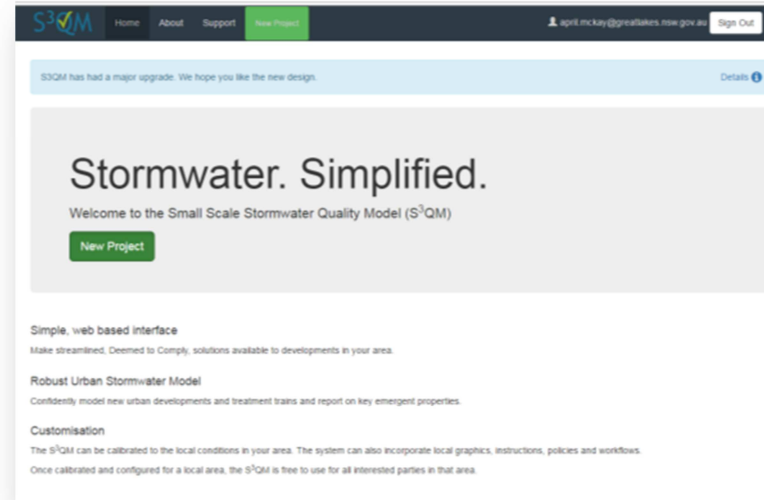


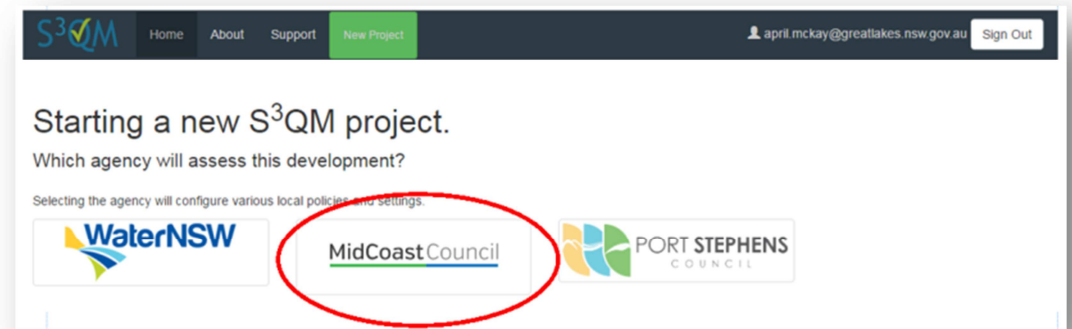
Step 1 - Register on the website www.s3qm.com.au

Registration is free and will save all of your jobs under your login.

Step 2 - If you are modelling a new site - click on 'New Project'



Step 3 - Click on 'MidCoast Council'



Step 4 - Insert details about the site. The project name and site address will help identify the file for you and the certifying authority.

- **Water Quality Assessment Type** = for most small scale urban infill sites this will be 'TTE' which is the % reduction targets outlined in Chapter 11 of the DCP. You should determine which of the targets you need to achieve (eg. TTE or NorBE) prior to modelling. *for this example we will use the TTE** option
- **Total Area (m²)** = is the total size of your site in square meters.
- **Climate Region** = Taree (for all sites)
- **Soil Type** = Select the soil type that is present on your site. This example is using sandy soils.

** the TTE targets (% Reductions) are:

- Total Suspended Solids (TSS) (%) = 80
- Total Phosphorus (TP) (%) = 60
- Total Nitrogen (TN) (%) = 45
- Gross Pollutants (GP) (%) = 100

The screenshot shows the 'Project Details' form in the S3QM system. The form is organized into three main sections. The top section contains fields for Project Name (Guide Test Project), Project Number (Project Number), Lot/DP Number (Lot/DP Number), Council Area (MidCoast Council), and Site Address (52 Undecided Road, Forster). The middle section contains fields for Approving Body (MidCoast Council), Water Quality Assessment Type (TTE), Total Suspended Solids (TSS) (%) (80), Total Phosphorus (TP) (%) (60), Total Nitrogen (TN) (%) (45), and Gross Pollutants (GP) (%) (100). The bottom section contains fields for Total Area (m²) (600), Climate Region (Taree), and Soil Type (Sand). Each field has a question mark icon next to it, indicating a help or information link. The form is displayed on a dark blue header with the S3QM logo and navigation links (Home, About, Support, New Project). The user's email address (april.mckay@greatlakes.nsw.gov.au) and a Sign Out button are visible in the top right corner.

