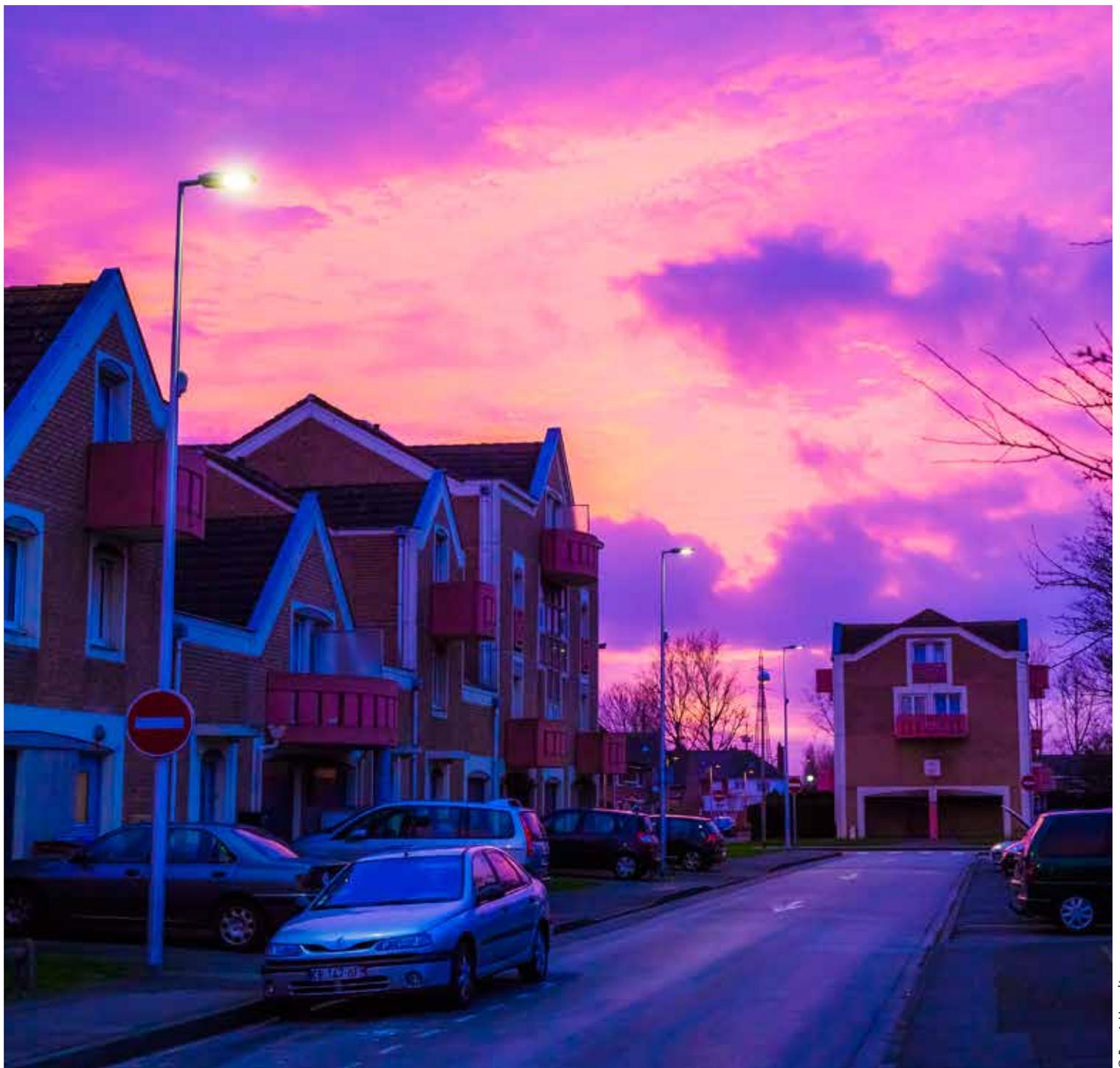


# THORN

LIGHTING PEOPLE

## Case Study

Grande-Synthe, France



# Thorn Lighting and Set Tertiaire have helped the city of Grande-Synthe in northern France to replace 810 sodium streetlamps with highly efficient Thorn LED luminaires, delivering annual energy savings of more than €700 000



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## Project background

Set Tertiaire is an electrical installation specialist that serves Dunkirk in Northern France and its surrounding areas. The company, which has 90 employees, has been working with Thorn Lighting for 22 years to meet its clients' lighting needs. With a focus on energy efficiency, ecology and lighting quality, Set Tertiaire helps its clients dramatically reduce energy consumption and costs, with no compromise on lighting quality.

As a member of the Thorn Energy Partnership, Set Tertiaire gets a range of pre-sales and post-sales support to help it optimise lighting solutions for its clients. The Thorn Energy Partnership is a worldwide venture between Thorn and lighting professionals that promotes energy efficiency – without sacrificing good lighting performance.

Christophe Dureux, Business Manager in SET Tertiaire's Network Department, says, "Thorn helps us create compelling bids for new work, conducting photometric studies that show exactly what lighting schemes will look like when they are installed. Thorn also provides training through the Thorn Energy Partnership that helps us deliver advanced energy saving solutions to our customers."

The long-term partnership between Thorn and Set Tertiaire recently delivered major benefits for the city of Grande-Synthe in northern France, which is undertaking a high-profile project to replace 7 000 aging sodium street lights with next-generation LED luminaires over a ten-year period.

Arnaud Gruwé, Urban Development Consultant and Head of the Lighting Renewal Project at Grande-Synthe, says, "Our sodium lamps were 25 years old and they failed frequently, increasing maintenance costs to around €600 000 a year. What's more, the old lamps were very inefficient in terms of energy consumption and the colour of the light was orange, which made the city less attractive at night."

