



Title: Planning Comments Response

Date: 16.03.2025

1.0 Planning Conditions

1.1 This Technical Note is to address the planning comments for the development at Chickenhall Lane. The comments from EA, LLFA and Ecology are addressed below:

2.0 EA

2.1 Full comments can be found in Appendices, extract of the technical aspects is provided below, and our responses in blue:

i. *"The FRA has stated that finished floor levels will be set no lower than 11.60mAOD, which is 300mm above the highest 0.1% flood level. Although an extreme flood event the 0.1% flood does not equate to the 1% 35% climate change allowance (design flood) that should be used to assess future flood risk."*

2.1.1 Understood. The levels quoted in the FRA used the 0.1% event, supplied within the Product 4 pack. The EA have also provided us a Product 6 Model, which contained the Flood Levels for the 1% +35% CC event. The flood levels for this event do not exceed 11.30mAOD near the site boundary, hence the FFL set at 11.60mAOD still complies with the 300mm freeboard requirement.

2.1.2 In addition, the modelled levels used to set the FFL occur at the northern corner of the site and reduce in the southern direction, with topography. They range between 11.20mAOD and 10.80mAOD adjacent to the proposed care home location, hence the freeboard for the proposed care home is greater than the 300mm specified.

ii. *"Given the size of the development, ground floor sleeping accommodation and the potential vulnerability of the users, the Environment Agency considers it critically important that a detailed assessment of future climate change flood risk is undertaken for the site, and FFLs set accordingly."*

iii. *The availability of safe access and egress should also be considered against the 1% 35% CC level. The FRA should also demonstrate that there will be no loss of floodplain storage volume, over the lifetime of the development."*

2.1.3 The proposed development has used the extents of the 1% + 35% CC event as the outline of the flooding boundary shown on the layouts. This was used to set out the redline boundary for the site, ensuring all works are located outside of the flood extents, therefore there will be no loss of floodplain storage volume.

2.1.4 The access and egress can be provided via the main site entrance, as the proposed building and all area to the west is located outside of the flood extents, in Flood Zone 1.

2.1.5 See Appendix for flood extents and levels extracts from Product 6 information from the EA.

3.0 LLFA

3.1 Full comments can be found in Appendices, extract of the technical aspects is provided below, and our responses in blue:

iv. *"While discharge into the watercourse is considered appropriate, the proposal to discharge at 5l/s can not be accepted given it is in excess of the greenfield runoff rate and has not been given approval by the Environment Agency. Unless other agreements are in place, the drainage strategy must demonstrate a discharge rate of no greater than 2l/s."*

3.1.1 The 2.0 l/s is achievable for the site by deepening the sub-base of the paving area to a min. ~600mm depth. The attached strategy illustrates this.

v. *"A hydrobrake has been identified prior to the outfall headwall. Clarification should also be provided in relation to the discharge rate and also the operation of the hydrobrake in flood / high flow conditions. It is referenced that a non-return valve would also be included but it is not clear where this is or how it would operate in high flow conditions."*

3.1.2 A surcharged outfall scenario has been modelled (included in the FRA), which shows some flooding in the 1in100+CC scenario, but as agreed during our pre-app discussions, this is managed with overland flow routes, directing flows back towards the river channel.

vi. *"The outfall swale cannot be considered as part of the treatment features given its short length and potential for inundation however the other elements provided are sufficient for the simple index approach. "*

3.1.3 Understood. Additional treatment features also added, to accommodate the Ecology requirements.

vii. *"Groundwater levels have been identified and may affect the permeable paving unless it is tanked or lined. This doesn't appear to have been considered and would need to take into account utility corridors to ensure its integrity is not compromised."*

3.1.4 Correct. Permeable paving is used for storage and treatment only. It is tanked. Utility corridors will be provided, to be coordinated during the detailed design stages.

viii. *"Cover levels across the site have been identified as 11.45mAOD which does not take into account any existing falls across the area or the exceedance routing identified. Further details should be provided in relation to proposed land level changes so the impact on the surrounding area can be reviewed."*

3.1.5 The drainage features will aim to provide a cover level of 11.45mAOD, as they are situated near the care home, with a set FFL. Permeable paving has been updated, with the cover levels also updated to reflect recent changes.

4.0 Ecology

4.1 Full comments can be found in Appendices, extract of the technical aspects is provided below, and our responses in blue:

ix. *"The surface water drainage strategy for this application lists four rain gardens, French drains, permeable paving and a swale as forms of treatment for runoff, however it has not been demonstrated that all of the surface water will be treated by all of these components. The proposed swale is located outside of the red line boundary and is too short. It would not function as a form of water treatment when overtopped by high water. The surface water drainage from the car park would only have one form of treatment provided by the permeable paving."*

4.1.1 Additional forms of treatment have been added to provide 3 forms of treatment to car-park:

- Hydro Filter Channel Drain, pick up drainage directly from surface of carpark,
 - Permeable Sub-base, conveys and treats water.
 - SPEL Smartceptor, provides final stage of treatment prior to outfall
- x. *Tables 3 and 4 on the simple index approach have been copied from the SuDS manual and inferences made, but the specific calculations for the roof water and car park areas in this application have not been done. It is also not clear whether these components are compatible with the high ground water levels on site. The site investigation reported ground water encountered at depths from 0.58 m to 1.22m below ground level, so ground water flooding must also be considered.*
- xi. *Permeable paving is proposed for the majority of the attenuation and is proposed to be 0.5 m deep with 30% void storage. This is only slightly shallower than the highest groundwater.*

4.1.2 Extracts showing treatment Indices to water from roofs and carpark have been added. Attached to this report. Both Roof and CarPark runoff are treated to >0.95 Pollution Indices, above and beyond the requirement of ~0.5.

4.1.3 Groundwater has been considered. All drainage features are isolated from the groundwater with impermeable membranes, all discharge is directly towards the watercourse.

xii. *Information has not been provided on the flow of surface water through the system and the effects of high groundwater on the proposals. A diagram showing the path of each surface water flow with arrows would be required to demonstrate that all of the surface water passes through at least 3 forms of naturalised filtration within the treatment train before being discharged off site.*

4.1.4 All areas onsite are routed via min. 3no stages of treatment. See updated drainage plan.

5.0 Appendix A – Comments

Eastleigh Borough Council
Planning Policy & Design Team
Eastleigh House Upper Market Street
EASTLEIGH
Hampshire
SO50 9YN

Our ref: HA/2025/126445/01-L01
Your ref: F/24/98678
Date: 27 January 2025

Dear Sir/Madam

CONSTRUCTION OF A 70-BED CARE HOME (USE CLASS C2), WITH ASSOCIATED PARKING, LANDSCAPING, ACCESS, DRAINAGE, AND OTHER ASSOCIATED WORKS FOLLOWING DEMOLITION OF EXISTING STRUCTURES.

LAND EAST OF CHICKENHALL LANE,, EASTLEIGH, SO50 6AF

Environment Agency position

In the absence of an acceptable flood risk assessment (FRA) we **object** to this application and recommend that planning permission is refused.

Reason(s)

The submitted FRA does not comply with the requirements for site-specific flood risk assessments, as set out in paragraphs 20 to 21 of the Flood Risk and Coastal Change planning practice guidance and its site-specific flood risk assessment checklist. The FRA does not therefore adequately assess the flood risks posed by the development. In particular, the FRA fails to:

- take the impacts of climate change into account. The FRA has not provided climate change levels for the site using the latest available climate change allowances.

Overcoming our objection

To overcome our objection, the applicant should submit a revised FRA which addresses the points highlighted above.

If this cannot be achieved, we are likely to maintain our objection. Please re-consult us on any revised FRA submitted and we'll respond within 21 days of receiving it.

Environment Agency
Canal Walk, ROMSEY, Hampshire, SO51 7LP.
Customer services line: 03708 506 506
www.gov.uk/environment-agency
Cont/d..

If you are minded to approve the application contrary to our objection, we would be grateful if you could re-notify the Environment Agency to explain why material considerations outweigh our objection, and to give us the opportunity to make further representations. Should our objection detailed above be removed, it is likely we will recommend planning conditions to be included on any subsequent approval.

Advice to the applicant and LPA

Although the site extents have been set to be wholly within current day Flood Zone 1, the Environment Agency does not consider that an adequate assessment of future risk has been undertaken.

Modelled data for the River Itchen is based upon old climate change allowances. The model is in the process of being updated with the latest allowances but these will not be available until summer 2025.

The FRA has stated that finished floor levels will be set no lower than 11.60mAOD, which is 300mm above the highest 0.1% flood level. Although an extreme flood event the 0.1% flood does not equate to the 1% 35% climate change allowance (design flood) that should be used to assess future flood risk.

Given the size of the development, ground floor sleeping accommodation and the potential vulnerability of the users, the Environment Agency considers it critically important that a detailed assessment of future climate change flood risk is undertaken for the site, and FFLs set accordingly.

The availability of safe access and egress should also be considered against the 1% 35% CC level. The FRA should also demonstrate that there will be no loss of floodplain storage volume, over the lifetime of the development.

Environmental permit - advice to applicant

The Environmental Permitting (England and Wales) Regulations 2016 require a permit or exemption to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culverted main river (16 metres if tidal)
- on or within 16 metres of a sea defence
- involving quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert
- in the floodplain of a main river if the activity could affect flood flow or storage and potential impacts are not controlled by a planning permission

For further guidance please visit <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits> or contact our National Customer Contact Centre on 03708 506 506 (Monday to Friday, 8am to 6pm) or by emailing enquiries@environment-agency.gov.uk.

The applicant should not assume that a permit will automatically be forthcoming once planning permission has been granted, and we advise them to consult with us at the earliest opportunity.

Yours faithfully

Miss Suz Greenwood
Planning Advisor, Environment Agency

Direct dial 02084745098

Direct fax

Direct e-mail suz.greenwood@environment-agency.gov.uk

End



Hampshire County Council

Universal Services
The Castle
Winchester, Hampshire SO23 8UD

Tel: 0300 555 1375
Fax 01962 847055
www.hants.gov.uk

Enquiries to	Sarah Reghif	My reference	SWM/2025/0013
Direct Line		Your reference	F/24/98678
Date	4 February 2025	Email	SWM.consultee@hants.gov.uk

Dear Sir/Madam,

Construction of a 70-bed care home (Use Class C2), with associated parking, landscaping, access, drainage, and other associated works following demolition of existing structures. at Land East of Chickenhall Lane, Eastleigh, SO50 6AF(Application No. F/24/98678

Hampshire County Council as Lead Local Flood Authority has provided comments in relation to the above application in our role as statutory consultee on surface water drainage for major developments.

This response does not reflect the position of Hampshire County Council as the Highway Authority. If there is a potential for the drainage features to be offered for adoption, this will need to be discussed separately with Highways development planning as they might not be considered acceptable by the Highway Authority.

In order to assist applicants in providing the correct information to their Local Planning Authority for planning permission, Hampshire County Council has set out the information it requires to provide a substantive response at <https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/planning>

The County Council has reviewed the following documents relating to the above application:

- Flood Risk Assessment & Drainage Strategy Report ref: 24305_FRA01

It is proposed to manage surface water flows using permeable paving, raingardens and other features before discharging into the Barton River.

Director of Universal Services
Patrick Blogg

While discharge into the watercourse is considered appropriate, the proposal to discharge at 5l/s can not be accepted given it is in excess of the greenfield runoff rate and has not been given approval by the Environment Agency. Unless other agreements are in place, the drainage strategy must demonstrate a discharge rate of no greater than 2l/s.

A hydrobrake has been identified prior to the outfall headwall. Clarification should also be provided in relation to the discharge rate and also the operation of the hydrobrake in flood / high flow conditions. It is referenced that a non-return valve would also be included but it is not clear where this is or how it would operate in high flow conditions.

The outfall swale cannot be considered as part of the treatment features given its short length and potential for inundation however the other elements provided are sufficient for the simple index approach.

Groundwater levels have been identified and may affect the permeable paving unless it is tanked or lined. This doesn't appear to have been considered and would need to take into account utility corridors to ensure its integrity is not compromised.

Cover levels across the site have been identified as 11.45mAOD which does not take into account any existing falls across the area or the exceedance routing identified. Further details should be provided in relation to proposed land level changes so the impact on the surrounding area can be reviewed.

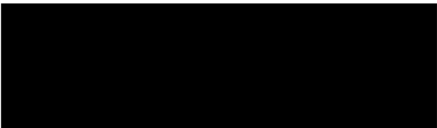
We require this further information before we can make a decision on whether to recommend to the Local Planning Authority that planning permission is granted.

As a statutory consultee, the County Council has a duty to respond to consultations within **21 days**. The 21 day period will not begin until we have received sufficient information to enable us to provide a meaningful response.

Please ensure all data is sent to us via the relevant Local Planning Authority.

If you require additional guidance on providing the correct information, we recommend you use our **Surface Water Management Pre-application service** which will enable discussions with the reviewing engineer and scope out works that would address the points raised. For full details, please visit: <https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/planning> and click on [pre-application advice request form](#).

This response has been provided using the best knowledge and information submitted by the applicant as part of the planning application at the time of responding and is reliant on the accuracy of that information.



Flood and Water Management Team
Hampshire County Council,
The Castle, Winchester, Hampshire SO23 8UD
Web:

<https://www.hants.gov.uk/landplanningandenvironment/environment/flooding>

General guidance for the application

It is important to ensure that the long-term maintenance and responsibility for Sustainable Drainage Systems is agreed between the Local Planning Authority and the applicant before planning permission is granted. This should involve discussions with those adopting and/or maintaining the proposed systems, which could include the Highway Authority, Planning Authority, Parish Councils, Water Companies and private management companies.

For SuDS systems to be adopted by Hampshire Highways it is recommended that you visit the website at:

<https://www.hants.gov.uk/transport/developers/constructionstandards> for guidance on which drainage features would be suitable for adoption.

Where the proposals are connecting to an existing drainage system it is likely that the authorities responsible for maintaining those systems will have their own design requirements. These requirements will need to be reviewed and agreed as part of any surface water drainage scheme.

Works in relation to ordinary watercourses

*PLEASE NOTE: If the proposals include works to an ordinary watercourse, under the Land Drainage Act 1991, as amended by the Flood and Water Management Act 2010, prior consent from the Lead Local Flood Authority is required. **This consent is required as a separate permission to planning.***

Information on ordinary watercourse consenting can be found at the following link

<https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/c hangewatercourse>

It is strongly recommended that this information is reviewed before Land Drainage consent application is made.

*For guidance on providing the correct information, we recommend you use our **Ordinary Watercourse Consents Pre-application service** and help avoid delays occurring at the formal application stage. A Pre-application service for Ordinary Watercourse Consents is available, allowing consents to go through in a smoother, often more timely manner. For full information please visit:*
<https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/cangewatercourse>

Ecology response 5 2 25 for F/24/98678 Land East of Chickenhall Lane, Eastleigh, SO50 6AF

Construction of a 70-bed care home (Use Class C2), with associated parking, landscaping, access, drainage, and other associated works following demolition of existing structures.

Rebecca Altman

5/2/25

Ecology objects to this application on the grounds of layout, proximity and lack of a suitable buffer to the River Itchen SAC. In addition, the SuDs strategy does not meet the requirements of Local Plan Policy DM 6. The application would fail a Habitats Regulations Assessment due to impacts on the SAC.

Location and layout

The site is located within priority habitat along the Barton River which is designated as protected waters of the River Itchen SAC and SSSI. It is functionally linked to the rest of ecologically sensitive River Itchen complex and within 10m of the SAC boundary.

The Ecology response to the pre-app Q/24/97879 stated that *a 50 m buffer to the Barton River will be required*. The 8 to 15 m buffer proposed in this application is not sufficient to protect the SAC. The buffer must not contain any development including buildings, footpaths, gardens, fencing, light spill or car parking.

The proposed building would be 3 stories tall and would cause an unacceptable amount of shading on the SAC buffer, especially in winter.

The biodiversity net gain calculations would need to be revisited with a revised site layout.

Surface water drainage

The Ecology response to the pre-app Q/24/97879 stated that *A surface water drainage plan which conforms to the water quality requirements of DM 6 and shows that all pollution hazards are mitigated will be required. DM6 states that wherever feasible, naturalised filtration should be included within the treatment train as follows: a. On sites of 1 hectare or more, or within 100m of the River Itchen SAC or Solent Maritime SAC, SuDS schemes should include at least three forms of naturalised filtration before surface water is discharged off site.*

The surface water drainage strategy for this application lists four rain gardens, French drains, permeable paving and a swale as forms of treatment for runoff, however it has not been demonstrated that all of the surface water will be treated by all of these components. The proposed swale is located outside of the red line boundary and is too short. It would not function as a form of water treatment when overtopped by high water. The surface water drainage from the car park would only have one form of treatment provided by the permeable paving.

Tables 3 and 4 on the simple index approach have been copied from the SuDS manual and inferences made, but the specific calculations for the roof water and car park areas in this application have not been done. It is also not clear whether these components are

compatible with the high ground water levels on site. The site investigation reported ground water encountered at depths from 0.58 m to 1.22m below ground level, so ground water flooding must also be considered.

Permeable paving is proposed for the majority of the attenuation and is proposed to be 0.5 m deep with 30% void storage. This is only slightly shallower than the highest groundwater.

