

Corner Fields, Nutts Lane, Hinckley
Drainage Technical Note
July 2025
Our Ref: 28011-FLD-0101

Introduction

MEC Consulting Group has been commissioned by Gary Earp Construction Ltd (hereafter referred to as 'the Client') to prepare a drainage strategy for a proposed residential development at Corner Fields, Nutts Lane, Hinckley (hereafter referred to as 'the Site'). This report aims to discharge condition 6 as part of planning application 23/00346/REM received on 11th April 2023, which can be found in **Appendix A**. The condition is outlined below.

"The development hereby permitted shall not commence until drainage plans for the disposal of surface water and foul sewage have been submitted to and approved by the Local Planning Authority. The scheme shall be implemented in accordance with the approved details before the development is first brought into use. This is to ensure the development is provided with a satisfactory means of drainage, as well as to reduce the risk of creating or exacerbating a flooding problem and to minimise the risk of pollution".

In total, the site covers approximately 0.47ha, with proposals including residential development of up to 9 dwellings. The proposed site location is shown in Figure 1.

Figure 1: Site Location Plan



Flood Risk Information

The site is located within Flood Zone 1 (FZ1). FZ1 is defined as land assessed as having an annual probability of flooding from rivers or seas of less than 0.1%.

The majority of the site is at low risk of surface water flooding. There is a small area at medium risk of surface water flooding through the centre of the site, likely to be caused by a localised low point; these areas have a low probability of flooding to 0.2m deep and are not situated within the development area.

Surface Water Drainage

Surface water arising from the development should, as far as practicable, be managed in a sustainable manner to mimic the surface water flows if the site was undeveloped. When considering surface water discharge the SuDS hierarchy needs to be adhered to and is as follows;

- Water reuse, where a need is identified;
- Into the ground (infiltration), where ground conditions permit;
- To a surface water body
- To a surface water sewer, highway drain, or other drainage systems; or
- To a combined sewer

Water reuse

Consideration should be given to the implementation of rainwater harvesting systems, including but not limited to; water butts on residential dwellings and green planters to ensure water re-use. Therefore, the first 5mm of rainfall will be collected via rainwater harvesting techniques.

Discharge at Source (Infiltration)

British Geological Survey (BGS) mapping shows the site is underlain by bedrock of the Mercia Mudstone Group, consisting of mudstone. Superficial deposits comprise of Bosworth Clay Member and Alluvium consisting of clay, silt, sand and gravel. The site is likely to have a limited potential for infiltration due to their generally impermeable nature of mudstone and clay.

The BGS Infiltration SuDS report (ref QFRA 2254) that was provided by UK Flood Risk Consultants for the reserved matters application (23/00346/REM) indicated that there was a very significant potential for hazards associated with infiltration to occur. The site is situated in an area that may experience ground instability issues, which could worsen with increased infiltration. In addition, the report finds that the site is located within an area at a high likelihood of persistent or shallow groundwater. On this basis, it is considered that soakaways are not a viable option and an alternative should be sought.

Discharge to a Surface Water Body

The closest designated Main River is the Sketchley Brook, located approximately 215m southeast of the site. Any route to this watercourse would cross third-party land and, therefore, an alternative option should be sought.

Discharge to a Sewer

A review of sewer records, provided by Severn Trent Water, see **Appendix B** shows there are no public surface water sewers nearby to the site. There is a 225mm diameter foul water sewer that runs north along Nutts Lane. In accordance with the drainage hierarchy surface water from the site will outfall into the existing foul water public sewer in Nutts Lane.

Land Use

To calculate the drainage requirements, the existing and proposed land use are required. Table 1 below, summarises the proposed land uses within the site. The site currently comprises of open green space laid to grass and shrubs. The current land use has been calculated using the existing site plan and the post-development land has been measured from the proposed layout. A 10% allowance for urban creep has been included within the Flow Causeway Calculations.

Table 1: Land Use Summary

	Existing Site Areas		Proposed Site Areas	
	ha	%	Ha	%
Impermeable Areas	0.00	0	0.24	53
Green Landscape / Permeable Areas	0.46	100	0.22	47
Total	0.46	100	0.46	100

Climate Change Allowances

The influence of climate change on rainfall intensity is likely to increase the frequency of flood events and the overall volume of water that passes the site. When considering surface water runoff from the site, the increases in peak rainfall intensity varies over the lifetime of the development. Where residential developments with a lifetime beyond the 2070s are proposed, the NPPF states that the Upper End allowances for the 2070's epoch (2061 to 2125) should be used, as highlighted in green in Table 2, based on the Soar Management Catchment, in which the site falls.

Table 2: Peak Rainfall Intensity Allowances from Flood Risk Assessments: Climate Change Allowances Guidance for the Soar Management Catchment

Annual Exceedance Probability	Total potential change anticipated for the '2050s' (2022 to 2060)		Total potential change anticipated for the '2070s' (2061 to 2125)	
	Central	Upper End	Central	Upper End
3.3% AEP	20%	35%	25%	35%
1% AEP	20%	40%	25%	40%

Discharge Rates

Greenfield runoff conditions have been calculated using the FEH module within Causeway Flow. For the proposed impermeable area of 0.242ha, the peak discharge rate has been calculated as 0.9l/s. Calculations for the greenfield runoff rate can be found within **Appendix C**.

In accordance with the National SuDS standards the drainage strategy involves conveying surface water flows to a geo-cellular tank via permeable paving. This geo-cellular tank will then discharge at the controlled discharge rate of 0.9l/s into the existing foul water sewer within Nutts Lane, as agreed by Severn Trent Water within the developer enquiry and consultation with the Lead Local Flood Authority during the outline application (20/01289/OUT).

Geo-Cellular Tank

Surface water flows for an impermeable area of 0.242ha, plus an additional allowance for urban creep, will be conveyed to a proposed geo-cellular tank within the private road. A storage volume of 220.057m³ is required within the geo-cellular tank to allow sufficient water to discharge into the proposed geo-cellular tank at a rate of 1.0l/s and cater for all events up to and including the 1%AEP40CC event. The geo-cellular tank has been designed to a depth of 1.20m, with a minimum allowance of 0.8m cover. The calculations for the proposed design can be seen in **Appendix C**, and the drainage strategy based on the principles above is shown in drawing ref: 28011_01_230_01 in **Appendix D**.

Additional drainage features such as permeable paving and rain gardens can be used across the site and will provide additional storage and treatment. Permeable paving will act as a first treatment stage for any runoff and will ensure adequate surface water treatment is provided. These features have been excluded from calculations at this stage.

Applicable SuDS Techniques

The Non-Statutory Technical Standards for Sustainable Drainage Systems that deals with SuDS, covers a whole range of sustainable approaches to surface water drainage management, including;

- Source control measures, including rainwater recycling and drainage;
- Filter strips and swales, which are vegetated features that hold and drain water mimicking natural drainage patterns;
- Filter drains and permeable pavements to allow rainwater and runoff to infiltrate into permeable paving below ground and provide storage if needed; and
- Basins and ponds to hold excess water after rain and allow controlled discharge that avoids flooding.

Each of the five SuDS components listed above is discussed below in Table 3, with reference to their suitability for the proposed development.

Table 3: Suitability of SuDS Techniques

	COMPONENT	SUITABILITY	REASONS
Source Control	Rainwater Harvesting	Yes	Rainwater harvesting could be used across the site and should be used to accommodate the first 5mm of rainfall during a storm event.
	Green Roofs	No	More appropriate SuDS features can be accommodated within the development and are preferred.
	Bio-retention Systems / Rain Gardens	Yes	Open green space can be converted to provide additional water quality improvements.
Proprietary Systems	Proprietary bio-retention systems	No	More appropriate SuDS features can be accommodated within the development and are preferred.
Infiltration Devices	Permeable Paving	Yes	Permeable paving is suitable for the proposed development within parking spaces.
	Infiltration trenches / Soakaways	No	The findings of the site observation and field reports suggest that infiltration SuDS will not be feasible for the proposed site.
Filtration	Open swales / Filter Strips / Drains	No	Due to the size and location of the site, open swales are not considered suitable.
Retention / Detention	Detention Basin, Attenuation Pond / Tanks	Yes	The proposed geo-cellular tank will provide surface water storage.

Surface Water Quality

The CIRIA SuDS Manual C753, indicates the minimum treatment indices appropriate for contributing pollution hazards for different land use classifications. To deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index (for each contaminant) that equals or exceeds the pollution hazard index. Surface water runoff from residential roofs and low-traffic roads will have a low pollution hazard level.

