

• New & Used Glasshouses • Heating • Screening • Benching • Irrigation •
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Crossland Flower Nursery
Barham Lane
Walberton
Nr Arundel
West Sussex
BN18 0AX

For the attention of Mr Ben Cross
Our Reference QGS21035

26th March 2021

Used Glasshouse Budget Proposal

Dear Ben

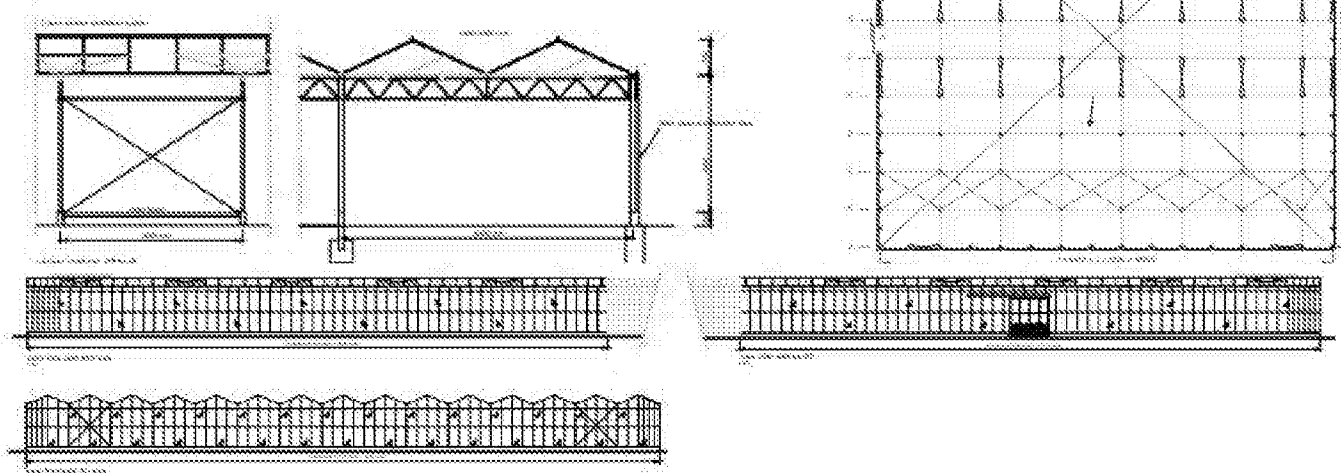
Further to our recent site visit, we have pleasure in submitting the following budget proposal, based on the drawing supplied recently, to supply & build a Used glasshouse on your Nursery site for your perusal and consideration, based on the information submitted and discussed.

STANDARD SPECIFICATION AND LOADS OF THE STEEL CONSTRUCTION

The steel construction is statically calculated according to:

- ¿ Calculation program CASTA Kassenbouw 3.01 SP2
- ¿ Standard BS EN13031:
- ¿ Wind zone 3
- ¿ Snow zone 3

Type of Greenhouse: Venlo



CONSTRUCTION

Frame type

The VENLO greenhouse will exist of:

Truss size	: 6.40 & 3.20m
Roof dimensions	: 3.20m
Section dimensions	: 4.00m
Column height	: 3.00m

Dimensions:

Width: 48.00m = 7 bays of 6.40 metres
1 bay of 3.20 metres

Length: 44.00m = 11 sections of 4.00 metres

Column Height: 3.00 metres from top of foundation to underside of gutter

Total Surface area: 2,112.00m² measured from heart to heart of gutter

End wall extension:

As in line L1-L16

Extend from one end wall of the existing greenhouse with 15 spans of 3.20 m. The gutters of the existing greenhouse are extended into the new structure (the post height is the same in both greenhouses). The existing end wall remains in place.

The existing wall is retained and serves as an intermediate wall. Adjustments to the existing structure and/or wall have not been taken into account.

Foundation work:

Zeus non-insulated external wall foundations:

The foundation consists of a prefabricated non-insulated concrete plate system manufactured by ZEUS and anchored with pulse piles. The wall and internal posts are anchored to the foundation with M10 anchor bolts. The foundation is supplied complete with original connectors and finishing plates.

