

MUSIC-link Report

Project Details		Company Details	
Project:	170 Derby St, Penrith	Company:	Smart Structures
Report Export Date:	1/12/2020	Contact:	Kamyar Elvazzadeh
Catchment Name:	170 Derby St	Address:	Suite 2.04, Building 3, 35-41 Waterloo Rd, Macquarie Park NSW 2113
Catchment Area:	0.13ha		
Impervious Area*:	76.13%		
Rainfall Station:	67113 PENRITH		
Modelling Time-step:	6 Minutes		
Modelling Period:	1/01/1999 - 31/12/2008 11:54:00 PM		
Mean Annual Rainfall:	691mm		
Evapotranspiration:	1158mm		
MUSIC Version:	6.3.0		
MUSIC-link data Version:	6.33		
Study Area:	Penrith		
Scenario:	Penrith Development		

\* takes into account area from all source nodes that link to the chosen reporting node, excluding Import Data Nodes

Treatment Train Effectiveness	Treatment Nodes		Source Nodes		
Node: 85/60/45	Reduction	Node Type	Number	Node Type	Number
Flow	18.9%	Rain Water Tank Node	1	Urban Source Node	5
TSS	85.2%	Sedimentation Basin Node	1		
TP	78.9%	Buffer Node	1		
TN	59.6%	GPT Node	1		
GP	95%	Generic Node	1		

**Comments**

- Roof node base flow values are as per the Penrith MUSIC modelling guidelines which indicate base flow has no effect for impervious areas and therefore no value is needed.
- The 'SF Chamber' node has been modified to represent the below ground filtration chamber. Default 'K' values have been manually adjusted to 1 in order to eliminate any performance from the actual tank, which would already be accounted for in the Filter Generic Node Target Elements/Transfer Functions. This must be adjusted for any proprietary filter using this method of modelling. Not doing this would represent a duplication of the chamber attenuation effect. (For any questions, please Contact Ocean Protect on 1300 354 722).

**Passing Parameters**

Node Type	Node Name	Parameter	Min	Max	Actual
GPT	1 x OceanGuard200um	Hi-flow bypass rate (cum/sec)	None	99	0.02
Receiving	85/60/45	% Load Reduction	None	None	18.9
Receiving	85/60/45	GP % Load Reduction	90	None	95
Receiving	85/60/45	TN % Load Reduction	45	None	59.6
Receiving	85/60/45	TP % Load Reduction	60	None	78.9
Receiving	85/60/45	TSS % Load Reduction	85	None	85.2
Sedimentation	SF Chamber 3m	High Flow Bypass Out (ML/yr)	None	None	0
Urban	Driveway - 36.25m (100% Imp.)	Area Impervious (ha)	None	None	0.004
Urban	Driveway - 36.25m (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Driveway - 36.25m (100% Imp.)	Total Area (ha)	None	None	0.004
Urban	Ground - 242.79m (100% Perv.)	Area Impervious (ha)	None	None	0
Urban	Ground - 242.79m (100% Perv.)	Area Pervious (ha)	None	None	0.024
Urban	Ground - 242.79m (100% Perv.)	Total Area (ha)	None	None	0.024
Urban	Hardstand - 630.64m (100% Imp.)	Area Impervious (ha)	None	None	0.063
Urban	Hardstand - 630.64m (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Hardstand - 630.64m (100% Imp.)	Total Area (ha)	None	None	0.063
Urban	Landscape Bypass - 100.9m (70% Perv.)	Area Impervious (ha)	None	None	0.002
Urban	Landscape Bypass - 100.9m (70% Perv.)	Area Pervious (ha)	None	None	0.007
Urban	Landscape Bypass - 100.9m (70% Perv.)	Total Area (ha)	None	None	0.01
Urban	Roof - 290.31m (100% Imp.)	Area Impervious (ha)	None	None	0.029
Urban	Roof - 290.31m (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Roof - 290.31m (100% Imp.)	Total Area (ha)	None	None	0.029

Only certain parameters are reported when they pass validation

**Failing Parameters**

Node Type	Node Name	Parameter	Min	Max	Actual
Rain	1 x 10kL RWT	% Reuse Demand Met	80	None	37.20
Sedimentation	SF Chamber 3m	Notional Detention Time (hrs)	8	12	0.176
Sedimentation	SF Chamber 3m	Total Nitrogen - k (m/yr)	500	500	1
Sedimentation	SF Chamber 3m	Total Phosphorus - k (m/yr)	6000	6000	1
Sedimentation	SF Chamber 3m	Total Suspended Solids - k (m/yr)	8000	8000	1

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