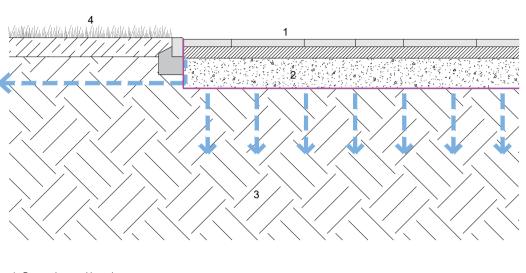
## **BARNHILL GARDEN VILLAGE** Sustainable Drainage Systems - Details

DETAIL 1. RAIN GARDEN sc 1/50 3 Side Slope Rain garden basin Side Slope

sc 1/50



1 - Gentle slope to collect water from the surface 2 - 450mm improved topsoil up to 20% coarse compost 3 - Free-drainage soil, under-drain optional 4 - Adapted vegetation, tolerant to wet soil and submersion

5 - Overflow in case of heavy rain or impeded drainage

1 - Proposed permeable paving 2 - Open graded sub-base providing c.30% structural strength volume for water storage 3 - Natural soil 4 - Vegetation area

> SuDS Concept: Water drains from paths to provide water source for trees and other planting in pit. Water rises through subsoil through capillary action and becomes available for use by

the trees.

Cycleways and roads can be

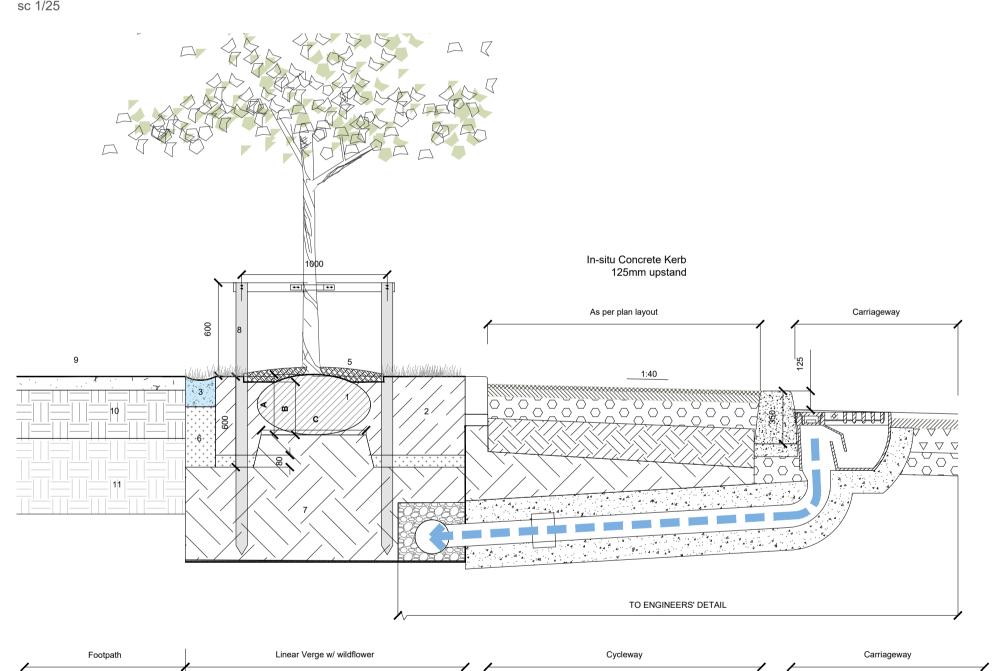
integrated if required; water

tree pit through perforated

pipe; otherwise as above.

collected in gullies and fed into

DETAIL 5. SUDS - WATER DRAINAGE FROM HARD SURFACE AS WATER SOURCE FOR TREES sc 1/25

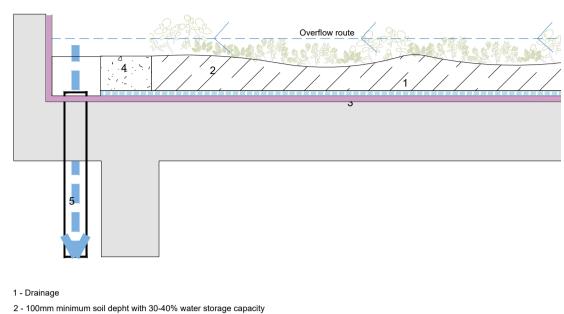


Tree rootball (nom. 450mm diameter); note - tree raised locally to elevate the rootball above the rain garden level.
 Good quality topsoil sourced from site with slow release fertiliser incorporated into backfill; 200mm depth between tree pits for grass; 450mm for shrubs/hedging

- stock.

