	1 in 86
0701	176.61	CO	0	150			VC	49.66154	

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- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice 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
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic

MANHOLE FUNCTION

FO	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 Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

1 BURNSIDE,
RAMSBOTTOM,
BURY,
BL0 0LW

OS sheet Number: SD7918NE
Scale: 1:1250 **Date:** 16/03/2020
Nodes: 188
Sheet: 4 of 6

Printed by: Property Searches

SEWER RECORDS

United Utilities — helping life flow smoothly

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APPENDIX E – LANCASHIRE COUNTY COUNCIL AND ROSSENDALE BOURGH COUNCIL CORRESPONDENCE

[redacted]

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Megan Berry

From: Megan Berry
Sent: 13 March 2020 14:02
To: 'generalenquiries@rossendalebc.gov.uk'
Subject: Flood Risk Information
Attachments: LOCATION PLAN.pdf

F.A.O Flood Risk, Drainage and/or Planning department

To whom it may concern

Edenwood Mill, Rossendale

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

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

Kind Regards

Megan Berry BSc(Hons) GradCIWEM
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

[redacted]

www.betts-associates.co.uk

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

Megan Berry

From: Megan Berry
Sent: 13 March 2020 14:03
To: 'suds@lancashire.gov.uk'
Subject: Flood Risk Information
Attachments: LOCATION PLAN.pdf

F.A.O Flood Risk, Drainage and/or Planning department

To whom it may concern

Edenwood Mill, Rossendale

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

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

Kind Regards

Megan Berry BSc(Hons) GradCIWEM
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

[redacted]

www.betts-associates.co.uk

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

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APPENDIX F – SURFACE WATER CALCULATIONS AND QUICK STORAGE ESTIMATES

[redacted]

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Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Kirsty Williams
Site name:	Edenwood Mill
Site location:	Ramsbottom

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	53.66236° N
Longitude:	2.30786° W
Reference:	280899593
Date:	Apr 03 2020 18:15

Runoff estimation approach

FEH Statistical

Site characteristics

Total site area (ha): 3.150

Methodology

Q_{MED} estimation method:	Calculate from BFI and SAAR
BFI and SPR method:	Specify BFI manually
HOST class:	22
BFI / BFIHOST:	0.326
Q_{MED} (l/s):	52.24
Q_{BAR} / Q_{MED} factor:	1.08

Hydrological characteristics

	Default	Edited
SAAR (mm):	1339	1339
Hydrological region:	10	10
Growth curve factor 1 year:	0.87	0.87
Growth curve factor 30 years:	1.7	1.7
Growth curve factor 100 years:	2.08	2.08
Growth curve factor 200 years:	2.37	2.37

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q_{BAR} (l/s):	56.16	55.49
1 in 1 year (l/s):	48.86	48.28
1 in 30 years (l/s):	95.47	94.34
1 in 100 year (l/s):	116.81	115.42
1 in 200 years (l/s):	133.1	131.52

SURFACE WATER RUN-OFF CALCULATION SHEET

BETTS HYDRO
CONSULTING ENGINEERS

Development	EDENWOOD MILL, ROSSENDALE
Project No.	HYD510

Revision	B	Completed by	MB
Date	03/04/2020	Checked by	KW

Areas

Total Site	3.150	ha	
Development Area[1]	3.150	ha	
Existing Impermeable	0.315	ha	
Existing Impermeable[2]	0.000	ha	
Existing Pervious	2.835	ha	
Existing Pervious[2]	0.000	ha	
Proposed total impermeable	1.575	ha	50%

Catchment Characteristics

SAAR	1323	mm			
SPR	0.52				
BFI	0.326				
i_1	19.2	mm/hr	d_1	26.8	mm
i_{30}	34.9	mm/hr	d_{30}	53.4	mm
i_{100}	43.5	mm/hr	d_{100}	66.6	mm

Run-off Rates

Pre-development

Impermeable ------	1yr	0.0	l/s
	30yr	0.0	l/s
	100yr	0.0	l/s
	40mm/hr[3]	0.0	l/s
Pervious[4] ------	1yr	48.3	l/s
	30yr	94.3	l/s
	100yr	115.4	l/s
	QBar[5]	55.5	l/s
Total ------	1yr	48.3	l/s
	30yr	94.3	l/s
	100yr	115.4	l/s

Post-development (without control)

