



designplan
L I G H T I N G

TRANSPORT

ILLUMINATING OUR RAILWAYS

*Station Category A, B, C, D, E, F



DESIGNPLAN LIGHTING

PEACE OF MIND



Since 1963 Designplan have been designing and manufacturing luminaires in the London Borough of Sutton. When it comes to lighting rail applications we have an unrivalled wealth of experience and products.

Our robust luminaires provide peace of mind to a wide variety of people including engineers, train drivers, lighting designers and the public. Three core values are embedded in our DNA.

- Robust and durable
- Service excellence
- Total cost of ownership

Robust And Durable

Our luminaires, made from steel or aluminium with specialist polycarbonate diffusers, can resist up to 5 times (250 joules) more impact than standard fittings (50 joules). High IP ratings help minimise maintenance requirements.

- High impact and ingress protection
- Robust construction
- Standards compliance
- Plug and play upgrades

Service Excellence

Our team has a great deal of knowledge and experience in developing and delivering lighting solutions for rail environments.

- Made in Britain
- Bespoke and standard solutions
- Project and design support
- Vast sector experience (Est. 1963)

Total Cost Of Ownership

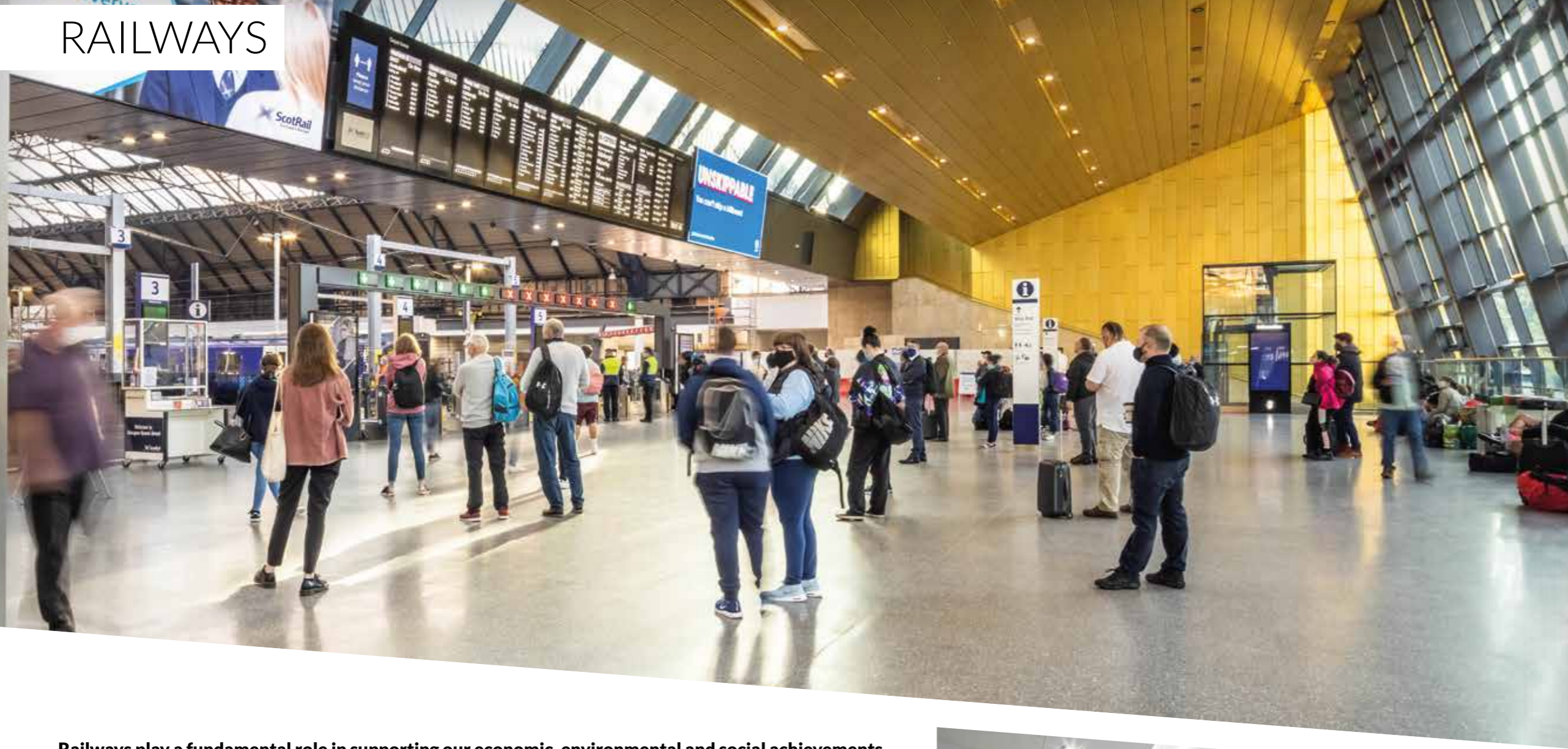
Our vandal resistant LED luminaires help reduce your total cost of ownership over a project's lifetime.

- Low energy
- Long operational life
- Sustainable
- Easy to maintain, easy to upgrade

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ILLUMINATING OUR RAILWAYS



The 4Ss Challenge

Sustainability

Satisfaction

Safety

Stewardship

Railways play a fundamental role in supporting our economic, environmental and social achievements. The quality of station facilities has a significant bearing on customer satisfaction. A new rail industry initiative, the 4Ss, aims to deliver passenger focused travel.

The 4Ss challenge

Sustainability

As part of all components Life Cycle Engineering, lighting and controls should be designed to be easily upgradable, repairable and recyclable.

Satisfaction

The "Principles of Good Design" guidance, and customer surveys, will gather feedback, in order to inform future renewals and refurbishments.

Safety

The rail network will improve safety by using design and technology. Equipment not fit for purpose will be replaced with long-life, robust solutions.

Stewardship

The high investment in rail infrastructure should be protected by assessing each component for robustness and performance when specified and after each control period.

How We Can Help

In this brochure we will show you that lighting has the power to continually drive improvement of the customer experience.

Good lighting promotes visual clarity and comfort, feelings of safety and security and has a unique ability to transform even tired environments.

Whilst lighting cannot, of course, be seen in isolation, we believe that it has a particularly significant part to play in helping the rail industry meet the 4Ss challenge.



HUB STATIONS



Shopping, eating and drinking are as much a part of the customer experience as catching a train. Lighting hub stations, whether a new build or a refurbishment, present a multitude of challenges to ensure sustainability, safety and satisfaction whilst maintaining these assets effectively.

Design Requirements

- Provide a unique identity to the station that is accessible to all.
- Provide a visually comfortable space whilst controlling light spill.
- Use light as a way-finding tool.
- Identify hazards with local accent lighting, such as level changes and platform edges.
- Achieve safety and security requirements.
- Use a lighting control system that offers flexibility across the site.
- Cable management to incorporate other services e.g. Smart CCTV, HVAC and sensors.

Lighting Requirements

- Constant light output and controlled glare.
- High efficacy over 100 lm/cw.
- Minimal use of finishes to increase recyclability. 70Khr+ life.
- Lighting control systems with an open protocol.
- Flicker-free dimming control to 10%.
- Sustainable luminaires with upgradeable gear trays.
- High IP and IK rated products to ensure a 30 year+ design life.
- Emergency lighting designed to BS5266.

Bespoke Lighting For Hub Stations

Whether lighting a listed building or a brand new hub station, there will be times when an "off the shelf" luminaire will not provide the desired solution.

We have developed the capability, over 60 years, to modify a standard fitting or create a completely new design to meet the needs of any rail lighting project.

Our bespoke team developed a light-box to illuminate the platforms of several Elizabeth Line stations. They have a design life of over 30 years and produce an output of over 6,000 lumens, whilst consuming the energy of a 60 watt household lamp! See pages 28 and 29.



The 4Ss Challenge

Sustainability

- Luminaires to be modular, replaceable & upgradeable for a 30 year+ design life.
- Multi-functional systems e.g. lighting with cable management reduces number of items to produce and maintain.
- Photometrically efficient lighting should be manufactured from recyclable materials with a short supply chain.

Satisfaction

- Good lighting enhances the user experience and their perception of hub station facilities.
- Systems with cable management and the integration of other functions help to minimise visual clutter.
- Hubs require a modular design to lighting to co-ordinate with and integrate into the structure.

Safety

- Good lighting assists with wayfinding and the movement of passengers safely and efficiently around a hub station.
- We can provide optical solutions that reduce discomfort glare and increase visual acuity.
- Our lighting can enhance the use of CCTV and other security devices.

Stewardship

- Ongoing operational costs, waste and the consumption of natural resources must be minimised in hub stations.
- We have many installations on the rail network which demonstrate the benefits of a 'whole life cost' model.

BEST PRACTICE ADVICE

Security, wayfinding, wellbeing and emergency provision all need to be factored into the lighting design of any category station, not least a network hub. Areas to be considered include:



1. Light Zoning

Highlighting areas such as ticket machines and exits improves wayfinding and our sense of wellbeing and safety,



2. Lighting Control

Wired and wireless lighting controls, coupled with a range of sensors, ensure a semi-automated and dynamic lighting result. See pages 36 and 37 for more information.