- Stock.
   Filter drain with 200mm topsoil to direct water into subsoil (4).
   Free Draining Fill / Subsoil (to proposed levels and falls).
   Bark mulch, 75mm depth.
   80mm layer of farmyard manure or a suitable compost material as approved by ER.
   Free draining subsoil / structural subsoil with drainage capacity.
   Double stake and crossbar; timber uprights 75mm dia. and crossbar min. 75x35mm; crossbar attached to uprights with timber screws; 40mm min. Nylon Deieferand Rubber Tops Tip attaching and flather than (70x10):20mm min. b to be attached uping astrony and weakard. Reinforced Rubber Tree Tie strapping and flatback tree pad (70x42x22mm min.) to be attached using screws and washers.
- Concrete Paving to engineer's detail
   As-Built Linear Tree Pit Structural Fill (Built to original road layout)
   As-Built Linear Tree Pit Structural Tree Soil (can function as additional rooting space).
- TREE PIT DIMENSIONS:
- A. Depth equal to rootball diameter
  B. Rootball diameter *minus* 50mm to accommodate root flare
  C. Width equal to diameter of rootball
- Above detail developed with input from Arborist based on recent research and experience.

**DETAIL 3. GREEN ROOF** sc 1/25

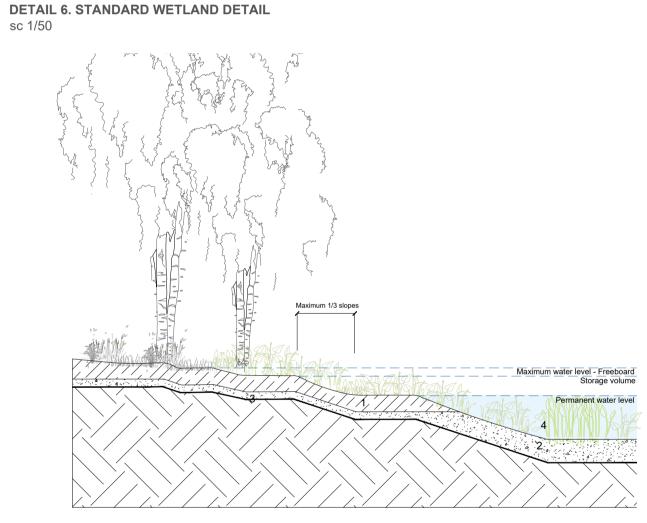


3 - Water proof membrane and root barrier (if needed)

\_\_\_\_\_

4 - Gravel 5 - Drain

> DETAIL 7. EXISTING DITCHES sc 1/100



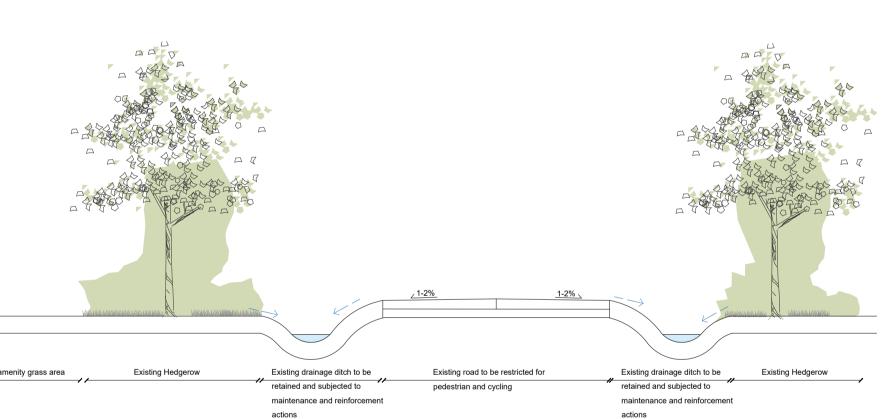
 Shallow gradient safety bench
 Wet bench
 Vegetation / benches etc as wide as required
 Open water 300 - 500mm

 and maintenance access - dry
 if required
 for design criteria - dense planted area
 Open water 300 - 500mm

