

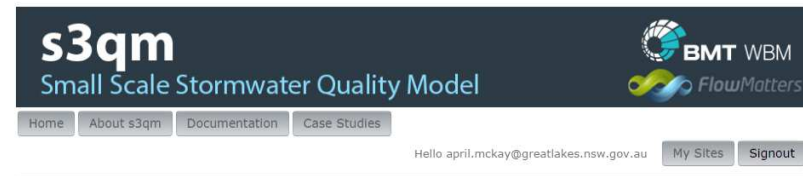
Step 1 - Register on the website www.s3qm.com.au

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

Step 3 - Insert details about the site. The details on the left hand side help to identify the site, project data, and address information. The data on the right hand side is essential to begin the modelling.

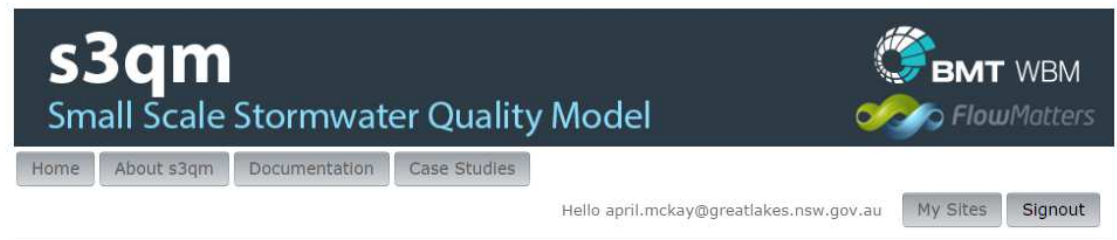
- **Climate Region** = Taree (for all Great Lakes LGA sites)
- **Soil Type** = Select the soil type that is present on your site. This example is using sandy soils.
- **Water Quality Assessment Type** = for most small scale urban infill sites this will be 'TTE' which is the % reduction targets outlined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

Press '**Save**'



Welcome to s3qm

[Create a New Project](#) [View an Existing Project](#)



New site

Main Site Details

Project Name :	<input type="text" value="Pacific Palms Beach House"/>	Climate Region :	<input type="text" value="Taree"/>
Project Number :	<input type="text" value="DA??/2014"/>	Soil Type :	<input type="text" value="Sand"/>
Council Area :	<input type="text" value="Great Lakes"/>	Water Quality Assessment Type :	<input type="text" value="TTE"/>
Site Address :	<input type="text" value="2 Beach Street, Beach Town"/>	Assessment Method :	<input type="text" value="Design"/>
Lot/DP Number :	<input type="text" value="Lot XX DP XXXXX"/>	Total Area (m ²) :	<input type="text" value="462"/>
Comments :	<input type="text" value="Steep slope, sandy soils, interalic"/>		

Step 4 - You then get the following screen. The first block of information **'Main Site'** is a summary of the data you entered in Step 3.

Site was successfully created.

Main Site Details

Project Name: Pacific Palms Beach House **Climate Region:** Taree
Project Number: DA??/2014 **Soil Type:** Sand
Council Area: Great Lakes **Water Quality Assessment Type:** TTE
Site Address: 2 Beach Street, Beach Town **Assessment Method:** Design
Lot/DP Number: Lot XX DP XXXXX **Total Area (m²):** 462.0
Comments: Steep slope, sandy soils, interallotment drainage

Treatment Train Effectiveness (% Reductions)

Total Suspended Solids (TSS) (%) 0
Total Phosphorus (TP) (%) 0
Total Nitrogen (TN) (%) 0
Gross Pollutants (GP) (%) 0

Details of catchment land use and stormwater treatment devices are required for both the Existing Case and the Developed Case for assessing water quality impacts. Refer to Table 2 in the Documentation on what land use or surfaces should be used to represent the proposed development. Note that a maximum of two sub-catchments can be used to model a site that has two stormwater outlets, or drains in two different directions.

Developed Case

Catchments 1 configured out of a maximum of 2
Total allocated area: 0 (c.f 462.0 for project)

Catchment #1

Catchment Number: 1
Total Allocated Area 0

You will now need to tell the program what the TTE targets are. Press the 'Edit' button that is next to the heading **'Treatment Train Effectiveness (% Reductions)'**. Enter the following percentages and press **'Save'**.