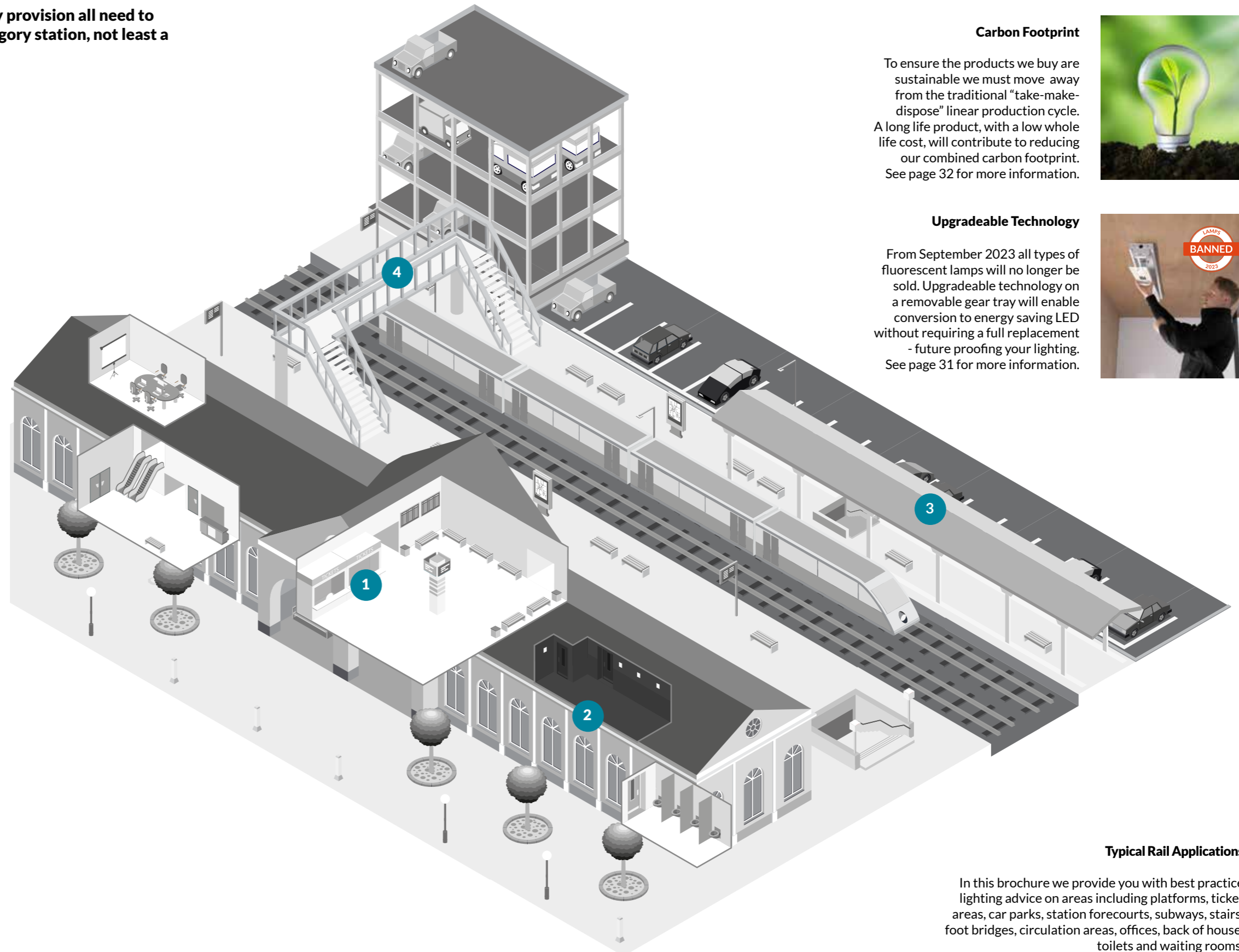
3. Cable Management

Cable management helps provide a clean architectural aesthetic, consolidates services and streamlines the installation. See page 35 for more information.



4. Light Spill And Glare

This needs to be controlled, optically or mechanically, for the user and the local environment.



Carbon Footprint

To ensure the products we buy are sustainable we must move away from the traditional "take-make-dispose" linear production cycle. A long life product, with a low whole life cost, will contribute to reducing our combined carbon footprint. See page 32 for more information.



Upgradeable Technology

From September 2023 all types of fluorescent lamps will no longer be sold. Upgradeable technology on a removable gear tray will enable conversion to energy saving LED without requiring a full replacement - future proofing your lighting. See page 31 for more information.



Typical Rail Applications

In this brochure we provide you with best practice lighting advice on areas including platforms, ticket areas, car parks, station forecourts, subways, stairs, foot bridges, circulation areas, offices, back of house, toilets and waiting rooms.

COVERED PLATFORM

Lighting levels and uniformity must meet specific standards to ensure all relevant objects and surfaces are easily and immediately visible, whether the platform is empty or crowded. Areas of concern include signage and identifying the edge of the platform. Appropriate levels of horizontal and vertical illuminance must be balanced with the need to minimise glare. Ensuring a clear field of vision for the driver is vital to allow effective processing of a visual signal prior to entering and exiting a platform.

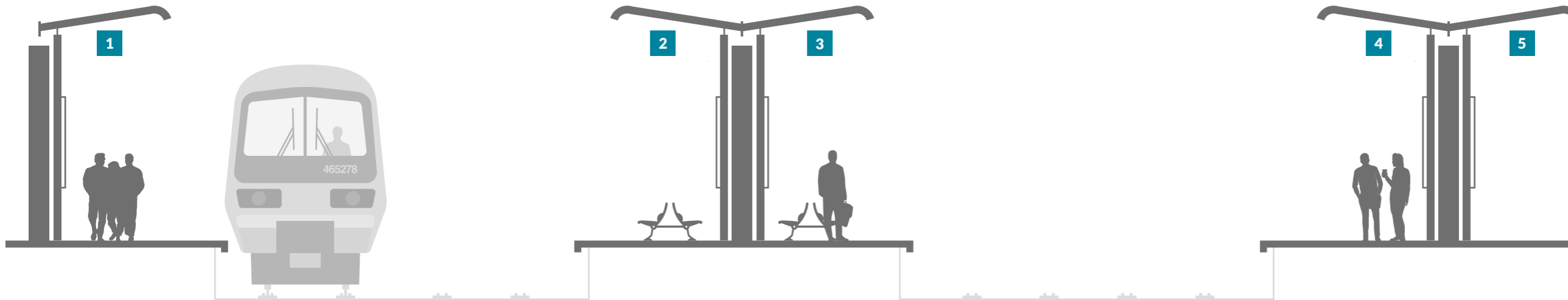
Whilst it may be tempting to space luminaires as widely as possible for reasons of economy, station platforms can experience sudden flurries of intense activity. It is important that lighting takes fully occupied circumstances into account.

Lower output luminaires, more closely spaced, will help put sufficient light in the volume of the space. This helps when a platform is crowded.

Good illuminance on the vertical structure of the canopy can also go a long way to raising the perceived brightness of the whole platform setting.

Cable management helps provide a clean architectural aesthetic, consolidates services and streamlines the installation.

All luminaires should incorporate higher levels of impact resistance than standard fittings, especially where they are accessible to members of the public.



Technical Support

Several standards have specific information on the interface between platforms, track and trains. This includes RIS-7702-INS Iss1 Rail Industry Standard for Lighting at Stations which refers to BS EN 12464-2:2014 and Railway Group Standard GI/RT7016 Issue Five Dated March 2014. These standards may take account of the likely numbers of passengers when setting lighting requirements.

When lighting a covered platform we would recommend 30 -100 lux average on the platform surface with a uniformity of 0.4 as per DFT Design Standards for Accessible Railway Stations. The illuminance range is dependent on usage and accessibility of the platform as per BS EN 12464-2. The platform edge requires a 20 lux minimum with 0.4 uniformity, which is in line with RIS-7702-INS standards. Where CCTV is used the design of the scheme and positioning of fittings must avoid conflict.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk

The 4Ss Challenge

Sustainability

- Retrofit LED gear trays ensure 30 year+ design life, sustainable technology upgrades and low energy consumption.
- Photometrically efficient lighting should be manufactured from recyclable materials with a short supply chain.
- Integrated lighting controls will ensure light is utilised where and when required.

Satisfaction

- Good lighting helps create a welcoming ambience and improves accessibility.
- Lighting aids recognition of signage and orientation allowing for visual impairment, physical disability and age.
- Feelings of safety and security are enhanced by good lighting.

Safety

- Uniform lighting helps eliminate areas of deep shadow.
- Good lighting contributes to crime reduction and deters anti-social behaviour.
- Cable management incorporates other services e.g. Smart CCTV which increase a passenger's sense of security.

Stewardship

- Ability to upgrade lighting several times over 30 years helps combat 'patch and mend' upkeep of rail infrastructure.
- A scorecard for each asset (used every 5 years) will dictate the specification of long life products.

1 MISSION CMS

IK 16 Versatile lighting for transport applications which can be standalone or integrate a cable management system.
IP 65



2 TUSCAN 89

IK 16 The market leading weather and vandal resistant fitting designed to resist extreme physical attack.
IP 65



3 FLAIR

IK 16 Robust vandal and weather resistant linear fitting for interior or exterior use.
IP 65



4 STROMMA G2

IK 14 Robust vandal and weather-resistant IP65 rated modular lighting system offering continuous linear illumination. With 3 circuit through wiring capability.
IP 65



5 PARKALUX

IK 14 Versatile vandal and weather resistant linear fitting.
IP 54



OPEN PLATFORM

The combination of open and covered platforms present two specific challenges. Firstly, ensuring there are no dramatic changes in illuminance level. Secondly, ensuring the character of light along the platform remains consistent. LED luminaires make it feasible to have almost identical light sources in both undercover lighting and pole-top solutions.

Platform use can vary rapidly from sparse occupation to busy activity. It is important that the lighting takes all circumstances into account.

