

Our strategy.

Our products are sold throughout the world. The Group management team is passionate about developing the business for the benefit of the shareholders, employees and customers. With the energy and ability of our staff we look forward to the future with enthusiasm. Our aim is to create shareholder value through market leadership in the design, manufacture and supply of professional lighting systems.

Our focus is for long-term growth and stability, achieved through the following priorities:

Overview of strategy

- Strategy was designed to build on the values that have been at the core of the company since its inception. FW Thorpe has been built on product innovation – design and product development is fundamental.
- The Group is product led. This enables us to maintain competitive advantage with marketing-leading products, utilising technology to retain and attract new customers.
- Sustainable growth is key to our stakeholders – targeting new customers in existing or new territories, using our product portfolio to drive into new sectors.
- Control of the manufacturing processes is of utmost importance – key processes are kept in-house with targeted investment in new machinery as required.
- Family principles and how we treat our people is fundamental to our success. The Group prides itself on the development of people from within the organisation, providing training and experience as well as maintaining our core values.

1 Focus on high quality products and good leadership in technology

Customers continually require new and innovative ways in which to reduce the operating costs of their lighting installations. There is also the requirement to reduce their environmental impacts.

Progress to date

- Continued enhancement of features for the SmartScan wireless system
- Shared product development between certain companies within the Group
- Electric vehicle charging and road safety products now being sold in the UK


Future opportunities

- Further development of SmartScan
- Continuous research and development
- Targeted acquisition

Associated risks **F**

- Product acceptance
- Initial product introduction

Strategy in action

 See more on pages 28 to 33

2 Continue to grow the customer base for Group companies

With the continued investment in the product portfolio and the broad range of sectors we can service, the focus will be on expanding our customer base in new markets and territories.

Progress to date

- Targeted approach in the Netherlands and France with Thorlux industrial product and controls portfolio
- Introduce Famostar product portfolio to territories where the Group has a presence
- Introduce Zemper product portfolio to territories where the Group has a presence


Future opportunities

- Consider further sales offices overseas
- Potential business development investment
- Investment in sales personnel in the UK and Europe
- Targeted acquisition

Associated risks **A C E F**

- Short-term cost increase without immediate return
- Prolonged time required to establish FW Thorpe brands

Strategy in action

 See more on pages 34 to 36

Risk key

- | | |
|---|---|
| (A) Adverse economic conditions | (G) Sustainability and climate related risk |
| (B) Business Continuity | (H) Cyber security |
| (C) Price changes | (I) Exit from the European Union |
| (D) Changes in government legislation or policy | (J) Credit risk |
| (E) Impact of conflict on domestic and global economies | (K) Movements in currency exchange |
| (F) Competitive environment | |

3 Focus on manufacturing excellence

Along with continued product development, the need to innovate the production process is essential.

Progress to date

- Further solar investment at Famostar and Ratio UK
- New paint plant at Solite targeted to reduce gas consumption and carbon emissions


Future opportunities

- Continued development of manufacturing facilities and processes for Ratio EV products in the UK at the Target Park facility
- Paint plant upgrades across the UK
- Continual investment in facilities and processes across the Group

Associated risks (B) (F)

- Reduced productivity while changes are implemented
- Learning curve on introduction of new products and processes

Sustainability

 See more on pages 58 to 59

4 Continue to develop high quality people

As one of our main sources of competitive advantage, it is imperative we continually develop and retain talent within the business.

Progress to date

- Apprentice scheme continues
- Investment in management training
- Training and development

Future opportunities

- Continued investment in training and personnel development
- Inter-company collaboration teams to develop a broader understanding of the whole business

Associated risks (F) (I)

- Ability to retain staff in competitive local job markets
- Potential loss of UK personnel from the EU
- Ability to sponsor non-UK staff and associated increased costs

