

JJ CHURCHILL, WAREHOUSE EXTENSION STATION ROAD, MARKET BOSWORTH

Flood Risk Assessment

Produced by

MJM Consulting Engineers
Southgate House
Southgate
Wakefield
West Yorkshire
WF1 1TL

Tel: +44 (1924) 811000

Client

JJ CHURCHILL

Job no 8663
Date 31/03/2023

Document Record:				
Project Name	JJ Churchill, Warehouse Extension, Station Road, Market Bosworth			
	P01	P02	P03	P04
Remarks:	Draft Issue			
Date:	31/03/2023			
Prepared by:	EW			
Checked and Authorised by:	TM			

Contents

1	Introduction.....	1
1.1	Background	1
1.2	Site Location.....	1
1.3	Development Proposals.....	1
1.4	Report Structure	2
2	Relevant Policy and Guidance.....	3
2.1	National Planning Policy.....	3
2.2	Local Policy	4
	Hinckley & Bosworth Borough Council Local Plan 2006-2026 - Core Strategy	4
	Strategic Flood Risk Assessment for Hinckley and Bosworth Borough Council 2019.....	5
	Leicestershire County Council Preliminary Flood Risk Assessment 2011.....	6
	Existing Site	9
2.3	Site Specific information	9
2.4	Topographical Survey.....	9
2.5	Geotechnical Investigation.....	9
3	Potential Sources of Flooding.....	10
3.1	Fluvial and Tidal Flooding.....	10
3.2	Flooding from Land (Overland flow & Surface Water Flooding).....	10
3.3	Ground Water Flooding.....	10
3.4	Flooding from Sewers.....	11
3.5	Flooding from Reservoirs, Canals and other Artificial Sources	11
3.6	Flood Risk Summary.....	11
4	Surface Water Management Strategy	12
4.1	Existing Site Drainage.....	12
4.2	Sustainable Drainage Systems (SuDS).....	12
4.3	SuDS and the Proposed Development.....	13
5	Proposed Surface Water Drainage	14
5.1	Proposed Site Layout.....	14

5.2	Discharge to Soakaways or Infiltration Systems	14
5.3	Discharge to Watercourse.....	14
5.4	Discharge to Sewer	14
5.5	Proposed Surface Water Strategy	14
6	Proposed Foul Drainage.....	16
6.1	Drainage Maintenance strategy	16
7	Conclusions	17

Appendices

Appendix A – Proposed Site Layout
Appendix B – Topographical Survey
Appendix C – Existing Sewer Records
Appendix D – Drainage Maintenance Plan
Appendix E – Drainage Calculations
Appendix F – Correspondence with Lead Local Flood Authority and Severn Trent Water
Appendix G – Drainage Layouts

1 Introduction

1.1 Background

- 1.1.1 MJM Consulting Engineers Ltd (MJM) have been commissioned by JJ Churchill to prepare a Flood Risk Assessment (FRA) to accompany a planning application for a warehouse extension to an existing site at on Station Road, Market Bosworth.

1.2 Site Location

- 1.2.1 The site is a previously developed parcel of land, with the proposal on an area of approximately 0.42ha, located on the western extent of Market Bosworth. The site is bound by Station Road to the north, arable land to the east and south, and 'The Battlefield Line' heritage rail line to the west. Access is gained through the existing site from Station Road.
- 1.2.2 The grid reference of the site is SK 39270 02978 and OS grid reference is X – 439270, Y - 302978. The site sits within Hinckley and Bosworth District in Leicestershire County in the East Midlands of England. The site location is demonstrated in Figure 1-1 below.



Figure 1-1 Site Location (Source: Google Earth)

1.3 Development Proposals

- 1.3.1 The proposals comprise of the construction of a new warehouse with accompanying car park on land adjacent to an existing warehouse site. The proposed site layout for the new building is included at Appendix A.

1.4 Report Structure

1.4.1 Following this introductory section:

- Section 2 describes the planning policy context within which the proposals will be assessed;
- Section 3 details the existing site, considering any site specific information and current survey information which has been gathered;
- Section 4 discusses the potential sources of flooding for the site;
- Section 5 summarises a surface water management strategy for the site, considering any existing site drainage, the proposed point of discharge and the appropriateness of Sustainable Drainage Systems (SuDS);
- Section 6 deals with any requirement for foul water drainage;
- Section 7 offers a summary and conclusions

2 Relevant Policy and Guidance

2.1 National Planning Policy

2.1.1 With regard to flood risk, the National Planning Policy Framework (NPPF) requires that:

"Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere."

2.1.2 The NPPF sets out that the Sequential Test should be applied to steer development to the areas of lowest probability of flooding and states that development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding.

2.1.3 To establish the appropriateness of development at a specific site the NPPF refers to the Flood Zones, which are shown on the Environment Agency Flood Map, and establishes the range of uses which are appropriate, or compatible, land uses for each Flood Zone.

2.1.4 The Flood Zones can be summarised as follows:

- **Zone 1: Low Probability.** This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any one year. (<0.1%)
- **Zone 2: Medium Probability.** This zone comprises land assessed as having between 1 in 100 and 1 in 1000 annual probability of river flooding (1%-0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.
- **Zone 3a: High Probability.** This zone comprises land assessed as having 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
- **Zone 3b: Functional Flood Plain.** This zone comprises land where water must flow or stored in times of flood. Strategic Flood Risk Assessments should identify this zone.

2.1.5 Paragraph 162 of the NPPF goes on to state that "The aim of the sequential test is to steer new development to areas with the lowest risk of flooding from **any** source...The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding."

2.1.6 According to the NPPF, if following the application of the Sequential Test it is not possible, consistent with wider sustainability objectives, for the development to be in zones of lower probability of flooding, the Exception Test can be applied.

2.1.7 As part of this process, it is necessary to consider the type and nature of the development. The Planning Practice Guidance: Flood Risk and Coastal Change defines the type and nature of different development classifications in the context of their flood risk vulnerability. This has been summarised in Table 2.1 below.

Table 2.1: Flood Risk Vulnerability and flood zone compatibility

Flood Risk Vulnerability	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	✓	✓	Exception Test Required	✓	✓
Zone 2	Exception Test Required	✓	Exception Test Required	✓	✓
Zone 3a	Exception Test Required	✓	×	Exception Test Required	✓
Zone 3b	Exception Test Required	✓	×	×	×

✓ Development is appropriate × Development should not be permitted.

- 2.1.8 The site is located in Flood Zone 1, as shown below in Figure 2-1, and has an area less than 1.0 hectare. The proposed uses are classed as less vulnerable use. Therefore, it is deemed that development is appropriate and an exception test is not required.

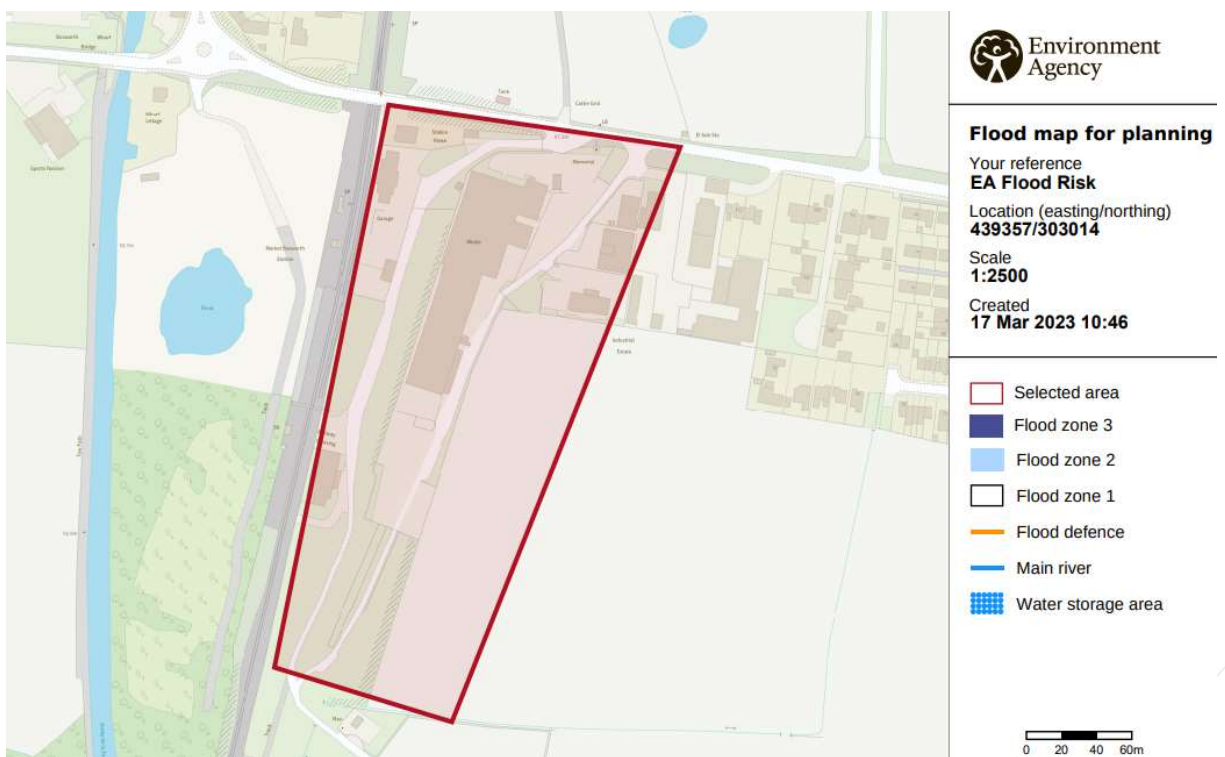


Figure 2-1 Flood Risk Map (Data Source: Environment Agency)

2.2 Local Policy

Hinckley & Bosworth Borough Council Local Plan 2006-2026 - Core Strategy

- 2.2.1 Hinckley and Bosworth Local Plan 2006-2016 sets out the vision and framework to ensure the borough of Hinckley and Bosworth is developed in the 'right way'. This includes having the right facilities and infrastructure to support the community and grow the local economy and tourism.
- 2.2.2 In the Local Plan improving resource management is seen as an issue to resolve. As part of addressing this issue a Strategic Flood Risk Assessment has been completed which suggests flooding is not a major issue in the borough. However, the Local Plan states that flood mitigation measures need to be incorporated into new developments to ensure any flooding is suitably addressed. It is recognised that sustainable urban drainage (SUDS) can be used as a flood mitigation measure on new developments

- 2.2.3 Policy 20 – Green Infrastructure is highlighted as a key priority for the council. Strategic interventions have been identified which will be supported by the council. These include installing and retaining flood prevention measures: flood storage ponds, greens roofs and swales.

Strategic Flood Risk Assessment for Hinckley and Bosworth Borough Council 2019

- 2.2.4 The purpose of the SFRA is to provide evidence to support the production of the Local Plan to 2036. It will be used to inform decisions on the location of the future development and sustainable policies for the management of long term flood risk.
- 2.2.5 The key objectives of the Level 1 SFRA include providing up to date information and guidance on flood risk taking into account latest flood risk information and national planning policy; determine in current and future flood risk; provide a comprehensive set of maps presenting flood risk; to provide advice for applicants carrying out site-specific flood risk assessments.
- 2.2.6 It is noted within the SFRA that the past flooding information available is limited. The data that does exist indicates that the main flooding risks in Hinckley and Bosworth area are from surface water and culverted watercourses. Historically, the most affected areas correspond with the main urban areas in the borough.
- 2.2.7 Within the Hinckley and Bosworth borough the underlying geology is almost exclusively sandstone, siltstone and mudstone. The bedrock geology that have been identified across the borough consist of Mercia Mudstone Group, Edwalton Member Mudstone and Siltstone, and Gunthorpe Member mudstone.
- 2.2.8 The SFRA also notes there's a mix of slowly permeable, freely draining and impeded drainage and naturally high groundwater soils within the borough.
- 2.2.9 Figure 5.4 and 5.5 in the SFRA are maps showing the bedrock formations and the superficial geology, respectively, in Hinckley and Bosworth borough. Figure 5.4 suggests a designation of secondary (undifferentiated) bedrock classification at the site location. Figure 5.5 suggests a designation of secondary B superficial geology classification at the site location.
- 2.2.10 The Hinckley and Bosworth borough SFRA sets out what the strategic solutions encourage developments to do. These include: use of sustainable flood storage and mitigation to store water and manage surface water run off; promote and consider SUDS at the earliest stage of the development of a site; use SFRA to inform future development and minimise flood risk from all sources.
- 2.2.11 The SFRA Appendix A provides interactive mapping showing the Flood zones, areas at risk of flooding from surface water and areas susceptible to groundwater.
- 2.2.12 Appendix A, Index Grid C2 of the SFRA shows the following: the site is located within Flood Zone 1; some small areas at the edge of the site are at minimal risk from surface water flooding; is in an area susceptible to groundwater flooding ($\geq 25\% < 50\%$).
- 2.2.13 The sources of the data used to create the interactive mapping are stated in Appendix B of the SFRA. Flood zone data has been taken from Environment Agency's Flood Map for Planning. Surface water flooding data has been taken from the Environment Agency's Risk of Flooding from Surface Water maps. Groundwater flood risk areas have been taken from Areas Susceptible to Groundwater (AStGWF) dataset. It is noted that the (AStGWF) dataset is taken over 1km grid squares taking account of the general geological and hydrogeological conditions

and therefore only isolated areas within the 1km grid will experience groundwater flooding. The data should only be used in combination with other information, for example historic data.

