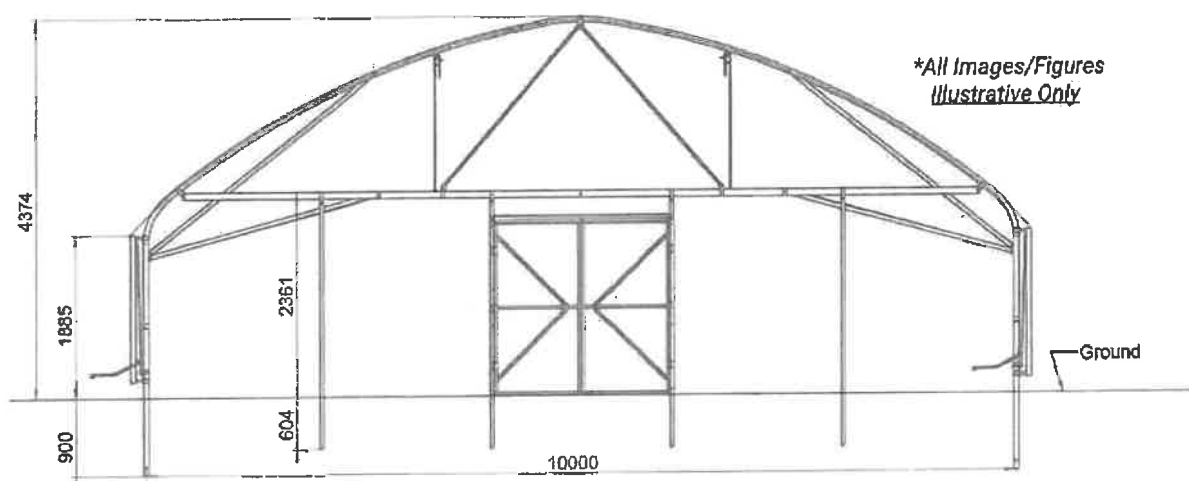


1. Specifications

Tunnel Dimensions		
Ridge Height (depending on levels):		4.35m
Span:		10.0m
Length:		30.0m
Area:		300.00 m ²
Total Project Area:	(x1)	300.00 m ²
Total Green Area:	(x1)	300.00 m ²



Foundations

Hot-dip Galvanised Pipe: Ø60mm x 3mm x 1800mm

- Depth of digging: ± 1.0m
- Diameter: 300mm
- Concrete strength: 20MPa

Trellising Support

Ø3.7mm Galvanised wire

- Overhead support is included
 - 6 paired rows, 1.6m apart

Arches

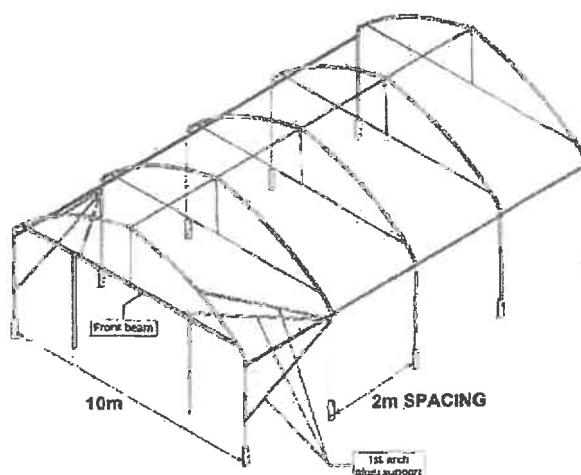
Pre-galvanised Pipe: Ø60mm x 2mm

- Arches every: 2.0m
- Front beam height: ± 2.4m
- Ridge height: ± 4.35m

Load Calculations

Vertical Trellising Load

- 20 kg/m²



2. Tunnel Cladding

Film Properties – Sun saver AV Diffused 75%, 200µm, ✓ Anti-Drip, ✓ AV Effect

The roof, gable fronts and sides will be covered with a 200-micron polyethylene, greenhouse film from Ginagar's Sun saver range. This High Diffused 5 Layer film has a 3-year warranty. This film provides high light transmission, IR additives to improve heating efficiency and UV blocking (100/380nm) that will reduce the activity of virus carrying insects like, White-Fly and Thrips. The properties of the film are summarized as follows:



Light Transmission in PAR:	87%
Diffused Light in PAR:	75%
UV-Blocking:	100/380%
Thermicity:	85%
Anti-Drip:	Yes

Table 1: Sun saver Properties

Palziv Tape

- All steel in contact with polyethylene is covered with a protective Palziv tape, to prevent damage

