

THE CITY OF NEWCASTLE STANDARD DRAWINGS
FOR WATER SENSITIVE URBAN DESIGN (WSUD)



DESIGN NOTES AND SPECIFICATIONS

1. ALL DEVICES ARE TO BE DESIGNED IN ACCORDANCE WITH THE CITY OF NEWCASTLE STORMWATER AND WATER EFFICIENCY TECHNICAL MANUAL (SEE PART 4C).
2. THE FINISHED SURFACE OF THE BIORETENTION FILTER MEDIA OR SAND FILTER MUST BE FLAT TO ENSURE FULL ENGAGEMENT OF THE FILTER MEDIA BY STORMWATER FLOWS.
3. ALL DEVICES ARE TO BE DESIGNED TO TREAT THE 6 MONTH ARI STORM EVENT.
4. THE EXTENDED DETENTION DEPTH ABOVE THE FILTER MEDIA SHALL NOT EXCEED 0.3m.
5. EXTENDED DETENTION TO BE A MINIMUM OF 24HOURS TO MAXIMUM OF 48HOURS.
6. DEVICES ARE TO BE CONFIGURED IN SUCH A WAY AS TO ENSURE THAT MAJOR FLOWS DO NOT ENTER THE DEVICE. A MAJOR FLOW BYPASS IS TO BE PROVIDED TO PREVENT SCOUR.
7. ALL SEDIMENT AND GROSS POLLUTANTS ARE TO BE REMOVED UPSTREAM OF THE DEVICE. AN ONLINE GROSS POLLUTANT TRAP IS TO BE PROVIDED UPSTREAM OF ALL BIOFILTRATION BASINS OR SAND FILTERS WHERE APPROPRIATE.
8. AN IMPERMEABLE LINER TO THE BIORETENTION FILTER/SAND FILTER IS TO BE PROVIDED IN AREAS WHERE THE SATURATED HYDRAULIC CONDUCTIVITY OF THE BIORETENTION FILTER MEDIA IS LESS THAN 10 TIMES THAT OF THE NATIVE SURROUNDING SOILS, EXAMPLE BENTOFIX OR EQUIVALENT.
9. THE BASE AND WALLS OF THE FILTER MEDIA IS TO BE LINED WITH BIDIM A14 GEOFABRIC OR EQUIVALENT.
10. A NETWORK OF 100mm SUBSOIL PIPES IS TO BE PROVIDED OVER THE BASE OF THE FILTER, HAVE FLUSH OUT SURFACE POINTS WITH CONCRETE SURROUNDS AND CAPS AND BE CONNECTED TO A RECEIVING PIT.
11. MAXIMUM SPACING BETWEEN SUBSOIL COLLECTION PIPES TO BE 5m. IN A LARGE SYSTEM A COLLECTION PIPE (MINIMUM 225mm) IS TO BE PROVIDED.
12. THE MAXIMUM BATTER GRADES TO BE 1(V):6(H) TURFED AND 1(V):3(H) LANDSCAPED.
13. MULCH IS TO BE PROVIDED TO ALL LANDSCAPED BATTERS AND BIORETENTION MEDIA SURFACE, BUT NOT TO SAND FILTERS.
14. MULCH TO BE MINIMUM 75mm DEEP OF 20mm DOUBLE WASHED GRAVEL OR EQUIVALENT.
15. ALL DEVICES ARE TO BE DESIGNED SO THAT THEY DO NOT REQUIRE FENCING.
16. WHERE REQUIRED, AN OVER FLOW WEIR IS TO BE PROVIDED WITH A MINIMUM FREEBOARD OF 0.1m TO THE INLET OF THE RECEIVING PIT.
17. OVERFLOW WEIR IS TO BE CONSTRUCTED LEVEL AND ROCK PITCHED TO PREVENT SCOUR - MINIMUM 400mm DIAMETER SANDSTONE ROCK IS TO BE USED. ROCK IS TO BE PLACED IN ACCORDANCE WITH THE GUIDELINES FOR ROCK PLACEMENT SHOWN ON THE STANDARD DRAWINGS.
18. OFF STREET PARKING BAY FOR THE COUNCIL MAINTENANCE TRUCK IS TO BE PROVIDED WITHIN 1m HORIZONTAL DISTANCE AND 2m VERTICAL DISTANCE FROM THE GPT, DIVERSION PIT AND SEDIMENT BAYS TO FACILITATE CLEANING OF THESE DEVICES.
19. A TRAFFICABLE ACCESS IS TO BE PROVIDED TO THE BASE OF THE BIORETENTION/SAND FILTER TO COUNCIL'S STANDARDS FOR MAINTENANCE PURPOSES.
20. AT STEEP SITES, HIGH VELOCITY FLOWS CAN EASILY CAUSE SCOURING AND EROSION. ENERGY DISSIPATION SHOULD BE A KEY CONSIDERATION FOR ANY DESIGN.
21. TO MINIMIZE FLOW VELOCITIES CONSIDER THE USE OF DROP STRUCTURES AND PIPE GRADES TO BE A MAXIMUM OF 1% GRADE DISCHARGING TO A LEVEL SPREADER OUTLET STRUCTURE.
22. IN LARGE DEVICES CONSIDER THE USE OF A FLOW SPREADER TO EVENLY DISTRIBUTE FLOWS TO ENSURE ENGAGEMENT OF THE ENTIRE MEDIA SURFACE.
23. FOUNDING MATERIAL TO ACHIEVE A MINIMUM ALLOWABLE BEARING CAPACITY OF 150KPa

REFERENCES

NOTE: THE CITY OF NEWCASTLE STANDARD DRAWINGS FOR WATER SENSITIVE URBAN DESIGN (WSUD) WERE ADAPTED FROM THE SYDNEY METROPOLITAN CATCHMENT MANAGEMENT AUTHORITY "TYPICAL DRAWINGS FOR WSUD" FOR THE NEWCASTLE LGA.

1. WATER BY DESIGN – www.waterbydesign.com.au
2. FACILITY FOR ADVANCING WATER BIOFILTRATION (FAWB) – www.monash.edu.au/fawb

				SCALE	 LIVEABLE CITY INFRASTRUCTURE MANAGEMENT SERVICES	APPROVED:  SIGNED:..... INFRASTRUCTURE MANAGEMENT SERVICES MANAGER DATE: 11/6/13	THE CITY OF NEWCASTLE		NCC PLAN No.	SHEET No.
				AS SHOWN				WSUD STANDARD NOTES AND SPECIFICATIONS		A2400
1	CONSTRUCTION	11.06.13	J.C.							
0	PRELIMINARY – FOR REVIEW AND COMMENT ONLY	11.01.13	J.C.							
No.	AMENDMENT DETAILS	DATE	INITIALS							
A3 ORIGINAL THIS SHEET WAS PREPARED IN COLOUR AND WILL BE INCOMPLETE IF COPIED				COORDINATE SYSTEM:	HEIGHT DATUM: AHD	REVIEWED:	J.C.		AMENDMENT No.	SHEETS