

SuDS Strategy Report

Land South of 84 Westleigh, BA12 8NJ

Project Reference: SD2310184

SuDS DESIGNS

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Revisions and Additional Material

Document History and Status

Revision	Date	Purpose/Status
-	October 2023	First Issue

Document Details

Project Number	SD2310184
Project Author	Megan Nicholson

1 Preamble

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2 Introduction & Existing Conditions

2.0.0 SuDS Designs have been appointed to prepare a surface water drainage strategy to support the planning application for the site south of 84 Westleigh. As part of the proposals, this report will assess the potential impact from alterations to the site drainage, and the surface water characteristics locally.

2.0.1 The site is located on an existing property's soft landscaped garden with a proposal to develop 1 detached dwelling with associated garden and drive,

2.0.2 To consider the ground conditions in the application site, the British Geological Society database has been reviewed.

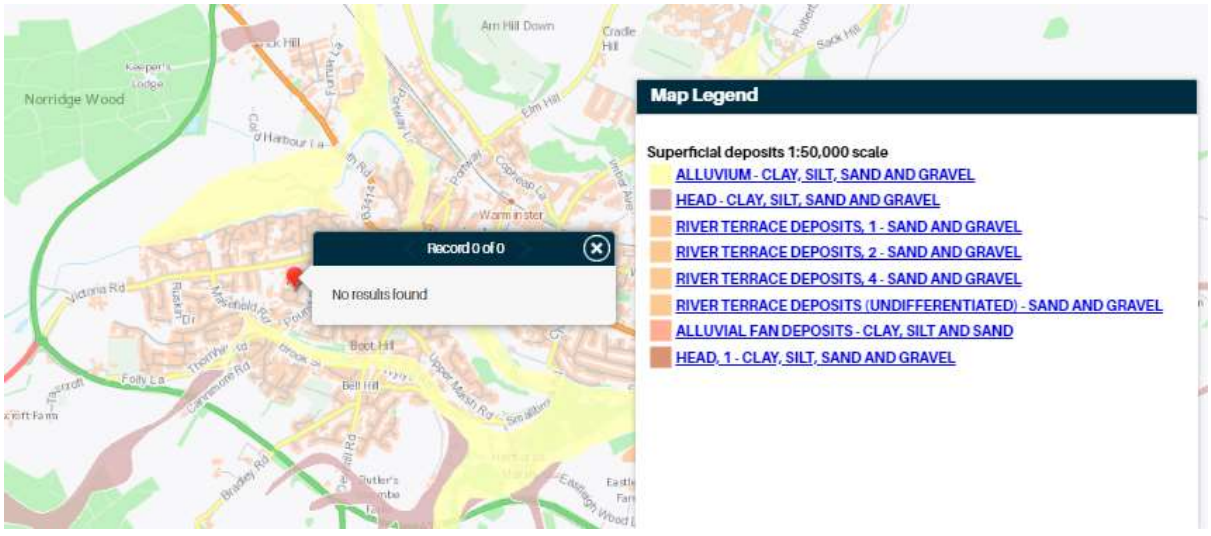


Figure 1: Extent of Superficial Geology

2.0.4 Bedrock Geology:



Figure 2: Extent of BGS Bedrock Geology

2.0.5 BGS mapping shows that the site has no known superficial deposits however Alluvium (clay, silt, sand, gravel) is in close proximity to the site. Bedrock geology is Boyne Hollow Chert Member (sandstone).

3 SuDS Considerations

3.0.1 Consideration of SuDS are a planning requirement for new developments. SuDS are designed to replicate the natural course of drainage as closely as possible with a view to reducing the impact of flooding, removing pollutants at source, and combining water management with green space.

Developments should utilise SuDS where possible and ensure that surface water run-off is managed as close to its source as possible in line with the following hierarchy:

1. Into ground (infiltration).
2. To a surface water body.
3. To a surface water sewer.
4. To a combined sewer.

3.0.2 Sustainable Drainage Systems should be included in the design to manage surface water flood risk. SuDS should be inspired by natural drainage processes and manage water as close to its source as possible whilst offering pollution control and landscape benefits.

3.0.3 Local design guidance states that a surface water drainage assessment should be carried out to demonstrate that the proposed development makes use of SuDS and will not create an increased risk of flooding from surface water to the development site and the surrounding area.

3.1 SuDS Incorporation

3.1.1 The below table, taken from the SuDS Manual, C753, CIRIA, 2015 Document lists a variety of SuDS component options which may be applied to development proposals.