Information has not been provided on the flow of surface water through the system and the effects of high groundwater on the proposals. A diagram showing the path of each surface water flow with arrows would be required to demonstrate that all of the surface water passes through at least 3 forms of naturalised filtration within the treatment train before being discharged off site.

If these objections can be resolved and the application is to progress further, please re-consult Ecology.

Additional comments

Three hedgerows have been identified on site, two of which (H1 and H2) qualify as habitats of principal importance hedgerows in poor condition. Reptiles were assessed as likely to be present in hedgerow H1.

Other neutral grassland in poor condition has been recorded in the southern section of the site with the wetter areas in the southeastern corner identified as Coastal floodplain grazing marsh priority habitat.

Protected species surveys have been done in 2024. The site is being used by foraging and commuting bats, nesting birds, common lizards and grass snakes and hedgehogs (assumed present due to suitable habitat on site and records in connected nearby habitat).

Great crested newts have been ruled out due to major barriers to dispersal from known populations.

No signs of badgers, water voles or otters were recorded on site at the time of the survey, but the habitat is suitable and there are known populations within 1 km, so precautionary working methods for these species must be implemented. This will include pre-works update survey for signs of water voles and otters and habitat management to deter presence during construction. If signs of water voles or otters are found, all work in this area must stop and a license must be obtained from Natural England.

Any vegetation to be removed to facilitate the development must be removed outside of bird nesting season (which is usually between the beginning of March and the end of August) or if this is not possible then only after being checked for nesting birds by a suitably qualified ecologist up to 24 hours before the start of works. If any active nests are found, work must stop, and a 5 m buffer must be erected around the nest to protect it from disturbance until after the birds have fledged and left the nest.

The Ecological Impact Appraisal report recommends an Ecological Construction and Environmental Management Plan (ECEMP) to include the specific precautionary working

method statements and management plans for each protected species. This can be conditioned. It must contain a biodiversity enhancement plan to include the locations and specifications of any species-specific enhancements on site (bat boxes, swift bricks, reptile habitat and hibernacula, hedgehog passageways and hibernation/ sheltering areas).

Lighting

I have reviewed the Artificial Lighting Assessment by Dice Environmental (v3, December 2024). The report states *The modelling results indicated that there are no exceedances of 0.5 lux predicted at any of the sensitive ecological receptors.*

The references include the Bats and Artificial Lighting in the UK guidance from 2008. This is outdated. The latest updated lighting guidance note (GN08/23) should be followed. This is available at [Guidance Note 8 Bats and Artificial Lighting | Institution of Lighting Professionals \(theilp.org.uk\)](https://theilp.org.uk/Guidance%20Note%208%20Bats%20and%20Artificial%20Lighting).

Figures 4 and 5 are titled Predicted Lux Level. They show the faces of the building and the land surrounding the building, but there is no key given to interpret the colours in these diagrams.

The locations of bat boxes mounted on the building elevations have not been considered, as their exact locations have not yet been specified. Any hedgerows and trees must also be considered as ecological receptors as bats use them for commuting and foraging. Full size diagrams with the lux level information, direction arrows, the locations of the bat boxes, hedgerows and trees must be submitted.

There is also a proposed garden building that does not appear on the lighting diagram. Light spill from the windows must be considered in addition to any exterior lighting.

Proposed Landscaping

I have reviewed the Landscape General Arrangement Plan (rev E, December 2024) and The Landscape and Ecological Management Plan (LEMP) (November 2024) both by Deacon Design.

The LEMP table of contents includes three sections which are labelled Error! Bookmark not defined.

Section 3.28 needs clarification. As written: *Wildflower - Once established the wildflower requires very little maintenance, however, there is one important task to carry out each autumn; to cut the plants and remove these cuttings.*

This should be amended to: Wildflower grassland- once established the wildflower grassland must be cut according to the specific directions provided by the seed supplier. Further details are provided in sections 4.24-4.33. Two different seed mixes have been mentioned (EM8 and EM4) so the mowing regimes for each should be specified separately.

In section 4 the section labelled Biodiversity Enhancements is highlighted and labelled *Ecologist's input required*. This is quite general. It must be tailored to the specific enhancements proposed for this site and re-submitted for review.

Section 4.13 should be changed to include hibernating hedgehogs rather than dormice, as dormice have been scoped out of this site. If hedgerow bases are proposed to be cut, an ecologist must do a fingertip search for hedgehogs immediately before the start of works.

The existing vegetation section (4.14 and 4.15) has also been labelled *Ecologist's input required*. A detailed Botanical Species List has been provided in Appendix B of the Ecological Impact Appraisal by FPCR (Rev B, December 2024) and does not need to be repeated in the LEMP.

Section 4.17 should include hedgerow management on a three-year rotation (as explained in 5.30), cutting only each side or the top annually, outside of bird nesting season and after flowering has ended so that there is also a supply of nectar and pollen for pollinating insects.

The Soft Landscape Maintenance table in 4.34 includes Treat all planting beds with a winter herbicide to control weed growth. This is repeated in table 6.1 specimen trees post construction. **The use of any herbicides, pesticides and artificial fertilisers must be avoided in this ecologically sensitive area so that they will not pollute the surface water or ground water which flows into the SAC.**

Section 6.2 includes applying fertiliser to the proposed hedging, this also needs to be reconsidered. Wildflowers should be encouraged to grow under the hedging and use of fertiliser will promote nutrient-hungry species to grow out-competing wildflowers which do best on nutrient-poor soils.

Herbicides and fertiliser are mentioned again in this table in section 6.3 Management of Ornamental shrub planting and section 6.6 Management of Amenity Grass Areas, and 6.10 Management of Paved Surfaces. The use of Moss and weed killer is mentioned in 6.11 Management of Asphalt and Concrete Road Surfaces and Footpaths. Any changes must also be reflected in table 7. Hand removal or use of a pressure washer is preferable to herbicides and the use of compost is preferable to the use of chemical fertilisers.

Section 5.23-5.245.25 should include that a variety of seed heads and fruit should be left as food for birds (not just because they are attractive) and not removed in autumn and winter.

The LEMP should also include any specific information required for managing the rain gardens proposed on site.

CEMP

I have reviewed the CEMP by Highwood Construction (v3 2024). The locations of the silt barriers and bunds around the eastern perimeter of the site adjacent to the Barton River must be added to the site logistics plan in Appendix 1.

A named site manager must be identified to inspect, repair and replace silt barriers and bunds daily. Replacement supplies for silt barriers must be kept on site and always available

All site operatives must understand the importance of keeping the silt barriers intact and functional.

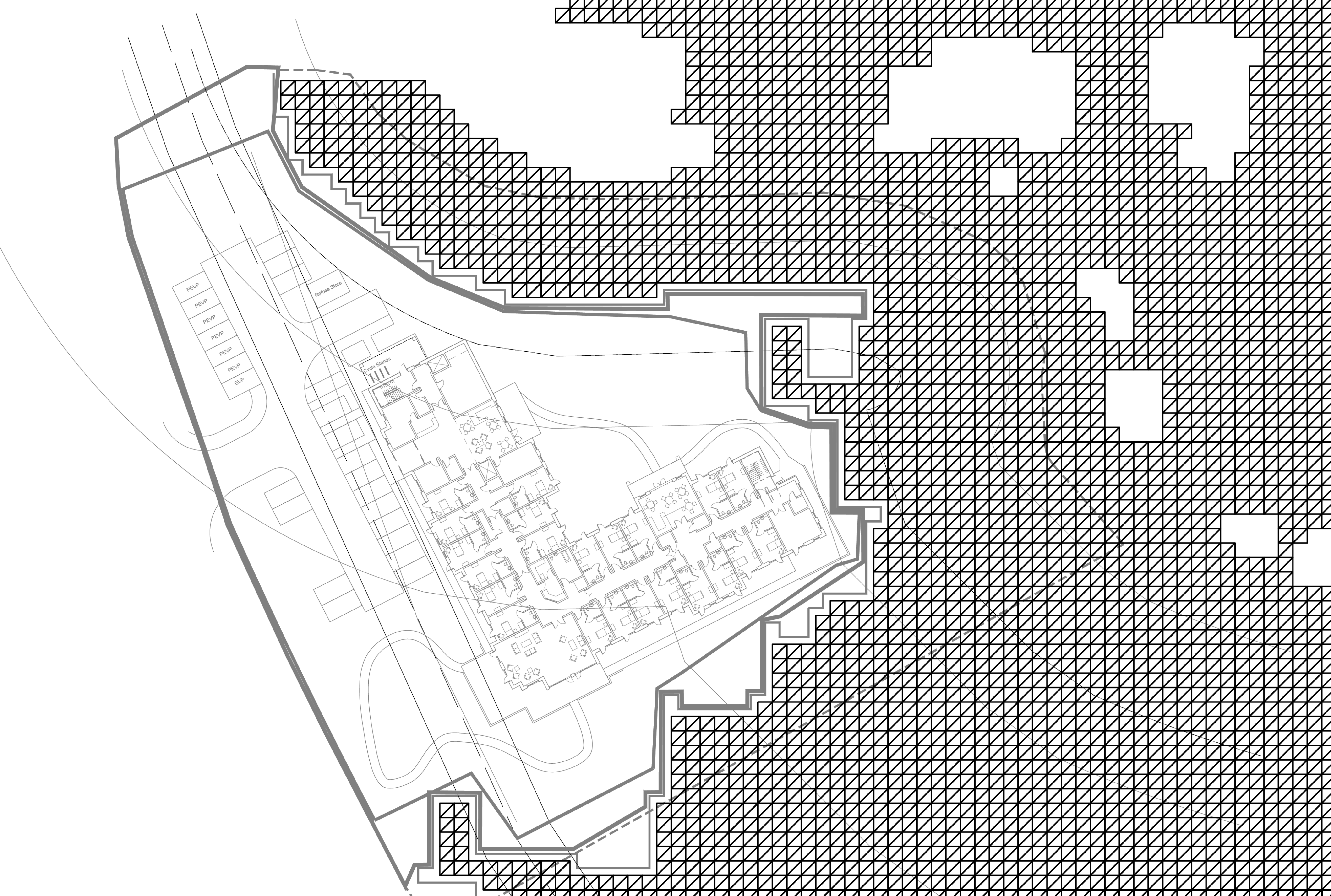
All excavations and open pipes must either be covered at night or fitted with a small animal escape ramp to allow any animals to escape if they fall in. These areas must be checked by the site manager every morning before the ramps are removed.

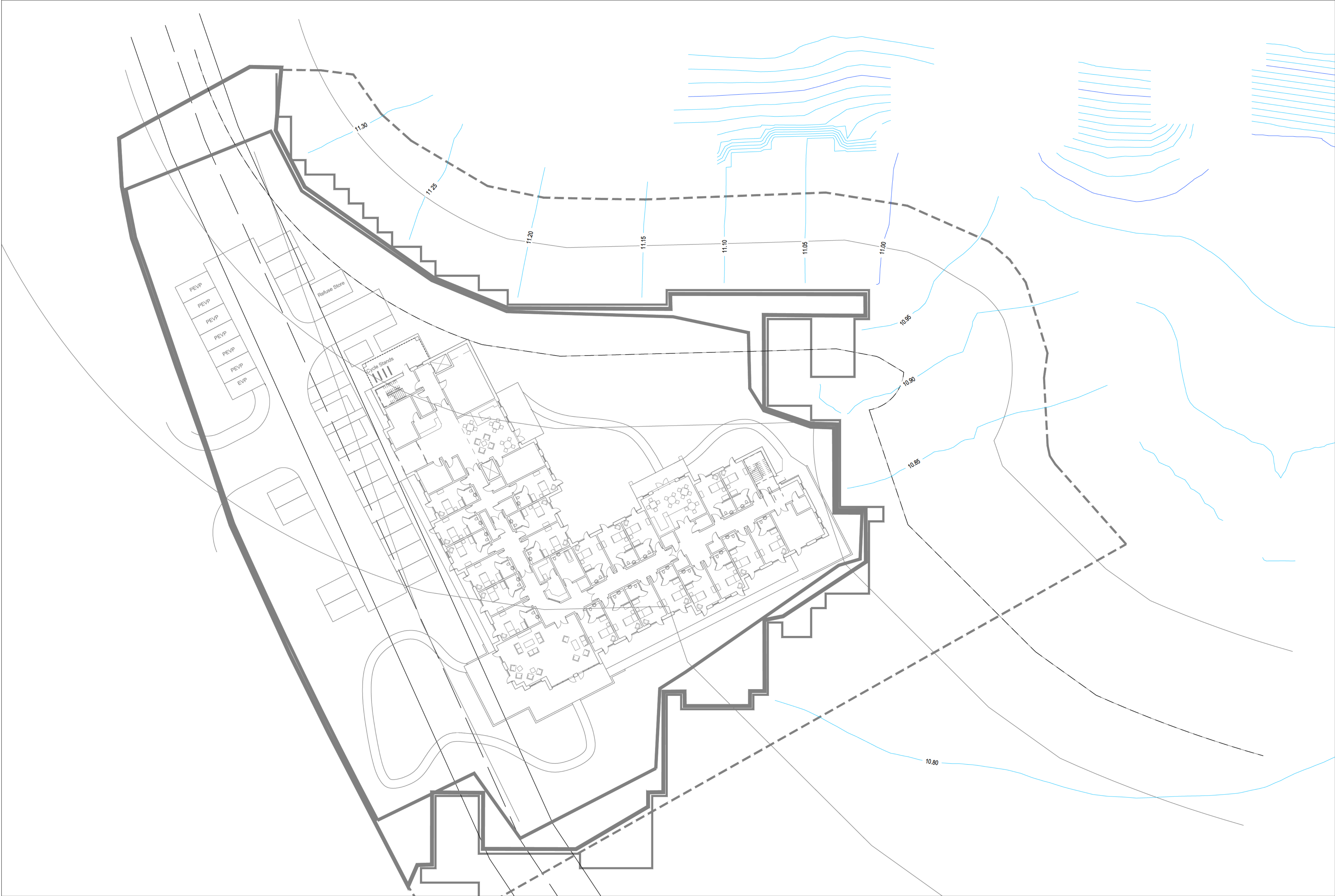
Specific precautionary working method statements for each protected species must be conditioned in a separate document (ECEMP) as proposed by the Ecological Impact Assessment report.

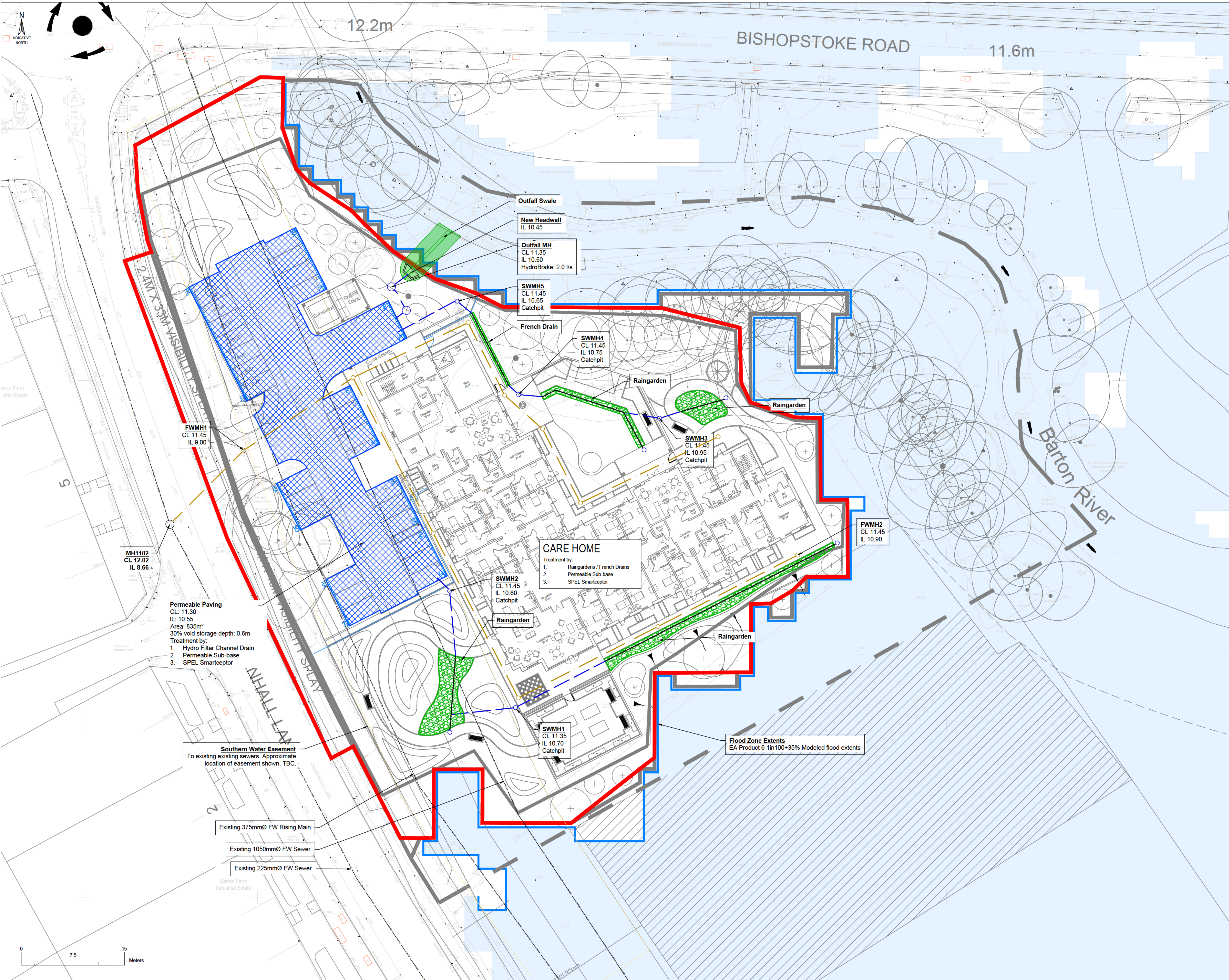
Lisa Malter

Ecologist

6.0 Appendix B – Supporting Information







LEGEND

S1 CL 0.000 L-1.155 2250 @ 1.225 Proposed surface water sewer

F1 CL 0.000 L-1.155 2250 @ 1.225 Proposed foul water sewer

G Proposed surface water gully

G Proposed foul water gully

RA SO Channel drain (Hydro Filter Drain or similar)

French Drain / Raingarden

Permeable Sub-Base

Attenuation tank

SPEL Smartceptor

Easement

Headwall

Swale

Existing public water foul sewer

- NOTES**
1. Do not scale from this drawing.
 2. Location of existing utilities and drainage are indicative. Contractor to confirm location/depth of utilities on site before undertaking any construction activities.
 3. Attenuation is provided to accommodate the 1 in 100 year including % climate change allowance rainfall event.
 4. Storage features are shown indicatively. The size, shape and position is subject to detail design.
 5. Infiltration onsite not possible due to high groundwater.
 6. Locations of drain points TBC.
 7. Works within Southern Water easements to be coordinated and subject to relevant approvals.
 8. All SuDS features to be lined with impermeable membrane, to prevent ingress of groundwater.