Impermeable[6] ------	1yr	84.1	l/s
	30yr	152.6	l/s
	100yr+40%CC	266.7	l/s

Volumes

Pre-development

Impermeable ------	1yr	0.0	cu.m
	30yr	0.0	cu.m
	100yr	0.0	cu.m
Pervious[4] ------	1yr	524.3	cu.m
	30yr	984.2	cu.m
	100yr	1308.1	cu.m
Total ------	1yr	524.3	cu.m
	30yr	984.2	cu.m
	100yr	1308.1	cu.m

Post-development

Impermeable[6] ------	1yr	42.2	cu.m
	30yr	84.1	cu.m
	100yr+40%CC	105.0	cu.m

Stormwater Storage Estimates

Based on Greenfield run-off QBar

Microdrainage Quick Storage Estimates (using FEH catchment data)

Return Period	Rate		lower	upper	mean	
1yr	55.5	l/s	50	144	97	cu.m
30yr	55.5	l/s	251	410	330.5	cu.m
100yr+40%CC	55.5	l/s	597	885	741	cu.m

1/ The 'development area' removes areas of POS and/or landscaped areas of the wider site that are to remain as existing.
2/ On occasion the existing impermeable area cannot be evidenced to connect and a reduction is applied.
3/ 50mm/hr is used for BRegs calculations and often used by Water Companies when considering allowable post-development rates of discharge. (Rational Method)
4/ The Greenfield rates and of run-off have been calculated using the UK SUDS Calculator
5/ QBar is the estimated flood flow for the 2.33yr return period event and is often used as a post-development rate restriction.
6/ Post-development run-off is only considered from the impermeable area when the proposed post-development impermeable area >50% in accordance with the EA Guidance Preliminary rainfall runoff management for developments (W5-074/A/TR1/1 rev E (2012).

NB. The catchment characteristics are from the FEH catchment, the UK SUDS Calculator and Microdrainage.
NB. The rainfall intensities and depths are calculated for the 6hr duration rainfall event (peak summer intensity)

[redacted]

EDENWOOD MILL
ROSSENDALE

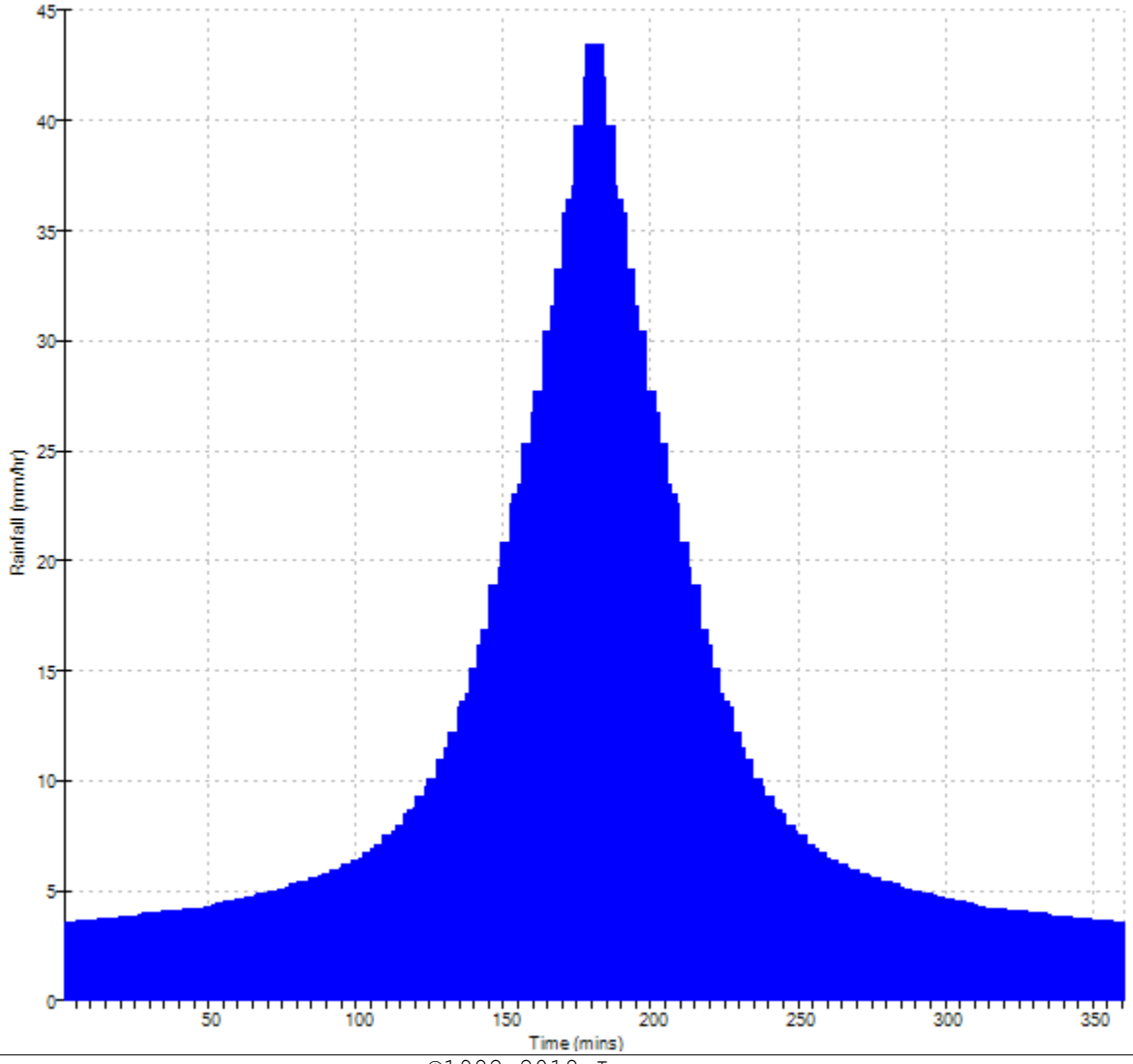
Date 30/03/2020 | Designed by MB
File | Checked by DK
Micro Drainage | Network 2018.1

