

Lakes Lane Nursery, Phase 1: Vermako block (south)

As-built details of drainage and attenuation system

The installed system has been installed in accordance with the submitted and approved design in WA/75/20/PL and is fit for purpose.



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As-built details of drainage and attenuation system

Background

The greenhouse dimensions as built are 15 x 5m sections long (75m) x 14 x 9.6m spans (134.4m), with a total area of 1.08 ha. This comprises Phase 1 of the development, with Phase 2 planned for the southern greenhouse.

Downpipes

The installed pipes are all PVC-u Class 51, 110mm dia.

Header

Low level buried PVC header as per Hennock document "Lakes Lane Nursery, Vermako block (south). Details of drainage and attenuation system", detailing diameters from 315mm to 500mm. All the installed pipe is PVC-U class 51 trenched in as per normal practice.

Variation:- the intermediate cross header and associated internal downpipes as per application drawing (Douglas Briggs August 2021) has not been installed, with just the gable end downpipes. Single downpipe systems are not uncommon on this length house, as it is around the length where intermediates start to be installed.

The header fall is directional 1:200 (header is surcharged by downpipes).

Header drain down system (sump and pump)

A header drain down sump is installed (to prevent the system sitting permanently flooded, it is not a part of the drainage *per se* which is entirely gravity fed) as per the submitted drawing.

Attenuation tanks

Variation – 2 off tanks of capacity each 512m³ (total 1024m³) were installed due to space limitations, rather than the single tank of 1069m³ in the application.

This reduction represents a reduction in capacity of 4%.

The required volume for this Phase 1 development (27% of total area) is 930m³ so the storage as installed is satisfactory. It should be noted that when the Phase 2 (southern glasshouse block) is constructed that the total storage volumes and discharge rates need to be matched to the original calculations.

Inlet

The main 500mm header pipe rises up externally and then over with 2 x 90° bends as per details drawing.

Outlet

Variation - The outlet arrangement is as per the photograph below with twin orifice plates as per submitted plans. This is a temporary arrangement until Phase 2 is constructed when it will be relocated to the new, lower tank as the combined outfall for both.



Orifice plates

Upper orifice plate – hole diameter = 57mm

Lower orifice plate – hole diameter = 47mm

Drain down

The drain-down valve is installed as per submitted documents and shown in photo above for draining the tanks down for maintenance.

Discharge to stream

The permitted discharge from the tanks, is via the orifice plates and 110mm twinwall pipe.

Variation – the discharge point (Phases 1 and 2) was detailed as directly into the main watercourse, with the 2 tanks connected upstream of the orifice plates. For phase 1 a temporary outfall to the existing ditch has been installed, as below, from whence it flows into

the water course as per the application. After Phase 2 this will be amended to the original design.



Outfall to ditch