Treatment Train Effectiveness (% Reductions)

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

Details of catchment land use and stormwater treatment devices are required for both the Existing Case and the Developed Case for assessing water quality impacts. Refer to Table 2 in the Documentation on what land use or surfaces should be used to represent the proposed development. Note that a maximum of two sub-catchments can be used to model a site that has two stormwater outlets, or drains in two different directions.

Step 5 - In 'Catchment #1', press the 'Enable' button that is next to 'Urban'

This will open a series of data fields for you to input your information regarding your development.

The screenshot shows a web interface for configuring a 'Developed Case'. At the top right, there is an 'Add Catchment ?' button. Below this, the title 'Developed Case' is displayed. The interface indicates that 1 catchment is configured out of a maximum of 2, and the total allocated area is 0 (c.f. 462.0 for project). The main section is titled 'Catchment #1' and contains the following information:

- Catchment Number: 1
- Total Allocated Area 0
- Comments:

There are three categories listed, each with an 'Enable ?' button:

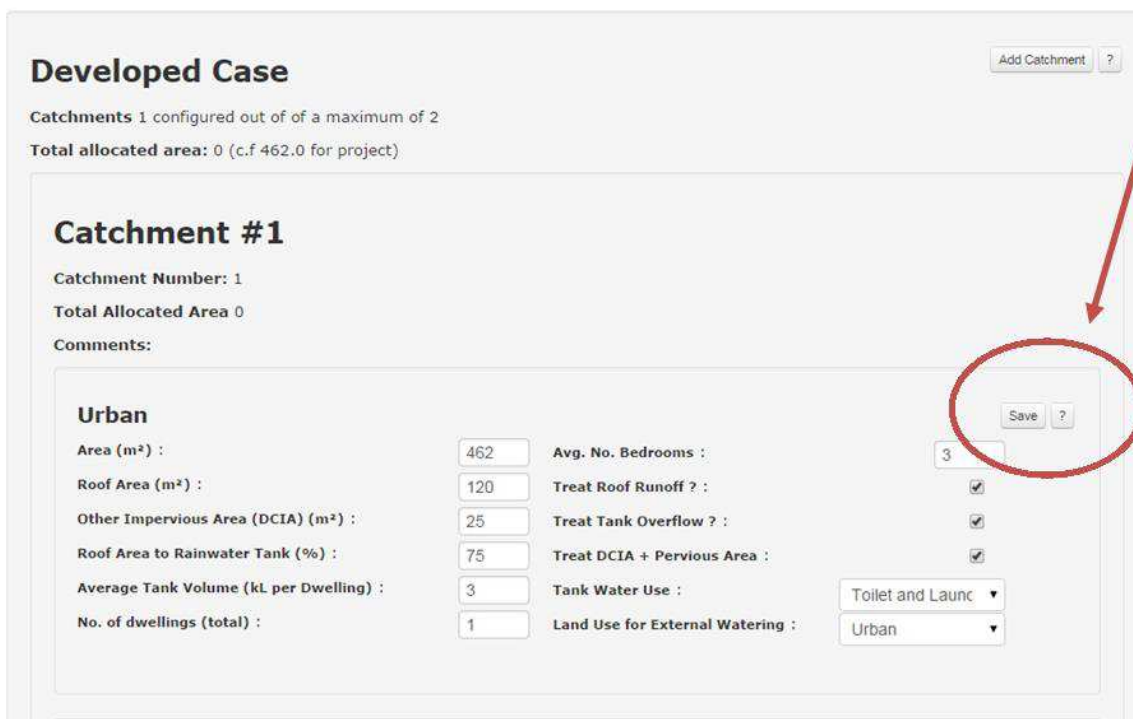
- Urban**: The 'Enable ?' button is circled in red, and a red arrow points to it from the top right.
- Agriculture**: The 'Enable ?' button is visible.
- Forest**: The 'Enable ?' button is visible.

At the bottom of the main section, there is an 'Add Treatment' dropdown menu set to 'Below Ground Litter Trap', followed by a 'Create ?' button. At the very bottom of the interface, there are 'Run', 'Show Certificate', and '?' buttons.

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 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

Once all of the information has been entered, press '**Save**'



Developed Case Add Catchment ?