Leicestershire County Council Preliminary Flood Risk Assessment 2011

- 2.2.14 In accordance with the Flood Risk Regulations 2009 a Preliminary Flood Risk Assessment (PFRA) has been completed for Leicestershire County Council. The PFRA is a summary of significant flood risk, covering the probability and consequences of past and future flooding events, based on available and readily derivable information. Sources include Environment Agency, Strategic Flood Risk Assessment and Surface Water Management Plans.
- 2.2.15 Objectives have been outlined in the PFRA which include establishing a base of historic flood risk information, assessment of historic flood events and the potential harmful consequences of future flood events.
- 2.2.16 The study area of the PFRA is defined as the administrative of Leicestershire CC, covering approximately 2,073km². The boundary includes Blaby District Council, Charnwood Borough Council, Harborough District Council, Hinckley and Bosworth Borough Council, Melton Borough Council, North West Leicestershire District Council and Oadby and Wigston Borough Council.
- 2.2.17 The historic data for the PFRA was collated through contacting the following authorities and organisations; the above district councils, teams in the county council, Rutland Council, Anglian Water, Severn Trent Water, British Waterways, Leicestershire Fire and Rescue Service, and the EA.
- 2.2.18 It is noted in the review of the historic data collected for surface water flooding, ordinary watercourse flooding, flooding from canals and sewer flooding that it is all limited. The data is deemed insufficient to draw definitive conclusions about the impacts and consequences of historic flood events. In the future flood events will be recorded in full details to inform future PFRA cycles.
- 2.2.19 The EA have given a threshold which is to be used to identify future consequences of flooding. The assessment was carried out over 1km² grid. The criteria to exceed the threshold include 'Flooded to a depth of 0.3m during a rainfall event with a 1 in 200 chance of occurring (or 0.5%)' to areas with 200 people or 20 businesses or 1 critical service. A map of the areas identified in the PFRA is shown in figure 2.2.

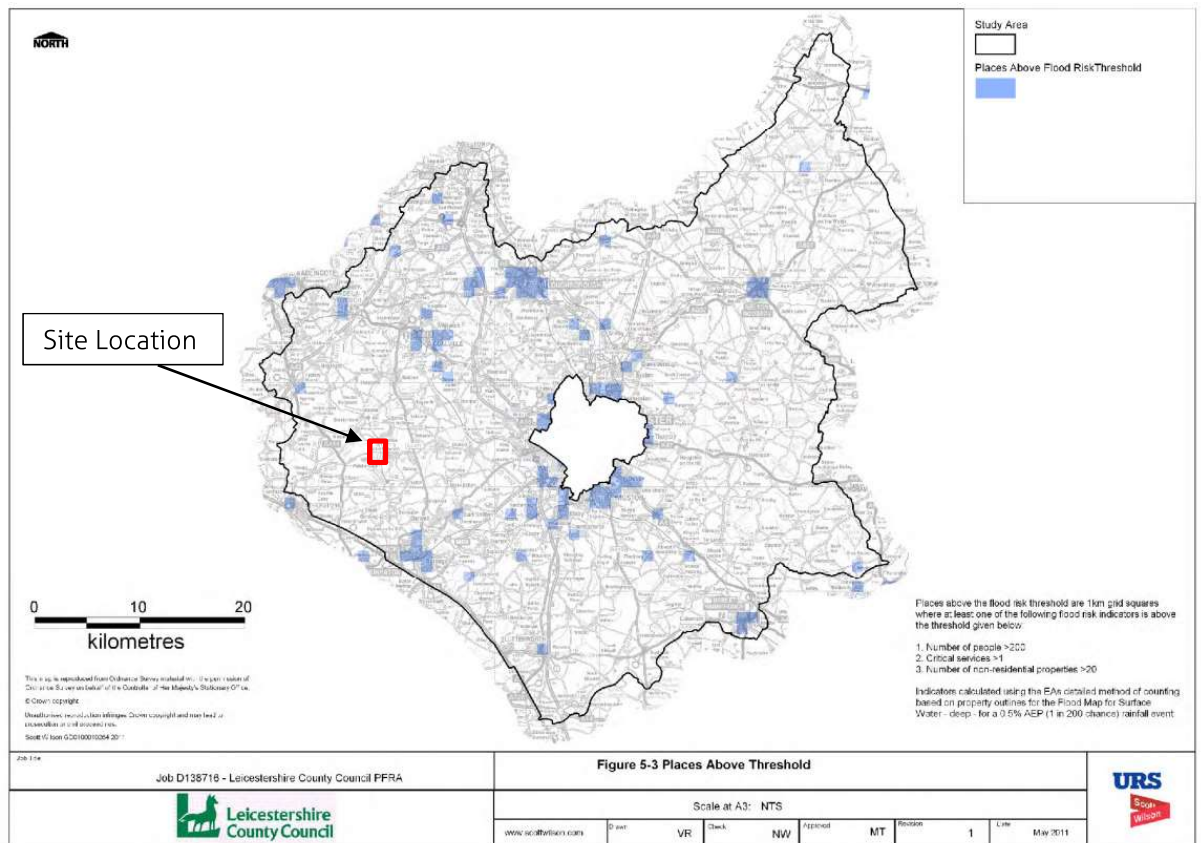


Figure 2-2 EA Threshold Criteria Map (Data Source: Leicestershire County Council PFRA 2011)

- 2.2.20 An Indicative Flood Risk Area has been identified within the PFRA using this mapping where there is a cluster of grid squares and over 30,000 properties that are predicted to be at risk of flooding. The identified indicative flood risk area includes Leicester City and associated critical infrastructure and residential and commercial properties in the fringes of the city.

Leicestershire County Council Local Flood Risk Management Strategy 2015

- 2.2.21 Leicestershire County Council as the Lead Local Flood Authority are responsible for developing maintaining, applying and monitoring a Local Flood Risk Management Strategy. The strategy focuses on local flood risk from surface water, groundwater and watercourse flooding.
- 2.2.22 The aim of the strategy is to provide a framework for the LLFA to enable them to lead and co-ordinate flood risk management across Leicestershire. This would be achieved through the strategy by utilising a range of options to manage and communicate the risks and consequences of flooding.
- 2.2.23 Objectives have been set in the strategy to enable Leicestershire CC to achieve the strategy aim. Some of the objectives include: working collaboratively with local partners and stakeholders, improving local knowledge and understanding of local flood risk, promotion of sustainable drainage systems. The Local Flood Risk Management Strategy Action Plan sets out the identified actions that have been developed to achieve the strategies objectives.
- 2.2.24 The strategy acknowledges the contribution Surface Water Management Plans (SWMPs) can make as a tool to identify flood risk from surface water and ordinary watercourses. In addition, SWMPs can be used to assess options to understand the risk and where possible mitigation and preparation can take place to manage the risk. 4 key areas have been identified

geographical areas have been identified that would benefit from the preparation of SWMP: Loughborough, Burbage, Harborough and Greater Leicester Flood Risk Area. The output of the SWMPs is to be used to inform development control decisions.

- 2.2.25 As the LLFA, local planning authorities must consult with the County Council on the management of surface water. The County Council acknowledges the benefits SuDS provides in flood risk management and intends to set an example by using SuDS in highway improvement schemes and in its own developments.

Existing Site

2.3 Site Specific information

- 2.3.1 This section of the report contains information gathered from the Environment Agency (EA), Leicestershire County Council and the above mentioned Strategic Flood Risk Assessment (SFRA).

2.4 Topographical Survey

- 2.4.1 The site comprises of an existing access track, trees and dense vegetation. The access track passes through the middle of the site with retaining walls either side and two raised parcels of land.
- 2.4.2 A topographical survey of the site has been completed and is included at **Appendix B**.
- 2.4.3 Ground levels across the site fall from north to south. On the two sets of raised land ground levels fall from approximately 97.5m AOD to 96.4m AOD, at a gradient of approximately 1.2%. The existing access track ground levels fall from approximately 96.25m AOD to 95.1m, at a gradient of approximately 1%.

2.5 Geotechnical Investigation

- 2.5.1 A desk study and intrusive ground investigation has been completed and we are currently awaiting the results.
- 2.5.2 The British Geological Survey (BGS) has been consulted, in lieu of an intrusive site investigation, to identify the likely ground conditions of the proposed site. This demonstrates the following:
- The site is likely to be above a bedrock of Gunthorpe Member Mudstone.
 - This is likely overlain by Clays and Silts of the Bosworth Clay family
 - A nearby borehole record (SK30SE23) appears to confirm this, with clays found to a depth of 2.5m where the borehole record ends.

3 Potential Sources of Flooding

3.1.1 As required by NPPF, all sources of flooding have been assessed as part of this FRA report. The specific issues relating to each source and its impact on this development are discussed below.

3.1 Fluvial and Tidal Flooding

3.1.1 The Environment Agency flood map in Figure 2.1 shows the site is located within Flood Zone 1 and as such has a low probability of flooding (less than 1 in 1000 annual probability (<0.1%)). The proposed uses are classed as less vulnerable use and are compatible with the site in Flood Zone 1.

3.2 Flooding from Land (Overland flow & Surface Water Flooding)

3.2.1 As stated in the SFRA, data on surface water flood risk has been obtained from the Environment Agency. A surface water flood risk map is provided in the SFRA, which shows that small areas at the edge of the site are at minimal flood risk from surface water flooding.

3.3 Ground Water Flooding

3.3.1 As discussed in Chapter 2 of this document, Figure 5.4 of the SFRA suggests a designation of secondary (undifferentiated) bedrock classification (not possible to attribute category) at the site location. Figure 5.5 SFRA suggests a designation of secondary B superficial geology classification at the site location.

3.3.2 British Geological Mapping shows the site to be underlain by the Bosworth Clay Member – grey to brown laminated clay and silt.

3.3.3 The SFRA mapping shows the site is in an area with potential to be susceptible to groundwater flooding. The mapping is produced in 1km grid squares, where geological and hydrogeological conditions indicate the potential conditions for groundwater flooding to occur. The SFRA states 'It does not show the likelihood of groundwater flooding occurring.' and that provided groundwater mapping should only be used in combination with other information; such as local data or historical data.

3.3.4 Given there has been no previous evidence of groundwater flooding either on the site or in the vicinity of the site, and provided the below recommendations are to be followed to ensure the risk of groundwater flooding is not exacerbated, it is considered the risk of groundwater flooding can be summarised as **low**.

3.3.5 The following measures should be considered to ensure flood risk from groundwater remains low:

- No infiltration drainage to be allowed without appropriate ground water level monitoring
- No use of septic tanks
- Ensure drainage systems are sealed and increase the level of testing of drainage installations
- Prevention of storm discharges to foul systems
- Avoid construction of basements
- Ensure access routes remain free of groundwater flooding
- Specification of materials resilient to long term exposure to flooding

- Consultation with local communities on groundwater flooding and emergence

3.4 Flooding from Sewers

- 3.4.1 In urban areas, rainwater is frequently drained into surface water sewers or sewers containing both surface and wastewater known as “combined sewers”. Flooding can result when the sewer is overwhelmed by heavy rainfall, becomes blocked, or is of inadequate capacity; this will continue until the water drains away. When this happens to combined sewers, there is a high risk of land and property flooding with water contaminated with raw sewage as well as pollution of rivers due to discharge from combined sewer overflows.
- 3.4.2 Sewer record information has been obtained from Severn Trent Water and is attached in Appendix C of this note. This search has identified a combined rising main running adjacent to the eastern section of the site with the associated pumping station at the south eastern corner of the site. No known issues with regards to flooding of these existing sewers is known. Consequently, the risk of flooding to the proposed development from this source is considered low.

3.5 Flooding from Reservoirs, Canals and other Artificial Sources

- 3.5.1 Non-natural or artificial sources of flooding can include reservoirs, canals and lakes where water is retained above natural ground level, operational and redundant industrial processes including mining, quarrying and sand and gravel extraction, as they may increase floodwater depths and velocities in adjacent areas. The potential effects of flood risk management infrastructure and other structures also need to be considered. Reservoir or canal flooding may occur as a result of the facility being overwhelmed and/or as a result of dam or bank failure.
- 3.5.2 The Environment Agency’s flood risk from reservoirs map shows that the site is not at risk from flooding from reservoirs, canals or other artificial sources. The risk of flooding from this source is therefore considered very low.

3.6 Flood Risk Summary

- 3.6.1 As can be seen from the various searches and maps above, the proposed site is located within Flood Zone 1 and is therefore at low risk of flooding. There are no significant risks from surface water flooding. Measures have been suggested in 3.3.5 to ensure the risk of groundwater flooding remains low. The site is also not located in an area susceptible to sewer flooding or artificial sources such as canals or reservoirs.
- 3.6.2 NPPF guidance must be followed with particular reference to Paragraph 162: “*The aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source*”. This would suggest that a sequential test is therefore not required for the site given no risk of flooding from any source has been identified.

4 Surface Water Management Strategy

4.1 Existing Site Drainage

- 4.1.1 No existing drainage is apparent on the site from either the topographic survey or asset record drawings obtained from Severn Trent Water.

4.2 Sustainable Drainage Systems (SuDS)

- 4.2.1 NPPF Planning Practice Guidance Paragraph 080 states that:

- 4.2.2 "Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable:

1. *into the ground (infiltration);*
2. *to a surface water body;*
3. *to a surface water sewer, highway drain, or another drainage system;*
4. *to a combined sewer."*

- 4.2.3 Section 1.1 of the SuDS Manual (Ciria C753) states the following:

- "Sustainable drainage systems (SuDS) can deliver multiple benefits. Surface water is a valuable resource, and this should be reflected in the way it is managed and used in the built environment. It can add to and enhance biodiversity, beauty, tranquillity and the natural aesthetic of buildings, places and landscapes and it can help make them more resilient to the changing climate.
- The philosophy of sustainable drainage systems is about maximising the benefits and minimising the negative impacts of surface water run-off from developed areas.
- The SuDS approach involves slowing down and reducing the quantity of surface water runoff from a developed area to manage downstream flood risk and reducing the risk of that runoff causing pollution. This is achieved by harvesting, infiltrating, slowing, storing, conveying and treating runoff on site and, where possible, on the surface rather than underground. Water then becomes a much more visible and tangible part of the built environment, which can be enjoyed by everyone."
- The SuDS Manual describes the four pillars of SuDS design as Water Quality, Water Quantity, Amenity and Biodiversity as illustrated in Figure 5.1 below which is a representation of The SuDS Manual Figure 2.1.