3.1.2 The ground conditions and recent percolation testing appears to support the use of surface water disposal by infiltration.

Component Type	Description	Design Criteria							
		Collection Mechanism	Water Quantity (Chapter 3)			Water Quality (Chapter 4)	Amenity (Chapter 5)	Biodiversity (Chapter 6)	Further Information (Chapter Ref)
			Peak Runoff Rate	Runoff Volumes					
				Events (Interceptions)	Large Events				

Rainwater Harvesting Systems	Systems that collect runoff from the roof of a building or other paved surface for use	P		●	●		●		11
Green roofs	Planted soil layers on the roof of buildings that slow and store runoff	S	○	●		●	●	●	12
Infiltration systems	Systems that collect and store runoff, allowing it to infiltrate into the ground	P	●	●	●	●	●	●	13
Proprietary treatment systems	Subsurface structures design to provide treatment to runoff	P				●			14
Filter strips	Grass strips hat promote sedimentation and filtration as runoff is conveyed over the surface	L		●		●	○	○	15
Filter drains	Shallow stone-filled trenches that provide attenuation, conveyance and treatment of runoff	L	●	○		●	○	○	16
Swales	Shallow landscaped depressions that allow runoff to pond temporarily on the surface, before filtering through vegetation and underlying soils	L	●	●	●	●	●	●	17
Bioretention systems	Trees with soil-filled tree pits, tree planters or structural soils used to collect, store and treat runoff	P	●	●	●	●	●	●	18
Trees	Structural paving through which runoff can soak and subsequently be stored in the sub-base beneath, and/or allowed to infiltrate into the ground below	P	●	●		●	●	●	19
Pervious pavements	Structural paving through which runoff can soak and subsequently be stored in the sub-base beneath, and/or allowed to infiltrate into the ground below	S	●	●	●	●	○	○	20
Attenuation storage tanks	Large, below-ground voided spaces used to temporarily store runoff before infiltration-controlled release or use	P	●						21
Detention basins	Vegetated depressions that store and treat runoff	P	●	●		●	●	●	22
Ponds and wetlands	Permanent pools of water used to facilitate treatment of runoff – runoff can also be stored in an attenuation zone above the pool	P	●			●	●	●	23

P-Point L-Lateral S-Surface

● – likely valuable contribution to delivery of design criterion

○ - some potential contribution to delivery of design criterion, if specifically included in the design

Figure 3 CIRIA Table 7.1 SuDS Components

3.1.3 The proposed site layout offers the opportunity to apply a range of SuDS measures in accordance with the table above. Proposals are as follows:

- **Infiltration Systems –** A filter strip system with a perforated pipe has been proposed to allow surface water run-off to infiltrate to the ground before entering the storage system. The system also adds source control.
- **Pervious Pavements –** Permeable paving has been proposed for in location of the driveway, with the systems sub-base providing surface water storage and later allowing infiltration to the ground.

3.1.4 By use of the above, the development proposals aim to drain all impermeable areas via SuDS measures.

3.1.5 In accordance with Table 26.2 of CIRIA Report C753, the pollution hazard level can be classified as 'very low' and 'Low'. Using table 26.3 of the same document, the mitigation indices values for permeable surfacing exceed the pollution hazard values taken from the previous table. This ensures that proposals offer enough pollution risk mitigation.

Figure 4 Extract from Table 26.2 CIRIA SuDS Manual Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential Roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie <300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

3.1.6 The above proposals ensure that an 'at source' SuDS measure is applied, and betterment is provided in terms of surface water runoff velocity and quality. Pollution indices from different land types can be found per as per table 26.15 CIRIA SuDS Manual 2015, below.

Land use surface type (Lust)	Impermeability (IMP_{RF})	Total suspended solids pollution index (PI_{TSS})	Organic pollution index (PI_{Org})	Hydrocarbon pollution index (PI_{PAD})	Metals Pollution index (PI)
Roofs					
• Industrial / Commercial	1.0	0.3	0.3-0.4	0.2	0.4-0.8
• Residential	0.9	0.4-0.5	0.6-0.7	0.1	0.2-0.5