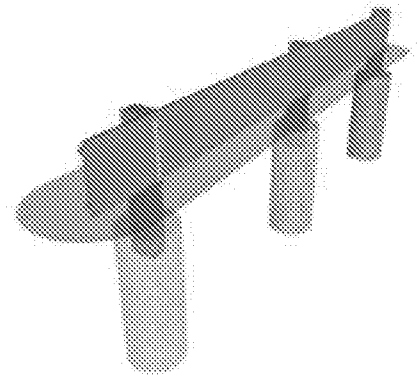
Foundation plate:

End wall

Quantity	: 15 x 3.20m
Height	: 400mm
Width	: 550mm
Length	: 3.20m
Concrete pile	: 120 x 180 x 1000mm with M10 bolt

Side wall

Quantity	: 22 x 4.00m
Height	: 400 mm
Width	: 550 mm
Length	: 2.00m
Concrete pile	: 120 x 180 x 1000mm with M10 bolt



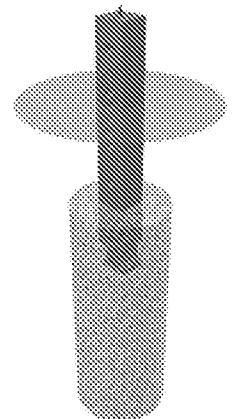
Internal concrete piles:

Concrete piles

42 pcs	: 120 x 120 x 1000 mm, provided with an anchor strip
Concrete	: precast concrete pile

Concrete pile cross bracing

28 pcs	: 120 x 120 x 1000 mm, provided with an anchor strip
Concrete	: precast concrete pile



Prior to start of foundations:

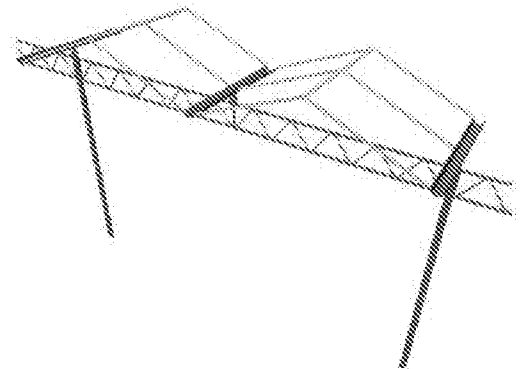
- ⚡ Slope: the building site must be laser levelled
- ⚡ The ground needs to be free of debris and plant remains.
- ⚡ The foundation is C20-25 (B-25) quality with 15mE in-situ concrete (*the concrete is not included in this quotation*).
- ⚡ The price for installing the concrete is approx. £ 80.00 per m3. Any extra concrete installation work (for whatever reason) will be charged per m3
- ⚡ With a possibly higher foundation, the additional costs of £ 6.50 (per 5 cm height) per linear meter will be covered by the client.
- ⚡ If we cannot drill due to rocky ground, stone or otherwise, the client is responsible for the making of so-called boreholes in the ground. If this causes delay in the further course of the building process, any additional costs will be covered directly by the client. Ebtech Glasshouse Systems takes no responsibility regarding the suspension of delivery.
- ⚡ If the boreholes for the pulse piles for the wall have to be drilled outwards due to excavation / cultivation of the soil in the greenhouse, this must be discussed with Ebtech Glasshouse System before signing of any contract.

We cannot accept any liability for the load bearing capacity of the subsurface.

Substructure:

Trellis of 6.40 & 3.20 metres

Model	: Standard
Truss height	: 350mm
Top & bottom bar	: Square hollow section



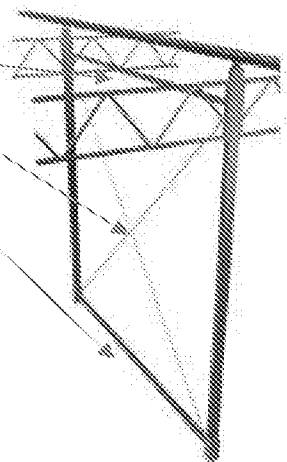
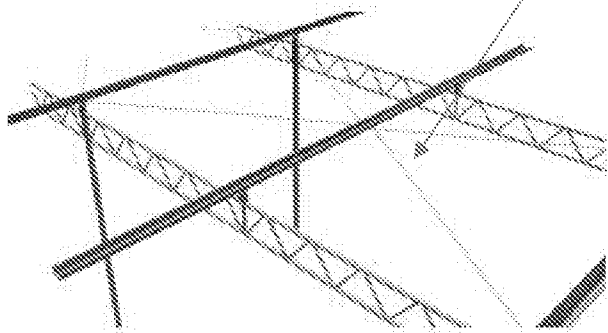
Posts:

Internal post	: Square hollow section, 80 x 50 x 2.0mm
Side wall post	: Square hollow section, 80 x 50 x 2.0mm
Side wall intermediate post	: Square hollow section, 800 x 50 x 2.0mm
Post cross strut	: Square hollow section, 80 x 50 x 2.0mm
End wall post	: Square hollow section, 80 x 50 x 2.0mm

Struts:

Single cross braces:

Cross bracing, 2 rows	: Steel tube $\varnothing$ 27mm 1.5mm
Wind bracing, 1 row	: Massive steel $\varnothing$ 8mm with fastening plates and tensioners
Tie beams, (Low)	: Square hollow section, 80 x 50 x 2.0mm
Tie beams, (High)	: Steel tube $\varnothing$ 51mm 1.5mm, (<i>Lowered 325mm</i>)



Gutters:

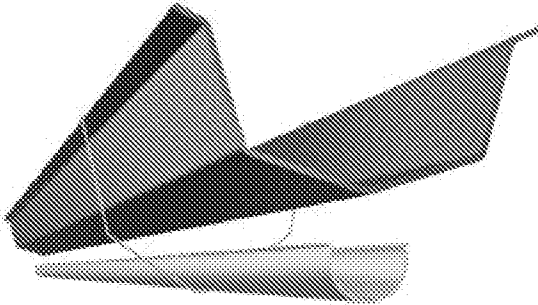
Steel Gutters:

The greenhouse will be provided with a steel HI gutter, 175/156mm wide and 2.5mm thick
The gutters are connected and fastened with bolts & nuts and sealed.
The galvanised brushed steel gutters are provided with a new noxyde coating on the water sides.

Condensation drainage

Aluminium condensation gutters are installed under the rainwater gutters, complete with drains and suspension brackets.

The condensation drain nozzles are fitted with a drain hose up to the foundation.



Rainwater pipes:

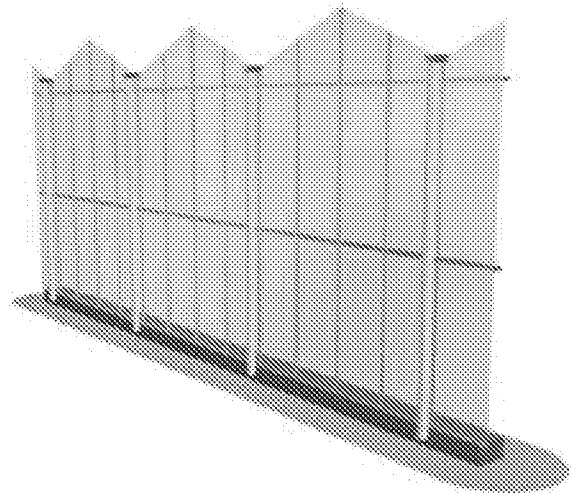
External drainage per post with PVC pipes

The water is drained to two end walls of the greenhouse in the direction of axis A

Rainwater is collected by hoppers on the outside wall.

The system will comprise several assemblies of grey $\varnothing 125$ mm PVC pipe that drain to ground level.

The PVC pipe is connected using tees and bends. (*external drainage and excavation work not included*).



PVC underground tube excluded

Underground piping is excluded

WALLS:

Outside walls with glass

End wall:

15 pcs. x 3.20 each existing of:

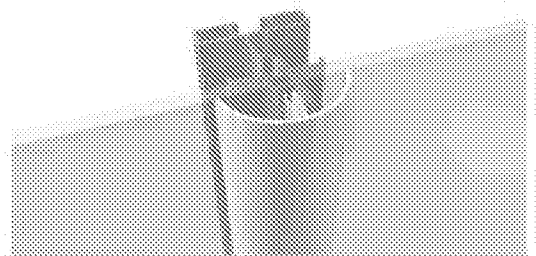
End wall post	: Square hollow section 80 x 50 x 2.0mm
Bottom profile	: aluminum
Purlins	: 2 pcs. steel U-profile, suitable for rolling screen system.
Roof angle bars	: aluminum section
Glazing bars	: aluminum, with new white PVC sealing strips, suitable for single glass

Side wall:

22 pcs. x 4.00m

each existing of:

Side wall post	: Square hollow section 80 x 50 x 2.0mm
Side wall middle post	: Square hollow section 80 x 50 x 2.0mm
Bottom profile	: aluminum
Purlins	: 2 pcs. steel U-profile, suitable for rolling screen system.
Roof angle bars	: aluminum profiles
Glazing bars	: aluminum, with new white PVC sealing strips, suitable for single glass



ROOF:

In combination with steel gutter

The roof, type VENLO 3.20m. The roof glazing is inserted in the aluminium glazing bars and sealed with gutter edging on all four sides. The gable-ends are glazed with half panes on both sides of the ridge up to the first ventilation window. The roof in the end side wall sections are completely glazed with half panes except in and under the ventilation windows.

Two diagonal gutter-ridge-gutter ties in the end wall fix the ridge in place. Gutter-ridge-gutter ties are installed in the roofs above each lattice girder as extra storm proofing. The entire roof is rendered storm proof with ridge clamps.