Rainfall profile

Storm duration (mins) 360

FEH Data

FEH Rainfall Version	2013
Site Location	GB 379748 418504 SD 79748 18504
Data Type	Point
Peak Intensity (mm/hr)	43.536
Ave. Intensity (mm/hr)	11.106
Return Period (years)	100.0



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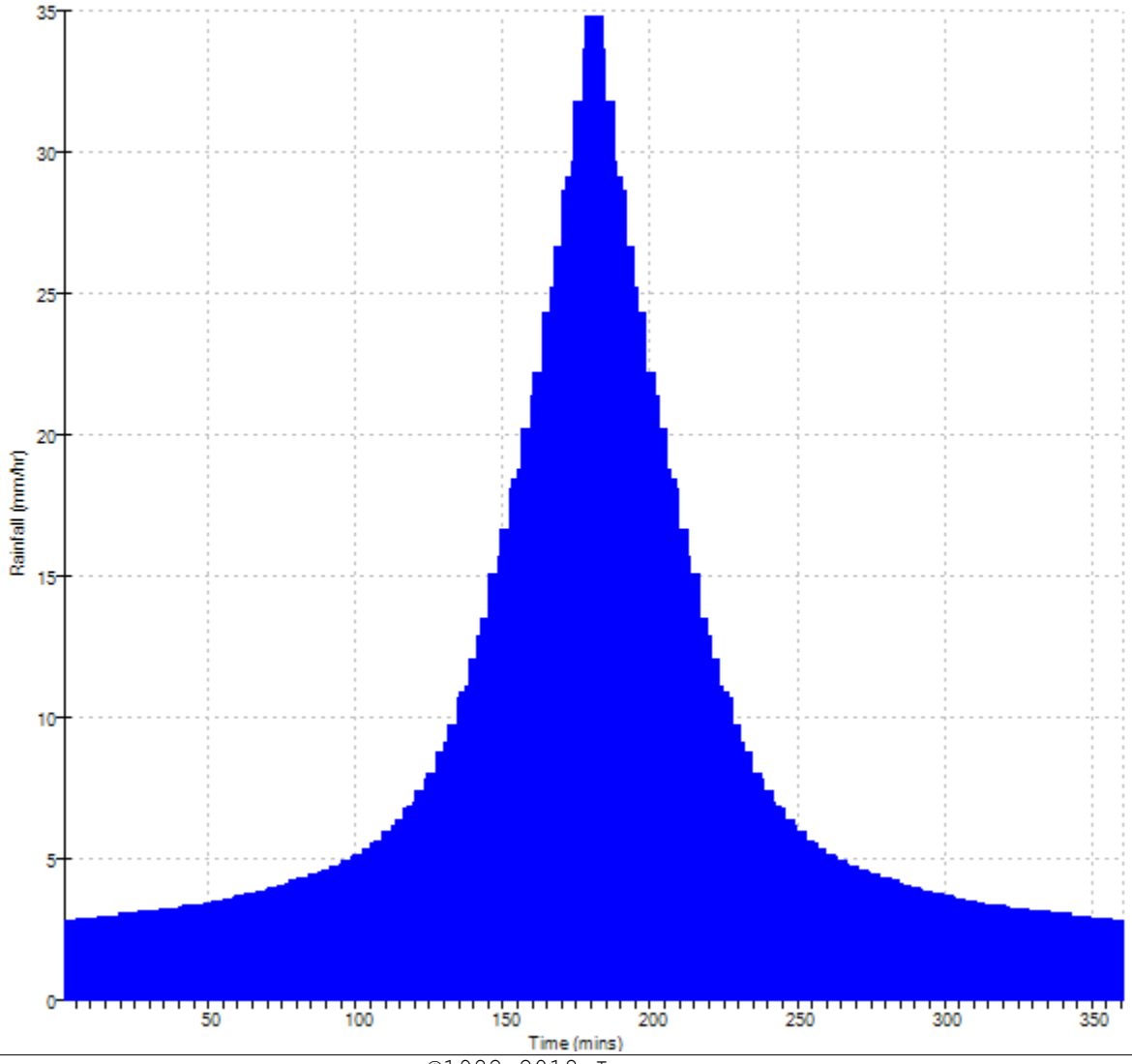
EDENWOOD MILL
ROSSENDALE