P6	20.02.25	Updated to comments	KG	RL
P5	06.12.24	Planning Issue	KG	RL
P4	25.11.24	Draft FRA	KG	RL
P3	25.09.24	Updated Arch Layout	KG	RL
P2	19.09.24	Updated Layout	KG	RL
P1	06.09.24	Preliminary issue	KG	RL
Rev	Date	Description	By	Apvd

PROJECT:
CHICKENHALL LANE

TITLE:
DRAINAGE LAYOUT

CLIENT:
HIGHWOOD

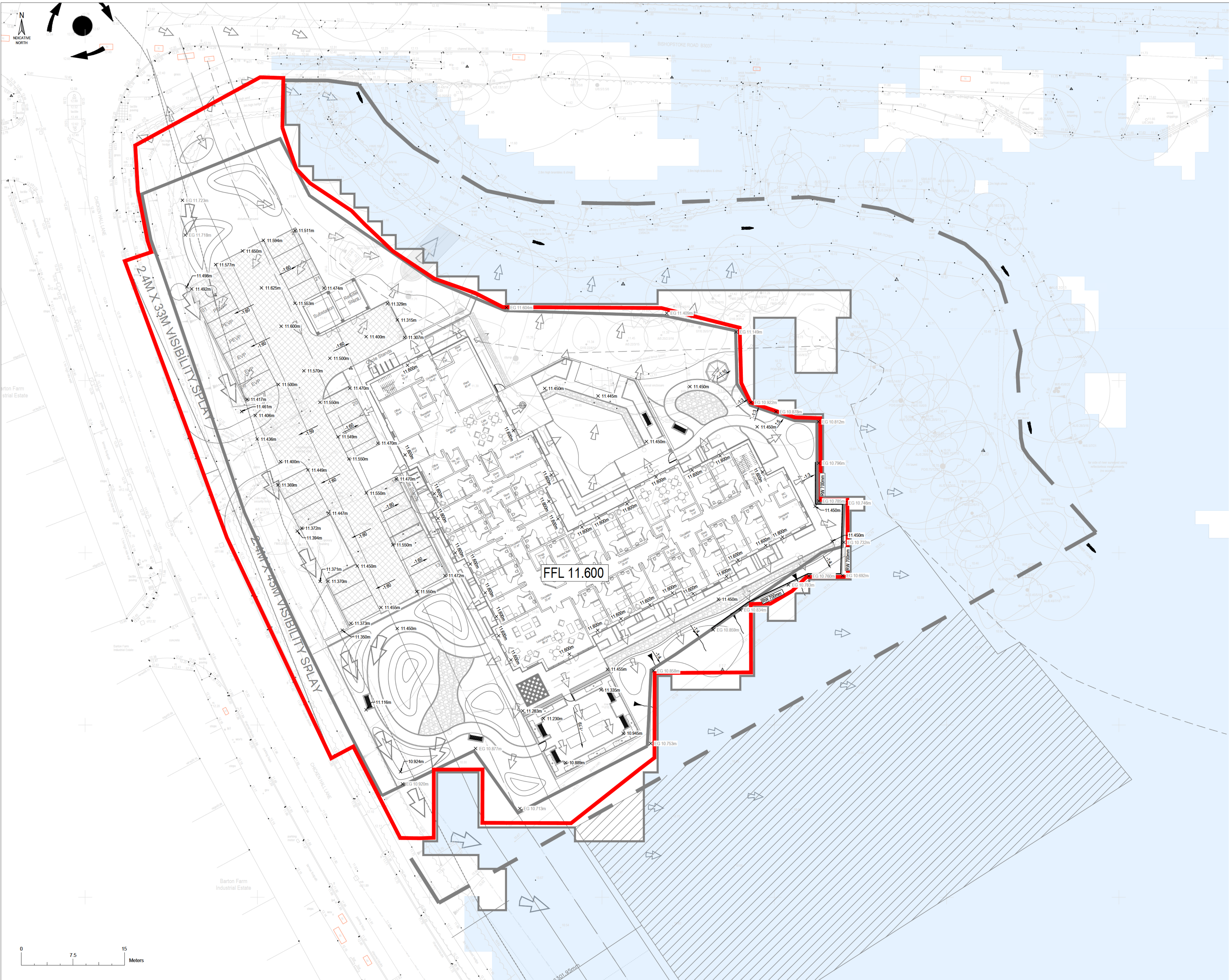
SCALE@A1:
1:250

PROJECT REF:
24305

DRAWING No:
JUBB-XX-XX-DR-C-0500

REV:
P6

Revision Referencing
P = Preliminary A = Approval T = Tender C = Construction



LEGEND

× 11.450m Proposed Level

× EG 10.834m Existing Level

Proposed Retaining Wall

- NOTES**
1. Do not scale from this drawing
 2. Levels shown for planning purposes, some changes may occur at detailed design stages.
 3. Reference should be made to all other relevant drawings.
 4. Existing levels taken from the topographical survey.
 5. Proposed FFL set based on Product 4 Flood Level Information supplied by the EA.
 6. All levels to fall away from building entrances. Level thresholds TBC by Architect.

P3	20.02.25	Updated to planning comments	KG	RL
P2	06.12.24	Planning Issue	KG	RL
P1	25.11.24	Draft FRA	KG	RL
Rev	Date	Description	By	Apvd

PROJECT:
CHICKENHALL LANE

TITLE:
PROPOSED LEVELS

CLIENT:
HIGHWOOD

SCALE@A1:
1:250

PROJECT REF:
24305

DRAWING No:
JUBB-XX-XX-DR-C-0600

Revision Referencing
P = Preliminary A = Approval T = Tender C = Construction

REV:
P3

Chickenhall are	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Inflows Storm Phase: Phase				



Catchment Area (1)

Type : Catchment Area

Area (ha)	0.013
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (2)

Type : Catchment Area

Area (ha)	0.037
-----------	-------

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (3)

Type : Catchment Area

Area (ha)	0.01
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (4)

Type : Catchment Area

Area (ha)	0.025
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Chickenhall are	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Inflows Storm Phase: Phase				

 Catchment Area (5)

Type : Catchment Area

Area (ha)	0.016
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Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

 Catchment Area (6)

Type : Catchment Area

Area (ha)	0.028
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Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

 Catchment Area (7)

Type : Catchment Area

Area (ha)	0.005
-----------	-------

Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

 Catchment Area (8)

Type : Catchment Area

Area (ha)	0.007
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Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Chickenhall are	Date 25/09/2024		
	Designed by KG	Checked by	Approved By
Report Details Type: Inflows Storm Phase: Phase	Jubb		

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Catchment Area (9)

Type : Catchment Area

Area (ha)	0.004
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (10)

Type : Catchment Area

Area (ha)	0.003
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (11)

Type : Catchment Area

Area (ha)	0.003
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (12)

Type : Catchment Area

Area (ha)	0.003
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Chickenhall are	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Inflows Storm Phase: Phase				



Catchment Area (13)

Type : Catchment Area

Area (ha)	0.008
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (14)

Type : Catchment Area

Area (ha)	0.007
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (15)

Type : Catchment Area

Area (ha)	0.009
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (16)

Type : Catchment Area

Area (ha)	0.084
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Inflows Storm Phase: Phase				



Catchment Area (17)

Type : Catchment Area

Area (ha)	0.009
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Junctions Storm Phase: Phase				

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
SWMH1	Manhole	446186.674	119077.151	11.280	0.480	10.800	Circular	0.600
SWMH2	Manhole	446177.685	119093.879	11.450	0.850	10.600	Circular	0.600
HB Manhole - Outfall	Manhole	446170.397	119138.007	11.320	0.870	10.450	Circular	1.200
SWMH3	Manhole	446208.564	119120.221	11.450	0.500	10.950	Circular	0.600
SWMH4	Manhole	446187.795	119123.002	11.450	0.700	10.750	Circular	0.600
SWMH5	Manhole	446180.001	119136.167	11.450	0.800	10.650	Circular	0.600
Headwall	Manhole	446172.862	119140.759	11.300	0.900	10.400	Circular	1.200

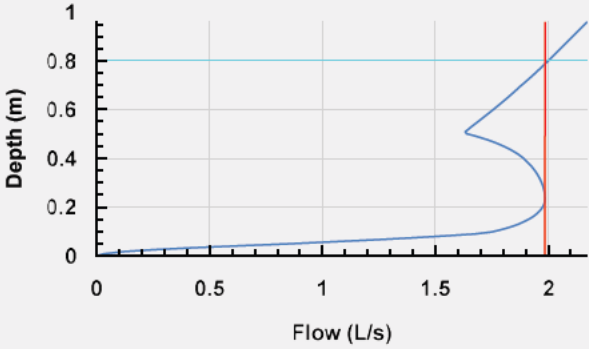
Name	Lock
SWMH1	None
SWMH2	None
HB Manhole - Outfall	None
SWMH3	None
SWMH4	None
SWMH5	None
Headwall	None

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
SWMH1	Inlet	Pipe Catchment Area (15) Catchment Area (13) Catchment Area (4)	(None)	No Restriction
SWMH2	Inlet	Pipe (2)	(None)	No Restriction
HB Manhole - Outfall	Inlet (1)	Pipe (7) Pipe (6)	(None)	No Restriction
SWMH3	Inlet	No Delay Catchment Area (3)	(None)	No Restriction
SWMH4	Inlet (1)	Pipe (4) Catchment Area (10) Catchment Area (11)	(None)	No Restriction
	Inlet (2)	Pipe (8)	(None)	No Restriction
SWMH5	Inlet	Pipe (5) No Delay (1)	(None)	No Restriction
Headwall	Inlet	Pipe (10)	(None)	No Restriction

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Junctions Storm Phase: Phase				

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWMH1	Outlet	Pipe (1)	Free Discharge
SWMH2	Outlet	Pipe (3)	Free Discharge
HB Manhole - Outfall	Outlet	Pipe (10)	Hydro-Brake®
	Invert Level (m)	10.450	
	Design Depth (m)	0.800	
	Design Flow (L/s)	2.0	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	☒	
	Unit Reference	SHE-0070-2000-0800-2000	
			
	Outlet (1)	Pipe (9)	Free Discharge
SWMH3	Outlet	Pipe (4)	Free Discharge
SWMH4	Outlet	Pipe (5)	Free Discharge
SWMH5	Outlet	Pipe (6)	Free Discharge

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Controls Storm Phase: Phase				



Raingarden 3

Type : Bioretention

Ponding Area

Exceedance Level (m)	11.450
Depth (m)	0.300
Base Level (m)	11.150
Top Area (m²)	25.38
Side Slope (1:X)	3.00
Base Area (m²)	11.10
Freeboard (mm)	0
Porosity (%)	100
Length (m)	7.934
Long. Slope (1:X)	0.00
Filtration Rate (m/hr)	5000.0
Friction Scheme	Manning's n
n	0.05
Total Volume (m³)	6.250

Filter Area

Base Level (m)	10.850
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Under Drain

Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Friction Scheme	Manning's n
n	0.015
Release Height (m)	0.000

Filtration Layers

Use	Name	Filtration Layer Depth (mm)	Porosity (%)	Conductivity (m/hr)	Soil Type
☐	Soil	300	20	3000.0	Soil Type
	Storage	300	20	3000.0	

Inlets

Inlet

Inlet Type	Lateral Inflow
Incoming Item(s)	Catchment Area (12)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	No Delay
Outlet Type	Under Drain

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details Type: Stormwater Controls Storm Phase: Phase	Jubb			

Advanced

Ponding Area

Base Perimeter (m)	18.665
Top Perimeter (m)	22.265

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Controls Storm Phase: Phase				



Porous Paving

Type : Porous Paving

Dimensions	
Exceedance Level (m)	11.300
Depth (m)	0.750
Base Level (m)	10.550
Paving Layer Depth (mm)	130
Membrane Percolation (m/hr)	5000.0
Porosity (%)	30
Length (m)	55.000
Long. Slope (1:X)	1000.00
Width (m)	15.200
Total Volume (m³)	155.496

Inlets

Inlet (1)	
Inlet Type	Lateral Inflow
Incoming Item(s)	Catchment Area (16)
	Catchment Area (7)
	Catchment Area (17)
	Catchment Area (6)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)	
Inlet Type	Point Inflow
Incoming Item(s)	Pipe (3)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet	
Inlet Type	Point Inflow
Incoming Item(s)	Pipe (9)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet	
Outgoing Connection	Pipe (7)
Outlet Type	Free Discharge

Advanced	
Conductivity (m/hr)	5000.0

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details Type: Stormwater Controls	Jubb			
Storm Phase: Phase				



French Drain

Type : Infiltration Trench

Dimensions	
Exceedance Level (m)	11.450
Depth (m)	0.750
Base Level (m)	10.700
Freeboard (mm)	0
Porosity (%)	30
Length (m)	11.000
Long. Slope (1:X)	500.00
Width (m)	0.500
Total Volume (m³)	1.374
Under Drain	
Height Above Base (m)	0.000
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015
Inlets	
Inlet	
Inlet Type	Lateral Inflow
Incoming Item(s)	Catchment Area (14)
	Catchment Area (1)
Bypass Destination	(None)
Capacity Type	No Restriction
Outlets	
Outlet	
Outgoing Connection	No Delay (1)
Outlet Type	Under Drain
Advanced	
Conductivity (m/hr)	5000.0

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Controls Storm Phase: Phase				



Raingarden 1

Type : Swale

Swale	
Exceedance Level (m)	11.450
Depth (m)	0.200
Base Level (m)	11.250
Top Width (m)	0.750
Side Slope (1:X)	0.63
Base Width (m)	0.500
Freesboard (mm)	0
Length (m)	37.000
Long. Slope (1:X)	500.00
Filtration Rate (m/hr)	500.0
Friction Scheme	Manning's n
n	0.05
Total Volume (m³)	7.875

Trench	
Trench Depth (m)	0.400
Trench Porosity (%)	30

Under Drain	
Height Above Base (m)	0.100
Diameter (mm)	225
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets	
Inlet	
Inlet Type	Lateral Inflow
Incoming Item(s)	Catchment Area (8)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Outlets	
Outlet	
Outgoing Connection	Pipe
Outlet Type	Free Discharge

Advanced	
Swale	
Porosity (%)	100
Trench	
Trench Conductivity (m/hr)	5000.0

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Controls Storm Phase: Phase				



Raingarden 2

Type : Swale

Swale	
Exceedance Level (m)	11.450
Depth (m)	0.300
Base Level (m)	11.150
Top Width (m)	6.500
Side Slope (1:X)	9.17
Base Width (m)	1.000
Freeboard (mm)	0
Length (m)	12.000
Long. Slope (1:X)	500.00
Filtration Rate (m/hr)	500.0
Friction Scheme	Manning's n
n	0.05
Total Volume (m³)	15.634

Trench	
Trench Depth (m)	0.500
Trench Porosity (%)	30

Under Drain	
Height Above Base (m)	0.000
Diameter (mm)	225
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets	
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Inlet	
Inlet Type	Lateral Inflow
Incoming Item(s)	Pipe (1)
Bypass Destination	Catchment Area (5)
Inlet Destination	(None)
Capacity Type	Ponding Area
	No Restriction

Outlets	
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Outlet	
Outgoing Connection	Pipe (2)
Outlet Type	Free Discharge