It may be tempting to stretch luminaire spacing to the maximum. However, this will result in lengthened shadows and areas of light and dark, potentially compromising visibility.

For column mounted solutions, the correct balance of mounting height and spacing will help alleviate any potential issues.

An alternative to column mounted lighting could be to provide lower level lighting from the rear edge of the platform.

Luminaires mounted close to the platform surfaces being illuminated, helps in efficiency terms. This form of lighting can also help minimise intrusive light spillage and minimise glare.

Accessible luminaires must be highly robust with high ingress protection and vandal resistance ratings.



Technical Support

RIS-7702-INS Iss1 Rail Industry Standard for Lighting at Stations mentions the importance of the transition between open and covered platforms. Reference should also be made to BS EN 12464-2:2014 and Railway Group Standard GI/RT7016 Issue Five Dated March 2014.

When lighting an uncovered platform we would recommend 10 to 50 lux average on the platform surface, with a uniformity of 0.3 to 0.4.

The illuminance range is dependent on usage and accessibility of the platform as per BS EN 12464-2. The platform edge requires a 20 lux minimum, which is in line with RIS-7016-INS standards. Where CCTV is used the design of the scheme and positioning of fittings must avoid conflict.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



The 4Ss Challenge

Sustainability

- A circular product design enables easy upgrade, repair and end of life recycling to minimise waste.
- Stray wasted light should be minimised with light trespass and pollution strictly controlled.
- Fittings made efficiently from recyclable materials with a short supply chain.

Satisfaction

- Good lighting encourages use of the entire platform.
- Common light sources provide consistent lighting quality between open and covered areas.
- Robust and reliable luminaires reduce downtime which would negatively effect journey time and customer satisfaction.

Safety

- Accessibility is enhanced by the uniform lighting of the entire platform.
- Glare free highlighting of signage and displays aids wayfinding.
- Smart cameras, microwave and PIR sensors can combine to optimize passenger flow and safely guide customers around the platform.

Stewardship

- Ongoing maintenance is largely eliminated further to our LED lighting's long life 70,000+ hour operation.
- Our 60 year experience in the railway lighting sector ensures we are a long term partner who can be relied upon.

1 TUSCAN II

IK 16 Robust weather and vandal resistant bulkhead fitting. Can be mounted on short posts, platform walls or fencing.
IP 65



2 ZELOS WALL

IK 16 Elegant and versatile, low glare bulkhead for wall mounted perimeter applications.
IP 65



3 TUSCAN 89 ANGLED

IK 16 The market leading weather and vandal resistant fitting designed to resist extreme physical attack.
IP 65



4 STREET By iGuzzini

IK 09 Stylish and innovatively designed multifunctional post top range.
IP 65



5 COLUMNS

We offer a range of columns including tubular, conical and hinged.



TICKET AREA (BOOKING HALL)

Lighting should be welcoming and with good uniformity in booking halls. Illumination in directly adjacent areas should be taken into account to create comfortable transitions between spaces. Higher levels of vertical illuminance are particularly useful to ensure that signage, self-service ticket booths, barriers, exits and displays are easy to recognise and use.

High ceiling halls may benefit from some uplight. Highly compact LED luminaires can provide light on the upper structure, which helps to lighten and open up the visual impression of the space, although positions and visibility of display screens should be taken into account.

Where spaces have access to daylight, this should be maximised where possible, and lighting controls should be used to ensure that the lighting is energised only as required.

Designplan luminaires are fit for use in tough environments. They also incorporate the latest optical designs for high efficiency and optimum visual comfort. This is very important in areas like a booking hall where passengers may spend a considerable time.



1 QUADRATUM G2

IK 14 Surface mounted or recessed (pictured) sealed luminaire which provides excellent light distribution and integrates with various ceiling types.
IP 65



2 TERMINUS SURFACE

IK 11 Cylindrical sealed weather and vandal resistant downlighter.
IP 65



3 HERO

IK 10 Robust high bay luminaire. Various lumen packages available with glare-free illumination even from high heights.
IP 65




4 STROMMA G2

IK 14 Robust vandal and weather-resistant IP65 rated modular lighting system offering continuous linear illumination. With 3 circuit through wiring capability.
IP 65



5 FLAIR MICRO

IK 11 
IP 67

6 DL86

IK 11 
IP 65



Technical Support

RIS-7702-INS Iss1 Rail Industry Standard for Lighting at Stations refers to EN12464-1:2011 with ticket halls and concourse areas at 200 lux and ticket and luggage offices at 300 lux.

For more traditional high ceiling halls it is desirable, in our experience, to provide an element of uplight to the structure. Especially where traditional globe type products are replaced by LED based luminaires - which may provide more downward directional lighting.

Light on the upper structure helps to lighten and open up the visual impression of the space. In the past, this type of desirable feature highlighting may have been excluded due to energy efficiency concerns. However, modern, highly compact LED sources can be used to light these surfaces from close offset distances which can increase efficiency significantly.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk

The 4Ss Challenge

Sustainability

- For a 30 year+ design life, luminaires should be modular, replaceable and upgradeable.
- Fittings should be made efficiently from recyclable materials with a short supply chain.
- Reduced light-spill minimises impact on the environment and focuses light where it's needed.

Satisfaction

- Lighting helps create a welcoming feel and highlights passenger information sources for speedy recognition.
- Electronic displays must be rendered clearly, with visual comfort maximised.
- Upkeep can be simplified with remote monitoring, helping to minimise downtime.

Safety

- Good lighting allows quick recognition of signage and information displays.
- Well-lit areas help alleviate congestion and improves accessibility.
- Our lighting can enhance the use of CCTV and other security devices.

Stewardship

- Installing luminaires that are designed to last demonstrates a long-term commitment to the care of assets on the network.
- Established in 1963, we will continue to be a long-term partner to the rail industry.

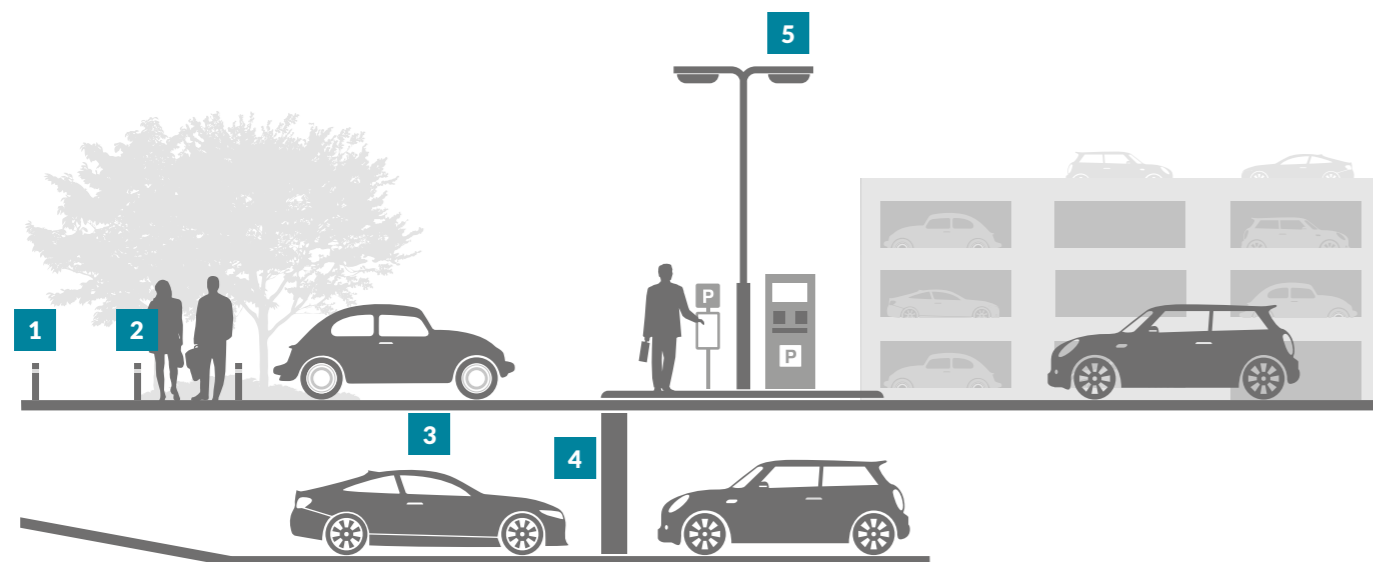
CAR PARKS (COVERED & OPEN)

Car park lighting should provide good levels of visibility. Illumination levels must promote confidence and feelings of safety and security. Ideally, lighting should be positioned over and between parked cars, in an attempt to eliminate potential hiding places.

Wide column spacing in outdoor car parks may be counter-productive in terms of light distribution. A higher quantity of lower output luminaires, more closely spaced, is preferred. Specific areas such as ticket machines, barriers, pedestrian walkways, and signage benefit from highlighting.

Car parks are often sited immediately adjacent to the tracks. A lighting solution must consider and mitigate potential glare to drivers. Similarly, car parks are often close to local residences, so light spill and general light pollution should be carefully considered and minimised.

Vandal resistance and high ingress protection are vital for luminaires specified in car park applications.



Technical Support

Reference should be made to BS EN 12464-1:2011 for indoor applications. BS EN 12464-2:2014 has guidance for outdoor car parking applications.

To light these areas a range of column, wall mounted luminaires and bollards may be appropriate with close attention paid to light spill.

Calculated uniformity should be 0.4 for covered / 0.25 open but care should be taken to avoid, as much as possible, areas of deep shadow between vehicles by careful selection and positioning of luminaires.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk

The 4Ss Challenge

Sustainability

- Stray wasted light should be minimised with light trespass and pollution strictly controlled.
- A circular product design enables easy upgrade, repair and end of life recycling to minimise waste.
- Photometrically efficient lighting should be manufactured from recyclable materials with a short supply chain.

