

Maple Farm

Sustainable Drainage Strategy

Curtins Ref: 089276-CUR-XX-XX-T-C-00001

Revision: P01

Issue Date: 09 July 2026

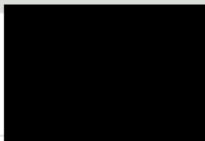
Client Name: Ms N Millar

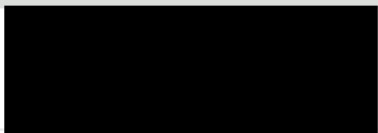
Client Address: Maple Farm, Marches Road, Warnham

Site Address: Land off Marches Road, Warnham, Horsham, RH12 3SL

Rev	Description	Issued by	Checked	Date
P01	Issued to Planners	MH	SD	09/07/2026

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Curtins Consulting Ltd has prepared this report based on the provided and available information. Investigations are required to confirm scope, assumptions and conclusions. The opinions, conclusions and any recommendations in this report are based on assumptions made by Curtins Consulting Ltd described in this report.

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1 Introduction

1.1 Project Background

Curtins have been appointed to produce a site-specific drainage strategy for to support the proposed Maple Farm development. The development comprises the construction of five new houses, along with associated parking, an access road and landscaping. Conditional planning permission for the scheme was obtained in November 2025 (application reference DC/25/0779), with condition 4 relating to the provision of a suitable drainage strategy. An extract of condition 4 is included below

“No development shall commence until a drainage strategy detailing the proposed means of foul and surface water disposal has been submitted to and approved in writing by the Local Planning Authority”

The purpose of this report is to review the constraints and opportunities for drainage provision around the site and to outline a proposed Sustainable Drainage Strategy (SDS) for the development. This should assist our client and the Local Planning Authority in ensuring adequate drainage infrastructure is in place to serve the existing site and the proposed development whilst not negatively impacting surrounding areas and working with the existing site constraints.

1.2 Scope of Sustainable Drainage Strategy

The SDS is to be undertaken in accordance with the standing advice of the Environment Agency (EA), the Department for the Environment, Food and Rural Affairs (DEFRA) and the Local Authority (LA), Gloucestershire County Council.

The SDS will:

- Consider the high-level flood risk at the site;
- Consider the procedures of the EA, DEFRA and LA guidance.
- Consider the hierarchy for surface water discharge location for selection of an appropriate receptor;
- Consider climate change effects; and
- Provide an outline strategy for the below ground management of foul and surface water at the site.

Proposals contained or forming part of this report represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project. Where such adjustments are undertaken as part of the detailed design and are deemed a material deviation from the intent contained in this document, prior approval should be obtained from the relevant authority in advance of commencing such works.

Where the proposed works, to which this report refers, are undertaken more than twelve months following the issue of this report, Curtins Consulting Ltd shall reserve the right to re-validate the findings and conclusions by undertaking appropriate further investigations at no cost to Curtins Consulting Ltd.

Allowance for the effects of climate change will be made in accordance with government recommendations in place and statistical data available at the time of writing this report. These recommendations may become more onerous and the statistical data may be revised in the future; we will not make any estimate of what changes may result from this. Please be aware that this, and other issues over which Curtins Consulting Ltd has no control, may affect future flood risk at the development and require further work to be undertaken for which we accept no liability.

2 Existing Site Details

2.1 Site Description

The site currently comprises a barn in the central half of the site, surrounded by gravel/ hardstanding. An ancient woodland bounds the eastern edge of the site, in which lies a public footpath, with further trees along its southern boundary. A line of hedges runs along the west of the site, with a section of fence and an access gate in the northwest and a fence bounding the northern site edge.

Beyond the site boundary, the ancient woodland continues to the east and open fields to the north and west. Marches Road lies to the south of the site, from which vehicular access into the site is provided via an existing gate at a break in the tree/ hedge line.

The site has an approximate central grid reference of TQ 15239 35726, with the site area being 0.21ha. An aerial view of the site is included in Figure 1 below.

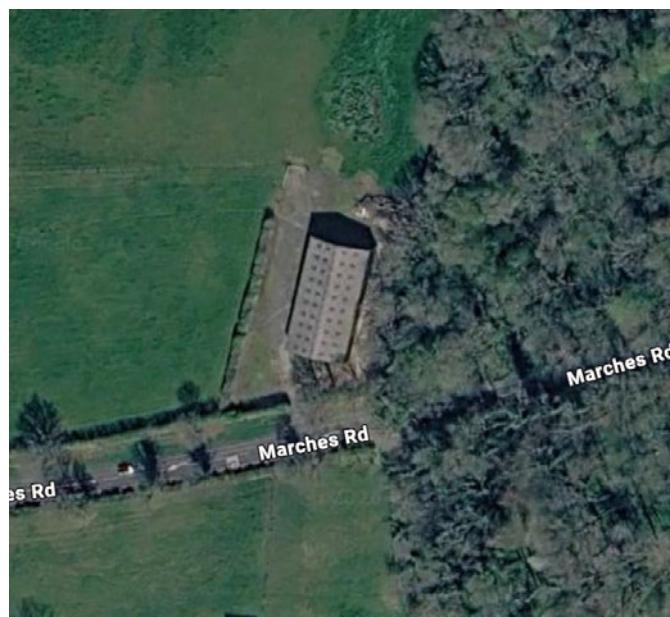


Figure 1 - Aerial view of the site (taken from Google Maps)

2.2 Development Description

The proposed development comprises the construction of five new houses; four connected units along the western side of the site and one individual unit to the north. Parking for houses one to four is provided along the eastern boundary of the site, and parking for unit five to the west of the house. Access into the site is maintained as via the existing access point in from Marches Road to the south. A proposed site layout drawing showing the proposals is included in Appendix A.

2.3 Existing Watercourses

The EA flood map for planning identifies an unnamed ordinary watercourse within the woodland to the east of the site, approximately 55m away. This is shown to begin southeast of the site, just west of Mayes Lane, flowing north to cross beneath Marches Road to get into the woodland. The ordinary watercourse is then shown to continue north into Stonefarm Gill, which runs from east to west approximately 230m north of the site before continuing on to discharging into the North River.

2.4 Existing Drainage

Sewer mapping obtained from Southern Water for the site and the surrounding area is included in Appendix B. This does not identify any existing sewers within the site or within its vicinity, with no sewers picked up on the mapping within at least 300m east and west and 170m north and south of the site.

A utilities survey of the site is not currently available. However, given its current use, it is assumed there is limited existing drainage. The site owner has confirmed that the RWPs serving the existing barn discharge above ground into French drains which then have a piped connection to the watercourse east of the site. They have confirmed that the position of the pipes aligns roughly with the north and south of the existing barn, as shown in Figure 2 below.



Figure 2 - Mark up received indicating the approximate locations of existing discharge points from the site into the watercourse, as confirmed by the site owner

2.5 Site Geology

The British Geological Societies geology viewer indicates bedrock geology beneath the site and surrounding area of Weald Clay Formation – Mudstone. It does not indicate any superficial geology across the site, though given the site currently comprises a barn and hardstanding, at least one layer of made ground can be expected.

2.6 Site Topography

A topographical survey of the site was completed by MK surveys in January 2022 (see Appendix C). This shows levels across the site to mainly fall from south to north, with a slight fall from west to east. Within the site boundary, the highest level is shown as approximately 68.85m AOD in the southwest corner, falling to 65.84m AOD in the northeast corner. The topographical survey also picks up two small gravel/ rubble mounds in the east of the site.

2.7 Designations

The site does not lie within a Source Protection Zone but does lie within a Drinking Water Safeguard Zone for Surface Water (Magic, n.d.).

The site is not classified as a Site of Special Scientific Interest (SSSI) and is not a special area of conservation. However, it does lie within the outer extents of the SSSI impact risk zone for the Birches Wood SSSI to the north (Magic, n.d.).

The site does not lie within a nutrient neutrality catchment (Magic, n.d.).

The woodland to the east of the site is classified as ancient woodland. Because of this, it is understood a 15m buffer zone applies from the edge of the woodland in which no new drainage is permitted.

