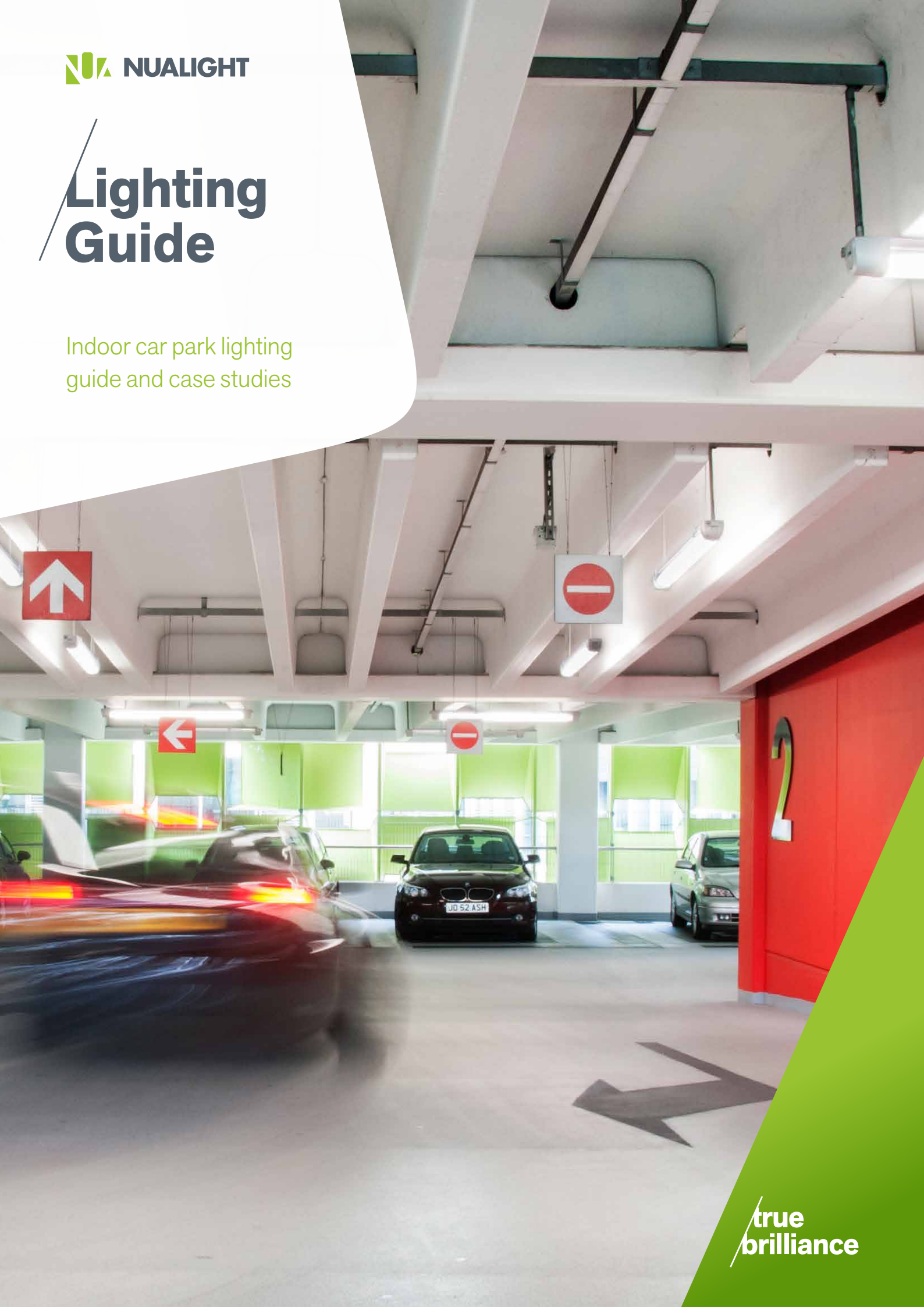
NUALIGHT

Lighting Guide

Indoor car park lighting guide and case studies



true brilliance

Indoor car park lighting guide

+ **Q-Park** / Ireland

How to apply LED lighting for brighter and safer indoor car parks.

