10 St Lukes Close, Uxbridge

SuDS Assessment

Discharge of Condition 7

Job Number: 1698

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December 2025	1	Issued for Information

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Acronym	Definition
SuDS	Sustainable Drainage Systems
NPPF	National Planning Policy Framework
EA	Environment Agency
BGS	British Geological Survey
LLFA	Lead Local Flood Authority
FFL	Finished Floor Level
CIRIA	CIRIA
TW	Thames Water
mAOD	Metres Above Ordnance Datum

Executive Summary

This summary sets out the key drainage considerations for the approved development at 10 St Lukes Close, Uxbridge and confirms how the proposed surface water strategy satisfies London Plan Policy SI13 and Hillingdon Local Plan Policy DMEI10. It provides a concise overview of the site, the proposed Sustainable Drainage Systems (SuDS) and the degree of policy compliance achieved.

Item	Summary
Site Address	10 St Lukes Close, Uxbridge, UB8 3SN, London. Grid Reference TQ05932 81380.
Proposal	Two storey side extension and single storey rear extension to create an additional two-bedroom dwelling, with demolition of existing outbuildings and formation of new parking, access and garden areas.
Baseline Condition	Developed residential plot with roofed buildings, hardstanding and garden areas draining via an existing private connection to the combined sewer network.
Geology and Infiltration Potential	Underlain by the Langley Silt Member over London Clay. Drain London mapping classifies the area as Infiltration SuDS Potentially Unsuitable, so infiltration at depth is not relied upon.
Proposed Drainage Strategy	1. Rainwater butts intercept roof runoff for reuse. 2. Permeable paving and landscaped areas provide interception and treatment. 3. All roofs and paved areas drain to lined on-site attenuation. 4. Discharge to the existing combined sewer is restricted to greenfield runoff rate.
Drainage Hierarchy Position	Upper hierarchy tiers achieved through rainwater reuse, permeable paving and green infrastructure, with residual runoff controlled and discharged to sewer in accordance with London Plan Policy SI13.
Run-off Performance	Post-development discharge limited to Qbar 0.10l/s, being the greenfield runoff rate for the full 428m² site. This represents a substantial reduction compared with the existing developed condition.
Policy Compliance	London Plan SI13: Greenfield runoff achieved; runoff managed close to source; preference for green SuDS delivered. Hillingdon DMEI10: No increase in flood risk; SuDS provided; water quality and amenity benefits delivered.
Flood Risk	No increase in flood risk on site or downstream. Exceedance during extreme events is routed safely within the landscaped areas of the site.
Maintenance	The drainage system, including rainwater butts, permeable paving, landscaped SuDS, attenuation tank and flow control, will be maintained by the property owners in accordance with the defined maintenance schedule.
Conclusion	The proposed scheme delivers a sustainable, robust and policy-compliant SuDS strategy, controlling runoff to greenfield rates, improving water quality and ensuring no increase in flood risk for the lifetime of the development.

The proposed drainage arrangement provides a controlled and sustainable surface water regime appropriate to the scale and urban context of the site, meeting all relevant London Plan and Hillingdon policy requirements.

Introduction

This Sustainable Drainage and Water Management Strategy has been prepared to discharge Condition 7 of the planning permission for the redevelopment of 10 St Lukes Close, Uxbridge, UB8 3SN. The condition requires a scheme for sustainable water management demonstrating that Sustainable Drainage Systems (SuDS) have been incorporated into the design in accordance with the hierarchy set out in London Plan Policy SI13 and Hillingdon Local Plan Policy DMEI10, together with details of runoff control, pollution prevention, implementation and long-term management.

The approved development comprises extensions to the existing dwelling to create two residential units together with the demolition of existing outbuildings and the construction of two new residential dwellings within a single 428m² site. The scheme introduces new roof areas and hardstanding but also retains a substantial proportion of soft landscaped garden, allowing surface water to be managed on site in a controlled and policy-compliant manner.

The purpose of this report is to set out a proportionate and technically appropriate surface water strategy for the site, addressing flood risk, water quality, amenity and water efficiency. The strategy is based on a conservative hydraulic design that assumes all roofs and paved areas drain to lined on-site attenuation with a restricted discharge to the existing sewer network, with additional SuDS features such as permeable paving, rainwater collection and landscaped features providing interception, treatment and wider environmental benefits.

The document has been prepared having regard to the Non-Statutory Technical Standards for SuDS, the CIRIA SuDS Manual C753, London Plan Policy SI13, and the London Borough of Hillingdon Sustainable Drainage Design and Evaluation Guide. It provides sufficient detail for the Local Planning Authority to determine that the approved development will not increase flood risk and will deliver a sustainable, maintainable and policy-compliant surface water management solution for the lifetime of the development.

This report is submitted in response to Condition 7 of the planning permission, which states:

“No development approved by this permission shall be commenced until a scheme for the provision of sustainable water management has been submitted to and approved in writing by the Local Planning Authority. The scheme shall clearly demonstrate that sustainable drainage systems (SuDS) have been incorporated into the designs of the development in accordance with the hierarchy set out in Policy SI5 of the London Plan and will:
i. provide information about the design storm period and intensity, the method employed to delay and control the surface water discharged from the site and the measures taken to prevent pollution of the receiving groundwater and/or surface waters;
ii. include a timetable for its implementation; and

iii. provide a management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime.

The scheme shall also demonstrate the use of methods to minimise the use of potable water through water collection, reuse and recycling and will:
iv. provide details of water collection facilities to capture excess rainwater; and
v. provide details of how rain and grey water will be recycled and reused in the development.

Thereafter the development shall be implemented and retained/maintained in accordance with these details for as long as the development remains in existence."

Although the wording of the condition refers to Policy SI5, the adopted London Plan now sets the SuDS hierarchy within Policy SI13, and this report addresses the condition in that policy context.

Site Description and Location

The site is located at 10 St Lukes Close, Uxbridge, UB8 3SN, within an established residential area to the south of Uxbridge town centre. The Ordnance Survey National Grid Reference for the site is TQ05932 81380. The property lies within the administrative area of the London Borough of Hillingdon and is served by the Thames Water combined sewer network.

The site comprises a single residential plot with an existing dwelling, outbuildings, hardstanding and private rear garden. The plot is bounded on all sides by neighbouring residential properties and associated garden areas.

The rear and side areas of the site include both hardstanding and soft landscaping, with the latter forming a continuous garden area to the east and south of the buildings. There are no ordinary watercourses, surface water bodies or open drainage features within or adjacent to the site. All existing surface water drainage is understood to discharge via a private connection to the combined sewer network.