2.8 Flood Risk

The production of a Flood Risk Assessment lies outside of Curtins scope. However, a high-level review of flood risk based on publicly available EA/ government mapping has been completed to assess if there are likely to be any implications on the proposed drainage strategy. This shows the site and all surrounding areas to lie within Flood Zone 1, with a low risk of flooding from rivers, the sea and surface water.

Table 1 - Flood Risk Assessment

Source of Flooding	Flood Risk
Rivers and Sea	Both current mapping and mapping for 2036 – 2069 show the site to have a negligible risk of flooding from rivers and the sea
Surface Water	Both current mapping and mapping for 2040 – 2060 show the site to have a negligible risk of surface water flooding.
Reservoirs	Mapping shows the site not to be at risk of reservoir flooding.

3 Proposed Surface Water Drainage Strategy

3.1 Surface Water Discharge Location, Collection and Conveyance Mechanisms

A review of possible surface water discharge locations in order of priority has been completed and is outlined in Table 2.

Table 2 - Surface Water Discharge Location Review

Discharge Location	Viability
Store for re-use	The scale of the development makes the cost of installing grey water systems prohibitive. However, water butts could be used to facilitate the collection and storage of water for irrigation.
Infiltrate to ground	Infiltration testing is not currently available for the development site. However, on the basis that geological mapping shows the bedrock beneath the site to be Weald Clay Formation – Mudstone, it is assumed that there will be limited infiltration potential. Therefore, it is considered unlikely that discharging run-off from the houses to a soakaway will be a feasible solution. Externally, if hardstanding can be kept permeable, this would allow run-off to soak through the build ups into the ground below. Providing external areas are generally only accommodating flows from their own area (and not receiving notable run-off from other impermeable areas), it is assumed that the infiltration rate would be sufficient to allow them to self-drain and not require further intervention.
Discharge to watercourse	As outlined in Section 3.3, an unnamed ordinary watercourse lies within the woodland to the east of the site. This is close enough for a connection to the watercourse to be considered. However, it is understood the woodland is designated as an ancient woodland therefore no new drainage is permitted to be installed through this. As outlined in Section 3.4, it is understood that there are two existing connections to this watercourse from the development site. The depth of these is subject to confirmation. It is feasible that the north outlet point may provide a suitable discharge location for some of the flows from the development. However, given the site topography, it is considered unlikely that this will be able to accommodate all flows from the site via a gravity connection. Similarly, it is considered unlikely that the south outlet point would be a viable discharge location for a gravity connection. If a gravity connection cannot be accommodated, a pumped solution may be required. Alternatively, allowing the flows to travel overland to the watercourse could be considered as it is understood the site owner also owns the land between the site and the watercourse, including the field to the north of the site. As such, allowing flows to travel overland would not be impacting the flood risk of another property.
Discharge to a surface water sewer	As outlined in Section 3.4, sewer mapping does not indicate any sewers in the vicinity of the site. Therefore, discharge to a surface water sewer is considered unviable.
Discharge to a combined sewer	As outlined in Section 3.4, sewer mapping does not indicate any sewers in the vicinity of the site. Therefore, discharge to a combined sewer is considered unviable.

As outlined in Table 2, complexities have been identified with several of the normal discharge locations. However, based on the available options, the following strategy is proposed:

1. One water butt is to be provided per house to facilitate water collection for irrigation
2. The access road and parking bays are to comprise permeable hardstanding. This will be lined with permeable geotextiles allowing flows to infiltrate into the ground below.
3. Small patio areas around the buildings will be allowed to overflow to the adjacent landscaping/ permeable paving.
4. Where feasible and not blocking access paths, RWPs will discharge to SuDS planters. Where not feasible, RWPs will discharge into an outlet gully.
5. RWPs serving plots 1-4 will discharge above ground to a gully or, where space allows, a SuDS planter which in turn will discharge to an adjacent gully. Below ground drainage will be used to connect the gullies to the existing pipe in the northeast of the site, which subsequently discharges to the adjacent watercourse. This strategy assumes that this outlet pipe is sufficiently deep to facilitate a gravity connection from plots 1-4
6. RWPs serving the south of plot 5 will discharge to a filter trench running along the northern boundary of this plot. This will discharge into the existing pipe in the northeast of the site, again assuming that levels will facilitate a gravity connection to this.
7. RWPs serving the north of plot 5 will be directed into SuDS planters or a water butt, with overflows from these features commuted away from the house in stone trenches. No formal outlet will be provided for these trenches, with it expected that the SuDS planters/ water butt will accommodate most of the discharge. Any excess flows will be allowed to travel overland through the adjacent field (owned by the same landowner) towards the watercourse.

A plan showing the proposed drainage strategy is included in Appendix D.

If site surveys indicate that a gravity connection from plots 1-4 and the south of plot 5 into the existing northern outlet pipe from the site, the following approaches could be considered:

1. Install a pump for areas where a gravity connection is not feasible.
2. Direct flows to the northeast of the site to a swale along the red line boundary. From here, flows could be allowed to continue across the field to the north (owned by the same landowner) into the watercourse, thus avoiding the need for new works within the ancient woodland.

3.2 Surface Water Discharge Rate

As outlined in Section 3.4, it is understood the existing barn discharges to two filter trenches, which in turn discharge to the adjacent watercourse via two piped outlets. The diameter and level of these pipes is unconfirmed. However, to establish an approximate existing discharge rate, a hydraulic model has been created, conservatively assuming a 150mm disaster pipe with minimum falls. This indicates a discharge rate of approximately 9.9 l/s from each existing connection point during the 1 in 100-year storm (no climate change allowance). Together, this equates to a discharge rate of 19.8 l/s from the site. For full calculations, please refer to Appendix E.

Greenfield calculations have been completed for the site based on an area of 380m². This corresponds to the roof area proposed to drain to the piped outlet to the watercourse. The calculations indicate greenfield run-off rates of between 0.2 – 0.7l/s for storms between the 1 in 1-year event to the 1 in 100-year event respectively. For full calculations, please refer to Appendix F.

It is not considered feasible to limit flows to greenfield rates given how low they are. Instead, it is proposed to limit flows from the new surface water system proposed to discharge into the existing northern connection to the watercourse to 9.9l/s for storms up to the 1 in 100-year event plus a 45% climate change allowance. This maintains the existing flow rate from this pipe for surface water flows. However, as no connections are proposed to the existing southern connection, this represents a 50% betterment on the combined peak piped flows out of the site from surface water.

Calculations for the proposed network serving plots 1-4 and the south of plot 5 are included in Appendix G. In completing these calculations, it should be noted that the benefits offered by the SuDS planters have not been considered. In reality, these will provide a significant contribution to reducing flows through removing water from the system and providing attenuation. As such, the calculations included in Appendix G are considered conservative.

High level calculations for the proposed system discharging to the existing northern connection to the watercourse have been completed and are included in Appendix A

The limitation of the discharge rate has been achieved through the use of an orifice plate near the downstream end of the system, with attenuation provided via an oversized pipe and manholes.

3.3 Water Quality

Table 4.3 of the CIRIA SuDS manual outlines the minimum water quality management requirements for discharges to surface waters and groundwater. The requirements are specified according to the pollution hazard level of the land use. A breakdown of the minimum surface water requirements for each of the land uses at the development is shown in Table 1.

Table 1 - Pollution Hazard Level Classification

Site use	Pollution Hazard Level (as defined in Table 4.3/ 26.2 of CIRIA SuDS Manual 2015)	Discharge location	Minimum Water Quality Management Requirements (as outlined in Table 4.3 of CIRIA SuDS Manual 2015)
Residential roofs	Very Low	Watercourse/ Groundwater	Removal of gross solids and sediments only
Carparking and access roads to car parks	Low	Watercourse/ Groundwater	Simple index approach to be used to assess requirements ¹

¹ The CIRIA SuDS Manual notes that extra measures in line with Step 3 of the Simple Index Approach may be required when a site is in a Source Protection Zone (SPZ). As the Maple Farm site is not within an SPZ, additional measures are not required.

As outlined in section 4.1, it is proposed to allow all RWP's to discharge into either a SuDS planter or an adjacent gully, both of which will facilitate the removal of gross solids and sediment thus satisfying the requirements outlined in Table 1 above.