Wetwall Balcony (See picture on Page 4, below)

- 50-Mesh Anti-Insect Net (for blocking whiteflies, aphids, thrips) – zip door included

Locking Profiles

The covering (polyethylene and net where applicable) will be attached to the tunnel structure with **Z275 galvanised steel** locking profiles and high-temperature coated spring inserts. All the locking profiles are designed to ensure:

- Ease of installation
- Longevity of plastic
- Resistance to high temperatures
- Re-usability
- Reliability
- High UV resistance

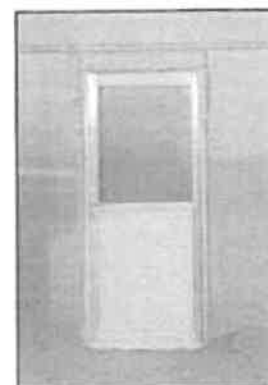
Wherever the film is in contact with the steel structure, the steel will be covered with special, protective Insulating white tape.

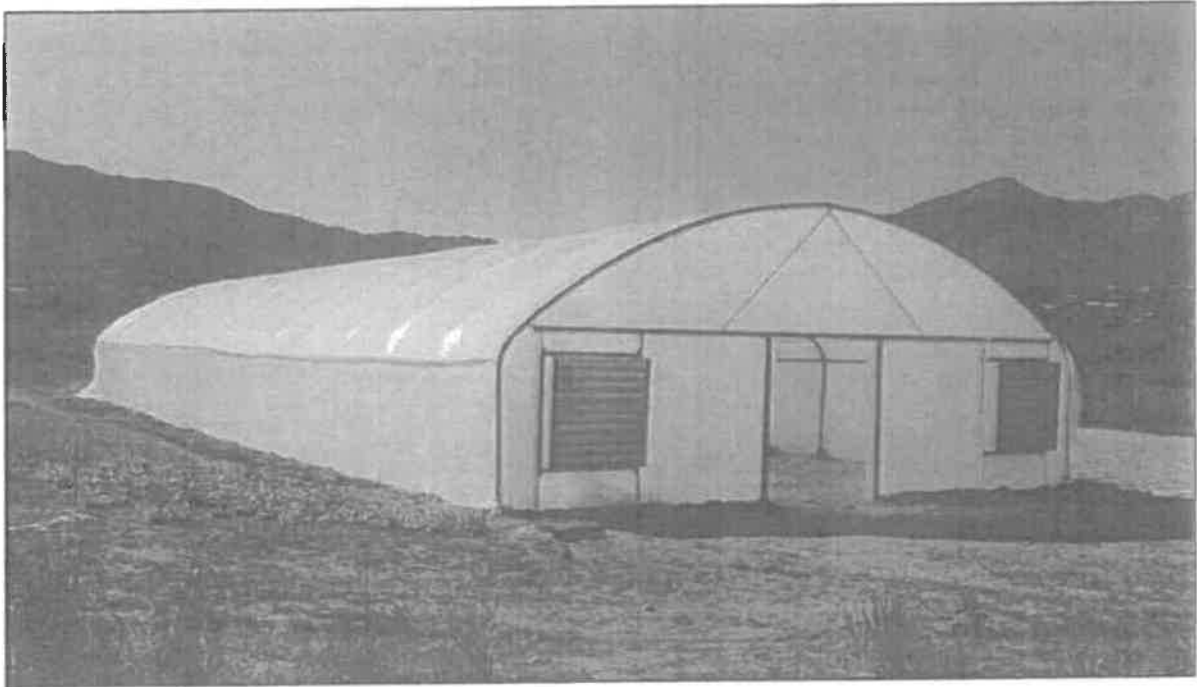
3. Doors & Curtains

- 1 x 0.9x2.1m (w*h) Pedestrian swing-door, Installed on one gable end (between the fans)

Side Curtains (Backup to Pad & Fan)