British Geological Survey mapping indicates that the site is underlain by the Langley Silt Member, comprising clay and silt, overlying the London Clay Formation. These deposits are of low permeability and are consistent with the Drain London mapping, which classifies the area as Infiltration SuDS Potentially Unsuitable. While shallow soil moisture storage and evapotranspiration will occur within landscaped areas, deeper infiltration cannot be relied upon for drainage design.

This site context forms the basis for the surface water management strategy set out in the following chapters.

FIGURE 1. SITE LOCATION

Development Proposal

The approved development at 10 St Lukes Close comprises the erection of a two storey side extension and a single storey rear extension to the existing dwelling, together with the creation of an additional two-bedroom, four-person dwelling within the extended building. The scheme also includes the demolition of the existing conservatory and outbuildings and the formation of new external amenity space, parking and access within the site.

The resulting layout provides two self-contained residential units within the same curtilage, served by new areas of hardstanding for parking, cycle and bin storage and by private garden areas to the rear of the dwellings. The combined footprint of the extended and reconfigured buildings is approximately 120m². New paved areas associated with access and parking total approximately 118m² and are shown on the approved drawings as permeable paving. The remainder of the site, approximately 190m², is retained or formed as soft landscaped garden.

From a surface water perspective, the development rationalises the existing informal arrangement of roofs, conservatory and outbuildings into two defined roof structures and formal areas of paving and landscaping. This creates a clear opportunity to intercept, convey and manage surface water in a controlled manner within the site boundary, replacing the existing uncontrolled runoff regime with a sustainable and policy-compliant SuDS strategy.

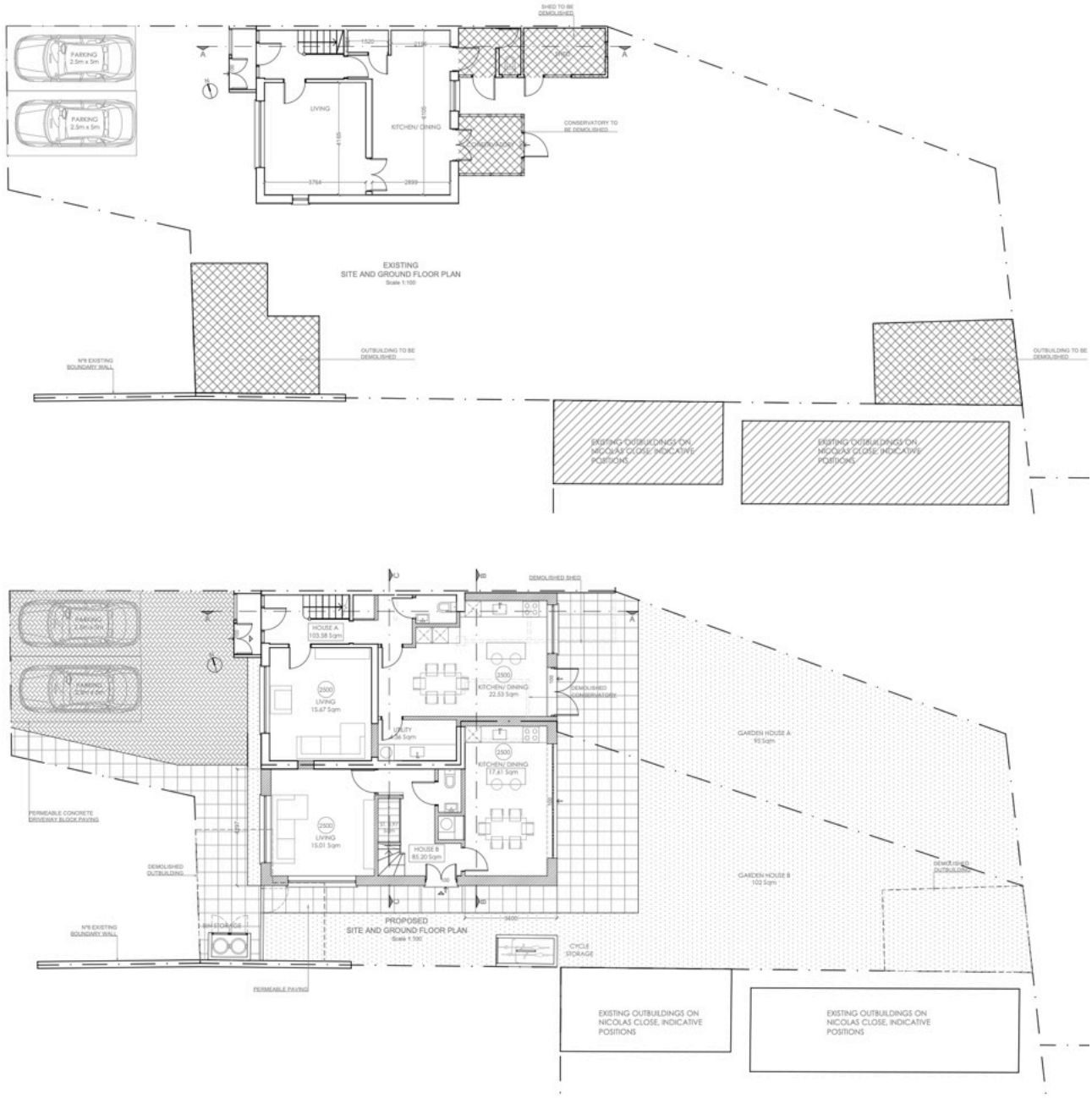

FIGURE 2. EXISTING AND PROPOSED SITE PLAN

Surface Water Run-off Assessment

Existing Run-off

Under existing conditions the site comprises a single dwelling with a conservatory and ancillary outbuildings, together with areas of hardstanding and garden. Roofs and paved surfaces drain via the existing private drainage system to the downstream sewer network, while the rear garden and other soft landscaped areas provide limited interception and surface storage at the surface. Given the underlying clay and silt geology, infiltration is shallow and slow, and runoff from built and paved areas is assumed to be conveyed predominantly by the existing sewered drainage system.

Proposed Run-off (Without SuDS Measures)

The approved development introduces a reconfigured and extended building footprint together with new areas of hardstanding associated with parking and access. The total impermeable area post-development is approximately 238m², comprising 120m² of roofs and 118m² of paved surfaces. In the absence of any SuDS measures, rainfall falling on these areas would be conveyed rapidly to the existing sewer outfall, generating higher peak flows and runoff volumes than would occur from the site in its natural state.