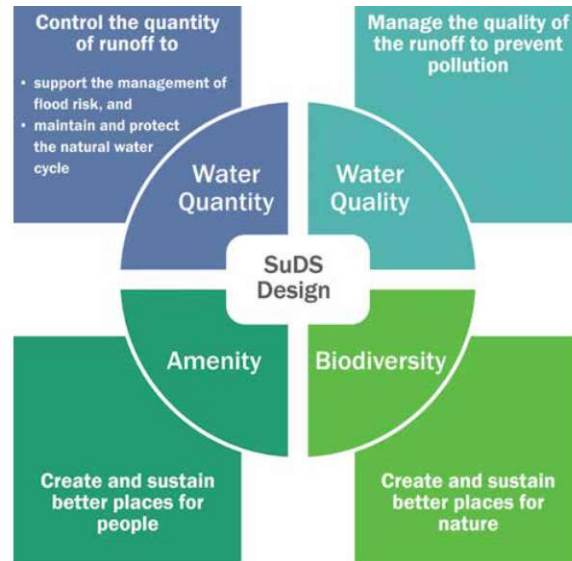


Figure 5.1: Extract Representation of Figure 2.1 of The SuDS Manual

4.3 SuDS and the Proposed Development

Water Quantity

- 4.3.1 To achieve a Greenfield runoff rate of 5 l/s for the new surface water drainage system it is proposed a pond and hydrobrake are used. The volume of the pond will be sized up to and including the 1:100 year storm event plus 40% allowance for climate change. Refer to Section 6 for more information.

Water Quality

- 4.3.2 The SuDS design for the development site should ensure the quality of any receiving water body is not adversely affected and preferably enhanced in accordance with Ciria SuDS Manual C753. Table 26.2 in the Ciria SuDS Manual shows that the development has a high pollution hazard. It is proposed to implement fuel interceptors, silt traps, trapped gullies and trapped drainage channels to intercept oils and silt entering the water system.

Amenity and Biodiversity

- 4.3.3 Given the nature of the development it is unlikely that there will be opportunities for SuDS to contribute significantly to biodiversity and amenity. This will be explored further by the architect and landscape designers.

5 Proposed Surface Water Drainage

5.1 Proposed Site Layout

- 5.1.1 Refer to section 1.3 for a description of the development proposals. A proposed site plan is presented within Appendix A.

5.2 Discharge to Soakaways or Infiltration Systems

- 5.2.1 Infiltration testing to BRE Digest 365 has not been carried out to date. A ground investigation has been completed and more information on ground conditions and suitability for an infiltration system will be provided once the results have been received.
- 5.2.2 Based on the BGS info described in Section 2.5 of this report, it does not appear that soakaways would be a feasible means of storm water discharge from the site given the presence of clays and mudstone within the existing ground. These types of material are generally considered unsuitable for soakaways.
- 5.2.3 Furthermore, there appears to be a low risk of groundwater flooding on the site. In accordance with the GMS, no infiltration should be allowed without suitable groundwater monitoring taking place. To minimise the potential risk of groundwater flooding we believe it would be prudent to avoid drainage via soakaways or other infiltration systems.
- 5.2.4 Soakaway testing will be completed on site to confirm the above, with results to be shared with the LLFA when available.

5.3 Discharge to Watercourse

- 5.3.1 In order to discharge into an existing watercourse a new connection will be required over third party land. This is considered unfeasible and as a result this has been discounted as an option.

5.4 Discharge to Sewer

- 5.4.1 Severn Trent records indicate an existing Combined Rising Main is located adjacent to the eastern extent of the site and the associated pumping station is located adjacent to the south eastern extent of the site.
- 5.4.2 The intention is for the new surface water drainage to discharge into the existing system via the pumping station located to the south eastern extent of the site. The new building and associated impermeable area will be limited to a discharge rate of a Greenfield rate of 5l/sec.

5.5 Proposed Surface Water Strategy

- 5.5.1 The drainage system and ground levels will be designed such that:
- Unless an area is designed to hold and/or convey water, flooding does not occur on any part of the site for a 1 in 30-year rainfall event.
 - Flooding does not occur during a 1 in 100-year storm event (including allowance for up to 40% increase to allow for the anticipated impacts of climate change) in any part of a building (including a basement) or in any utility plant susceptible to water within the development.
 - Flows resulting from rainfall in any event exceeding the 1 in 100-year rainfall event are managed in exceedance routes to minimise as far as practicable the risk of flooding to people and property both on and off site.

- The management of surface water on site will ensure that there is no increased risk of flooding on and offsite as a result of the development.
- The SuDS design for the development site should ensure that the quality of any receiving water body is not adversely affected and preferably enhanced in accordance with Ciria SuDS Manual, Chapter 4.

5.5.2 Refer to **Appendix E** for the attenuation storage calculations.

5.5.3 In summary, all hard standing areas will discharge to the existing network. The rate of discharge will be controlled by a hydrobrake with excess water stored in a proposed pond. This would be the most SuDS compatible solution for the site.

5.5.4 A quick storage calculation, using 'Microdrainage Source Control', has been completed for the site. The calculation estimated there is a requirement of between 164m³ – 227m³ for surface water storage.

5.5.5 Using this range as an indication of storage volume required and the conditions for design stated above, further calculations have been completed using Microdrainage to determine the anticipated size of a pond with the discharge rate to be controlled using a Hydrobrake.

5.5.6 Following an iterative process, the output of the preliminary calculations indicated a pond with a volume of 176m³ would be required for the Greenfield run off rate of 5l/sec for the proposed site.

5.5.7 It is currently our proposal to locate the pond in an area indicated as landscaping west of the proposed warehouse. Detailed layouts of the proposed drainage system, including the pond and hydrobrake, are provided in **Appendix H**.

6 Proposed Foul Drainage

- 6.1.1 Most private sewers and private lateral drains which were connected to a public sewer as of July 2011 transferred in ownership to Severn Trent Water. Severn Trent Water does not possess complete records of these assets and some assets may not be displayed on the asset map.
- 6.1.2 Severn Trent records indicate there is an existing Combined Rising Main is located on the eastern extent of the site and the associated pumping station is located south eastern extent of the site.
- 6.1.3 It is proposed that the new development will connect to this existing combined rising main via the pumping station. The peak discharge rate of foul water for the new development is anticipated to be 0.6l/s. This value is based on the values provided in the 'British Water Code of Practice – Flow and Loads - Table of Loadings for Sewage Treatment Systems' for developable land.
- 6.1.4 A predevelopment enquiry has been made to Severn Trent Water and we are currently awaiting a response.

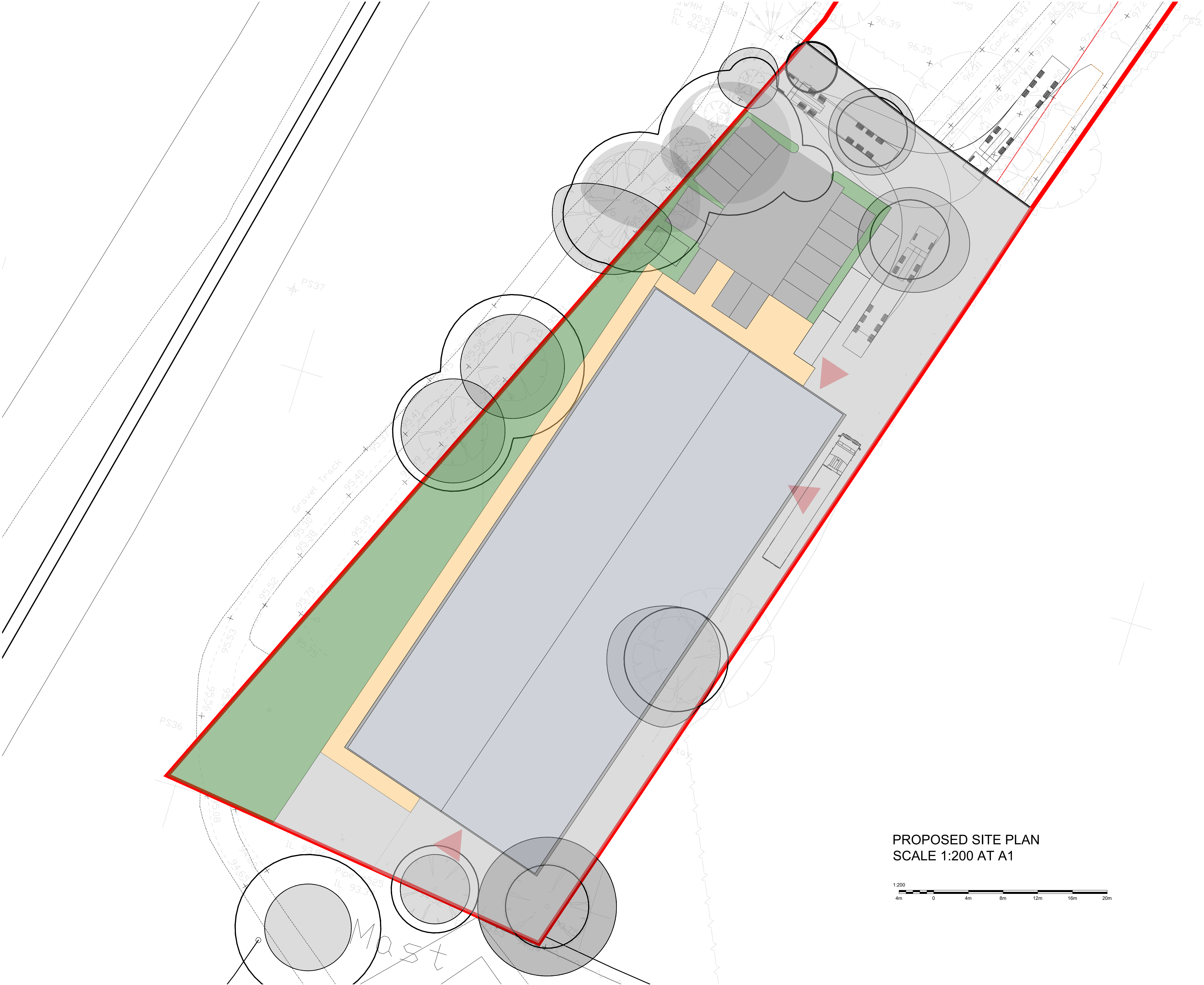
6.1 Drainage Maintenance strategy

- 6.1.1 For the proposed drainage system to function efficiently, it is important that the network is inspected and maintained on a regular basis. The surface water drainage will not be adopted and is to remain private, therefore it is anticipated that the drainage system will be maintained by the owner. Refer to Appendix D for the drainage maintenance plan.

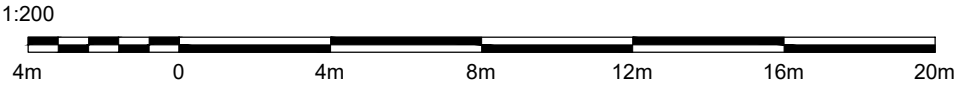
7 Conclusions

- 7.1.1 The NPPF Technical Guide classifies the flood risk vulnerability of buildings used for 'General Industry' as a less vulnerable use and Table 3 of the Technical Guide indicates that such development is compatible with Flood Zone 1.
- 7.1.2 All forms of flood risk to the site have been assessed and it has been determined that there is low risk of flooding to the proposed development.
- 7.1.3 The development proposals are in accordance with both National and Local Policy and Guidance relating to Flood Risk and Surface Water Management.
- 7.1.4 Site Wide Measures are designed to ensure external ground levels will be designed to direct any surface water flow away from building thresholds.
- 7.1.5 The design foul water flow from the proposed development will discharge to the existing Severn Trent Water combined sewer via the existing pumping station south east of the site, subject to the approval of Severn Trent Water.
- 7.1.6 The SuDS strategy will be developed as part of the detailed design to meet the following criteria:
 - Unless an area is designed to hold and/or convey water, flooding will not occur on any part of the site for a 1 in 30-year rainfall event.
 - Flooding does not occur during a 1 in 100-year storm event (including an allowance for a 40% increase in rainfall intensity due to climate change) in any part of a building (including a basement) or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.
 - Discharge of surface water will be to the combined rising main to the east of the site via the existing pumping station at a rate limited to 5 l/sec.
 - In order to achieve the above, sufficient storm water attenuation will be provided to manage the storm water discharging from site.
 - Flows resulting from rainfall in any event exceeding the 1 in 100-year rainfall event are managed in exceedance routes to minimise as far as practicable the risk of flooding to people and property both on and off site.
 - The SuDS design for the development site should ensure that the quality of any receiving water body is not adversely affected and preferably enhanced in accordance with Ciria SuDS Manual C753, Chapter 4.