User safety and security are the keywords for car parks. Location alone will not attract and retain users to a car park, particularly indoor car parks, where there is an element of entering the unknown. If a user perceives a threat to their personal or vehicle safety, they are unlikely to consider leaving their vehicle there. Car park operators must satisfy a user's perceived safety expectations and comply with safety requirements to facilitate the movement of both pedestrians and vehicles.

Indoor car parks typically operate for long periods throughout the day and night, with some offering 24-hour facilities. By their nature they offer limited natural daylight, resulting in high operating and energy costs.

Usage patterns of a car park can also vary greatly, from peak times of arrival/departure for work or leisure activities to much quieter periods where it would be a phenomenal waste of energy, increased cost and environmental impact, if services were to run constantly.

Lighting to guide

- Lighting plays a huge role in creating the desired ambience and feelings of security in a car park. Once inside and safely parked, it is important for users to easily recognise emergency and way finding information.

Lighting for security

- High vertical illuminance should be considered to increase recognition of people's faces and the feeling of security. A well-lit car park can also help towards reducing criminal activity and aids the effectiveness of CCTV.

Questions to consider

- Does the chosen scheme eliminate shadows by providing clear visibility and bright spaces at key areas such as pay stations, ticket barriers and stairwells?
- Will the luminaire provide enough light on the various surfaces and structure of the car park to eliminate shadows and a gloomy environment?
- Are there suitable options to ensure emergency, wayfinding and structural hazards are clearly marked to allow users to travel via the optimal and safest route?
- Is the luminaire efficient?
- Does the luminaire have a low power consumption and high efficacy rating to help lower energy bills and CO^2 emissions?
- Is there a way to further reduce energy usage with the use of a controls system that optimises light output dependent on daylight and occupancy/ usage of the car park?

Further recommendations and guidelines for transit areas and carparks, can be found in the European lighting standard, EN 12464-1 Lighting for indoor workplaces.

CASE STUDY ONE

HANDYSIDE CAR PARK, KINGS CROSS

Since 2001, the King's Cross development partnership has planned, managed and delivered the regeneration of King's Cross – one of the most significant urban development projects in the UK.

Situated amidst the vibrant new city quarter of shops, restaurants and cultural venues is the Tapestry Building. Set alongside St Pancras Lock, the 14 storey Tapestry Building is an outstanding collection of 129, one, two and three bedroom apartments, townhouses and penthouses, of which 34 are for One Housing group.
The development also boasts a multi-use games pitch, two retail units and a 415 space car park (public and private use), representing a new way of sustainable city living for today. The King's Cross development partnership worked with consultant Parking Matters and contractors Keir to select and install a smart lighting scheme for the car park – an area often over looked by designers.

David Swainsbury, King's Cross development partnership, Project Manager, explains

> "When planning car park lighting we have to be careful to take into account not just the costs of running it, but also, the paramount consideration is the safety of all the users."