Highways					
• Motorways	0.8-0.9	0.9	0.7	0.9	0.8
• Major arterial highways	0.7-0.8	0.8	0.7	0.8	0.8
• Urban distributor roads	0.6-0.7	0.7-0.8	0.5	0.8	0.7
• Residential Street	0.4-0.6	0.4	0.6	0.6	0.6
• Pavements	0.5-0.6	0.4	0.6	0.3	0.3
Car Parks / Hardstanding					
• Industrial/Commercial	0.6-0.8	0.6-0.7	0.6-0.7	0.7	0.4-0.5
• Driveways (Residential)	0.5	0.5	0.6	0.4	0.3
Open Areas					
• Gardens (All types)	0.1	0.3	0.2-0.3	0	0.01
• Parks/Golf Courses	0.2	0.2-0.3	0.2	0	0.02
• Grassed Areas (including verges, all types)	0.1	0.2-0.3	0.2-0.3	0.05	0.05
Note					
1 Pollution index values are based on reported land use type EMC distributions and impact potential thresholds from House et al (1991), Luker and Montague (1994), Butler and Clark (1995), D'Arcy et al (2000), Mitchell (2005) and Moy et al (2003)					

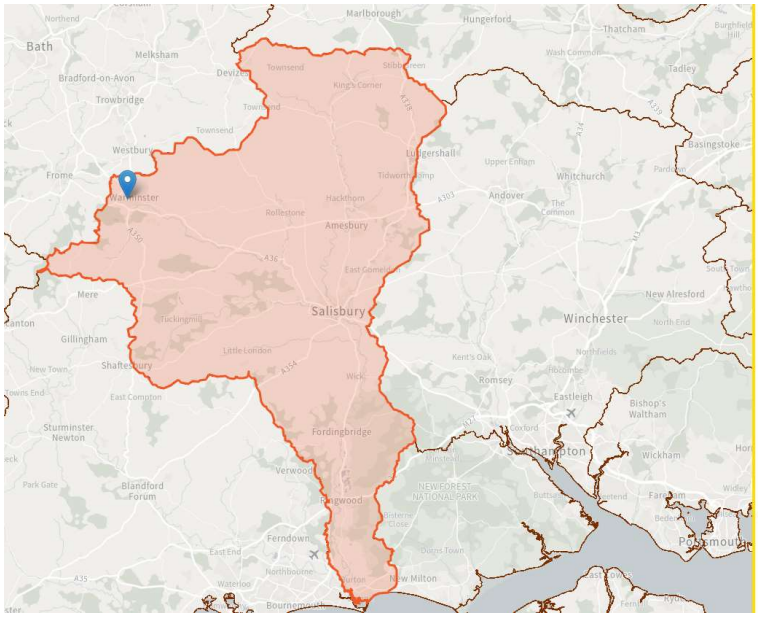
3.1.7 In determining the infiltration rate, reference is made to the Non-Statutory Technical Standards for SuDS, March 2015.

3.1.8 The above proposals ensure that SuDS measures are applied throughout the development. The client has conducted infiltration tests in accordance with BRE365 and a value if 0.181818 m/hr has been calculated.

3.2 Climate Change

3.2.1 The appended drainage calculation allows for a 1:100-year storm plus 45% climate change, this has been sourced from the DEFRA Hydrology Data Explorer for Climate Change Allowances, as below.

Figure 5: Impermeability and pollution indices for different land use types



Avon Hampshire Management Catchment peak rainfall allowances

3.3% annual exceedance rainfall event

Epoch	Central allowance	Upper end allowance
2050s	20%	35%
2070s	25%	40%

1% annual exceedance rainfall event

Epoch	Central allowance	Upper end allowance
2050s	25%	40%
2070s	25%	45%

*Use '2050s' for development with a lifetime up 2060 and use the 2070s epoch for development with a lifetime between 2061 and 2125.

This map contains information generated by Met Office Hadley Centre (2019): UKCP Local Projections on a 5km grid over the UK for 1980-2080. Centre for Environmental Data Analysis, 2022

Figure 6 Climate change allowances for peak rainfall by catchment area

4 Surface Water Strategy

The surface water strategy is based upon the SuDS implementation as outlined above along with the hierarchy for surface water disposal as follows:

A. Store rainwater for later use:

Not proposed through site layout

B. Use infiltration techniques, such as porous surfaces:

A filter strip system and permeable paving have been proposed and adds source control.

C. Attenuate rainwater in ponds or open water features for gradual release:

Not proposed through site layout

D. Attenuate rainwater by storing in tanks or sealed water features for gradual release:

Ground conditions do not require use of attenuation.

E. Direct rainwater direct to the watercourse:

No watercourse in proximity, nor is it required due to application of infiltration.

F. Discharge rainwater to a surface water sewer/drain

Not required.

G. Discharge rainwater to combined sewer:

Not required.

H. Discharge rainwater to foul sewer:

Not required.