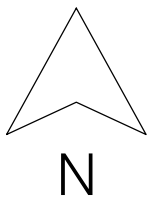
Appendix A
Proposed Site Layout



PROPOSED SITE PLAN
SCALE 1:200 AT A1



THIS DRAWING IS COPYRIGHT DIMENSIONS ARE NOT TO BE SCALED FROM THIS DRAWING
ELECTRONIC DATA IS NOT TO BE AMENDED/DELETED WITHOUT IMA ARCHITECTS PERMISSION
ALL FIXINGS, TO BE DESIGNED BY APPROPRIATE SPECIALIST SUB-CONTRACTOR
DETAIL DRAWINGS AT LARGER SCALE TAKE PRECEDENCE OVER GENERAL ARRANGEMENT DRAWINGS
P01 17/02/2023 NO FIRST ISSUE



JJ Churchill Ltd
PRECISION ENGINEERING

ima ARCHITECTS

6 Rose Way
Blaby Business Park
Lutterworth Road
Blaby
Leicester
LE8 4BY

0116 2781200
www.ima-architects.co.uk

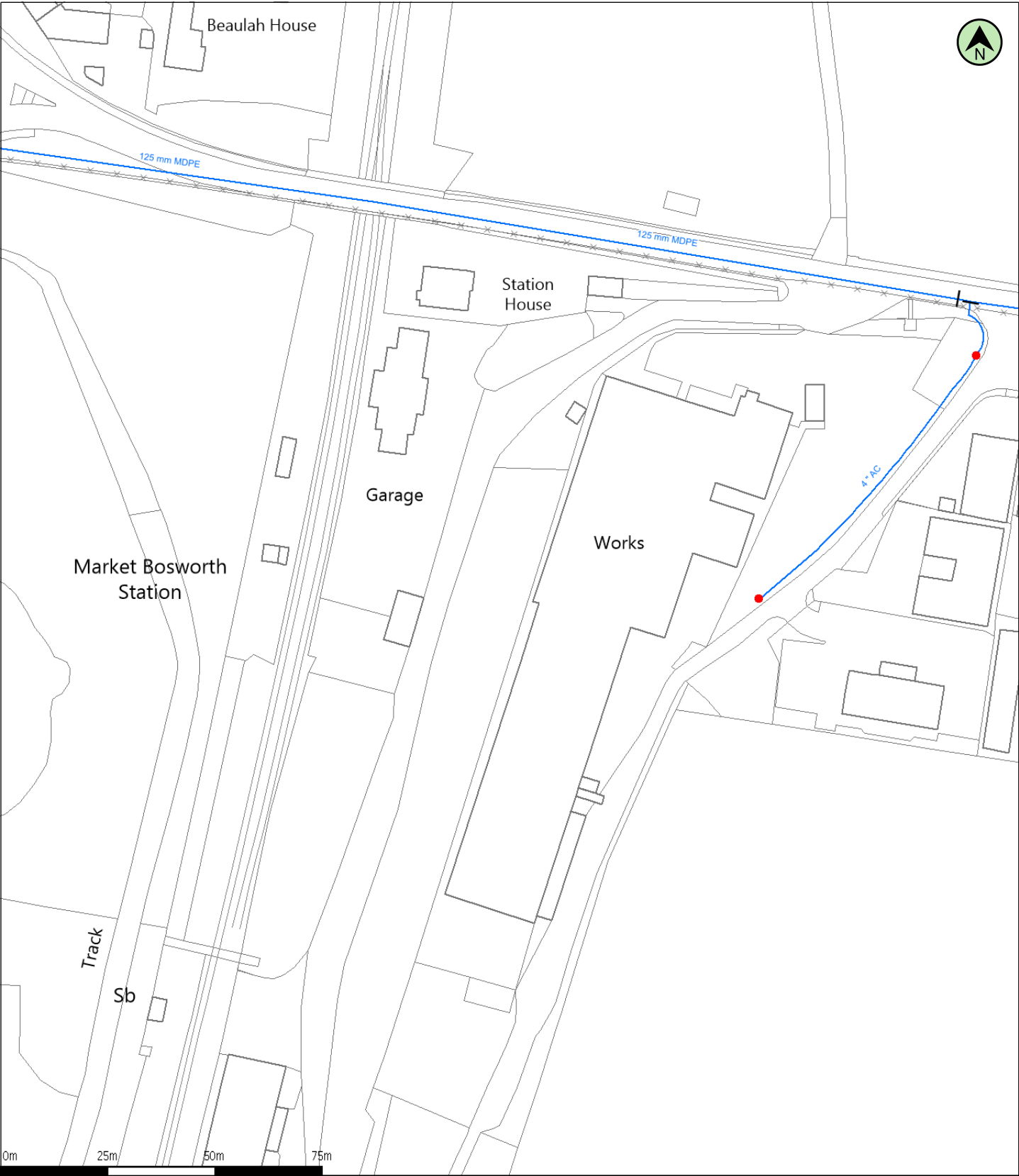
Project	JJ CHURCHILL WAREHOUSE EXTENSION STATION ROAD, MARKET BOSWORTH
IMA Project No.	223008
	223008-IMA - ST-XX-DR-A-050102
Revision	P01
Status	PLANNING
Drawing Title	SITE PLAN
Date	17/02/2023
Scale	1:200
Sheet Size	A1
Drawn By	NO
Checked By	AD

Appendix B
Topographical Survey

8663 - MJM - 00 - 00 - DR - C - 1003

© THIS DRAWING MAY NOT BE COPIED WITHOUT PRIOR WRITTEN PERMISSION

Appendix C
Existing Sewer Records



(c) Crown copyright and database rights 2023 Ordnance Survey 100031673
Data updated: 14/03/23

Scale: 1:1250
Map Centre: 439332,303103

Date: 28/03/23
Our Ref: 1122184 - 1

Clean Water Plan A4
Powered by digdat

Hydrant	●	Valve		Aqueduct	- - - - -
Washout	●	Water Main	—	Duct	==
Meter	■	Abandoned Pipe	x-x-x-x-x	Service Pipe/ Private Pipe	- . - . -



Do not scale off this map. The plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems. Reproduction by permission of Ordnance Survey on behalf of HMSO. ©Crown Copyright and database rights 2023 All rights reserved. Ordnance Survey licence number 100031673. Document users other than SEVERN TRENT WATER business users are advised that this document is provided for reference purpose only and is subject to copyright, therefore, no further copies should be made from it.

GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Severn Trent Water Limited (STW) apparatus (defined below), the person, contractor or subcontractor responsible must inform STW immediately on:

0800 783 4444 (24 hours)

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991 (a legal agreement between a developer and STW, where a developer agrees to build sewers to an agreed standard, which STW will then adopt); mains installed in accordance with an agreement for the self-construction of water mains entered into with STW and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as "STW Apparatus" in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of STW Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and STW does not guarantee its accuracy.
- d) STW does not update these plans on a regular basis. Therefore the position and depth of STW Apparatus may change and this plan is issued subject to any such change. Before any works are carried out, you should confirm whether any changes to the plan have been made since it was issued.
- e) The plan must not be relied upon in the event of excavations or other works in the vicinity of STW Apparatus. It is your responsibility to ascertain the precise location of any STW Apparatus prior to undertaking any development or other works (including but not limited to excavations).
- f) No person or company shall be relieved from liability for loss and/or damage caused to STW Apparatus by reason of the actual position and/or depths of STW Apparatus being different from those shown on the plan.

In order to achieve safe working conditions adjacent to any STW Apparatus the following should be observed:

1. All STW Apparatus should be located by hand digging prior to the use of mechanical excavators.
2. All information set out in any plans received from us, or given by our staff at the site of the works, about the position and depth of the mains, is approximate. Every possible precaution should be taken to avoid damage to STW Apparatus. You or your contractor must ensure the safety of STW Apparatus and will be responsible for the cost of repairing any loss and/or damage caused (including without limitation replacement parts).
3. Water mains are normally laid at a depth of 900mm. No records are kept of customer service pipes which are normally laid at a depth of 750mm; but some idea of their positions may be obtained from the position of stop tap covers and their existence must be anticipated.
4. During construction work, where heavy plant will cross the line of STW Apparatus, specific crossing points must be agreed with STW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of STW Apparatus at other locations must be prevented.
5. Where it is proposed to carry out piling or boring within 20 metres of any STW Apparatus, STW should be consulted to enable any affected STW Apparatus to be surveyed prior to the works commencing.
6. Where excavation of trenches adjacent to any STW Apparatus affects its support, the STW Apparatus must be supported to the satisfaction of STW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bends and other fittings.
7. Where a trench is excavated crossing or parallel to the line of any STW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the STW Apparatus. In

special cases, it may be necessary to provide permanent support to STW Apparatus which has been exposed over a length of the excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the STW Apparatus.

8. No other apparatus should be laid along the line of STW Apparatus irrespective of clearance. Above ground apparatus must not be located within a minimum of 3 metres either side of the centre line of STW Apparatus for smaller sized pipes and 6 metres either side for larger sized pipes without prior approval. No manhole or chamber shall be built over or around any STW Apparatus.

9. A minimum radial clearance of 300 millimetres should be allowed between any plant or equipment being installed and existing STW Apparatus. We reserve the right to increase this distance where strategic assets are affected.

10. Where any STW Apparatus coated with a special wrapping is damaged, even to a minor extent, STW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any STW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage, the necessary remedial work will be recharged to you.

11. It may be necessary to adjust the finished level of any surface boxes which may fall within your proposed construction. Please ensure that these are not damaged, buried or otherwise rendered inaccessible as a result of the works and that all stop taps, valves, hydrants, etc. remain accessible and operable. Minor reduction in existing levels may result in conflict with STW Apparatus such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such STW Apparatus in order to determine any necessary alterations in advance of the works.

12. With regard to any proposed resurfacing works, you are required to contact STW on the number given above to arrange a site inspection to establish the condition of any STW Apparatus in the nature of surface boxes or manhole covers and frames affected by the works. STW will then advise on any measures to be taken, in the event of this a proportionate charge will be made.

13. You are advised that STW will not agree to either the erection of posts, directly over or within 1.0 metre of valves and hydrants,

14. No explosives are to be used in the vicinity of any STW Apparatus without prior consultation with STW.

TREE PLANTING RESTRICTIONS

There are many problems with the location of trees adjacent to sewers, water mains and other STW Apparatus and these can lead to the loss of trees and hence amenity to the area which many people may have become used to. It is best if the problem is not created in the first place. Set out below are the recommendations for tree planting in close proximity to public sewers, water mains and other STW Apparatus.

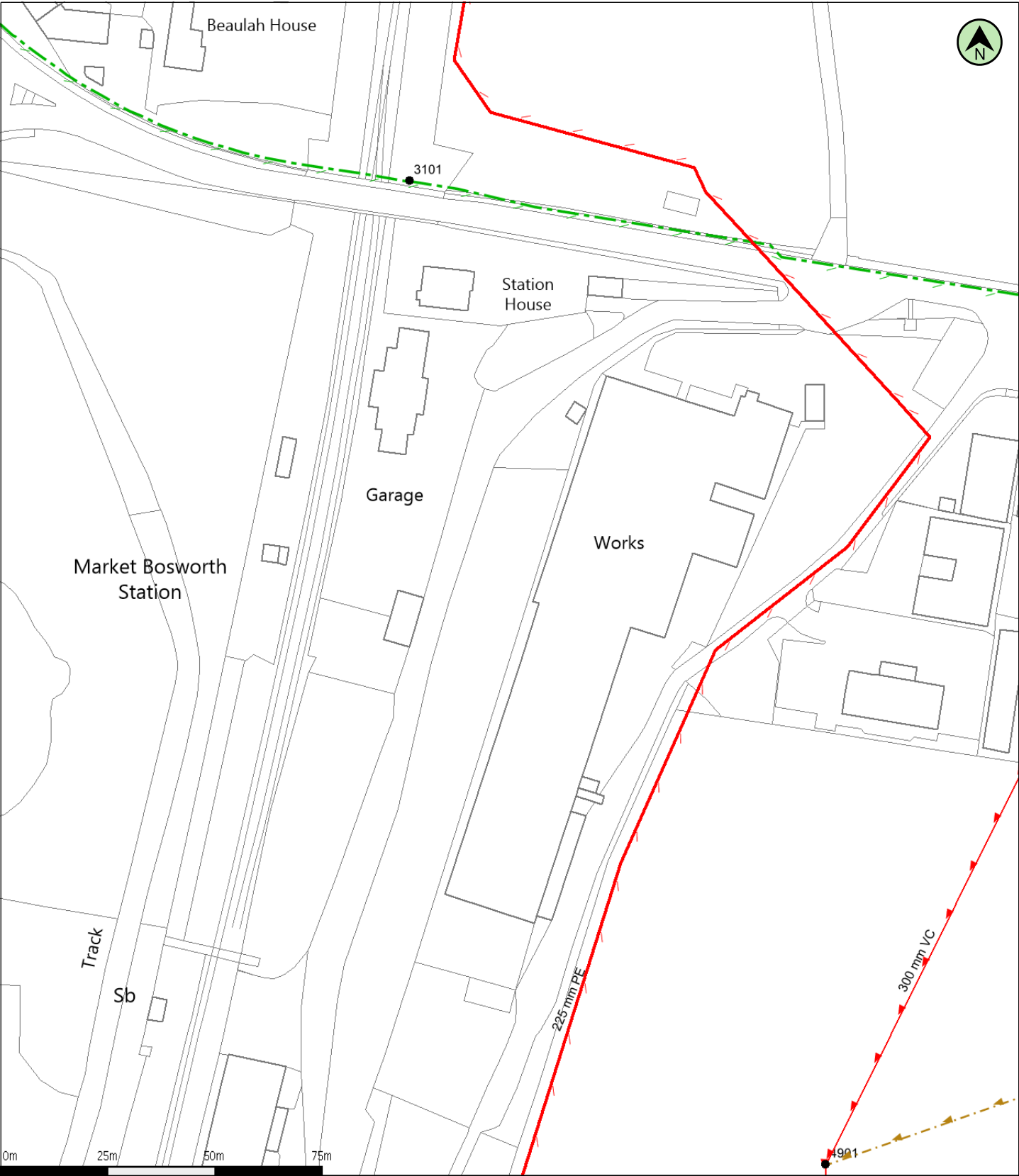
15. Please ensure that, in relation to STW Apparatus, the mature root systems and canopies of any tree planted do not and will not encroach within the recommended distances specified in the notes below.

16. Both Poplar and Willow trees have extensive root systems and should not be planted within 12 metres of a sewer, water main or other STW Apparatus.

17. The following trees and those of similar size, be they deciduous or evergreen, should not be planted within 6 metres of a sewer, water main or other STW Apparatus. E.g. Ash, Beech, Birch, most Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear. Asset Protection Statements Updated May 2014

18. STW personnel require a clear path to conduct surveys etc. No shrubs or bushes should be planted within 2 metre of the centre line of a sewer, water main or other STW Apparatus.

19. In certain circumstances, both STW and landowners may wish to plant shrubs/bushes in close proximity to a sewer, water main or other STW Apparatus for screening purposes. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry, and most ornamental flowering shrubs.



