Design Assessment Checklist: Infiltration / Detention Basin

**Table 1 Deemed to Comply Requirements: Basin**

|  |  |  |
| --- | --- | --- |
| **Basin Parameter** | **Deemed to comply requirements** | |
| **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 | 1m | 1 m |
| Permeability of topsoil | > Permeability of underlying soils | N/A |
| For the 1 year 30 minute event meet one or more of following requirements: | N/A |  |
| Average residence time in basin  Or |  | > 10 minutes |
| Velocity |  | < 0.3m/s |

**Table 2 Design Assessment Checklist: Basin**

|  |  |  |  |
| --- | --- | --- | --- |
| **General information** |  | | |
| Site ID |  | | |
| Asset ID(s) |  | | |
| Basin location(s) and co-ordinates |  | Drawing Reference(s) |  |
| Date of assessment |  | Specification Reference(s) |  |
| Primary function(s) of basin: | Attenuation / Infiltration / Treatment / Other dual use (specify) | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Check** | **DtCR** | **Summary details** (*See Note)* | **Acceptable (Y/N)** | **Comments/ Remedial actions** |
| **DIMENSIONS (SuDS Manual Ref.)** |  |  |  |  |
| Length (m) | **** |  |  |  |
| Width – at top and at base (m) | **** |  |  |  |
| Top surface area (m2) |  |  |  |  |
| Side slope (1 in ?) | **** |  |  |  |
| Depth – maximum and minimum (m) |  |  |  |  |
| Freeboard (m) |  |  |  |  |
| Longitudinal slope (1 in ?) | **** |  |  |  |

| **Check** | **DtCR** | **Summary details** (*See Note)* | **Acceptable (Y/N)** | **Comments/ Remedial actions** |
| --- | --- | --- | --- | --- |
| **INFLOWS (SuDS Manual Ref.)** |  |  |  |  |
| Provide a description of the contributing catchment land use and its size (m2). |  |  |  |  |
| Does the design include suitable silt interception upstream of system, where required? |  |  |  |  |
| Where required, does the design include:  • Suitable flow spreading?  • Appropriate energy dissipation? |  |  |  |  |
| **OUTFALL ARRANGEMENTS (SuDS Manual Ref.)** |  |  |  |  |
| Provide details of any flow control systems, overflow arrangements and limiting discharge rate(s) from the basin. |  |  |  |  |
| Is the basin designed to allow infiltration? If yes, attach Infiltration Assessment. |  |  |  |  |
| Does the design include infiltration trenches or blankets beneath the base to promote improved infiltration? |  |  |  |  |
| Is a geomembrane required to prevent infiltration? If yes, give reason. |  |  |  |  |
| Depth to maximum likely groundwater level (m) |  |  |  |  |
| Is topsoil of sufficient permeability to allow infiltration or underdrainage (where required)? | **** |  |  |  |
| **STORAGE (SuDS Manual Ref.)** |  |  |  |  |
| Design return period(s) (years) |  |  |  |  |
| Maximum design water depth(s) and level(s) | **** |  |  |  |
| Maximum design storage volume(s) (m3)  Note: It would be unusual for this volume to exceed 10,000 m3. If it does, the design may have to comply with the Reservoirs Act (as amended by the FWMA). Checks should be made of the design to confirm suitability of such a large volume. |  |  |  |  |
| Levels around the edge of the pond/wetland appropriate to contain design depths of water? |  |  |  |  |
| **WATER QUALITY TREATMENT (SuDS Manual Ref.)** |  |  |  |  |
| 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 | **** |  |  |  |
| **LANDSCAPE/BIODIVERSITY (SuDS Manual Ref.)** |  |  |  |  |
| Does the proposed planting have potential to create bio diverse habitats? |  |  |  |  |
| 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.) |  |  |  |  |
| Is the proposed planting appropriate to the location, visually, relative to gradient, water depths etc. and with respect to access and maintenance? |  |  |  |  |
| Where relevant, confirm planting design does not adversely impact highway visibility and safety requirements (check with highway authority). |  |  |  |  |
| Is the proposed top soil profile suitable to sustain the proposed plant species and as permeable as the filter bed? |  |  |  |  |
| **CRITICAL MATERIALS/ PRODUCT SPECIFICATIONS** |  |  |  |  |
| Geomembrane |  |  |  |  |
| Geotextile (non-woven) |  |  |  |  |
| Topsoil |  |  |  |  |
| Other (including proprietary systems) |  |  |  |  |
| **CONSTRUCTABILITY (SuDS Manual Ref.)** |  |  |  |  |
| Are there any identifiable construction risks? If yes, state and confirm acceptable risk management measures are proposed. |  |  |  |  |
| **MAINTAINABILITY (SuDS Manual Ref.)** |  |  |  |  |
| Confirm that access for maintenance is acceptable and summarise details. |  |  |  |  |
| Are there specific features that are likely to pose maintenance difficulties? If yes, identify mitigation measures required. |  |  |  |  |
| **BASIN DESIGN ACCEPTABILITY (SuDS Manual Ref.)** | **Summary details including any changes required** | | **Acceptable (Y/N)** | **Date changes made** |
| Acceptable:  Minor changes required:  Major changes required / re-design: |  | |  |  |

Note: Input range if applied to > 1 basin. If there is a DtCR (as indicated) confirm whether or not this is met and provide details of any variations.