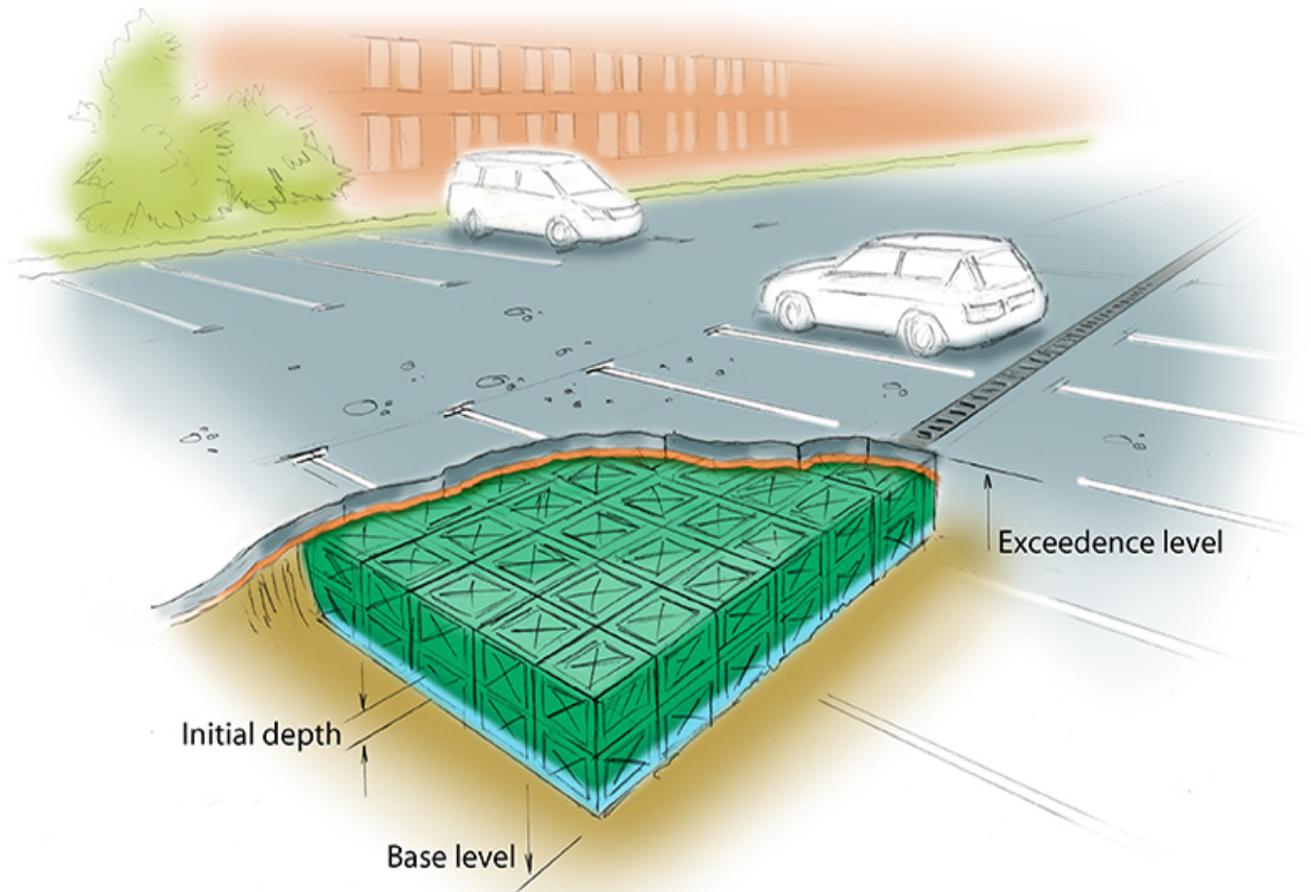


Cellular Storage

Cellular Storage stormwater controls may be used to model cellular crate-based structures, such as Stormcell.



Total Volume

The Total Volume value shown in the bottom-right corner of the data form shows the volume available in the system up to the Freeboard level.

i Note

The analysis will assume a 1m² plan area shaft up from the soffit of the crates up to the exceedence level. As such the Total Volume value will include this additional volume up to the freeboard level if present

Dimensions

The Dimensions tab has the following fields:

Exceedence Level - Represents the level (above datum) of the stormwater control above which flooding is reported. This may be the level that interacts with the ground surface or the top of an embankment, whichever is higher. An overflow or spillway crest level may be specified at a lower level as part of the outlet control details. If a [Surface Data](#) is present, the Exceedence Level will automatically be picked up from the centre of the icon or from the lowest point on the perimeter if an area has been drawn. This, combined with the Freeboard setting, allows a Status of Flood Risk to be assigned to the system on the Summary. For stormwater controls on a slope, the Exceedence level applies to the downstream (lowest) end. Above the Exceedence Level, water will be stored above the ground and then allowed to drain back into the network. The default ponding area used for the flooded volume is 1000 m².

