PHILIPS

Outdoor lighting

Tunnel & Underpass

Case Study

Comfortable and **sustainable** lighting with Philips TotalTunnel

Boxem Tunnel Zwolle, The Netherlands

TotalTunnel

- Connected LED lighting system, incorporating luminaires, guidance lighting, control and services
- Tailor-made LED lighting solution for any tunnel
- Precise levels of quality, guidance, control and service support

Background

The Boxem Tunnel at the edge of Zwolle was recently completed at the point where a provincial road and waterway intersect. It has been designed as a single-tube tunnel with two traffic lanes. The tunnel is 11.70 m wide. To minimize the impact for the surrounding polder landscape, the walls of the tunnel have been installed as low as possible.
The tunnel was completed with the Philips TotalTunnel concept and equipped with the latest Philips tunnel LED luminaire FlowStar and the TunneLogic control system.

Philips TotalTunnel is a comprehensive approach to tunnel lighting. It allows Philips to channel its LED expertise in tailor-made solutions for its customers and, in doing so, create lighting solutions that offer precise levels of quality, control and service support.

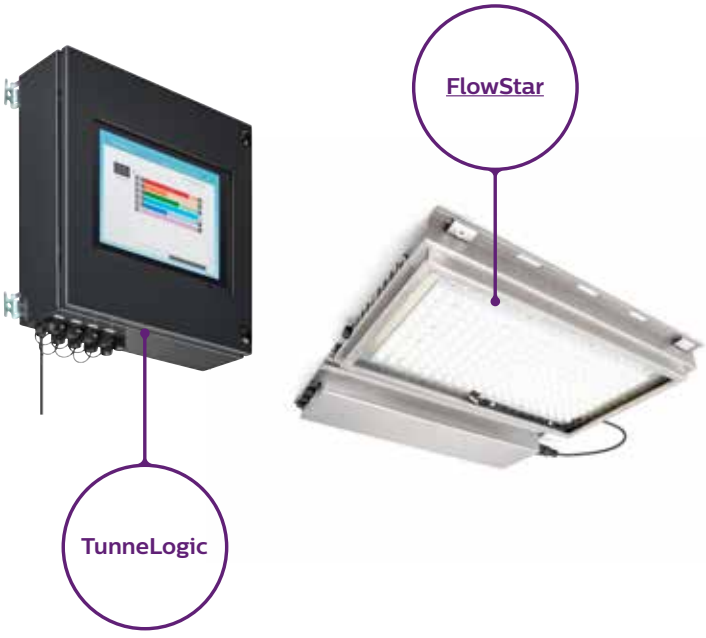
The project

The municipality of Zwolle had an important criterion for the illumination of the tunnel: low-energy consumption LED lighting.

Tunnel & Underpass

“We were looking for a reliable partner, with **broad experience** and **knowledge** of tunnel lighting. And we found one!”

Toon van Beek, project manager Zwolle municipality



“We were looking for a reliable partner, with broad experience and knowledge of tunnel lighting”, says Toon van Beek, project manager at the municipality of Zwolle. The municipality opted for Philips, who was keen to install the new TotalTunnel connected lighting solution in this tunnel to ‘demonstrate’ its benefits.

The tunnel is 4.60 m high. To ensure the optimum passage for vehicles, the luminaires and installation rails together could not be higher than 10.5 cm. “That is really not very much at all”, says Jan Jonker, project manager at the contractor Salverda. “Even so, we managed to achieve this thanks to the FlowStar, the latest Philips LED luminaire. It is less high and, as a result, far less space is required for its installation.” In comparison with conventional lighting, this is an enormous step forwards, believes Jonker. “Other luminaires have a height between 20 and 30 cm; the FlowStar by Philips is only 6.5 cm high. As a result, we were able to create this LED point source lighting luminaire in a single row, with junction boxes integrated in the row.”

