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NEEDS ASSESSMENT FOR DESIGNING A RETRACTABLE ROOF GREENHOUSE “SYSTEM”

Retractable roof greenhouse systems provide for much more flexibility in greenhouse layout and design than conventional greenhouses or shadehouses. Answering the relevant questions in as much detail as possible will help us prepare a detailed solution that ensures that your short and long term needs are met.

COMPANY NAME: _____

Building site address _____

PREPARED BY: _____ DATE: _____

ENVIRONMENT/ SITE CONDITIONS

Rain (Important if the greenhouse will be located in a tropical climate)

Rainfall in mm/hour (inches/ hour): Average _____ Maximum _____

Longest duration of continuous rain: _____ hours/ days. If roof ventilation is required during a rain, it may be beneficial to install a rain canopy on one house every 76m (250')

Soil Type

Sand ___/ Sandy Loam ___/ Loam ___/ Clay ___/ Rock ___

Soil is Undisturbed ___/ Disturbed, depth before undisturbed soil is reached _____

Water table: _____ cm/ inches below surface

Frost Depth: _____

Can an auger be screwed 1.5m (5 ft) into the ground (flat roof only)? Yes ___/ No ___

Is a soil report available: Yes ___/ No ___

If a flat roof house is being purchased, the holding capacity of the augers must be calculated based on actual soil conditions. The customer is responsible for any changes to the bracing conditions unless an accurate soil report is submitted. Soil report must show locations where the tests were taken relative to where the house is going to be located. Special bracing designs may be required if the soil has been disturbed, the water table less than 2.5m (8 feet) or large rocks prevent augers from being installed..

Grade

North/ South grade: _____% down to the _____

East/ West grade: _____% down to the _____

Grade: is a straight plane ___/ has grade variations of _____cm _____ inches maximum

CROPS/ REQUIREMENTS

Year round crop: _____

Seasonal crops: Spring _____ Summer _____
Fall _____ Winter _____

Future crops that may be grown: _____

Production phases

Stock plants ___/ Plugs ___/ Propagation ___ Production ___ Hardening ___

Crop orientation: rows should be oriented North/South ___/ East/West ___ (Tall crops normally are oriented north/ south)

Rain Protection from rain: Must ___/ Like ___

Heating

Is supplemental heat required: No ___/ Yes, for cold protection ___/ Yes, to maintain temperatures above 55 ___

Is it beneficial for the curtain system to be able to reduce heat loss when it is cold outside? Yes ___/ No ___

Shading

Is shade required for: light reduction ___/ cooling ___

Can plants tolerate exposure to direct sunlight for approximately one hour when the roof is closed 85%: Yes ___/ No ___. If no, a vent canopy or retractable curtain system is required.

Plants need to be acclimated to: Indoor conditions ___/ outdoor conditions ___

Size of zone for shading: _____

Blackout

Blackout required: Yes ___/ No ___

Blackout area: complete greenhouse ___/ part of the greenhouse ___, size _____

Size of zones: _____+

Insects/ Screening Primary pests _____

Pest problems are severe during the months of (circle months): J F M A M J J A S O N D

Requirement for insect screening is: insect reduction ___/ total exclusion ___

Screening on the **roof**: No ___/ Yes, stationary ___ retractable ___ Desired mesh size _____

Screening on the **walls**: No ___/ Yes, stationary ___ retractable ___ Desired mesh size _____

(10x14 for whitefly, 10x20 for thrip)

Crops grown In the ground ___ In containers ___ Hydroponically ___

Floor Dirt ___/ concrete ___, thickness _____ cm/ inches

Zones

Will separate heating/zones need to be created for different crops? No ___/ Yes ___

(Install partition roll up curtains)

Perimeter wall roll up curtains

Is a permanent knee wall required to protect plants from direct wind exposure or to help keep rodents out? No ___/ Yes ___, Desired knee wall height: _____

LAYOUT/MECHANICAL / ELECTRICAL

Overall dimensions or size greenhouse to be built:

_____ x _____ feet or meters totalling _____ square feet or meters

Future expansion of the greenhouse:

No___/Yes___ Specify maximum size of future expansion_____

Preferred house width: _____ (if width is critical)

Crop/ equipment support

Hanging baskets___/ Crops___ / Other_____

Cropload: _____ / pounds per sq ft, _____ kg / square meter

Height of crop support wires (measured from the ground):_____

Mounting of galvanized support cable (on 3.65m (12ft) centers) and support cable to be:

Included___/ Not Included_____.

Stationary Cladding and seals

Flexible: (RC02) for cladding and seals___

Cladding to be: stationary (fastened with black tape and screws)___

Seasonally removable (fastened with polylock)___

Rigid covering (with horse hair for seals): corrugated polycarbonate, clear___, white___
twinwall, clear___/white___

Head Clearance Minimum head clearance required for materials handling equipment (trucks, carts): _____ cm/ inches/ feet

Internal or External sidewall bracing for flat roof house

External cable and auger___/ Internal compression___ (External is recommended especially for crops that are grown in the ground since it eliminates obstructions inside the house.

Internal compression brace is ususally suitable for containerized plants and allows driveways to be located directly beside the greenhouse.

Materials handling

Maximum size road and doorway for materials handling: _____ cm / feet

Gables must be open to allow for benches to roll out: No___/ Yes___, bench width:_____

Maximum required door opening width:_____

Doors

Cladding: Reinforced polyethelene___, Corrugated polycarbonate___/ twin wall clear___

Design: one way sliding___/ two way sliding___

Motor contactor panels and environmental computer

Computer to be purchased___/ Already exists___, Brand_____

Number of control panels desired: One panel for the entire greenhouse___ / One panel per zone___

Contactor panels construction: Steel___/ Fiberglass___ (there is an upcharge for fiberglass)

Power Supply: 1ph 220v___ / 3ph ___ 208V___, 380v___, 440v___, 480v___

REGULATIONS

Wind Design wind speed (code): _____ kph/ mph.

Exposure level: B / C/ D

(B = suburban/residential, C= open terrain with scattered obstructions, D= shoreline)

Snow Required Snow load (code)_____

Use Production___/ Commercial (Retail)___/ Institutional___

Building Permits Are you applying for a building permit? Yes___, No___

Engineered, stamped drawings Not Required___Required___ (at extra cost) Number of copies of drawings___/ calculation books___

Roof and wall covering must be flame retardent: Yes___/ No___

Flammability or smoke test that the roof covering is required to meet:_____

Must curtain fabric used on the internal curtain system be flame retardent?: Yes___/ No___