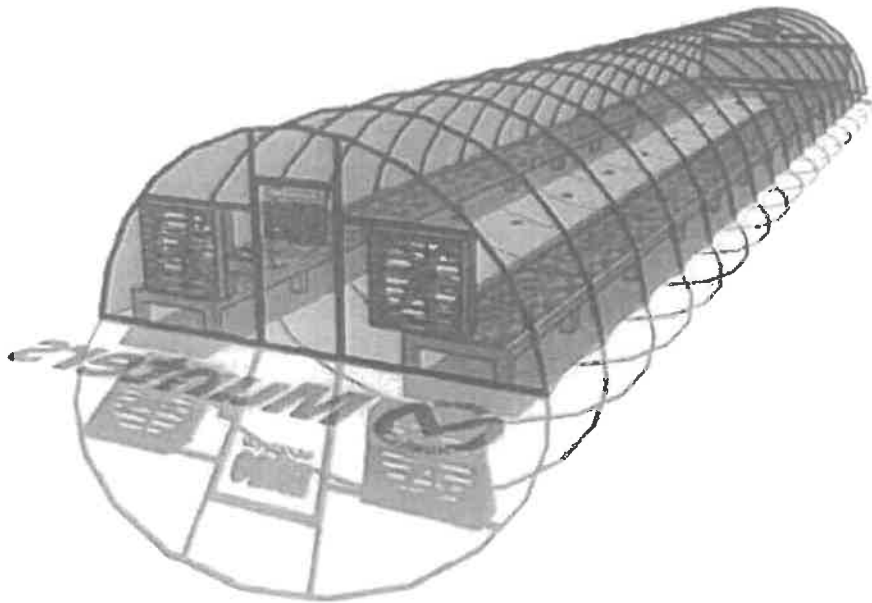
- Not Included
 - Can be included as a backup to Pad & Fan Cooling





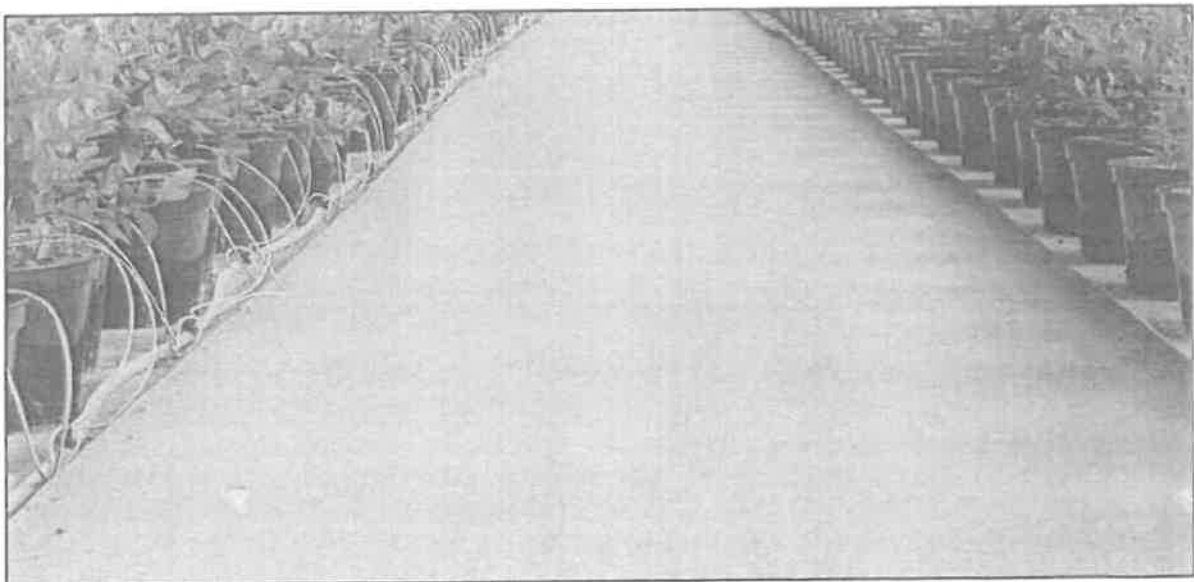
4. Wetwall System

- Munters CELdek Wetwall Pad, 9.6x1.5x0.1m
- 2 x Munters EM50n 1.0hp (3ph, 400V)
 - 32,500.0 m³/h @ 25Pa (Measured at 20 °C; 1,013 hPa)



