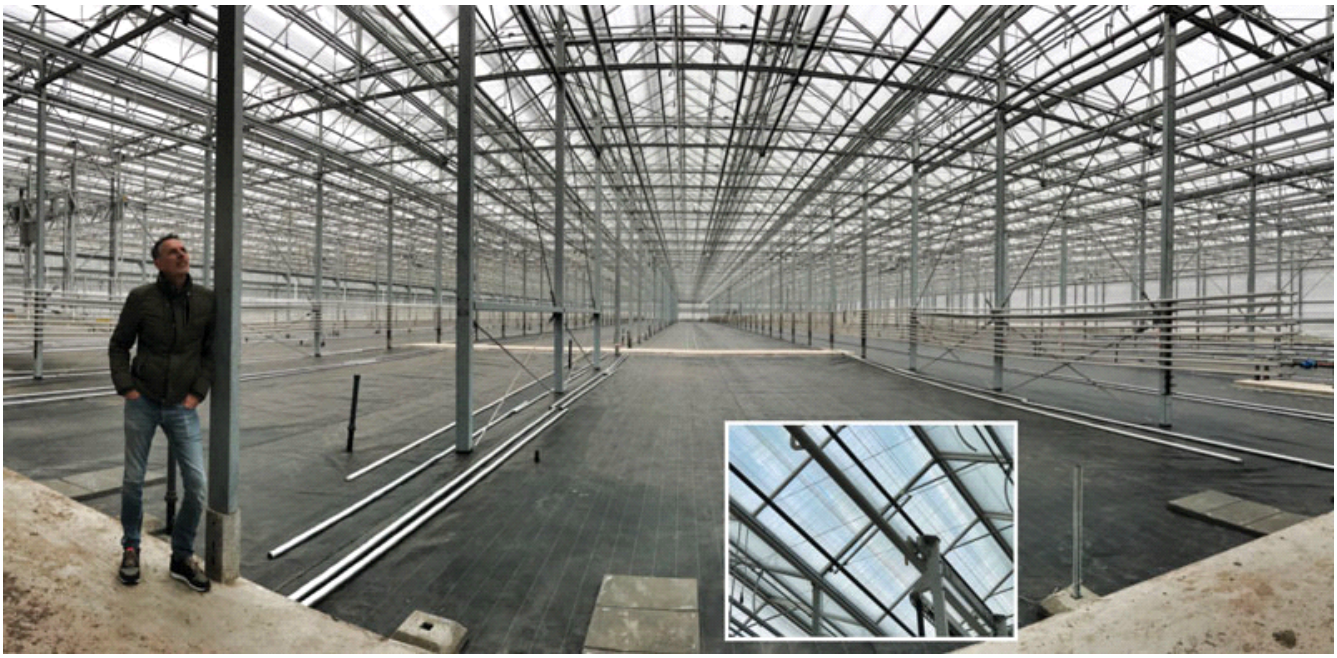
GROWERTALKS

GT in Brief

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Heat from Above

Chris Beytes



Dutch grower Eduard Ter Laak stands proudly in his new 5-hectare (12-acre) greenhouse range in Wateringen, the Netherlands. Located in the heart of the country's famous Westland horticultural region, the new house boasts an innovative system that captures sunlight and turns it into hot water. It's said to be the most modern greenhouse in the Netherlands and that pretty much means the most modern in the entire world.

GrowerTalks visited Ter Laak the Saturday after IPM Essen, where the company had just been named the International Grower of the Year 2018 by the International Association for Horticultural Producers (AIPH). Ter Laak's attention on energy conservation was a deciding factor in the judges' decision (they also gave Ter Laak the first-ever Sustainability award, as well as the Gold prize for the Finished Plants category). With that sort of resume, we couldn't pass up the chance to get a look at the new facility.

The structure, called "DaglichtKas" (Daylight Greenhouse) comes from Dutch builder Technokas. They've pioneered a novel glazing system that features large (5 ft. by 10 ft.) double-glazed glass panes. They're much like glass used in modern commercial and home construction, except between the glass is inserted plastic Fresnel lenses. These lenses focus the sunlight onto two steel pipes suspended just under the glass (see inset photo) that have water pumping through them.

The water pipes are suspended by cables in a way that allows them to be adjusted via computer throughout the day as the sun moves, keeping them in the focus area of the Fresnel lenses. The Fresnel panes are only on the south side of the bays; the north side has double-glazed diffused glass. The north also has the only roof vents.

The resulting hot (around 100F/38C) water is stored for later use in massive tanks and even in the aquifer several hundred feet below the greenhouse. Cool water can be stored the same way, giving Ter Laak an almost unlimited supply of hot and cold water for winter heating and summer cooling.

The double glass is heavy—more than 200 lbs. per pane—meaning the structure is beefier than the typical Dutch design. Bays are 9 meters wide (about 30 ft.) instead of 12.80 meters (42 ft.), a standard Dutch greenhouse dimension. And the house is 8 meters (26 ft.) high, up from 6 meters (20 ft.) of their existing house, to accommodate the additional systems.

And yes, those system are proven: Ter Laak built about an acre of the house in 2013 to test it and has been producing in it ever since. Eduard told us that the heat-from-sunlight system is so effective at converting the sun's energy into hot water that the new house, even with no shade paint or shade curtains, runs several degrees cooler than their standard greenhouse, which has shade.

Beyond the heating system and structure, the greenhouse features the same proven production equipment, from potting to internal transport, grading, harvesting and packing. Eduard and his brother, Richard, will produce about 3 million phalaenopsis orchids per year (added to their current capacity of 6 million). The first plants move in in April, with the first harvest coming February 2019.

As for the investment and payback? That's one question Eduard avoids, saying, "A lot of parts [of the greenhouse] are in combination with the existing greenhouse." But Ter Laak has long been a leader not just in production, but in marketing as well. They're part of Decorum, a group of 60 or so leading potted plant and cut flower growers who cooperate on packaging and marketing their products. They do a fantastic job in the marketplace, so don't bet against them! **GT**