Proposed Run-off (With SuDS Measures)

The proposed drainage strategy limits post-development surface water discharge from the site to the greenfield runoff rate for the full 428m² red line area. Using the UK SuDS IH124 method, this equates to a Qbar of 0.10l/s. All roofs and paved areas are conservatively assumed to drain to lined on-site attenuation before being discharged to the existing sewer connection at this restricted rate. No reliance is placed on infiltration or permeable paving storage to meet the hydraulic performance criteria.

A range of SuDS features is incorporated to intercept, treat and manage rainfall close to source. Rainwater collection, permeable paving and landscaped features provide initial storage, water quality treatment and evapotranspiration, while the 190m² of soft landscaped garden provides a defined area for exceedance routing and above-ground attenuation during extreme events. These measures ensure that floodwater is retained safely within the site boundary and away from buildings.

By controlling discharge to Qbar 0.10l/s, the development achieves a substantial reduction in runoff rate compared with the existing developed condition and ensures that surface water is managed in accordance with the greenfield standard required by the National SuDS Standards, London Plan Policy SI13 and Hillingdon Local Plan Policy DMEI10.

SuDS Assessment

According to Planning Practice Guidance (PPG), *"generally the aim should be to discharge surface runoff as high up the following hierarchy of drainage options as reasonably practicable:*

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

Surface water runoff should be managed as close to its source as possible, in line with both PPG guidance and the London Plan's drainage hierarchy (Policy SI13).

Infiltration

British Geological Survey mapping indicates that the site is underlain by the Langley Silt Member, comprising clay and silt overlying the London Clay Formation. This is consistent with the Drain London infiltration SuDS suitability mapping, which classifies the area as "Infiltration SuDS Potentially Unsuitable". These ground conditions indicate low permeability at depth and an increased risk of slow drainage and groundwater mounding if infiltration systems such as soakaways are used.

Shallow infiltration and surface retention within landscaped areas, permeable paving and planting soils is feasible and forms part of the proposed SuDS, but infiltration is not relied upon to provide the hydraulic control or flood risk mitigation for the site.

Surface Water Body

There are no ordinary watercourses, ponds or surface water bodies within or adjacent to the site. Discharge to a surface water body is not available.

Surface Water Sewer

The surrounding area is served by the Thames Water sewerage network. There is no evidence of a separate surface water sewer available for connection at this location.

Combined Sewer

The existing property drains to the combined sewer network operated by Thames Water. In the absence of a viable infiltration or surface water sewer option, controlled discharge to the combined sewer represents the lowest practicable tier of the drainage hierarchy for this site. The proposed strategy therefore restricts discharge to this network to the greenfield runoff rate, with on-site attenuation and SuDS used to manage runoff volumes and peak flows.

Proposed SuDS Measures

The drainage strategy incorporates a combination of source control, green infrastructure and formal attenuation to satisfy the requirements of London Plan Policy SI13 and Hillingdon Local Plan Policy DMEI10. Rainwater collection at source, permeable paving to trafficked areas and landscaped features within the rear garden provide interception, water quality treatment, evapotranspiration and amenity. These are complemented by lined on-site attenuation and a low-flow control device that limits discharge to the greenfield rate before release to the sewer.

This combination allows rainfall to be managed as high up the drainage hierarchy as is reasonably practicable for the site, while ensuring that peak flows and volumes are controlled, flood risk is not increased and multiple environmental benefits are delivered within the constrained urban setting.

SuDS Component	Description	Site Suitability	Comments
Blue-Green Hybrid Roof	A hybrid system integrating vegetation with a subsurface water retention layer. This allows for both water absorption by plants and controlled discharge, reducing peak runoff rates.	Not suitable	The development comprises pitched domestic roofs without podiums or flat roof decks. Structural loading, build-up depth and maintenance access constraints mean blue or green roof systems are not appropriate or necessary for this small residential scheme.
Rainwater Reuse	Rainwater is collected from rooftops and other paved surfaces and stored in aboveground or underground tanks. The stored water is treated and reused locally, typically for irrigation and toilet flushing.	Suitable	Rainwater butts will be provided to capture roof runoff for garden irrigation. This satisfies the SI13 hierarchy by using rainwater as a resource and reduces potable water demand and runoff volumes.
Soakaways	An underground pit filled with gravel or rubble designed to quickly absorb water into permeable soil layers. It allows water to seep gradually into the ground, preventing surface runoff.	Not suitable	The site is underlain by Langley Silt and London Clay and is mapped as Infiltration SuDS Potentially Unsuitable. Deep infiltration systems such as soakaways carry a risk of slow drainage and groundwater mounding and are not relied upon.
Rain Gardens	Grassed or planted areas where runoff flows across, promoting infiltration and natural filtration of pollutants.	Suitable	Rain gardens and landscaped areas within the 190m² rear garden will receive roof overflows and surface runoff, providing interception storage, water quality treatment and evapotranspiration.
Permeable Paving	Paving that allows water to pass through gaps between solid blocks or through porous materials, enabling water to soak into the ground or be stored in the sub-base below.	Suitable	All new hardstanding and parking areas are proposed as permeable paving. These provide interception, treatment and shallow storage, although no reliance is placed on infiltration for hydraulic control.
Bioretention	A vegetated zone with layers of gravel and sand designed to channel, filter and cleanse water as it seeps vertically. Water can either infiltrate into the ground or be drained through perforated pipes for further conveyance.	Suitable	Bioretention is provided through planted rain garden soils and landscaped margins, with underdrains and overflow routing to the formal attenuation system where required.
Swales	Shallow, landscaped depressions designed to channel and filter water. Swales can be ‘wet’ with surface water retention or ‘dry’ with subsurface water filtration through a gravel layer.	Limited suitability	Space constraints and the enclosed residential layout restrict the use of formal swales, but shallow landscaped depressions and graded lawn areas will provide similar conveyance and filtering functions.
Hardscape Storage	Constructed water storage features integrated into urban landscapes, storing runoff above ground within designed containers. These features can enhance public spaces with both aesthetic and functional benefits.	Limited suitability	Above-ground storage is provided in a functional form through rainwater butts and landscaped features rather than formal hardscape tanks, which are not appropriate in a private garden setting.
Ponds/Basins	Water bodies designed for stormwater management. ‘Wet’ ponds maintain a constant water level with plants for habitat, while ‘dry’ basins store water temporarily during rainfall and allow for infiltration or controlled release.	Not suitable	The site is too small and constrained for ponds or basins, and standing water features would be inappropriate in a private residential garden.
Stormwater Wetlands	Wetlands are shallow, vegetated water bodies with fluctuating water levels. They utilise specially selected plant species to filter and purify water. Water flows horizontally through these plants, undergoing gradual treatment before being discharged.	Not suitable	The scale of the site and residential context preclude the use of wetland systems.
Geocellular Systems	Water can be stored underground in tanks, gravel beds, or plastic crates to provide attenuation and manage runoff.	Suitable	A lined geocellular attenuation tank is proposed to provide the required storage volume for the 1:100yr+40%CC event before controlled discharge to the sewer at Qbar 0.10l/s.