Satisfaction

- Good lighting encourages use of the whole car park.
- Integrated lighting controls will ensure light is directed where and when required.
- Common light sources provide consistent lighting quality between open and covered areas.

Safety

- Clear and uniform lighting minimises shadowing, promoting user confidence.
- Pedestrian pathways must be clearly illuminated with clear and unambiguous lighting of signage.
- Smart cameras, microwave and PIR sensors can combine to safely optimize passenger flow.

Stewardship

- Ongoing operational costs, waste and the consumption of natural resources must be minimised.
- Ongoing maintenance is largely eliminated further to our LED lighting's long life 70,000+ hour operation.



1 ZELOS BOLLARD

IK 16 Specifically designed optics to provide up to 8 metre spacings on typical pathway applications (15 lux average and 0.25 uniformity).
IP 65



2 IWAY

IK 10 Stylish round and square bollard range designed to eliminate glare and uniformly illuminate the horizontal plane.
IP 66



3 PARKALUX

IK 14 Versatile vandal and weather resistant linear fitting.
IP 54



4 QUADEVO

IK 14 Contemporary, robust bulkhead fitting with uniform light distribution. Ideal for wall or ceiling mounting.
IP 65



5 STREET

IK 09 Stylish and innovatively designed multifunctional post top range.
IP 65



STATION FORECOURT

The station approach is the passenger's first experience, so lighting should be designed for amenity and safety. In addition, good illumination provides a welcoming ambiance with clear visual cues to the whereabouts of thoroughfares and facilities.

Signage must be properly illuminated and clearly visible. The perceived brightness of the approach should be carefully considered. Illuminance levels should be selected to balance with the ambient illuminance that exists in the vicinity.

"Welcoming" lighting that may be suitable for a rural station, which should in itself be carefully considered to control potential issues with light pollution, may need to be increased markedly for brightly lit urban environments.

The local weather conditions should be carefully considered for externally installed lighting. High ingress protection ratings are essential and corrosion resistant paint should be applied to luminaires where relevant.



Technical Support

Different standards may be referenced dependant on the precise nature of the station approach. This includes 1) BS EN 12464-1:2011 for covered areas 2) BS EN 12464-2:2014 for general outdoor areas including car park spaces and 3) BS 5489-1 Code of Practice for the Design of Road Lighting Part 1: Lighting of Roads and Public Amenity Areas.

Codes of practice will generally specify values of horizontal illuminance. It should be noted that light on horizontal planes is a poor predictor of the impression of brightness perceived by users of the area.

Careful and controlled lighting of the vertical façade can dramatically increase the perception that the space is brightly lit and welcoming, far beyond what horizontal illuminance alone can deliver. It should also be noted that when lighting "on" a vertical surface, a luminaire mounted on that surface can give dramatically different results to lighting "onto" a surface from a remote source. This should be carefully considered when creating a lighting design.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



The 4Ss Challenge

Sustainability

- Retrofit LED gear trays ensure 30 year+ design life, sustainable technology upgrades and low energy consumption.
- Light levels chosen to suit locality, limiting light pollution in to neighbourhood areas where possible.
- Running hours and output can be reduced by using lighting controls.

Satisfaction

- Good lighting can create a beacon effect, helping with wayfinding and can also reduce bottle necks.
- Effective lighting promotes feelings of safety and security allowing for varying needs including physical disability & age.
- Well-lit areas aid recognition of signage, ensuring effective orientation for passengers.

Safety

- Location of access routes and facilities should be emphasised.
- Luminaires with high ingress protection enable weather proof operation ensuring safe access and egress despite the elements.
- Well-lit areas help alleviate congestion and improve accessibility.

Stewardship

- Ability to upgrade lighting several times over 30 years helps combat the 'patch and mend' upkeep of rail infrastructure.
- A scorecard for each asset (used every 5 years) will dictate specification of long life products.

1 IWAY By iGuzzini

IK 10 Stylish round and square bollard range designed to eliminate glare and uniformly illuminate the horizontal plane.
IP 66



2 PARKALUX

IK 14 Versatile vandal and weather resistant linear fitting.
IP 54



3 ZELOS WALL MAX

IK 16 Elegant and versatile bulkhead for high wall mounted perimeter applications.
IP 65



4 TERMINUS WALL

IK 11 Robust, elegant fitting with an option for upward and downward light projection.
IP 65



5 STROMMA G2

IK 14
IP 65



6 TUSCAN WALL

IK 14
IP 65



SUBWAYS

Subways and underpasses can often be associated with “a fear of crime”. Whilst subways may not necessarily be relevant in all station settings, passengers can have feelings of uncertainty when using such enclosed spaces, which lighting can help alleviate.

It is particularly important that subways are well lit and feel appropriately bright, with a managed transition of illuminance from adjacent areas. Where restricted lines of sight exist, the lighting should be designed to help eliminate any dark spaces.

Subway lighting may well be on 24 hour operation and could also be subject to unwelcome attention in the form of vandalism. Good lighting inspires user confidence and helps discourage criminal behaviour.

It is therefore particularly important that lighting is especially robust and requires little in the way of maintenance.



Technical Support

Standard BS EN 12464-1:2011 specifies 100 lux for subways between platforms for large numbers of passengers. However, the accessible Code of Practice Version 04 – March 2015 suggests a level of 150 lux, with clear directional information.

With different advice being offered we recommend complying with BS 5489-1:2013

Whilst not specific to railways BS 5489-1:2013 specifies 350 lux during the day, with controls to allow 150 lux at night. These lighting levels take account of the different transition requirements at day or night whilst providing the light levels required to ensure passenger feelings of safety and security.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



The 4Ss Challenge

Sustainability

- Reduced light-spill minimises the impact on the environment and focuses light where it's needed.
- Photometrically efficient lighting should be manufactured from recyclable materials with a short supply chain.
- A circular product design enables easy upgrade, repair and end of life recycling to minimise waste.

Satisfaction

- Good lighting encourages use of the subway.
- Robust and reliable luminaires minimise downtime which affects customer journey times.
- Upkeep can be simplified with remote monitoring, helping to minimise downtime.

Safety

- Good lighting promotes safety in potential bottleneck areas.
- Light walls and ceiling promotes user confidence.
- Eliminating dark shadow areas enhances customer comfort.

Stewardship

- Ongoing maintenance is largely eliminated further to our LED lighting's long life 70,000+ hour operation.
- Ongoing operational costs, waste and the consumption of natural resources must be minimised.

1 TUSCAN 89 ANGLED

IK 16 The number one luminaire for subway and underpass lighting, designed to resist extreme physical attack.
IP 65



2 MISSION

IK 16 Versatile lighting for transport applications including a cable management system.
IP 65



3 TUSCAN RECESSED

IK 16 Recessed luminaire for subway and underpass lighting, designed to resist extreme physical attack.
IP 65



4 CURVE VR

IK 14 Reinforced fitting for surface ceiling mounting.
IP 54



5 BASTION

IK 16 Slim, strong bulkhead for both interior and exterior applications. Designed for use in subways and underpasses.
IP 65



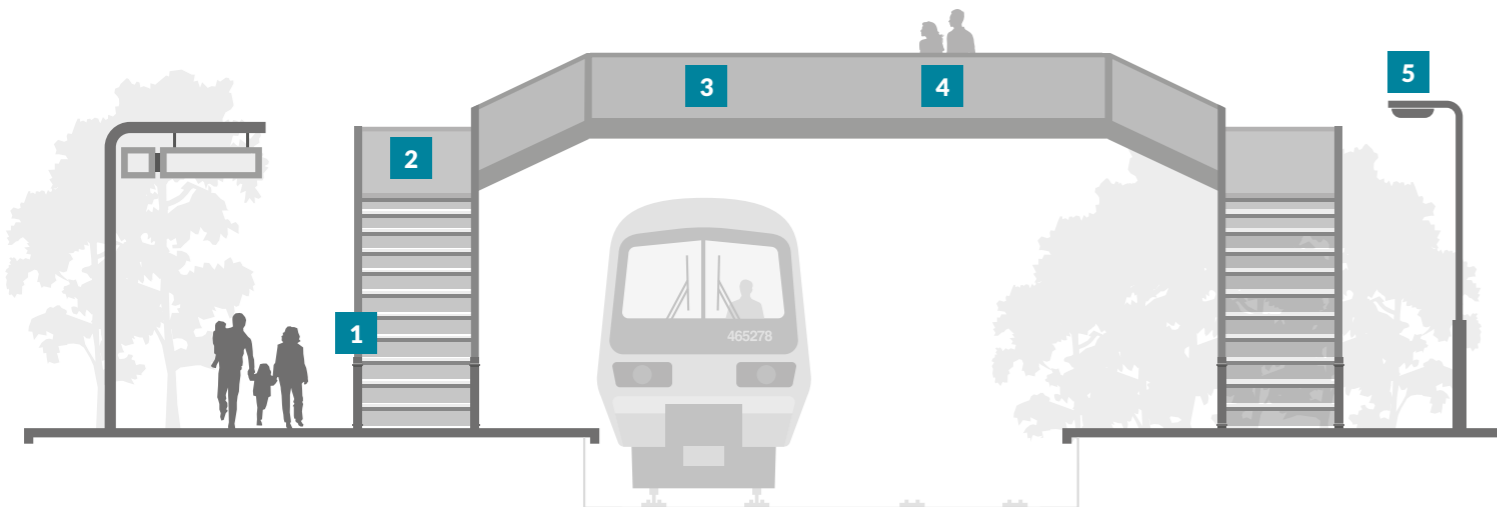
STAIRS & FOOT BRIDGES

Stairs and bridges may be open, enclosed and of varying construction. Good lighting can go some way towards maximising safety and capacity. Lighting should highlight the walking surface, stair treads and risers. It should also help create sufficient contrast between adjacent surfaces for maximum visibility, whether sparsely or fully occupied.