Project Details	
Project Name	Guide Test Project
Project Number	Project Number
Lot/DP Number	Lot/DP Number
Council Area	MidCoast Council
Site Address	52 Undecided Road, Forster
Approving Body	MidCoast Council
Water Quality Assessment Type	TTE
Total Suspended Solids (TSS) (%)	80
Total Phosphorus (TP) (%)	60
Total Nitrogen (TN) (%)	45
Gross Pollutants (GP) (%)	100
Total Area (m ²)	600
Climate Region	Taree
Soil Type	Sand

Step 5 - Scroll down to Catchment 1. You will now need to input the data into the fields that are relevant to your development.


- **Area (m²)** = the total area of the site in square meters
- **Roof Area (m²)** = the size of the total roof area in square meters (including garages, decks with roof etc)
- **Other Impervious Area (DCIA) (m²)** = is the total area of other hard surfaces such as driveways and footpaths
- **Roof Area to Rainwater Tank (%)** = is the area of the roof that will flow into the rainwater tank, expressed as a percentage of the total roof area
- **Average Tank Volume (KL)** = the size of the rainwater tank, expressed as KL. Eg a 3000L tank will be 3KL
- **No. of Dwellings** = usually this is 1, however can be used for dual occupancies where the design of the buildings are the same
- **Avg. No. of Bedrooms** = number of bedrooms proposed in the development
- **Treat Roof Runoff?** = this refers to the area of roof that is NOT collected by the rainwater tank. All roof water should flow through the raingarden whether it is collected by the tank first. By ticking this box you are saying that the roof area not collected by the rainwater tank will be piped into the raingarden. Only in certain circumstances can you leave this box unticked.
- **Treat Tank Overflow?** = this refers to the overflow from the rainwater tank being piped into the raingarden. Tick this box to indicate that the overflow from the rainwater tank will be directed into the garden.
- **Treat DCIA + Pervious Area** = this refers to the runoff that is generated by driveways, footpaths and other hardstand in the development. If you intend on collecting the runoff these areas generate and piping it to the raingarden then you may tick this box. DO NOT tick this box if you intend on discharging it directly into the stormwater system.
- **Tank Water Use** = Indicate how you will be using the rainwater internally. Only select full re-use if you are not connected to town water.
- **Land Use for External Watering** = indicate the land use type in which you propose to construct

****Note: 'Road Area'** is not relevant to the MidCoast Council area and should not be used.


Catchment 1

Urban ☒ Agriculture ☐ Forest ☐


Area (m ²) ?	<input type="text" value="600"/>	Roof Area (m ²) ?	<input type="text" value="250"/>
Other Impervious Area (DCIA) (m ²) ?	<input type="text" value="30"/>	Road Area (m ²) ?	<input type="text" value=""/>

 No. of dwellings (total) ? Avg. No. Bedrooms ?

Land Use for External Watering ?

 Roof Area to Rainwater Tank (%) ? Average Tank Volume (kL per Dwelling) ?

Tank Water Use ?

 Treat Roof Runoff ? ☒ Treat Tank Overflow ? ☒

Treat DCIA + Pervious Area ? ☒ Treat Road Area ? ☐

Runoff Bypassing Treatment (%) ?

Step 6 - Choose the type of treatment.