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Controls Storm Phase: Phase				

Advanced	
Swale	
Porosity (%)	100
Trench	
Trench Conductivity (m/hr)	5000.0



Raingarden 4

Type : Swale

Swale	
Exceedance Level (m)	11.450
Depth (m)	0.400
Base Level (m)	11.050
Top Width (m)	1.500
Side Slope (1:X)	1.00
Base Width (m)	0.700
Freesboard (mm)	0
Length (m)	16.000
Long. Slope (1:X)	500.00
Filtration Rate (m/hr)	500.0
Friction Scheme	Manning's n
n	0.05
Total Volume (m³)	8.325

Trench	
Trench Depth (m)	0.250
Trench Porosity (%)	30

Under Drain	
Height Above Base (m)	0.000
Diameter (mm)	225
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets	
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Inlet	
Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area (9)
	Catchment Area (2)
Bypass Destination	(None)
Inlet Destination	Ponding Area
Capacity Type	No Restriction

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
	Report Details Type: Stormwater Controls Storm Phase: Phase			
			Jubb	

Outlets

Outlet

Outgoing Connection	Pipe (8)
Outlet Type	Orifice
Diameter (m)	0.225
Coefficient of Discharge	0.600
Invert Level (m)	10.800

Advanced

Swale

Porosity (%)	100
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Trench

Trench Conductivity (m/hr)	5000.0
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Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
	Jubb			
Report Details Type: Manhole Schedule Storm Phase: Phase				

Name	Cover Level (m) Invert Level (m)		Connection Details				Type
Coordinates (m)	Depth (m)	Manhole Size (m)	Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SWMH1	11.280 10.800	Diameter / Length: 0.600	{1} Pipe	Pipe	10.800	Diam/Width:225	Manhole
E:446186.674 N:119077.151	0.480						
			{a} Pipe (1)	Pipe	10.800	Diam/Width:225	Not Applicable
SWMH2	11.450 10.600	Diameter / Length: 0.600	{1} Pipe (2)	Pipe	10.600	Diam/Width:225	Manhole
E:446177.685 N:119093.879	0.850						
			{a} Pipe (3)	Pipe	10.600	Diam/Width:225	Not Applicable
HB Manhole - Outfall	11.320 10.450	Diameter / Length: 1.200	{1} Pipe (7)	Pipe	10.450	Diam/Width:300	Manhole
E:446170.397 N:119138.007	0.870		{2} Pipe (6)	Pipe	10.450	Diam/Width:300	
			{a} Pipe (10)	Pipe	10.450	Diam/Width:150	Not Applicable
			{b} Pipe (9)	Pipe	10.450	Diam/Width:300	
SWMH3	11.450 10.950	Diameter / Length: 0.600	{1} No Delay	No Delay	Not Applicable	Not Applicable	Manhole
E:446208.564 N:119120.221	0.500						
			{a} Pipe (4)	Pipe	10.950	Diam/Width:150	Not Applicable

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
	Report Details Type: Manhole Schedule Storm Phase: Phase			
		Jubb		

Name	Cover Level (m) Invert Level (m)		Connection Details				Type
Coordinates (m)	Depth (m)	Manhole Size (m)	Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
SWMH4	11.450 10.750	Diameter / Length: 0.600	{1} Pipe (4)	Pipe	10.750	Diam/Width:150	Manhole
E:446187.795 N:119123.002	0.700		{2} Pipe (8)	No Delay	Not Applicable	Not Applicable	
			{a} Pipe (5)	Pipe	10.750	Diam/Width:300	Not Applicable
SWMH5	11.450 10.650	Diameter / Length: 0.600	{1} Pipe (5)	Pipe	10.650	Diam/Width:300	Manhole
E:446180.001 N:119136.167	0.800		{2} No Delay (1)	No Delay	Not Applicable	Not Applicable	
			{a} Pipe (6)	Pipe	10.650	Diam/Width:300	Not Applicable
Headwall	11.300 10.400	Diameter / Length: 1.200	{1} Pipe (10)	Pipe	10.400	Diam/Width:150	Manhole
E:446172.862 N:119140.759	0.900						
							Not Applicable

Chickenhall Lane	Date 25/09/2024		
	Designed by KG	Checked by	Approved By
Report Details Type: Inflow Summary Storm Phase: Phase	Jubb		



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage mpervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area (1)	French Drain		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (2)	Raingarden 4		Time of Concentration	0.037	100	0	100	0.037
Catchment Area (3)	SWMH3		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (4)	SWMH1		Time of Concentration	0.025	100	0	100	0.025
Catchment Area (5)	Raingarden 2		Time of Concentration	0.016	100	0	100	0.016
Catchment Area (6)	Porous Paving		Time of Concentration	0.028	100	0	100	0.028
Catchment Area (7)	Porous Paving		Time of Concentration	0.005	100	0	100	0.005
Catchment Area (8)	Raingarden 1		Time of Concentration	0.007	100	0	100	0.007
Catchment Area (9)	Raingarden 4		Time of Concentration	0.004	100	0	100	0.004
Catchment Area (10)	SWMH4		Time of Concentration	0.003	100	0	100	0.003
Catchment Area (11)	SWMH4		Time of Concentration	0.003	100	0	100	0.003
Catchment Area (12)	Raingarden 3		Time of Concentration	0.003	100	0	100	0.003
Catchment Area (13)	SWMH1		Time of Concentration	0.008	100	0	100	0.008
Catchment Area (14)	French Drain		Time of Concentration	0.007	100	0	100	0.007
Catchment Area (15)	SWMH1		Time of Concentration	0.009	100	0	100	0.009
Catchment Area (16)	Porous Paving		Time of Concentration	0.084	100	0	100	0.084
Catchment Area (17)	Porous Paving		Time of Concentration	0.009	100	0	100	0.009
TOTAL		0.0		0.269				0.269

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
	Report Details Type: Outfall Details Storm Phase: Phase			
		Jubb		

Outfalls

Outfall	Outfall Type	Fixed Surcharged Level (m)	Level Curve
Headwall	Free Discharge		

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
	Report Title Rainfall Analysis Criteria			
		Jubb		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Shortest
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Junctions Summary Storm Phase: Phase				



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWMH1	FEH: 100 years: +45 %: 15 mins: Winter	11.280	10.800	11.249	0.449	27.3	0.127	0.000	26.5	14.919	Flood Risk
SWMH2	FEH: 100 years: +45 %: 360 mins: Winter	11.450	10.600	11.119	0.519	5.1	0.147	0.000	5.0	42.516	Surcharged
HB Manhole - Outfall	FEH: 100 years: +45 %: 360 mins: Winter	11.320	10.450	11.119	0.669	6.4	0.756	0.000	1.9	101.091	Flood Risk
SWMH3	FEH: 100 years: +45 %: 360 mins: Winter	11.450	10.950	11.119	0.169	1.4	0.048	0.000	1.0	8.497	Surcharged
SWMH4	FEH: 100 years: +45 %: 360 mins: Winter	11.450	10.750	11.119	0.369	4.7	0.104	0.000	4.4	39.483	Surcharged
SWMH5	FEH: 100 years: +45 %: 360 mins: Winter	11.450	10.650	11.119	0.469	5.9	0.133	0.000	5.6	51.513	Surcharged
Headwall	FEH: 100 years: +45 %: 240 mins: Summer	11.300	10.400	10.431	0.031	2.0	0.000	0.000	2.0	47.898	OK

Chickenhall Lane	Date 25/09/2024		
	Designed by KG	Checked by	Approved By
Report Details Type: Stormwater Controls Summary Storm Phase: Phase	Jubb		





FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By:
Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Porous Paving	FEH: 100 years: +45 %: 360 mins: Winter	11.119	11.119	0.514	0.569	19.6	135.851	0.000	0.000	1.0	51.482		12.633
Raingarden 1	FEH: 100 years: +45 %: 15 mins: Winter	11.256	11.251	0.332	0.401	11.2	2.036	0.000	0.000	2.2	1.516		74.145
Raingarden 2	FEH: 100 years: +45 %: 360 mins: Winter	11.119	11.119	0.445	0.469	5.3	1.643	0.000	0.000	5.1	42.749	2	89.488
Raingarden 4	FEH: 100 years: +45 %: 960 mins: Winter	11.444	11.444	0.612	0.644	1.5	7.325	0.000	0.000	3.7	33.722	34	12.017
French Drain	FEH: 100 years: +45 %: 360 mins: Winter	11.118	11.119	0.396	0.419	1.6	0.672	0.000	0.000	1.5	13.109	4	51.045
Raingarden 3	FEH: 100 years: +45 %: 360 mins: Winter	11.118	11.118	0.268	0.268	0.2	0.596	0.000	0.000	0.5	1.544	20	90.464

Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
	Jubb			
Report Details Type: Stormwater Controls Summary Storm Phase: Phase				

Status
OK
OK
OK
OK
OK
OK
OK

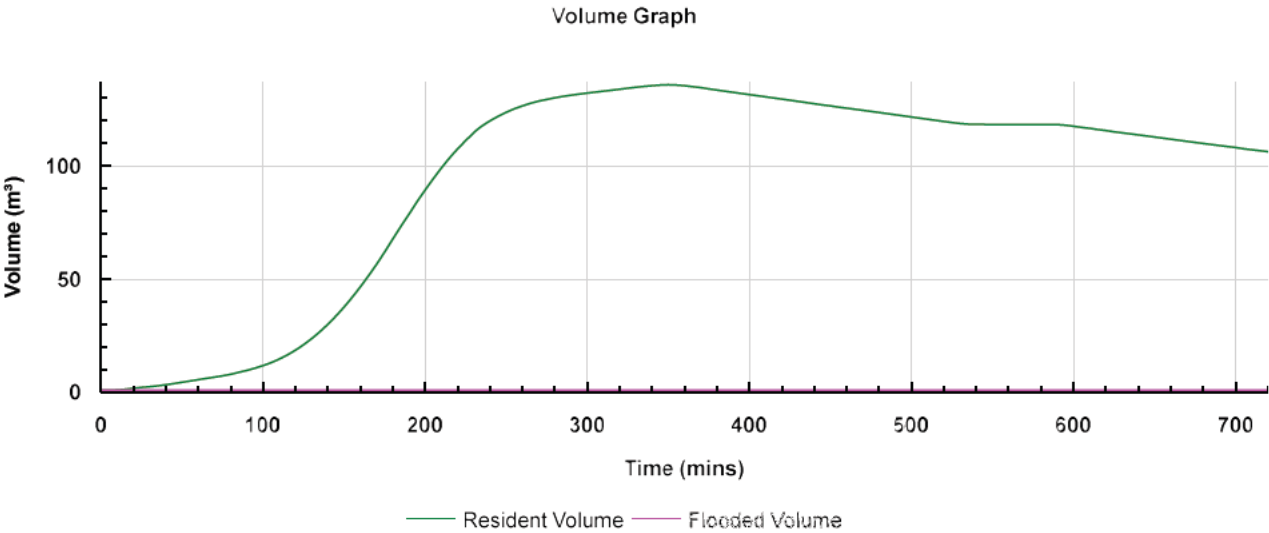
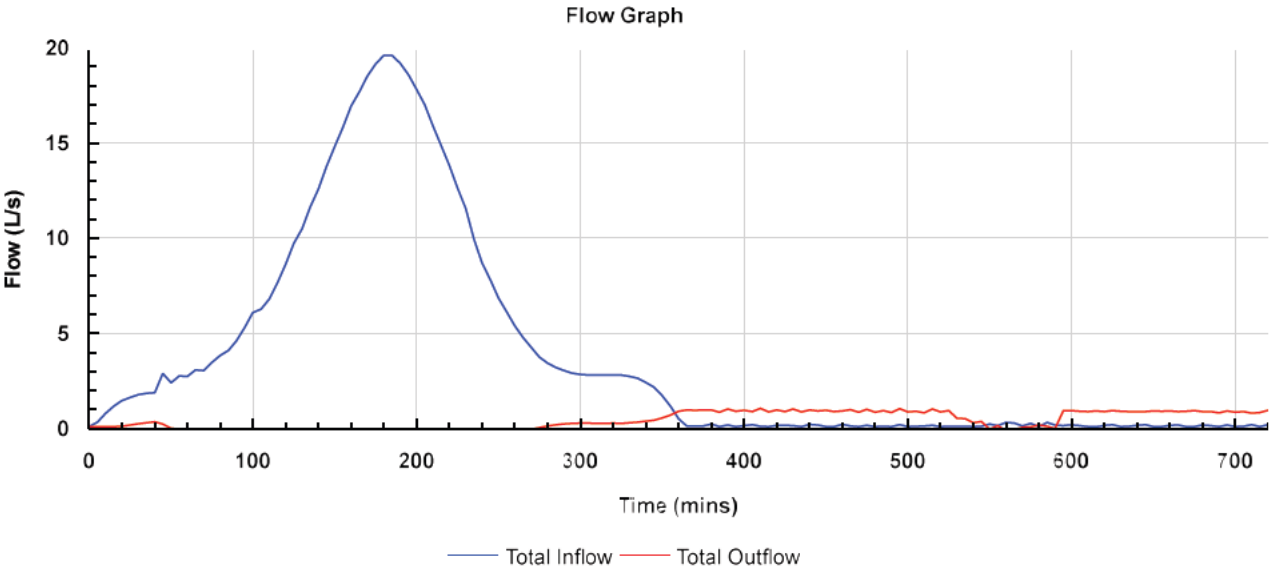
Chickenhall Lane	Date 25/09/2024			 DRN
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Control Results Storm Phase: Phase				



Porous Paving
 Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

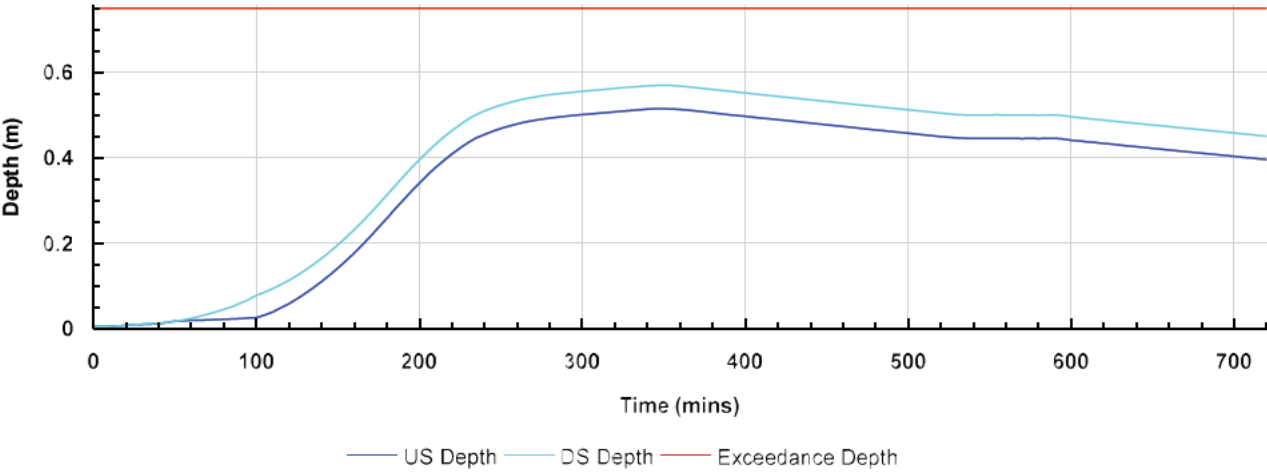
Type : Porous Paving

Graphs



Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Control Results Storm Phase: Phase				

Depth Graph



Chickenhall Lane	Date 25/09/2024			 DRN
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Control Results Storm Phase: Phase				