Lighting from each side can give sufficient directional quality of light. Equal highlighting of horizontal treads and vertical risers on the stairs is important whilst maintaining the natural lit contrast between the two. Luminaires mounted at low level can minimise glare. Care should also be taken to minimise glare to train drivers and dispatchers.

Lighting could also be provided by column mounted luminaires either around the bridge or mounted on it, or a combination of both. Care should be taken to achieve suitable levels of uniformity.

In many situations, lighting may be fully exposed to the elements, making high IP rated luminaires essential. Moreover, for longevity and to minimise costs, the external finishes of luminaires should be highly resistant to degradation.



Technical Support

There are some differences in recommended levels across standards. EN12464-2:2014 calls for 50 or 100 lux in outdoor applications dependant on passenger numbers. Whilst the Rail Industry Standard calls for 100 lux on footbridges and 150 lux on stairs.

In our experience 150 lux throughout is often selected for covered applications. BS 5489-1:2013 calls for 15-30 lux outdoors and 150 lux for enclosed areas.

In all cases due consideration should be given to contrast between adjacent areas and surfaces.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



The 4Ss Challenge

Sustainability

- Retrofit LED gear trays ensure 30 year+ design life, sustainable technology upgrades and low energy consumption.
- Photometrically efficient lighting should be manufactured from recyclable materials with a short supply chain.
- Integrated lighting controls will ensure light is directed where and when required.

Satisfaction

- Good lighting allows for varying needs such as visual impairment, physical disability and age to promote feelings of safety and security.
- Integrated lighting controls will ensure light is directed where and when required.
- In covered stairwells cable management systems can integrate various functions and minimise visual clutter.

Safety

- Lighting should highlight the walking surface, stair treads and risers to reduce the likely hood of slips and tripping.
- Uniform light distribution will provide visual clarity even during crowded times.
- High ingress protection is required for uncovered or partially covered areas.

Stewardship

- Ongoing operational costs, waste and the consumption of natural resources must be minimised.
- We have many installations on the rail network which demonstrate the benefits of a 'whole life cost' model.

1 FLAIRMICRO

IK 11
IP 67
Slim linear lighting solution for accent, architectural and general illumination.



2 ZELOS WALL

IK 16
IP 65
Elegant and versatile bulkhead for wall mounted perimeter applications.



3 TUSCAN 89 ANGLED

IK 16
IP 65
The marketing leading robust luminaire designed to resist extreme physical attack.



4 FLAIR ANGLED

IK 16
IP 65
Angled vandal and weather resistant fitting for interior or exterior use.



5 STREET By iGuzzini

IK 09
IP 65
Stylish and innovatively designed multifunctional post top range.



GENERAL CIRCULATION

Well-designed lighting in circulation spaces, and leading up to retail or refreshments units, must be warm and welcoming for effective wayfinding and to drive footfall. Lighting in general circulation spaces should have good uniformity.

Illumination in directly adjacent areas, such as refreshment kiosks with outside seating, should be taken into account to create comfortable areas to relax in and ensure the easy transition between spaces.

In take away kiosks, facing directly onto a circulation space, the counter and work area must be well illuminated. This ensures staff can work effectively and that the items on display for purchase appear inviting to the customer.

Technical Support

The style of lighting will depend on the type of architecture in general circulation areas. RIS-7702-INS Iss1 Rail Industry Standard for Lighting at Stations refers to EN12464-1:2011 with concourse / circulation areas requiring 200 lux.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



1 HERO By Fagerhult



2 TERMINUS



3 TERMINUS SURFACE



4 FLAIR



5 CLARION G2



6 DUOMO



OFFICE & BACK OF HOUSE

Office tasks can vary considerably, from screen and paper based work to meetings with colleagues. Office spaces require high quality lighting, particularly in terms of visual comfort and glare control. Light levels must be carefully selected.

The provision of dimming control and the uniformity of light should be maximised. Lighting that controls glare, but also adequately lights vertical surfaces, including the faces of staff, is especially important. For general back of house areas it is advisable to use low maintenance, functional lighting tailored to the task.

Staff rooms are important spaces to rest, refuel, escape and think. Quality lighting is key to achieving a comfortable and welcoming ambience. The combination of overall ambient light, and elements of directional and surface lighting, can promote comfort whilst differentiating the staff room from more utilitarian spaces.

Technical Support

It is important to balance light levels, and light quality, whilst ensuring a space is not over illuminated which wastes energy. Further energy savings can be made by employing lighting controls. Automated occupancy controls are especially valuable in areas that are not continuously occupied.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



1 EASY SPACE By iGuzzini



2 EASY CEILING By iGuzzini



3 LINILUX



4 IPLAN ACCESS By iGuzzini



5 COVE



6 TORINO G2



PUBLIC TOILETS

Lighting in public toilets should aid safe access and promote feelings of cleanliness, whilst also be easy to clean. Moisture is likely to be ever-present, so luminaires with high IP ratings are a must. Luminaires should also help highlight any potential slip hazards that may be present.

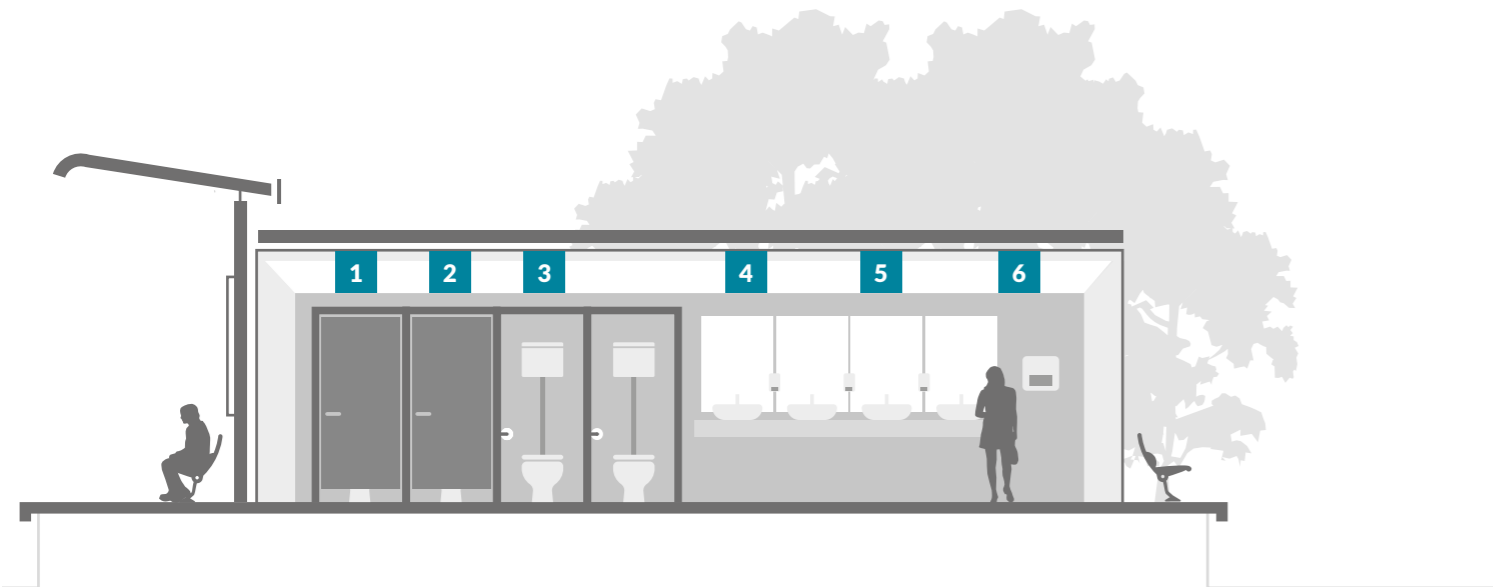
To prevent heavy shadowing each cubicle should have a proportion of direct light, if not an individual luminaire.

Luminaires that are particularly robust, easy to clean and with long service lives will help minimise any down time for maintenance.

Technical Support

BS EN 12464-1: 2011 calls for 100 lux in restrooms and 200 lux in cloakrooms, washrooms and bathrooms. However, there may be an argument to increase the general 100 lux value dependant on the precise nature of the facility.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



1 TERMINUS

IK 12
IP 65



2 CLARION G2

IK 08
IP 65



3 RDL G2

IK 12
IP 65



4 MONITOR

IK 16
IP 65



5 QUADEVO

IK 14
IP 65



6 BASILICA

IK 20
IP 66



WAITING ROOMS

Lighting should be welcoming and promote feelings of safety and security. Bright interiors are generally better, so light coloured surfaces and higher vertical illuminances, with some light onto the ceiling are preferred. Warm or intermediate colour temperatures will help promote a welcoming feel.