Date 30/03/2020 | Designed by MB
File | Checked by DK
Micro Drainage | Network 2018.1

Rainfall profile

Storm duration (mins) 360

FEH Data	
FEH Rainfall Version	2013
Site Location	GB 379748 418504 SD 79748 18504
Data Type	Point
Peak Intensity (mm/hr)	34.872
Ave. Intensity (mm/hr)	8.896
Return Period (years)	30.0



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EDENWOOD MILL
ROSSENDALE

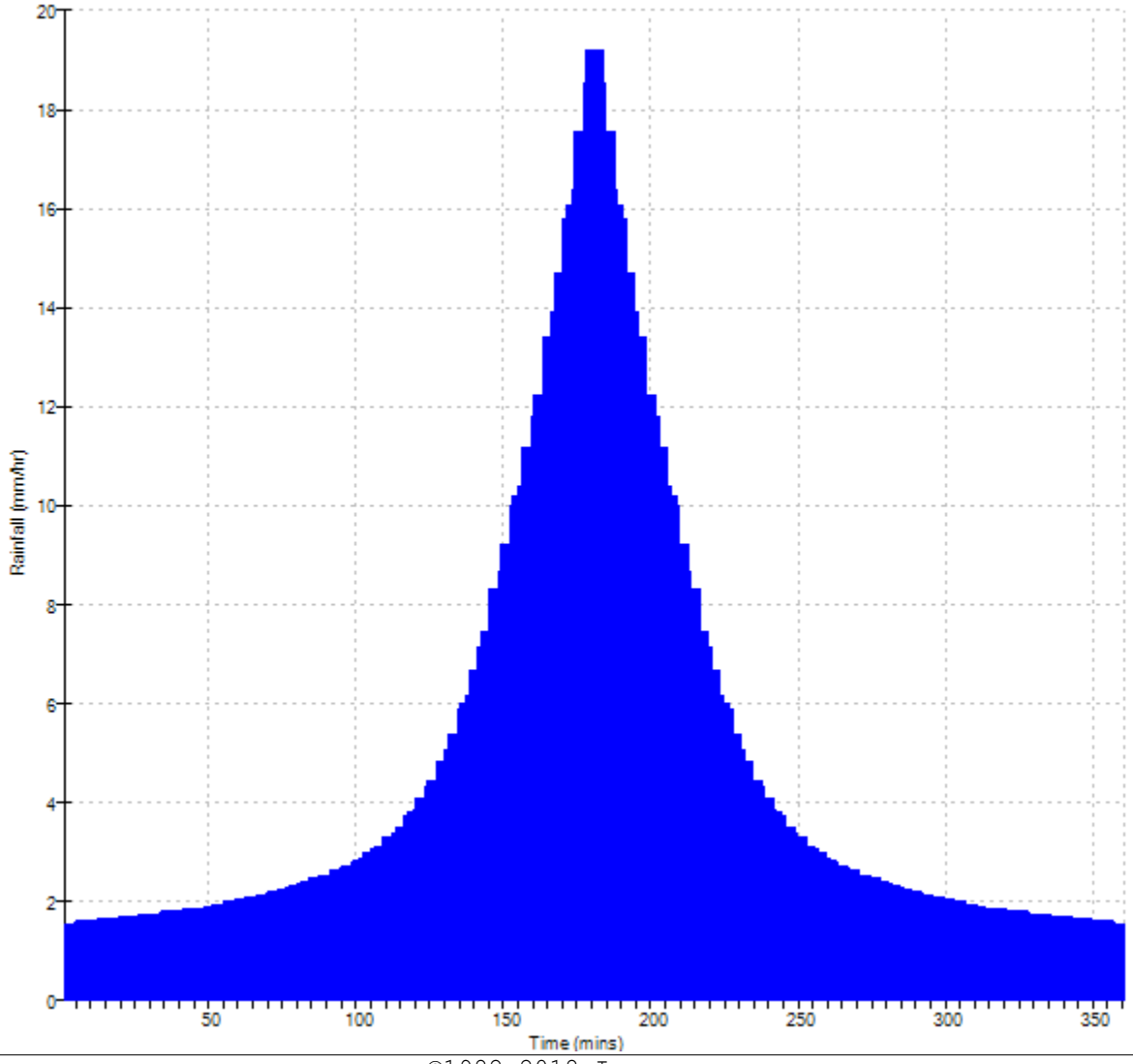
Date 30/03/2020 13:26 | Designed by MB
File | Checked by DK
Micro Drainage | Network 2018.1