Sustainability

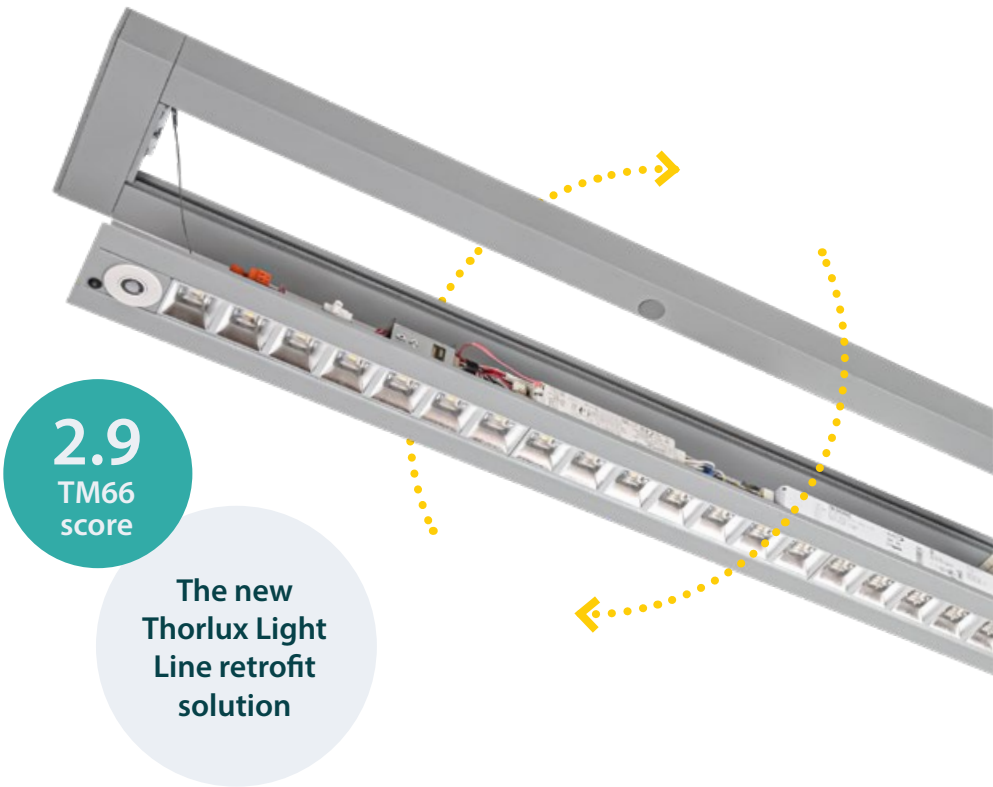
 See more on page 76

Circularity in lighting.

As we gradually reach the point of depletion of the earth's finite resources, the linear method of taking materials, making products, and then throwing them away at the end of life needs to be re-thought. This is where the concept of the circular economy is becoming increasingly important.

What is the circular economy?

The key principles of the circular economy are to eliminate waste and pollution, circulate products and materials, and regenerate nature. Products and materials are kept in circulation for as long as possible through maintenance, reuse, refurbishment and remanufacture, then, once the end of life is reached, recycling and/or composting takes place, ensuring nothing is lost. The circular economy looks to move away from the 'take-make-waste' pattern, into a more sustainable and regenerative one.



Why is circularity important?

FW Thorpe Group companies have always considered the impact of their products on the environment. Key circular principles such as product efficiency, longevity and maintainability have always been pillars of the design process, long before the topic of circularity became mainstream. Combining highly efficient luminaires with a lighting management system such as SmartScan ensures lighting uses the minimum energy possible (therefore producing less pollution).

Group companies ensure luminaires last as long as possible by using high quality parts, materials and manufacturing techniques. In most cases, luminaires are designed to last an impressive 100,000 hours.

In addition, the vast majority of Group products can be serviced easily in situ, keeping them operating and in use for longer.

Looking forwards, the Group believes that engaging in the circular economy is not only the right thing to do from an environmental point of view, but also from a business perspective. Embracing the circular economy stimulates innovation and the development of new products and services, and offers inspiring new business opportunities such as remanufacture, retrofit and renovation projects.

Circularity is now further embedded in the Group Product Design Rules, so that the following practices are incorporated into each new design:



Using less material in the design



Choosing more sustainable materials



Making products last even longer



Making products easier to repair



Optimising material utilisation



Making products as efficient as possible



Making products easier to strip down and recycle at end of life

What is TM66?

The Chartered Institution of Building Services Engineers (CIBSE) and the Society of Light and Lighting (SLL) have written TM66, a document that provides guidance on how to assess the circularity of a luminaire, including a checklist and real-world examples of good practice. TM66 is an exacting framework that demands proof of the highest standards from lighting product designers and manufacturers.

Off the back of this, the Lighting Industry Association (LIA) has developed TM66 Assured, a scheme where by luminaires can be independently assessed and scored in accordance with TM66. This means that manufacturers can independently verify their circularity claims, and customers can gain comfort from this third-party approval.