Depth - Represents the depth of the stormwater control. This field is automatically calculated from the crate dimensions and is not editable.

Base Level - Represents the level (above datum) of the base of the stormwater control.

No. of Crates Long - The number of crates along the length of the structure. You can design up to 1000 crates.

No. of Crates Wide - The number of crates across the width of the structure. You can design up to 1000 crates.

No. of Crates High - The number of crates deep in the structure. You can design up to 1000 crates.

Porosity - Defines the percentage of the Cellular Storage that is available for storage. This is dictated by the type of fill material that is used, i.e. 100% if empty or typically 30% for rubble.

Crate Dimensions

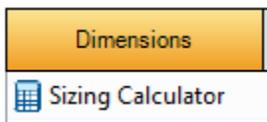
Crate Length - The length of an individual crate.

Crate Width - The width of an individual crate.

Crate Height - The height of an individual crate.

Sizing Calculator

The Sizing Calculator allows you to re-size the Cellular Storage by specifying a volume and a parameter to modify to achieve that volume. The Sizing Calculator is discussed in more detail in the [Stormwater Control Sizing Calculator](#).



Inlets

Refer to the [Inlets](#) page for more details on the different types of Inlets that can be specified.

Outlets

Refer to the [Outlets](#) page for more details on the different types of Outlets that can be specified.

Advanced

The Advanced tab has the following fields:

The screenshot shows a software window titled "Cellular Storage" with a close button (X) in the top right corner. Below the title bar is a "Name" field containing "Cellular Storage". The main area is divided into five tabs: "Dimensions", "Inlets", "Outlets", "Advanced" (which is highlighted in orange), and "Pollution".

Under the "Advanced" tab, the following fields are visible:

- Base Infiltration Rate (m/hr) with a value of 0.0
- Side Infiltration Rate (m/hr) with a value of 0.0
- Safety Factor with a value of 1.0
- Consider Longitudinal Delay
- A dropdown menu set to "Manning" with a small downward arrow.
- A variable "n" with a value of 0.000.

At the bottom left, there is a button that says "Click to show image(s)". At the bottom right, there are three buttons: "OK", "Cancel", and "Apply". Below these buttons, the text "Total Volume (m³): 52.640" is displayed next to a "Help" icon.

Base Infiltration Rate - Defines the rate of infiltration through the base of the filter area. This should be determined from a performance site test.

Side Infiltration Rate - Defines the rate of infiltration through the sides of the filter area. This should be determined from a performance site test.

Safety Factor - Reduces the infiltration rate during the analysis to account for silting up or poor maintenance. This is required for the UK.



This option may not be available for your region. For more information, refer to the [Regionalisation](#) topic.

Consider Longitudinal Delay - Determines if a time of travel needs to be considered across the structure. This may not be required as they are laid flat and can be considered as filling instantaneously. If the travel time is to be considered a roughness method and value should be selected.

Friction Scheme - Specifies the formula used to calculate velocity and time of travel. Select from: Manning's, and Colebrook-White. The variable below the combo box depends on the option selected.

n - Manning's n roughness value. Used by the [Manning Formula](#) equation to calculate the velocity and therefore time of travel when using the Manning's option.

Roughness - Colebrook-White roughness value. Used by the [Colebrook-White Formula](#) equation to calculate the velocity and therefore time of travel when using the Colebrook-White option.

Pollution

The Pollution tab has the following fields:

Cellular Storage

Name: Cellular Storage

| Dimensions | | Inlets | | Outlets | | Advanced | | Pollution | |
|------------|-------------------|---------------------------------|--------------------|------------------------|---------------|----------|--|-----------|--|
| Name | Aspect | Background Concentration (mg/L) | Method | Percentage Removal (%) | τ (mins) | | | | |
| TSS | Ponding Pollution | 0.0 | Percentage Removal | 0 | 0 | | | | |
| TP | Ponding Pollution | 0.0 | Percentage Removal | 0 | 0 | | | | |
| TN | Ponding Pollution | 0.0 | Percentage Removal | 0 | 0 | | | | |

Click to show image(s)

OK Cancel Apply

Total Volume (m³): 52.640 Help

Name - Name of pollutants. This is populated based on the [Pollutants](#) set up as part of the Site Data.

Background Concentration - Value below which the pollution concentration cannot fall during analysis. When concentration reaches this level, no further removal occurs.

Method - [Percentage Removal](#) or [First Order Decay](#) method can be selected. Click the links for more information about each method.

Percentage Removal - Available if Percentage Removal entered. The value entered will be deducted from the Inflow into the system.

- The decay time constant or (mean) lifetime of the pollutant. It can be entered manually or calculated from the decay constant or decay half-life. See Pollutant Removal Method - First Order Decay for more details.