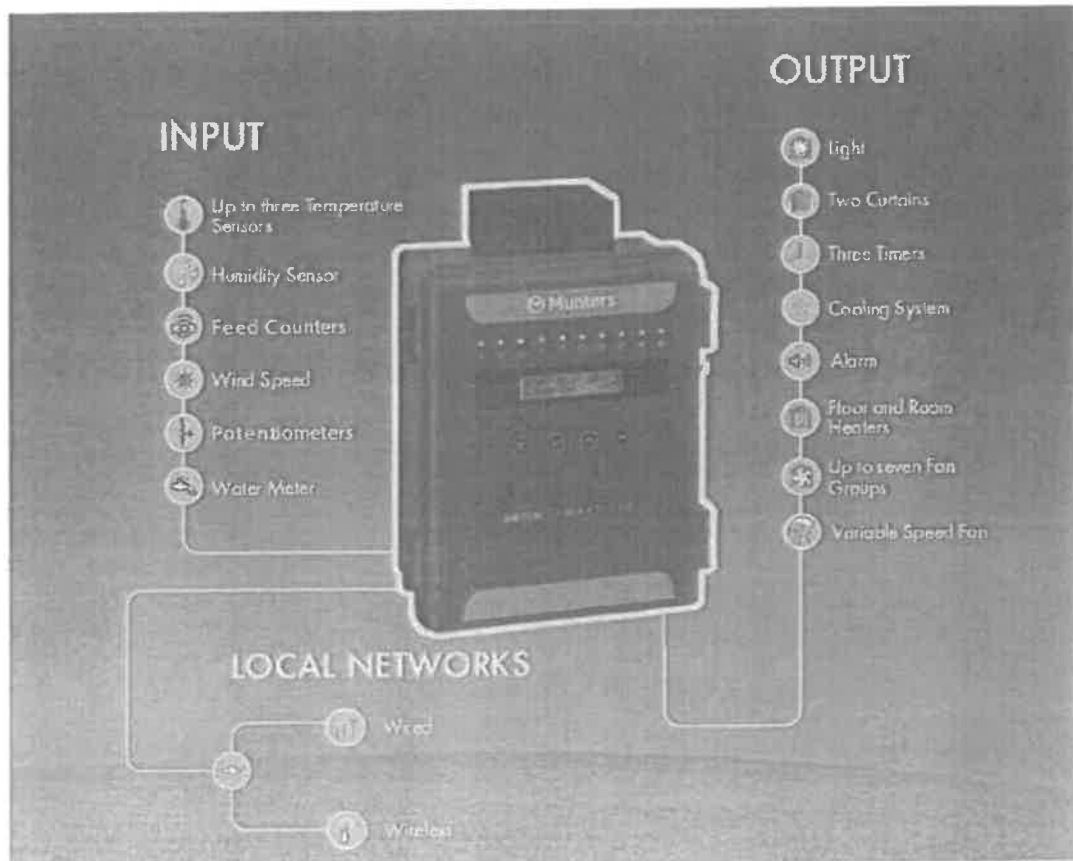
5. Groundcover

- 130 gr/m² Woven Black/White Polypropylene (100% Recyclable)
 - 1,260 l/min/m² Water Flow Rate



6. Munters Smart Controller

- Includes 1 x Temperature Sensor



• Features

- Automatic control of ventilation, cooling, and heating
- Supports
 - Temperature and humidity sensors
 - Water and feed meters
 - Potentiometer feedback
 - Wind speed and direction sensor for natural ventilation
 - Digital Inputs
 - Analog 0-8 VDC outputs
 - TRIAC for variable speed fans
 - History data on PC
 - Data plug for easy transfer of settings
 - Multiple language packages

• Benefits

- Cost effective technology provides high ROI.
- Automatic shift from minimum ventilation to tunnel ventilation ensures high air quality at any temperature.
- User friendly software and flexible settings enable adjusting the SMART to specific local conditions.
- Supported by Munters PC communications software, enabling remote access and ability to supervise 24/7.
- SMART models vary in their number of relays and options, enabling you to find the model that meets your specific requirements.