4.1 Designing for Exceedance

4.1.0 Consideration should be given to external levels to ensure they are set above overland flood risk levels, and low points are created to direct water away from the building footprints during exceedance events. Please see appended drawing for exceedance flow directions.

4.1.1 CIRIA document C635 *Designing for exceedance in urban drainage – good practice* states that "at present there are no guidelines on the return period of event (extreme event) that should be used for design exceedance". However, Section 3.4 also states that "it is suggested that return periods of 1 in 30, to 1 in 100 or 1 in 200-year events would form a suitable framework for most applications".

4.1.2 In accordance with the above, the drainage network has been modelled using a 1 in 200-year event as an exceedance event to exemplify the resilience of the solution.

5 Building and Detailed Design

5.1 Pollution, Water Quality, and Control Measures

5.1.0 Consideration for surface water needs to be taken during the construction process, and how it is managed including flood risk and pollution control.

5.1.1 On completion of the permanent drainage system the network will be relied upon to control pollution and water quality for the remainder of the construction works.

5.1.2 Wheel and plant washing will take place at the temporary entrance to minimise the pollutants being transferred to, or from site, and is also located to minimise the risk of pollutants entering the permeable surfacing and other drainage elements.

5.1.3 Pollution incident potential involving plant and machinery can be contained by simple measures:

- Use of drip trays
- Emergency spill kits
- Regular maintenance/checks of plant and machinery including checks for wear, oil leaks and immediate decommissioning when faults occur.
- Procedures for refuelling areas, with spillage kits

6 Conclusions

6.0.1 A filter strip and permeable paving system have been design to provide infiltration of surface water run-off with source control applied. The permeable paving sub-base has been designed to accommodate a 1 in 200-year storm event + 45% climate change.

6.1 Architect layout Plan

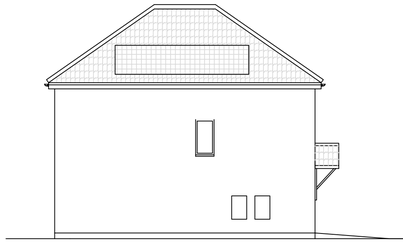
DRAWINGS BASED ON TOPOGRAPHY & SITE BOUNDARY LIMITS INFORMATION PROVIDED BY OTHERS, IF ONSITE DISCREPANCIES ARISE, BRING TO A HARLOW & SONS ATTETNTION IMMEDIATELY

IF IN DOUBT,ASK - DO NOT SCALE - CHECK ON SITE DIMENSIONS.
SITE DIMENSIONS TO BE CHECKED PRIOR TO START - DISCREPANCIES TO BE RAISED WITH A HARLOW & SON

All DIMENSIONS ARE TO STRUCTURAL ELEMENTS & NOT TO APPLIED FINISHES



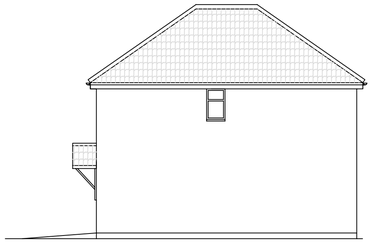
Proposed Front (East) Elevation 1:100



Proposed Side (South) Elevation 1:100

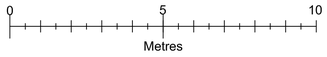


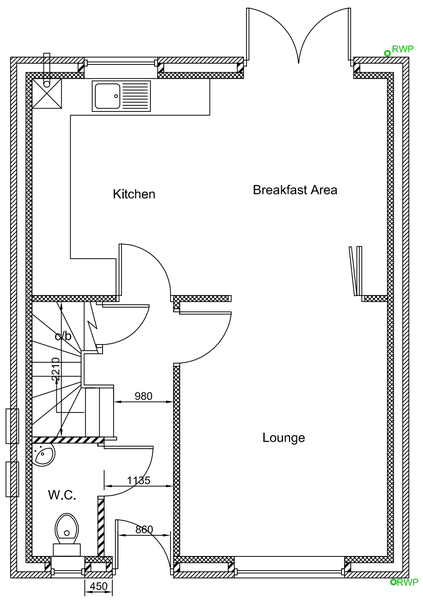
Proposed Rear (West) Elevation 1:100



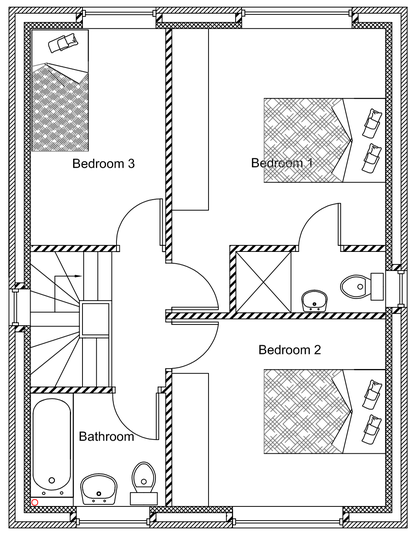
Proposed Side (North) Elevation 1:100

Building Materials:-
Walls:- Red Brick to match 84 Westleigh
Roof:- Concrete profile tile to match 84 Westleigh & solar panels
Windows & Doors:- Upvc
Rainwater Goods:- Upvc