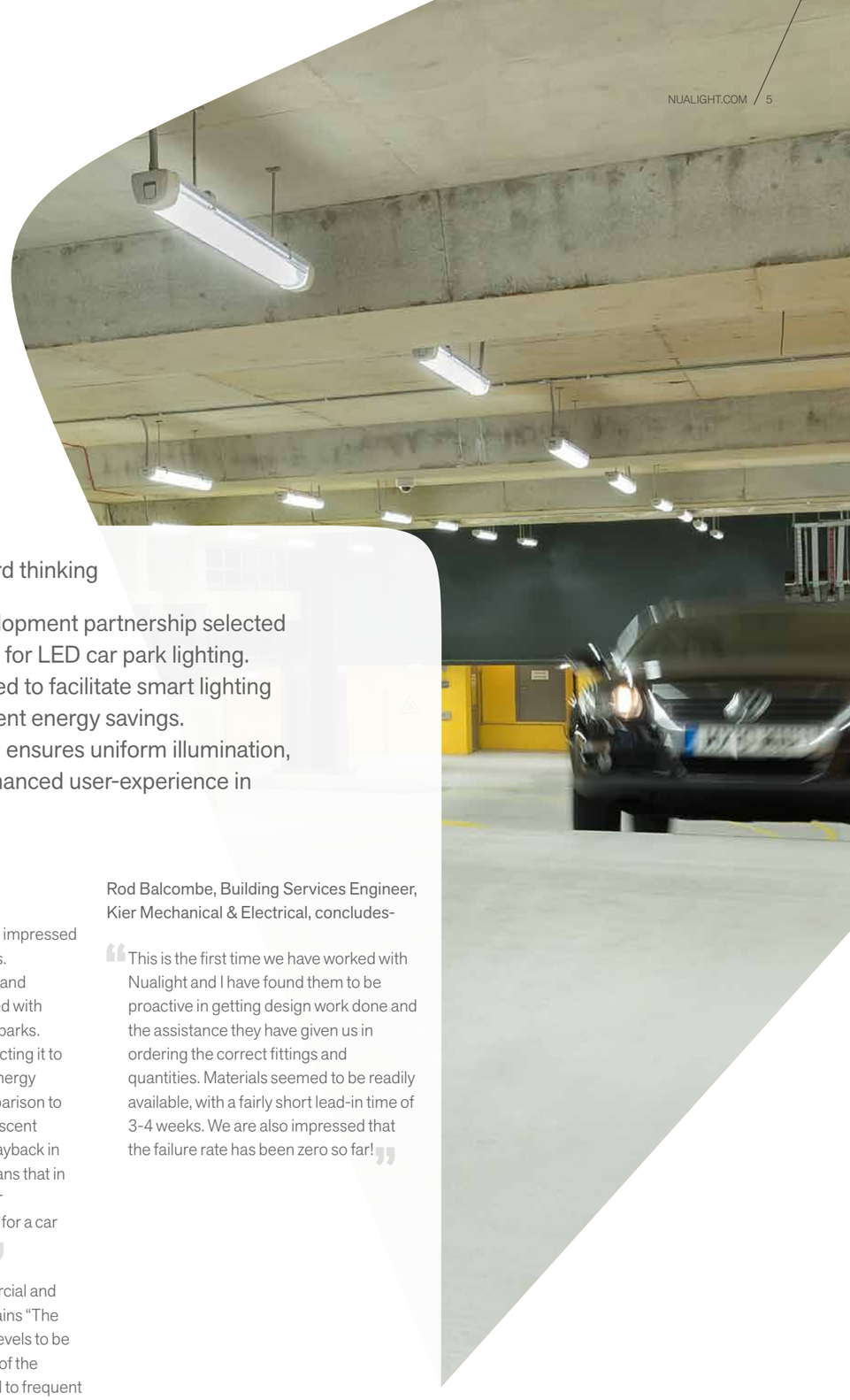
> "Ultimately we wanted a high quality lighting scheme which allows residence and shoppers to travel safely but also to save money in the operational running of the MSCP as an asset."

KEY FACTS

Large MSCP using Tiitan and DALIPark solutions

Saving 89% energy and 153 tonnes of CO_2 per year

ROI <3 years



Bright, safe and forward thinking

The King's Cross development partnership selected Nualight's robust Titan for LED car park lighting. Titan has been designed to facilitate smart lighting control, yielding excellent energy savings.
Its batwing distribution ensures uniform illumination, offering a safe and enhanced user-experience in covered car parks.

David adds,

> "One of the main features that impressed us was the DALIPark controls. It overcomes the typical cost and installation barriers associated with smart lighting controls in car parks. Time will tell, but we are expecting it to deliver exceptional lighting energy savings of up to 89% in comparison to the same scheme with fluorescent fittings. We even managed payback in under three years, which means that in no time they will be paying for themselves, an ideal solution for a car park being run as an asset."

