

This checklist should form part of a suite of documents required for a submission for drainage approval, including (but not limited to):

- a scheme design assessment
- detailed infiltration assessment (where infiltration components are proposed)
- a scheme health and safety risk assessment (if required)
- a scheme construction method statement
- a scheme Maintenance Plan.

It can be used as a checklist by organisations responsible for the approval and adoption of SuDS to support their assessment of schemes, or it can be used as part of the required submissions from the developer. It can also help designers ensure that they have provided all relevant information to the drainage approving body in their submissions for approval.

Minimum design requirements (MDRs) are provided in **Table B.18**. Where there are variations from these, justification should be provided, and evidence set out that risks relating to safety and performance have been managed appropriately.

The checklist can be used for an infiltration/detention basin or groups of such basins with the same characteristics.

TABLE Minimum design requirements: basin

Basin Parameter	Minimum design requirements (MDRs)	
	Infiltration	Detention
Length:width ratio	N/A	> 2:1
Side slope	Side slope < 1 in 3	Side slope < 1 in 3
Longitudinal slope	Bed slope < 1 in 40	Bed slope < 1 in 40
Maximum water depth for 1 in 100 year event	1 m	1 m
Permeability of topsoil	> permeability of underlying soils	N/A
For the 1 year 30 minute event: ▸ average residence time in basin ▸ flow height ▸ velocity	N/A	> 9 minutes <100 mm < 0.3 m/s

TABLE B.19 Design assessment checklist: basin

General information				
Site ID	Halsnead – Whinston			
Asset ID(s)	Attenuation Basin			
Basin location(s) and co-ordinates	Basin 1: 347521.625E 389765.883N	Drawing reference(s)		
Date of assessment	11.10.21	Specification reference(s)		
Primary function(s) of basin:	Attenuation/infiltration/treatment/other dual use (specify)			
Check	MDR	Summary details ¹	Acceptable (Y/N)	Comments/ remedial actions
Dimensions (Sections 13.2 and 22.2)				
Length (m)	✓	Basin 1: 109		
Width – at top and at base (m)	✓	Measured at widest. Basin 1: Top: 35 Base: 26.3		
Top surface area (m²)		Basin 1: 3536.304		
Side slope (1 in ?)	✓	1:3 to 1:4		
Depth – maximum and minimum (m)		Basin 1: Minimum: 0.997 Maximum: 1.650		
Freeboard (m)		0.3minimum		
Longitudinal slope (1 in ?)	✓	1 in 400		
Inflows (Sections 13.8.1 and 22.8.1)				
Provide a description of the contributing catchment land use and its size (m²)		67350		
Does the design include suitable silt Interception upstream of system, where required?		Basin 1: A forebay has been added so the first basin using a permeable berm for the first inlet S16.13HW and the second inlet to this basin S19.8HW will need an upstream catchpit to reduce sedimentation.		
Where required, does the design include: ▪ suitable flow spreading ▪ appropriate energy dissipation?		Inlet S16.13HW will need a rip rap on to reduce erosion on the inlet, we are proposing a wire mattress rip rap as seen on the attenuation basin headwall details.		
Outfall arrangements (Sections 13.8.2 and 22.8.2)				
Provide details of any flow control systems, overflow arrangements and limiting discharge rate(s) from the basin		Basin 1: HydroBrake limiting flow to 5l/s.		
Is the basin designed to allow infiltration? If yes, attach infiltration assessment		N/A		
Does the design include infiltration trenches or blankets beneath the base to promote improved infiltration?		N/A		
Is a geomembrane required to prevent infiltration? If yes, give reason		N/A		

Depth to maximum likely groundwater level (m)		N/A		
Is topsoil of sufficient permeability to allow infiltration or underdrainage (where required)?	✓	N/A		
Storage (Sections 13.4 and 22.4)				
Design return period(s) (years)		1, 2, 30, 100 and 100 + 40% Climate Change		

TABLE Design assessment checklist: basin**B.19**

Check	MDR	Summary details ¹	Acceptable (Y/N)	Comments/ remedial actions
Maximum design water depth(s) and level(s)	✓	Maximum design depth is 0.997m and the level is 38.097mAOD		
Maximum design storage volume(s) (m ³) Note: It would be unusual for this volume to exceed 10,000 m ³ . If it does, the design may have to comply with the Reservoirs Act 1975 (as amended by the Flood and Water Management Act (FWMA) 2010). Checks should be made of the design to confirm suitability of such a large volume		Basin 1: 4834.1398		
Levels around the edge of the pond/ wetland appropriate to contain design depths of water?		Land around each basin is battered at a 1:3 to the top of the proposed bank at the shallowest point of the basins.		
Water quality treatment (Sections 13.5 and 22.5)				
For the 1 year, 30 min event confirm:				
Average residence time in detention basin is acceptable for effective treatment Or Maximum velocity is acceptable for effective treatment	✓ ✓	Basin 1 has a 1yr 30 min event WL of 0.84m		
Landscape/biodiversity (Sections 13.6, 13.7, 13.10, 22.6, 22.7 and 22.10)				
Does the proposed planting have potential to create biodiverse habitats?		To be confirmed with client		
Have native plant species been used? (Note: if ornamental species are proposed, give reasons and describe measures that prevent their migration to natural water bodies.)		To be confirmed with client		
Is the proposed planting appropriate to the location, visually, relative to gradient, water depths etc and with respect to access and maintenance?		To be confirmed with client		
Where relevant, confirm planting design does not adversely impact highway visibility and safety requirements (check with highway authority)		To be confirmed with client		
Is the proposed topsoil profile suitable to sustain the proposed plant species and as permeable as the filter bed?		To be confirmed with client		
Critical materials and product specifications (Sections 13.9 and 22.9)				
Geomembrane		N/A		
Geotextile (non-woven)		N/A		
Topsoil		To be confirmed with client		

continued from...

TABLE Design assessment checklist: basin				
B.19				
Check	MDR	Summary details¹	Acceptable (Y/N)	Comments/ remedial actions
Constructability (Sections 13.11 and 22.11)				
Are there any identifiable construction risks? If yes, state and confirm acceptable risk management measures are proposed		To be confirmed with client		
Maintainability (Sections 13.12 and 22.12)				
Confirm that access for maintenance is acceptable and summarise details		To be confirmed with client		
Are there specific features that are likely to pose maintenance difficulties? If yes, identify mitigation measures required		To be confirmed with client		
Basin design acceptability	Summary details including any changes required		Acceptable (Y/N)	Date changes made
Acceptable: Minor changes required: Major changes required/redesign:				

Note

1 If there is an MDR (as indicated) confirm whether or not this is met and provide details of any variations.