

## BSI Draft Review

### BS8582, Code of Practice for Surface Water Management for Development Sites

#### Code of Practice for Surface Water Management

**Comment:** The introduction of a specific British Standard which provides clear and concise guidance on the management of surface water is essential. The British Standard is a document that the industry understands to be a benchmark to be complied with, forcing the increased uptake of sustainable drainage systems and consideration of surface water management issues.

However; to ensure that this document is held in the appropriate regard and can be used as a key reference, it is imperative that it incorporates the requirements of the plethora of additional guidance documents and legislation which is forthcoming. Until this can be done its formal issue should be delayed to prevent continuous updating over the next few years.

For such an important document within the industry I am surprised by the lack of comments/responses that have been provided by stakeholders to date. I would suggest consideration be made to a redrafting (further to issue of other importation legislative/guidance documents) with a new consultation period set with better publicity to gain a more robust response.

#### 3.2 Bioretention

**Comment:** Why is pollutant removal highlighted within bioretention but not within many of the other SuDS features which provide equal (or arguably) better performance?

**Remedy:** "Depressed landscaping area in which run-off is collected and allowed to percolate through the soil to an underdrain."

**Remedy:** Add in a term for "treatment train" or "management train" which details how SuDS elements work in sequence to remove pollutants.

#### 3.9 Detention Basin

**Comment:** Detention basins are dry features and are generally used to attenuate run-off but not to treat flow. They will provide very little benefit in this regard and generally do not need to because of the dilution in contamination that will have taken place when they become operational.

**Remedy:** Remove "and treat flows" from the definition.

#### 3.13 Filter Trench

**Comment:** The punctuation within the paragraph appears to indicate it is the perforated pipe in the base that captures, attenuates and treats surface water run-off rather than the filter trench as a whole.

**Remedy:** "Linear excavation with a permeable material, often with a perforated pipe in the base, that captures, attenuates and treats surface water run-off"

### **3.16 Flood Risk Management**

**Comment:** The word "protect" insinuates that flood risk management is about preventing water from entering land, buildings, environmental assets etc. This is incorrect as it should relate to managing flood water in an appropriate way for the development under consideration, which may include allowing areas to flood.

**Remedy:** "Action that manages and reduces the consequences of flooding to people, land and/or buildings, or environmental assets to an acceptable level"

### **3.17 Greenfield**

**Comment:** Title should state "greenfield run-off" rather than just "greenfield" in order to agree with the definition provided.

**Remedy:** Change title to "Greenfield Run-off"

### **3.24 Long Term Storage**

**Comment:** "area" should be replaced with "element" or "feature".

**Remedy:** "area" should be replaced with "element" or "feature".

### **3.38 Urban Creep**

**Comment:** New regulations require that any future development (however small) that impacts on an existing drainage system has to incorporate its own SuDS system and be approved by the SuDS Approving Body. Assuming that this is implemented then an allowance for urban creep is not required. The current proposal will add additional attenuation and unnecessary costs to a project, which will remain unused.

**Remedy:** Consider whether an allowance for urban creep is really required within the analysis.

### **3.39 Wetland**

**Comment:** Should add "in a temporary storage zone above the water body" as provided for ponds.

**Remedy:** "A permanently wet area where the water is shallow enough to enable the growth of bottom rooted plants that can be used to attenuate in a temporary storage zone above the water body, and treat surface water run-off"

### **3.40 Whole Life Carbon Footprint**

**Comment:** Whole life cycle greenhouse gas emissions should also include for end of life

**Remedy:** "Total greenhouse gas emissions caused directly and indirectly by the planning, construction, operation/maintenance and disposal of the drainage system, over its whole life cycle"

### **Figure 2 (Design Criteria and Environmental Objectives)**

**Comment:** Box 1 under design criteria should read (<5 mm) rather than (>5 mm)

**Remedy:** Replace (>5 mm) with (<5 mm) under design criteria box 1

**Comment:** Clarity required on allowable peak flow rates (design criteria box 3). Are we to assume the 1:1 year discharge rate should be used up to the 1:99 year event, with an additional allowance for the 1:100 event? This appears very onerous. Alternatively if only the 1:1 year and 1:100 year events need to be checked then there is a high risk that discharge for the intervening periods could exceed that of the existing site, increasing flood risk downstream.