Rainfall profile

Storm duration (mins) 360

FEH Data

FEH Rainfall Version	2013
Site Location	GB 379748 418504 SD 79748 18504
Data Type	Point
Peak Intensity (mm/hr)	19.226
Ave. Intensity (mm/hr)	4.905
Return Period (years)	2.0



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Date 06/04/2020 10:25	Designed by MeganBerry
File	Checked by
Micro Drainage	Source Control 2018.1

Greenfield Runoff Volume

FSR Data

Return Period (years)	100
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	19.000
Ratio R	0.250
Areal Reduction Factor	1.00
Area (ha)	3.150
SAAR (mm)	1329
CWI	124.088
Urban	0.000
SPR	53.000

Results

Percentage Runoff (%)	57.84
Greenfield Runoff Volume (m^3)	1308.119

Greenfield Runoff Volume

FSR Data

Return Period (years)	30
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	19.000
Ratio R	0.250
Areal Reduction Factor	1.00
Area (ha)	3.150
SAAR (mm)	1329
CWI	124.088
Urban	0.000
SPR	53.000

Results

Percentage Runoff (%)	55.89
Greenfield Runoff Volume (m^3)	984.244

Greenfield Runoff Volume

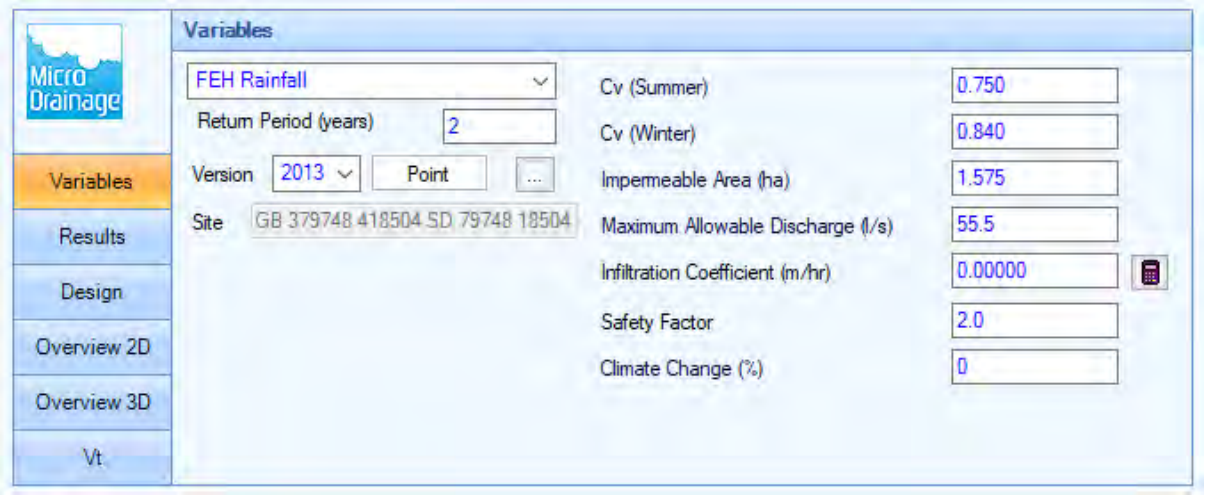
FSR Data

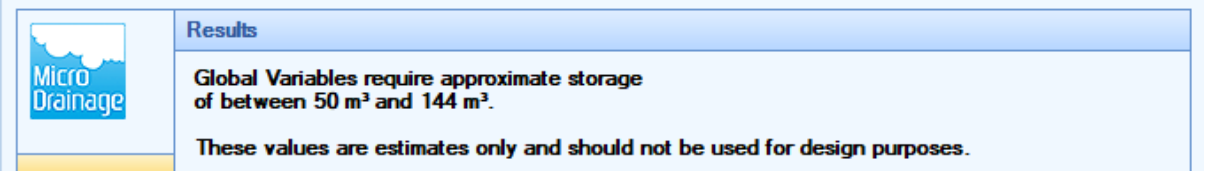
Return Period (years)	2
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	19.000
Ratio R	0.250
Areal Reduction Factor	1.00
Area (ha)	3.150
SAAR (mm)	1329
CWI	124.088
Urban	0.000
SPR	53.000

Results

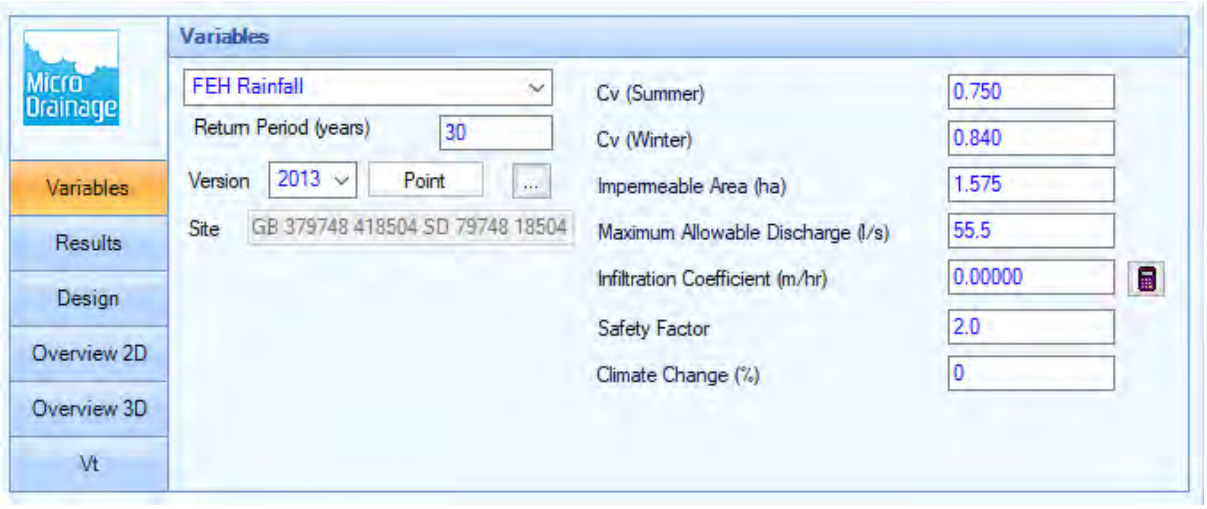
Percentage Runoff (%)	52.77
Greenfield Runoff Volume (m^3)	524.348