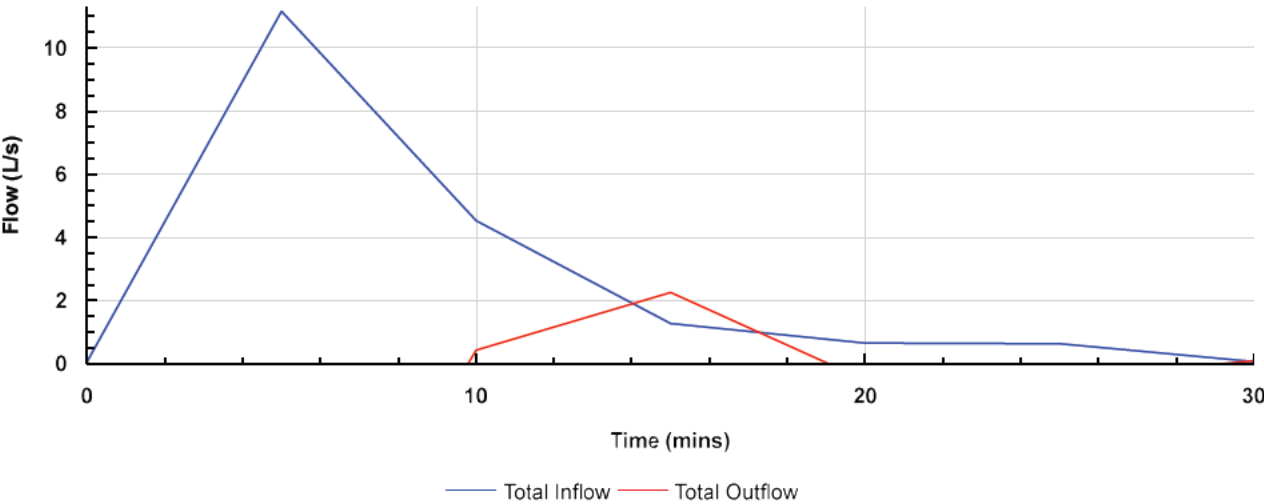


Raingarden 1
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

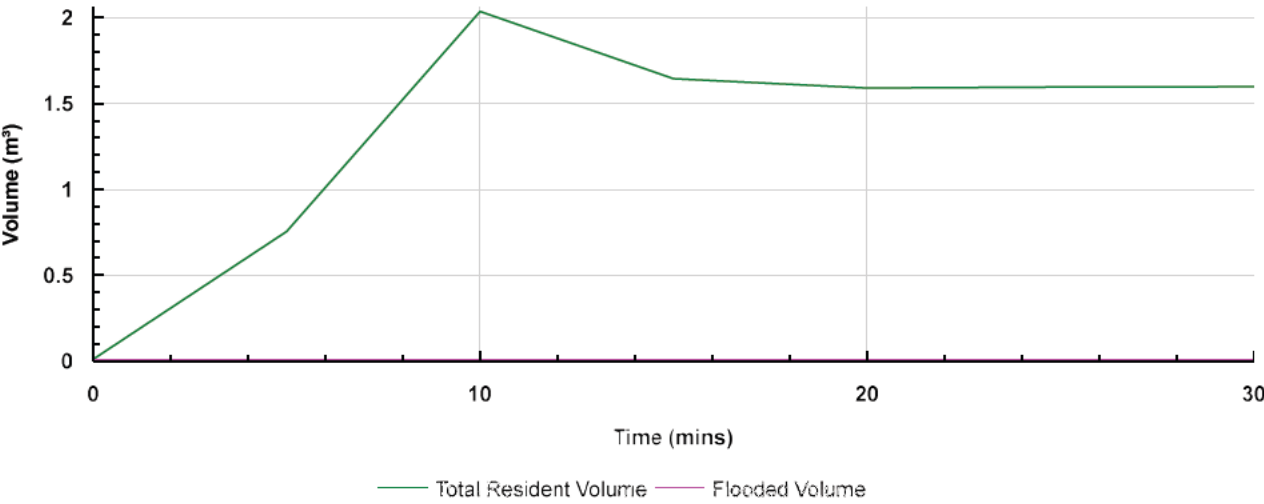
Type : Swale

Graphs

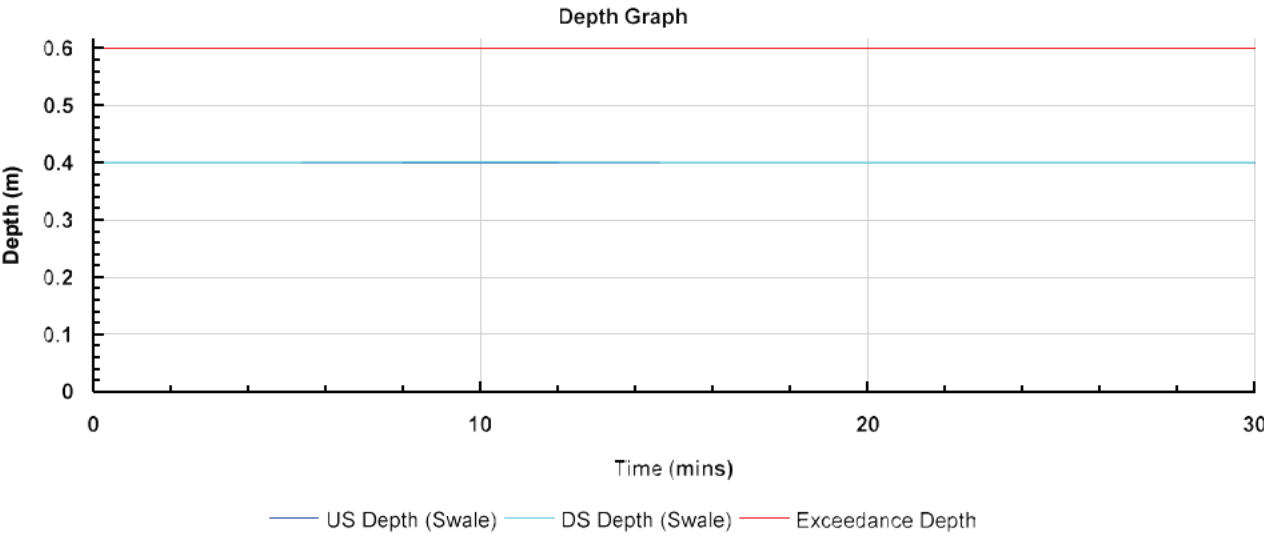
Flow Graph



Volume Graph



Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details Type: Stormwater Control Results Storm Phase: Phase	Jubb			



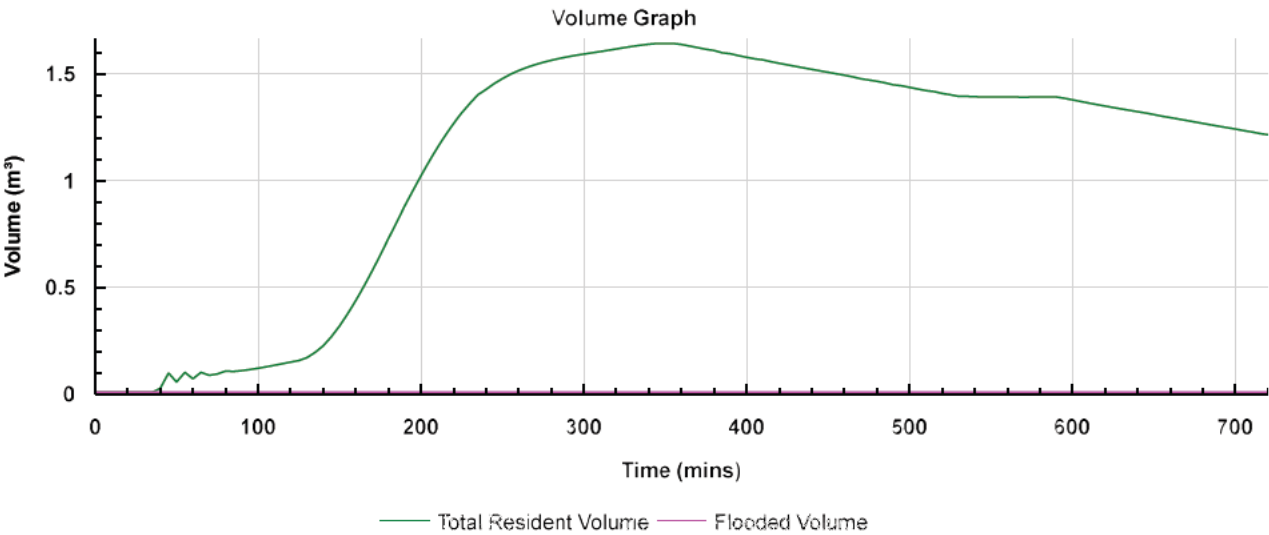
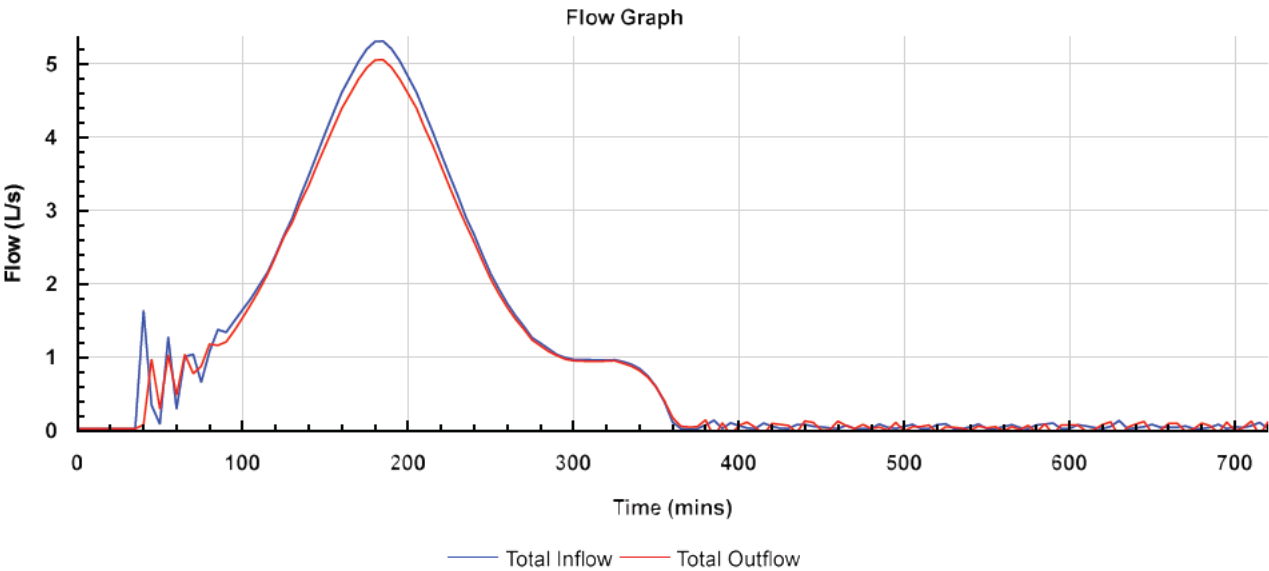
Chickenhall Lane	Date 25/09/2024		
	Designed by KG	Checked by	Approved By
Report Details Type: Stormwater Control Results Storm Phase: Phase	Jubb		



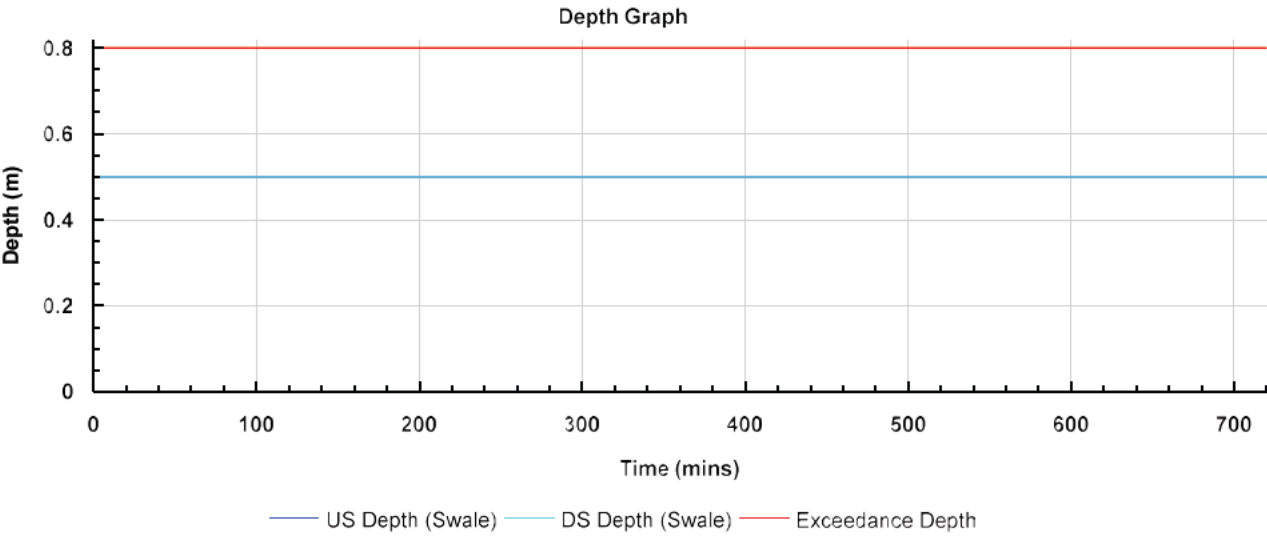
Raingarden 2
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

Type : Swale

Graphs



Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Control Results Storm Phase: Phase				



Chickenhall Lane	Date 25/09/2024			 DRN
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Control Results Storm Phase: Phase				

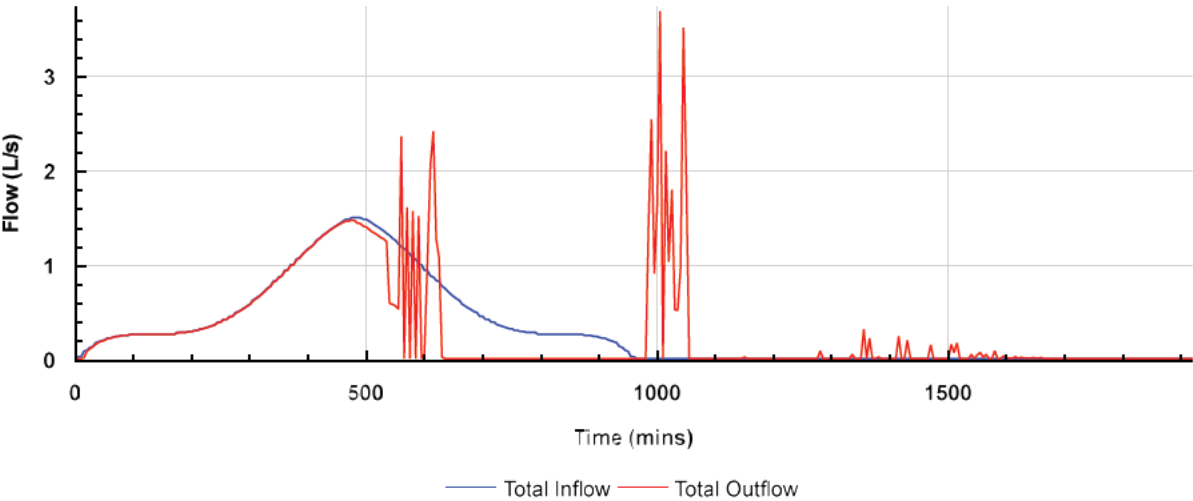


Raingarden 4
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 960 mins: Winter

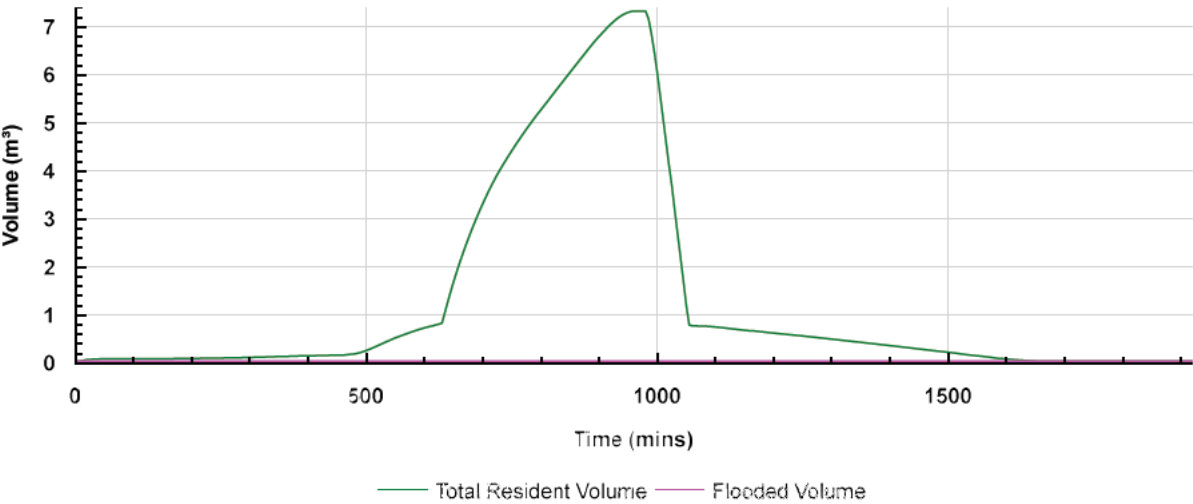
Type : Swale

Graphs

Flow Graph

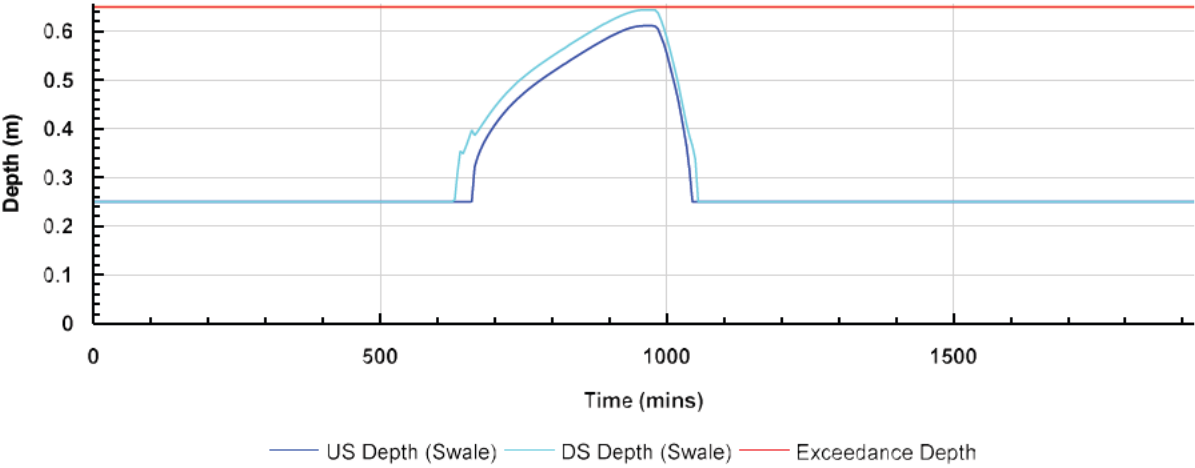


Volume Graph



Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details Type: Stormwater Control Results Storm Phase: Phase	Jubb			