FIGURE 3. SUDS SITE SUITABILITY

SuDS Component Progressed to Design

The drainage strategy for the development is based on a conservative, attenuation-led SuDS approach that reflects the urban context, the clay and silt geology and the policy requirement to control runoff to greenfield rates. The scheme incorporates a combination of source control, green infrastructure and formal below-ground storage to ensure that rainfall is intercepted, treated and managed within the site before controlled discharge to the sewer.

Rainwater Collection and Reuse

Rainwater butts will be provided to receive roof runoff for both dwellings. These provide interception storage and enable reuse of rainfall for garden irrigation, directly addressing the top tier of the SI13 drainage hierarchy and contributing to reduced potable water demand. The water butts also reduce the initial volume and rate of runoff entering the drainage system during smaller rainfall events.

Planters, Rain Gardens and Soft Landscaping

The 190m² of rear garden and landscaped margins form an integral part of the SuDS strategy. These areas act as shallow rain gardens and bioretention zones, receiving overflow from rainwater collection systems and contributing to surface interception, water quality treatment, evapotranspiration and amenity. Although shallow infiltration to the soil profile will occur, these features are not relied upon for hydraulic compliance and instead provide multiple environmental benefits consistent with London Plan Policy SI13(D).

Permeable Paving

All new hardstanding and parking areas are proposed as permeable paving. These surfaces provide interception storage within the sub-base, water quality treatment and controlled conveyance to the formal drainage system. For design purposes they are conservatively treated as impermeable with lined sub-bases, ensuring that the hydraulic performance of the scheme does not depend on infiltration through the underlying clay and silt.

Geocellular Attenuation and Flow Control

A lined geocellular attenuation tank is provided to store runoff from all roofs and paved areas for the 1:100yr+40%CC design event. Discharge from the tank is controlled by a low-flow control device set to Qbar 0.10l/s, being the greenfield runoff rate for the 428m² site. This ensures that peak flows and volumes released to the existing combined sewer are significantly lower than those from an unmanaged developed site and fully compliant with London Plan Policy SI13(B) and the National SuDS Standards.

Overall Performance

The combination of rainwater collection, permeable surfaces, landscaped SuDS features and formal attenuation provides a resilient and proportionate drainage system. Rainfall is intercepted and treated close to source, controlled to greenfield discharge rates and safely attenuated within the site during extreme events, with exceedance routed to the landscaped garden areas. The system is simple to maintain, entirely within the site boundary and provides multiple benefits in terms of flood risk, water quality, amenity and water efficiency.