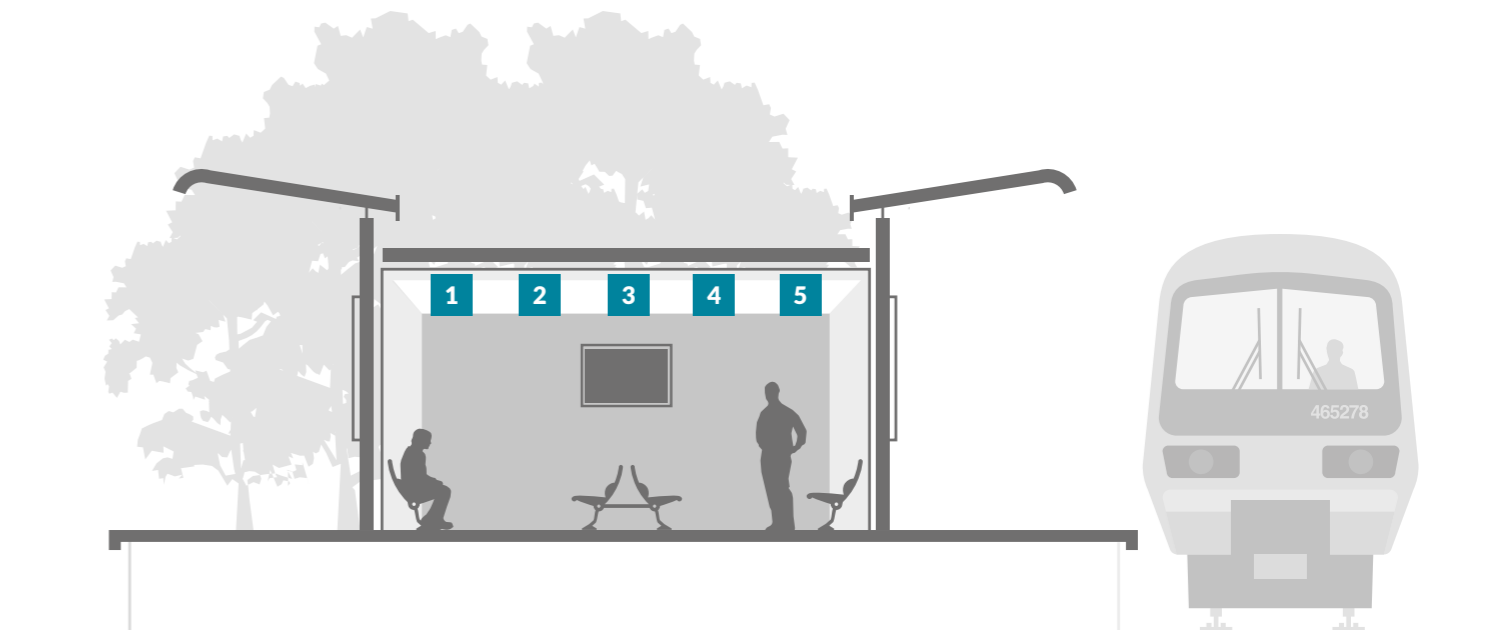
Lighting should be sufficient to allow reading of printed matter, whether seated or standing.

Care should be taken to avoid obscuring any electronic information displays that may be present either by obstruction or having a luminaire positioned too close to the display.

Technical Support

The general recommendation in EN 12464-1:2014 is for 200 lux to provide a light, welcoming feel for use at all times of the day and night. Linear fittings have better light spread at higher angles so they are preferred for this application as they minimise wall scalloping - providing more even vertical illuminance.

For further lighting advice speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



1 DUOMO

IK 15
IP 65



2 QUADRATUM G2

IK 14
IP 65



3 PARKALUX

IK 14
IP 54



4 TERMINUS

IK 12
IP 65



5 RDL G2

IK 12
IP 65

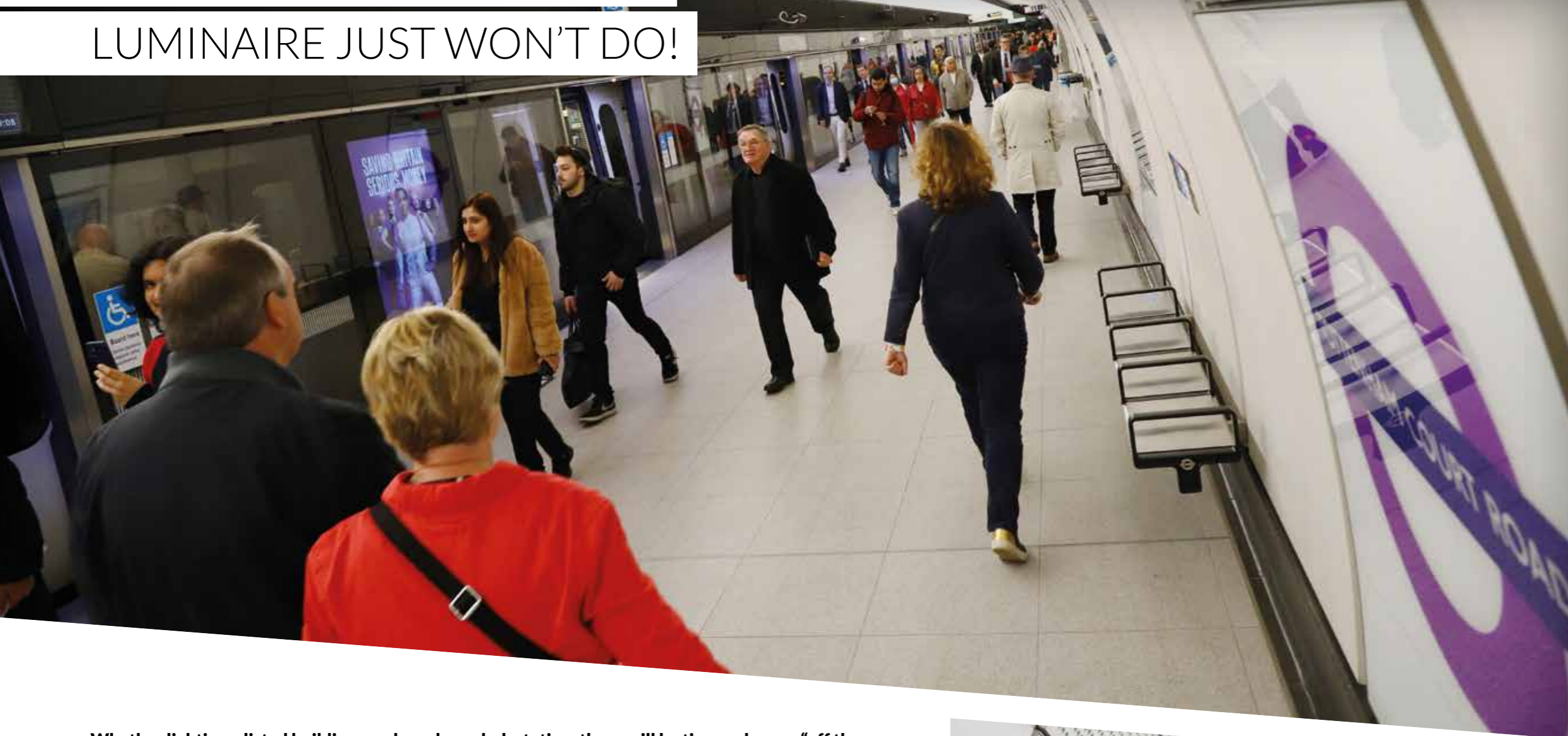


6 DL86

IK 11
IP 65



WHEN AN “OFF THE SHELF” LUMINAIRE JUST WON'T DO!



Whether lighting a listed building or a brand new hub station, there will be times when an “off the shelf” luminaire will not provide the desired solution.

We have developed the capability, over 60 years, to modify a standard fitting or create a completely new design to meet the needs of any rail lighting project.

Our design credo applies to all our fittings, from new ranges through to bespoke variants. All our luminaires aspire to be robust, best in class, easy to install, easy to manufacture, sustainable and compliant.

Our fittings start as concept designs utilising 3D CAD software. They are converted into working prototypes which are tested for performance in our in-house laboratory. We are in control of the whole bespoke design process from concept through to completion.

Illuminating The Elizabeth Line

Our bespoke team developed a light-box to illuminate the platforms of several Elizabeth Line stations. These light boxes have a design life of over 30 years and produce an output of over 6,000 lumens, whilst consuming the energy of a 60 watt household light!

A key consideration was to make maintenance quick and easy. We achieved this by designing a hinged LED array system to provide access from below. The energy saving LED light engine is mounted on a removable gear tray to enable easy technology upgrades, further extending life and performance.

Our light boxes are S1085 compliant and were rigorously blast and fire tested. They were assessed for electromagnetic field interference and tested for impact resistance, ingress and electrical safety.

We collaboratively developed the brackets for the light boxes and a method for mounting them. This was tested at our factory in Sutton to ensure ease of installation prior to being installed. A new production line was created, and a reusable metal packaging system was designed for securely delivering the light boxes and minimising waste.



TAILOR-MADE PRODUCTS



We can provide fittings with completely blank bodies with no conduit or fixing holes. This allows the installer to create holes in the fitting that are specifically required for on-site installation.

This specification assists in maintaining the IP rating of the luminaire and reducing the possibility of unauthorised tampering or vandalism following installation.

	FLAIR IK 16 IP 65		TUSCAN 89 ANGLED IK 16 IP 65
	PARKALUX ANGLED IK 14 IP 54		TUSCAN 88 IK 16 IP 65
	PARKALUX IK 14 IP 54		TUSCAN 89 IK 16 IP 65
	TUSCAN 88 ANGLED IK 16 IP 65		TUSCAN II IK 16 IP 65

To order products with this blank body specification simply add suffix /NET to the product part number listed on our website.

CONVERT TO LED WITH A RETROFIT GEAR TRAY

High energy consumption, and the frequent maintenance of your installed lighting, is about to become history. From September 2023 fluorescent lamps will no longer be sold with some options being removed from sale as early as 25 February 2023.

