

Water collected from the growing field's roofing system and surrounding neighborhood is processed in the water treatment towers into potable and greywater. The 'first run' water is collected and processed into potable water for the facility and neighborhood. Reuse water is processed to be used by agricultural systems, allowing for maximum use of site resources and minimal intake from exterior wa-

ter sources.

Water is first processed through the primary processing tank then pumped into the tower where gravity filters it through the simulated wetland process. Water is then stored in the holding tank until needed.

The wetland water processing system utilizes natural plantings to filter out pollutants in the water. These plants can be easily replaced as they reach the end of their life cycle, and are easily replaced by new plants grown in the agriculture support center.

The system utilizes a primary tank that extracts large objects that snuck into the system, then breaks down any organic matter through bacterial processes. These processes are enhanced by use of products such as 'Biogone,' an all natural supplement to greatly boost bacteria's natural processes.

Once processed, the water passes through each level of the treatment tower and until the water is made usable.

Vertical wind generators allow for greater torque and output from less wind over traditional towers. These generators are also lighter, require less maintenance, removes bird impact concerns, and can be outfitted with solar cells in place of sails.

Energy is collected into and distributed from

a series of molten salt batteries designed to both quickly or slowly charge or discharge. This battery type was specifically designed for use in solar and wind power generation to increase capacity and decrease wasted energy.

Polycarbonate glass is used in place of traditional glass to improved light spectrum characteristics, increased durability, and decreased weight. Triangular venting systems along each beam naturally cool the space. The structure of the system is designed as a series of arches forming a dome net. This net is designed to work in compression and tension to support the polyglass roofing.

Heavy objects such as the power generation and water collection systems are centered over the main supports where load transfer is most effective.

The canopy over the growing fields allows the system to optimize growing yield limited by a short season to year round.

The growing beds (tower, oversize, and water types) are designed as an integral piece of the HVAC system. Each unit heats or cools depending on the need. These growth beds monitor the plant's needs from water and light through heat and pH. Supplements are used when lacking. An example of this is the use of growth spectrum organic light emitting diodes (OLEDs) that are superior in energy usage, are extremely thin, and are able to be shaped as a skin for the hydroponic units. These units therefore can be fully or partially lit, assist in controlling the local temperature as well as humidity and other aspects.