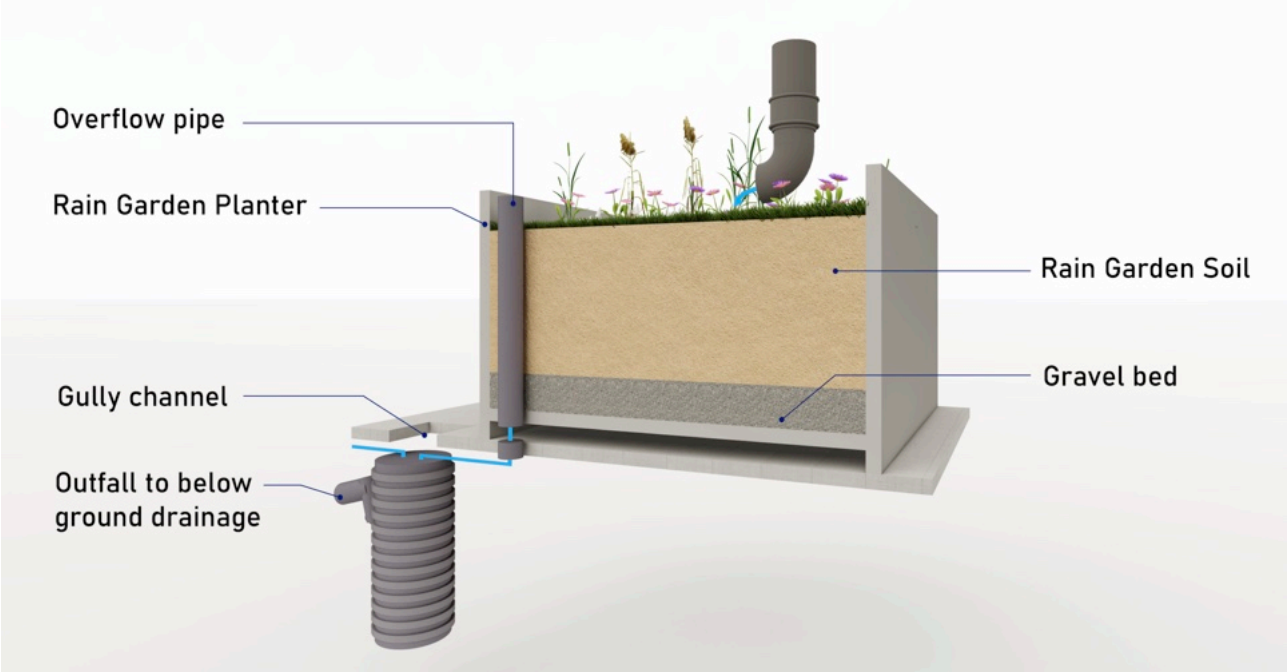

FIGURE 4. TYPICAL RAIN GARDEN PLANTER DETAIL

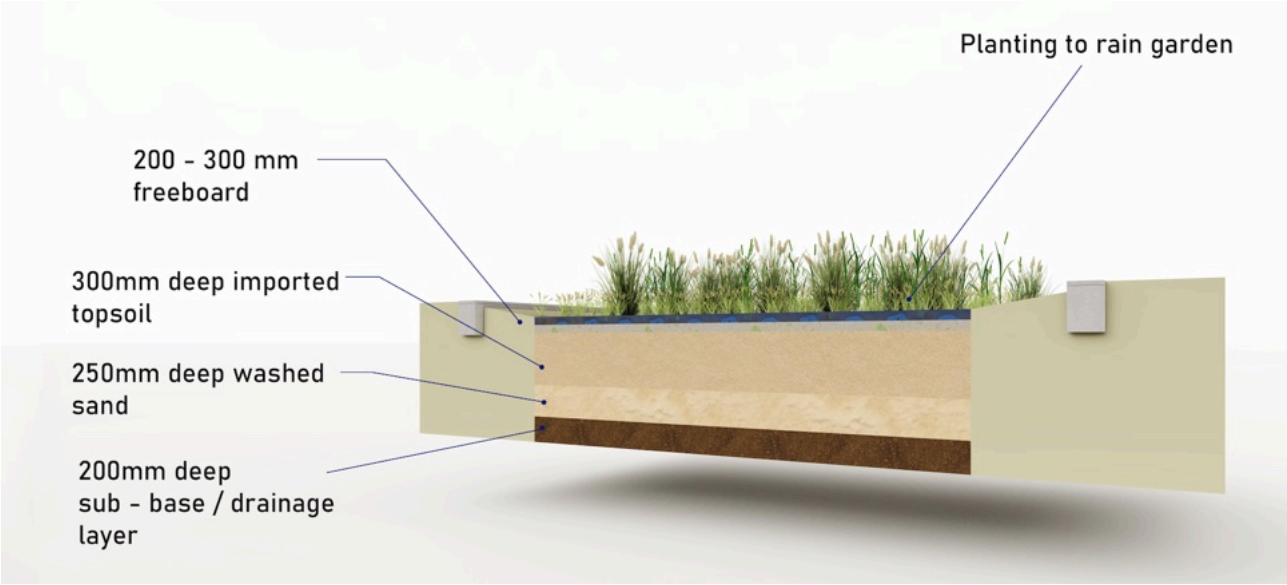

FIGURE 5. TYPICAL RAIN GARDEN DETAIL

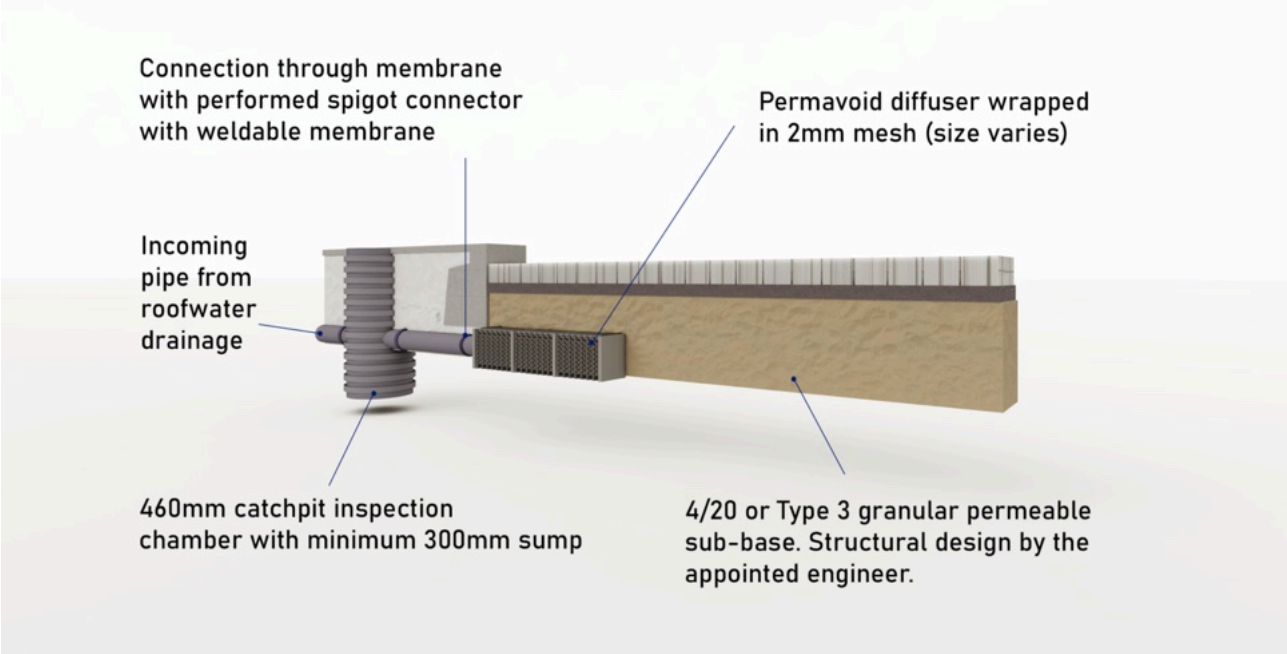

FIGURE 6. TYPICAL DIFFUSER UNIT DETAIL

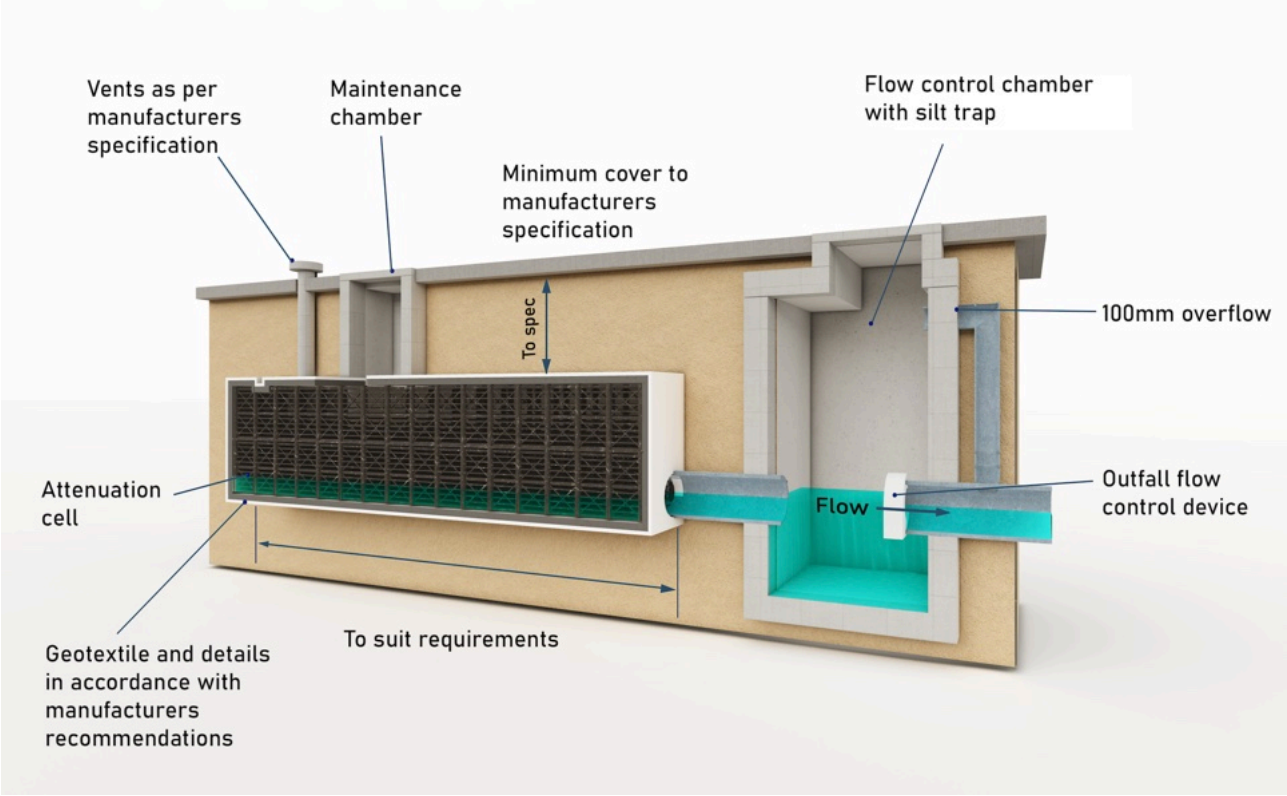

FIGURE 7. TYPICAL ATTENUATION TANK DETAIL

SuDS Run-off Summary

The approved development comprises two dwellings with a combined roof area of approximately 120m² and paved areas of approximately 118m². For design purposes all roof and paved surfaces are conservatively treated as contributing runoff to the surface water drainage system.

Rainfall from roofs is intercepted at source by rainwater butts which provide initial storage and enable reuse for garden irrigation. Overflow from the water butts, together with runoff from permeable paving and hardstanding, is routed to landscaped areas within the 190m² rear garden and to the formal drainage system.

The underlying Langley Silt and London Clay geology means that infiltration at depth cannot be relied upon. The drainage strategy is therefore designed on the basis that all runoff ultimately drains to lined on-site attenuation before controlled discharge to the existing combined sewer. Shallow infiltration and surface storage within planted areas, permeable paving and soil profiles provides additional interception, water quality treatment and evapotranspiration, but is not relied upon for hydraulic compliance.

Post-development discharge from the site is restricted to the greenfield runoff rate for the full 428m² red line area. Using the UK SuDS IH124 method, this equates to a Qbar of 0.10l/s. This represents a substantial reduction compared with the existing developed condition and ensures that surface water runoff from the site will not increase flood risk to the downstream sewer network.

Exceedance flows during events greater than the 1:100yr+40% climate change design storm will be routed safely across the landscaped garden areas within the site, ensuring that floodwater is retained away from buildings and within the site boundary.

On this basis the development delivers a controlled and sustainable surface water regime that accords with the drainage hierarchy set out in London Plan Policy SI13 and the requirements of Hillingdon Local Plan Policy DMEI10.

Surface Water Maintenance Strategy

All components of the surface water drainage system for the site will be located within the site boundary and will remain under the control of the property owners. The SuDS have been selected to be simple, passive and robust, minimising the risk of failure and the need for specialist maintenance.

Rainwater butts shall be inspected at least twice per year and after periods of prolonged rainfall to ensure that inlets, filters and overflows remain clear of debris. Stored water may be used for garden irrigation, which will help maintain available storage between rainfall events.

Permeable paving areas shall be kept free of sediment, leaves and other material that could block surface joints. Routine sweeping and periodic vacuum cleaning will be undertaken to maintain permeability and water quality performance. Any damaged or displaced blocks shall be replaced as required.

