NOTES:
1. THE RAINGARDENS ARE PREFERRED TO BE TERRACED RAINGARDEN TO MAXIMISE THE PONDING VOLUME. REFER DRAWING 7.2.5.
2. THE RAINGARDEN & SURROUNDINGS AREAS SHALL BE DESIGNED IN ACCORDANCE WITH SYDNEY STREET TECHNICAL SPECIFICATION PART A4.

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
RAINGARDEN MEDIA SPECIFICATION

MULCH
- WASHED AGGREGATE 10-20mm

BIO FILTRATION SPECIFICATION
SANDY LOAM MIX (IN ACCORDANCE WITH FAWB GUIDELINES)
- SATURATED HYDRAULIC CONDUCTIVITY
  100mm/Hr - 250mm/Hr

PARTICLE DISTRIBUTION
DESCRIPTION PROPORTION GRADING
Clay & Silt <3% <0.05mm
Very Fine Sand 5-30% 0.05-0.15mm
Fine Sand 10-30% 0.15-0.25mm
Medium to Coarse Sand 40-60% 0.25-1.0mm
Coarse Sand 7-10% 1.0-2.0mm
Fine Gravel <3% 2.0-3.4mm

- TOTAL CLAY AND SILT CONTENT ≤3%
- ORGANIC CONTENT ≤5%
- pH (1:5 IN WATER) 5.5 - 7.5
- ELECTRICAL CONDUCTIVITY (EC) ≤1.2dS/m
- TOTAL NITROGEN ≤1000mg/kg
- ORTHOPHOSPHATE (PO₄³⁻) ≤80mg/kg

TRANSITION LAYER SPECIFICATIONS
COARSE WASHED RIVER SAND OR RECYCLED CRUSHED GLASS EQUIVALENT
- 90% PARTICLES RETAINED ABOVE 0.25mm
- SATURATED HYDRAULIC CONDUCTIVITY >250mm/Hr

DRAINAGE LAYER SPECIFICATION
NO FINES DRAINAGE GRAVEL

ACCEPTABLE PARTICLE DISTRIBUTION

<table>
<thead>
<tr>
<th>PARTICLE SIZE</th>
<th>% RETAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;7mm</td>
<td>0</td>
</tr>
<tr>
<td>4-7mm</td>
<td>&gt;70%</td>
</tr>
<tr>
<td>2-4mm</td>
<td>&lt;20%</td>
</tr>
<tr>
<td>&lt;2mm</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTES

1. BACK OF KERB SHALL BE CONSTRUCTED VERTICALLY AND NO EXCESS CONCRETE SHALL BE POURED IN THE RAIN GARDEN.

2. WHERE STRUCTURAL STABILITY OF KERB IS A CONCERNED MATTER, THE KERB & GUTTER MAY BE REINFORCED USING REINFORCEMENT STEEL BARS REFER DWG# 1.1.15

3. THE KERBS MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH CITY OF SYDNEY STREET CODE
RAINGARDEN MEDIA SPECIFICATION

MULCH
- WASHED AGGREGATE 10-20mm

BIO FILTRATION MEDIA SPECIFICATION
SANDY LOAM MIX (IN ACCORDANCE WITH FAWB GUIDELINES)
- SATURATED HYDRAULIC CONDUCTIVITY 100mm /Hr - 250mm /Hr

PARTICLE DISTRIBUTION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PROPORTION</th>
<th>GRADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay &amp; Silt</td>
<td>&lt;3%</td>
<td>&lt;0.05mm</td>
</tr>
<tr>
<td>Very Fine Sand</td>
<td>5-30%</td>
<td>0.05-0.15mm</td>
</tr>
<tr>
<td>Fine Sand</td>
<td>10-30%</td>
<td>0.15-0.25mm</td>
</tr>
<tr>
<td>Medium to Coarse Sand</td>
<td>40-60%</td>
<td>0.25-1.0mm</td>
</tr>
<tr>
<td>Coarse Sand</td>
<td>7-10%</td>
<td>1.0-2.0mm</td>
</tr>
<tr>
<td>Fine Gravel</td>
<td>&lt;3%</td>
<td>2.0-3.4mm</td>
</tr>
</tbody>
</table>