1 - Wetland topsoil, depth to be determined by requirements of vegetation,400 - 500mm shrubs and herbaceous, 100-150mm grass/wildflower. 2 - Layer of subsoil or gravel

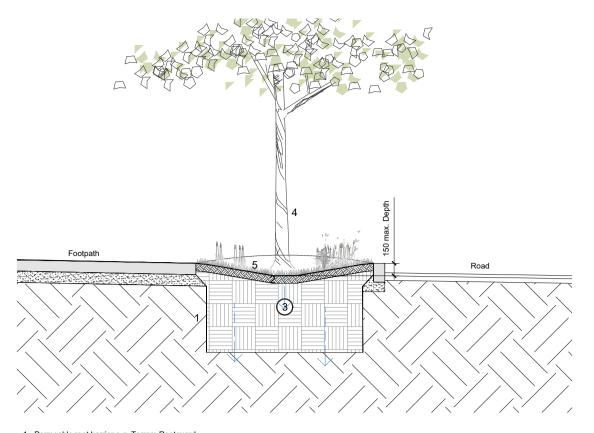
3 - Geo-textil liner layer 4 - Water plants

bench



Proposed amenity grass area

## **DETAIL 4. INFILTRATION STRIP/ TREE PIT - CROSS SECTION** sc 1/50



## 1 - Permeable root barrier e.g. Terram Rootguard

2 - Free-draining soil layer with from site 50-150mm max. as substrate for wildflower seed planting. Variable soil depths and low fertility are compatible with wildflower

3 - Perforated Drainage Pipe with outfall to storm system (diameter / specification to Engineer's detail); Wrapped with root barrier fabric; Pipe to be centred in the trench generally, but bent around tree positions.

4 - Tree: rootball (nom. 450mm diameter); note - tree raised locally to elevate the rootball above the trench level.

5 - Tree Pit in accordance with current Arboricultural best practice - wide, shallow topsoil area and free-draining subsoil similar to natural soil profile; Good quality topsoil sourced from site or imported and compliant with BS3882:2015'Multipurpose Topsoil' with slow release fertiliser incorporated into backfill; 200mm depth between tree pits for grass; 450mm for shrubs/hedging stock.

| + 087 910 1600 | + | 087 | 910 | 1600 |  |
|----------------|---|-----|-----|------|--|
|----------------|---|-----|-----|------|--|

+ info@gannonandassociates.ie

+Terenure Enterprise Centre 17 Rathfarnham Road, D6W

## gannon + associates

| 0                                                 |                |           |            |         |  |  |  |  |
|---------------------------------------------------|----------------|-----------|------------|---------|--|--|--|--|
|                                                   |                |           |            |         |  |  |  |  |
| G 27/06/22                                        | SuDS - Details |           | PS/AP      | JG      |  |  |  |  |
| REV DATE                                          | REVISION       |           | DRAWN      | CHECKED |  |  |  |  |
|                                                   |                |           |            |         |  |  |  |  |
| CLIENT                                            |                |           |            |         |  |  |  |  |
| Alanna Homes & Alcove Ireland Four Ltd.           |                |           |            |         |  |  |  |  |
| PROJECT TITLE                                     |                |           |            |         |  |  |  |  |
| Barnhill Garden Village - Proposed development at |                |           |            |         |  |  |  |  |
| Barnhill, Clonsilla, Co.Dublin                    |                |           |            |         |  |  |  |  |
| PROJECT ARCHITECT                                 |                |           |            |         |  |  |  |  |
| CDP Architects / CWOB Architects / Delphi Design  |                |           |            |         |  |  |  |  |
| SHEET TITLE                                       |                |           |            |         |  |  |  |  |
| Sustainable Urban Drainage Systems Details        |                |           |            |         |  |  |  |  |
| SHEET NO.                                         |                | SHE       | SHEET SIZE |         |  |  |  |  |
| 21154_LP_G_                                       | _SuDS_D        | A1        | A1         |         |  |  |  |  |
| SCALE                                             | REVI           | REVISION  |            |         |  |  |  |  |
| as shown                                          | G              | G         |            |         |  |  |  |  |
| STAGE                                             | DATE           | DATE      |            |         |  |  |  |  |
| Planning Stag                                     | Jur            | June 2022 |            |         |  |  |  |  |
| Copyright Gannon and Associates, 2022             |                |           |            |         |  |  |  |  |