When using more than one SuDS component in series, the mitigation indices are multiplied by a factor of 0.5. This is to account for the reduced performance of secondary or tertiary components associated with the already reduced inflow concentrations. The SuDS Mitigation index from the additional components will be added together up to a maximum value of 0.95, regardless of the number of components in series.

The pollution hazard indices, mitigation indices of each SuDS component and the accompanying calculations are provided in Table 4.

Table 4: SuDS Mitigation Indices (from CIRIA SuDS Manual)

SuDS Component	Mitigation Indices		
	<i>Total Suspended Solids</i>	<i>Metals</i>	<i>Hydrocarbons</i>
Residential Roofs	0.2	0.2	0.05
Property driveways, residential car parks and low traffic roofs	0.5	0.4	0.4
Permeable Paving	0.7	0.6	0.7
Bioretention Systems (rainwater harvesting)	0.8	0.8	0.8
Mitigation Calculation	0.7+0.8(0.5)	0.6+0.8(0.5)	0.7+0.8(0.5)
SuDS Mitigation Index	0.95	0.95	0.95
Mitigation Requirement Met?	Yes	Yes	Yes

For the low pollution hazard levels generated at the site, the proposed permeable paving and rain gardens would provide sufficient treatment in accordance with the Simple Index Approach.

Exceedance and Flow Routing

The risk of overland flowing from adjacent land to the building is low. The design of levels and features on the site will follow best practice by ensuring any overland flow is routed safely away from the commercial unit and to areas of lowest risk. Any surcharging and subsequent flooding of sewers on or in the vicinity of the site will also be mitigated by the flood routing described above. As such, the risk of flooding on site from exceedance events and flood flow routes is low.

Maintenance and Management

An integrated approach to the maintenance and management of SuDS is a requirement of the NPPF and the Flood and Water Management Act 2010. A maintenance and management plan aims to ensure that there is a clear understanding of drainage responsibilities and that a maintenance regime is implemented for all new drainage systems for the lifetime of the development.

All private drainage, including SuDS features will be maintained by the landowner, Gary Earp Construction Ltd, until a time where an appropriate management company are appointed, or the system is adopted by the relevant statutory body.

A proposed maintenance schedule, which breaks down the maintenance requirements of the proposed SuDS features, is shown in **Appendix E**.

Foul Water Strategy

According to The Buildings Regulations (2010), foul water drainage from new developments should be discharged into the following, in order of priority;

- A public sewer;
- A private sewer communicating with a public sewer;
- A septic tanks, which has an appropriate form of secondary treatment; or
- A cesspool

Severn Trent Water has confirmed in the application comments that there are no public sewers within the vicinity of the site. There is a 225mm diameter foul water sewer that runs along Nutts Lane. Foul water from the proposed development will combine with the restricted surface water flows and outfall into the foul water sewer at manhole 0701, at a rate of 0.14l/s (2xDWF) as agreed within the Outline Planning Application by Severn Trent Water. The foul water connection can be found in the drainage strategy drawing in **Appendix D**.

REGISTRATION OF AMENDMENTS

Date	Rev	Comment	Prepared By	Checked By	Approved By
July 2025	-	First issue	Zoe Jordan BSc (Hons) Flood Risk Engineer	Thomas Sturtridge BSc (Hons), MSc, PIEMA Flood Risk Engineer	Ryan Chafer BSc (Hons) Senior Flood Risk Engineer

Appendices

- A. Hinckley and Bosworth's comments
- B. Severn Trent Sewer Records
- C. Surface and Foul Water Drainage Calculations (28011-CALC-0101)
- D. Surface and Foul Water Drainage Strategy (28011_01_230_01)
- E. Maintenance and Management Plan

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APPENDICES



APPENDIX A

Hinckley & Bosworth Borough Council

Town and Country Planning Act 1990

Planning Permission

Name and Address of Applicant

C/O Agent
LRO Cornerfields Nutts Lane
Hinckley
Leicestershire
LE10 3EG

Name and Address of Agent (if any)

Simon Cheshire BA(Hons) DipTP MRTPI
Simon Cheshire Planning Ltd
34 Stanley Road
Market Bosworth
Nuneaton
CV13 0NB
United Kingdom

Part I - Particulars of Application

Date of Application

11 April 2023

Application No.

23/00346/REM

Particulars and location of development :

Approval of reserved matters (appearance, landscaping, layout and scale) of Outline Planning Permission 20/01289/OUT for residential development of up to 9 dwellings

Cornerfields Nutts Lane Hinckley Leicestershire LE10 3EG

Part II - Particulars of decision

In dealing with the application, through ongoing negotiation the local planning authority have worked with the applicant in a positive and proactive manner by offering a pre-application advice service and by seeking solutions to problems arising in relation to dealing with the planning application and this has resulted in the approval of the application. The Local Planning Authority has therefore acted pro-actively to secure a sustainable form of development in line with the requirements of the National Planning Policy Framework (paragraph 38) and in accordance with the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended).

The Hinckley and Bosworth Borough Council grants approval in respect of the details referred to in Part I hereof for the purpose of the conditions imposed on the grant of outline planning permission and subject to the following condition(s) :-

1. The development hereby permitted shall not be carried out otherwise than in complete accordance with the submitted application details, as follows:
 - Proposed Site Plan - Drawing No. 0821-101-P06 Rev B
 - Plots 1 & 4 - 3 bed bungalow - Drawing No. 0821-101-P01
 - Plot - 2 bed bungalow - Drawing No. 0821-101-P02
 - Plots 7 & 8 - 3 bed detached - Drawing No. 0821-101-P03

IMPORTANT – PLEASE READ THE NOTES AT THE END OF THIS DOCUMENT

- Plots 3, 5 & 6 - 5 bed detached - Drawing No. 0821-101-P04
- Plot 9 - 2 bed bungalow - Drawing No. 0821-101-P05

Reason: To ensure a satisfactory form of development in accordance with Policies DM1 and DM10 of the adopted Site Allocations and Development Management Policies Development Plan Document (2016).

2. The materials to be used on the external elevations of the dwellings hereby approved shall accord with the approved materials schedule received by the LPA on 12.04.2023.

Reason: To ensure that the development has a satisfactory external appearance in accordance with Policy DM10 of the adopted Site Allocations and Development Management Policies Development Plan Document (2016).

3. No development above foundation level shall take place until a scheme of hard and soft landscaping works, including boundary treatments, for the site, including an implementation scheme, has been submitted in writing to and approved in writing by the Local Planning Authority. The scheme shall be carried out in full accordance with the approved landscaping scheme. The soft landscaping scheme shall be maintained for a period of five years from the date of planting. During this period any trees or shrubs which die or are damaged, removed, or are seriously diseased shall be replaced by trees or shrubs of a similar size and species (native) to those originally planted at which time shall be specified by the Local Planning Authority.

Reason: To ensure that the development has a satisfactory external appearance in accordance with Policy DM10 of the adopted Site Allocations and Development Management Policies DPD (2016).

4. The development hereby permitted shall not be occupied until such time as the parking and turning facilities have been implemented in accordance with TUK architecture drawing number 0821-101-P06 Rev B. Thereafter the onsite parking and turning provision shall be kept available for such uses in perpetuity.

Reason: To ensure that adequate off-street parking provision is made to reduce the possibility of the proposed development leading to on-street parking problems locally (and to enable vehicles to enter and leave the site in a forward direction) in the interests of highway safety and in accordance with SADMP Policy DM17 and the National Planning Policy Framework (2023).

5. Prior to the commencement of development above floor plate level, a scheme for the installation of electric vehicle charging points will be submitted to and approved in writing by the local planning authority. The scheme shall identify the number of units to benefit from electric charging points, together with full detail of the location and fitting of the units.

Reason: To ensure that the proposals meet the requirements of Policy DM10 (g) of the Site Allocations and Development Management Policies DPD (2016) and Paragraph 112 (e) of the National Planning Policy Framework (2023).

6. The development hereby permitted shall not commence until drainage plans for the disposal of surface water and foul sewage have been submitted to and approved by the Local Planning Authority. The scheme shall be implemented in accordance with the approved details before the development is first brought into use.

Reason: To ensure that the development is provided with a satisfactory means of drainage as well as reduce the risk of creating or exacerbating a flooding problem and to minimise the risk of pollution.