Customer
Province of Overijssel
Municipality of Zwolle

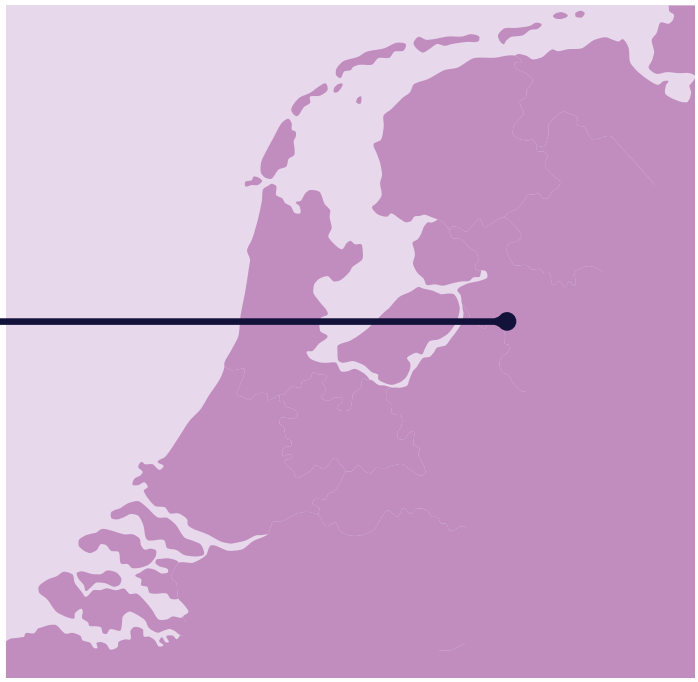
Contractor
Salverda

Installer
Beenen industriële automatisering

Philips products
FlowStar
TunneLogic

Boxem Tunnel

Zwolle
The Netherlands



Jonker also draws attention to the considerably lower energy consumption. “With the FlowStar installation optimized for flexible light level adjustment via TunneLogic and the long lifetime of the FlowStar we will achieve an energy saving of 34% each year compared to other tunnel lighting systems. Thanks to the extended lifespan of LEDs, the lighting is almost maintenance free. That saves time, money and reduces traffic disruption because the tunnel has to be closed for this. And of course an elegant strip of light like this has far more aesthetic appeal. Tying in perfectly with the architect’s minimalist tunnel design.”

Beenen industriële automatisering was contracted to install the system. Harry van Wieren, account manager for the company, claims that the new Philips TunneLogic control system was a true eye opener. “Thanks to this system, the lighting is continuously dimmable. Not just to a lower level of light, but even a section of the luminaires can be switched off. And it is also possible to quickly increase lighting levels to 100% in the case of emergencies. So that police and ambulance personnel have a better visibility to give first aid. This can be done from a switch cupboard in the tunnel, but also from a remote location by computer.” Jan Jonker: “TunneLogic ensures that the lighting in the tunnel is always harmonized with the level of daylight.” He explains how it works. “At 105 m from the tunnel entrance, a luminance meter has been installed that measures the brightness of the tunnel entrance. TunneLogic translates this value into a light intensity in the tunnel. So you can say that every driver gets the light level that matches his day or nighttime experience. This makes the transition from outside to inside the tunnel as pleasant as possible and...this also benefits safety.”

Benefits

The tunnel has been built by the municipality of Zwolle, but the ownership, management and maintenance is to be transferred to the province of Overijssel. According to Toon van Beek, project manager at the municipality of Zwolle. “With this LED lighting solution, we save a lot on energy and maintenance. This demonstrates that sustainability and safety can go hand-in-hand.”
Jan Jonker and Harry van Wieren also reflect with satisfaction on the tunnel build.
“It was a great project for us and this was partly thanks to the Philips TotalTunnel approach. We have worked with the latest technologies. Making this tunnel more sustainable, comfortable and safer.”

Reduction
of installation and operation costs

More **comfort**
for the driver

Flexible **lighting levels**
through connected lighting approach

“

The TunneLogic control system ensures that the lighting in the tunnel is always **harmonized with the level of daylight.”**

Jan Jonker, project manager contractor Salverda

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