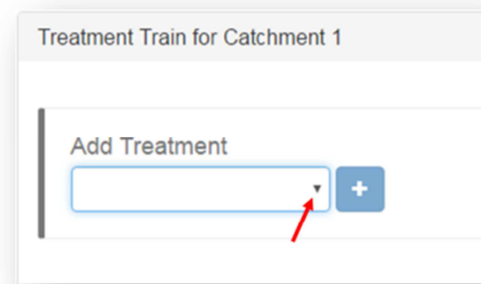
NB in the Great Lakes area, the two main types are:

- 1) Biofiltration (for both clay and sandy sites)
- 2) Swale (only for larger rural res or rural blocks),

then press the '+' button.

The S3QM tool has been produced for use nationally and not all treatments are suitable to all areas.

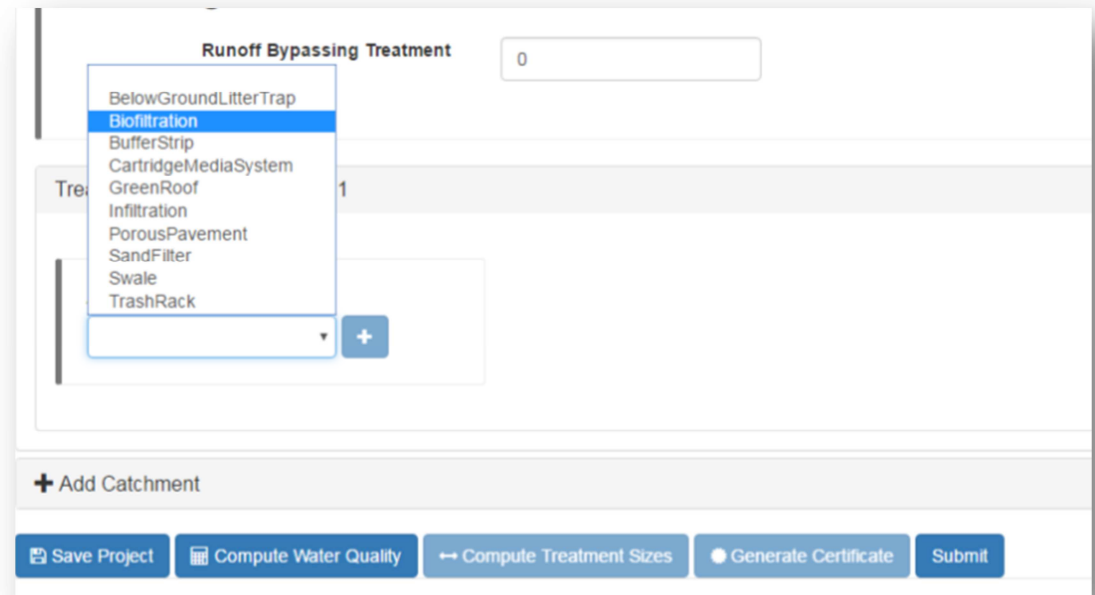
Note: The biofiltration option should be used for all raingardens whether they are on sandy soils or clay soils. The primary function of the raingardens are the same on each soil type (eg. Filter media and vegetation) however only the drainage mechanism is different which doesn't affect treatment capability.



Treatment Train for Catchment 1

Add Treatment

[Empty dropdown menu] +



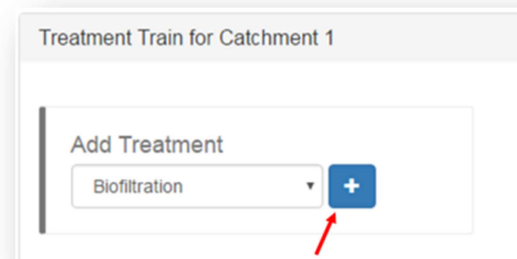
Runoff Bypassing Treatment

0

BelowGroundLitterTrap
Biofiltration
BufferStrip
CartridgeMediaSystem
GreenRoof
Infiltration
PorousPavement
SandFilter
Swale
TrashRack

+ Add Catchment

Save Project Compute Water Quality Compute Treatment Sizes Generate Certificate Submit



Treatment Train for Catchment 1

Add Treatment

Biofiltration +


Step 7 - Once you click on the add button, it should automatically bring up the default size of raingarden as 5m^2 , and the '**Extended Detention Depth**' as 0.1, and '**Filter Depth**' as 0.4.

