



**DOVE**  
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## Specification

### **Stewarts Nurseries**

Stewarts Nurseries are a company that has been growing plants for over 260 years. They moved to the south coast of England in 1950. Even at that time they were innovative in the sale and transplanting of mature trees, leaving the root system untouched which meant they could be transplanted at any time of the year, which at that time was unheard-of.

The company continues the heritage of innovation by the planning and design of a new glasshouse which will be at the forefront of technology. Part of the new structure will be used for education and the whole system will be on display to provide a learning platform for both young and old alike to show them modern growing techniques and enhance the unique selling point of the business that they grow the plants they sell. This will be a flagship project and one that will serve to demonstrate the advances in modern growing.

The glasshouse is planned to produce “value added” crops for direct sale by their own chain of garden centres. Relatively small numbers of a large variety of alpines, herbaceous perennials, bedding plants and shrubs will be produced with most of the crops being sold during the spring and summer period. The table system is designed to reduce the manual handling of the plants and allow a quicker potting and despatch system. LED lighting with Ebb & Flood irrigation complement the modern growing techniques for this project. The house will be heated by a ground source heat pump taking heat from the adjacent fields.

### **Glasshouse specification**

The glasshouse will be used to grow a wide range of plants in smaller numbers of container grown plants. The structure will be divided into four zones with each zone having independent heating, ventilation, thermal screens, and irrigation controls. The glasshouse will be fitted with tables of 1,6m wide and 3.7m long on rails, and powered transport lines. Layout details of these are shown in the attached drawings ref SN 3.3b. Three phase power available for vent motors.

The glasshouse structure would be a 3.2m module Venlo style house with a height to the gutter of 4m and with clear access under the trellis girder of 3.5m.

The roof and sides of the growing areas will be standard 4mm glass.

The packing/despatch area with 50mm PIR core panels with steel outer coating. Outside colour light grey and interior white. Ventilators to be 3, half pane panels, clad with glass in both the growing and packing area on both sides of the ridge. Two double doors to fitted as shown on the plan. 2 x 2.m wide by 3.5m high with 4mm glass in the top section and insulated aluminium in the lower section.

### **Thermal screen specification**

All the four growing areas to have a thermal screen fitted above the crop and down the sides where applicable.

## **Heating system**

The glasshouse to be installed with a hot water piped heating system. In the growing area, pipes to be installed under and above the tables. The heating pipes above the crop to be suitable for gantry use. The system will be provided by heat from a ground source heat pump with an estimated heat output of 650kW. The heating system to allow heating to 16°C in all zones but not all sections will be heated to that level at the same time. Each zone to be independently operated. Single glazed roof and walls have “U” value of 5.6w/m<sup>2</sup>/°C.

The Ground Source Heat pump, either as a single unit or multiple units will need to provide heat to the six glasshouse zones. Four with growing crops, one potting and despatch area and one educational room. The heating system in each heating zone to be designed to utilise a flow temperature of no more than 50°C.

The heat pumps and storage tank will be sited in a plant room section of the glasshouse. Please advise what floor area you will require for the proposed units and the storage tank.

Please install a heat meter and main circulating pump for the glasshouse system. Pipe flow to be in the region of 95 m<sup>3</sup>/h @ 12 mts head.

The present supply transformer will need upgrading to meet the heat pump increased loading. A new transformer is being scheduled to provide up to 200 kW additional supply capacity.

The land area available is shown on the attached plan. A high voltage, underground cable runs across part of the area and will need to be avoided for the ground loops.

The soil is a clay sand which has a depth in excess of 2 metres.

## **Underground cable**

A High voltage underground cable runs across some of the land and could be intercepted at ground loop depth. The cable must be located and the ground loop design made, taking the cable route into account.

## **RHI**

The system will be registered for the RHI and all work must be carried out to the necessary standard by registered staff and companies.

## **Project time line**

This project is grant aided and has several strict conditions that must be adhered to.

## **Start date**

The site will be available for the heat pump installation work from January 2020. The land area currently has a small are of multispan tunnels on it. These will be removed by March when the tunnel dismantling will occur. Work on installing the ground loops can commence earlier on available land.

## **Site address**

Stewarts Nurseries  
God's Blessing Lane  
Broomhill  
Dorest  
BH21 7DF

Documents attached:

Stewarts Procurement policy

Tender letter

Drawing SN3.5a A3L.PDF Project layout

Drawing SN3.2b A3p. PDF heating pipes and zones