(c) Crown copyright and database rights 2023 Ordnance Survey 100031673 Scale: 1:1250 Date: 28/03/23 Wastewater Plan A4
Data updated: 14/03/23 Map Centre: 439332,303103 Our Ref: 1122184 - 2 Powered by digdat

Public Foul Gravity/Lateral Drain	Highway Drain	Manhole Foul	michaelr@mjmc.co.uk JJ Churchill
Public Combined Gravity/Lateral Drain	Overflow Pipe	Manhole Surface	
Public Surface Water Gravity/Lateral Drain	Disposal Pipe	Abandoned Pipe	
Pressure Foul	Culverted Water Course	Chamber	
Pressure Combined	Pumping Station	Section 104 sewers are shown in green	
Pressure Surface Water	Fitting	Private sewers are shown in magenta	

Do not scale off this map. The plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems. Reproduction by permission of Ordnance Survey on behalf of HMSO. ©Crown Copyright and database rights 2023 All rights reserved. Ordnance Survey licence number 100031673. Document users other than SEVERN TRENT WATER business users are advised that this document is provided for reference purpose only and is subject to copyright, therefore, no further copies should be made from it.

GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Severn Trent Water Limited (STW) apparatus (defined below), the person, contractor or subcontractor responsible must inform STW immediately on:

0800 783 4444 (24 hours)

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991(a legal agreement between a developer and STW, where a developer agrees to build sewers to an agreed standard, which STW will then adopt); mains installed in accordance with an agreement for the self-construction of water mains entered into with STW and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as "STW Apparatus" in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of STW Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and STW does not guarantee its accuracy.
- d) STW does not update these plans on a regular basis. Therefore the position and depth of STW Apparatus may change and this plan is issued subject to any such change. Before any works are carried out, you should confirm whether any changes to the plan have been made since it was issued.
- e) The plan must not be relied upon in the event of excavations or other works in the vicinity of STW Apparatus. It is your responsibility to ascertain the precise location of any STW Apparatus prior to undertaking any development or other works (including but not limited to excavations).
- f) No person or company shall be relieved from liability for loss and/or damage caused to STW Apparatus by reason of the actual position and/or depths of STW Apparatus being different from those shown on the plan.

In order to achieve safe working conditions adjacent to any STW Apparatus the following should be observed:

1. All STW Apparatus should be located by hand digging prior to the use of mechanical excavators.
2. All information set out in any plans received from us, or given by our staff at the site of the works, about the position and depth of the mains, is approximate. Every possible precaution should be taken to avoid damage to STW Apparatus. You or your contractor must ensure the safety of STW Apparatus and will be responsible for the cost of repairing any loss and/or damage caused (including without limitation replacement parts).
3. Water mains are normally laid at a depth of 900mm. No records are kept of customer service pipes which are normally laid at a depth of 750mm; but some idea of their positions may be obtained from the position of stop tap covers and their existence must be anticipated.
4. During construction work, where heavy plant will cross the line of STW Apparatus, specific crossing points must be agreed with STW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of STW Apparatus at other locations must be prevented.
5. Where it is proposed to carry out piling or boring within 20 metres of any STW Apparatus, STW should be consulted to enable any affected STW Apparatus to be surveyed prior to the works commencing.
6. Where excavation of trenches adjacent to any STW Apparatus affects its support, the STW Apparatus must be supported to the satisfaction of STW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bends and other fittings.
7. Where a trench is excavated crossing or parallel to the line of any STW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the STW Apparatus. In special cases, it may be necessary to provide permanent support to STW Apparatus which has been exposed over a length of the

excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the STW Apparatus.

8. No other apparatus should be laid along the line of STW Apparatus irrespective of clearance. Above ground apparatus must not be located within a minimum of 3 metres either side of the centre line of STW Apparatus for smaller sized pipes and 6 metres either side for larger sized pipes without prior approval. No manhole or chamber shall be built over or around any STW Apparatus.

9. A minimum radial clearance of 300 millimetres should be allowed between any plant or equipment being installed and existing STW Apparatus. We reserve the right to increase this distance where strategic assets are affected.

10. Where any STW Apparatus coated with a special wrapping is damaged, even to a minor extent, STW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any STW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage, the necessary remedial work will be recharged to you.

11. It may be necessary to adjust the finished level of any surface boxes which may fall within your proposed construction. Please ensure that these are not damaged, buried or otherwise rendered inaccessible as a result of the works and that all stop taps, valves, hydrants, etc. remain accessible and operable. Minor reduction in existing levels may result in conflict with STW Apparatus such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such STW Apparatus in order to determine any necessary alterations in advance of the works.

12. With regard to any proposed resurfacing works, you are required to contact STW on the number given above to arrange a site inspection to establish the condition of any STW Apparatus in the nature of surface boxes or manhole covers and frames affected by the works. STW will then advise on any measures to be taken, in the event of this a proportionate charge will be made.

13. You are advised that STW will not agree to either the erection of posts, directly over or within 1.0 metre of valves and hydrants,

14. No explosives are to be used in the vicinity of any STW Apparatus without prior consultation with STW.

TREE PLANTING RESTRICTIONS

There are many problems with the location of trees adjacent to sewers, water mains and other STW Apparatus and these can lead to the loss of trees and hence amenity to the area which many people may have become used to. It is best if the problem is not created in the first place. Set out below are the recommendations for tree planting in close proximity to public sewers, water mains and other STW Apparatus.

15. Please ensure that, in relation to STW Apparatus, the mature root systems and canopies of any tree planted do not and will not encroach within the recommended distances specified in the notes below.

16. Both Poplar and Willow trees have extensive root systems and should not be planted within 12 metres of a sewer, water main or other STW Apparatus.

17. The following trees and those of similar size, be they deciduous or evergreen, should not be planted within 6 metres of a sewer, water main or other STW Apparatus. E.g. Ash, Beech, Birch, most Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear. Asset Protection Statements Updated May 2014

18. STW personnel require a clear path to conduct surveys etc. No shrubs or bushes should be planted within 2 metre of the centre line of a sewer, water main or other STW Apparatus.

19. In certain circumstances, both STW and landowners may wish to plant shrubs/bushes in close proximity to a sewer, water main or other STW Apparatus for screening purposes. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry, and most ornamental flowering shrubs.



(c) Crown copyright and database rights 2023 Ordnance Survey 100031673 Scale: 1:1250 Date: 28/03/23 Clean Water Plan A4
Data updated: 14/03/23 Map Centre: 439307,302855 Our Ref: 1122184 - 3 Powered by digdat

Hydrant	●	Valve		Aqueduct	- - - - -
Washout	●	Water Main	—	Duct	— — — —
Meter	■	Abandoned Pipe	x-x-x-x-x	Service Pipe/ Private Pipe	- . - . - .



Do not scale off this map. The plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems. Reproduction by permission of Ordnance Survey on behalf of HMSO. ©Crown Copyright and database rights 2023 All rights reserved. Ordnance Survey licence number 100031673. Document users other than SEVERN TRENT WATER business users are advised that this document is provided for reference purpose only and is subject to copyright, therefore, no further copies should be made from it.

GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Severn Trent Water Limited (STW) apparatus (defined below), the person, contractor or subcontractor responsible must inform STW immediately on:

0800 783 4444 (24 hours)

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991 (a legal agreement between a developer and STW, where a developer agrees to build sewers to an agreed standard, which STW will then adopt); mains installed in accordance with an agreement for the self-construction of water mains entered into with STW and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as "STW Apparatus" in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of STW Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and STW does not guarantee its accuracy.
- d) STW does not update these plans on a regular basis. Therefore the position and depth of STW Apparatus may change and this plan is issued subject to any such change. Before any works are carried out, you should confirm whether any changes to the plan have been made since it was issued.
- e) The plan must not be relied upon in the event of excavations or other works in the vicinity of STW Apparatus. It is your responsibility to ascertain the precise location of any STW Apparatus prior to undertaking any development or other works (including but not limited to excavations).
- f) No person or company shall be relieved from liability for loss and/or damage caused to STW Apparatus by reason of the actual position and/or depths of STW Apparatus being different from those shown on the plan.

In order to achieve safe working conditions adjacent to any STW Apparatus the following should be observed:

1. All STW Apparatus should be located by hand digging prior to the use of mechanical excavators.
2. All information set out in any plans received from us, or given by our staff at the site of the works, about the position and depth of the mains, is approximate. Every possible precaution should be taken to avoid damage to STW Apparatus. You or your contractor must ensure the safety of STW Apparatus and will be responsible for the cost of repairing any loss and/or damage caused (including without limitation replacement parts).
3. Water mains are normally laid at a depth of 900mm. No records are kept of customer service pipes which are normally laid at a depth of 750mm; but some idea of their positions may be obtained from the position of stop tap covers and their existence must be anticipated.
4. During construction work, where heavy plant will cross the line of STW Apparatus, specific crossing points must be agreed with STW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of STW Apparatus at other locations must be prevented.
5. Where it is proposed to carry out piling or boring within 20 metres of any STW Apparatus, STW should be consulted to enable any affected STW Apparatus to be surveyed prior to the works commencing.
6. Where excavation of trenches adjacent to any STW Apparatus affects its support, the STW Apparatus must be supported to the satisfaction of STW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bends and other fittings.
7. Where a trench is excavated crossing or parallel to the line of any STW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the STW Apparatus. In

special cases, it may be necessary to provide permanent support to STW Apparatus which has been exposed over a length of the excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the STW Apparatus.

8. No other apparatus should be laid along the line of STW Apparatus irrespective of clearance. Above ground apparatus must not be located within a minimum of 3 metres either side of the centre line of STW Apparatus for smaller sized pipes and 6 metres either side for larger sized pipes without prior approval. No manhole or chamber shall be built over or around any STW Apparatus.

9. A minimum radial clearance of 300 millimetres should be allowed between any plant or equipment being installed and existing STW Apparatus. We reserve the right to increase this distance where strategic assets are affected.

10. Where any STW Apparatus coated with a special wrapping is damaged, even to a minor extent, STW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any STW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage, the necessary remedial work will be recharged to you.

11. It may be necessary to adjust the finished level of any surface boxes which may fall within your proposed construction. Please ensure that these are not damaged, buried or otherwise rendered inaccessible as a result of the works and that all stop taps, valves, hydrants, etc. remain accessible and operable. Minor reduction in existing levels may result in conflict with STW Apparatus such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such STW Apparatus in order to determine any necessary alterations in advance of the works.

12. With regard to any proposed resurfacing works, you are required to contact STW on the number given above to arrange a site inspection to establish the condition of any STW Apparatus in the nature of surface boxes or manhole covers and frames affected by the works. STW will then advise on any measures to be taken, in the event of this a proportionate charge will be made.

13. You are advised that STW will not agree to either the erection of posts, directly over or within 1.0 metre of valves and hydrants,

14. No explosives are to be used in the vicinity of any STW Apparatus without prior consultation with STW.

TREE PLANTING RESTRICTIONS

There are many problems with the location of trees adjacent to sewers, water mains and other STW Apparatus and these can lead to the loss of trees and hence amenity to the area which many people may have become used to. It is best if the problem is not created in the first place. Set out below are the recommendations for tree planting in close proximity to public sewers, water mains and other STW Apparatus.

15. Please ensure that, in relation to STW Apparatus, the mature root systems and canopies of any tree planted do not and will not encroach within the recommended distances specified in the notes below.

16. Both Poplar and Willow trees have extensive root systems and should not be planted within 12 metres of a sewer, water main or other STW Apparatus.

17. The following trees and those of similar size, be they deciduous or evergreen, should not be planted within 6 metres of a sewer, water main or other STW Apparatus. E.g. Ash, Beech, Birch, most Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear. Asset Protection Statements Updated May 2014

18. STW personnel require a clear path to conduct surveys etc. No shrubs or bushes should be planted within 2 metre of the centre line of a sewer, water main or other STW Apparatus.

19. In certain circumstances, both STW and landowners may wish to plant shrubs/bushes in close proximity to a sewer, water main or other STW Apparatus for screening purposes. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry, and most ornamental flowering shrubs.

Do not scale off this map. The plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems. Reproduction by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and database rights 2023. All rights reserved. Ordnance Survey licence number 100031673. Document users other than SEVERN TRENT WATER business users are advised that this document is provided for reference purpose only and is subject to copyright, therefore, no further copies should be made from it.

GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Severn Trent Water Limited (STW) apparatus (defined below), the person, contractor or subcontractor responsible must inform STW immediately on:

0800 783 4444 (24 hours)

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991(a legal agreement between a developer and STW, where a developer agrees to build sewers to an agreed standard, which STW will then adopt); mains installed in accordance with an agreement for the self-construction of water mains entered into with STW and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as "STW Apparatus" in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of STW Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and STW does not guarantee its accuracy.
- d) STW does not update these plans on a regular basis. Therefore the position and depth of STW Apparatus may change and this plan is issued subject to any such change. Before any works are carried out, you should confirm whether any changes to the plan have been made since it was issued.
- e) The plan must not be relied upon in the event of excavations or other works in the vicinity of STW Apparatus. It is your responsibility to ascertain the precise location of any STW Apparatus prior to undertaking any development or other works (including but not limited to excavations).
- f) No person or company shall be relieved from liability for loss and/or damage caused to STW Apparatus by reason of the actual position and/or depths of STW Apparatus being different from those shown on the plan.

