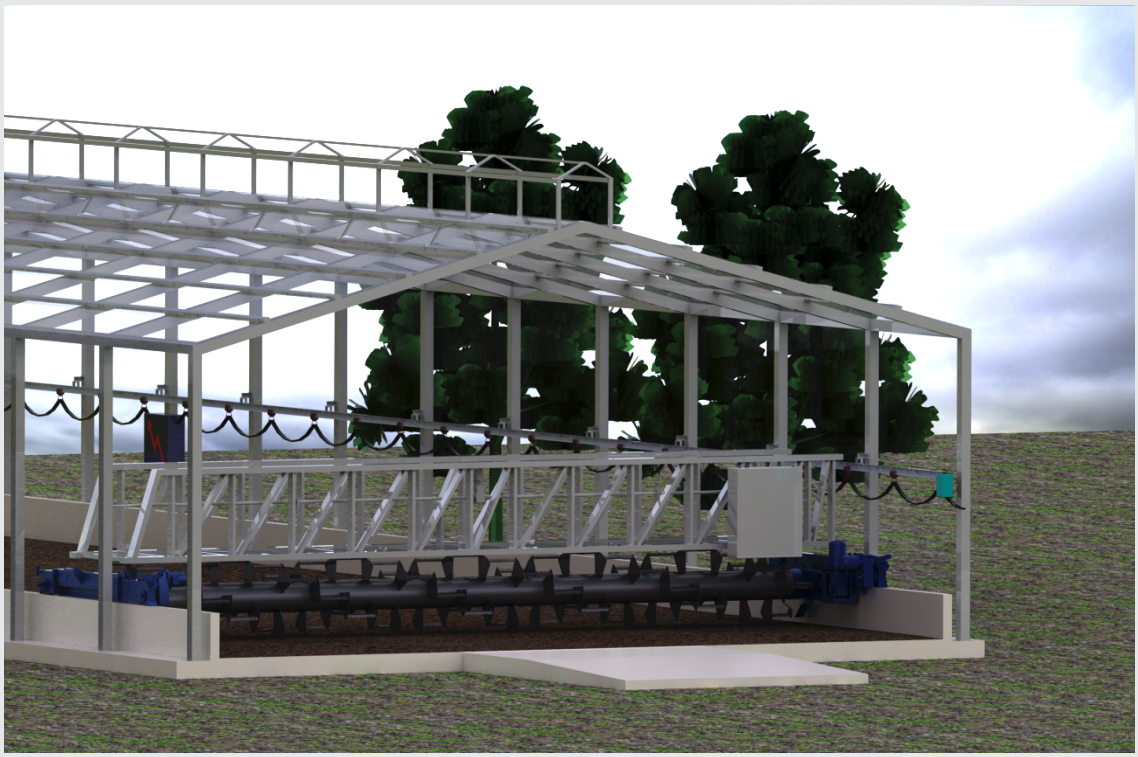
HELIOS
SOLAR SLUDGE DRYER

The principle of the Solar Drying System is drying sewage sludge by using the solar radiation. System consists of a waterproof horizontal drying bed which is covered by a greenhouse and equipped with auxiliaries. As the solar radiation warms the surface of the sludge, the water content at the surface is evaporated. The moist air is evacuated while dry air is sucked from outside of the greenhouse. The dry air is blown over the sludge drying bed by the ventilators. However, while the sludge surface dries, the lower parts remain moist, and have to be turned upside down.

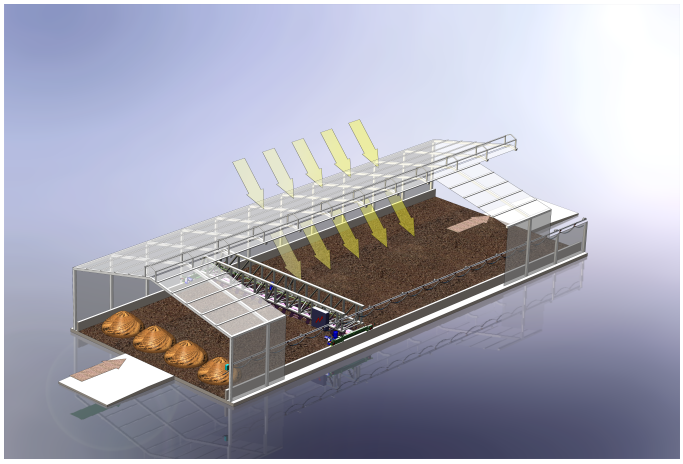
HELiOS performs turning of the sludge as well as transportation from one side of the greenhouse to the other. The sludge feeding options can be adjusted to suit customer-specific requirements; drying bed is fed and emptied with appropriate systems but the transport through the bed is entirely automatic which is achieved by HELiOS. It starts its operation as sludge is fed from one end and spreads the sludge homogenously to entire area of the drying bed. It also mixes and turns the sludge to aerate and ensure effective drying. Finally it transports the dried product to the output end.

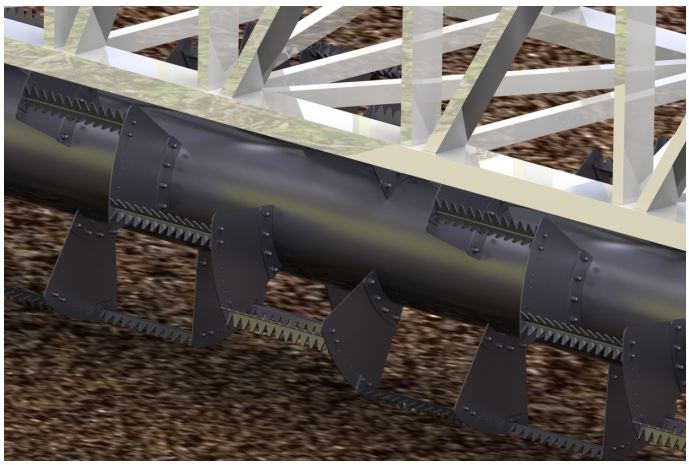


HELiOS runs on two parallel walls which are 12 m apart from each other and 1.100 mm above drying bed. The main part is a drum on which different combs and paddles are fixed to cut the sludge's surface and aerate the lower parts. The drum can be lowered from a free height of 80 cm to approximately 1 cm above the ground with a central motor. The drum turns with a frequency of up to 60 rpm and conveys the sludge below while moving slowly. As the radial velocity is higher than the advancing speed, each time the drum turned the sludge is automatically moved from one end of the drying bed to the other. The unit can move and rotate in both directions and is controlled by frequency driven motors. Specially designed combs avoid excessive dust production. The standard HELiOS is designed to operate in greenhouses up to 150 m in length. It is fully equipped with sensors and control units. Built in automatic programme ensures a continuous flow of the fresh loaded sludge through the drying bed. The required energy is extremely low. The sludge is transformed into a granular bio-solid which is easy to handle and store.

BENEFITS

- Low operation costs
- Low maintenance costs
- Safe operation
- Dry, granular product
- Little dust generation





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