Craig Stead, VP Sales - Commercial and Industrial, Nualight, further explains "The DALIPark controls enable light levels to be set optimally from the very start of the installation, this eliminates the all to frequent need to over light at the start of a products life, it then adjusts automatically to match daylight and occupancy levels. It's an "easy fix and forget" solution with little to no reliance on manual intervention."

Rod Balcombe, Building Services Engineer, Kier Mechanical & Electrical, concludes-

> "This is the first time we have worked with Nualight and I have found them to be proactive in getting design work done and the assistance they have given us in ordering the correct fittings and quantities. Materials seemed to be readily available, with a fairly short lead-in time of 3-4 weeks. We are also impressed that the failure rate has been zero so far!"

CASE STUDY TWO

Q-PARK CLERYS, DUBLIN, IRELAND

Q-Park, Ireland's leading off-street car park operator, own and manage over 30 car parks throughout Ireland, with sites in major hub cities including Dublin, Belfast, Galway and Cork.

Located on Marlborough Street in Dublin's busy city centre is Q-Park Clerys car park, a multi-storey parking facility which has five floors with 621-spaces. The Q-Park Clerys car park was fully refurbished in 2007 and quickly became synonymous with state-of the-art parking facilities and innovative complimentary services such as parent and child parking spaces, shoe shining, jump starts, AEDs (defibrillators), children's buggies and umbrellas. More recently, QPark have launched an energy efficiency programme with the aim of reducing their energy bills and carbon footprint. The QPark Clerys location was chosen as the first car park for the new initiative.

David Vavasour, Technical Services Manager, Q-Park Ireland describes,

"We are currently rolling out an energy efficiency programme for all car parks. I have used Nualight on previous projects. I know their luminaires are reliable, energy efficient and offer very good performance in terms of light output combined with a high lumen per watt, so they were my first point of contact to help with this project."

"Previously we had standard PIR controls switching the lights on / off. The team at Nualight recommended we take our controls further to yield the full benefits of LED."

KEY FACTS

24 hours, 5 floors, 621 spaces, multi-storey car park

Titan with DALI park controls

35-40% reduction in energy bills with payback <3 years

The Nualight solution focused heavily on DALI controls with Titan low bay LED, to help Q-Park meet their energy saving objective.

Craig Stead, Head of Sales - Global Commercial and Industrial, Nualight, explains the solution,

"Our Titan range has been especially designed to offer exceptional performance for car park lighting, but the DALI controls takes it that step further in terms of energy savings. For Clerys we employed several controls options for maximum energy and atmospheric benefits. PIR controls were installed at the entrance on each level. When the PIR's are activated by either vehicles or pedestrians the lights illuminate.
To achieve the maximum savings from LED, DALI dimming controls are utilised. During un-occupied periods Titan dims to 10% and to promote the feeling of safety increases to 90% (day) or 60% (night) when presence is detected. Secondly the outer rows of lights are controlled by daylight sensors, during daylight hours they are dimmed to 10%. It's all about control."

Multi-storey, Multi-benefits. The new lighting installation for Q-Park achieved an outstanding reduction of 35-40% annually on their energy bills, David elaborates, "As a result of the upgrade, we have enhanced our customer experience. Our lux levels have increased, we have improved colour rendering and uniformity which helps with CCTV and facial recognition and creates a brighter, secure and comfortable parking environment, while also meeting standards for emergency lighting. However, the main thing is that we have realised our objective and seen a decrease in our energy bills off between 35-40%. This equates to a reduction of 62 tonnes a year in carbon emissions."

We are reassured by the 5-year warranty on all products

"I found Nualight a very professional company to deal with, and will work with them on future projects. In choosing Nualight we have experienced many other consequential benefits; the installation is virtually maintenance free for Titan's lifetime and we have secured a return on investment of 2.5 – 3 years, which is important for justifying future projects. Furthermore, with the installation of LED and the proven energy savings we can apply for government grants, which will assist with the roll out of the program."

ALL SALES ENQUIRIES

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