In October 2023, the new SkyCore range from Thorlux was the first Group company range to be independently assessed by the LIA TM66 Assured scheme. The SkyCore range received a score of 2.5, certifying it as being 'excellent' – the highest achievable level of circularity.

As a part of Thorlux's drive to improve the circularity of its products, all new Thorlux luminaires will be scored and independently assessed and verified in accordance with TM66 Assured, with the target of meeting a minimum of 'excellent'.

In April 2024, TRT made history with its new Oaken streetlight. Achieving an impressive score of 3.1, Oaken gained the highest verified score for any luminaire in the TM66 Assured scheme at the time. Oaken is a highly innovative luminaire made from recycled polycarbonate and aluminium, housed in an oak body.

FW Thorpe Plc prides itself on its position as a market leader and always being at the forefront of emerging and pioneering movements, concepts and technologies, continually recognising the changing needs of not only its customers and dynamic industry, but also the planet.

The Thorlux Flexbar has achieved a score of 2.6

The all new Firefly range.

Group Innovation Project

Developed through collaborative efforts as a Group innovation project, the new Firefly emergency downlight has improved features and benefits, including new enhanced lithium battery technology, providing pivotal emergency lighting with a 10-year warranty.



Firefly with Power Pack and Control Module

One of Thorlux Lighting's most successful products, Firefly has helped thousands of customers achieve emergency lighting compliance, making buildings, campuses and facilities safer, and protecting staff, visitors and the general public.

Group collaboration and joint development

The **Luciérnaga** joint project ('Firefly' in Spanish) is the first collaboration to combine the knowledge, resources and experience from four Group companies: Thorlux Lighting (UK), Philip Payne (UK), Famostar (NL) and Zemper (ES).

This collaboration brings with it a number of advantages:

Control of supply chain components and reduced reliance on third-party suppliers.

Internal production of advanced and market-leading electronic components.

Group development of emergency self-test and wireless communication software (SmartScan).

Significant Group investment in new body moulds, tooling and optical distribution designs, for improved overall product performance.

Reduced product material, manufacturing and component expenditures.



Firefly Surface

Firefly IP65



The new Firefly combines a discreet recessed downlight with the SmartScan wireless emergency system for a reliable, compliant solution that is easy to install and maintain.

Reliability, functionality and simplicity

Customers today seek an emergency lighting system that provides a fit-and-forget solution and achieves compliance. Firefly's discreet 50mm recessed head and SmartScan wireless controls are the ideal combination to deliver a reliable and functional answer to this requirement.

The monthly function tests, annual duration tests and daily product status reports provide the responsible person with the necessary information to ensure that people can safely escape a building during a power failure.

With ease of use at the heart of the design, Firefly is simple and quick to install. It offers easy maintenance of consumable parts like batteries. Furthermore, the body has been designed with chamfered edges to make inserting or extracting it from ceilings a smooth process.

Battery technology

A higher efficiency battery with lower operating power creates an all-around more sustainable Firefly. Findings show lithium batteries have four times less embodied carbon per kilogramme than nickel metal hydride batteries. Additionally, a lithium battery charge cycle will switch off when full capacity is achieved, reducing energy consumption.

Precision emergency lighting

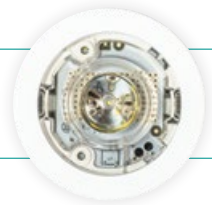
Ensuring safe passage from a building during a power failure is crucial and potentially life saving. For this reason, Firefly has been significantly upgraded, with more optical distribution variations to help eliminate or reduce risk to escapees.

In particular, the new advanced corridor plus optic distributes 1 lux of light 24 metres along a corridor while highlighting points of emphasis such as call points and fire extinguishers.

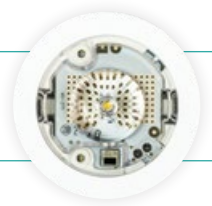
Furthermore, optimisation of the spot optic achieves minimum lighting requirements for healthcare treatment beds, providing 50 lux in emergency lighting conditions. This requirement ensures medical professionals have the correct lighting levels to treat and care for patients under normal power output conditions.

Finally, the corner optic provides a guiding escape light around bends, illuminating the next section of the escape route. Standards dictate that an emergency luminaire must be within two metres of a change of direction; the nine-metre spacing distance provided by this optic means fewer fittings are required.