7. Notwithstanding the provisions of Article 3, Schedule 2, Part 1 Class A; of the Town and Country Planning (General Permitted Development) (England) Order 2015 (or any Order revoking and re-enacting that Order with or without modification), no enlargement improvement or other alteration to the dwellings hereby approved shall be carried out unless planning permission for such development has been granted by the Local Planning Authority.

Reason: To safeguard the amenities of neighbouring properties in accordance with Policy DM10 of the Site Allocations and Development Management Policies Development Plan Document (2016).

8. The development hereby permitted shall be carried out in full accordance with the acoustic design criteria and sound insulation scheme as outlined in the submitted Noise Impact Assessment (UK Building Compliance - Project Reference - NP-009577).

Reason: To ensure that residents do not experience unacceptable levels of noise and disturbance in accordance with Policy DM10 of the SADMP.

9. Prior to the commencement of development, a further noise report shall be submitted to and approved by the Local Planning Authority in relation to any external fixed plant (air source heat pumps etc.) to be installed. Once the plant units are specified the noise emissions should be calculated by an appropriately qualified person to ensure that the limit levels are achieved.

Reason: To ensure that residents do not experience unacceptable levels of noise and disturbance in accordance with Policy DM10 of the SADMP.

10. The development hereby permitted shall be carried out in accordance with the mitigation and enhancement measures outlined in the Barn owl and mitigation survey (Dr. Stefan Bodnar, 01.11.2022). Within 6 weeks of completion of the development, the proposed barn owl mitigation & enhancements will be inspected by a licensed barn owl ecologist and photographs provided to the LPA in order to discharge the condition.

Reason: To ensure that the development does not cause harm to any protected species or their habitats in accordance with Policy DM6 of the Site Allocations and Development Management Policies DPD 2016 and Government guidance contained within the National Planning Policy Framework.

11. The development hereby permitted shall be carried out in accordance with the mitigation and enhancement measures for the duration of the construction period as outlined in section 5.0 of the Badger survey (Dr. Stefan Bodnar, 01.11.2022).

Reason: To ensure that the development does not cause harm to any protected species or their habitats in accordance with Policy DM6 of the Site Allocations and Development Management Policies DPD 2016 and Government guidance contained within the National Planning Policy Framework.

NOTES TO APPLICANT :-

1. The approved development may require Building Regulations Approval, for further information please contact the Building Control team via e-mail at buildingcontrol@hinckley-bosworth.gov.uk or call 01455 238141.
2. Severn Trent Water advise that although our statutory sewer records do not show any public sewers within the area you have specified, there may be sewers that have been recently adopted under, The Transfer Of Sewer Regulations 2011. Public sewers have statutory protection and may not be built close to, directly over or be diverted without consent and you are advised to contact Severn Trent Water to discuss your proposals. Severn Trent will seek to assist you obtaining a solution which protects both the public sewer and the building.
3. Planning Permission does not give you approval to work on the public highway. Therefore, prior to carrying out any works on the public highway you must ensure all necessary licences/permits/agreements are in place. For further information, please telephone 0116 305 0001. It is an offence under Section 148 and Section 151 of the Highways Act 1980 to deposit mud on the public highway and therefore you should take every effort to prevent this occurring.
4. The proposed road layout does not conform to an acceptable standard for adoption and therefore it will not be considered for adoption and future maintenance by the Local Highway Authority. The Local Highway Authority will, however, serve Advance Payment Codes in respect of all plots served by (all) the private road(s) within the development in accordance with Section 219 of the Highways Act 1980. Payment of the charge must be made before building commences. Please note that the Highway Authority has standards for private roads which will need to be complied with to ensure that the Advanced Payment Code may be exempted and the monies returned. Failure to comply with these standards will mean that monies cannot be refunded. For further details please email road.adoptions@leics.gov.uk. Signs should be erected within the site at the access advising people that the road is a private road with no highway rights over it.
5. To erect temporary directional signage you must seek prior approval from the Local Highway Authority in the first instance (telephone 0116 305 0001).
6. Prior to the commencement of works, in order to ensure compliance with the method statement and to sufficiently mitigate against potential effects on Badgers, the project manager will take responsibility or appoint a person to be responsible for ensuring the following:
 - Compliance with legal requirements relating to nature conservation;
 - Installation of physical protection measures during construction;
 - Implementation of sensitive working practices during construction;
 - Regular inspection and maintenance of physical protection measures and monitoring of working practices during construction; and Until such time as a responsible person has been appointed, the project manager shall be responsible for ensuring that the above points are addressed.
7. All waste and recycling services must have a collection point at the boundary with the adopted public highway. Please ensure adequate space on properties in rear gardens to store the various containers.

If all or part of the new road to the new properties is to be private (un-adopted) then consideration will need to be given to adequate and safe collection point space at the

adopted highway boundary for the placement of all the containers on collection day (up to 2 bins per property at one time).

It will be the responsibility of the occupiers to ensure that all containers/wheeled bins will be brought to the collection point, please ensure occupiers are advised of the procedure and bin collection points.

The road must be constructed to a suitable standard for HGVs with a gross vehicle weight of 32 tonnes and there is sufficient area for the vehicle to turn round.



Christopher Brown MRTPI
Head of Planning

Date:- 8 November 2023

NOTES

1. It will be most helpful if the application number shown overleaf is quoted in all correspondence.
2. If you consider that this decision has been made invalidly through the Council failing to follow a procedure correctly, not having the legal power to make the decision in the way it did or through its decision being so unreasonable as no reasonable local authority would make the same decision based on the same facts, then you may enter a claim for judicial review to quash the decision. In order to proceed with a claim for judicial review an initial application for permission will need to be made to the Administrative Court, this application is required to be made "promptly and in any event within three months of the decision". The initial permission application will decide if you have an arguable case, whether you are sufficiently materially affected by the decision to bring the claim. If you are granted permission to bring the claim it will proceed to a full hearing at the Administrative Court. Although there is no requirement for you to do so it is highly recommended that you seek independent legal advice before bringing forward a claim for Judicial Review
3. If you are aggrieved by the decision of the Local Planning Authority to grant permission subject to conditions he may appeal to the Secretary of State for the Environment in accordance with Section 78 of the Town and Country Planning Act 1990 within **six month (see para 2a below)** of the date of this notice. (Appeals must be made on a form which is available from the Planning Inspectorate, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN, tel. 0303 444 5000 or online at <https://www.gov.uk/planning-inspectorate>). The Secretary of State has power to allow a longer period for the giving of a notice of appeal but he will not normally be prepared to exercise this power unless there are special circumstances which excuse the delay in giving notice of appeal. The Secretary of State is not required to entertain an appeal if it appears to him that the permission for the proposed development could not have been granted by the Local Planning Authority, or could not have been so granted otherwise than subject to the conditions imposed by them, having regard to the statutory requirements as set out in Section 78 of the Town and Country Planning Act 1990, to the provisions of the development order, and to the directions given under the order. He does not in practice refuse to entertain appeals solely because the decision by the Local Planning Authority was based on a direction given by him. Appeals- new time rules. Appeals relating to applications made to the Local Planning Authority on, or after, 5th September 2003 must be made within **six months** of the date of this notice.
4. If permission to develop land is granted subject to conditions, whether by the Local Planning Authority or by the Secretary of State for the Environment and the owner claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted, he may serve on the Council a purchase notice requiring that Council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.
5. In certain circumstances a claim may be made against the Local Planning Authority for compensation, where permission is refused or granted subject to conditions by the Secretary of State on appeal or on a reference of the application to him. The circumstances in which such compensation is payable are set out in Section 114 of the Town and Country Planning Act 1990.
6. This permission only covers consent under the Town and Country Planning Acts and does not give permission to demolish a Listed Building, for which separate consent is required. Amongst other things the consent of the Council of the district in which the land is situated may be required under the Buildings Regulations and if the proposals affect land within the limits of the highway (that is between the highway fences and hedges) the separate consent of the Highway Authority may also be required. Steps to obtain the necessary further consents should be taken before proceeding with the development.