After analysing bids from competing lighting and electrical installation companies, Grande-Synthe chose a solution from Thorn Lighting and Set Tertiaire. "We invited bids from three leading lighting companies, outlining our requirements for reducing energy consumption and costs and improving the quality of street lighting," says Gruwé. "Based on cost, delivery capabilities and the quality of the lighting products offered, we chose a solution from Thorn and Set Tertiaire. We are delighted with the results."

## The Thorn and Set Tertiaire solution

Initially, the project partners undertook a detailed lighting study to assess the requirements in different streets across the city, taking the location of existing streetlight columns into consideration.

Jimmy Slovak, Technical Sales at Thorn Lighting, says, "Our specialist lighting engineers helped Set Tertiaire design a lighting scheme that optimises the quality of street lighting and matches the right Thorn products to the requirements of different streets across the city. The consultancy we provided for Set Tertiaire also ensured that the Grande-Synthe lighting scheme was as energy efficient as possible – in this case reducing energy consumption for the city by more than 70%."

Based on the lighting study and the advice of Thorn specialists, Set Tertiaire chose to deploy Thorn Plurio LED 40W luminaires to replace Grand-Synthe's 125 watt sodium lamps, and Thorn Oxane 84W luminaires for wider streets. "The lighting scheme designed by Thorn offered the competitive price, energy efficiency and excellent quality lighting we were looking for," says Gruwé.

For the first phase of the project, the city of Grande-Synthe deployed 650 Thorn luminaires to replace 810 sodium lamps, reducing the overall lighting estate by 160 luminaires. The Thorn LED luminaires, which were retrofitted to existing columns, can be dimmed at night to minimise energy use. "The project run like clockwork thanks to the dedication and professionalism of the Set Tertiaire team," says Gruwé. "That's the benefit of working with a Thorn Energy Partnership partner who has years of experience working with Thorn products."



### Annual lighting energy savings of €70 800

The city had very specific targets for its lighting renewal project, both in terms of efficiency savings and lighting performance. "We needed more energy efficient luminaires that we could turn down during off-peak hours to reduce consumption by a further 50% at night," says Gruwé. "We also wanted luminaires that could produce much better-quality white light, with virtually no maintenance required."

In the final analysis, the lighting solution from Thorn Lighting and Set Tertiaire has delivered a 71% reduction in lighting energy consumption and costs, far exceeding initial targets and expectations. "We estimate that our energy consumption for street lighting will fall from 671 508 kilowatts to 193 044 kilowatts, a total reduction of 478 464 kilowatts," says Gruwé. In percentage terms, this is an energy saving of 71%, which is an amazing achievement."

This energy saving directly translates into cost savings for the city. "We will reduce our energy costs from €100 800 to €30 000: a total saving of around €70 800 per year," says Gruwé.

### Reduced maintenance costs

With the new Thorn luminaires installed, Grande-Synthe will save hundreds of thousands of Euros a year on maintenance alone. "We spent around €600 000 a year maintaining and repairing our old sodium lamps, and this figure will fall to virtually nothing with the new Thorn LED luminaires," says Gruwé. "We are expecting the Thorn luminaires to deliver reliable service for many years to come with virtually no maintenance needed."

### Improved lighting quality for local residents

Feedback about the new street lights from local residents has been overwhelmingly positive. "When people saw us taking the old street lights down, they were concerned that the replacement luminaires would not be as bright as the old ones," says Gruwé. "However, now that the new lighting is installed, people are very happy. The lighting quality is great and everything is lighter and whiter at night."

### Success in partnership

The fact that Thorn Lighting and Set Tertiaire were chosen to deliver the first phase of the project reflects on the quality of the Thorn products and the high quality installation services delivered by Set Tertiaire. The project partners have worked together seamlessly to deliver and install the first 650 luminaires and are now ready to support future phases of the project.

"To minimise risk, we plan to work with three suppliers over the course of this major, 10-year project", says Gruwé. "However, the excellent quality and efficiency delivered by the Thorn products, the great installation services from Set Tertiaire and the excellent collaboration between the partners mean we've got off to an excellent start."

### Project background

- Northern French city Grande-Synthe needed to improve the efficiency and reliability of its ageing street lights
- Thorn Lighting and Thorn Energy Partnership partner Set Tertiaire were chosen to deliver the first phase of the street-light renewal in a competitive bid process
- The project partners needed to deliver a highly efficient solution that would also improve the quality and brightness of street lighting

### The Thorn Lighting and Set Tertiaire solution

- Thorn Lighting and Set Tertiaire undertook a major study to scope project requirements
- Based on the study, Grande-Synthe chose to replace 810 sodium street lights with Thorn Plurio LED 40W luminaires and Thorn Oxane 84W luminaires
- Built in bi-power dimming reduces brightness and energy use during off-peak hours

### Results and benefits

- Annual lighting savings of €70 800 (71%)
- Maintenance costs reduced by hundreds of thousands of Euros a year
- Improved quality and brightness of street lighting for local residents
- Successful project delivery in partnership with Thorn Lighting and Set Tertiaire



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**eControl** From Thorn's 15 ways to save energy, the following are key to minimising energy consumption in Grande-Synthe:



#### Lamp efficacy

The luminaires effectively convert electricity into light and minimal energy is wasted due to conversion into other energy sources such as heat.



#### System efficacy

The Thorn Plurio LED 40W luminaires and Thorn Oxane 84W luminaires combine optical and thermal controls to maximise efficiency and lumens per watt and optimise energy savings for the city of Grande-Synthe.



#### Maintenance schedule

The Thorn LED luminaires with low maintenance requirements will deliver major cost savings for Grande-Synthe compared to the previous sodium lighting.



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