7. Electricity and Switchboards

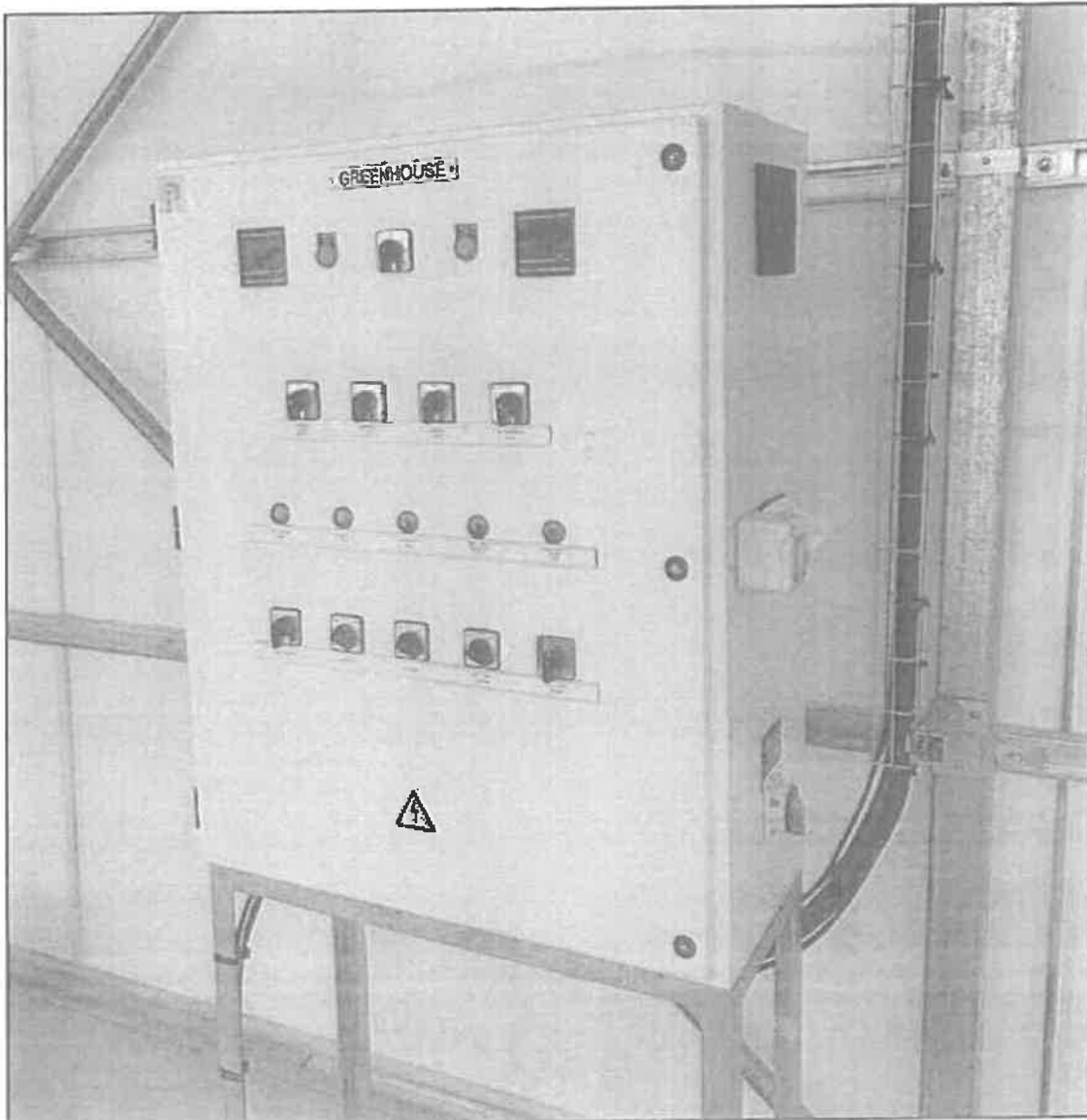
Electric switchboards are an integral part of Vegtech's comprehensive control systems. The boards supplied by Vegtech comply with the strictest standards and are constructed from galvanized metal, coated with oven-painted polyester.

One switchboard will be required in each tunnel, to supply power and control to any/all:

- Fans (x2)
- Wetwall Pumps (x1)

Cables

Cabling is included in this proposal, from the switchboard to all Vegtech-supplied components. Connection of the switchboards to Mains power supply is not included in this proposal.





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LADY FRERE 5410

Tel: 087 238 2225

Email: Sindiswa.mpongoshe@ikhala.edu.za

Reference:	QNN TUNNEL	Enquiries:	Mphongoshe SJJ	Date:	07	10	25
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SPECIFICATION FOR THE GREENHOUSE TUNNEL – QNN

1. The structure should follow the specifications on the first page.
2. The ground should be left as is, (**no earthworks**) just levelled ground as the service provider will procure the groundcover that is recyclable.
3. The specification for the groundcover must be followed as is on page 5.
4. The Munters smart controller must be procured by the service provider.
5. Electricity switchboard will be bought by the College but attached here for SCM to see and advice.

SITE BRIEFING IS COMPULSORY FOR THIS TRANSACTION.

**MPHONGOSHE SJJ
ACTING CAMPUS HEAD**

Administration Centre: 047 873 8800 Aliwal North Campus: 051 634 1035
Aliwal North Engineering Campus: 051 634 1035 Cala Skills Centre: 087 238 2225
Ezibeleni Engineering Campus: 047 873 1293 Ezibeleni Skills Centre: 047 873 1293
Queenstown Campus: 045 838 2593/94 Queen Nonesi: 087 238 2225
Sterkspruit: 051 611 0205 Sterkspruit Engineering Campus: 051 611 0205