Landscaped areas, including rain garden and bioretention features, shall be maintained as part of the normal garden management regime. Vegetation shall be kept healthy and free of invasive species, and any accumulated silt or debris shall be removed to maintain surface storage and infiltration at the soil interface.

The geocellular attenuation tank, flow control chamber and associated pipework shall be inspected at least annually to confirm that there is no sediment build-up, damage or blockage. Any silt traps or catchpits upstream of the tank shall be cleared as required to protect the low-flow control device. The flow control orifice and guard shall be checked to ensure free operation.

All exceedance routes through the landscaped areas shall be kept clear and shall not be obstructed by fencing, structures or raised levels that could divert floodwater towards buildings.

Responsibility for the maintenance of the surface water system shall lie with the property owners for as long as the development remains in existence. No SuDS components are proposed for adoption by Thames Water or any other public authority.

SuDS Feature	Maintenance Task	Frequency	Notes and Performance Checks
Planters and Rain Garden Areas	Inspect soil condition, planting health and surface drainage. Remove litter, leaves and sediment.	Quarterly and after heavy rainfall events.	Check for standing water, surface sealing or blocked weep points. Top up mulch or soil if erosion or compaction is observed. Replace failed plants as required.
	Check base drainage layers and any underdrain or outlet for blockage.	Every 6 months.	Flush with clean water if ponding persists beyond 48 hours after rainfall. Confirm that any overflow routes remain clear.
Rainwater Butts	Inspect and clean inlet screens, leaf guards and diverters.	Quarterly and before and after winter.	Remove leaves and debris to maintain inflow efficiency and prevent blockages.
	Check integrity of tank, connections and overflow pipework.	Annually.	Confirm that overflow discharges freely to the adjacent landscaped area or drainage system. Inspect for cracks, leaks or UV damage.
	Drain and flush tank to remove sediment and biofilm.	Every 12–18 months.	Rinse with clean water and reconnect once clear.
Permeable Paving	Sweep surfaces to remove detritus and sediment.	Monthly and after leaf fall.	Prevent clogging of joints and maintain surface permeability.
	Vacuum clean and inspect sub-base performance.	Every 1–2 years.	Remove accumulated fines. Replace jointing material if permeability is reduced.
Catchpits and Silt Traps	Inspect and remove accumulated silt and debris.	Every 6 months and after major rainfall events.	Protects the attenuation system and low-flow control from blockage.
Geocellular Attenuation Tank	Inspect access points and internal condition.	Annually.	Check for sediment build-up, structural damage or standing water. Remove sediment if required.
Flow Control Chamber	Inspect orifice, guard and overflow weir.	Annually and after extreme rainfall.	Confirm free flow through the low-flow control and that the guard is not obstructed.
Exceedance Routes and Landscaped Areas	Inspect flow paths and ground levels.	Annually.	Ensure no fences, planting or level changes obstruct exceedance routing towards landscaped areas and away from buildings.

Conclusions

The proposed development at 10 St Lukes Close incorporates a surface water drainage strategy that is fully aligned with London Plan Policy SI13, Hillingdon Local Plan Policy DMEI10 and the National SuDS Standards.

