ROCK SOLID GREENHOUSE Taylorville, Illinois



Solid Structure & Systems Low Cost Energy Secure setting Immediate Occupancy





Key Considerations

- Very Low Energy costs:
 - Reuse of renewable waste heat
 - Significant discount to Natural Gas pricing
 - Competitive advantage to become the lowest cost producer in State
 - Ample supply to double floor space for same waste heat price
- Centrally Located:
 - Central Illinois
 - Access to Chicago, St. Louis, Indianapolis, Springfield markets
 - Welcomed by town & county leaders
 - Safe, secure, and rural location

• Built-in Safety:

- Backup Generator
- Multiple Heat sources
- Known to Dept. of Agriculture
- Proven technologies & systems

- Quick Occupancy:
 - Fully updated Newer Greenhouse
 - Complete infrastructure
 - Electric, Heat, Water, Natural Gas
 - Radiant Heating for warm root loving plants
 - Nursery Room, Hanging Baskets, Pots, Soil capable
 - Computerized, Thermostatic, and Timer controls
 - Can be operational quickly for early revenue generation
 - No wait for permitting/building or reconstructing internally
 - Expandable in the future

Winning Combination



Greenhouse Aerial



Rock Solid Aerial - Looking South



Greenhouse



- 3.75 acres covered in glass and plastic (163K sq. Ft.)
- Head House w/ Offices, Cold Store, Nursery (20K sq. Ft.)
- Heated by waste heat from adjacent WM facility
 - Substantial discount to Natural Gas market price
 - Radiant heating throughout facility for warm roots & even heating
- Close to major markets:
 - 4 hours from Chicago
 - 40 minutes from Springfield
 - 1.2 hours from St. Louis
- Agriculture heartland
- Land leased for 20 yrs - extendable



Key History

- Constructed in 2007
- Designed specifically to use Renewable Waste Heat piped under flooring
- Operated as a Floral & Herbal & Vegetable grower
- Fully upgraded in 2012 & 2017
- Currently occupied by major Floral grower for Spring 2017 plants

Proven Production History

- Food: Tomatoes, Spinach, Melons, Peppers
- Herbs: Basil, Oregano, Chives, Mint, Rosemary....
- Leafy: Spinach, Sesame, Curry, Kefir Lime
- Flower: Various Ornamentals & Photosensitive
- Ship: Chicago, Indianapolis, St. Louis, Springfield
- Proven systems/automation:
 - Venting: both top & sides
 - Watering systems & controls
 - Fertilization systems
 - Heating: NatGas & Renewable
 - Shade: both dark & infrared
 - Conveyor belt system
 - Backup generators

Illinois



Included in Facility

- Irrigation and Fertilizing Systems & Controls
- Heating/Recovery System
- Conveyer Belt System
- Automatic Venting on Sides and Roof
- Nursery Benching
- Lighting in 2 bays
- Shade Curtains on Ceilings in 18 bays
- Dark Curtains in 4 bays
- Backup Generator
- Golf cart with wagon
- Two hand jacks

Greenhouse Specifics



- 8 Bays of Double Poly Arch style
- 10 Bays of Glass Venlo style
- Each Bay: 42' X 216' X 16' or 9,072 Sq.Ft.
- Total of 163K Sq.Ft. over 18 bays or 3.75 acres
- Thermostat controlled Ceiling & Side Venting
- Full automated shade/energy shield system
- Conveyer belt system
- Radiant Heating under floor in all 18 bays
- Lighting in 2 bays

Head House

- 80' X 250' X 24' or 20K sq.Ft.
- Clear span Steel cover insulated bldg
- 7 offices + conf. room
- Potting/Nursery room
- Tool Storage room
- Boiler room
- 4 Loading docks
- Large outdoor concrete pad for storage
- Break room, restrooms



Irrigation and Fertilizing Argus Titan Systems & Controls for all 18 bays



Heating/Recovery System







Low Cost Renewable Heat

- Located next to Waste Mgmt (WM) operation
- Waste Heat from WM Landfill Methane operation
- WM runs 4 Electric Generators 7/24
- Heat from Generators is transferred via Hot Water that is piped under Greenhouse
- Significant Heating cost advantage
- Have Back up Boiler / Generator for safety





2014 Heat Usage Analysis <u>Annual</u> Comparison

Waste Heat

(Actual)

- \$60K per year
- NatGas use as backup:
 - Windy & cold periods
 - Early Morning Cold spells
 - Use 1 or 2 boilers as needed

Natural Gas ONLY

(Comparison)

- \$400K+ per year
- 2 Boilers
 - Superior
 - Wells McClane

- \$0.33 per Sq.Ft. per year
- \$2.2 per Sq.Ft. per year

Diesel Back up Generator

- Generac (1997 model)
- 250 KVA
- 300 Amps
- 200 KW
- Auto Start
- Fully Operational
- On Standby always



Curtain systems

- New Ceiling curtains in all 18 bays
- Shade & Reflective for Heat optimization
- Black Out in 4 bays
- Fully Motorized
- Thermostatic & Timer
- Regulate Temp & Light



Land & Heat Lease (Extendable)

• Land:

- 16.9 acres total
- 20 year lease beginning November 2011
- Fixed price per year
- Paid annually
- rises 2% per year

- Heat:
 - 20 year lease beginning
 November 2011
 - Significant discount to
 Wholesale Market price
 - Paid monthly based on annual adjustment

Green Considerations



- Green practices capable
- Grow in Pots, Hanging Baskets, and Floor Soil
- Vary temp/lights/conditions by Zones
- Success with Integrated Pest Mgmt
- Avoidance of Pesticides, Herbicides, Fungicides.
- Low Carbon Footprint due to avoidance of Fossil Fuels and specific use of Waste Heat
- Competitive Advantage with Low Cost and Green

Produce – real examples at site





Basil on floor

Rosemary & Basil Seedlings on floor Chives in Hanging Pots

Herbs – potted on bench & floor







Water Spinach – Floor based soil



10 foot tall plants/vines growing in rows on floor based grow-bags



Compelling Advantages over Warehouse or New Facility

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