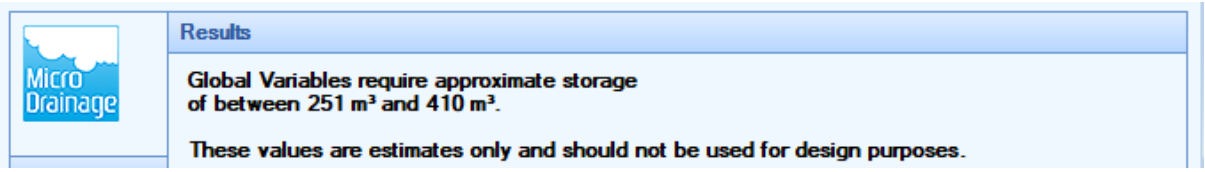
1 YEAR RETURN PERIOD STORM EVENT



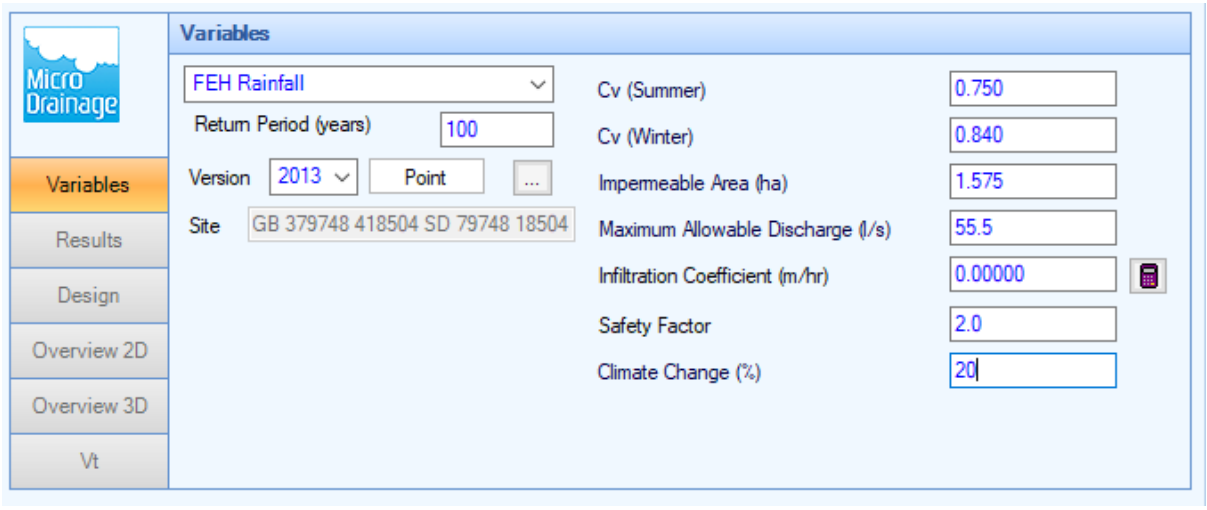


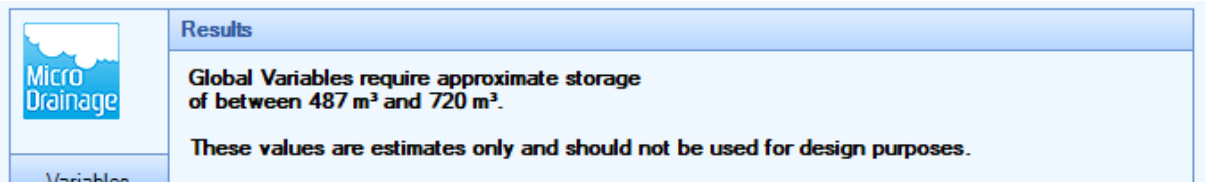