Benefits Of LED Gear Trays

- Sustainable way to convert to LED
- Reduces your energy use
- Lowers maintenance costs
- Minimises disruption
- Improves safety and output
- Reduces your ownership costs
- Future proofs your lighting.

Support And Advice

One of our technical sales team will visit your site to conduct a thorough, no obligation survey of your current lighting installation.

We will send you a site survey pack which will include, as required, a lighting scheme, recommended luminaires and/or LED gear tray replacements and a costed design proposal.

You Can Rely On Designplan

We never "turn our back" on a Designplan luminaire. We have a range of gear trays "ready to go". We can also quickly design other replacement gear trays, tested in-house, to meet your needs.

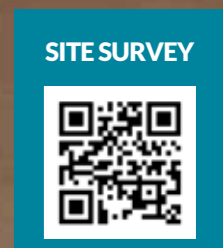
Re-Certification And Warranty

You can rely on Designplan to recertify, as a new product, the CE/UKCA mark of your modified luminaire. We will also renew the 5 year warranty of your complete luminaire following a site survey*.

*Following a site survey we may reuse or need to replace some/all components depending on current condition, e.g. the diffuser.



WE WILL VISIT YOUR PREMISES TO RECOMMEND POTENTIAL ENERGY SAVINGS



SUSTAINABLE LIGHTING



Until recently, few people had heard the term circular economy. We have now embraced the need to move away from the traditional “take-make-dispose” linear production cycle.

Sustainability Built In

To be sustainable we require products designed to emphasise resource reduction, extended use, reuse and recycling. Ensuring various functional requirements are met, such as performance standards and safety, is also vital.

What Makes A Sustainable Luminaire

1. Long Life Body

A body constructed using durable and recyclable materials such as steel and aluminium, protected using proprietary methods, will ensure a high IK rating for impact resistance and a 30 year+ design life.

2. Sustainable Technology

Upgradeable components means less waste when replacing whole fittings. An LED retrofit gear tray reduces costly on-site work and provides access to new technologies as they are developed - without having to replace entire installations.

3. High Ingress Protection

Dust tight and weather resistant lighting is essential in many rail applications. Long life, quality, precision cut materials and rigorous testing ensure a high ingress protection (IP) rating.

4. Recyclable Components

We utilise recyclable components throughout our luminaires. For example our opal, prismatic, frosted and glass diffusers which are also designed for use with application specific optics.

5. Low Maintenance

It is very important to specify low-maintenance, long life, energy efficient products that are tamper-proof to ensure the product's security once installed.

How We Manufacture Sustainably

We are upgrading older machinery to state of the art high efficiency, low energy consumption machines. Since updating our punch machines, we have saved an average of 43,200 kWh a year. This is the equivalent to powering 596 of our Tuscan luminaires over a working year.

Our recycling and harvesting water initiatives have saved 72,000 litres of water a week. We also divert 99.8% of our waste from landfill.

Between 2017 and 2021 we have reduced our usage of plastic packaging by 63%. Our smart cardboard box design, which we make ourselves as required, utilises crush zones which have removed the need for plastic bumpers. We are continuing our efforts to eliminate all non-biodegradable plastic packaging

CARBON REDUCTION CASE STUDY

We upgraded the platform lighting at Birmingham New Street station to energy saving LED, utilising our precision designed retrofit gear trays. Replacing the light engine of the existing luminaire, and not the full body of the fitting, also saved significant time on-site.

Energy Savings

The new LED retrofit option has reduced power consumption to 30W, enabling a 40W/57% saving in energy per luminaire.

As the luminaires are operational for 24 hours a day throughout the year, annual operational energy consumption is down from 613 kWh to 264 kWh per luminaire.

Emissions Reduction*

The carbon emissions for each modified luminaire are 56 kg CO₂e per annum. In total, the operational carbon emissions for all 891 platform luminaires is now 50 tonnes CO₂e every year - a significant reduction from the 117 tonnes generated by the old T5 and T8 fluorescent versions.

Embodied Carbon Savings

The total embodied carbon saved is 163 tonnes of CO₂e. This carbon saving is the equivalent to 165 flight journeys between London and New York per year!

RAIL BUSINESS AWARDS 2023: Nominated For Sustainability & Environmental Excellence



BIRMINGHAM NEW STREET



*Using the 'Carbon factor for Electricity' in the UK (revised in January 2022).

EMERGENCY

LIGHTING



UK Building regulations and associated Approved Documents stipulate that all escape routes, and many other areas, should be provided with emergency lighting in the event of failure of the normal lighting supply. Emergency lighting allows occupants to use escape routes by providing way finding and illumination, which helps protect users and gives them the confidence to escape safely.

Standards

There are many guides, directives and standards relating to emergency lighting including:

- BS EN60598-2-22 for emergency luminaires
- The Health and Safety (Safety Signs and Signals) Regulations
- BS5266 Part 1:2016, Code of Practice for the Emergency Lighting of Premises.

We can provide professional guidance on the requirements for your application.

System Types

Emergency operation can be via either self-contained integral emergency equipment or central battery systems.

We have been supplying emergency versions of our luminaires for many years.

Our emergency luminaires follow the same rigorous design, development and testing procedures as all our luminaires, and in all cases the entire luminaire is factory certified by us.

Testing

We also have full ranges of Auto or Self Test emergency equipment to carry out mandatory testing and monitoring in real time, ensuring that the system is always at peak operational readiness.

These systems, such as DesignPath, clearly signal faults either integral to the luminaire or remotely, allow the responsible party to comply with their legal obligations whilst cutting costs to an absolute minimum.



CABLE MANAGEMENT

SYSTEMS

Cable management systems (CMS) help provide a clean architectural aesthetic, consolidate services and streamlines a lighting installation.

CMS lighting, which can also be referred to as LED trunking, are continuous row lighting assemblies. They utilise trunking compartments to feed power to individual luminaires, emergency battery packs and other services integrated into the system.

CMS/LED trunking offers an easy way to incorporate lighting control. The flexible design can also include speakers, cameras, sensors, PA, CCTV and other services. They also play a major role in the Internet of Things.

Flexible trunking systems, like our Mission CMS (pictured), are ideal for platform applications where vandalism or particulate ingress is a concern.

Each CMS application is unique. One of our technical sales team will visit your site to conduct a thorough, no obligation survey of your current lighting installation.

We will send you a site survey pack which will include, as required, a lighting scheme, recommended CMS system and a costed design proposal.

For more information, speak to our technical sales team on 020 8254 2022 or e-mail technicalsales@designplan.co.uk



LIGHTING CONTROLS

TECHNOLOGY



By utilising the latest technology in lighting controls, we can help create dynamic spaces in stations and terminals by ensuring that the right amount of light is present for all applications including retail, concourse, platforms and urban areas. This is achieved by following the RSSB guidelines with reference to CIBSE/SLL and ILP guidance for lighting in public areas.

Luminaires

Our luminaires can be supplied with a number of driver options including standard switched, DALI-2 and DMX.

When connected to a lighting control system, the drivers can be used to bring colour effects into urban spaces and also create circadian lighting effects by utilising our tunable white fittings to change from a warm to a cool white colour temperature.

Lighting Controls

We can offer both wired DALI-2 and wireless cloud based solutions with the added benefit of remote monitoring. These can reduce your energy costs with the use of presence detectors, photocells and timed control.

Lighting controls systems may need to be integrated to other services. This can be achieved by making use of bacNET and API communication.

DALI-2 Lighting Systems

The DALI-2 standard (IEC 62386) allows for interoperability of input and output devices and is an open protocol.

A DALI-2 lighting control system will provide individual data from drivers and inverters with full monitoring and fault reporting. The luminaires can be maintained more effectively with regular reports sent to maintenance teams.

Emergency Lighting

Compliance testing can be achieved by the use of our DesignPath DALI emergency lighting test system which is available in both wireless and wired versions.

DesignPath will automate the testing process by initiating the required function and duration tests. Compliance reports are automatically stored locally and also sent by email to key personnel.

Control Strategy

A control strategy is based upon the specification requirements specific to areas of a rail project, defined by the needs of passengers, train operators and lighting consultants. We can provide solutions using the following control methods:

- Presence activation
- Absence detection
- Timed control
- Daylight linking
- Manual control.

We are able to provide energy efficient solutions for any application by using PIR and microwave sensor technologies for presence detection to work in conjunction with photocells.

We can reduce lighting levels in order to provide the right amount of light when required and to dim or switch off luminaires when sufficient daylight is available.

LIGHTING CONTROLS

APPLICATIONS

The implementation of lighting control strategies can help to ensure the well-being and safety of users, reduce energy requirements and meet compliance obligations.

Regulatory Testing

The use of lighting control systems to undertake compliance testing provides the assurance that all emergency tests on a site are undertaken and compliance reports are readily accessible. It will also reduce the number of site visits required, saving you time and money.

Planned maintenance tasks can also be enhanced by the use of remote monitoring features.

Reduce Energy

Designplan can provide control solutions from a single luminaire-based sensor control with daylight and presence detection through to a large scale remote cloud-based monitoring system with full maintenance and reporting features.