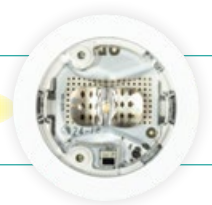
Spot Optic Distribution



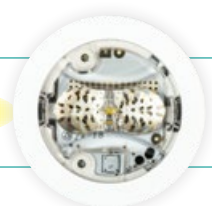
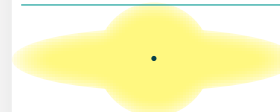
Area Optic Distribution



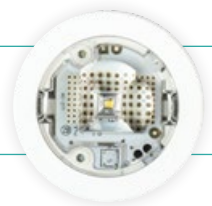
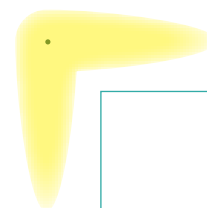
Corridor Optic Distribution



Corridor Plus Optic Distribution



Corner Optic Distribution



Setting new standards in sustainable lighting.

The Group product innovation team has designed two groundbreaking products – ARDEN and Oaken – that mark a significant departure from conventional luminaire construction; for the first time, wood has been utilised as a primary material. This pioneering use of wood in luminaire construction underscores FW Thorpe's commitment to innovation and sustainability.

Why wood?

Wood has less embodied carbon (kgCO₂e) and requires less embodied energy compared with aluminium castings. Since wood is a renewable resource and requires less-energy-intensive processes to be transformed into a usable material, it contributes less to the overall embodied carbon footprint.

Why specifically European oak?

European oak is an extremely durable hardwood that will achieve in excess of a 20-year life, which ensures its suitability for use in long-service luminaires. European oak is sustainably harvested. Sustainable harvesting practices involve careful consideration of the environmental impact, ensuring

that the rate of extraction does not exceed the rate of regeneration. This approach helps maintain the health and biodiversity of forests while providing a continuous supply of wood.

In the future, there is also the possibility of sourcing wood from the Group woodland projects in Monmouthshire and Herefordshire.

ARDEN exit sign

ARDEN from Philip Payne represents the company's most sustainable premium emergency exit sign yet. Manufactured and assembled in the UK using European joinery-grade oak sourced from responsibly managed forests, ARDEN combines aesthetic elegance with outstanding functionality to offer a new standard in sustainable emergency exit signage.

ARDEN boasts an impressively low embodied carbon score, according to CIBSE's TM65 calculation methodology, of 29.87kg CO₂e, up to 30% lower than many non-wooden exit signs. Its extended lifespan, projected to be more than 20 years, ensures a reduced ecological footprint and minimises the need for frequent replacement.

ARDEN's production process is designed to maximise material efficiency, with waste material from Computer Numerical Control (CNC) machining repurposed to heat the timber manufacturing facility. At the end of its lifecycle, the oak body is fully recyclable, further contributing to a circular economy. The water-based finishes used are free from harsh chemicals and solvents, ensuring no complications with recyclability.

When mains supply fails, ARDEN is powered by an advanced lithium iron phosphate (LiFePO₄) battery with an expected design life of up to eight years, significantly reducing maintenance requirements and waste compared with traditional battery systems.



TM66
score
3.1



Certified by DarkSky.org



The Oaken

TRT Lighting's Oaken luminaire is a groundbreaking product that redefines outdoor lighting with its eco-friendly design and advanced technology. Through its focus on energy efficiency and the utilisation of sustainable materials, the Oaken showcases a dedication to minimising its carbon footprint across its entire lifecycle.

- European oak housing
- 100% post-industrial recycled polycarbonate gear enclosure
- Highly efficient dual output driver realising up to 92% efficiency
- Gear tray made from >90% recycled aluminium components
- Highly efficient acrylic (PMMA) and polycarbonate (PC) lens options for high optical clarity, durability and recyclability

Circular design

What truly sets the Oaken apart is its dedication to circular design principles. Each component is designed for disassembly and recyclability, facilitating the recycling and repurposing of materials at the end of its life.

The TM66 Assured product verification scheme is an innovative initiative developed and fulfilled by the Lighting Industry Association (LIA) and endorsed by with Chartered Institution of Building Services Engineers (CIBSE). A TM66 score demonstrates a product's performance in the context of a circular economy. Achieving a third-party LIA accredited TM66 score of 3.1, the Oaken leads the industry with the highest score ever recorded for any lighting product under this methodology.