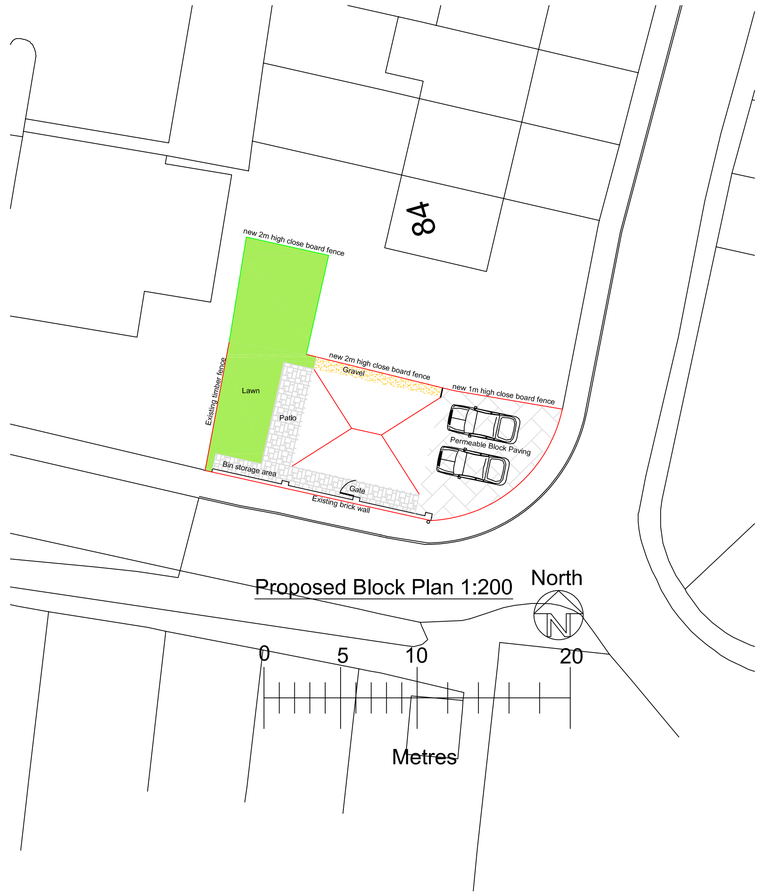


Proposed Ground Floor Plan 1:50



Obscure glazing to level 4 with restrictor stay to top opener

Proposed First Floor Plan 1:50



Proposed Block Plan 1:200

Drawn by	A Harlow & Son 01225 938329	
Proposed New Dwelling at Land South of 84 Westleigh Road Warminster Wiltshire BA12 8NJ		
		A1 Papersize
Scale	1:100, 1:50	Drawing No AH2023/58
Date	6th Oct 2023	Sheet 1 of 2

This drawing cannot be copied or given to third parties without the written permission of A Harlow & Son