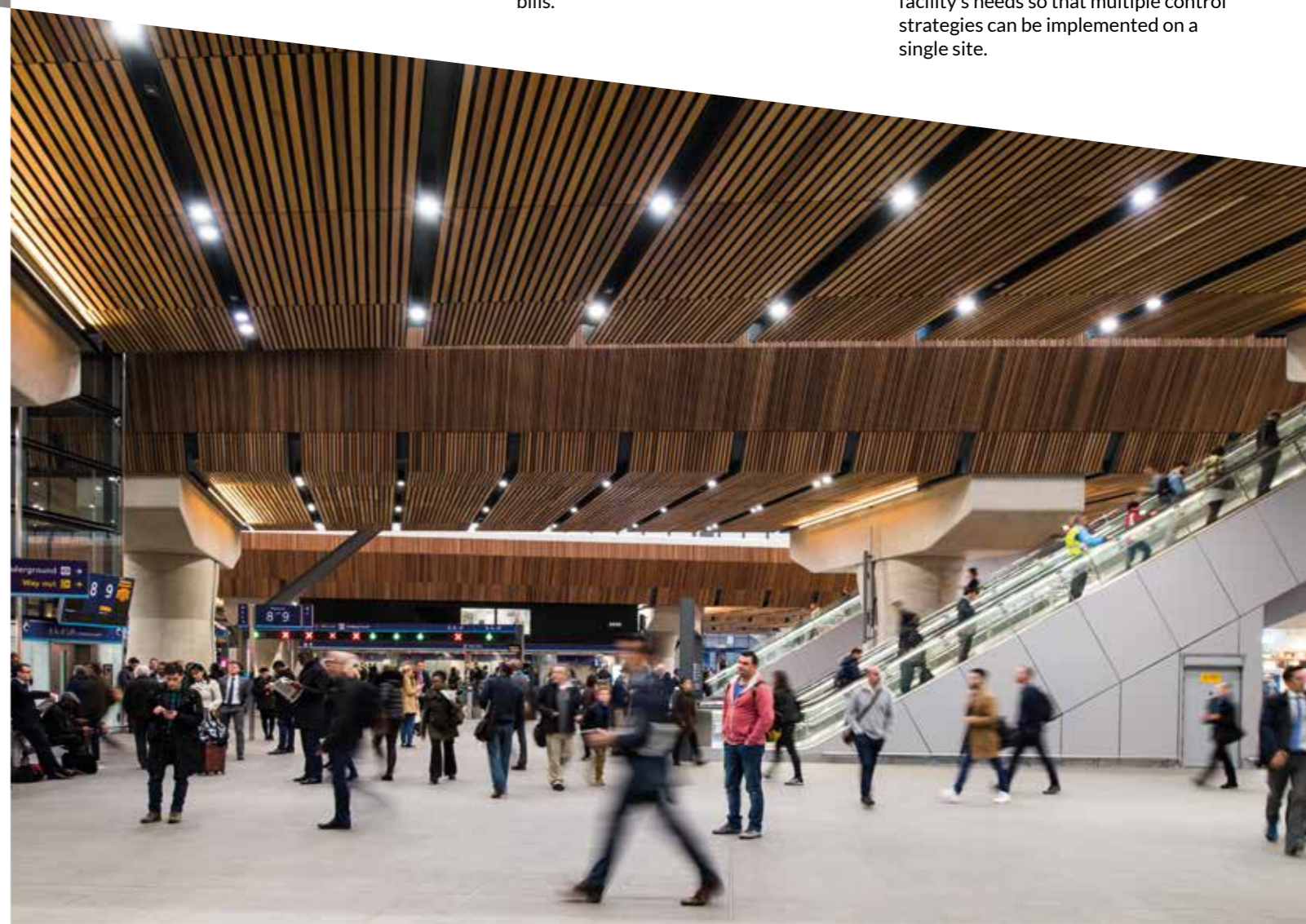
Our lighting control systems, whether wired or wireless, can provide details of energy usage with real time data of a building filtered down to individual zones. These systems can be fine-tuned so that energy can be further reduced for specific areas reducing your energy bills.

Operational Requirements

A control strategy can be put in place for specific areas to meet operational requirements. For rail applications this would include platforms, the concourse, walkways and car parks.

External circuits may be required to switch on/off at specific times at a specified light output. However, lighting in stairwells may be required to operate using presence detectors, reducing to a low level when there is no activity.

It is important that a lighting control system has the flexibility to meet a rail facility's needs so that multiple control strategies can be implemented on a single site.



PRODUCT TESTING

AND MANUFACTURING



We've been making robust luminaires in the London Borough of Sutton since 1963. Product testing is a vital element in the design of our luminaires. Our fittings start as concept designs, utilising 3D CAD software, and are then fully tested in our in-house laboratory.



Manufacturing Cycle

Our production processes utilise advanced robotic and automated machines together with highly skilled operators.

After forming, luminaire bodies flow into our paint plant to apply the finishes which will protect them from the harsh environments they will operate in. The remaining stages of our manufacturing cycle are assembly, testing and despatch.

Our manufacturing workflow uses LEAN methodology to reduce waste in time and materials and help us continually improve our products.



Low Carbon Footprint

We are accredited to the ISO 9001 Quality Management and ISO 14001 Environmental Management systems.

Our purpose built high quality manufacturing facility (designed by ourselves) has helped us reduce our carbon footprint.

Rain water harvesting, solar panels, material recycling and plastic reduction have resulted in our facility being awarded the BREEAM 'Excellent' accreditation.

PROJECT MANAGEMENT

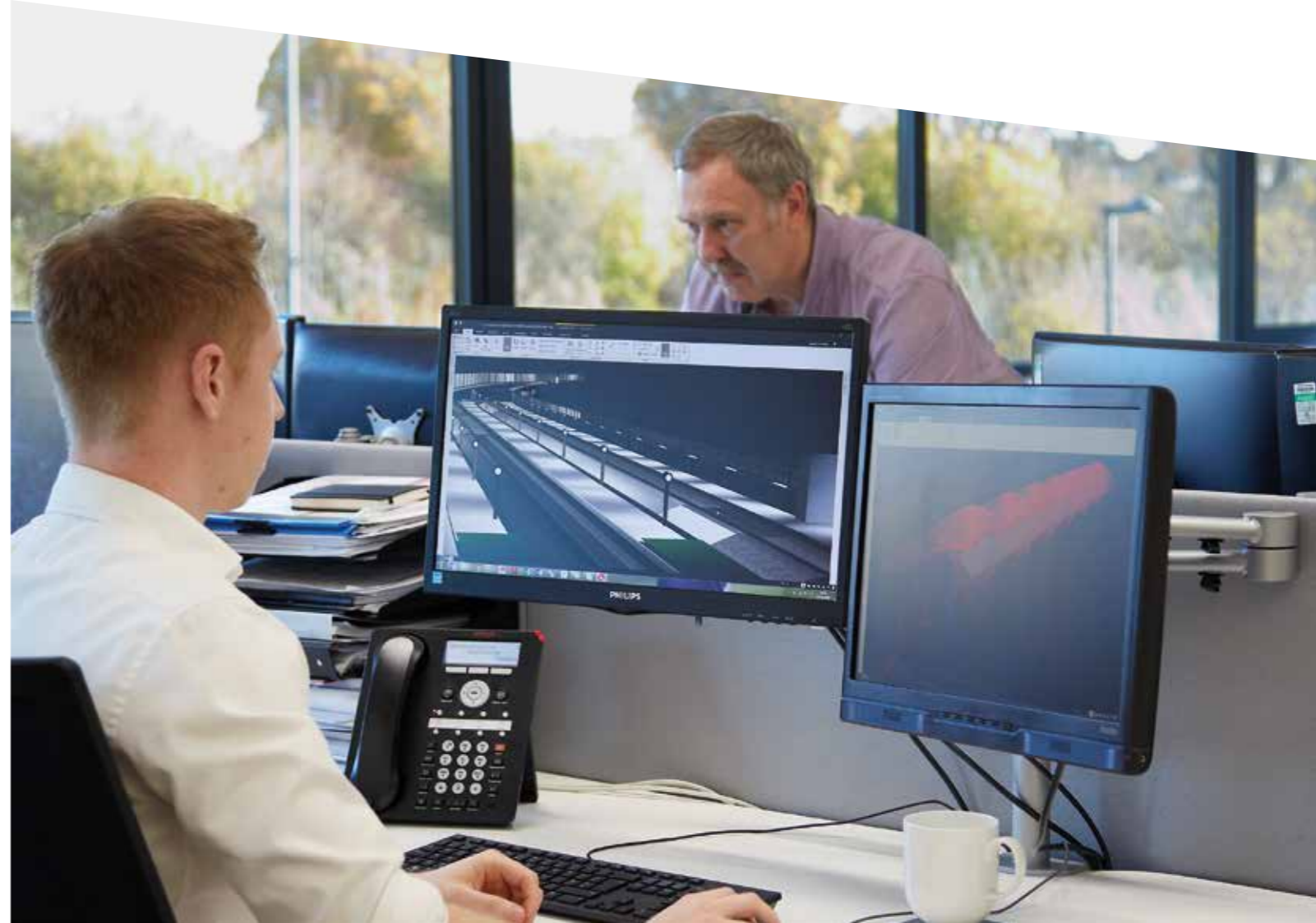
AND LIGHTING DESIGN

Our dedicated in-house project management team will work closely with your project team. Together they will help ensure the schedule is met and the on-site logistics are managed in the most efficient way.

Services Include:

- Design and product development assistance.
- Delivery coordination - on time and in full.
- Site visits for update meetings.
- On site installation support.
- Full after sales service.
- Energy management site surveys.
- Best practice recommendations.
- Bespoke solutions.
- Providing lighting designs from industry standard platforms such as Relux or Dialux.
- Supplying technical and photometric performance details.
- Providing BIM models.
- General technical advice and support for Designplan products.

To speak to our team or arrange a site survey call 020 8254 2022 or e-mail technicalsales@designplan.co.uk





DESIGNED TO LAST

Our transport luminaires are robustly constructed, reliable, simple to install and easy to maintain.