SHOPS, OFFICES, FACTORIES, EDUCATIONAL BUILDINGS & BUILDINGS TO WHICH THE PUBLIC ARE TO BE ADMITTED : ACCESS AND PROVISION FOR THE DISABLED PERSONS

- 1 The Local Planning Authority is required to bring to your attention the requirements of the Disabled Persons 1981, Building Regulations 1991 "Access and facilities for Disabled People" document M and the Chronically Sick & Disabled Act 1970 (as amended 1976) (Sections 4.7.8 and 8A) requiring the provision of access facilities, car parking and toilets for the disabled and the provision of signing indicating what provision has been made for disabled persons within the building. Your attention is also drawn to the Code of Practice BS 5619 "Design of Housing for the convenience of Disabled People", 1978 and Code of Practice, BS 5810 : 1979, "Access for the Disabled to buildings" available from the British Standards Institution, 2 Park Street, London W1A 2BS. (Tel 071-629-9000) and (in so far as educational buildings are concerned), to Design Note 18 "Access for the Physically Disabled to Educational Buildings".
- 2 The buildings to which these requirements apply are :-
 - a) Buildings to which the public are to be admitted to which Section 4 of the Chronically Sick & Disabled Act 1970 (as amended 1976) applies.
 - b) Offices, Shops & Railway Premises as defined in the Offices, Shops & Railway Premises Act 1963 or premises deemed to fall within the Act.
 - c) Factories as defined by Section 175 of the Factories Act 1961.

RMNOTES (02/07/2014)



Hinckley & Bosworth
Borough Council

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Start Notice

Important Information – Please keep this with your decision notice

Please read the above decision notice carefully and ensure that you understand and comply with the requirements of any planning conditions imposed.

If you require any further information about why a particular planning condition has been imposed or in respect of what information is needed to discharge your condition please contact the case officer who will be happy to advise of the requirements and information required.

We carry out a programme of site monitoring to check compliance with conditions in order to proactively manage the development and to ensure development is carried out in accordance with the planning permission granted.

Please ensure that any application for the discharge of pre-commencement conditions are carried out in a timely manner as this may take up to 8 weeks depending on the requirements of the condition. Please also be aware there is a charge to discharge conditions per request which means you can discharge conditions individually or group details together as a single request to discharge multiple planning conditions. The fee for discharging these pre-commence conditions, can be found on the [planning portal](#).

We would be grateful if you could email the development address and application reference number with your contact details and the intended start date by email to planning@hinckley-bosworth.gov.uk or complete the form on the reverse.

Hinckley & Bosworth Borough Council
Hinckley Hub, Rugby Road, Hinckley, Leicestershire, LE10 0FR
TEL: 01455 238141 EMAIL: planning@hinckley-bosworth.gov.uk



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Development Details

Planning application ref:	23/00346/REM
Proposal:	Approval of reserved matters (appearance, landscaping, layout and scale) of Outline Planning Permission 20/01289/OUT for residential development of up to 9 dwellings
Site Location:	Cornerfields Nutts Lane Hinckley Leicestershire LE10 3EG

Date when work is intended to start:	
Have all pre-commencement conditions been discharged?	
Signed:	Print Name:

Your contact details (or attach letterhead/business card):

Name:	
Address:	
Telephone:	
Mobile:	
Email:	

Hinckley & Bosworth Borough Council
Hinckley Hub, Rugby Road, Hinckley, Leicestershire, LE10 0FR
TEL: 01455 238141 EMAIL: planning@hinckley-bosworth.gov.uk

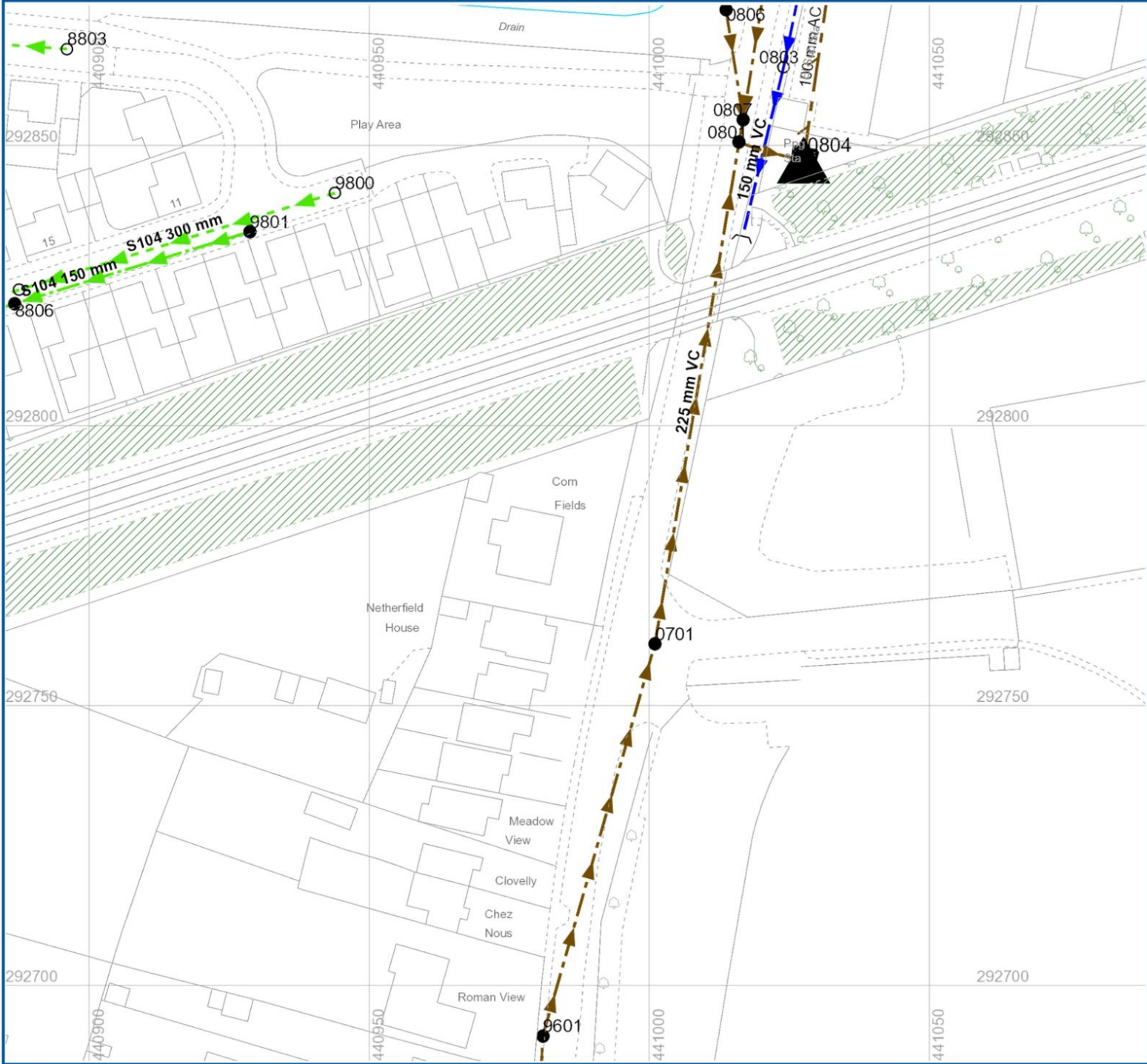


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APPENDICES



APPENDIX B



Reference	Cover Level	Invert Level Upstream	Invert Level Downstream	Purpose	Material	Pipe Shape	Max Size	Min Size	Gradient	Year Laid
SP40929801	91.2699	89.406	89.121	F	<UNK>	<UNK>	150	<UNK>	154.04	05/11/2010 00:00:00
SP40929800	91.4199	89.94	89.522	S	<UNK>	<UNK>	300	<UNK>	141.03	05/11/2010 00:00:00
SP40928803	91.1999	89.719	89.412	S	<UNK>	<UNK>	300	<UNK>	243.06	05/11/2010 00:00:00
SP40928806	90.94	89.121	88.729	F	<UNK>	<UNK>	150	<UNK>	154.36	05/11/2010 00:00:00
SP40928800	90.93	89.522	89.342	S	<UNK>	<UNK>	375	<UNK>	263.94	05/11/2010 00:00:00
SP41920803	91.2099	90.32	<UNK>	S	VC	C	150	<UNK>	0	31/12/1899 00:00:00
SP41920701	90.75	87.66	87.37	F	VC	C	<UNK>	<UNK>	311.24	31/12/1899 00:00:00
SP41920801	91.12	87.31	<UNK>	F	VC	C	225	<UNK>	0	31/12/1899 00:00:00
SP40929601	90.54	88	87.68	F	VC	C	225	<UNK>	227.5	31/12/1899 00:00:00
SP41920806	91.22	87.66	87.48	F	VC	C	150	<UNK>	110.422	04/12/2017 00:00:00
SP41920807	91.08	87.39	87.35	F	VC	C	225	<UNK>	102.475	31/12/1899 00:00:00

