**Sustainable Drainage Systems (SuDS)** Handbook


# Appendix C

**Planning Committee**

**Site Visit Protocol**

Appendix C


# Hydraulic Model Parameters

If you have used a hydraulic model in support of your SuDS application, please complete the tables below (as applicable) in order to assist the LLFA in their review.

## C1 InfoWorks ICM / CS 1D SuDS Components

If you are representing SuDS components using 1D elements, please complete Table C1-1. If any SuDS components are modelled in 2D, please complete Table C1-2.

|  |  |  |
| --- | --- | --- |
| **Model Parameter** | **Value** | **Justification for Choice / Link to Supporting Information** |
| **Boundary Conditions** |
| Design Events Assessed |  |  |
| Storm Durations Assessed (minutes) |  |  |
| Critical Storm Duration Selected (minutes) |  |  |
| **Soakaways** |
| How many soakaways are included in the model? |  |  |
| Do all soakaways use the same SuDS parameters? If not, please supply the range of infiltration coefficients used in the boxes below. |  |  |
| Infiltration Loss Coefficient (mm/hr) |  |  |
| Porosity of Fill Material (voids volume / total volume) |  |  |
| **Ponds** |
| How many ponds are included in the model? |  |  |
| Do all ponds use the same SuDS parameters? If not, please supply the range of infiltration coefficients used in the boxes below. |  |  |

|  |  |  |
| --- | --- | --- |
| **Model Parameter** | **Value** | **Justification for Choice / Link to Supporting Information** |
| Infiltration Loss (mm/hr) | Coefficient |  |  |
| **Swales** |
| How many swales included in the model? | are |  |  |
| Do all swales use the same SuDS parameters? If not, please supply the range of infiltration coefficients used in the boxes below. |  |  |
| Have you specified different infiltration loss rates for the sides and base? |  |  |
| Infiltration Loss Coefficient (base) (mm/hour) |  |  |
| Infiltration Loss Coefficient (side) (mm/hour) |  |  |
| **Permeable Pavements** |
| How many permeable pavements are included in the model? |  |  |
| Do all permeable pavements use the same SuDS parameters? If not, please supply the range of porosity values used. |  |  |
| Porosity of Fill Material (voids volume / total volume) |  |  |

**Table C1-1 InfoWorks 1D SuDS Components**

## C2 InfoWorks ICM / CS 2D SuDS Components

|  |  |  |
| --- | --- | --- |
| **Model Parameter** | **Value** | **Justification for Choice / Link to Supporting Information** |
| **2D Infiltration Zones** |
| What SuDS components have you represented using 2D infiltration zones? |  |  |

|  |  |  |
| --- | --- | --- |
| **Model Parameter** | **Value** | **Justification for Choice / Link to Supporting Information** |
| Which infiltration model have you used? (Constant / Fixed / Horton) |  |  |
| **Constant Infiltration Model** |
| Have you used the same infiltration loss coefficient for all 2D infiltration zones? If not, please supply the range of infiltration coefficients used in the boxes below. |  |  |
| Infiltration Loss Coefficient (mm/hour) |  |  |
| **Fixed Infiltration Model** |
| Have you used the same runoff coefficient for all 2D infiltration zones? If not, please supply the range of runoff coefficients used in the boxes below. |  |  |
| Runoff Coefficient |  |  |
| **Horton Infiltration Model** |
| Have you used the same coefficients for all 2D infiltration zones? If not, please supply the range of runoff coefficients used in the boxes below. |  |  |
| f0 (Initial infiltration rate in mm/hour) |  |  |
| fC (Final infiltration rate in mm/hour) |  |  |
| K |  |  |
| Soil Moisture Storage |  |  |
| Initial Soil Moisture Water Content |  |  |

**Table C1-2 InfoWorks 2D SuDS Components**

## C3 Micro Drainage Source Control SuDS Components

If you are representing SuDS components using MicroDrainage, please complete Table C1-3.

|  |  |  |
| --- | --- | --- |
| **Model Parameter** | **Value** | **Justification for Choice / Link to Supporting Information** |
| **Boundary Conditions** |
| Design Events Assessed |  |  |
| Storm Durations Assessed (minutes) |  |  |
| Summer and Winter Cv |  |  |
| **Site Information** |
| Site Area (hectares) |  |  |
| Volumetric Runoff Coefficient |  |  |
| Time of Concentration (minutes) |  |  |
| Storage Volume in Pipe Network (m³) |  |  |
| Time Area Diagram |  |  |
| **Green Roofs** |
| How many green roofs have been used? |  |  |
| Do all green roofs use the same SuDS parameters? If not, please supply the range of values used in the boxes below. |  |  |
| Roof area (m²) |  |  |
| Depression storage (m³) |  |  |
| Evapotranspiration (assumed rate) |  |  |
| Decay coefficient |  |  |

|  |  |  |
| --- | --- | --- |
| **Model Parameter** | **Value** | **Justification for Choice / Link to Supporting Information** |
| **Infiltration** |
| How many infiltration structures have been used? |  |  |
| Do all structures used the same infiltration parameters? If not, please supply the range of values used in the boxes below. |  |  |
| Infiltration Loss Coefficient (base) (mm/hour) |  |  |
| Infiltration Loss Coefficient (sides) (mm/hour) |  |  |
| **Porous Car Park** |
| How many porous car parks have been used? |  |  |
| Do all car parks use the same parameters? If not, please supply the range of values used in the boxes below. |  |  |
| Membrane percolation |  |  |
| Porosity |  |  |
| Depression Storage |  |  |
| Evaporation |  |  |
| **Soakaway** |
| How many soakaways are included in the model? |  |  |
| Do all soakaways use the same parameters? If not, please supply the range of coefficients used in the box below. |  |  |
| Porosity |  |  |

|  |  |  |
| --- | --- | --- |
| **Model Parameter** | **Value** | **Justification for Choice / Link to Supporting Information** |
| **Infiltration Trench** |
| How many infiltration trenches are included in the model? |  |  |
| Do all infiltration trenches use the same parameters? If not, please supply the range of coefficients used in the box below. |  |  |
| Porosity |  |  |
| **Cellular Storage** |
| Does all your cellular storage use the same porosity value? If not, please supply the range of coefficients used in the box below. |  |  |
| Porosity |  |  |

**Table C1-3 MicroDrainage SuDS Components**


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