Depth Graph



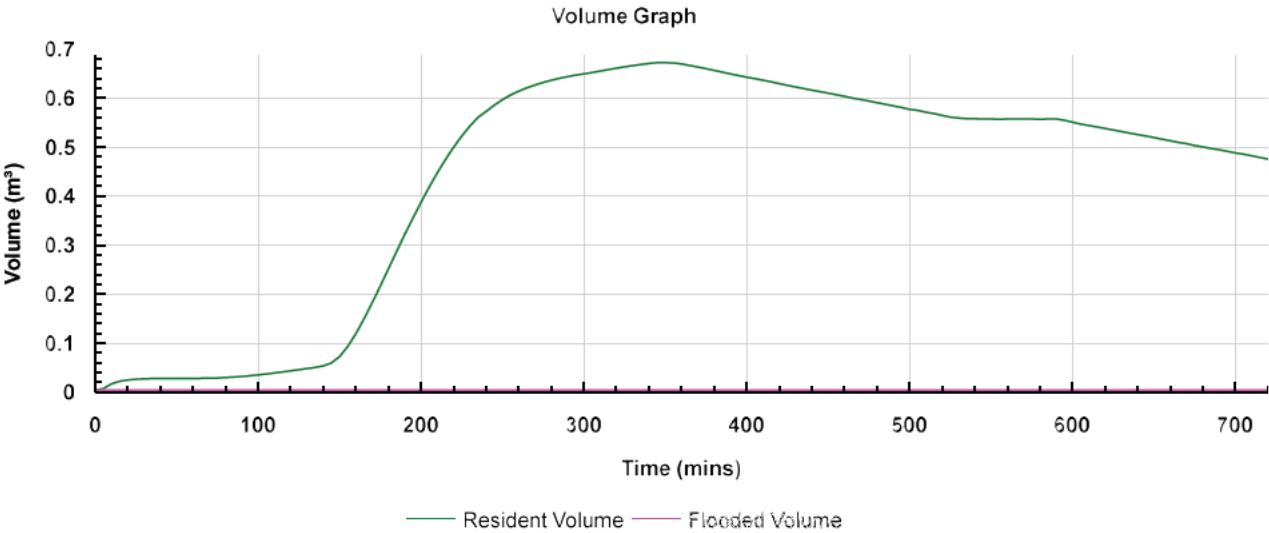
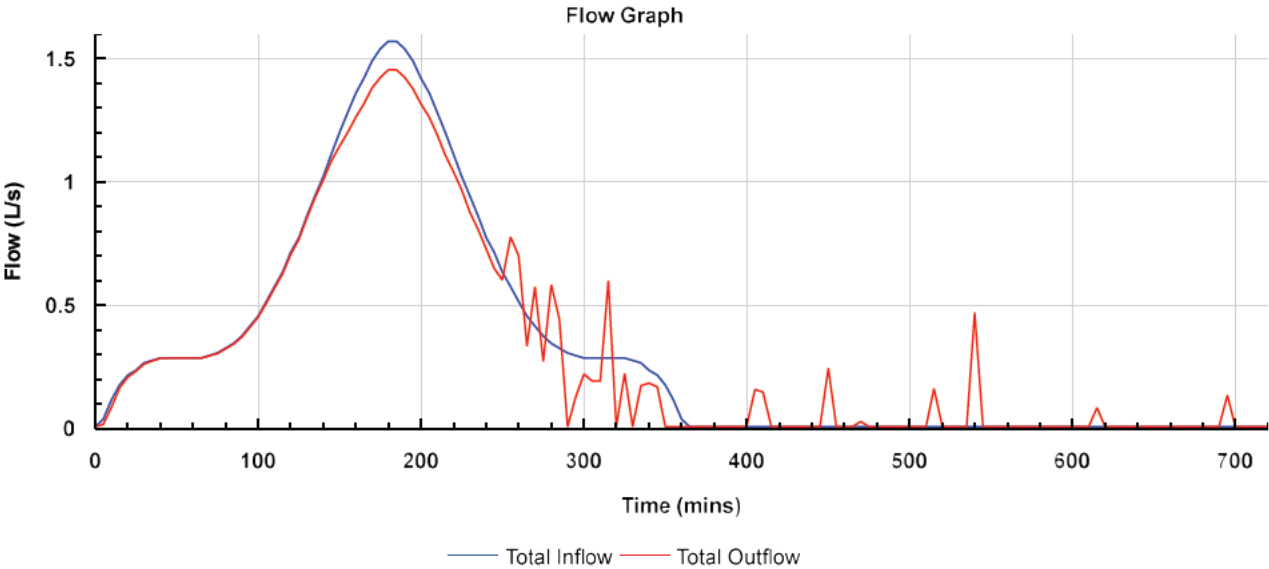
Chickenhall Lane	Date 25/09/2024		
	Designed by KG	Checked by	Approved By
Report Details Type: Stormwater Control Results Storm Phase: Phase	Jubb		



French Drain
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

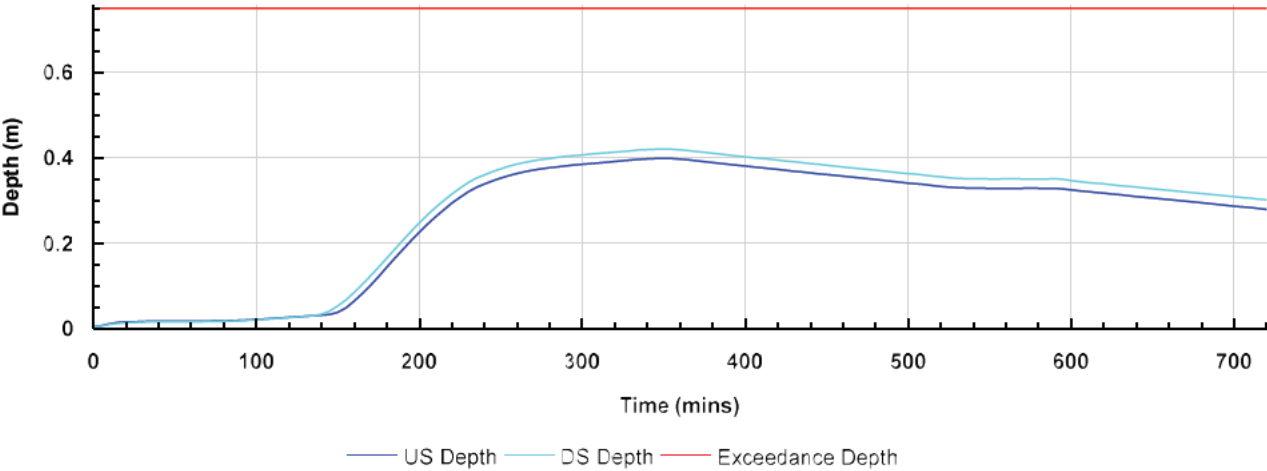
Type : Infiltration Trench

Graphs



Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Control Results Storm Phase: Phase				

Depth Graph



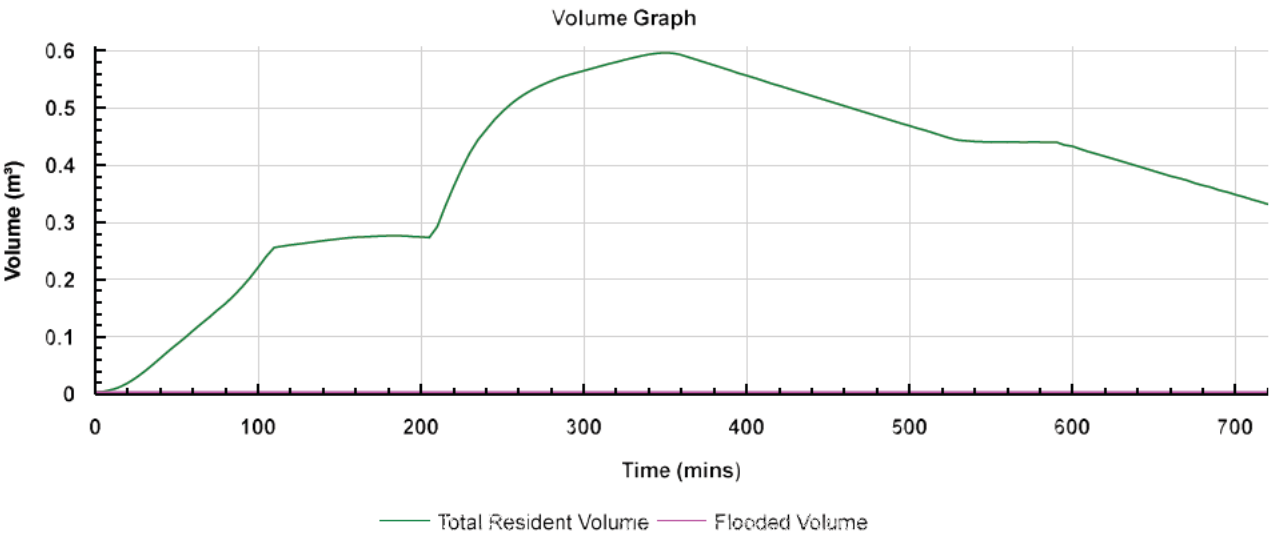
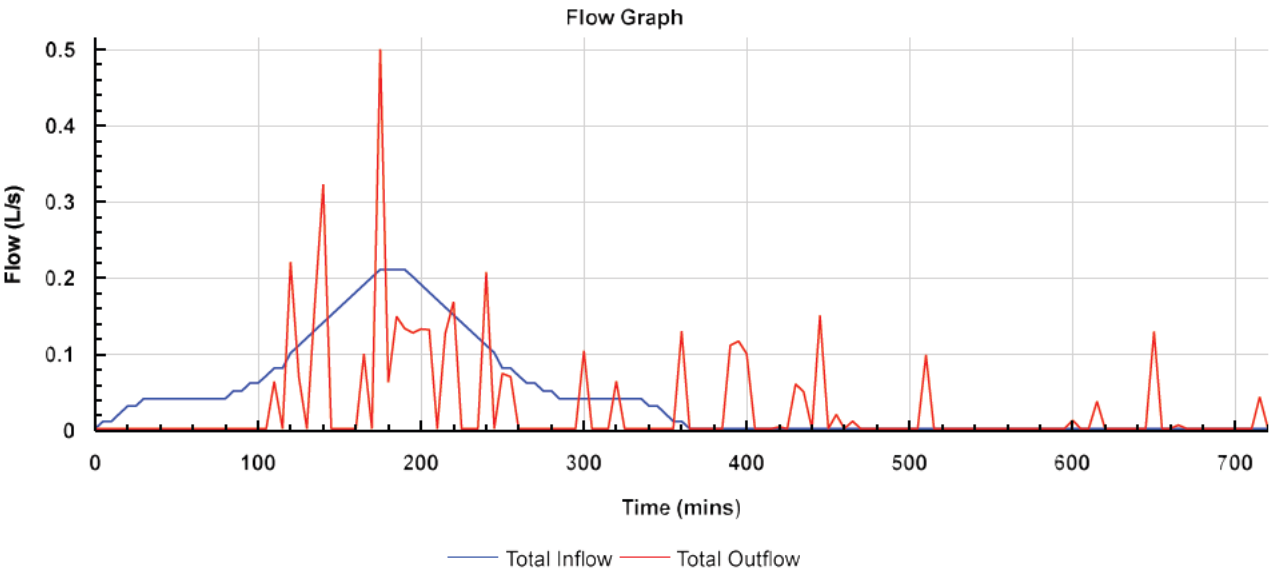
Chickenhall Lane	Date 25/09/2024		
	Designed by KG	Checked by	Approved By
Report Details Type: Stormwater Control Results Storm Phase: Phase	Jubb		



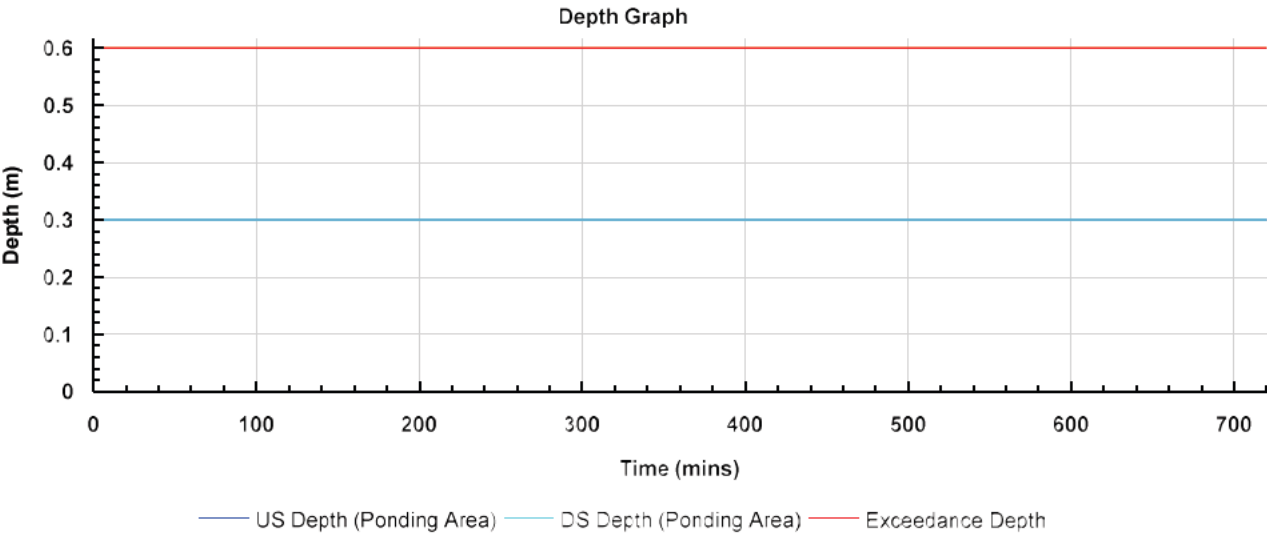
Raingarden 3
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

Type : Bioretention

Graphs



Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Stormwater Control Results Storm Phase: Phase				



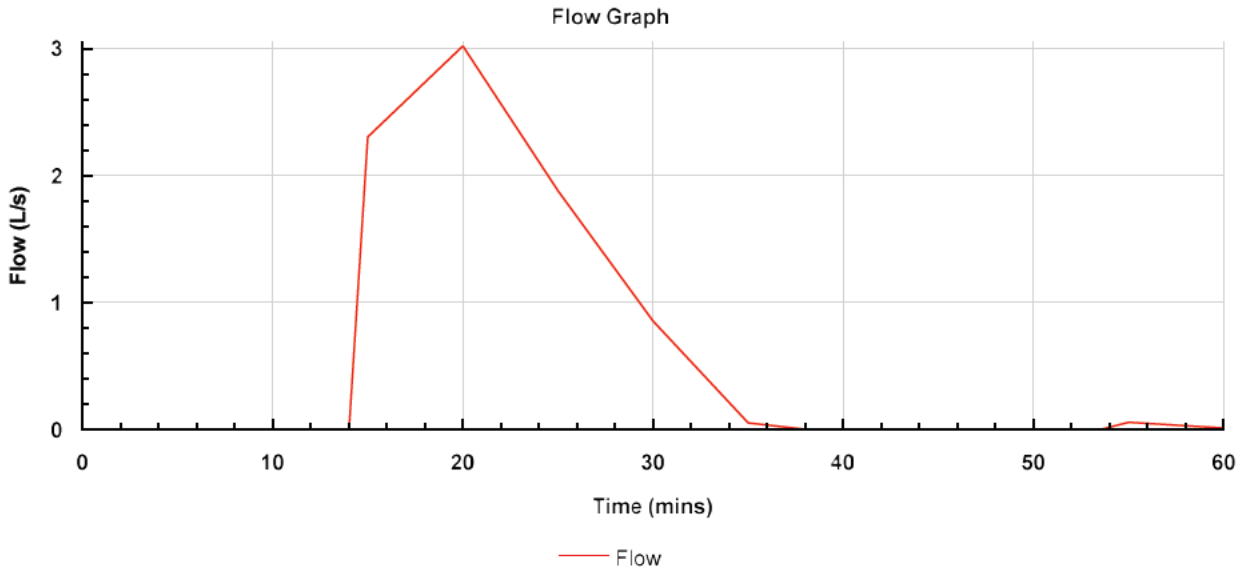
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 30 mins: Winter