6.2 Proposed Drainage Calculations

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 56 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	9.616	0.151	0.6	1.9	O K
30 min Summer	9.649	0.184	0.6	2.5	O K
60 min Summer	9.668	0.203	0.6	2.8	O K
120 min Summer	9.669	0.204	0.6	2.8	O K
180 min Summer	9.658	0.193	0.6	2.6	O K
240 min Summer	9.644	0.179	0.6	2.4	O K
360 min Summer	9.615	0.150	0.6	1.9	O K
480 min Summer	9.590	0.125	0.6	1.5	O K
600 min Summer	9.570	0.105	0.6	1.2	O K
720 min Summer	9.553	0.088	0.6	0.9	O K
960 min Summer	9.534	0.069	0.6	0.6	O K
1440 min Summer	9.519	0.054	0.4	0.4	O K
2160 min Summer	9.510	0.045	0.3	0.2	O K
2880 min Summer	9.506	0.041	0.3	0.2	O K
4320 min Summer	9.500	0.035	0.2	0.1	O K
5760 min Summer	9.496	0.031	0.2	0.1	O K
7200 min Summer	9.493	0.028	0.1	0.1	O K
8640 min Summer	9.491	0.026	0.1	0.1	O K
10080 min Summer	9.490	0.025	0.1	0.1	O K
15 min Winter	9.633	0.168	0.6	2.2	O K
30 min Winter	9.672	0.207	0.6	2.9	O K
60 min Winter	9.695	0.230	0.6	3.2	O K
120 min Winter	9.694	0.229	0.6	3.2	O K
180 min Winter	9.676	0.211	0.6	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	123.871	0.0	17
30 min Summer	83.317	0.0	31
60 min Summer	53.551	0.0	50
120 min Summer	33.288	0.0	84
180 min Summer	24.858	0.0	118
240 min Summer	20.073	0.0	152
360 min Summer	14.748	0.0	218
480 min Summer	11.856	0.0	278
600 min Summer	10.000	0.0	338
720 min Summer	8.698	0.0	392
960 min Summer	6.972	0.0	500
1440 min Summer	5.096	0.0	736
2160 min Summer	3.716	0.0	1100
2880 min Summer	2.967	0.0	1456
4320 min Summer	2.156	0.0	2168
5760 min Summer	1.717	0.0	2936
7200 min Summer	1.438	0.0	3600
8640 min Summer	1.243	0.0	4336
10080 min Summer	1.100	0.0	4976
15 min Winter	123.871	0.0	17
30 min Winter	83.317	0.0	31
60 min Winter	53.551	0.0	58
120 min Winter	33.288	0.0	92
180 min Winter	24.858	0.0	130

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Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	9.653	0.188	0.6	2.5	O K
360 min Winter	9.608	0.143	0.6	1.8	O K
480 min Winter	9.571	0.106	0.6	1.2	O K
600 min Winter	9.544	0.079	0.6	0.7	O K
720 min Winter	9.531	0.066	0.5	0.5	O K
960 min Winter	9.520	0.055	0.4	0.4	O K
1440 min Winter	9.510	0.045	0.3	0.2	O K
2160 min Winter	9.504	0.039	0.2	0.2	O K
2880 min Winter	9.499	0.034	0.2	0.1	O K
4320 min Winter	9.494	0.029	0.1	0.1	O K
5760 min Winter	9.491	0.026	0.1	0.1	O K
7200 min Winter	9.489	0.024	0.1	0.1	O K
8640 min Winter	9.487	0.022	0.1	0.1	O K
10080 min Winter	9.486	0.021	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	20.073	0.0	164
360 min Winter	14.748	0.0	232
480 min Winter	11.856	0.0	290
600 min Winter	10.000	0.0	340
720 min Winter	8.698	0.0	384
960 min Winter	6.972	0.0	502
1440 min Winter	5.096	0.0	728
2160 min Winter	3.716	0.0	1104
2880 min Winter	2.967	0.0	1472
4320 min Winter	2.156	0.0	2152
5760 min Winter	1.717	0.0	2928
7200 min Winter	1.438	0.0	3672
8640 min Winter	1.243	0.0	4304
10080 min Winter	1.100	0.0	5088

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.300	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.011

Time (mins) From:	To:	Area (ha)
0	4	0.011

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Model Details

Storage is Online Cover Level (m) 10.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.18182	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	5.5
Max Percolation (l/s)	15.3	Slope (1:X)	80.0
Safety Factor	5.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	9.465	Cap Volume Depth (m)	0.325

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6.3 Exceedance Calculations

Summary of Results for 200 year Return Period (+45%)