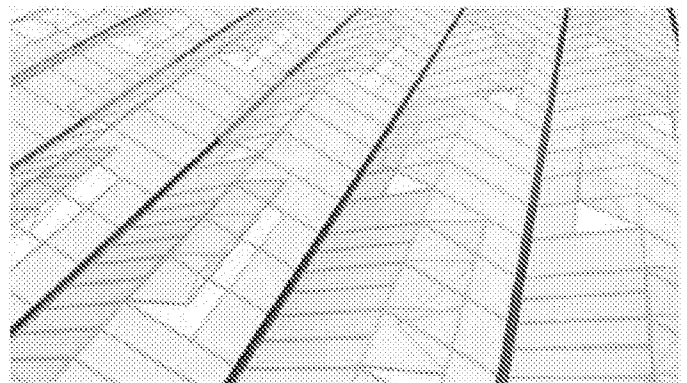
Ventilation windows, (Triple pane)

The roof, alternately of the ridge, to provide with:

150 pcs.

Type: 3 pane ventilation windows, (3 x 1000 x 825mm)

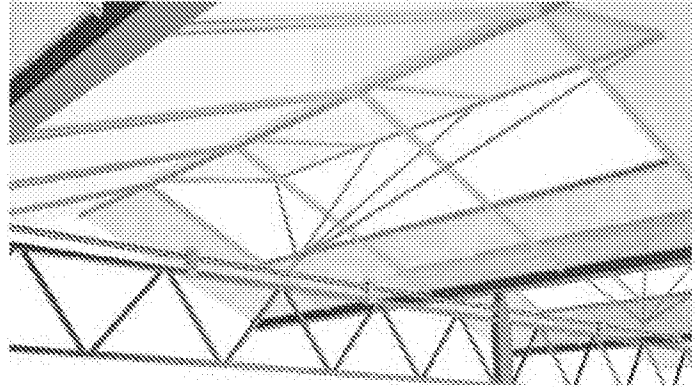
Position: on both sides of the ridge



Ventilation system:

System: rail mechanism on the truss

The roof is executed with a rail on the truss mechanism system with opening pushers of $\varnothing 19$ mm, 0,9 mm thick. The openers are connected with each other through an aluminium clamping bracket which is connected to a steel push-pull tube $\varnothing 27$ mm. Per 3.20m roofing 2 pieces mechanical guide rails are provided with plastic rollers. The drive motors are supplied with fittings as standard.



Drive system:

The drive system comprises of:

Number of departments:	1
Rack and pinions:	10 pieces, type Ridder / De Gier 5,000N
Motors:	2 pieces, type De Gier / Ridder
Electricity current:	3 phase 380v
Shafts:	2 pieces, $\varnothing 13$ λ galvanized
Built-in potentiometer	Excluded

Note: Excluded is the supply of power cables, switch boxes, the electrical connection and the adjustment of the motors & Limits

Roof- and wall glazing:

Roof glass

Departments:	1
Thickness:	4 mm.
Tolerance:	3.8 - 4.2 mm.
Width:	1,000mm
Length:	1,650mm

External walls with single glazing

Thickness:	4 mm.
Tolerance:	3.8 - 4.2 mm.
End walls:	15 pcs. of 3.20m
Side walls:	22 pcs. of 4.00m

Wall glazing, glass

The wall panes are stacked in aluminium H sections and secured with new white PVC cover strips. Aluminium corner profiles are used at the corners of the greenhouse and half panes are used in the end wall from the corner over a length of 1600 mm and in the side wall from the corner over a length of 2000 mm.

Wire arches:

In combination with suspended irrigation systems

For suspended irrigation systems, $\varnothing$ 10 mm solid steel wire arches are installed at the end walls and attached to the end wall posts with adjustable brackets.

DOORS:

Door (A) - Aluminum single sliding door

Number	1
Dimensions	3,000mm wide x 2,600mm high
Mechanical system	Top mounted
Manufacture	Supplied in 2 parts with aluminium H section joining trim
Material	Aluminium hollow sections with welded corner joints
Bottom	Insulated with 20mm polystyrene panels and finished on both sides with aluminium :Stucco panels~
Top	Aluminium glazing bars for 4mm glazing and sealed with white rubber
Glazing	Suitable for 4mm
Other	Frame, brush seals and handles
Lock	Cylinder lock

Miscellaneous:

Top roller:

The doors are provided with a top rail, rubber stopper and top roll wheels

Option: Doors can be provided with a code lock for an additional price, (approx. £ 270.00 + VAT per lock)

Door opening

The door opening does not have the same dimensions as the clear opening in aluminium sliding and/or hinged doors.

Door levels:

The customer is responsible for determining the reference level so that we can install the doors at the correct height. If the reference levels are not known at the time of construction and we have to install the doors at a later date, the additional costs will be charged to the customer (in consultation).