



PHILIPS

Horticulture
LED Solutions

Case study
Borst
Bloembollen BV

Obdam, Netherlands



Philips GreenPower LED production module

A more easily controllable process in the greenhouses

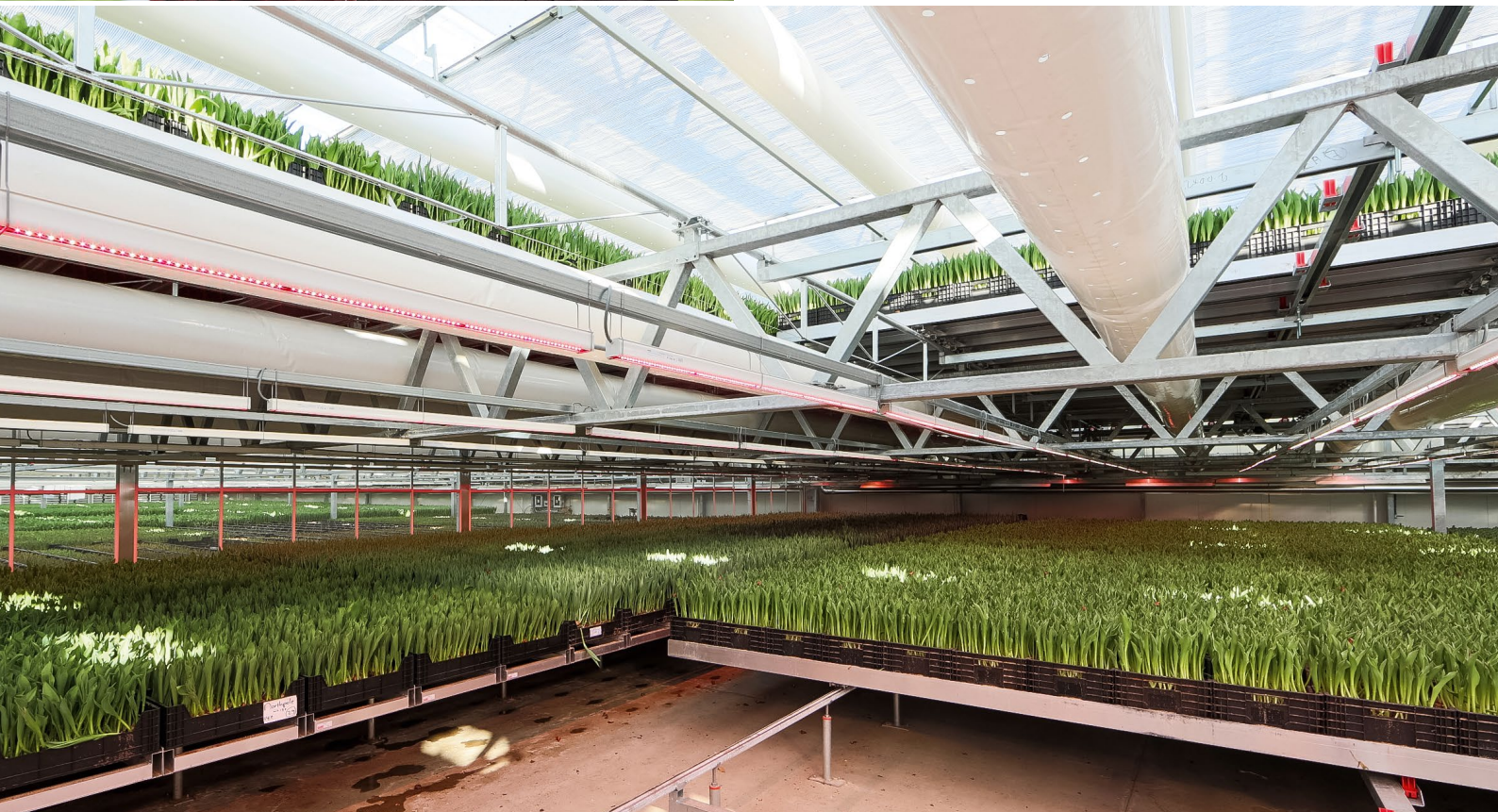
With LED it is possible to achieve a low uniform light level even when the plants are close together



“

A more easily controllable process in the greenhouses **and more economical and sustainable business operations.**”

Jos Borst, owner Borst Bloembollen BV



Background

Borst Bloembollen is owned by Jos Borst in Obdam. Borst is a leading company in the tulip sector. The firm focuses on introducing and propagating new tulip varieties, and also forces some twenty million tulips a year itself in an ultramodern forcing area. In 2012 Borst was voted Agricultural Entrepreneur of the Year on account of the high quality of his cultivars and his innovative entrepreneurship.

The challenge

In 2011 Borst enlarged his greenhouse. Even while the building work was going on, he was preparing part of it for two-layer cultivation. After growing crops on one layer (the bottom layer) for a year, a second, top layer will now be made. This means that the top layer will of course receive sunlight, but the bottom layer – almost 40% of the total greenhouse area – will not. Although a young tulip will also develop without light because of the nutrition obtained from the bulb, Borst is certain that the quality of a tulip is closely related to the quantity of light that the tulip receives.

Borst says: ‘It’s with good reason that tulips grown outdoors are so highly prized at auction.’ In order to achieve this quality during the propagation process in a greenhouse during the winter season, Borst has decided to illuminate the tulips in the bottom layer throughout the cultivation period. Thanks to the positive results obtained in reference projects with multi-layer tulip cultivation, for instance at G. Oud & Zn. and Maatschap Kreuk in Andijk, Borst has also opted for Philips LED lighting. He received assistance and advice in this from installer Van der Laan.

The solution

Following consultations with Philips and Van der Laan, Borst has decided to use Philips GreenPower LED production modules in deep red/white. In order to get the best possible lighting for each of the tulip’s growth phases, Borst has a unique strategy. ‘The tulips are placed on containers that follow a fixed route through the greenhouse for a period of seven to ten days. At the start of the route they are shoots measuring from one to five centimeters, and when they leave the greenhouse there is already a young

tulip measuring from ten to thirty centimeters. In my opinion a small shoot can make do with less light, but a complete tulip benefits from more light. This is why the light level is geared to the tulip's growth phase: during the route through the greenhouse the container goes through three increasing light levels, from 14 via 20 to 27 micromoles.'

Benefits

Installing LEDs has major advantages over alternative forms of lighting such as SON-T and fluorescent. The considerable reduction in energy consumption is the major one, but the light distribution is another. With LED it is possible to achieve a low uniform light level even when the plants are close together. Borst will recoup the investment he has made in LEDs within a few years due to energy savings of over 60%. In short, a better product, a more easily controllable process in the greenhouses, and more economical and sustainable business operations. The Philips solution is proving its added value on several fronts.



“

**More than 60% reduction
in energy costs!”**



Facts

Grower

Borst Bloembollen BV

Sector

Bulbs

Crop

Tulips

Location

Obdam, Noord-Holland, Netherlands

Solution

Philips GreenPower LED production module

Installer

Van der Laan

Result

A more easily controllable process in the greenhouses and more economical and sustainable business operations



© 2015 Royal Philips N.V. All rights reserved. Philips reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.

Document order number: 3222 635 67447
01/2015
Data subject to change

For more information about
Philips horticulture LED Solutions visit:
www.philips.com/horti

Write us an e-mail:
horti.info@philips.com

Or tweet us:
[@PhilipsHorti](https://twitter.com/PhilipsHorti)