See pages 28 to 29

Impressive performance

The Oaken not only delivers impressive performance but also sets new standards for efficiency (up to 191.7 luminaire lumens per circuit watt), minimising energy consumption while maximising light output.

Intelligent control

By combining programmable presence detection and light sensing with LED luminaires, the Oaken enables enhanced energy and carbon savings whilst extending maintenance cycles. Additionally, the Oaken offers a range of connectivity options, from simple factory-set dimming to full wireless control, ensuring versatility and adaptability to various lighting needs.

West Midlands Trains and Network Rail.

Thorlux has worked closely with West Midlands Trains (WMT) and Network Rail for nearly a decade to modernise the lighting systems at 150 sites, including 145 stations. Additionally, Thorlux has supplied luminaires and control systems for the brand-new £56 million University Station in Birmingham.

A long-standing collaboration

Existing WMT stations frequently relied on out-of-date, inefficient lighting technology. WMT set a goal of improving lighting efficiency across the network, reducing emissions and costs whilst improving light levels to comply with current standards.

WMT appointed Thorlux based on its reputation for innovation and previous rail industry experience. In 2016, WMT became an early adopter of the then-new Thorlux SmartScan lighting management system. Following the 2017 lighting renovation at Redditch Station in Worcestershire, which functioned as a proof of concept for the larger plan, Thorlux began installations across the network.

The project required significant retrofitting and remanufacturing work – many stations have at least one unique retrofit requirement or ‘heritage’ element. Some of the oldest luminaires requiring modernisation had been in service for 50 years or more.

Above all, railway premises are safety-critical, requiring constant functional lighting. Removing a fitting for off-site inspection or refurbishment is impossible unless a temporary substitute provides identical performance – which is usually impractical. This restriction made on-site retrofitting a central part of the project.

Every upgraded WMT luminaire now uses either standard SmartScan or SmartScan Radar controls. Even with lighting levels increasing by 500% at certain stations to achieve industry standards compliance, WMT has reduced carbon emissions by 65%. With increased efficiency cutting lighting energy costs, plus reduced upkeep (planned, reactive and callout) and other factors, WMT calculates it will save over £1 million per year on its combined total energy and maintenance spend.

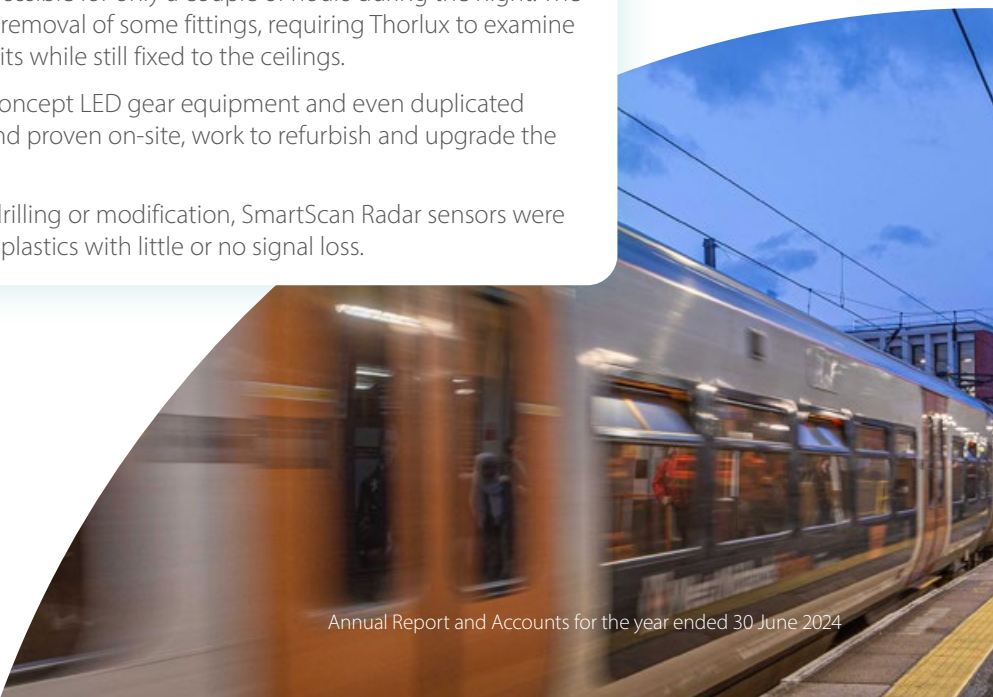
Coventry Station...