In order to achieve safe working conditions adjacent to any STW Apparatus the following should be observed:

1. All STW Apparatus should be located by hand digging prior to the use of mechanical excavators.
2. All information set out in any plans received from us, or given by our staff at the site of the works, about the position and depth of the mains, is approximate. Every possible precaution should be taken to avoid damage to STW Apparatus. You or your contractor must ensure the safety of STW Apparatus and will be responsible for the cost of repairing any loss and/or damage caused (including without limitation replacement parts).
3. Water mains are normally laid at a depth of 900mm. No records are kept of customer service pipes which are normally laid at a depth of 750mm; but some idea of their positions may be obtained from the position of stop tap covers and their existence must be anticipated.
4. During construction work, where heavy plant will cross the line of STW Apparatus, specific crossing points must be agreed with STW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of STW Apparatus at other locations must be prevented.
5. Where it is proposed to carry out piling or boring within 20 metres of any STW Apparatus, STW should be consulted to enable any affected STW Apparatus to be surveyed prior to the works commencing.
6. Where excavation of trenches adjacent to any STW Apparatus affects its support, the STW Apparatus must be supported to the satisfaction of STW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bends and other fittings.
7. Where a trench is excavated crossing or parallel to the line of any STW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the STW Apparatus. In special cases, it may be necessary to provide permanent support to STW Apparatus which has been exposed over a length of the

excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the STW Apparatus.

8. No other apparatus should be laid along the line of STW Apparatus irrespective of clearance. Above ground apparatus must not be located within a minimum of 3 metres either side of the centre line of STW Apparatus for smaller sized pipes and 6 metres either side for larger sized pipes without prior approval. No manhole or chamber shall be built over or around any STW Apparatus.

9. A minimum radial clearance of 300 millimetres should be allowed between any plant or equipment being installed and existing STW Apparatus. We reserve the right to increase this distance where strategic assets are affected.

10. Where any STW Apparatus coated with a special wrapping is damaged, even to a minor extent, STW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any STW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage, the necessary remedial work will be recharged to you.

11. It may be necessary to adjust the finished level of any surface boxes which may fall within your proposed construction. Please ensure that these are not damaged, buried or otherwise rendered inaccessible as a result of the works and that all stop taps, valves, hydrants, etc. remain accessible and operable. Minor reduction in existing levels may result in conflict with STW Apparatus such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such STW Apparatus in order to determine any necessary alterations in advance of the works.

12. With regard to any proposed resurfacing works, you are required to contact STW on the number given above to arrange a site inspection to establish the condition of any STW Apparatus in the nature of surface boxes or manhole covers and frames affected by the works. STW will then advise on any measures to be taken, in the event of this a proportionate charge will be made.

13. You are advised that STW will not agree to either the erection of posts, directly over or within 1.0 metre of valves and hydrants,

14. No explosives are to be used in the vicinity of any STW Apparatus without prior consultation with STW.

TREE PLANTING RESTRICTIONS

There are many problems with the location of trees adjacent to sewers, water mains and other STW Apparatus and these can lead to the loss of trees and hence amenity to the area which many people may have become used to. It is best if the problem is not created in the first place. Set out below are the recommendations for tree planting in close proximity to public sewers, water mains and other STW Apparatus.

15. Please ensure that, in relation to STW Apparatus, the mature root systems and canopies of any tree planted do not and will not encroach within the recommended distances specified in the notes below.

16. Both Poplar and Willow trees have extensive root systems and should not be planted within 12 metres of a sewer, water main or other STW Apparatus.

17. The following trees and those of similar size, be they deciduous or evergreen, should not be planted within 6 metres of a sewer, water main or other STW Apparatus. E.g. Ash, Beech, Birch, most Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear. Asset Protection Statements Updated May 2014

18. STW personnel require a clear path to conduct surveys etc. No shrubs or bushes should be planted within 2 metre of the centre line of a sewer, water main or other STW Apparatus.

19. In certain circumstances, both STW and landowners may wish to plant shrubs/bushes in close proximity to a sewer, water main or other STW Apparatus for screening purposes. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry, and most ornamental flowering shrubs.

Appendix D
Drainage Maintenance Plan

JJ Churchill, *Market Bosworth* Surface Water Drainage Maintenance Plan – 28th March 2023

The following surface water management plan applies to the development of a new warehouse with accompanying carpark as an extension to an existing site in Market Bosworth.

The underground surface water drainage within the site boundary will be maintained by JJ Churchill upon completion. All proprietary systems will be maintained in accordance with manufacturer's recommendations. The current recommendations, where appropriate, are included below. However, the guidance provided below should be reviewed as and when manufacturer's guidance is updated. All installation and maintenance guides for proprietary systems will be retained on the premises in the Health & Safety file.

In addition to the following guidance on the underground drainage system, the above ground roof rainwater drainage system should be maintained strictly in accordance with the designer's guidance to ensure that roof run-off is conveyed in to the underground system as intended.

Gullies

Road gullies draining the site hardstandings should be inspected regularly to ensure that they continue to operate effectively, and are free from damage and blockage by debris or solid objects.

They should be cleaned at least once a year, and incorporated into a planned maintenance schedule.

Any debris or blockages near to the surface of the gully should be removed by hand or by jet-vac. The trap element of the gully can be cleaned through the use of a high-pressure hose.

The seating areas for grates should be cleaned before they are replaced. If grates are allowed to move within their frame, this may cause damage to the frame or seating.

Drainage channels

Drainage channels should be inspected regularly to ensure that the system continues to operate effectively, and is free from damage and blockage by debris or solid objects.

The system should be cleaned at least once a year, and incorporated into a planned maintenance schedule. Channel units can be cleaned through the use of a high-pressure hose. This can be fed into the channel system through access units which are strategically placed along the channel run.

Southgate House,
Southgate
Wakefield WF1 1TL

E: info@mjmc.co.uk
T: +44 (1924) 811 000

DIRECTORS J.P. LEACH BSc CEng MStructE, M.N. DAVISON BEng(Hons) CEng MStructE, A.P. DICKSON BEng(Hons) CEng MStructE, C.R. SHORT BSc(Hons.1) CEng MICE MStructE
TECHNICAL DIRECTOR A.J. NEWSOME BEng(Hons) MSc CEng MStructE
ASSOCIATES D.E. MACHELL MEng(Hons) CEng MStructE, R.M. REID MEng(Hons) CEng MStructE, V.K. HAINES MEng(Hons) CEng MStructE, T.W. MURPHY MEng(Hons) CEng MICE
Company Registration Number 3145094, VAT Number 721619645.
A member of the MJMC (Holdings) Limited Group of Companies.

The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of surface liquids into the drainage channel. Any debris within the throat should be removed.

The seating areas for covers and grates should be cleaned before they are replaced. The covers and grates should be locked into position to prevent these being removed, stolen or dislodged by traffic. Locking bolts should be replaced and sufficiently tightened, taking care that the bolt heads do not stand above the top surface of the cover or grate. If grates/ covers are allowed to move within their frame, this may cause damage to the frame or seating.

Pipes and manholes

Manholes are to be inspected annually for signs of blockage, with pipes jet washed and CCTV inspections carried out to the pipelines as appropriate should a blockage occur.

The flow control device located within the manhole prior to tying into the existing network is also to be checked bi-annually for blockages.

Attenuation Basin

The attenuation basin is to be inspected bi-annually for signs of clogging and excessive debris and sediment accumulation. Any sediment build-up should be removed when the basin is thoroughly dry. Any debris, trash, sediments and other waste material should be disposed or recycled in compliance with local, state and federal waste regulations.

General guidance for the safe inspection of underground systems and confined spaces

- Contaminated surface water can contain substances harmful to human health. Any person carrying out maintenance on equipment which could potentially contain contaminated water should wear suitable protective clothing, including gloves. Good hygiene practice should also be observed.
- When covers are removed precautions should be taken against personnel falling into the unit.
- The working area should be adequately lit and the inspector should be familiar with the area and access points
- Correct posture should be maintained, particularly when lifting. Appropriate lifting equipment should be used when necessary. Proper footing and balance should be maintained at all times, taking care to avoid any sharp edges.

Appendix E
Drainage Calculations

M J M C				Page 1	
Southgate House Southgate Wakefield WF1 1TL					
Date 28/03/2023 15:42 File					
			Designed by emilyw Checked by		
Micro Drainage			Source Control 2020.1.3		
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	99.427	0.427	5.0	83.3	O K
30 min Summer	99.556	0.556	5.0	108.3	O K
60 min Summer	99.675	0.675	5.0	131.7	O K
120 min Summer	99.763	0.763	5.0	148.8	Flood Risk
180 min Summer	99.787	0.787	5.0	153.5	Flood Risk
240 min Summer	99.785	0.785	5.0	153.0	Flood Risk
360 min Summer	99.762	0.762	5.0	148.5	Flood Risk
480 min Summer	99.737	0.737	5.0	143.7	Flood Risk
600 min Summer	99.711	0.711	5.0	138.6	Flood Risk
720 min Summer	99.684	0.684	5.0	133.4	O K
960 min Summer	99.630	0.630	5.0	122.8	O K
1440 min Summer	99.510	0.510	5.0	99.4	O K
2160 min Summer	99.367	0.367	5.0	71.5	O K
2880 min Summer	99.264	0.264	5.0	51.4	O K
4320 min Summer	99.153	0.153	4.7	29.8	O K
5760 min Summer	99.115	0.115	4.2	22.4	O K
7200 min Summer	99.098	0.098	3.6	19.2	O K
8640 min Summer	99.088	0.088	3.1	17.1	O K
10080 min Summer	99.080	0.080	2.8	15.7	O K
15 min Winter	99.481	0.481	5.0	93.9	O K
30 min Winter	99.627	0.627	5.0	122.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min Summer	136.640	0.0	87.5	25	
30 min Summer	89.730	0.0	115.1	40	
60 min Summer	56.129	0.0	144.8	68	
120 min Summer	33.920	0.0	175.1	126	
180 min Summer	24.926	0.0	193.0	182	
240 min Summer	19.911	0.0	205.6	240	
360 min Summer	14.459	0.0	224.0	298	
480 min Summer	11.523	0.0	238.0	362	
600 min Summer	9.656	0.0	249.3	428	
720 min Summer	8.354	0.0	258.8	498	
960 min Summer	6.641	0.0	274.3	638	
1440 min Summer	4.799	0.0	297.3	894	
2160 min Summer	3.463	0.0	322.3	1260	
2880 min Summer	2.744	0.0	340.4	1596	
4320 min Summer	1.974	0.0	367.1	2256	
5760 min Summer	1.561	0.0	387.6	2944	
7200 min Summer	1.301	0.0	403.6	3672	
8640 min Summer	1.120	0.0	417.0	4408	
10080 min Summer	0.987	0.0	428.4	5136	
15 min Winter	136.640	0.0	98.1	25	
30 min Winter	89.730	0.0	129.0	39	
©1982-2020 Innovyze					

M J M C				Page 2	
Southgate House Southgate Wakefield WF1 1TL					
Date 28/03/2023 15:42 File		Designed by emilyw Checked by			
Micro Drainage		Source Control 2020.1.3			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	99.762	0.762	5.0	148.6	Flood Risk
120 min Winter	99.867	0.867	5.0	169.0	Flood Risk
180 min Winter	99.900	0.900	5.0	175.4	Flood Risk
240 min Winter	99.903	0.903	5.0	176.0	Flood Risk
360 min Winter	99.875	0.875	5.0	170.7	Flood Risk
480 min Winter	99.843	0.843	5.0	164.5	Flood Risk
600 min Winter	99.809	0.809	5.0	157.8	Flood Risk
720 min Winter	99.772	0.772	5.0	150.6	Flood Risk
960 min Winter	99.694	0.694	5.0	135.4	O K
1440 min Winter	99.515	0.515	5.0	100.4	O K
2160 min Winter	99.303	0.303	5.0	59.1	O K
2880 min Winter	99.181	0.181	4.9	35.3	O K
4320 min Winter	99.108	0.108	4.0	21.1	O K
5760 min Winter	99.088	0.088	3.1	17.3	O K
7200 min Winter	99.078	0.078	2.6	15.2	O K
8640 min Winter	99.071	0.071	2.3	13.8	O K
10080 min Winter	99.065	0.065	2.0	12.8	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	56.129	0.0	162.2	68	
120 min Winter	33.920	0.0	196.1	124	
180 min Winter	24.926	0.0	216.2	180	
240 min Winter	19.911	0.0	230.3	236	
360 min Winter	14.459	0.0	250.9	336	
480 min Winter	11.523	0.0	266.6	380	
600 min Winter	9.656	0.0	279.3	458	
720 min Winter	8.354	0.0	289.9	536	
960 min Winter	6.641	0.0	307.3	690	
1440 min Winter	4.799	0.0	333.1	966	
2160 min Winter	3.463	0.0	361.0	1308	
2880 min Winter	2.744	0.0	381.3	1620	
4320 min Winter	1.974	0.0	411.2	2244	
5760 min Winter	1.561	0.0	434.2	2944	
7200 min Winter	1.301	0.0	452.1	3680	
8640 min Winter	1.120	0.0	467.1	4400	
10080 min Winter	0.987	0.0	479.9	5144	
©1982-2020 Innovyze					

M J M C		Page 3
Southgate House Southgate Wakefield WF1 1TL		
Date 28/03/2023 15:42 File	Designed by emilyw Checked by	
Micro Drainage Source Control 2020.1.3		