For the access road and car parking bays, Table 4.3 of the CIRIA SuDS manual indicates that the simple index approach may be used to check water quality requirements are satisfied. The simple index approach compares the pollution hazard posed by a land use with the mitigation against pollutants offered by the receiving SuDS features through comparing numerical indices ascribed to both elements. For residential car parks and low traffic roads, Table 26.2 of the CIRIA SuDS manual defines the following pollution hazard indices:

Total Suspended Solids: 0.5

Metals: 0.4

Hydro-carbons: 0.4

As outlined in Section 4.1, it is proposed to form the access road and parking bays at Maple farm from permeable hardstanding. Table 26.3 of the CIRIA SuDS manual defines permeable pavements as offering the following mitigation indices when flows are discharged to surface waters:

Total Suspended Solids: 0.7

Metals: 0.6

Hydro-carbons: 0.7

As the mitigation indices for permeable paving exceed the pollution hazard indices for the land use, permeable paving is considered suitable treatment for the flows.

4 Proposed Foul Water Drainage Strategy

A review of possible foul water discharge locations has been completed and is outlined in Table 3.

Discharge Location	Viability
Foul or combined sewer	As outlined in Section 3.4, sewer mapping does not indicate any foul or combined sewers within the vicinity of the site (including up to 300m east or west or 160m north or south). As such, discharge to a sewer is not considered viable.
Septic tank	Septic tanks require a secondary treatment facility such as a drainage field. There is insufficient space to provide this within the site boundary. As such, the use of a septic tank has been discounted.
Private treatment systems	Suitably sized private treatment systems are a viable option for the development providing a suitable outfall location for the treated flows can be agreed.
Cesspool	The development comprises the construction of 5 new dwellings ranging from two to four beds. Building Regulations Part H outlines that cesspools should provide 18,000l of storage for the first two occupants, with an additional 6,800l to be provided for every additional occupant over this. Assuming four occupants for a two bed property, five occupants for a three bed property and 6 occupants for a four bed property, this equates to 282,000l of storage for the development. Whilst technically feasible, this would require a large storage tank compared to the size of the development and the ongoing operation requirements associated with emptying and maintaining the tank are considered less preferable to the use of a private treatment system.

Based on the options considered in Table 3, it is proposed to use private treatment systems to serve the development. It has been requested that a separate system be provided for plot 5. As such, two tanks are proposed; one for plots 1-4 and one for plot 5. It is proposed to locate both within the soft landscaping to the north of the parking bays for plots 1-4.

Below ground pipes will be used to commute flows from the houses to the private treatment systems. Once treated, the flows will be commuted to the existing northern outlet pipe from the site to the watercourse to the east. As outlined in Section 3.4, the depth of this is currently unconfirmed. If possible, the flows from the tank serving plots 1-4 will connect to the existing outlet via gravity. However, if the depth of the existing connection does not facilitate this, the flows will need to be pumped. It is expected that the flows from the tank serving plot 5 will also need to be pumped to reach this outfall.

To facilitate the production of the drainage strategy, in particular, to ensure there is a suitable product available and to ascertain the likely size of such a product, Kingspan have been consulted in relation to the development. They have confirmed that their Klargerster BioDisc tanks would be suitable, with models BC and BA suitable to serve plots 1-4 and 5 respectively. Details for these tanks are included in Appendix H and it is proposed that these tanks or similar alternatives are used to serve the development. Kingspan have confirmed that the outflow rates from the tanks range from 1-2l/s. The suitability and detailing of any private treatment tank should be confirmed by the manufacturer in advance of commencing works.

A proposed drainage drawing showing the route of the below ground drainage, treatment tanks, pump(s) and outfall routes is included in Appendix D.

5 Conclusions and Recommendations

New foul and surface water drainage is required to serve the development. For surface water, the key principles are as follows:

1. External areas are generally to be formed of permeable surfacing and allowed to self-drain via infiltration. This is subject to confirmation of an adequate infiltration rate via on-site testing.
2. The roofs of plots 1-4 and the south of plot 5 will be picked up by a below ground network commuting flows to an existing piped outlet from the site to the watercourse to the east. This is subject to confirmation that the depth of this connection allows for a gravity connection.
3. Flows from this network will be limited to 9.9l/s for storms up to the 100-year event + 45% climate change allowance. However, this calculation has not included for the take up of water or attenuation offered by a number of SuDS planters and water butts proposed around the site. Therefore, it is expected that better results will be achieved in reality.
4. RWPs serving the north of plot 5 will generally discharge into SuDS planters or water butts, with any overflows from these allowed to follow overland flow routes down to the adjacent watercourse.

For the foul water flows, the key principles are as follows:

1. There are no sewers in the vicinity of the site therefore discharge to a public sewer is not considered viable.
2. Instead, two private treatment plants are proposed, one to serve plots 1-4 and one to serve plot 5
3. Outflows from the treatment plants will be directed to the existing northern piped outlet from the site to the adjacent watercourse. Subject to confirmation of the existing pipe level, the flows will either connect to the outlet via gravity (preferable) or a pumped solution.

6 Appendices

Appendix A - Proposed Site Layout

KEY

Small Retaining Wall

Gravel

Tarmac Refuse Collection Area

Sandstone Paving Kandica Grey
Sheet Blasted

Permeable Resinbound Surface To
Vehicular Loading
With Appropriate Half Battered Kerb/
Dropped Kerbs

Mossbridge Block Paving, Colour
Cinder

250mm x 150mm With 50mm x 100mm
concrete Pin Kerb To Edge

Proposed Native Hedge See Planting
Table

Proposed Planting See Planting Table

Amenity Lawn- Turf 429m2

Ancient Woodland Buffer Zone
(See Planting Scheme & Spec) 308m2
Clay Loam Topsoil BS3862:2015