The site lies on Langley Silt and London Clay and is mapped as Infiltration SuDS Potentially Unsuitable. The drainage design has therefore been developed on a conservative basis that does not rely on infiltration to control runoff. All roofs and paved areas are assumed to drain to lined on-site attenuation, with discharge restricted to the greenfield runoff rate of Qbar 0.10l/s for the full 428m² red line area.

A range of SuDS measures, including rainwater collection, permeable paving and landscaped bioretention features, provide interception, water quality treatment, evapotranspiration and amenity benefits, and allow rainfall to be managed as close to source as reasonably practicable. These measures are hydraulically subservient to the attenuation and flow control system and provide additional resilience rather than forming the basis of compliance.

The proposed system ensures that peak flows and runoff volumes released to the existing combined sewer are significantly lower than those from the existing developed site and that exceedance during extreme events is contained safely within the site's landscaped areas. The scheme will not increase flood risk on site or elsewhere.

A clear and proportionate maintenance regime has been defined to ensure that the SuDS operate effectively for the lifetime of the development.

On this basis the surface water drainage strategy provides a sustainable, robust and policy-compliant solution that satisfies the requirements of Condition 7 of the planning permission.

Note:

This document has been prepared solely for the purposes of discharging Condition 7 of the planning permission and reflects the information, drawings and third-party datasets available at the time of preparation. It provides a planning-level surface water strategy only and does not constitute a detailed construction design or a guarantee of drainage performance under all operating conditions.

The drainage concept is based on compliance with adopted planning policy, including restriction of discharge to the greenfield runoff rate. Such low discharge rates require correctly specified flow controls, clean installation, protection from sediment during construction and ongoing maintenance by the owner. The performance of the system is dependent on these matters and on the continued availability and serviceability of the existing sewer connection. No responsibility is accepted for flooding or damage arising from blockage, misuse, lack of maintenance, unauthorised alterations, deterioration of third-party drainage infrastructure or events beyond the design assumptions.

No liability is accepted to any party other than the Client for the use of this report, whether for construction, operation, asset management or any other purpose. The report may not be relied upon by third parties without the express written consent of Flume Consulting Engineers Ltd.

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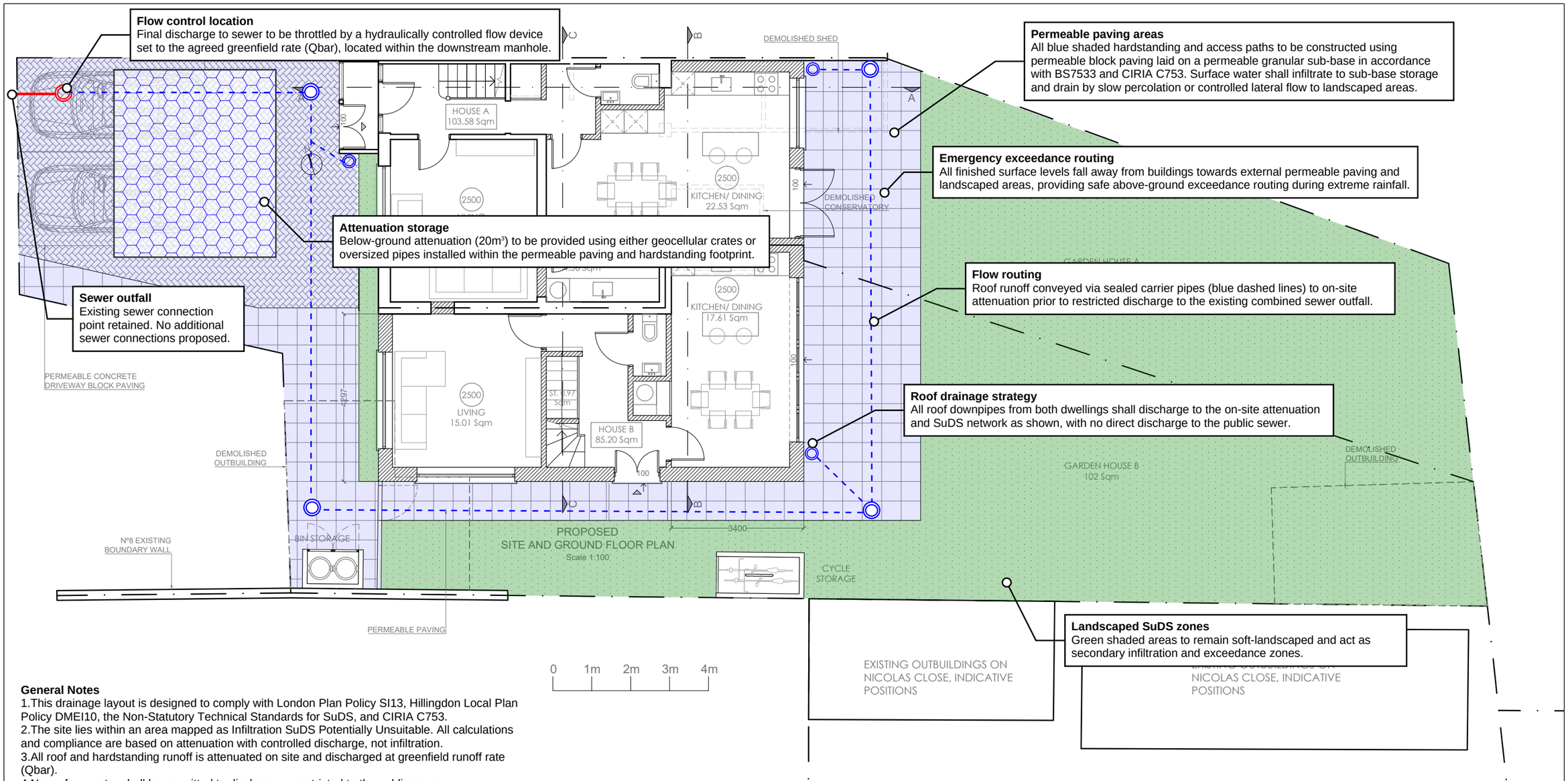
Appendix A - SuDS Strategy

Job No.	1698	Page	SK 001	Rev	1
Date	20/12/2025	Eng	TQ	Chd	
Job	10 St Lukes Close - SuDS Strategy				



General Notes

1.This drainage layout is designed to comply with London Plan Policy SI13, Hillingdon Local Plan Policy DMEI10, the Non-Statutory Technical Standards for SuDS, and CIRIA C753.
2.The site lies within an area mapped as Infiltration SuDS Potentially Unsuitable. All calculations and compliance are based on attenuation with controlled discharge, not infiltration.
3.All roof and hardstanding runoff is attenuated on site and discharged at greenfield runoff rate (Qbar).
4.No surface water shall be permitted to discharge unrestricted to the public sewer.
5.Finished floor levels are set above all local exceedance routes.
6.All permeable paving must be maintained free of sediment and detritus to retain hydraulic performance.
7.Flow control devices must be installed strictly in accordance with manufacturer's instructions and protected from blockage.
8.During construction all SuDS components must be protected from silt ingress. No trafficking or material storage on permeable surfaces prior to completion.
9.Any future alteration to drainage, surfacing or landscaping that reduces permeability shall require separate approval.
10.The drainage system is designed for the 1:100yr +40% climate change event without property flooding.
11.Exceedance flows shall be safely routed across paved and landscaped areas away from buildings.
12.Maintenance of all SuDS components is the responsibility of the site owner in perpetuity.

Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

hrwallingford

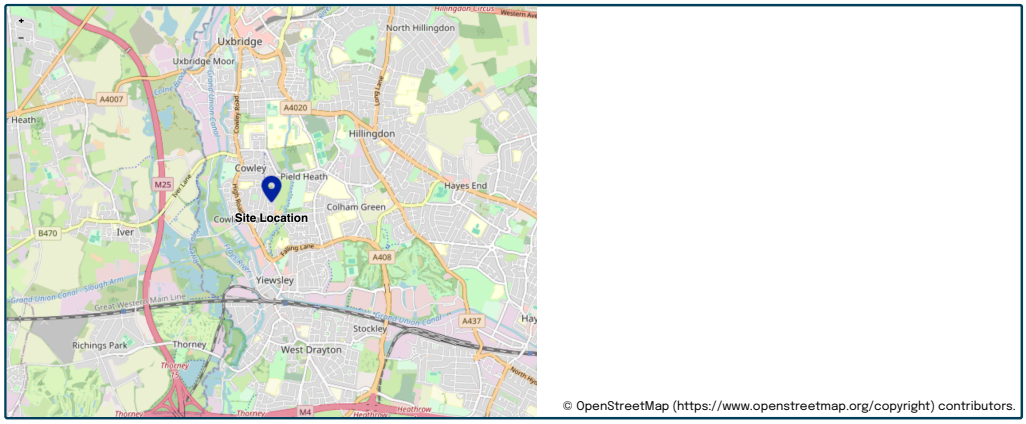
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	07/01/2026
Calculated by	TQ
Reference	10 St Lukes Close
Model version	2.2.2

Location

Site name	10 St Lukes Close
Site location	Hillingdon



Site easting (British National Grid)	505908
Site northing (British National Grid)	181412

Site details

Total site area (ha)	.0428 ha

Greenfield runoff

Method

Method	IH124

IH124

	My value		Map value
SAAR (mm)	625 mm	☐	625
How should SPR be derived?	WRAP soil type		
WRAP soil type	2	☐	2
SPR	0.3		
QBar (IH124) (l/s)	0.1 l/s		

Growth curve factors

	My value		Map value
Hydrological region	6	☐	6
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)	0.1 l/s
Flow rate 2 year (l/s)	0.1 l/s
Flow rate 10 years (l/s)	0.1 l/s
Flow rate 30 years (l/s)	0.2 l/s
Flow rate 100 years (l/s)	0.2 l/s
Flow rate 200 years (l/s)	0.3 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.

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	999.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Depth (m)
Attenuation	0.024	5.00	2.000	450	2.000
Outfall	0.000		2.000	450	2.000

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	Attenuation	Outfall	3.000	0.600	0.000	0.000	0.000	0.0	100	5.05	54.5

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	1.000	7.9	4.7	1.900	1.900	0.024	0.0	0	∞

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	3.000	0.0	100	Circular	2.000	0.000	1.900	2.000	0.000	1.900

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	Attenuation	450	Manhole	Adoptable	Outfall	450	Manhole	Adoptable

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
Attenuation	2.000	2.000	450	0	1.000	0.000	100
Outfall	2.000	2.000	450	1	1.000	0.000	100

Simulation Settings

Rainfall Methodology	FSR	Summer CV	1.000	Additional Storage (m³/ha)	0.0
Rainfall Events	Singular	Winter CV	1.000	Starting Level (m)	
FSR Region	England and Wales	Analysis Speed	Normal	Check Discharge Rate(s)	x
M5-60 (mm)	20.000	Skip Steady State	x	Check Discharge Volume	x
Ratio-R	0.400	Drain Down Time (mins)	1440		

Storm Durations

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

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

Node Attenuation Online Depth/Flow Control

Flap Valve	x	Invert Level (m)	0.000	Design Flow (l/s)	0.2
Replaces Downstream Link	✓	Design Depth (m)	1.000		

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.001	0.100	1.000	0.100

Node Attenuation Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	0.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	20.0	20.0	1.000	20.0	20.0	1.001	0.0	20.0

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 15 minute summer	488.233	138.153	100 year +40% CC 360 minute summer	56.677	14.585
100 year +40% CC 15 minute winter	342.620	138.153	100 year +40% CC 360 minute winter	36.841	14.585
100 year +40% CC 30 minute summer	320.551	90.705	100 year +40% CC 480 minute summer	43.979	11.622
100 year +40% CC 30 minute winter	224.948	90.705	100 year +40% CC 480 minute winter	29.219	11.622
100 year +40% CC 60 minute summer	214.603	56.713	100 year +40% CC 600 minute summer	35.604	9.738
100 year +40% CC 60 minute winter	142.577	56.713	100 year +40% CC 600 minute winter	24.327	9.738
100 year +40% CC 120 minute summer	129.587	34.246	100 year +40% CC 720 minute summer	31.433	8.424
100 year +40% CC 120 minute winter	86.094	34.246	100 year +40% CC 720 minute winter	21.125	8.424
100 year +40% CC 180 minute summer	97.729	25.149	100 year +40% CC 960 minute summer	25.432	6.697
100 year +40% CC 180 minute winter	63.526	25.149	100 year +40% CC 960 minute winter	16.847	6.697
100 year +40% CC 240 minute summer	75.977	20.078	100 year +40% CC 1440 minute summer	18.055	4.839
100 year +40% CC 240 minute winter	50.477	20.078	100 year +40% CC 1440 minute winter	12.134	4.839

Results for 100 year +40% CC 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
960 minute summer	Attenuation	945	2.000	2.000	1.7	19.3275	0.0000	SURCHARGED
15 minute summer	Outfall	1	0.000	0.000	0.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Discharge Vol (m³)
960 minute summer	Attenuation	Depth/Flow	Outfall	0.1	14.3