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.345

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.115	4 8	0.115	8 12	0.115

©1982-2020 Innovyze

M J M C		Page 4																																																																																															
Southgate House Southgate Wakefield WF1 1TL																																																																																																	
Date 28/03/2023 15:42 File	Designed by emilyw Checked by																																																																																																
Micro Drainage																																																																																																	
Source Control 2020.1.3																																																																																																	
Model Details Storage is Online Cover Level (m) 100.000 Tank or Pond Structure Invert Level (m) 99.000 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>195.0</td><td>1.000</td><td>195.0</td></tr></tbody></table> Hydro-Brake® Optimum Outflow Control Unit Reference MD-SHE-0107-5000-0900-5000 Design Head (m) 0.900 Design Flow (l/s) 5.0 Flush-Flo™ Calculated Objective Minimise upstream storage Application Surface Sump Available Yes Diameter (mm) 107 Invert Level (m) 99.000 Minimum Outlet Pipe Diameter (mm) 150 Suggested Manhole Diameter (mm) 1200 <table><thead><tr><th>Control Points</th><th>Head (m)</th><th>Flow (l/s)</th></tr></thead><tbody><tr><td>Design Point (Calculated)</td><td>0.900</td><td>5.0</td></tr><tr><td>Flush-Flo™</td><td>0.271</td><td>5.0</td></tr><tr><td>Kick-Flo®</td><td>0.590</td><td>4.1</td></tr><tr><td>Mean Flow over Head Range</td><td>-</td><td>4.3</td></tr></tbody></table> The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated <table><thead><tr><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th></tr></thead><tbody><tr><td>0.100</td><td>3.6</td><td>1.200</td><td>5.7</td><td>3.000</td><td>8.8</td><td>7.000</td><td>13.1</td></tr><tr><td>0.200</td><td>4.9</td><td>1.400</td><td>6.1</td><td>3.500</td><td>9.4</td><td>7.500</td><td>13.6</td></tr><tr><td>0.300</td><td>5.0</td><td>1.600</td><td>6.5</td><td>4.000</td><td>10.1</td><td>8.000</td><td>14.0</td></tr><tr><td>0.400</td><td>4.9</td><td>1.800</td><td>6.9</td><td>4.500</td><td>10.6</td><td>8.500</td><td>14.4</td></tr><tr><td>0.500</td><td>4.6</td><td>2.000</td><td>7.2</td><td>5.000</td><td>11.2</td><td>9.000</td><td>14.8</td></tr><tr><td>0.600</td><td>4.1</td><td>2.200</td><td>7.6</td><td>5.500</td><td>11.7</td><td>9.500</td><td>15.2</td></tr><tr><td>0.800</td><td>4.7</td><td>2.400</td><td>7.9</td><td>6.000</td><td>12.2</td><td></td><td></td></tr><tr><td>1.000</td><td>5.2</td><td>2.600</td><td>8.2</td><td>6.500</td><td>12.7</td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	195.0	1.000	195.0	Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	0.900	5.0	Flush-Flo™	0.271	5.0	Kick-Flo®	0.590	4.1	Mean Flow over Head Range	-	4.3	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	3.6	1.200	5.7	3.000	8.8	7.000	13.1	0.200	4.9	1.400	6.1	3.500	9.4	7.500	13.6	0.300	5.0	1.600	6.5	4.000	10.1	8.000	14.0	0.400	4.9	1.800	6.9	4.500	10.6	8.500	14.4	0.500	4.6	2.000	7.2	5.000	11.2	9.000	14.8	0.600	4.1	2.200	7.6	5.500	11.7	9.500	15.2	0.800	4.7	2.400	7.9	6.000	12.2			1.000	5.2	2.600	8.2	6.500	12.7		
Depth (m)	Area (m²)	Depth (m)	Area (m²)																																																																																														
0.000	195.0	1.000	195.0																																																																																														
Control Points	Head (m)	Flow (l/s)																																																																																															
Design Point (Calculated)	0.900	5.0																																																																																															
Flush-Flo™	0.271	5.0																																																																																															
Kick-Flo®	0.590	4.1																																																																																															
Mean Flow over Head Range	-	4.3																																																																																															
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)																																																																																										
0.100	3.6	1.200	5.7	3.000	8.8	7.000	13.1																																																																																										
0.200	4.9	1.400	6.1	3.500	9.4	7.500	13.6																																																																																										
0.300	5.0	1.600	6.5	4.000	10.1	8.000	14.0																																																																																										
0.400	4.9	1.800	6.9	4.500	10.6	8.500	14.4																																																																																										
0.500	4.6	2.000	7.2	5.000	11.2	9.000	14.8																																																																																										
0.600	4.1	2.200	7.6	5.500	11.7	9.500	15.2																																																																																										
0.800	4.7	2.400	7.9	6.000	12.2																																																																																												
1.000	5.2	2.600	8.2	6.500	12.7																																																																																												
©1982-2020 Innovyze																																																																																																	

Appendix F

Correspondence with Leading Local Flood Authority and Severn Trent Water

flooding@leics.gov.uk
 Our Ref: 8663-MJM-ZZ-RP-C-5202
 28th March 2023

Dear Sir / Madam,

JJ Churchill, Market Bosworth - Pre Planning LLFA Enquiry

We are writing in connection with the above site as part of a pre-planning application enquiry to confirm the strategy of storm water and foul water discharge. This is advance of the production of a full Flood Risk Assessment and therefore your comment on our proposals would be appreciated.

Site Info:

The site is adjacent to the previously developed parcel of land by JJ Churchill, located west of Market Bosworth. It is an extension, to the south of the existing development of approximately 0.42ha. The site is bound by Station Road to the north, arable land to the east and south, and 'The Battlefield Line' heritage rail line to the west. Access is gained through the existing site from Station Road.

The grid reference of the site is SK 39270 02978 and OS grid reference is X – 439270, Y - 302978. The site sits within Hinckley and Bosworth District in Leicestershire County in the East Midlands of England. The site location is demonstrated in Figure 1-1 below.



Figure 1-1 Site Location (Source: Google Earth)

1.3.1 The proposals comprise of the construction of a new warehouse with accompanying car park on land adjacent to an existing warehouse site. The proposed site layout is included with this letter.

Southgate House,
 Southgate
 Wakefield WF1 1TL

E: info@mjmc.co.uk
 T: +44 (1924) 811 000

DIRECTORS J.P. LEACH BSc CEng MStructE, M.N. DAVISON BEng(Hons) CEng MStructE, A.P. DICKSON BEng(Hons) CEng MStructE, T.W. MURPHY MEng(Hons) CEng MICE, C.R. SHORT BSc(Hons.1) CEng MICE MStructE
TECHNICAL DIRECTOR A.J. NEWSOME BEng(Hons) MSc CEng MStructE
ASSOCIATES D.E. MACHELL MEng(Hons) CEng MStructE, R.M. REID MEng(Hons) CEng MStructE, V.K. HAINES MEng(Hons) CEng MStructE
 Company Registration Number 3145094. VAT Number 721619645.
 A member of the MJMC (Holdings) Limited Group of Companies.

Proposed Storm Water Drainage:

Discharge to Soakaways or Infiltration Systems

Based on the British Geological Survey data it does not appear that soakaways would be a feasible means of storm water discharge from the site given the presence of clays and mudstone within the existing ground. These types of material are generally considered unsuitable for soakaways. Infiltration testing to BRE Digest 365 has not been carried out to date however, a desk study and intrusive ground investigation has been completed and we are currently awaiting the results of this

Furthermore, there appears to be a low risk of groundwater flooding on the site. In accordance with the GMS, no infiltration should be allowed without suitable groundwater monitoring taking place. To minimise the potential risk of groundwater flooding we believe it would be prudent to avoid drainage via soakaways or other infiltration systems.

At this moment in time we are not proposing to use infiltration as a form of drainage.

Discharge to Watercourse

In order to discharge into an existing watercourse a new connection will be required over third party land. This is not considered feasible and as a result this has been discounted as an option.

Discharge to Sewer

Severn Trent records indicate an existing Combined Rising Main is located adjacent to the eastern extent of the site and the associated pumping station is located adjacent to the south eastern extent of the site.

The intention is for the new surface water drainage to discharge into the existing system via the pumping station located to the south eastern extent of the site. A Greenfield runoff rate for the site has been calculated, using Microdrainage, at 1.8l/s. It is not practical to restrict the discharge rate to this value as the required storage volume would be too great for the size of the site. As a result, it is being proposed a Greenfield runoff rate of 5l/s is used in accordance with generally accepted good practice guidelines.

The drainage system and ground levels will be designed such that:

- Unless an area is designed to hold and/or convey water, flooding will not occur on any part of the site for a 1 in 30-year rainfall event.
- Flooding does not occur during a 1 in 100-year storm event (including an allowance for a 40% increase in rainfall intensity due to climate change) in any part of a building (including a basement) or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.
- Flows resulting from rainfall in any event exceeding the 1 in 100-year rainfall event are managed in exceedance routes to minimise as far as practicable the risk of flooding to people and property both on and off site.
- The management of surface water on site will ensure that there is no increased risk of flooding on and offsite as a result of the development.
- The SuDS design for the development site should ensure that the quality of any receiving water body is not adversely affected and preferably enhanced in accordance with Ciria SuDS Manual C753, Chapter 4.

- All four pillars of SuDS design (i.e. Water Quality, Water Quantity, Amenity and Biodiversity) will be considered within the design and the use of SuDS actively encouraged wherever possible.

A quick storage calculation, using 'Microdrainage Source Control', has been completed for the site. The calculation estimated there is a requirement of between 164m³ – 227m³ for surface water storage. Using this range as an indication of storage volume required and the conditions for design stated above, further calculations have been completed using Microdrainage to determine the anticipated storage volume required for a pond with the discharge rate to be controlled using a Hydrobrake.

Following an iterative process, the output of the calculations indicated a pond with a volume of 176m³ would be required for the Greenfield run off rate of 5l/sec for the proposed site. It is currently our proposal to locate the pond in the landscape area to the west of the proposed warehouse.

Proposed Foul Drainage

Most private sewers and private lateral drains which were connected to a public sewer as of July 2011 transferred in ownership to Severn Trent Water. Severn Trent Water does not possess complete records of these assets and some assets may not be displayed on the asset map. Severn Trent records indicate there is an existing Combined Rising Main is located on the eastern extent of the site and the associated pumping station is located south eastern extent of the site.

It is proposed that the new development will connect to this existing combined rising main via the pumping station. The peak discharge rate of foul water for the new development is anticipated to be 0.6l/s. This value is based on the values provided in the 'British Water Code of Practice – Flow and Loads - Table of Loadings for Sewage Treatment Systems' for developable land.

A predevelopment enquiry has been made to Severn Trent Water and we are currently awaiting a response.

Summary

We would be grateful for your comment on the above drainage proposals in order to inform a full Flood Risk Assessment and look forward to your response.

Yours Faithfully,



Tom Murphy MEng (Hons) CEng MICE
Director - Highways and Transport Planning
For MJM Consulting Engineers Ltd.

Enc.
Site Layout Plan
Site Location Plan

Development enquiry request

Water supply and/or drainage capacity assessment for a proposed development



NOTE: Please ensure all relevant sections of the application are completed and refer to the attached support notes.

Office use only:
LSS



Section 1: Applicant's details

Name of Applicant: <i>Note 1.1</i>	Contact name:
MJMC Consulting Engineers Ltd	Emily Wilkes
Address of Applicant: <i>Note 1.2</i>	Telephone number:
Southgate House, Southgate, Wakefield	01924811000
Postcode:	Mobile number:
Registered company number: <i>Note 1.3</i>	Email address:
03145094	emilyw@mjmc.co.uk
	Fax number:

Section 2: Request details

1. Response required: water supply ☐ sewerage ☒ combined ☐
2. Payment of £ 178.49 enclosed *Note 2.1*

NOTE: For water supply only, complete all sections other than Section 7; for sewerage only, complete all sections other than Table 5C and Section 6; for a combined request, complete all sections.

Section 3: Proposed site details

Site name and address: <i>Note 3.1</i>	Are you aware of any further development proposals adjacent to the site? Yes ☐ No ☒
Station Road, Market Bosworth, Nuneaton	If yes, please detail
Postcode: CV130PF	Related application reference: <i>Note 3.3</i>
Ordnance survey reference: <i>Note 3.2</i>	Official use only:
X: 439270 Y: 302978	

Section 4: Ground condition

We need to know what the site was used for previously so that we can determine whether there are any contaminants that will affect the pipe material to be laid. If the land is contaminated, the connection may be refused until protective measures or remedial action has been undertaken by you.

1. Was the site previously used for: **Note 4.1**

a) Greenfield/agriculture ☐

b) Housing ☐

c) Industry ☒

d) Landfill ☐

e) Other (please specify)

2. Is there any evidence that material [made ground] has been imported on the site?

Yes ☐

No ☒

3. Have any pollution events occurred at or near the site/are any adjacent sites known to be contaminated? **Note 4.2**

Yes ☐

No ☒

If yes to 2 or 3, please give brief details

4. Is the pipe work to be laid in ground which is (or likely to be) contaminated with surface active organic compounds or by concentrated oxidising agents? **Note 4.3**

Yes ☐

No ☒

NOTE: If you have chosen b, c, d or e for question 1 and/or chosen 'Yes' for questions 2 and/or 3 a soil analysis report of the site is required and must be included when/if you submit an application.

Section 5: Development profile (please be aware further details will be required if a full application is submitted)

1. Build programme start date

01 / 11 / 23

Duration

18 Months

2. Indicate the date the first property on this scheme will be occupied:

TBC

3. Indicate the date the last property on this scheme will be occupied:

TBC

Table 5a: Domestic units **Note 5.1**

Total number of premises occupied by the end of the development			
Flats	Terraced houses, mobile homes, maisonettes	Semi-detached premises	Detached premises inc. linked detached premises

Table 5b: Commercial units (please include detailed schedule) **Note 5.2**

Please complete the details below for each connection required from the new water main				
Property description	Total no.	Peak water flow in litres per second	Storage capacity in litres	Total floor area in m ²
e.g. Hotel	54 beds	1.0 l/s	5000	1200

Table 5c: Loading units (Domestic and Commercial) *Note 5.3*

Plot/unit or name	Total no.	No. supplied from storage	Valve size (mm)	Total no.	Min. tank fill rate (l/s)
WC flushing cistern					
Automatic flushing cisterns					
Basins in a household premises					
Basins elsewhere					
Baths (tap size 20mm)					
Baths (tap larger than 20mm)					
Showers					
Sinks (taps size 15mm)					
Sinks (taps larger than 15mm)					
Single spray taps					
Bidets					
Dishwashers					
Clothes washing machine			Process water (direct feed) in l/sec		
Drinks vending machines					
Hose bib tap 15mm			Please provide details:		
Hose bib tap 22mm					
Hose bib tap 25mm					
Other (please specify)					

4. Will other water supplies be required i.e. communal facilities, swimming pool etc?

Yes ☐

No ☐

If yes, please state details and flow required in litres per second

Section 6: Storage provision

1. Including the ground floor, what is the maximum number of floors within and individual building?

2. We recommend that storage provision is made to ensure an adequate water supply is available for fire fighting purposes. Will fire fighting supplies be required?