**Comment:** Presumably climate change should also be incorporated into the post-development analysis.

**Remedy:** "Peak flow rate control should be checked against the 1 in 1 year, 1 in 30 year and 1 in 100 year events (including an appropriate allowance for climate change) as a minimum"

#### **Table 1 (Options for Interception Delivery)**

**Comment:** Detention basins are normally dry features, often only used in significant storm events. CIRIA 697 states that they "provide little reduction in run-off volumes". It is therefore not appropriate to include these features as an option for interception delivery.

**Remedy:** Remove detention basins from the table.

#### **4.1.2.2 Infiltration**

**Comment:** The statement "infiltration should be prioritized as the first option for the disposal of surface water run-off" indicates that this takes priority over rainwater harvesting. Doing our best to collect and use the rainwater that falls onto the site, reducing demand on our water infrastructure, is surely preferential?

**Remedy:** "Where rainwater harvesting is not viable, infiltration should be prioritized as the preferred option for disposal of surface water run-off in order to protect groundwater recharge and support river baseflows, unless the infiltration process can be demonstrated to pose a risk to people, property or the environment (and that risk cannot be adequately mitigated)"

#### **4.1.2.3 Peak Flow Control**

**Comment:** New regulations require that any future development (however small) that impacts on an existing drainage system has to incorporate its own SuDS system and be approved by the SuDS Approving Body. Assuming that this is implemented then an allowance for urban creep is not required. The current proposal will add additional attenuation and unnecessary costs to a project, which will remain unused.

**Remedy:** Consider whether an allowance for urban creep is really required within the analysis.

#### **4.1.2.7 Risk based Treatment for Discharges to Surface Waters**

**Comment:** Regardless of whether discharge is to surface water or combined sewers, similar treatment stages should still be provided to allow for future flexibility/improvements and the potential separation of drainage systems.

**Remedy:** Remove the last paragraph relating to discharge into combined sewers.

### **6.2.5 Water Supply Infrastructure Risk**

**Comment:** Volumes/flow rates from rupture of water supply infrastructure are an unknown quantity and therefore the consequences of this occurring cannot be fully assessed. A storage allowance cannot be accurately calculated and reference to this should be removed.

**Remedy:** “The consequence of any potential rupture to water supply infrastructure on or adjacent to the site should be evaluated to enable appropriate volumes and flow rates of flood water to be routed away from people and property and failure risks minimized”

### **7.1 Evaluating the Pre-Development Site Characteristics Relating to Surface Water Runoff**

**Comment:** Include reference to assessment of contamination risk on the site.

**Remedy:** “d) Potential risk and type of contamination likely to be present on the existing site”

### **8.3 Development Density and Percentage Impermeability (Including Urban Creep Allowances)**

**Comment:** New regulations require that any future development (however small) that impacts on an existing drainage system has to incorporate its own SuDS system and be approved by the SuDS Approving Body. Assuming that this is implemented then an allowance for urban creep is not required. The current proposal will add additional attenuation and unnecessary costs to a project, which will remain unused.

**Remedy:** Consider whether an allowance for urban creep is really required within the analysis.

### **9.6 Flow Control Design**

**Comment:** Paragraph wording indicates that only those flow control options listed may be used, even though other approaches are available.

**Remedy:** Amend Note 1 to read; “Flow control options include (but are not limited to):”

### **9.7.1 Attenuation Storage (for Peak Flow Control)**

**Comment:** The text should highlight the preference for above ground storage over the use of below ground tank systems, as noted in the draft national SuDS standards.

**Remedy:** “The storage can be designed as an on-line or off-line system, either on the surface within detention basins, swales, bioretention systems, etc., or above permanent bodies of water such as ponds, or beneath the ground surface (in concrete or modular tank systems). Preference should always be given to above ground systems to enable the enhancement of biodiversity and amenity benefits”

### **10.1 Construction Processes and Programming**

**Comment:** Consideration should be made in relation to the programming of construction/demolition works to ensure impermeable areas do not increase during the transition period. If this is the case additional storage may be required, although this may be in the form of temporary SuDS features

**Remedy:** Include additional note: “g) Consideration should be made in relation to the programming of construction/demolition works to ensure impermeable areas do not increase during the transition period. If the area of impermeable area is to be increased, appropriate drainage measures should be put in place”

**Table A1 (Stakeholders to the Surface Water management Process)**

**Comment:** Please can you provide clarity as to which type of "development" this code of practice relates. Generally throughout the document it is relevant to all development; however, there are specific circumstances (such as the statement "to provide a cost-effective, attractive development that will easily sell", alongside others) which indicates it is only applicable to housing developments.

**Remedy:** Clarify within the introduction what is meant by the terms "development" and "redevelopment" and confirm if it applies only to housing developments (which would be misplaced)