LEGEND

LandlinePoint

Spot Height

Emergency Telephone

Site Of Heritage

Culvert

Positioned Nonconiferous Tree

Inland Water

Roadside

Overhead Construction

Rail

Positioned Coniferous Tree

Boundary Post Or Stone

Triangulation Point Or Pillar

Historic Interest

Landform

Tidal Water

Structure

LandlineTex

LandlineLine

Polygon Closing Line

Property Closing Line

Bottom Of Slope

Top Of Slope

Step

Mean High Water

Traffic Calming

Standard Gauge Track

Bottom Of Cliff

Top Of Cliff

Mean Low Water

Path

Overhead Construction

Culvert

Pylon

Ridge Or Rock Line

Narrow Gauge Track

Railway Buffer

Tunnel Edge

Line Of Posts

Drain

Default Line

Building Outline

Edge Line

Road Or Track

Building Division

Inland water Line

General Surface Natural Line

Building Overhead Line

Landform Natural Line

Historic Interest Line

Landform Manmade Line

Unclassified

Other

Mixed Woodland Fill

Nonconiferous Tree Fill

Coniferous Tree Fill

Orchard Fill

Coppice Or Osiers Fill

Scrub Fill

Boulders Fill

Rock Fill

Scree Fill

Rough Grassland Fill

Heath Fill

Saltmarsh Fill

Marsh Fill

Reeds Fill

Slope Fill

Ancillary

Balancing Lagoon

Grease Trap

Interceptor

Screen

Chamber

Flushing Chamber

Seakeway

Overflow

Connector

Sewer Junctions

SewerLine Connection Node

Fitting

Blind Shaft

Facility Connector

Head Node

Lamphole

Sewerage Air Valve

Sewerage Chemical Injection Point

Sewerage Hatch Box

Sewerage Pressure Washout

Vent Column

Cliff Fill

Control Valve

Hydrobrake

Pendock

Sewerage Isolation Valve

Sewerage Non Return Valve

Manhole

Foul Bifurcation Manhole

Combined Bifurcation Manhole

Surface Water Bifurcation Manhole

Dual Manhole

Foul Single Manhole

Combined Single Manhole

Surface Water Single Manhole

Twin Manhole

Foul Adopted Manhole

Combined Adopted Manhole

Surface Adopted Manhole

Transfered Manhole

Unsurveyed Manhole

Operational Site

Waste Water Pump

S104

Waste Water Outfall

Waste Water Process Structure

Storage

Disposal Site

Off-Line Waste Water Storage

On-Line Waste Water Storage

Wet Well

Gravity Sewer Pipe

Foul Gravity Sewer

Combined Gravity Sewer

Surface Water Gravity Sewer

S104 Surface Water Gravity Sewer

Transfered Asset

S102

Null STW

Adopted Sewer

None

Highway Drain

Null Private

S24

Disposal Site

Off-Line Waste Water Storage

On-Line Waste Water Storage

Wet Well

Waste Water Process Structure

Sewage Treatment Point

Sewage Treatment Structure

Sludge Treatment Point

Sludge Treatment Structure

Gravity Sewer Pipe

Foul Gravity Sewer

Combined Gravity Sewer

Surface Water Gravity Sewer

S104 Surface Water Gravity Sewer

S104 Combined Gravity Sewer

S104 Foul Gravity Sewer

Private Surface Water Gravity Sewer

Private Combined Gravity Sewer

Private Foul Gravity Sewer

Surface Water Unserved Pipe

Combined Unserved Pipe

Foul Unserved Pipe

Transfered Surface Water Sewer

Transfered Combined Sewer

Transfered Foul Sewer

Disposal Pipe

Overflow Pipe

Culverted Water Course

Waste Internal Site Pipe

Sewer Service Connection

Gravity Sewer Others

Pressure Sewer Pipe

Surface Water Pressure Sewer

Combined Pressure Sewer

Foul Pressure Sewer

S104 Surface Water Pressure Sewer

S104 Combined Pressure Sewer

S104 Fc

Private

Private

Private

Surface

Foul Vt

S104 St

S104 Cr

S104 Fc

Private

Private

Private

Surface

Combli

Foul St

Private

Private

S104 St

S104 Cr

S104 Fc

Surface

MATERIALS

- NONE

AC - ASBESTOS CEME

BR - BRICK

CC - CONCRETE BOX CULVERT

CI - CAST IRON

CO - CONCRETE

CSB - CONCRETE SEGMENTS (BOLTED)

CSU - CONCRETE SEGMENTS (UNBOLTED)

DI - DUCTILE IRON

GRP - GLASS REINFORCED PLASTIC

MAC - MASONRY IN REGULAR COURSES

MAR - MASONRY RANDOMLY COURSED

PE - POLYETHYLENE

PF - PITCH

PP - POLYPROPYLENE

PSC - PLASTIC STEEL COMPOSITE

PVC - POLYVINYL CHLORIDE

RPM - REINFORCED PLASTIC MATRIX

SI - SPUN (GREY) IRON

ST - STEEL

U - UNKNOWN

VC - VITRIFIED CLAY

XXX - OTHER

CATEGORIES

W - WEIR

C - CASCADE

DB - DAMBOARD

SE - SIDE ENTRY

FV - FLAP VALVE

BD - BACK DROP

S - SIPHON

D - HIGHWAY DRAIN

S104 - SECTION 104

SHAPE

C - CIRCULAR

E - EGG SHAPED

O - OTHER

R - RECTANGLE

S - SQUARE

T - TRAPEZOIDAL

U - UNKNOWN

PURPOSE

C - COMBINED

E - FINAL EFFLUENT

F - FOUL

L - SLUDGE

S - SURFACE WATER

Severn Trent Water Limited

Asset Data Management

PO Box 5344

Coventry

CV3 9FT

Telephone: 0345 601 6616

SEWER RECORD (Tabular)

O/S Map Scale: 1:1,000

This map is centred upon:

Date of Issue: 12-03-21

X: 440986.81

Y: 292780.83

Disclaimer Statement

1 Do not scale off this Map.

2 This 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.

3 On 1 October 2011 most private sewers and private lateral drains in Severn Trent Water's sewerage area, which were connected to a public sewer as at 1 July 2011, transferred to the ownership of Severn Trent Water and became public sewers and public lateral drains. A further transfer takes place on 1 October 2012. Private pumping stations, which form part of these sewers or lateral drains, will transfer to ownership of Severn Trent Water on or before 1 October 2016. Severn Trent Water does not possess complete records of these assets. These assets may not be displayed on the map.

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MEC
Consulting Group

APPENDICES



APPENDIX C

Doc. Ref.	28011-CALC-0101
Sheet	1 of 9
Engineer	Z. Jordan
Date	01 Jul 25
Revision	-

DESIGN CALCULATIONS FRONT SHEET

SCHEME	Corner Fields, Nutts Lane, Hinckley
CLIENT	Gary Earp Construction Ltd
ASPECTS OF SCHEME TO BE DESIGNED	Surface Water and Foul Sewer Design Surface water attenuation design and simulation results for the 50%AEP, 3.3%AEP35CC, and 1%AEP40CC event for the development site.
CODES OF PRACTICE, DESIGN SPECIFICATIONS & BRITISH STANDARDS	- Design and analysis of urban storm drainage. Wallingford Procedure Vol.1 - Sustainable Drainage Systems- Non-Statutory technical standards for Sustainable drainage systems- 2015 - The SuDS Manual – CIRIA C753
NOTES	Existing runoff conditions have been calculated using FEH to calculate the Greenfield Discharge rate for the impermeable area of 0.242ha, the QBAR Greenfield rate has been calculated at 0.9l/s. Surface water from the site will discharge at 0.9l/s. Foul water from the site will discharge at 0.14l/s. The strategy involves conveying surface water flows through a series of permeable paving and rain gardens to a geo-cellular tank before combining with the foul water flows and discharging into the 225mm sewer within Nutts Lane. The calculations for the attenuation basins have been carried out using Flow Causeway.