Half Drain Time : 63 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	9.639	0.174	0.6	2.3	O K
30 min Summer	9.681	0.216	0.6	3.0	O K
60 min Summer	9.707	0.242	0.6	3.4	Flood Risk
120 min Summer	9.712	0.247	0.6	3.5	Flood Risk
180 min Summer	9.702	0.237	0.6	3.3	Flood Risk
240 min Summer	9.687	0.222	0.6	3.1	O K
360 min Summer	9.655	0.190	0.6	2.6	O K
480 min Summer	9.627	0.162	0.6	2.1	O K
600 min Summer	9.602	0.137	0.6	1.7	O K
720 min Summer	9.580	0.115	0.6	1.3	O K
960 min Summer	9.549	0.084	0.6	0.8	O K
1440 min Summer	9.526	0.061	0.5	0.4	O K
2160 min Summer	9.513	0.048	0.4	0.3	O K
2880 min Summer	9.508	0.043	0.3	0.2	O K
4320 min Summer	9.502	0.037	0.2	0.2	O K
5760 min Summer	9.498	0.033	0.2	0.1	O K
7200 min Summer	9.495	0.030	0.1	0.1	O K
8640 min Summer	9.493	0.028	0.1	0.1	O K
10080 min Summer	9.491	0.026	0.1	0.1	O K
15 min Winter	9.660	0.195	0.6	2.6	O K
30 min Winter	9.709	0.244	0.6	3.5	Flood Risk
60 min Winter	9.742	0.277	0.6	4.0	Flood Risk
120 min Winter	9.745	0.280	0.6	4.1	Flood Risk
180 min Winter	9.729	0.264	0.6	3.8	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	143.521	0.0	17
30 min Summer	97.087	0.0	31
60 min Summer	62.639	0.0	54
120 min Summer	38.976	0.0	88
180 min Summer	29.069	0.0	122
240 min Summer	23.426	0.0	156
360 min Summer	17.142	0.0	222
480 min Summer	13.745	0.0	286
600 min Summer	11.570	0.0	346
720 min Summer	10.044	0.0	404
960 min Summer	8.028	0.0	512
1440 min Summer	5.840	0.0	738
2160 min Summer	4.238	0.0	1100
2880 min Summer	3.371	0.0	1464
4320 min Summer	2.436	0.0	2160
5760 min Summer	1.931	0.0	2872
7200 min Summer	1.611	0.0	3560
8640 min Summer	1.389	0.0	4320
10080 min Summer	1.227	0.0	5032
15 min Winter	143.521	0.0	17
30 min Winter	97.087	0.0	31
60 min Winter	62.639	0.0	58
120 min Winter	38.976	0.0	94
180 min Winter	29.069	0.0	132

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Summary of Results for 200 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	9.706	0.241	0.6	3.4	Flood Risk
360 min Winter	9.656	0.191	0.6	2.6	O K
480 min Winter	9.612	0.147	0.6	1.9	O K
600 min Winter	9.576	0.111	0.6	1.3	O K
720 min Winter	9.549	0.084	0.6	0.8	O K
960 min Winter	9.527	0.062	0.5	0.5	O K
1440 min Winter	9.513	0.048	0.4	0.3	O K
2160 min Winter	9.506	0.041	0.3	0.2	O K
2880 min Winter	9.502	0.037	0.2	0.2	O K
4320 min Winter	9.496	0.031	0.2	0.1	O K
5760 min Winter	9.493	0.028	0.1	0.1	O K
7200 min Winter	9.490	0.025	0.1	0.1	O K
8640 min Winter	9.489	0.024	0.1	0.1	O K
10080 min Winter	9.487	0.022	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	23.426	0.0	170
360 min Winter	17.142	0.0	238
480 min Winter	13.745	0.0	302
600 min Winter	11.570	0.0	360
720 min Winter	10.044	0.0	408
960 min Winter	8.028	0.0	504
1440 min Winter	5.840	0.0	734
2160 min Winter	4.238	0.0	1080
2880 min Winter	3.371	0.0	1452
4320 min Winter	2.436	0.0	2196
5760 min Winter	1.931	0.0	2896
7200 min Winter	1.611	0.0	3616
8640 min Winter	1.389	0.0	4328
10080 min Winter	1.227	0.0	5000

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	200	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.300	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.011

Time (mins) From:	To:	Area (ha)
0	4	0.011

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Model Details

Storage is Online Cover Level (m) 10.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.18182	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	5.5
Max Percolation (l/s)	15.3	Slope (1:X)	80.0
Safety Factor	5.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	9.465	Cap Volume Depth (m)	0.325