Type : Pipe

Graphs



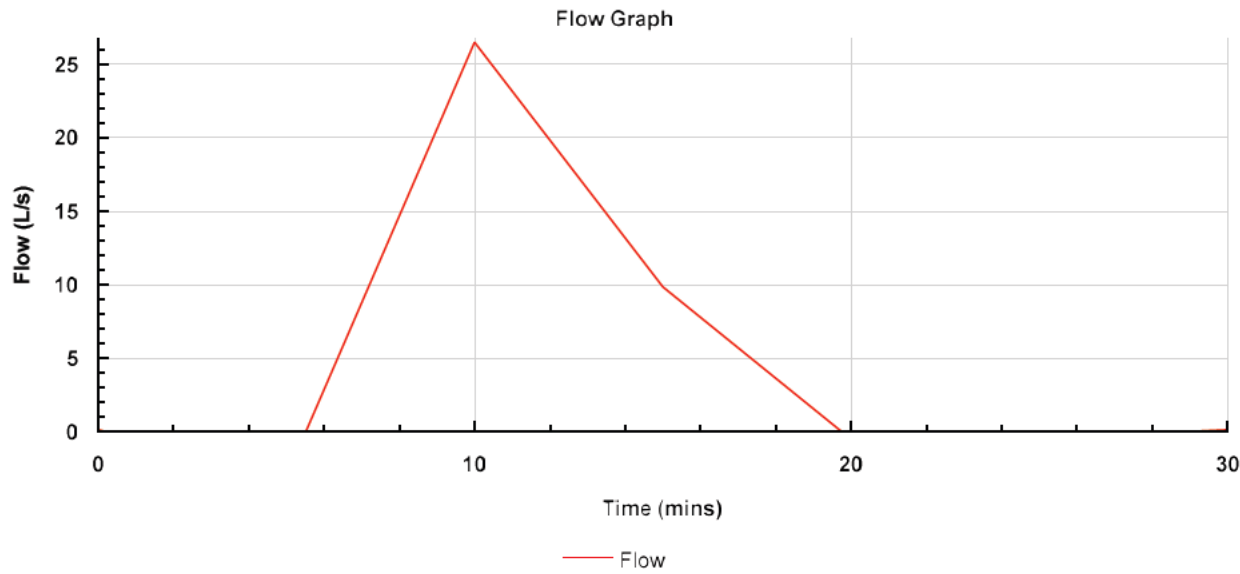
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (1)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : Pipe

Graphs



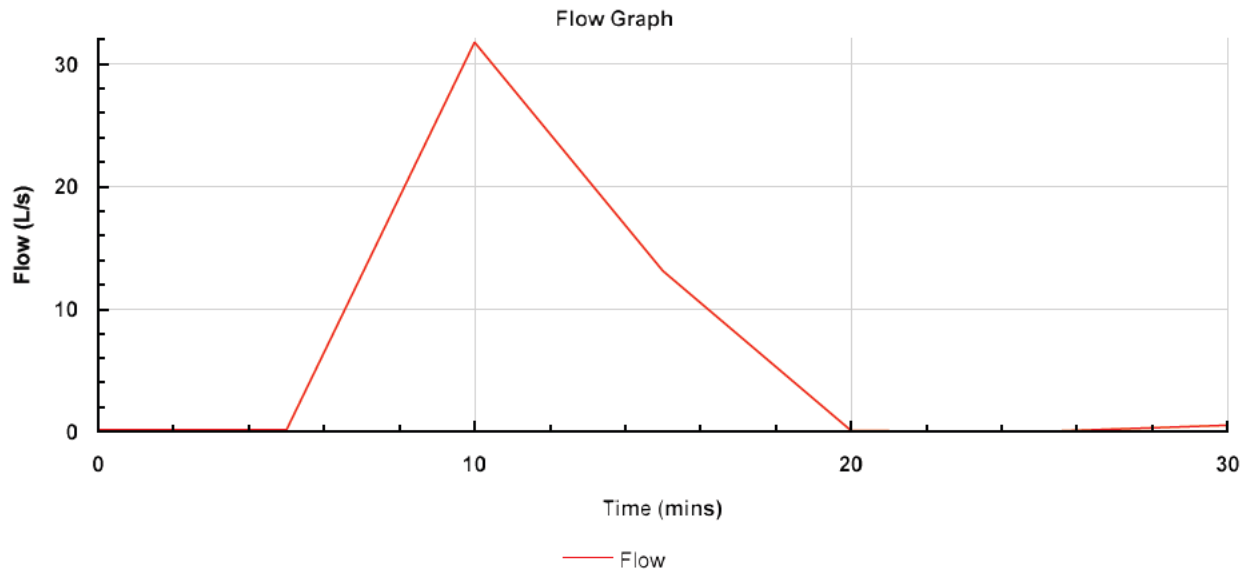
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (2)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : Pipe

Graphs



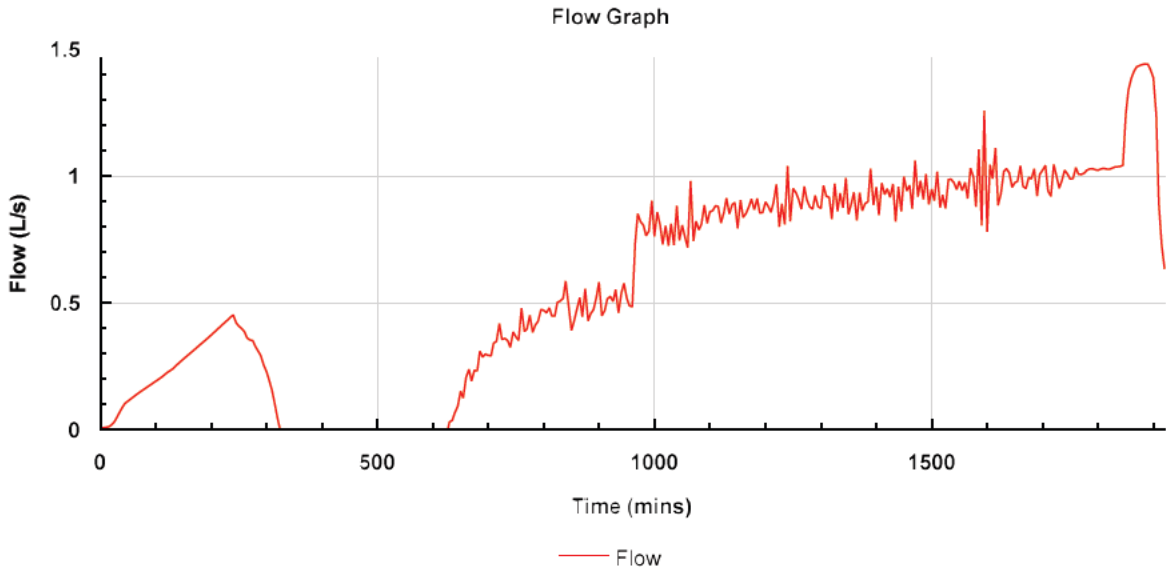
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (7)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 960 mins: Summer

Type : Pipe

Graphs



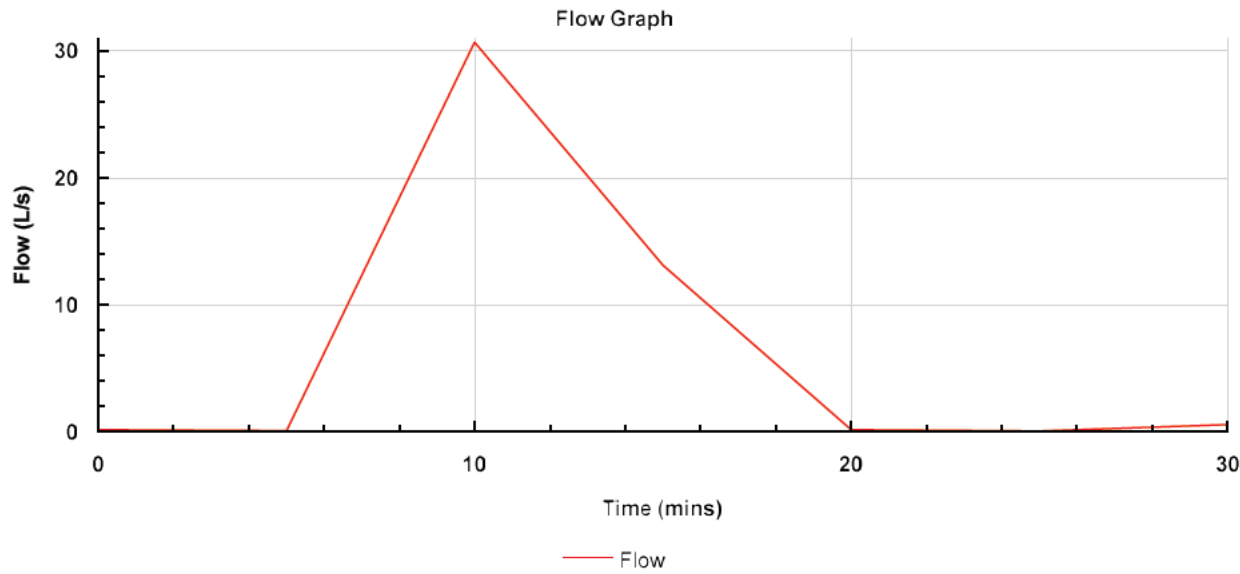
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (3)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : Pipe

Graphs



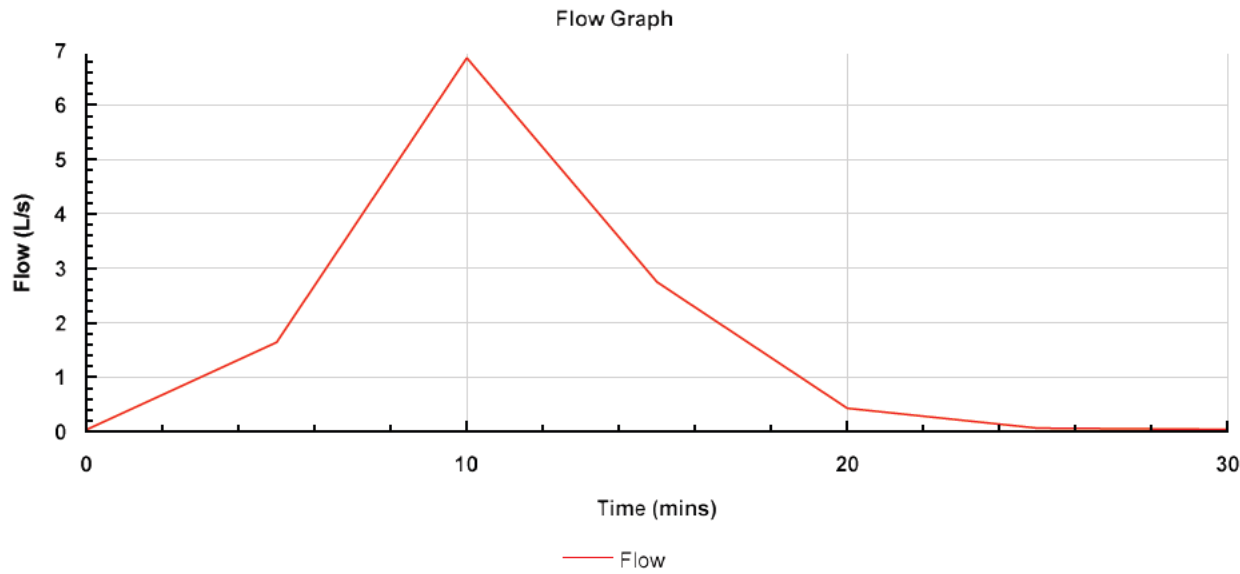
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (4)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : Pipe

Graphs



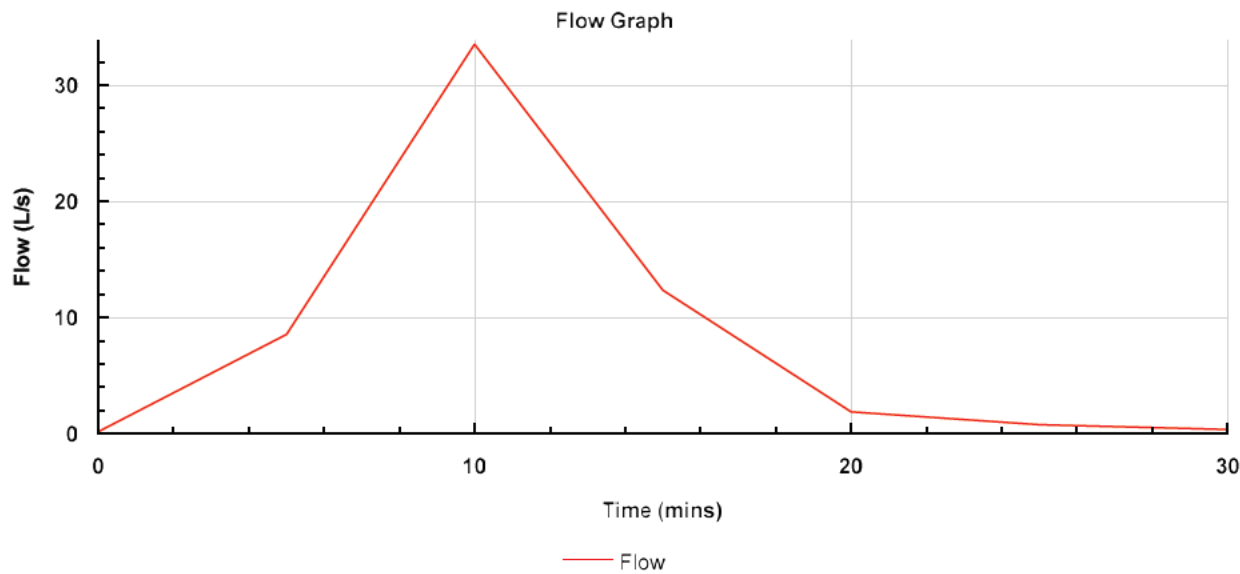
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details Type: Connection Results Storm Phase: Phase	Jubb			



Pipe (5)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : Pipe

Graphs



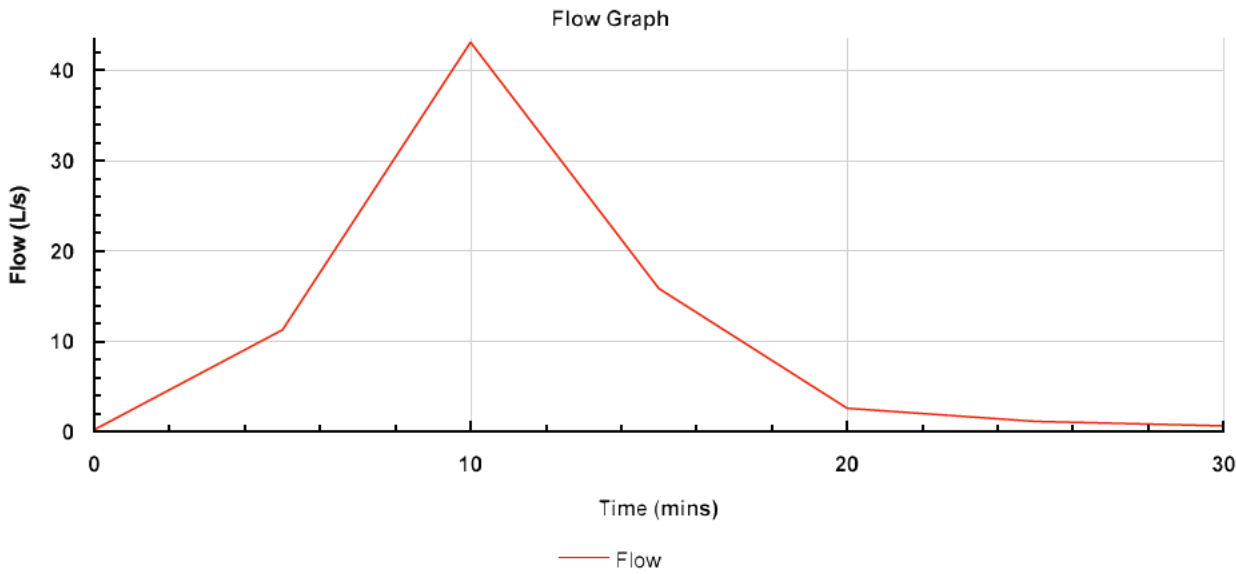
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (6)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : Pipe

Graphs



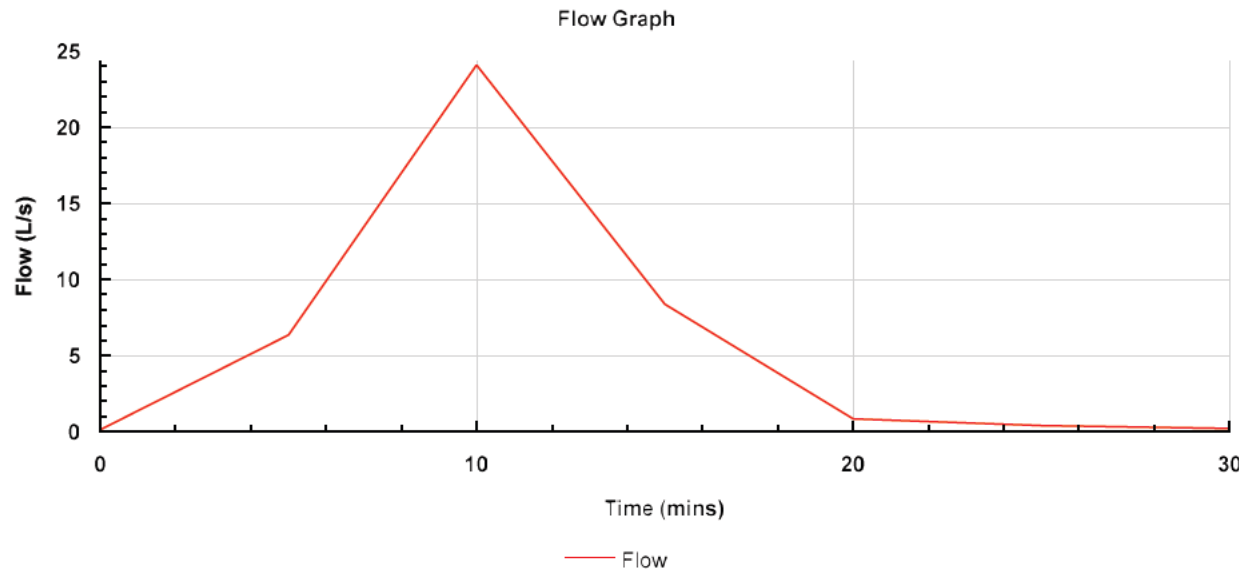
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (8)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : No Delay