- TOTAL CLAY AND SILT CONTENT ≤3%
- ORGANIC CONTENT <5%
- PH (1:5 IN WATER) 5.5 - 7.5
- ELECTRICAL CONDUCTIVITY (EC) <1.2dS/m
- TOTAL NITROGEN <1000mg/kg
- ORTHOPHOSPHATE (PO₄³⁻) <80mg/kg

TRANSITION LAYER SPECIFICATIONS
COARSE WASHED RIVER SAND OR RECYCLED CRUSHED GLASS EQUIVALENT
- 90% PARTICLES RETAINED ABOVE 0.25mm
- SATURATED HYDRAULIC CONDUCTIVITY >250mm/Hr

SUBMERGED ZONE SPECIFICATIONS
- NO FINES DRAINAGE GRAVEL
- 5% ORGANIC MULCH (SUGAR CANE MULCH)
- 5% HARDWOOD CHIPS (NOT TREATED)

ACCEPTABLE PARTICLE DISTRIBUTION

<table>
<thead>
<tr>
<th>PARTICLE SIZE</th>
<th>% RETAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-7mm</td>
<td>0</td>
</tr>
<tr>
<td>4-7mm</td>
<td>&gt;70%</td>
</tr>
<tr>
<td>2-4mm</td>
<td>&lt;30%</td>
</tr>
<tr>
<td>&lt;2mm</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTES
1. BACK OF KERB SHALL BE CONSTRUCTED VERTICALLY AND NO EXCESS CONCRETE SHALL BE POURED IN THE RAINGARDEN.
2. WHERE STRUCTURAL STABILITY OF KERB IS A CONCERNED MATTER, THE KERB & GUTTER MAY BE REINFORCED USING REINFORCEMENT STEEL BARS REFER DWG# 1.1.15
3. THE KERBS MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH CITY OF SYDNEY STREET CODE
RAINGARDEN MEDIA SPECIFICATION

MULCH
- WASHED AGGREGATE 10-20mm

BIO FILTRATION SPECIFICATION
SANDY LOAM MIX (IN ACCORDANCE WITH FAWB GUIDELINES)
- SATURATED HYDRAULIC CONDUCTIVITY
100mm/Hr - 250mm/Hr

PARTICLE DISTRIBUTION
DESCRIPTION PROPORTION GRADING
Clay & Silt <3% <0.05mm
Very Fine Sand 5-30% 0.05-0.15mm
Fine Sand 10-30% 0.15-0.25mm
Medium to Coarse Sand 40-60% 0.25-1.0mm
Coarse Sand 7-10% 1.0-2.0mm
Fine Gravel <3% 2.0-3.4mm

- TOTAL CLAY AND SILT CONTENT ≤3%
- ORGANIC CONTENT <9%
- pH (1:5 IN WATER) 5.5 - 7.5
- ELECTRICAL CONDUCTIVITY (EC) <1.2dS/m
- TOTAL NITROGEN <1000mg/kg
- ORTHOPHOSPHATE (PO4³) <80mg/kg

TRANSITION LAYER SPECIFICATIONS
COARSE WASHED RIVER SAND OR RECYCLED CRUSHED GLASS EQUIVALENT
- 30% PARTICLES RETAINED ABOVE 0.25mm
- SATURATED HYDRAULIC CONDUCTIVITY >250mm/Hr

DRAINAGE LAYER SPECIFICATION
NO FINES DRAINAGE GRAVEL

ACCEPTABLE PARTICLE DISTRIBUTION
PARTICLE SIZE % RETAINED
7-7mm 0
4-7mm >70%
2-4mm <30%
<2mm 0

NOTES
1. BACK OF KERB SHALL BE CONSTRUCTED VERTICALLY AND NO EXCESS CONCRETE SHALL BE POURED IN THE RAINGARDEN.

2. WHERE STRUCTURAL STABILITY OF KERB IS A CONCERNED MATTER, THE KERB & GUTTER MAY BE REINFORCED USING REINFORCEMENT STEEL BARS REFER DWG# 1.1.15

3. THE KERBS MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH CITY OF SYDNEY STREET CODE

4. DRAINAGE LAYER MAY BE DELETED IF THERE IS NO DRAINAGE IN THE VICINITY SUBJECTED TO CITY'S APPROVAL.

5. THE SLOTTED PIPE SHALL BE CONNECTED TO BYPASS CHAMBER OF BYPASS PIT/SURCHARGE PIT
1. The stone shall be bluestone unless specified by the designer and approved by City's representative.
2. The flush kerb at the edge of the footpath shall be selected to match the surrounding kerbs.
3. Other materials may be used for the retaining terraced edges upon City's approval.
RAINGARDEN ENERGY DISSIPATION - PLAN

1:25
NOTE: DISSIPATION BASIN LENGTH SHALL BE MINIMUM 400mm UNLESS NOTES OTHERWISE.

