

# Design Assessment Checklist: Scheme

## 1 Objectives

This checklist should be used when assessing the design of a proposed SuDS scheme for approval. It encourages a consistent assessment of the scheme against the criteria and principles set out in the Code for Sustainable Homes, the draft British Standard for Surface Water Management (BS8582) and the SuDS Manual (CIRIA C697).

This checklist will need to be supported by:

- A scheme Health and Safety Risk Assessment
- Detailed design checks for the proposed SuDS components
- Detailed Infiltration Assessment (if infiltration components form part of the scheme)
- A Construction Method Statement for the scheme
- A Maintenance Plan for the scheme.

It could be used as a checklist by organisations responsible for the approval and adoption of SuDS to support their assessment of schemes, or it could be used as part of the required submissions from the developer.

### Definitions

**Managing runoff at source** – this means managing runoff in a sustainable drainage component either adjacent to or beneath the area where the runoff is generated, that also deliver Interception for the contributing runoff surface.

**Managing runoff at or close to the surface** – this means using components or methods that keep water on the surface (e.g. swales, basins, ponds, etc.) or in shallow structures with less than 1m to their base (e.g. permeable pavements or shallow proprietary systems).



Table 1: Scheme Design Assessment Checklist

Requirements			
Site ID			
Site Location and co-ordinates			
Site description		Drawing Reference(s)	
Date of assessment		Specification Reference	
Type of development		Site Area	

	SuDS Manual Page Ref*	Y	N	Summary of details	Comments / Remedial actions
<b>1. PRINCIPLES</b>					
Is the runoff managed at or close to its source, wherever possible? If not, give reasons.					
Is the runoff managed at or close to the surface, wherever possible? If not, give reasons e.g. infiltration systems are being used to manage the runoff.					
Where the drainage system serves more than one property, is public space used and integrated with the drainage system in an appropriate and beneficial way? If not, give reasons.					
Have the opportunities afforded by the drainage system in terms of green infrastructure, biodiversity, urban design, climate adaptation and amenity provision been maximised?					
Has an appropriate SuDS Management train been provided?					
Are the operating and maintenance requirements of the drainage system					



	SuDS Manual Page Ref*	Y	N	Summary of details	Comments / Remedial actions
adequately defined?					
Is operation and maintenance achievable at an acceptable cost?					
<b>2. POINT OF DISCHARGE</b>					
Does the design meet the following discharge hierarchy 1. Infiltration is preferred where it is safe and acceptable to do so; 2. If infiltration is not possible discharge to water course; 3. Discharge to sewer as last resort.					
<b>If infiltration is used:</b> Confirm that an acceptable infiltration assessment has been undertaken and submitted?					
<b>If discharge is to sewer,</b> rather than a surface water body, provide justification.					
If discharge to a sewerage asset is proposed, has evidence been provided that the design criteria have been agreed with the sewerage undertaker and that an appropriate connection detail has been agreed?					
Have adequate and appropriate exceedance routes been provided and are they protected from future development?					
<b>3. INTERCEPTION</b>					
Does the scheme design demonstrate on-site retention of approximately the first 5mm of runoff from impermeable surfaces for most events?  How is Interception to be delivered (e.g. infiltration, green roofs, permeable pavements, vegetated surfaces, bespoke design - provide details)?					
<b>4. PEAK FLOW RATE CONTROL</b>					



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Does the design demonstrate control of the 1 year, critical duration site event to the equivalent 1 year greenfield peak flow rate or below?					
Does the design demonstrate control of the 100 year, critical duration site event to the equivalent 100 year greenfield peak flow rate or below?					
Do the design calculations take account of future development (urban creep) and climate change?					
<b>5. VOLUMETRIC CONTROL (FOR THE 100 YEAR, 6 HOUR EVENT)</b>					
<p>Does the design demonstrate that, for the 100 year 6 hour event:</p> <p>Either:</p> <p>The discharged site runoff volume is not greater than the equivalent greenfield runoff volume?</p> <p>Or:</p> <p>The discharged site runoff volume over and above the equivalent greenfield runoff volume (i.e. the Long Term Storage Volume) is discharged at a rate &lt; 2 l/s/ha (or another rate that is considered acceptable in not negatively impacting flood risk of the receiving water body)</p> <p>Or:</p> <p>Peak flow rates from the site are restricted to 2 l/s/ha or Qbar, whichever is the greater ha (or another rate that is considered acceptable in not negatively impacting flood risk of the receiving water body).</p>					
<b>6. WATER QUALITY TREATMENT</b>					
Is the receiving water body (surface or groundwater) environmentally sensitive (E.g.					



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Groundwater Source Protection Zone? What is its designation? Are any implications for drainage design clearly defined?					
Does the design include an appropriate treatment strategy that ensures: <ul style="list-style-type: none"> <li>• Sediment is trapped and retained on site in accessible and maintainable areas?</li> <li>• Has a sufficient number of drainage components been provided in series prior to discharge?</li> <li>• Suitable pollution removal capability e.g. % TSS removal (where this is a requirement of the SAB)</li> </ul>					
<b>7. FUNCTIONALITY</b>					
Are the design features sufficiently durable to ensure structural integrity over the system design life (residential 100 years and commercial 60 years), with reasonable maintenance requirements?					
Are all parts of the SuDS system outside any areas of flood risk? If not, provide justification and evidence that performance will not be adversely affected.					
Is pumping a requirement for operation of the system? If yes, provide justification and set out operation and maintenance/adoption arrangements.					
Has runoff and flooding from all sources (both on and off site) been considered and taken into account in the design?					
Are 1 in 30 year flows fully conveyed within the SuD system ?					
Are 1 in 100 year flows contained or stored on-site within safe exceedance storage areas and flow paths? Note some approving authorities may require greater return periods.					



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<b>8. CONSTRUCTABILITY</b>					
Has an acceptable construction method statement been submitted and approved?					
<b>9. MAINTAINABILITY</b>					
Has an acceptable Maintenance Plan been submitted and approved?					
<b>10. INFORMATION PROVISION</b>					
Do the design proposals include sufficient provision for community engagement and awareness raising?					

(\* ) to be added on completion of SuDS Manual update

SYSTEM DESIGN ACCEPTABILITY	Summary details including any changes required	Acceptable (Y/N)	Date made	changes
Acceptable:				
Minor changes required:				
Major changes required / re-design:				