If the window doesn't automatically come up with these figures, enter them into boxes automatically.

These measurements relate to the design of the biofiltration garden in cross section. Eg. The detention depth on the surface of the garden is 100mm and the depth of the filter media is 400mm. These are the standard requirements. There is the option to increase them to achieve higher reduction, especially on sites where space is at a minimum, however it requires more excavation, greater quantities of filter media, and must also allow for enough fall to drain off the site.

Step 8 - You should now be able to click on the button '**Compute Water Quality**' and the model will tell you whether 5m^2 is the appropriate size.

Treatment Train for Catchment 1

≡ Biofiltration 

Surface Area (m^2)

5


Extended Detention Depth (m)

0.1 ▼


Filter Depth (m)

0.4 ▼

Add Treatment

Biofiltration ▼ 

Treatment Train for Catchment 1

≡ Biofiltration 

Surface Area (m^2)

5


Extended Detention Depth (m)

0.1 ▼






Filter Depth (m)

0.4 ▼

Add Treatment

Biofiltration ▼ 

+ Add Catchment

 Save Project  **Compute Water Quality**  Compute Treatment Sizes  Generate Certificate  Submit

Step 9 - A pop-up-window showing how the targets are achieved will appear. If each of the rows are highlighted in **green** then it means they 'pass' and have achieved the targets that are required (remember TSS 80%, TP 60% and TN 45%??). If they are highlighted in **red**, it means that particular target has not been achieved and the raingarden needs to be bigger OR, rainwater tank size increased OR, direct more roof to the tank (if not already 100%).

Step 10 - As example of what it looks like when the targets are not achieved, the raingarden has been resized to 4m². As you can see, Total Phosphorus (TP) does not achieve the target of 60%, thus it is colour in red. In this instance it is obvious that 5m² is the smallest raingarden possible for this development.

Step 11 - When you've got the size right to achieve the reduction targets, you can then click on '**Generate Certificate**' which will give you a PDF file that you must submit with your Development Application.

Also note, that further detail is required on the plans to show location, drainage lines, inlet and outlet points, and cross sectional design that reflects what has been modelled here.

See associated Fact Sheets for other detail required for lodgement of DA
<http://www.midcoast.nsw.gov.au/Plan-Build/Stage-3-Conditions-Considerations/Environmental-Considerations>

Treatment Train for Catchment 1

Biofiltration
 Surface Area (m²)
 5
 Extended Detention Depth (m)
 0.1
 Filter Depth (m)
 0.4

Add Treatment

Results

Constituent	Residual Load	TTE (%)	OK?	Target TTE (%)
Q	0.28	33.0	✓	
Total Suspended Solids (TSS) (%)	3.44	83.9	✓	80
Total Phosphorus (TP) (%)	0.03	60.8	✓	60
Total Nitrogen (TN) (%)	0.33	59.8	✓	45
Gross Pollutants (GP) (%)	0.00	100.0	✓	100

+ Add Catchment

Save Project Compute Water Quality Compute Treatment Sizes

Treatment Train for Catchment 1

Biofiltration
 Surface Area (m²)
 4
 Extended Detention Depth (m)
 0.1
 Filter Depth (m)
 0.4

Add Treatment

Results

Constituent	Residual Load	TTE (%)	OK?	Target TTE (%)
Q	0.28	33.0	✓	
Total Suspended Solids (TSS) (%)	4.11	80.7	✓	80
Total Phosphorus (TP) (%)	0.03	58.9	!	60
Total Nitrogen (TN) (%)	0.35	57.1	✓	45
Gross Pollutants (GP) (%)	0.00	100.0	✓	100

+ Add Catchment

Save Project Compute Water Quality Compute Treatment Sizes

+ Add Catchment

Save Project Compute Water Quality Compute Treatment Sizes **Generate Certificate** Submit