Existing Native Hedge And Trees-
Retained

Proposed Trees

Proposed Closeboard fence 1.5m

Proposed Closeboard Fence 1.2m

Proposed Timber knee rail 0.75m

Steel vertical bar barrier and
handrail: black 1.2m

Timber Bike Store
1820mm x 910 on associated concrete
base

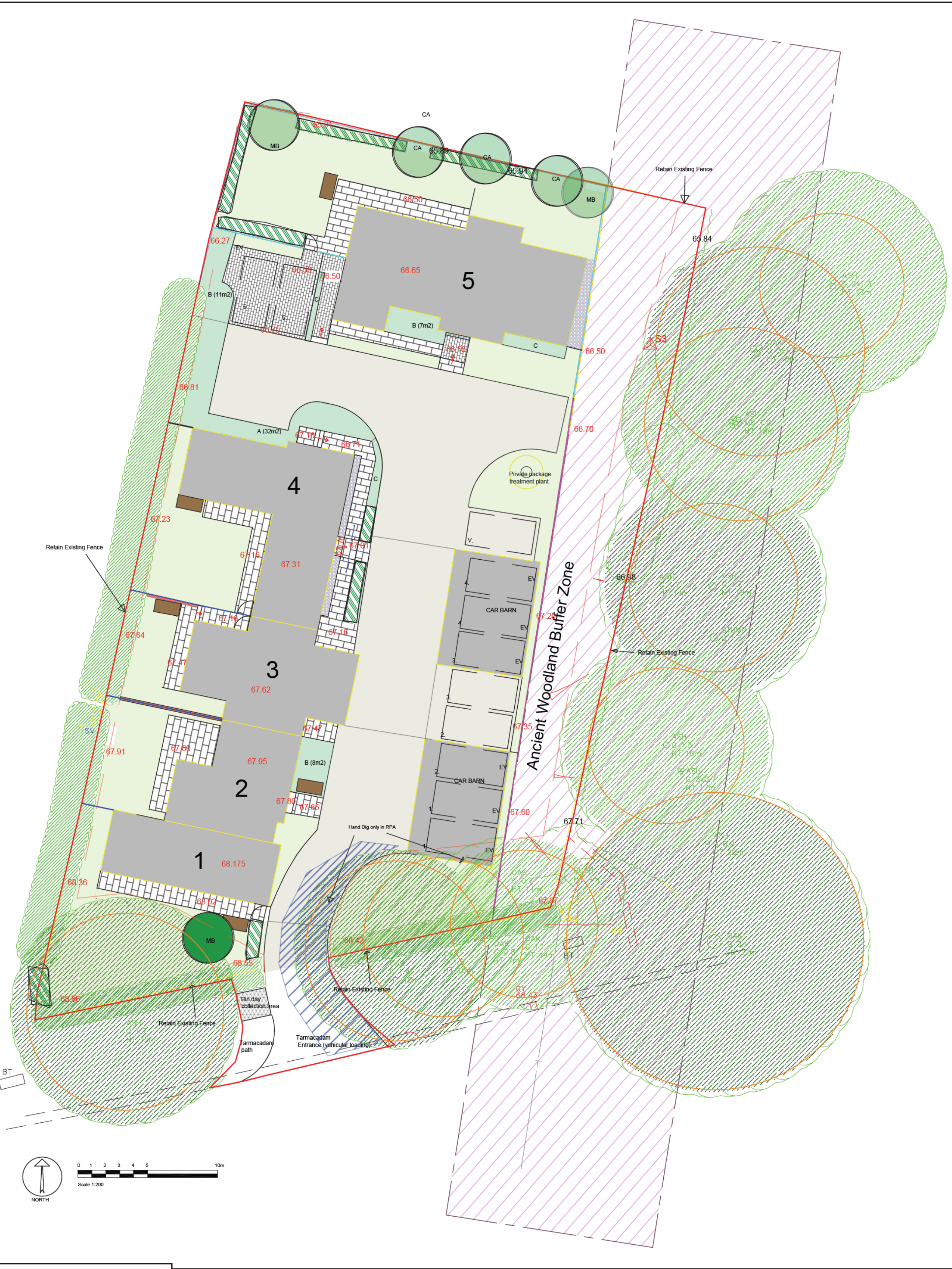
EV
Electric Vehicle Charge
Point

Tree Protection Fence
RPA

Ground Protection mats

Threshold Drain

Levels: Proposed/Existing



PLANTING TABLE					
SPECIES	SIZE (H)/form	POT SIZE	QUANTITY	MIX %	DENSITY /m2
TREE PLANTING					
Crataegus monogyna 'Stricta' (MB)	Standard 10-12cm clear stem	RB	3	NA	N/A
Corylus avellana (CA)	250-300cm multi stem (5 stem minimum from base)	RB	3		NA
SHRUB PLANTING A 32m2					
Cornus alba 'Sibirica'	40-60cm	10l	2	N/A	0.06m2
Viburnum davidii	40-50cm	20l	5	N/A	0.16m2
Hydrangea macrophila	40-50cm	2L	5	N/A	0.15m2
Hebe rakaiensis	25-35cm	3L	7	N/A	0.27m2
Skimmia japonica 'Rubella'	25-40cm	3L-5L	5	N/A	0.16m2
Daphne odora 'Aureomarginata'	30-40cm	3L-5L	3	N/A	0.09m2
Berberis thunbergii	25-40cm	3L	5	N/A	0.15m2
Pittosporum Tom Thumb	25-35cm	3L	6	N/A	0.27m2
UNDER PLANTING A					
Helleborus orientalis		3L	12	N/A	0.38m2 drifts
Hakonechloa macra		5L	10	N/A	0.31m2 drifts
Carex oshimensis 'Evergold'		2L	5	N/A	0.16m2
Heuchera 'Caramel'		2L	10	N/A	0.38m2 drifts
PLANTING B 26m2					
Pittosporum Tom Thumb	25-35cm	3L	7	N/A	0.27m2
Hydrangea macrophila	40-50cm	5L	4	N/A	0.15m2
Berberis thunbergii	25-40cm	3L	4	N/A	0.15m2
Hebe rakaiensis	25-35cm	3L	7	N/A	0.27m2
Lavandula angustifolia 'Hidcote'	20-30cm	2L-3L	16	N/A	0.62m2 Drift
Stipa tenuissima	20-40cm	2L	25	N/A	0.96/m2 Drift
Heuchera 'Caramel'	15-25cm	2L	25	N/A	0.96m2 Drifts
PLANTING C 15m					
Lavandula angustifolia 'Hidcote'	20-30cm	2L-3L	30	N/A	2/m
HEDGES 42m Double row					
Carpinus betulus	60-80cm	Bare Root	210	N/A	5/m
Ancient Woodland Buffer Zone Mix 295m2					
Digitalis purpurea	Plug		221	N/A	0.75
Ajuga reptans	Plug		295	N/A	1
Geum urbanum	Plug		295	N/A	1
Stachys sylvatica	Plug		221	N/A	0.75
Primula vulgaris	Plug		221	N/A	0.75
Campanula trachelium	Plug		148	N/A	0.5
Sanicula europaea	Plug		74	N/A	0.25

SEED MIX/TURF
Ancient Woodland Margin Seed mix (EW1):
308m2
4g/m2 (1232g)
Amenity Lawn Turf: 456m2

Rev

Notes

Date

Land North Of Marches Barn, Marches Road, Warnham, RH12 3SL

Drawn

Ref no: 26/02/45/JD

02.07.2026

HELLIS

ARBORICULTURE & LANDSCAPE DESIGN

Scale 1:200

Paper: A1

The Old Pump House, Osborne Rd, Sherborne, Dorset, DT9 3RX
Office: 01935 814110 Email: admin@hellis.biz Website: www.hellis.biz

DRAWING STATUS: Preliminary

Revisions: P01- First issue
P02- Patio revisions

If in doubt ask. Drawing measurements shall not be obtained by scaling. Verify all dimensions prior to construction. Immediately report any discrepancies on this document to the architect. This document shall be read in conjunction with associated models, specifications and related consultant's documents.

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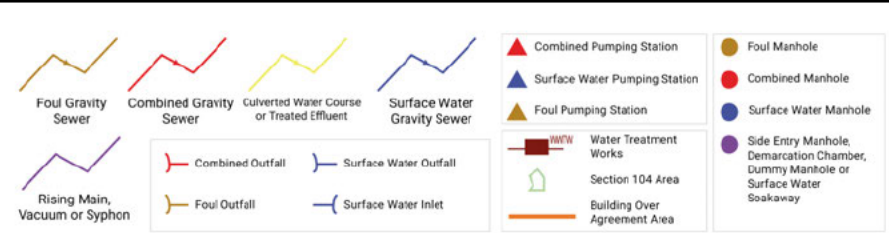
Appendix B - Sewer Records



(c) Crown copyright and database rights 2026 Ordnance Survey AC0000808122 Date: 12/06/26 Scale: 1:1250 Map Centre: 515240,135713 Data updated: 22/05/26 Our Ref: 2147466 - 1 Wastewater Plan A2 Powered by digdat

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2026 Ordnance Survey AC0000808122. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