DISSIPATION BASIN LENGTH
HEDGING BEYOND
RAINGARDEN KERB
6mm THICK PLATE FIXED WITH 3 M12 CHEMSETS

NEW GUTTER
CONCRETE HOB
GRAVEL MULCH
DISAPATION ROCKS 150mm DIA SIZE

SECTION
1:10

NOTE: THE PLATE SHALL BE RECESSION INTO THE KERB

GALVANISED PLATE
1:10

NOTE: T - TERRACE GARDEN IS THE PREFERRED OPTION FOR MOST OF RAINGARDENS EXCEPT ROCK SWALES: IN WHICH CASE ENTRY STRUCTURE SHALL BE DESIGNED TO SUIT THE ROCK SWALE

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
DEPTH AS REQUIRED
HEAVY DUTY HOT DIP GALVANISED STEEL SURCHARGE GRATE FRAME TO SUIT PIT OPENING
RAINGARDEN SURFACE LEVEL
150mm THICK CONCRETE WALLS WITH SL82 MESH CENTRALLY LOCATED
Ø100mm SLOTTED PVC
N12 COGS @ 200mm CENTRES, 300mm LONG EACH WAY (TYPICAL)

NOTES
1. ALL CONCRETE IS TO HAVE A MINIMUM STRENGTH OF 32 MPa.
2. PIT STRUCTURE TO BE 150mm THICK UNLESS NOTED OTHERWISE.
3. DRAINAGE PIPE TO BE MINIMUM 375Ø CLASS 4 REINFORCED CONCRETE PIPE

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED

SCALE 1:10
NOTES:

1. GUTTER BRIDGE SHALL BE DESIGNED TO SUIT MINIMUM 5 YEARS ARI STORM & SHALL HAVE 240 kN ULTIMATE LOAD CAPACITY. DESIGNER SHALL SUBMIT MAINTENANCE REGIME WITH ANY RAIN GARDEN INCORPORATED IN DESIGN.
2. USE OF BONDEK IS NOT ALLOWED FOR GUTTER BRIDGES.
3. SIZE OF GUTTER BRIDGE SHALL BE DESIGNED TO SUIT THE ANTICIPATED FLOW RATES

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
SMALL DISSIPATION ROCKS

KERB OUTLET INTO RAINGARDEN

FOOTPATH
KERB
RAINGARDEN

150mm THICK ROCK (50-100mm SIZE) SECURED WITH PVC NET (20mm MAX GRID SIZE) UNDER 50mm WASHED AGGREGATE MULCH

WASHED GRAVEL MULCH - 10-20mm

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED

SCALE 1:20

RAINGARDENS
DISSIPATION ROCKS
SMALL KERB OUTLETS

DRAINAGE

Rev C
Date 10.06.16
Approved P S
Dwg No. 7.2.9
1000 HIGH END RISER

SECTION

HEAVY DUTY uPVC PLASTIC COVER TO SIT 150mm PROUD

45° PVC BEND

NOM 1000 uPVC DRAINAGE PIPE CONNECTION TO SUBSOIL DRAINAGE LINE

NOM 1000 SLOTTED PVC SUBSOIL DRAINAGE LINE TO BE CONNECTED TO BYPASS STROMWATER DRAINAGE NETWORK.

SCALE 1:20

2250 HIGH END RISER JUNCTION

PLAN

SECTION

HEAVY DUTY uPVC PLASTIC COVER TO SIT 150mm PROUD

RAINGARDEN SURFACE

MIN 150

NOM 2250 uPVC RISER

NOM 1000 SLOTTED PVC SUBSOIL DRAINAGE LINE.

NOM 1000 uPVC DRAINAGE PIPE CONNECTION TO DRAINAGE PIT

NOM 1000 SLOTTED PVC SUBSOIL DRAINAGE LINE.