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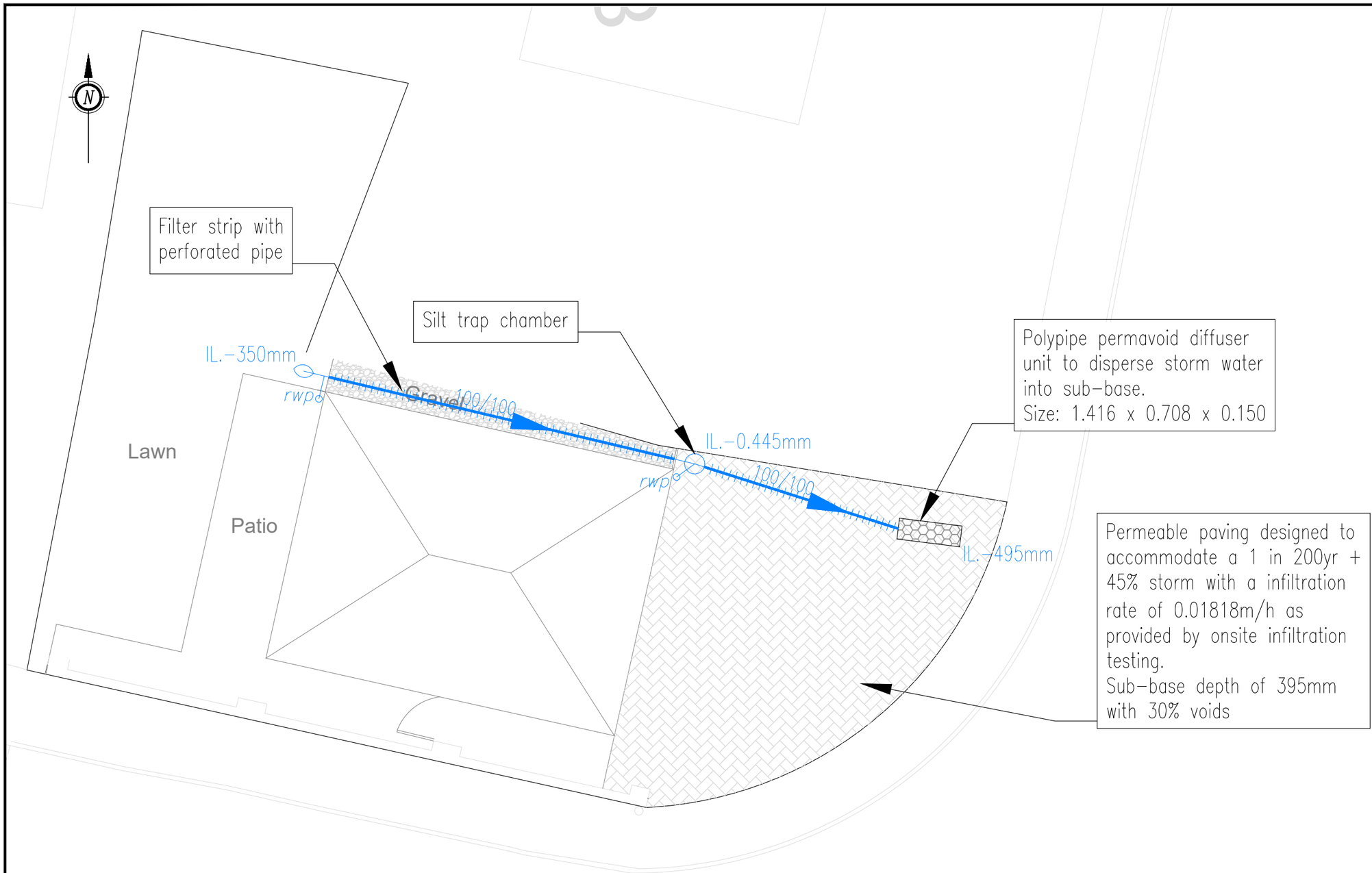
6.4 Proposed Drainage Layout and Details



General Notes:

1. Do not scale this drawing. All dimensions are in metres unless otherwise noted. Any discrepancies are to be recorded and reported to the engineers immediately.

2. This drawing is to be read in conjunction with all other engineers and architects drawings, and the specification.

3. All work is to be to the satisfaction of the engineer and local authority building control.

4. The contractor is responsible for and must take all necessary precautions to ensure the stability of the works at all times during construction.

5. All workmanship and materials are to be to current British Standards.

6. All services are to be located and protected as necessary by the contractor prior to the commencement of the works.

7. Any existing details which are shown on this drawing are for guidance only and are to be checked on site by the contractor. Any variations are to be recorded and reported to the engineer immediately.

8. During construction works on site, all roads and footpaths are to be swept and kept clear of obstructions, this is to include existing highways as appropriate to ensure safe passage of all road users.

9. Provision shall be made for the installation of all mains services including ducting prior to the laying of the road base-course.

Scale 1:100
4m 3m 2m 1m 0m 2m 4m

Issue	Notes	Drawn	Approved	Date
P1	Preliminary Issue	MN	DB	31.10.23

SuDS DESIGNS
Sustainable Drainage Designs

Issuing Office:
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Project
Land S/O 84 Westleigh
BA12 8NJ

Drawing Title
Drainage Layout

Project No.	Drawing No.	Issue
SD2310184	201	P1

PRELIMINARY

Original Sheet Size: A3

Questions?
Contact us.

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