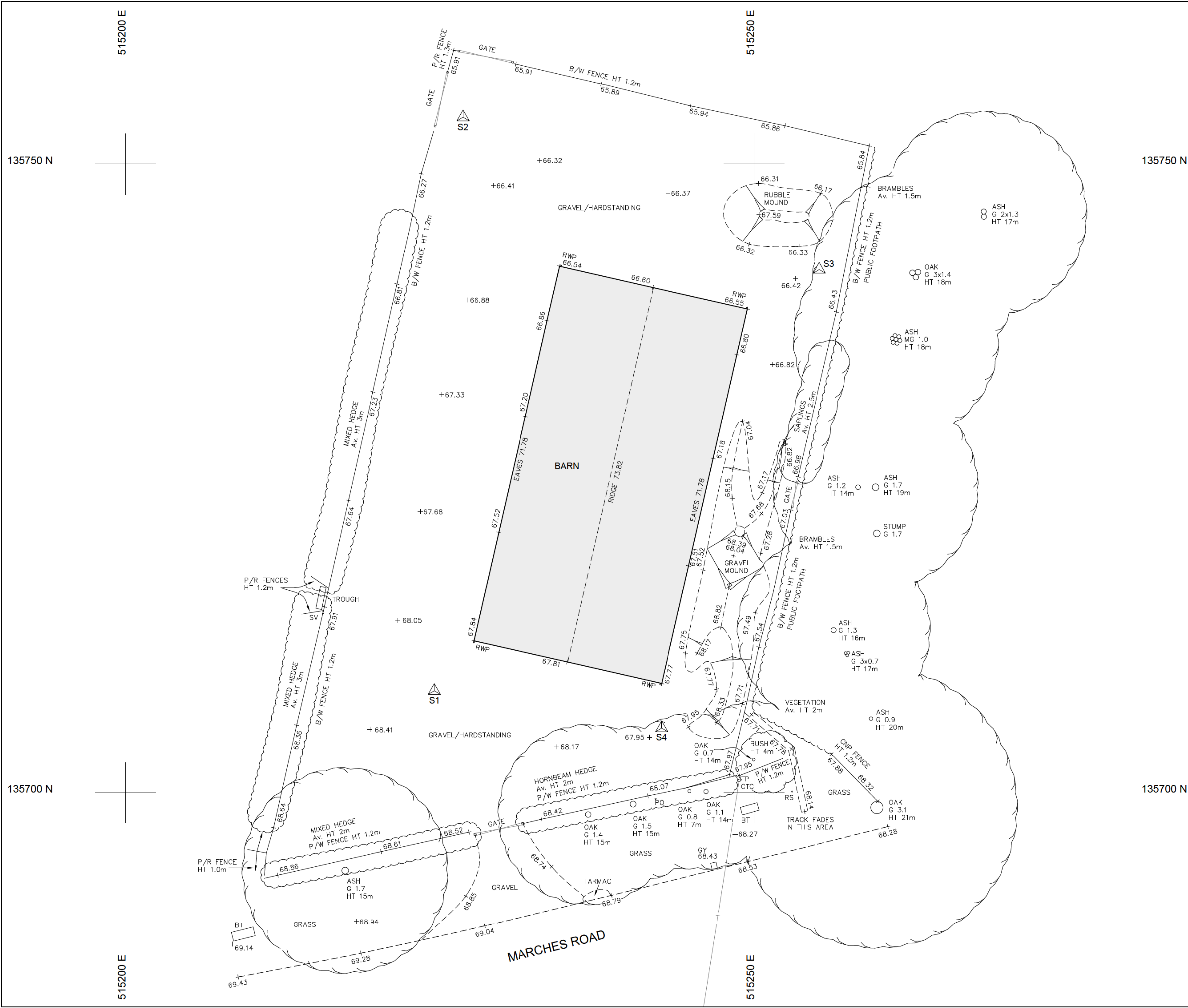


megan.hopton@curtins.com

Maple Farm



Appendix C - Topographical Survey



Notes:

1. GRID AND LEVELS BASED ON ORDNANCE DATUM, DERIVED FROM THE NATIONAL GNSS NETWORK. LOCAL SCALE FACTOR OF 0.99976 APPLIED.
2. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.

Coordinate Table				
Station	Description	Easting	Northing	Level
S1	Road Nail	515224.561	135708.107	68.144
S2	Road Nail	515226.848	135753.722	66.149
S3	Road Nail	515255.188	135741.601	66.422
S4	Road Nail	515242.636	135705.149	67.957



Revision	Description	Surv. by	Check. by	Appr. by	Date				
0m	2	4	6	8	10	12	14	16	18

Topographical Survey

Client:

Nicki Millar

Marches Road
Warnham
West Sussex

Scale:	Sheet Size:	Sheet Number:	Date:		
1:200	A2	1	January 2022		
Project Number:		Rev:	Surveyed by:	Checked by:	Approved by:
30801		-	TH	AJ	CP

mksurveys

www.mksurveys.com www.surveys4bim.co.uk

Head Office: Milton Keynes t: 01908 565561 e: mail@mksurveys.co.uk

Appendix D – Proposed Drainage Layout



EXISTING DRAINAGE

EXISTING STORM DRAINAGE (LOCATION INDICATIVE, TO BE CONFIRMED ON SITE)

PROPOSED PRIVATE DRAINAGE

FOUL DRAIN (100Ø U.N.O)
STORM DRAIN (150Ø U.N.O)
CARRIER FILTER PIPE WRAPPED IN PERMEABLE GEOTEXTILE

PRIVATE MANHOLES
PRIVATE INSPECTION CHAMBERS (PPIC)
FOUL CONNECTION POINT (WITH RODDING ACCESS) - REFER TO ARCHITECT'S DRAWINGS FOR DETAILS
RAIN WATER PIPE (WITH RODDING ACCESS) - REFER TO ARCHITECT'S DRAWINGS FOR DETAILS
RODDING EYE
OVERFLOW GULLY (ACO SuDs OVERFLOW GULLY OR SIMILAR APPROVED)
PUMP TO SPECIALIST DESIGN
RISING MAIN TO SPECIALIST DESIGN
PRIVATE TREATMENT PLANT
SAMPLING CHAMBER
WATER BUTT
SuDs PLANTER
STONE TRENCH
RAIN GARDEN
PERMEABLE SURFACING
DRAINAGE CHANNEL

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

1. TOPOGRAPHICAL SURVEY FROM MK SURVEYS TOPOGRAPHICAL SURVEY
DRAWING REF: 30801, DATED JANUARY 2022
2. SITE LAYOUT FROM HELLIS ARBORICULTURE AND LANDSCAPE DESIGN
(REF MAPLE FARM, RECEIVED 03/07/2026)
3. EXISTING DRAIN LOCATION TAKEN FROM BATCHELLER MONKHOUSE
MARK UP. TO BE VERIFIED ON SITE AND DRAINAGE STRATEGY VERIFIED
FOLLOWING THIS.

1. DRAINAGE LAYOUT (INCLUDING PIPE LOCATIONS, INVERT LEVELS AND COVER LEVELS) SUBJECT TO ADJUSTMENT DURING DETAILED DESIGN. IN PARTICULAR, FOLLOWING:
 - 1.1. CONFIRMATION OF EXISTING OUTLET LOCATION AND LEVEL
 - 1.2. CONFIRMATION OF PROPOSED GROUND LEVELS
 - 1.3. CONFIRMATION OF FOUL POP UP LOCATIONS AND RAIN WATER PIPE LOCATIONS
 - 1.4. CONFIRMATION OF INFILTRATION RATES TO CONFIRM NO POSITIVE DRAINAGE IS REQUIRED TO PERMEABLE EXTERNAL HARDSTANDING
2. DESIGN SUBJECT TO LLFA APPROVAL.
3. ALL NECESSARY APPROVALS TO BE OBTAINED PRIOR TO COMMENCING WORKS. IN PARTICULAR, DISCHARGE OF PLANNING CONDITION DISCHARGE AND, IF NEEDED, ORDINARY WATERCOURSE CONSENT.

P01	ISSUED WITH SDS FOR PLANNING CONDITION 4 DISCHARGE	05/07/26	MH	SD
Rev:	Description:	Date:	By:	Chkd:

Quayside 40-58 Hotwell Road Bristol BS8 4UQ
0117 302 7560
bristol@curtins.com
www.curtins.com

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Status: **SUITABLE FOR INFORMATION** **S2**

Project: **MARLE FARM**

Doc Title:

PROPOSED DRAINAGE LAYOUT

Drawn By MH	Designed By MH	Checked By YB
Project No 089276	Date 05/07/2026	Scales @ A1 1:200

Project Code - Originator - Function - Spatial - Form - Discipline - Number	Revision
089276 - CUR - XX - XX- D - C- 92211	P01

Appendix E - Existing Drainage Calculations



Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
ES1	0.023	5.00	66.559	450	515249.346	135738.368	0.759
ES2			66.400	450	515264.635	135735.948	0.690

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)
1.000	ES1	ES2	15.479	0.600	65.800	65.710	0.090	172.0	150	5.34	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)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.763	13.5	3.1	0.609	0.540	0.023	0.0	49	0.621

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.370	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160
30	120	240	480	720	1440	2880

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	0	0	0
100	45	0	0

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ES1	10	65.851	0.051	3.2	0.0081	0.0000	OK
15 minute winter	ES2	10	65.759	0.049	3.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ES1	1.000	ES2	3.2	0.615	0.234	0.0795	1.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ES1	10	65.885	0.085	7.8	0.0136	0.0000	OK
15 minute winter	ES2	10	65.791	0.081	7.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ES1	1.000	ES2	7.7	0.771	0.572	0.1550	3.6

Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ES1	10	65.901	0.101	10.0	0.0161	0.0000	OK
15 minute winter	ES2	10	65.802	0.092	9.9	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ES1	1.000	ES2	9.9	0.826	0.735	0.1856	4.6

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	ES1	10	65.945	0.145	14.6	0.0231	0.0000	OK
15 minute winter	ES2	10	65.821	0.111	14.3	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	ES1	1.000	ES2	14.3	0.900	1.063	0.2433	6.7

Appendix F - Greenfield Run-off Rate Calculations

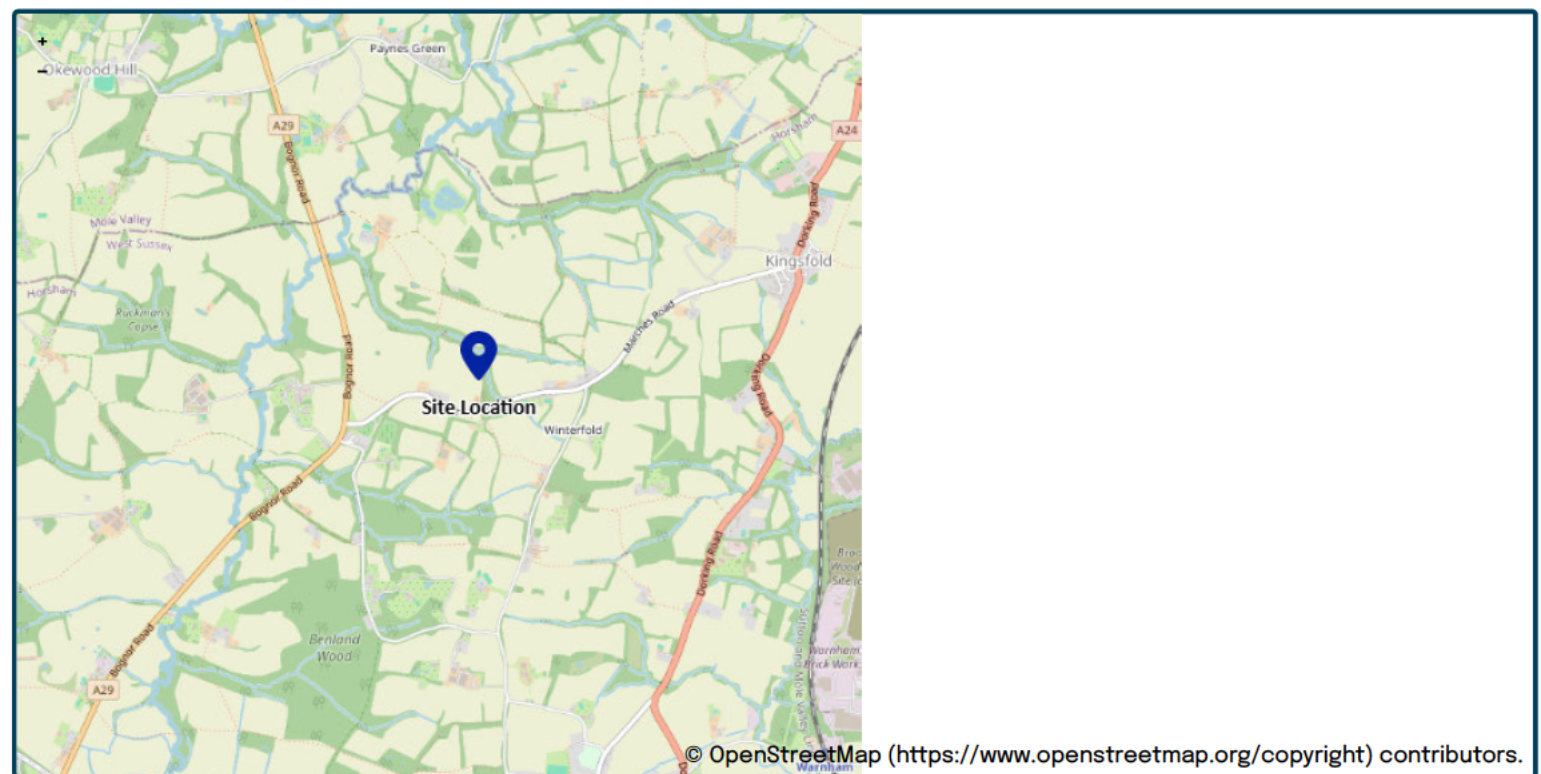
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015).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

Project details

Date	08/07/2026
Calculated by	MH
Reference	Maple Farm
Model version	2.2.3

Location

Site name	
Site location	



Site easting (British National Grid)	515250
Site northing (British National Grid)	135727

Site details

Total site area (ha)	0.038	ha
----------------------	------------------------------------	----

Greenfield runoff

Method

Method	IH124	
IH124		
	<u>My value</u>	<u>Map value</u>
SAAR (mm)	789 mm	789
How should SPR be derived?	WRAP soil type	
WRAP soil type	4	4
SPR	0.47	
QBar (IH124) (l/s)	0.2 l/s	

Growth curve factors

	<u>My value</u>	<u>Map value</u>
Hydrological region	7	7
1 year growth factor	0.85	
2 year growth factor	0.88	
10 year growth factor	1.62	
30 year growth factor	2.3	
100 year growth factor	3.19	
200 year growth factor	3.74	

Results

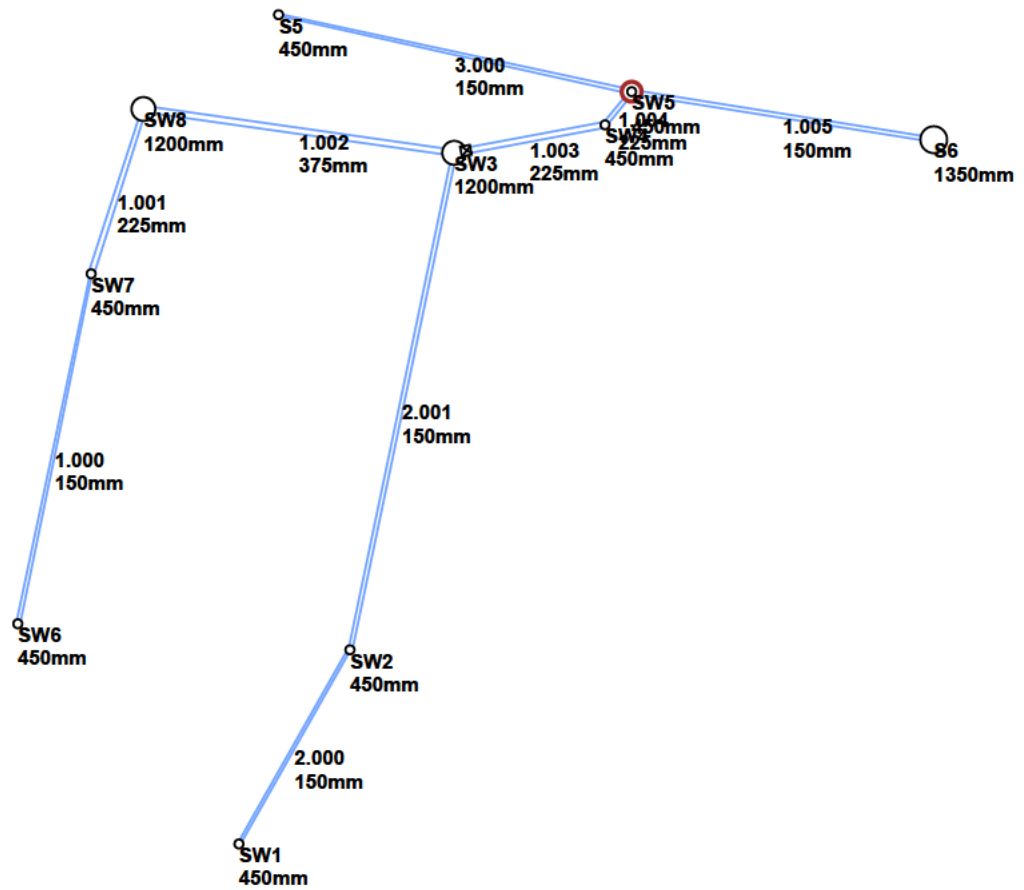
Method	IH124	
Flow rate 1 year (l/s)	0.2 l/s	
Flow rate 2 year (l/s)	0.2 l/s	
Flow rate 10 years (l/s)	0.3 l/s	
Flow rate 30 years (l/s)	0.5 l/s	
Flow rate 100 years (l/s)	0.7 l/s	
Flow rate 200 years (l/s)	0.8 l/s	