Coventry rail station opened in 1962 and was made a Grade II-listed building in 1995. The station canopy is a listed structure, with original luminaires maintained since the 1960s. Conservation authorities stipulated that any retrofitted or replaced luminaires must look and fit as the originals did while complying with modern standards and significantly improving lighting performance.

Access is a notable complication when working in the rail environment. For example, there is limited scope to close a line to conduct work safely on a luminaire mounted above a platform or near the railway track. At Coventry, this is possible for only a couple of hours during the night. The need to minimise disruption ruled out the removal of some fittings, requiring Thorlux to examine and take detailed measurements of the units while still fixed to the ceilings.

Thorlux then prepared bespoke proof-of-concept LED gear equipment and even duplicated bodywork. When these had been tested and proven on-site, work to refurbish and upgrade the lighting throughout the station began.

To preserve the original diffusers without drilling or modification, SmartScan Radar sensors were used. 24 GHz radar technology penetrates plastics with little or no signal loss.





University Station...

At University Station on the southern leg of Birmingham's Cross City rail line, an ageing late-1970s canopy structure has been replaced with a £56 million state-of-the-art building.

The new station can handle up to 7.2 million passengers yearly and features two spacious pavilion buildings, each containing comfortable waiting areas, offices and platform lifts. The rebuild took three years, during which the station remained open. Thorlux was delighted to supply high-performance, long-life SmartScan luminaires for the new build.

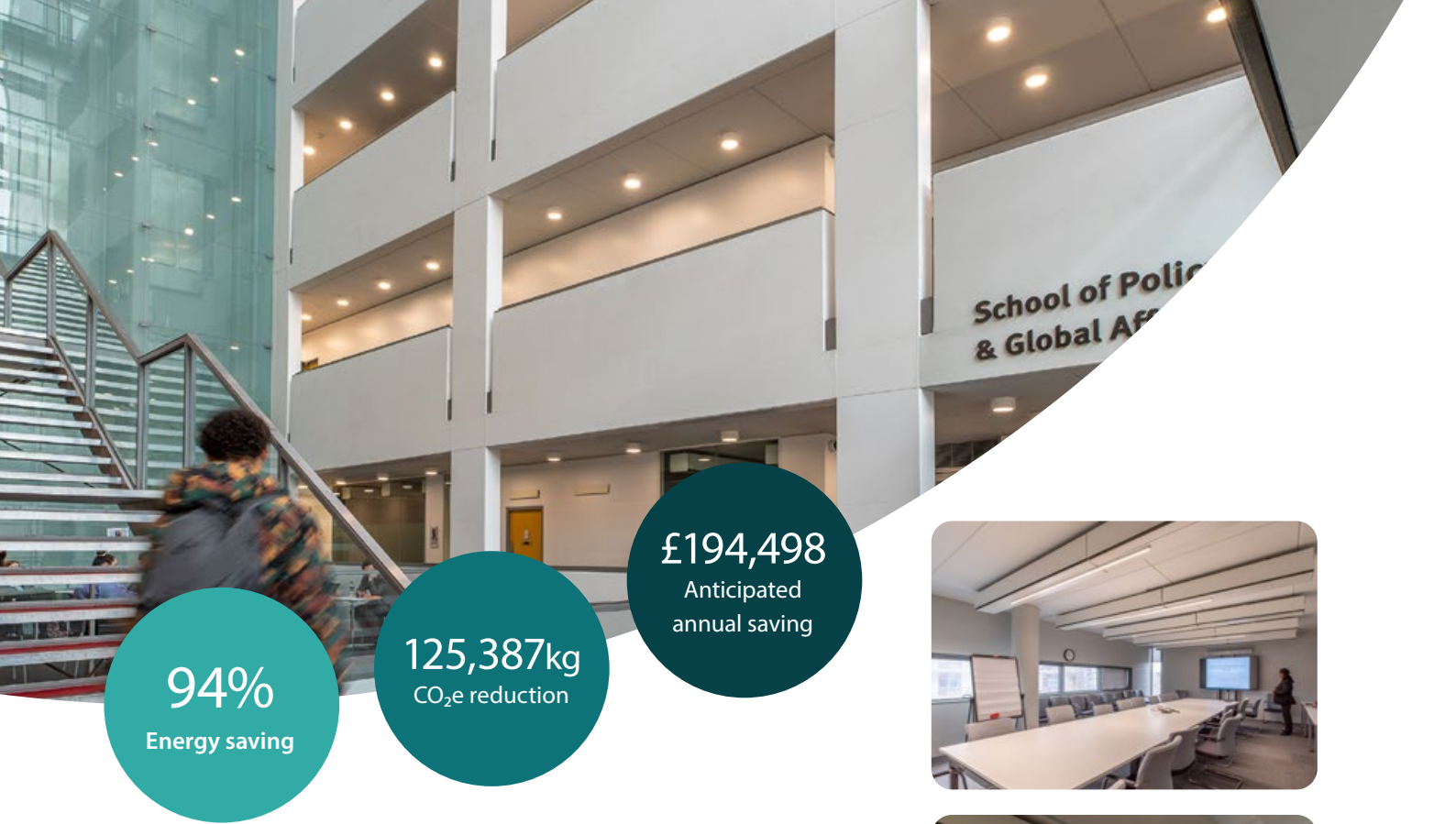
Customers arriving at the new station will find outdoor areas and platforms illuminated by pole-mounted IP66-rated Starbeam luminaires. These powerful, efficient floodlights emit less than 1% upward light, reducing unnecessary light pollution. Corrosion-resistant A-Line luminaires have been deployed under platform canopies and in the passenger footbridge. Other outdoor spaces feature wall-mounted Realta, Realta Micro and vandal-resistant Prismalette 360 luminaires.