Yes ☐

No ☐

3. If yes, what type of fire protection (i.e. sprinkler, hydrant etc)? *Note 6.1*

Full ☐

Reduced ☐

4. Please specify if storage tank to be used is a full capacity or reduced capacity storage tank:

5. If a full capacity storage tank, rate should fill tank in 36 hours.

If a reduced storage tank please state minimum tank fill rate.

6. Fire fighting flow required in litres per second. **Note 6.2**

Section 7: Sewerage proposals

1. Is the site identified on the council's local plan? Yes ☐ No ☒

2. Has planning approval been granted? Yes ☐ No ☒

3. If yes, please provide the planning reference number **Note 7.1**

Note 7.2 Outline ☐ Full ☐

4. Indicate any drainage conditions attached to the planning approval:

5. What is the total surface area to drain to the sewer? m²

6. If a redevelopment, did surface water previously drain to a public sewer? Yes ☐ No ☐

If yes, you must provide a plan showing evidence of existing site drainage and point of connections to the sewers.

7. If yes, what was the surface area that previously drained? m²

To understand the sewerage discharge requirements of your development, please answer the following questions.

8. Is it your intention that: **Note 7.3**

a) Foul sewers will be adopted? Yes ☐ No ☒

b) Surface water sewers will be adopted? Yes ☐ No ☒

c) SUDS to be offered for Adoption? Yes ☐ No ☒

d) Foul water will connect into the existing public sewerage system? Yes ☒ No ☐

e) Surface Water will connect into the existing public sewerage system? Yes ☒ No ☐

Section 8: Supporting information checklist to be completed for all enquiries

To ensure that we have all the information necessary to provide a response to your enquiry, please tick the checklist below to confirm that you have:

a) Fully completed all relevant sections of this form ☒

b) Enclosed the correct payment payable to 'Severn Trent Water Ltd' ☒

c) Enclosed a suitable A4 size location plan with clearly defined site boundary and site entrance ☒

d) Drainage Strategy or Statement and layout plan showing proposed discharge points and routes. Where possible the plan should show high or low points of the site or watershed(s) along with topographical information ☒

e) Evidence of existing drainage connections & flow rates (if available / applicable) ☒

f) Where surface water is proposed to connect to a public sewer, ground investigation report to show infiltration cannot be utilised or BGS data where permeability results are not available ☒

g) Flood Risk Assessment (when required under NPPF guidelines) or a statement for site and associated risk ☒

h) Masterplan information (where applicable) ☐

Section 9: Declaration (to be signed by Applicant)

☒ Please advise me of the estimated costs and requirements to get the above-named development connected for water. In this respect, I will provide any relevant information required by Severn Trent Water Ltd; and/or

☒ Please provide me with an indication of where the nearest public sewer is in order to consider appropriate connection points for drainage of the site.

I understand that the submission of this form is to be treated as a preliminary enquiry and does not commit me or Severn Trent Water Ltd, save as set out above. In particular, I understand that Severn Trent Water Ltd does not authorise or hold itself responsible for the reimbursement of any expenses incurred in any design work undertaken by me without the express approval of Severn Trent Water Ltd.

I confirm that if following the provision of information by Severn Trent Water Ltd as requested above, I require any further or revised information for providing public water mains or sewers and/or water or sewerage connections for the above named development, I will pay Severn Trent Water Ltd's costs and will provide such advance payment as they may reasonably require.

By signing this form, I confirm:

- That the Applicant is the owner / occupier of the land or has an interest in the land and wishes to make initial enquiries as set out above
- That I understand that this is a preliminary enquiry and does not commit me or Severn Trent Water Ltd in any way, save as set out above
- That I have read the Severn Trent Water Ltd guidance notes for the application for a new water supply and sewerage connection
- (if signing on behalf of a Company) I am a duly authorised representative of the Company and can bind the Company accordingly.

Signed:



Position:

Director

Full name in capitals:

Tom Murphy MEng CEng MICE

Company name:

MJM Consulting Engineers

Date:

31st March 2023

Address:

Southgate House
Southgate
Wakefield

Postcode: WF1 1TL

Please note that we will only discuss this new connection with those parties identified on the application.

Should you make any changes to this information you must inform us as soon as possible so as not to delay your application.

Please return this form with supporting documents to:

Severn Trent Water Ltd
PO Box 5311
Coventry
CV3 9FL
Telephone: 0800 707 6600.

Developer enquiry support notes

Note 1: Applicants details

- 1.1** The Applicant is the owner/occupier of the site that requires the connection. It is this individual/company that is responsible for the content of the application form and accepting the conditions laid out in the application declaration.
- 1.2** Please ensure that the complete address and contact details are provided. These address details may be used for future contact and correspondence.
- 1.3** Registered Company Number: The registration number of the business as issued by Companies House (www.companieshouse.gov.uk).

Note 2: Request details

- 2.1** The charge can be found on page 11 of the New Connections Charges document located at www.stwater.co.uk/newconnections

Note 3: Proposed site details

- 3.1** Please provide as much of the site address as is available at the time of the applications submission. This address **MUST** contain: Road name, Town/city, County.
- 3.2** The Ordnance Survey reference is a 12-digit grid reference split into two 6 digit numbers (X and Y). This can be obtained from www.ordnancesurvey.co.uk
- 3.3** If you have submitted any relevant linked applications please provide the reference numbers, this will help us process your application/enquiry.

Note 4: Ground condition

- 4.1** Previous use definitions
 - a) **Greenfield/agriculture:** An area of land used previously for agriculture, forest land or some other undeveloped site.
 - b) **Housing:** A site dedicated to domestic premises.
 - c) **Industry:** A site dedicated to commercial or industrial uses.
 - d) **Landfill:** A disposal site where solid waste, such as paper, glass, and metal, is buried between layers of dirt and other materials.
- 4.2** Pollution events include any incident that would have resulted in the land within the site being contaminated; this would include any agents highlighted in Note 4.3. In addition to this, the site will be considered contaminated if it is situated within 100m of a petrol station or Industrial site that would use and dispose of contaminating agents.
- 4.3** Examples of the contaminants stated in question 4:
 - a) **Surface active organic compounds:** detergents, soaps, wetting agents or alcohol.
 - b) **Concentrated oxidising agents:** Chlorine, nitric acid and sulphuric acid.

Note 5: Development profile

5.1 We require the total number of premises that will be occupied by the end of the development so that we can assess the impact on our water network.

5.2 This section requires that you provide a list of the associated details of all commercial units that are being constructed on the site as part of this development. Below is a table demonstrating the property types and the total number of what is required for each:

Property type	Total no of
Hotel	Beds
Hospitals	Beds
Nursing homes	Beds
Schools	Pupils
Restaurants	Seats

5.3 A copy of Table C needs to be completed for each unit that will be built on the site.

Note 6: Storage provision

6.1 Sprinkler systems should be designed to BS EN 12845:2004

6.2 Please contact the Water Officer at the local Fire and Rescue Service if you are unsure of the fire fighting flow requirements for the proposed development.

NOTE: *Severn Trent Water are able to provide a flow rate that exceeds 8 litres per second, however this will be dependent on the local network. If the requirement exceeds the agreed flow rate, you may have to install provisions (e.g. a water tank) to accommodate the additional flow requirements.*

Note 7: Sewerage proposals

7.1 Please provide the unique reference number for the planning permission issued by the local council authority.

7.2 Outline consent: A form of planning consent designed to test the principle of whether or not a development is acceptable. The planning authority can request any level of detail they think is necessary to reach a decision, although usually, only a minimal amount of information is supplied. Outline consent does not authorise construction, only that the site is suitable for development.

Full consent: A detailed planning assessment that will provide consent for construction to start, as well as confirming the future use of the site.

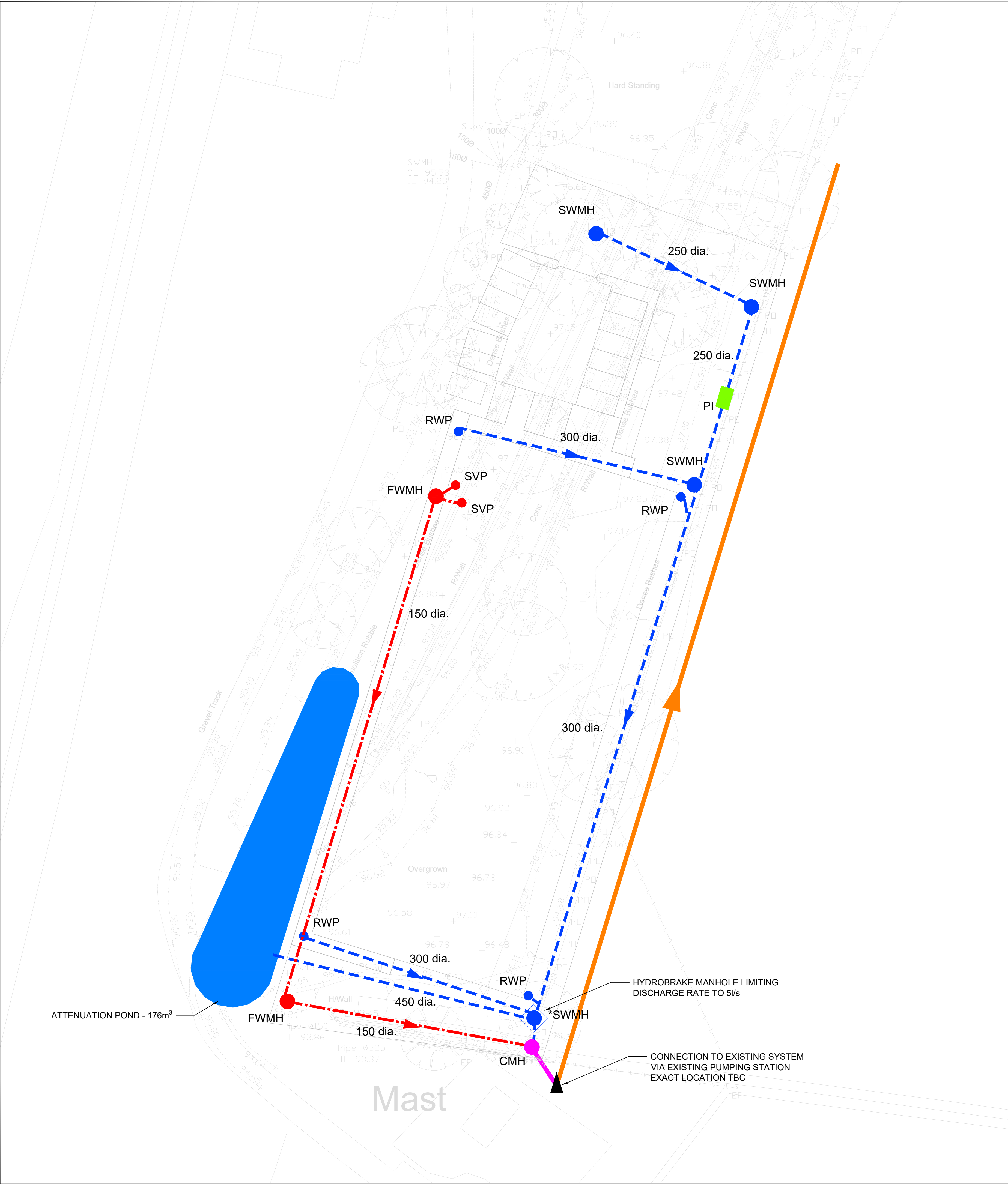
7.3 Definitions:

Foul water: Foul water is the waste water from your toilet, bidet, bath, basins, sinks, washing machines, dishwashers and showers etc.

Surface water: Surface water is rainfall as it collects around your property.

SUDS: Sustainable Urban Drainage Systems - are designed to reduce the potential impact of new and existing developments with respect to surface water drainage discharges. This is done by replicating natural systems that use cost effective solutions with low environmental impact to drain away dirty and surface water run-off through collection, storage, and cleaning before allowing it to be released slowly back into the environment, such as into water courses.

Appendix G
Drainage Layouts



KEY

EXISTING COMBINED RISING MAIN PIPE

EXISTING PUMPING STATION

PROPOSED SURFACE WATER PIPE

PROPOSED FOUL WATER PIPE

CMH

PROPOSED COMBINED MANHOLE

PROPOSED COMBINED PIPE

SWMH

PROPOSED SURFACE WATER MANHOLE

*SWMH

PROPOSED SURFACE WATER MANHOLE WITH HYDROBRAKE

FWMH

PROPOSED FOUL WATER MANHOLE

RWP

RAINWATER PIPE

SVP

FOUL DRAIN POINT

PI

PETROL INTERCEPTOR

DESIGNER RISK INFORMATION
IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:-
CONSTRUCTION:
MAINTENANCE/CLEANING:
DECOMMISSIONING/DEMOLITION:
IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

Rev

Date

Amendment

EW

TM

Rev

Date

Amendment

EW

TM

mjm

Consulting Engineers

Southgate House, 38 Southgate, Wakefield WF1 1TL
T: 01924 811 000 mjm.co.uk

Project:

JJ CHURCHILL

Client:

JJ CHURCHILL

Drawing Title:

DRAINAGE LAYOUT PLAN

EW

TM

TM

MJMC Ref:

8663

Scale:

1:250

Sheet Size:

A1

Revision Status:

P1

Suitability Status:

S2

Date:

MAR' 23

Suitability Description:

ISSUED FOR INFORMATION

Drawing Reference:

Project - Originator - Zone - Level - File Type - Discipline - Number

8663 - MJM - 00 - 00 - DR - C - 5200

© THIS DRAWING MAY NOT BE COPIED WITHOUT PRIOR WRITTEN PERMISSION