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Appendix G - Proposed Drainage Calculations



Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SW6	0.012	5.00	67.919	450	515218.280	135711.539	1.179
SW7	0.003	5.00	67.262	450	515221.994	135729.186	0.812
SW8	0.003	5.00	67.112	1200	515224.637	135737.495	1.152
SW1	0.004	5.00	68.170	450	515229.472	135700.437	1.060
SW2	0.007	5.00	67.648	450	515235.090	135710.225	1.058
SW3	0.002	5.00	66.885	1200	515240.364	135735.286	1.025
SW4			66.624	450	515247.997	135736.696	0.814
S5	0.007	5.00	66.578	450	515231.477	135742.250	0.678
SW5			66.559	450	515249.346	135738.368	0.789
S6			66.400	1350	515264.635	135735.948	0.700

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)
1.000	SW6	SW7	18.033	0.600	66.740	66.525	0.215	83.9	150	5.27	46.3
1.001	SW7	SW8	7.089	0.600	66.450	66.110	0.340	20.9	225	5.31	46.2
1.002	SW8	SW3	16.931	0.600	65.960	65.860	0.100	169.3	375	5.52	45.5
2.000	SW1	SW2	11.286	0.600	67.110	66.590	0.520	21.7	150	5.09	47.0
2.001	SW2	SW3	25.609	0.600	66.590	65.935	0.655	39.1	150	5.35	46.1
1.003	SW3	SW4	7.763	0.600	65.860	65.810	0.050	155.3	225	5.64	45.1
1.004	SW4	SW5	2.148	0.600	65.810	65.770	0.040	53.7	225	5.66	45.0
3.000	S5	SW5	18.287	0.600	65.900	65.770	0.130	140.7	150	5.36	46.0
1.005	SW5	S6	15.479	0.600	65.770	65.700	0.070	221.1	150	6.05	43.8

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.098	19.4	1.5	1.029	0.587	0.012	0.0	28	0.655
1.001	2.878	114.4	1.9	0.587	0.777	0.015	0.0	20	1.075
1.002	1.389	153.4	2.2	0.777	0.650	0.018	0.0	31	0.505
2.000	2.171	38.4	0.5	0.910	0.908	0.004	0.0	12	0.748
2.001	1.614	28.5	1.4	0.908	0.800	0.011	0.0	23	0.837
1.003	1.047	41.6	3.8	0.800	0.589	0.031	0.0	45	0.651
1.004	1.788	71.1	3.8	0.589	0.564	0.031	0.0	35	0.951
3.000	0.845	14.9	0.9	0.528	0.639	0.007	0.0	25	0.463
1.005	0.672	11.9	4.5	0.639	0.550	0.038	0.0	64	0.626

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.300	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440 | 2160

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	40	0	0
100	45	0	0

Node SW3 Online Orifice Control

Flap Valve	x	Invert Level (m)	65.860	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.065		

Node SW3 Online Weir Control

Flap Valve	x	Invert Level (m)	66.415	Discharge Coefficient	0.590
Replaces Downstream Link	x	Width (m)	1.200		

Node SW5 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	3.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	65.770	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	450

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SW6	10	66.768	0.028	1.5	0.0045	0.0000	OK
15 minute winter	SW7	10	66.471	0.020	1.9	0.0033	0.0000	OK
15 minute winter	SW8	13	65.995	0.035	2.3	0.0393	0.0000	OK
15 minute summer	SW1	11	67.122	0.012	0.5	0.0019	0.0000	OK
15 minute summer	SW2	10	66.612	0.022	1.4	0.0036	0.0000	OK
15 minute winter	SW3	12	65.993	0.133	3.9	0.1505	0.0000	OK
15 minute winter	SW4	14	65.843	0.033	2.7	0.0053	0.0000	OK
15 minute summer	S5	10	65.925	0.025	0.9	0.0039	0.0000	OK
15 minute winter	SW5	12	65.826	0.056	3.4	0.0318	0.0000	OK
15 minute winter	S6	12	65.752	0.052	3.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SW6	1.000	SW7	1.5	0.643	0.075	0.0410	
15 minute winter	SW7	1.001	SW8	1.9	1.058	0.016	0.0124	
15 minute winter	SW8	1.002	SW3	2.3	0.257	0.015	0.3381	
15 minute summer	SW1	2.000	SW2	0.5	0.464	0.013	0.0130	
15 minute winter	SW2	2.001	SW3	1.4	0.790	0.048	0.0995	
15 minute winter	SW3	1.003	SW4	2.7	0.644	0.064	0.0326	
15 minute winter	SW4	1.004	SW5	2.7	0.494	0.038	0.0121	
15 minute summer	S5	3.000	SW5	0.9	0.336	0.058	0.0690	
15 minute winter	SW5	1.005	S6	3.4	0.584	0.283	0.0889	2.2

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.57%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SW6	10	66.795	0.055	5.3	0.0087	0.0000	OK
15 minute winter	SW7	10	66.488	0.038	6.5	0.0061	0.0000	OK
30 minute winter	SW8	23	66.329	0.369	6.4	0.4172	0.0000	OK
15 minute winter	SW1	10	67.132	0.022	1.8	0.0035	0.0000	OK
15 minute winter	SW2	10	66.632	0.042	4.9	0.0066	0.0000	OK
30 minute winter	SW3	23	66.332	0.472	9.0	0.5333	0.0000	SURCHARGED
30 minute winter	SW4	23	65.863	0.053	5.7	0.0085	0.0000	OK
15 minute winter	S5	10	65.946	0.046	3.1	0.0073	0.0000	OK
15 minute winter	SW5	12	65.860	0.090	7.5	0.0707	0.0000	OK
15 minute winter	S6	12	65.780	0.080	7.5	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SW6	1.000	SW7	5.2	0.917	0.269	0.1026	
15 minute winter	SW7	1.001	SW8	6.5	1.511	0.057	0.1418	
15 minute winter	SW8	1.002	SW3	6.2	0.284	0.041	1.8436	
15 minute winter	SW1	2.000	SW2	1.8	0.654	0.047	0.0317	
15 minute winter	SW2	2.001	SW3	4.8	0.861	0.169	0.2766	
30 minute winter	SW3	1.003	SW4	5.7	0.733	0.136	0.0600	
30 minute winter	SW4	1.004	SW5	5.7	0.561	0.080	0.0231	
15 minute winter	S5	3.000	SW5	3.1	0.440	0.205	0.1402	
15 minute winter	SW5	1.005	S6	7.5	0.728	0.631	0.1592	7.7

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.38%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SW6	10	66.805	0.065	7.1	0.0103	0.0000	OK
30 minute winter	SW7	23	66.659	0.209	7.2	0.0332	0.0000	OK
30 minute winter	SW8	23	66.659	0.699	8.6	0.7910	0.0000	SURCHARGED
15 minute winter	SW1	10	67.135	0.025	2.4	0.0040	0.0000	OK
30 minute winter	SW2	23	66.663	0.073	5.3	0.0116	0.0000	OK
30 minute winter	SW3	23	66.661	0.801	12.8	0.9060	0.0000	FLOOD RISK
30 minute winter	SW4	21	65.879	0.069	7.5	0.0110	0.0000	OK
15 minute winter	S5	10	65.953	0.053	4.1	0.0085	0.0000	OK
30 minute winter	SW5	21	65.880	0.110	9.9	0.1004	0.0000	OK
30 minute winter	S6	21	65.792	0.092	9.9	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SW6	1.000	SW7	7.0	0.988	0.359	0.1433	
15 minute winter	SW7	1.001	SW8	8.7	1.592	0.076	0.2570	
15 minute summer	SW8	1.002	SW3	8.1	0.302	0.053	1.8674	
15 minute winter	SW1	2.000	SW2	2.4	0.709	0.062	0.0388	
15 minute winter	SW2	2.001	SW3	6.4	0.827	0.225	0.2882	
30 minute winter	SW3	1.003	SW4	7.5	0.755	0.181	0.0801	
30 minute winter	SW4	1.004	SW5	7.6	0.579	0.106	0.0318	
15 minute winter	S5	3.000	SW5	4.1	0.472	0.272	0.1701	
30 minute winter	SW5	1.005	S6	9.9	0.786	0.837	0.1951	14.3

Appendix H - Kingspan Treatment Tank Details



Kingspan Water and Energy Ltd
College Road North, Aston Clinton
Aylesbury
HP22 5EW
United Kingdom

15

EN 12566-3 :

Packaged domestic wastewater treatment plant
for treatment of domestic wastewater.