Catchments 1 configured out of a maximum of 2

Total allocated area: 0 (c.f 462.0 for project)

Catchment #1

Catchment Number: 1

Total Allocated Area 0

Comments:

Urban

Area (m ²) :	<input type="text" value="462"/>	Avg. No. Bedrooms :	<input type="text" value="3"/>
Roof Area (m ²) :	<input type="text" value="120"/>	Treat Roof Runoff ? :	<input checked="" type="checkbox"/>
Other Impervious Area (DCIA) (m ²) :	<input type="text" value="25"/>	Treat Tank Overflow ? :	<input checked="" type="checkbox"/>
Roof Area to Rainwater Tank (%) :	<input type="text" value="75"/>	Treat DCIA + Pervious Area :	<input checked="" type="checkbox"/>
Average Tank Volume (KL per Dwelling) :	<input type="text" value="3"/>	Tank Water Use :	<input type="text" value="Toilet and Launc"/>
No. of dwellings (total) :	<input type="text" value="1"/>	Land Use for External Watering :	<input type="text" value="Urban"/>

Save ?

Step 6 - Choose the type of treatment. NB in the Great Lakes area, the two main types are: 1) Biofiltration, 2) Swale (generally on larger rural res or rural blocks), then press '**Create**'

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.

Catchment #1

Catchment Number: 1
Total Allocated Area 0
Comments:

Urban		Disable	Edit	?
Area (m ²)	462.0	Avg. No. Bedrooms	3	
Roof Area (m ²)	120.0	Treat Roof Runoff ?	Yes	
Other Impervious Area (DCIA) (m ²)	25.0	Treat Tank Overflow ?	Yes	
Roof Area to Rainwater Tank (%)	75.0	Treat DCIA + Pervious Area	Yes	
Average Tank Volume (kL per Dwelling)	3.0	Tank Water Use	Toilet and Laundry	
No. of dwellings (total)	1	Land Use for External Watering	Urban	

Agriculture Enable ?

Forest Enable ?

Add Treatment Below Ground Litter Trap Create ?

- Below Ground Litter Trap
- Biofiltration**
- Buffer Strip
- Cartridge Media System
- Green Roof
- Infiltration
- Porous Pavement
- Sand Filter
- Swale
- Trash Rack

Run Show Certificate

Step 7 - Enter the proposed size of the biofiltration garden in square meters (m²), the '**Extended Detention Depth (m)**' and the '**Filter Depth (m2)**', the press '**Save**'. 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.

Biofiltration Save ?

Surface Area (m²) :

Extended Detention Depth (m) :

Filter Depth (m) :

Run Show Certificate ?

Step 8 - now press 'Run' and you should get a certificate that looks like this example below.

You can see at the bottom on the table, that all of the targets can be achieved with a 4m² biofiltration garden as they are shaded with green and have a tick next to the results.

If you wanted to try modelling a smaller garden, you can go back up to that section and edit it to make it 3m² and so on to determine what size is appropriate.

You can also make changes to the tank size, the amount of roof going to the tank, whether you are treating the driveway, roof runoff and overflow to determine what you need to do to make sure the TTE targets are achieved. When the targets are not achieved with the proposed treatment scenario, it will be shaded red with a cross.

Run Show Certificate ?

s3qm			
General Details			
Project Name:	Pacific Palms Beach House	Comments:	Steep slope, sandy soils, interallotment drainage
Project No.:	DA??/2014		
Author:	april.mckay@greatlakes.nsw.gov.au		
Location Details			
Site Address:		Lot/DP No.:	Lot XX DP XXXXX
Council Area:	Great Lakes	Dominant Soil Texture:	Sand
Rainfall Region:	Taree	Design Mode and WQOs:	Design/TTE
Total Area (m ²):	462.0	No. Catchments:	1

Output Summary		
Developed		
Catchment Characteristic:		
Imperviousness(%)	31.39%	
Water Usage:		
Storage Capacity (kL)	3.0 kL	
Demand (kL/yr)	243.55 kL/yr	
Utilisation (%)	18.59%	
Efficiency (%)	73.22%	
Catchment 1		
Urban	462.0	
Agriculture	0.0	
Forest	0.0	
Treatment Train:		
	Biofiltration: Surface Area=4.0, Ed Depth=0.1, F Depth=0.4	
Treated Loads / Flows		
Load	Treatment Train Effectiveness (%)	
Flow(ML)	0.18	31.0
TSS(kg/yr)	2.4	✓86.0
TP (kg/yr)	0.018	✓61.0
TN (kg/yr)	0.19	✓61.0
Gross Pollutants (kg/yr)	0.0	✓100.0
Note:		

Step 9 - when you're happy with the certificate, press 'Show Certificate' and you are able to print it and submit it with your plans. 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