30 YEAR RETURN PERIOD STORM EVENT



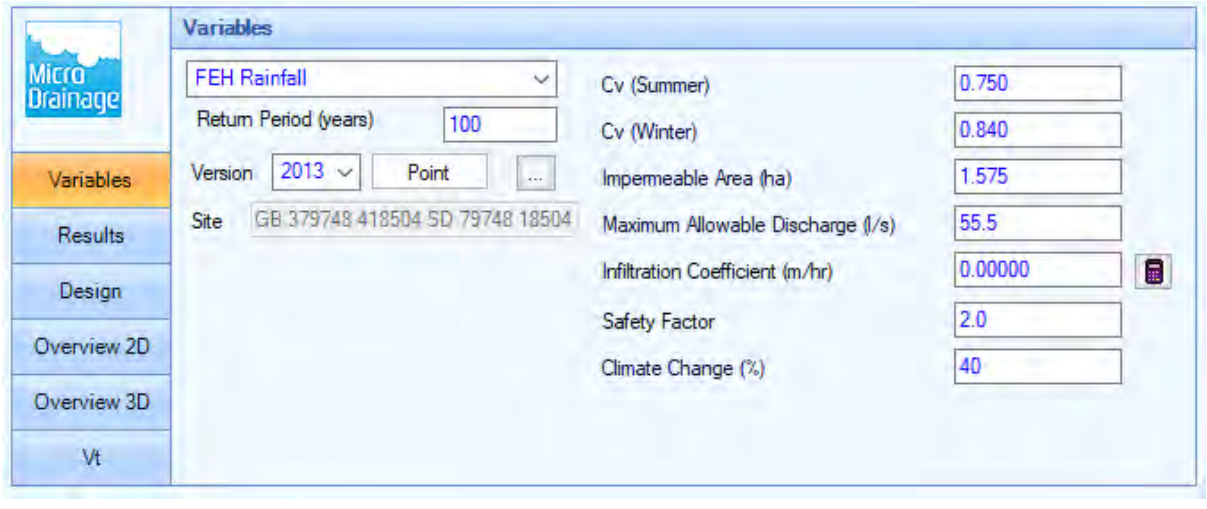


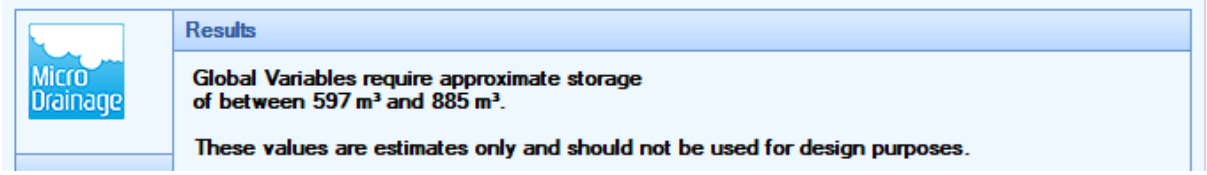
100 YEAR RETURN PERIOD STORM EVENT + 20% CLIMATE CHANGE