NOM 1000 uPVC DRAINAGE PIPE CONNECTION TO DRAINAGE PIT

FIXED AND SEALED CAP

SCALE 1:20

NOTE:
1. THE SUBSOIL DRAIN SHALL BE CONNECTED TO THE
   - BYPASS CHAMBER OF THE INLET PIT, OR;
   - BYPASS DRAINAGE PIT, OR;
   - RAINGARDEN SURCHAGE PIT.

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED

RAINGARDENS
RAINGARDEN INLET PIT WITH STEEL TRAY
PIT PERPENDICULAR TO THE ROAD

NOTE:
1. THIS OPTION REQUIRES OBVERT OF THE STORMWATER DRAINAGE PIPE TO BE DEEPER THAN 600mm
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING #7.2.1
3. EXISTING UTILITLY SERVICES & DEPTH TO EXISTING STORM WATER SHALL BE VERIFIED BEFORE SPECIFYING THIS OPTION

SCALE 1:40

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED

RAINGARDEN INLET PIT WITH STEEL TRAY
PIT PERPENDICULAR TO THE ROAD

NOTE:
1. THIS OPTION REQUIRES OBVERT OF THE STORMWATER DRAINAGE PIPE TO BE DEEPER THAN 600mm
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING #7.2.1
3. EXISTING UTILITLY SERVICES & DEPTH TO EXISTING STORM WATER SHALL BE VERIFIED BEFORE SPECIFYING THIS OPTION

SCALE 1:40

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
1. This drawing shall be read in conjunction with drawing #7.2.1.
2. This option requires obvert of the stormwater drainage pipe to be deeper than 550mm.
3. Size of the bypass shall be adjusted to suit the catchment size.
4. Levels of the surrounding shall be design to allow for 60mm local ponding over the raingarden inlet chamber.

NOTE: All dimensions in millimetres unless otherwise stated.
NOTE:

1. STORMWATER PIT SHALL BE CONSTRUCTED AS PER CITY'S STANDARD DRAWINGS. THE PIT SHALL BE CAREFULLY SELECTED TO SUIT SYDNEY STREET CODE & STANDARD SPEC. FROM DRAWINGS #7.1.1 TO 7.1.6.
2. THE ACO KERB DRAIN OR APPROVED EQUIVALENT SHALL BE USED FOR RANGARDEN ENTRY PIT.
3. THIS DETAIL IS WELL SUITED FOR THE AREAS WHERE
   - NO GRASS VERGE EXISTS
   - THE DRAINAGE PIPES ARE SHALLOWER THAN 1.20m.
NOTE:
1. RAINGARDEN SHALL BE DESIGNED IN ACCORDANCE WITH SYDNEY STREET TECHNICAL SPECIFICATION PART A4.
2. SURCHARGE PIT MAY BE DELETED UPON APPROVAL. REFER SYDNEY STREET TECHNICAL SPECIFICATION PART A4.
3. THIS OPTION BEST SUITS SMALLER CATCHMENTS WHERE
   - FOOTPATH HAS A GRASS VERGE.
   - INVERTS OF THE EXISTING DRAINAGE PIPES ARE SHALLOWER THAN 1.2m.
4. THE DRAINAGE PIT SHALL BE CONSTRUCTED IN ACCORDANCE WITH DRAWINGS #7.1.1 TO #7.1.6.

NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
NOTE: ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.

1 - THE SLOPE AND LEVELS SPECIFIED ON THE PLAN SHALL COMPLY WITH THE COMMENT BELOW:
   i- S3 > S1 + 1%
   ii- RL A > RL B + 0.05m
   iii- THE CROSS FALL OF THE ROAD SHALL ALWAYS BE MAINTAINED TO BE TOWARDS THE KERB & GUTTER AND NOT LESS THAN 1.5%.
2 - THIS DRAWING IS A GENERAL GUIDELINE ONLY AND THE RAINGARDEN & SURROUNDINGS SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH SYDNEY STREET TECHNICAL SPECIFICATIONS PART A4.
3- THE ENTRY TO THE RAINGARDEN SHALL DESIGN IN ACCORDANCE WITH DRAWING #7.2.6.

NOTE: RAINGARDENS / SWALE SYSTEM
GENERAL ARRANGEMENT
NO DRAINAGE IN VICINITY

DRAINAGE
Rev A
Date 10.06.2016
Approved P S
Dwg No. 7.2.15