INDEX

Pages	Calculations	Checked by	Date
2 – 7	Surface Water Sewer design details for the 50%, 3.3%AEP35CC and 1%AEP40CC simulation results	RC	01.07.2025
8 - 9	Foul Water Calculations	RC	01.07.2025

**Design Settings**

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S1	0.045	5.00	89.950	1200	440881.133	292725.114	1.460
S2	0.034	5.00	89.980	1200	440870.590	292744.151	1.488
S3	0.016	5.00	89.850	1200	440885.180	292739.568	1.448
S4	0.052	5.00	89.830	1200	440898.963	292762.632	1.661
S5 Tank	0.095	5.00	90.020	1200	440941.713	292778.714	2.041
S6 HydroBrake			90.020	1200	440952.849	292779.915	2.088
C1			90.110	1200	440960.461	292772.669	2.240
MH0701			90.750	1200	440995.355	292764.953	3.090

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
2.000	S1	S3	15.010	0.600	88.490	88.402	0.088	170.0	225	5.25	50.0
1.000	S2	S3	15.293	0.600	88.492	88.402	0.090	170.0	225	5.25	50.0
1.001	S3	S4	26.869	0.600	88.402	88.244	0.158	170.0	225	5.70	50.0
1.002	S4	S5 Tank	45.675	0.600	88.169	87.979	0.190	240.0	300	6.46	50.0
1.003	S5 Tank	S6 HydroBrake	11.201	0.600	87.979	87.932	0.047	240.0	300	6.64	50.0
1.004	S6 HydroBrake	C1	10.509	0.600	87.932	87.870	0.062	170.0	225	6.82	50.0
1.005	C1	MH0701	35.737	0.600	87.870	87.660	0.210	170.0	225	7.41	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
2.000	1.000	39.7	8.1	1.235	1.223	0.045	0.0
1.000	1.000	39.7	6.1	1.263	1.223	0.034	0.0
1.001	1.000	39.7	17.2	1.223	1.361	0.095	0.0
1.002	1.010	71.4	26.6	1.361	1.741	0.147	0.0
1.003	1.010	71.4	43.7	1.741	1.788	0.242	0.0
1.004	1.000	39.7	43.7	1.863	2.015	0.242	0.0
1.005	1.000	39.7	43.7	2.015	2.865	0.242	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.000	15.010	170.0	225	Storm	89.950	88.490	1.235	89.850	88.402	1.223
1.000	15.293	170.0	225	Storm	89.980	88.492	1.263	89.850	88.402	1.223
1.001	26.869	170.0	225	Storm	89.850	88.402	1.223	89.830	88.244	1.361
1.002	45.675	240.0	300	Storm	89.830	88.169	1.361	90.020	87.979	1.741
1.003	11.201	240.0	300	Storm	90.020	87.979	1.741	90.020	87.932	1.788

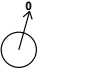
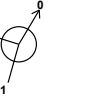
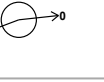
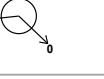
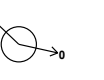
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.000	S1	1200	Manhole	Adoptable	S3	1200	Manhole	Adoptable
1.000	S2	1200	Manhole	Adoptable	S3	1200	Manhole	Adoptable
1.001	S3	1200	Manhole	Adoptable	S4	1200	Manhole	Adoptable
1.002	S4	1200	Manhole	Adoptable	S5 Tank	1200	Manhole	Adoptable
1.003	S5 Tank	1200	Manhole	Adoptable	S6 HydroBrake	1200	Manhole	Adoptable

**Pipeline Schedule**

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.004	10.509	170.0	225	Storm	90.020	87.932	1.863	90.110	87.870	2.015
1.005	35.737	170.0	225	Storm	90.110	87.870	2.015	90.750	87.660	2.865

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.004	S6 HydroBrake	1200	Manhole	Adoptable	C1	1200	Manhole	Adoptable
1.005	C1	1200	Manhole	Adoptable	MH0701	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S1	440881.133	292725.114	89.950	1.460	1200	 0	2.000	88.490	225
S2	440870.590	292744.151	89.980	1.488	1200	 0	1.000	88.492	225
S3	440885.180	292739.568	89.850	1.448	1200	 1 2 0	2.000 1.000 1.001	88.402 88.402	225 225
S4	440898.963	292762.632	89.830	1.661	1200	 1 0	1.001 1.002	88.244 88.169	225 300
S5 Tank	440941.713	292778.714	90.020	2.041	1200	 1 0	1.002 1.003	87.979 87.979	300 300
S6 HydroBrake	440952.849	292779.915	90.020	2.088	1200	 1 0	1.003 1.004	87.932 87.932	300 225
C1	440960.461	292772.669	90.110	2.240	1200	 1 0	1.004 1.005	87.870 87.870	225 225
MH0701	440995.355	292764.953	90.750	3.090	1200	 1	1.005	87.660	225

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	2 year (l/s)	0.8
Summer CV	1.000	Drain Down Time (mins)	240	30 year (l/s)	1.9
Winter CV	1.000	Additional Storage (m³/ha)	0.0	100 year (l/s)	2.4
Analysis Speed	Normal	Check Discharge Rate(s)	✓	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	10	0	100	40	10	0
30	35	10	0				



Pre-development Discharge Rate

Site Makeup	Greenfield	Region	4	QMed	0.8
Greenfield Method	FEH	QBar/QMed conversion factor	1.124	QBar	0.9
Positively Drained Area (ha)	0.244	Growth Factor 2 year	0.89	Q 2 year (l/s)	0.8
SAAR (mm)	650	Growth Factor 30 year	1.99	Q 30 year (l/s)	1.9
Host	1	Growth Factor 100 year	2.57	Q 100 year (l/s)	2.4
BFIHost	0.361	Betterment (%)	0		

Node S6 HydroBrake Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	87.932	Product Number	CTL-SHE-0042-9000-1247-9000
Design Depth (m)	1.247	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.9	Min Node Diameter (mm)	1200

Node S5 Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	87.979
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	198.0	0.0	1.200	198.0	0.0	1.201	0.0	0.0

Results for 2 year +10% A Critical Storm Duration. Lowest mass balance: 99.20%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	88.560	0.070	8.6	0.0795	0.0000	OK
15 minute summer	S2	10	88.553	0.061	6.5	0.0688	0.0000	OK
15 minute summer	S3	11	88.511	0.109	18.1	0.1231	0.0000	OK
15 minute summer	S4	10	88.310	0.141	27.3	0.1598	0.0000	OK
600 minute winter	S5 Tank	585	88.269	0.290	5.3	54.9538	0.0000	OK
600 minute winter	S6 HydroBrake	585	88.269	0.337	0.7	0.3816	0.0000	SURCHARGED
60 minute summer	C1	121	87.890	0.020	0.6	0.0226	0.0000	OK
60 minute summer	MH0701	120	87.680	0.020	0.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	2.000	S3	8.5	0.596	0.214	0.2202	
15 minute summer	S2	1.000	S3	6.4	0.485	0.162	0.2100	
15 minute summer	S3	1.001	S4	17.8	0.960	0.447	0.4975	
15 minute summer	S4	1.002	S5 Tank	27.9	1.484	0.390	0.9307	
600 minute winter	S5 Tank	1.003	S6 HydroBrake	0.7	0.118	0.010	0.7852	
600 minute winter	S6 HydroBrake	Hydro-Brake®	C1	0.6				
60 minute summer	C1	1.005	MH0701	0.6	0.375	0.016	0.0611	10.7

Results for 30 year +35% CC +10% A Critical Storm Duration. Lowest mass balance: 99.20%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	11	88.888	0.397	28.2	0.4496	0.0000	SURCHARGED
15 minute summer	S2	11	88.865	0.373	21.3	0.4222	0.0000	SURCHARGED
960 minute summer	S3	960	88.848	0.446	5.5	0.5043	0.0000	SURCHARGED
960 minute summer	S4	960	88.848	0.679	8.5	0.7678	0.0000	SURCHARGED
960 minute summer	S5 Tank	960	88.848	0.869	13.7	164.4162	0.0000	SURCHARGED
960 minute summer	S6 HydroBrake	960	88.848	0.916	0.8	1.0358	0.0000	SURCHARGED
960 minute summer	C1	960	87.892	0.022	0.8	0.0249	0.0000	OK
960 minute summer	MH0701	960	87.682	0.022	0.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	2.000	S3	26.0	0.720	0.654	0.5970	
15 minute summer	S2	1.000	S3	19.3	0.593	0.486	0.6082	
960 minute summer	S3	1.001	S4	5.5	0.648	0.137	1.0686	
960 minute summer	S4	1.002	S5 Tank	8.2	0.577	0.115	3.2164	
960 minute summer	S5 Tank	1.003	S6 HydroBrake	0.8	0.154	0.011	0.7888	
960 minute summer	S6 HydroBrake	Hydro-Brake®	C1	0.8				
960 minute summer	C1	1.005	MH0701	0.8	0.398	0.020	0.0708	48.0

**Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.20%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	11	89.387	0.897	36.5	1.0143	0.0000	SURCHARGED
15 minute summer	S2	11	89.351	0.859	27.7	0.9714	0.0000	SURCHARGED
15 minute summer	S3	11	89.303	0.901	70.7	1.0192	0.0000	SURCHARGED
960 minute winter	S4	945	89.142	0.973	6.7	1.1003	0.0000	SURCHARGED
960 minute winter	S5 Tank	945	89.142	1.163	11.1	220.0565	0.0000	SURCHARGED
960 minute winter	S6 HydroBrake	945	89.142	1.210	0.9	1.3684	0.0000	SURCHARGED
960 minute winter	C1	945	87.893	0.023	0.9	0.0264	0.0000	OK
960 minute winter	MH0701	945	87.683	0.023	0.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	2.000	S3	33.4	0.841	0.841	0.5970	
15 minute summer	S2	1.000	S3	24.9	0.627	0.627	0.6082	
15 minute summer	S3	1.001	S4	69.4	1.745	1.746	1.0686	
960 minute winter	S4	1.002	S5 Tank	6.6	0.545	0.092	3.2164	
960 minute winter	S5 Tank	1.003	S6 HydroBrake	0.9	0.146	0.013	0.7888	
960 minute winter	S6 HydroBrake	Hydro-Brake®	C1	0.9				
960 minute winter	C1	1.005	MH0701	0.9	0.413	0.022	0.0772	52.0

**Design Settings**

Frequency of use (kDU)	0.50	Minimum Velocity (m/s)	0.75
Flow per dwelling per day (l/day)	4000	Connection Type	Level Soffits
Domestic Flow (l/s/ha)	0.0	Minimum Backdrop Height (m)	0.200
Industrial Flow (l/s/ha)	0.0	Preferred Cover Depth (m)	1.200
Additional Flow (%)	0	Include Intermediate Ground	✓

Nodes

Name	Dwellings	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
F1	2	89.950	1200	440883.690	292725.846	1.150
F2	2	89.910	1200	440871.904	292745.225	1.106
F3		89.850	1200	440887.641	292740.984	1.142
F4	2	89.830	1200	440901.269	292761.878	1.591
F5	3	90.020	1200	440948.173	292777.802	2.072
C1		90.110	1200	440960.461	292772.669	2.240

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
2.000	F1	F3	15.645	1.500	88.800	88.708	0.092	170.0	225
1.000	F2	F3	16.298	1.500	88.804	88.708	0.096	170.0	225
1.001	F3	F4	24.946	1.500	88.708	88.239	0.469	53.2	225
1.002	F4	F5	49.533	1.500	88.239	87.948	0.291	170.0	225
1.003	F5	C1	13.317	1.500	87.948	87.870	0.078	170.0	225

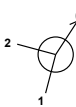
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)
2.000	0.879	35.0	0.1	0.925	0.917	0.000	2	0.0	0.0
1.000	0.879	35.0	0.1	0.881	0.917	0.000	2	0.0	0.0
1.001	1.575	62.6	0.2	0.917	1.366	0.000	4	0.0	0.0
1.002	0.879	35.0	0.3	1.366	1.847	0.000	6	0.0	0.0
1.003	0.879	35.0	0.4	1.847	2.015	0.000	9	0.0	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.000	15.645	170.0	225	Storm	89.950	88.800	0.925	89.850	88.708	0.917
1.000	16.298	170.0	225	Storm	89.910	88.804	0.881	89.850	88.708	0.917
1.001	24.946	53.2	225	Storm	89.850	88.708	0.917	89.830	88.239	1.366
1.002	49.533	170.0	225	Storm	89.830	88.239	1.366	90.020	87.948	1.847
1.003	13.317	170.0	225	Storm	90.020	87.948	1.847	90.110	87.870	2.015

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.000	F1	1200	Manhole	Adoptable	F3	1200	Manhole	Adoptable
1.000	F2	1200	Manhole	Adoptable	F3	1200	Manhole	Adoptable
1.001	F3	1200	Manhole	Adoptable	F4	1200	Manhole	Adoptable
1.002	F4	1200	Manhole	Adoptable	F5	1200	Manhole	Adoptable
1.003	F5	1200	Manhole	Adoptable	C1	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
F1	440883.690	292725.846	89.950	1.150	1200				
						0	2.000	88.800	225
F2	440871.904	292745.225	89.910	1.106	1200				
						0	1.000	88.804	225
F3	440887.641	292740.984	89.850	1.142	1200				
						1	2.000	88.708	225
						2	1.000	88.708	225
						0	1.001	88.708	225
F4	440901.269	292761.878	89.830	1.591	1200				
						1	1.001	88.239	225
						0	1.002	88.239	225
F5	440948.173	292777.802	90.020	2.072	1200				
						1	1.002	87.948	225
						0	1.003	87.948	225
C1	440960.461	292772.669	90.110	2.240	1200				
						1	1.003	87.870	225

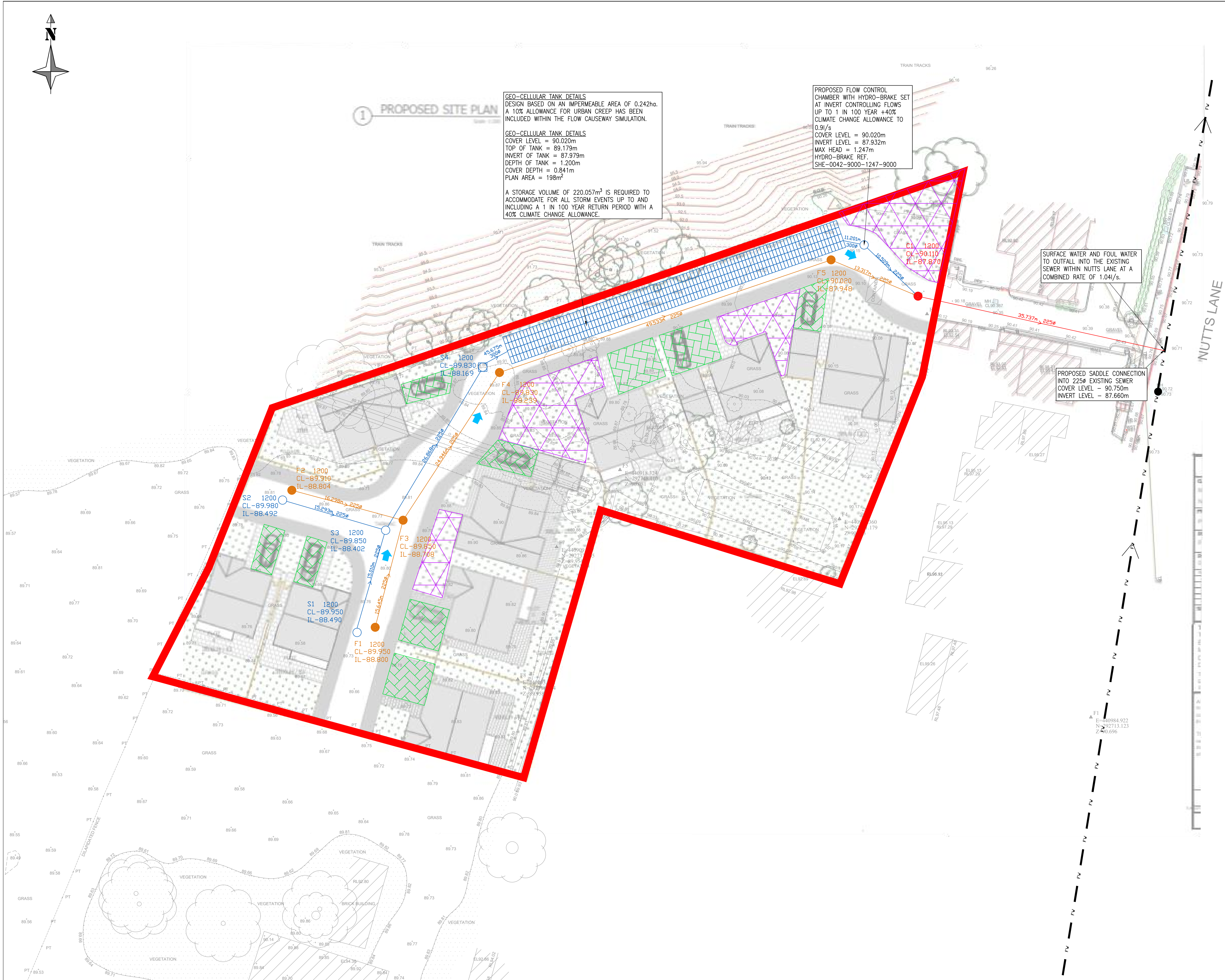


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APPENDICES



APPENDIX D



GEO-CELLULAR TANK DETAILS
DESIGN BASED ON AN IMPERMEABLE AREA OF 0.242ha.
A 10% ALLOWANCE FOR URBAN CREEP HAS BEEN INCLUDED WITHIN THE FLOW CAUSEWAY SIMULATION.