- Product's reference code: Rotating Biological Contactor (RBC)
- Material: GRP

Effectiveness of treatment:

Treatment efficiency (at tested organic daily load: BOD ₅ = 0.29 kg/d)	Efficiency	Effluent
	COD: 89.4%	59mg/l
	BOD ₅ : 95.7%	10mg/l
	NH ₄ -N: 88.6%	3.8mg/l
	SS: 94.8%	15mg/l

Treatment capacity (nominal designation):

- Nominal organic daily load (kg/BOD ₅ /d)	0.29 kg/d
- Nominal hydraulic daily flow (100%)	1.20 m ³ /d

Watertightness: (water test)

Pass

Crush resistance: (Pit Test)

Maximum installation Depth 0m over cover level
Wet conditions maximum water level 2.49m

Durability

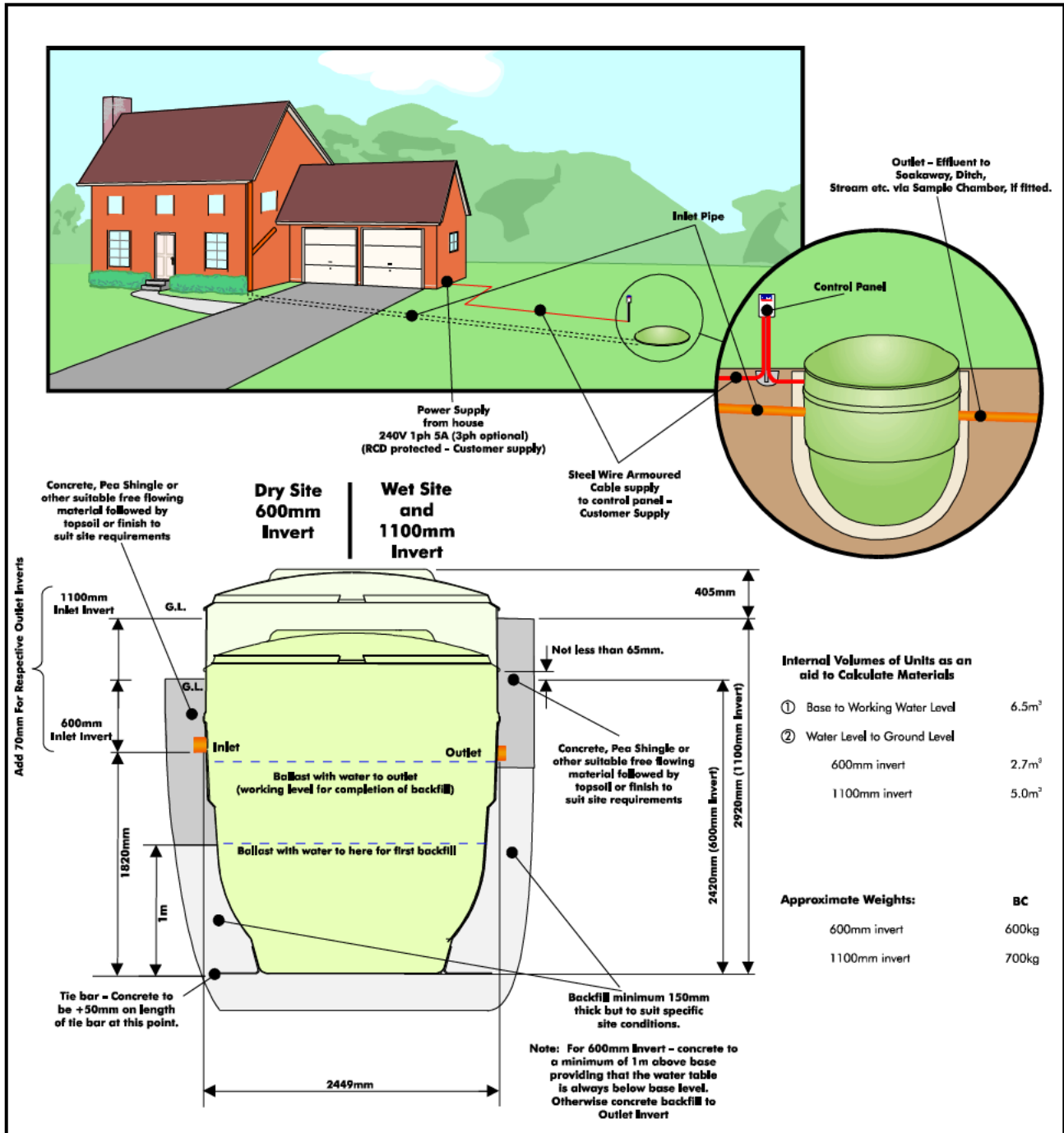
Pass

Reaction to fire

Class E

Release of dangerous substances

NPD



- 2.2.12 Connect the inlet and outlet pipework when safe access can be gained. Short lengths of “rocker” pipe with flexible joints should be used adjacent to the unit to allow for any minor differential movement.
- 2.2.13 Check the cables attached to the Control Panel and drill the corresponding number of 40mm holes in the BioDisc case, 100mm below ground level and adjacent to one end of the baffle supporting the Motor/gearbox. If an Independent Remote Alarm is to be fitted this will also require a 40mm hole.
- 2.2.14 Erect the Control Panel as described in Section 3.
- 2.2.15 Continue to backfill, with concrete, up to ground level. The finished surface should be 65mm minimum lower than the lip of the cover.
- 2.2.16 Important: Read section 6.1.3 regarding delayed electrical installation.

7 Technical Specification

Unit Reference	BC	NC
Population Equivalent (Std Flow)	18	18
Maximum Daily BOD (kg)	1.08	1.08
Maximum Daily Flow (m3)	3.6	2.7
Ø/Width (mm)	Ø2450	Ø2450
Length (mm)	-	-
Inlet Invert depth (mm)	600/1100	600/1100
Depth Below Inlet Invert (mm)	1820	1820
Outlet Invert Depth (mm)	1735	1735
Overall Height (mm)	2825/3325	2825/3325
Height to Rim of Cover (mm)	2485/2985	2485/2985
Empty Weight (kg)	650/750	650/750
Standard Power Supply	1 phase	1 phase
Motor Rating - 1 Phase (Watts)	75	75
Full Load Current 1 Phase (amps)	1,1	1,1
Optional Power Supply	3 phase	3 phase
Motor Rating - 3 Phase (Watts)	90	90
Full Load Current 3 Phase (amps)	0.38	0.38
Sludge Return Pump Rating (watts)	250	250

Desludge Volumes

Model	BA	BAX	BB/NB	BC/NC
Primary Settlement Tank	2200 litres (485 galls)	2200 litres (485 galls)	2200 litres (485 galls)	4580 litres (1009 galls)
Final Settlement Tank	400 litres (88 galls)	400 litres (88 galls)	400 litres (88 galls)	850 litres (187 galls)
Desludge Period	12 months Maximum	9 months Maximum	6 months Maximum	7 months Maximum
You should not exceed the maximum desludge periods given above.				

8 Contact Details

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Mktg. Comp. Code (Covers only)
03/2022_v1_5624