Graphs



Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				

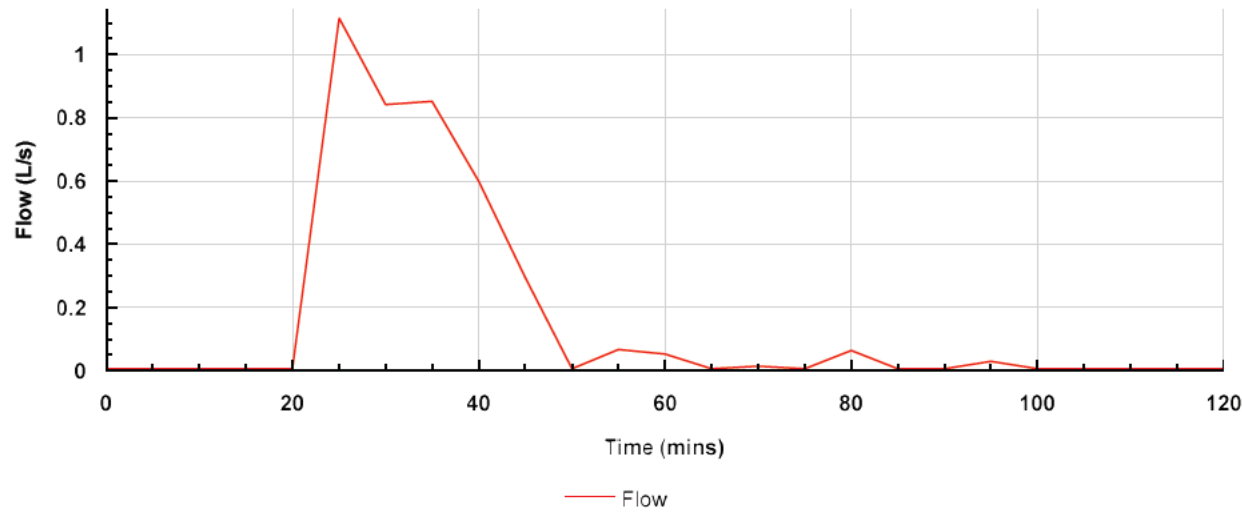


No Delay
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 60 mins: Winter

Type : No Delay

Graphs

Flow Graph



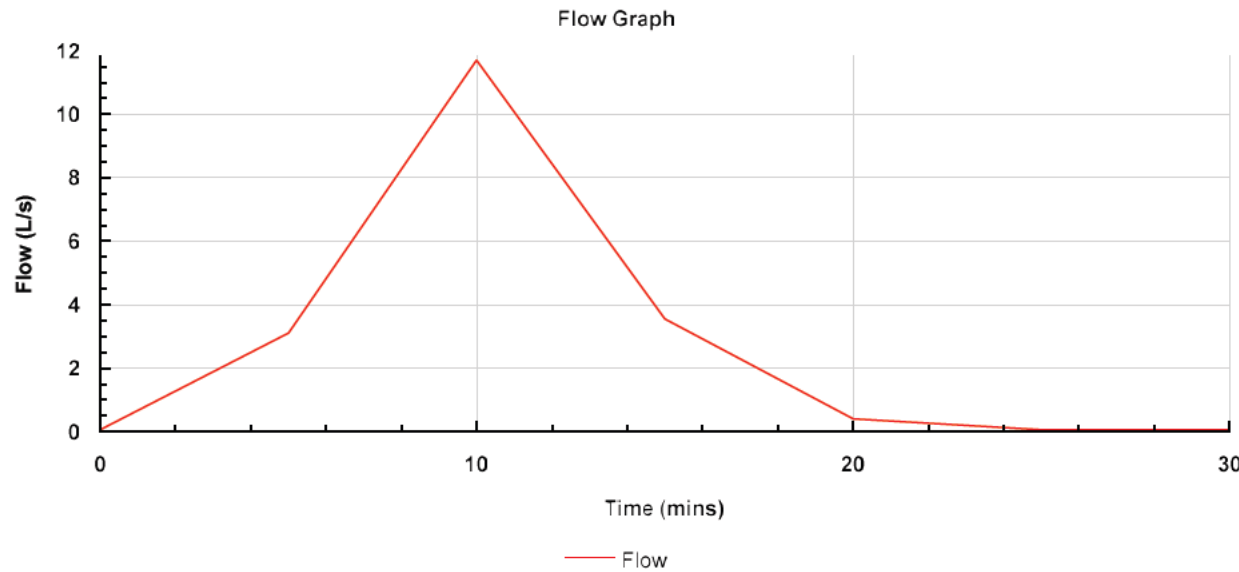
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



No Delay (1)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Type : No Delay

Graphs



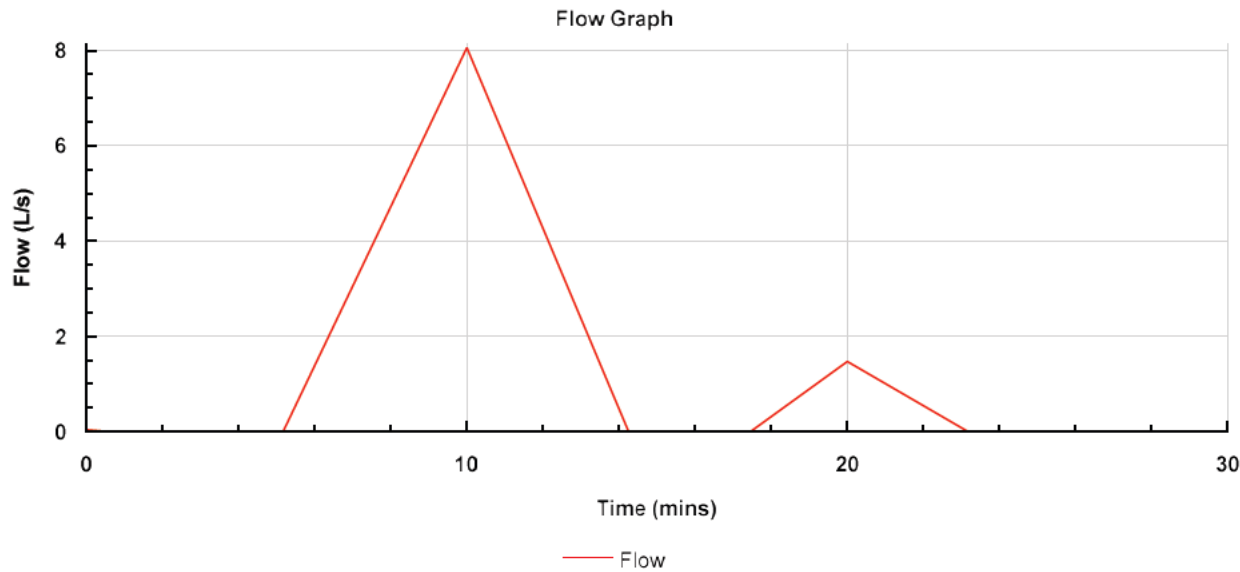
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details Type: Connection Results Storm Phase: Phase	Jubb			



Pipe (9)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Type : Pipe

Graphs



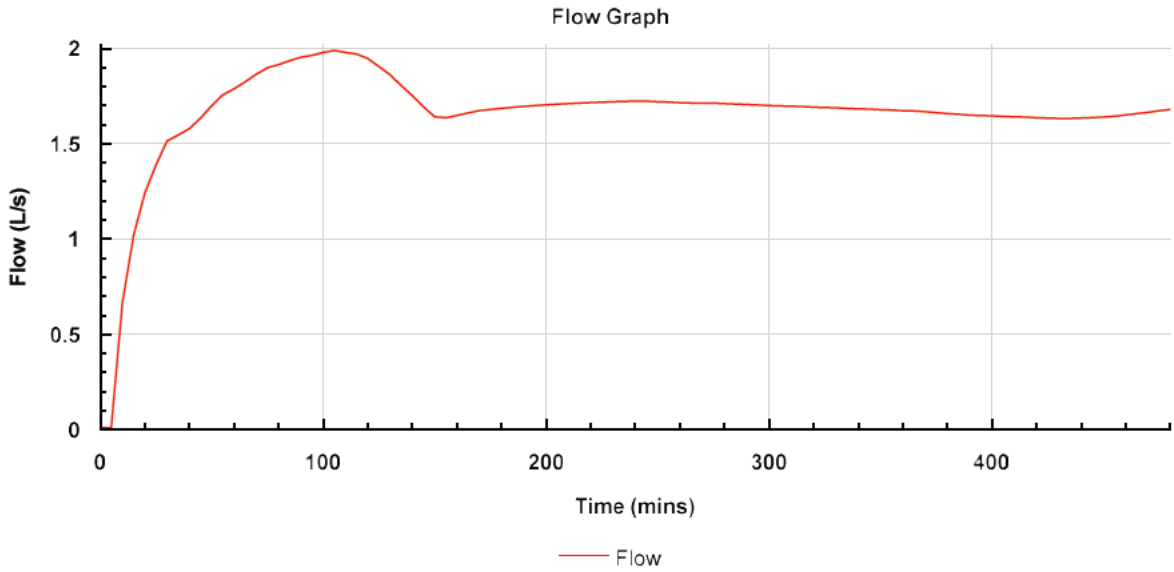
Chickenhall Lane	Date 25/09/2024			
	Designed by KG	Checked by	Approved By	
Report Details	Jubb			
Type: Connection Results Storm Phase: Phase				



Pipe (10)
Critical by Return Period: FEH: 100 years: Increase Rainfall (%): +45: 240 mins: Summer

Type : Pipe

Graphs

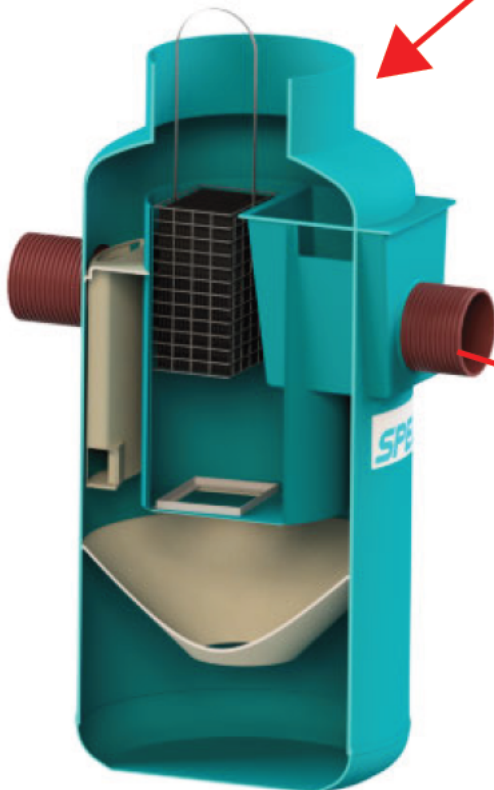
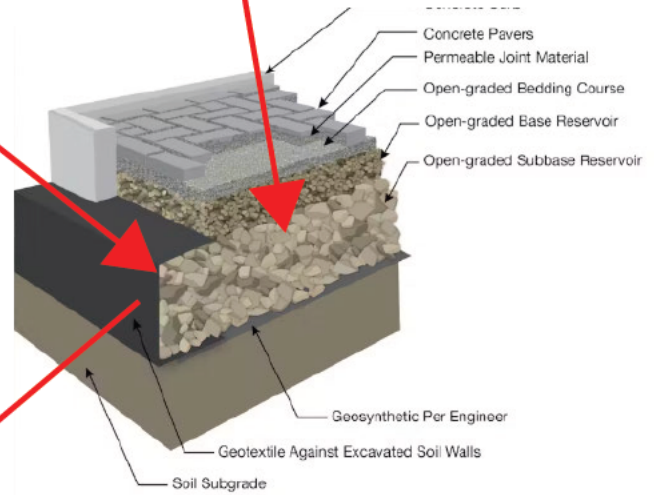
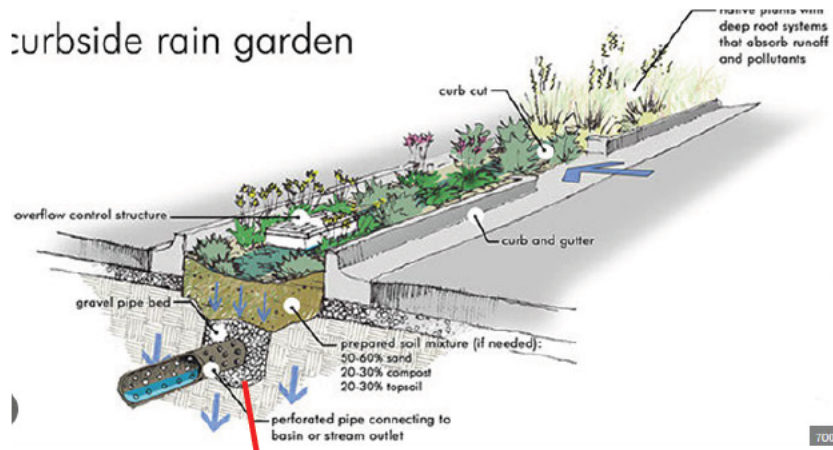


Car Parking



Roof / Paths

curbside rain garden



Car Parking - Pollution

	Runoff Area Land Use Description	Hazard Level	Pollution Hazard Indices		
			Suspended Solids	Metals	Hydrocarbons
Select land use type from the drop down list (or 'Other' if none applicable): →	Residential parking	Low	0.5	0.4	0.4
If the generic land use types in the drop down list above are not applicable, select 'Other' and enter a description of the land use of the runoff area and agreed user defined indices in this row:					
	Landuse Pollution Hazard Index	Low	0.5	0.4	0.4

Car Parking - Mitigation

	SuDS Component Description		Pollution Mitigation Indices		
			Suspended Solids	Metals	Hydrocarbons
Select SuDS Component 1 (i.e. the upstream SuDS component) from the drop down list: →	User defined indices	Enter User Defined Indices in row below			
Select SuDS Component 2 (i.e. the second SuDS component in a series) from the drop down list: →	Pervious pavement (where the pavement is not designed as an infiltration component)		0.7	0.6	0.7
Select SuDS Component 3 (i.e. the third SuDS component in a series) from the drop down list: →	User defined indices	Enter User Defined Indices in row below			
If the proposed SuDS components are bespoke/proprietary and/or the generic indices above are not considered appropriate, select 'Proprietary treatment system' or 'User defined indices' and enter component descriptions and agreed user defined indices in these rows:	Hydro Filter Channel Drain	SuDS Component 1	0.9	0.9	0.9
	SPEL Smartceptor	SuDS Component 3	0.5	0.4	0.5
	Aggregated Surface Water Pollution Mitigation Index		>0.95	>0.95	>0.95

Roof / Paths - pollution

	<i>Runoff Area Land Use Description</i>	<i>n</i> <i>Hazard</i>	<i>Pollution Hazard Indices</i>		
			Suspended Solids	Metals	Hydrocarbons
Select land use type from the drop down list (or 'Other' if none applicable): →	Residential roofing	Very low	0.2	0.2	0.05
drop down list above are not applicable, select 'Other' and enter a description of the land use of the runoff area and agreed user defined indices in this row:					
	Landuse Pollution Hazard Index	Very low	0.2	0.2	0.05

Roof / Paths - Mitigation

	<i>SuDS Component Description</i>			<i>Pollution Mitigation Indices</i>		
				Suspended Solids	Metals	Hydrocarbons
Select SuDS Component 1 (i.e. the upstream SuDS component) from the drop down list: →	Filter strip			0.4	0.4	0.5
Select SuDS Component 2 (i.e. the second SuDS component in a series) from the drop down list: →	Pervious pavement (where the pavement is not designed as an infiltration component)			0.7	0.6	0.7
Select SuDS Component 3 (i.e. the third SuDS component in a series) from the drop down list: →	User defined indices	Enter User Defined Indices in row below				
If the proposed SuDS components are bespoke/proprietary and/or the generic indices above are not considered appropriate, select 'Proprietary treatment system' or 'User defined indices' and enter component descriptions and agreed user defined indices in these rows:						
	SPEL Smartceptor	SuDS Component 3		0.5	0.4	0.5
	Aggregated Surface Water Pollution Mitigation Index			>0.95	0.9	>0.95