GEO-CELLULAR TANK DETAILS
COVER LEVEL = 90.020m
TOP OF TANK = 89.179m
INVERT OF TANK = 87.979m
DEPTH OF TANK = 1.200m
COVER DEPTH = 0.841m
PLAN AREA = 198m²

A STORAGE VOLUME OF 220.057m³ IS REQUIRED TO ACCOMMODATE FOR ALL STORM EVENTS UP TO AND INCLUDING A 1 IN 100 YEAR RETURN PERIOD WITH A 40% CLIMATE CHANGE ALLOWANCE.

PROPOSED FLOW CONTROL CHAMBER WITH HYDRO-BRAKE SET AT INVERT CONTROLLING FLOWS UP TO 1 IN 100 YEAR +40% CLIMATE CHANGE ALLOWANCE TO 0.9l/s
COVER LEVEL = 90.020m
INVERT LEVEL = 87.932m
MAX HEAD = 1.247m
HYDRO-BRAKE REF. SHE-0042-9000-1247-9000

SURFACE WATER AND FOUL WATER TO OUTFALL INTO THE EXISTING SEWER WITHIN NUTTS LANE AT A COMBINED RATE OF 1.04l/s.

PROPOSED SADDLE CONNECTION INTO 225Ø EXISTING SEWER
COVER LEVEL = 90.750m
INVERT LEVEL = 87.660m

NOTES:

- DO NOT SCALE THIS DRAWING.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS, ARCHITECTS AND SPECIALIST DESIGN DRAWINGS AND DETAILS.
- ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE. ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.
- THIS DRAWING IS FOR STRATEGY PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
- DESIGN BASED ON EXISTING LEVELS AND SUBJECT TO CHANGE WITH EXTERNAL WORKS DESIGN / CONFIRMATION OF FFLS.
- DRAINAGE STRATEGY IS SUBJECT TO AGREEMENT WITH RELEVANT THIRD PARTIES, INCLUDING ENVIRONMENT AGENCY, LOCAL PLANNING AUTHORITY, LEAD LOCAL FLOOD AUTHORITY AND WATER AUTHORITY.
- CONCRETE PROTECTION TO BE PROVIDED TO ANY PIPES WITH LOW COVER.
- THE DRAINAGE STRATEGY WILL NEED UPDATING IF THE LAYOUT IS REVISED.
- SURFACE WATER FLOWS FROM THE SITE WILL COMBINE WITH THE FOUL WATER FLOWS AND OUTFALL INTO THE EXISTING SEWER WITHIN NUTTS LANE AT MANHOLE 0701, AS AGREED WITHIN THE OUTLINE PLANNING APPLICATION AT A COMBINED DISCHARGE RATE OF 1.04l/s.
- PERMEABLE PAVING AND RAIN GARDENS WILL BE UTILISED ON SITE TO PROVIDE TREATMENT FOR SURFACE WATER RUNOFF PRIOR TO ENTERING THE GEO-CELLULAR TANK.

KEY

- SITE BOUNDARY
- PROPOSED SURFACE WATER SEWER
- PROPOSED FOUL WATER SEWER
- PROPOSED COMBINED SEWER
- EXISTING FOUL WATER SEWER
- PROPOSED GEO-CELLULAR TANK
- PROPOSED PERMEABLE PAVING
- PROPOSED RAIN GARDENS
- ➔ PROPOSED OVERLAND FLOW ROUTES
- PROPOSED CATCHPIT

REV.	FIRST ISSUE	AMENDMENTS	DRN.	CHK.	APP.	DATE
1						01.07.25

PROJECT: CORNER FIELDS, NUTTS LANE, HINCKLEY

DRAWING TITLE: DETAILED DRAINAGE STRATEGY

CLIENT: GARY EARP CONSTRUCTION LTD

DRAWING NUMBER: 28011_01_230_01

REVISION: - **SHEET SIZE:** A1 **SCALE:** 1:250

STATUS: FOR INFORMATION / APPROVAL

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APPENDICES



APPENDIX E

MAINTENANCE AND MANAGEMENT

A proposed maintenance plan is shown in the table below and breaks down the maintenance requirements of the various proposed assets in accordance with the CIRIA C753 SuDS Manual guidance.

Table 1.1: Proposed Maintenance Regime

Drainage Asset	Responsible Organisation	Maintenance Work	Frequency
Pipework / Manholes	Water Authority	Inspect pipework and clear blockages	Annually or after severe storms.
		Inspect manholes and clear blockages	
		Repair any defects in the network	
		Inspect flow control, ensure operating freely and pivoting bypass door and penstock valve operating correctly	
Catchpits	Private Ownership	Inspect structure and remove any debris/litter on structure	Annually or after severe storms
		Replace malfunctioning parts or structures	As required
Flow Control Chamber	Private Ownership	Inspect structure and remove excessive silt build-up	Monthly during construction and then annually or after severe storms
		Inspect pipework and manholes also clear blockages	Annually or after severe storms
		Inspect manholes and clear blockages	
		Inspect flow control, ensure operating freely and pivoting bypass door and penstock valve operating correctly	
		Replace malfunctioning parts or structures	
		Inspect for evidence of poor operation	6 monthly
		Inspect sediment accumulation rates and establish appropriate removal frequencies	
		Test control structure to ensure operating as per original design	5 yearly
Rainwater Harvesting	Private Ownership	Inspection of the tank for debris and sediment build-up, inlets/outlets/withdrawal devices, overflow areas, pumps and filters	Annually (and following poor performance)
		Cleaning of the tank, inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris	
		Cleaning and/or replacement of any filters	3 monthly (or as required)
		Repair of overflow erosion damage or damage to the tank	As required
		Pump repairs	
Bioretention Systems	Private Ownership	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain to determine if maintenance is necessary	Quarterly



		Check operation of underdrains by inspection of flows after rain	Annually
		Assess plants for disease infection, poor growth, invasive species etc and replace if necessary	Quarterly
		Inspect inlets and outlets for blockages	
		Remove litter and surface debris and weeds	
		Replace any plants to maintain planting density	As required
		Remove sediment, litter and debris build-up from around inlets or from forebays	Quarterly to biannually
		Infill any holes or scour in the filter medium, improve erosion protection if required	As required
		Repair minor accumulations of silt by raking away surface mulch, scarifying the surface of the medium and replacing mulch	
		Remove and replace filter medium and vegetation above	
Permeable Pavements	Private Ownership	Brushing and vacuuming (standard cosmetic sweep over the whole surface)	Once a year after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging of manufacturer's recommendations.
		Stabilise and mow contributing and adjacent areas	As required
		Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than sweeping	
		Remediate any landscaping which, through vegetation maintenance of soil slip, has been raised to within 50 mm of the level of the paving	
		Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users and replace lost jointing material	
		Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required
		Initial inspection	Monthly for 3 months after installation
		Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	3 monthly, 48 hours after large storms in first 6 months
		Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
		Monitor inspection chambers	



Attenuation Storage Tanks	Private Ownership / Management Company	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months then annually
		Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
		For systems where rainfall infiltrates into the tank from above, check the surface of the filter for blockages by sediment, algae or other matter; remove and replace surface infiltration medium as necessary	Annually
		Remove the sediment from pre-treatment structures and/or internal forebays	
		Repair/rehabilitate inlets, outlets, overflows and vents	As required
		Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
		Survey inside of the tank for sediment build-up and remove if necessary	Every 5 years or as required
		Repair/rehabilitate inlets, outlets and overflows	



CIVIL ENGINEERING



TRANSPORT



FLOOD RISK & DRAINAGE



STRUCTURES



GEO-ENVIRONMENTAL



ACOUSTIC AIR



UTILITIES



GEOMATICS



LIGHTING



EXPERT WITNESS



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