100 YEAR RETURN PERIOD STORM EVENT + 40% CLIMATE CHANGE





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APPENDIX G – DRAINAGE OPPORTUNITIES PLAN

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DATE: 14/04/2020

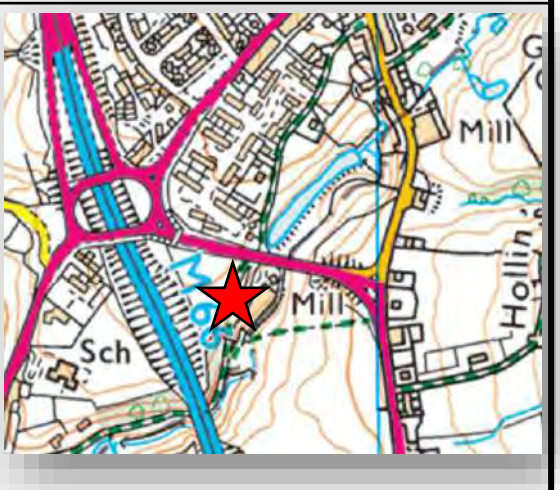
REVISION: 1.0

REF: HYD510

BETTS HYDRO
CONSULTING ENGINEERS

EDENWOOD MILL
EDENFIELD, ROSSENDALE

EXISTING DRAINAGE PLAN



LEGEND

- Site Extent
- General Topography

Existing Drainage Features

- Main River
- Pond/Sluice

Existing Sewer Network

- Public surface Water Sewer
- Public Combined Sewer

FURTHER NOTES:

This drawing is not a drainage 'design' it is a preliminary drainage strategy showing existing sewer locations.

It should be noted the drainage plan only shows key UU sewers within proximity to the site. Please see UU sewer records for full details.

DATE: 14/04/2020

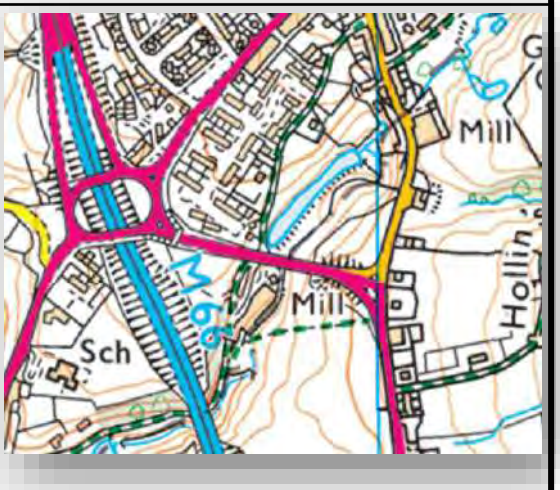
REVISION: 1.0

REF: HYD510

BETTS HYDRO
CONSULTING ENGINEERS

EDENWOOD MILL
EDENFIELD, ROSSENDALE

PROPOSED DRAINAGE PLAN



N

BOLTON RD NORTH

A56

CROFT ACRES

BURNSIDE

DEARDEN BROOK

A56 WOOD LANE

ENDENWOOD MILL

A56

M66

ROSEBANK

DEARDEN BROOK

A56

LEGEND

Site Extent

Existing Drainage Features

Main River

Pond/Sluice

Existing Sewer Network

Public surface Water Sewer

Public Combined Sewer

Proposed Features & Connection(s)

8m offset from the Main River

Surface Water Connection(s)

SuDS/Attenuation

Foul Water Connection(s)

FURTHER NOTES:

This drawing is not a drainage 'design' it is a preliminary drainage strategy showing existing sewer locations. It should be noted the drainage plan only shows key UU sewers within proximity to the site. Please see UU sewer records for full details.

No hydraulic simulation or assessment of these proposals has been undertaken. Proposed points of connection to the existing watercourse and sewer require invert levels to be accurately established. Surcharging of the proposed outfall will require modelling to satisfy the requirements of united utilities along with full hydraulic analysis.