Indoors, the pavilion spaces are lit with powerful suspended Comboseal circular luminaires. Capable of producing over 22,000 lumens of white light, with a colour-rendering index (CRI) of over 80, Comboseal is an ideal choice for large, fast-paced transit environments. Elsewhere, narrow-body Kanby LED Controller linear luminaires are installed outside the ticket offices, while backroom spaces feature Radiance Recessed fittings. All the luminaires connect via the SmartScan network.



WMT project accolade

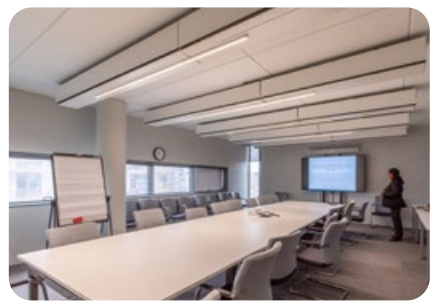
Recognising the success of this long-term relationship and the impressive carbon reductions it has generated, Thorlux Lighting and WMT were highly commended for their overall LED station lighting project at the 2024 Rail Business Awards.



94%
Energy saving

125,387kg
CO₂e reduction

£194,498
Anticipated
annual saving



STRATEGY IN ACTION

Rhind Building, University of London.

Thorlux Lighting has worked closely with City, University of London to convert aged light fittings in its Rhind Building on St John Street to the latest energy-saving LED lighting technology.

The Rhind Building houses several lecture rooms and meeting spaces that are in regular use by the university. However, the lighting system comprised outdated fluorescent technology and required updating; besides the recent phase-out of fluorescent lamps from general sale under changes to the Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS), the university sought to improve energy efficiency and reduce carbon output.

Seeking a sustainable solution, the university wished to keep the existing multi-function chilled beams at the Rhind Building in place instead of replacing them with new fixtures. Thorlux provided tailored retrofits

to replace the existing lamps and covers, re-engineering the existing chilled beam chassis. The retrofit was completed in situ by Thorlux engineers and scheduled around lectures and other bookings to minimise disruption to both staff and students.

Retrofitting offers a circular economy solution which can help minimise waste and keep valuable materials in use for longer. A renovated lighting scheme must provide sufficient light levels and uniformity. With modern LED and optical technology, it is possible to significantly improve light levels while reducing energy consumption compared with older light fittings. This renovation also has the added benefit of saving the embodied carbon arising from brand-new light fittings.

Thorlux retrofitted 1,260 luminaires in the Rhind Building, resulting in an energy saving of 94% compared with the old lighting system, with the potential saving of £194,498 of electricity each year. The award-winning SmartScan lighting management system now controls the retrofitted luminaires, combining maintained illuminance, daylight dimming and presence detection to maximise energy savings. This change contributes significantly to meeting City's environmental, social and governance responsibilities and sustainability goals. Both City and Thorlux Lighting have separately committed to achieving net-zero emissions by 2040.