



Healthcare Lighting



The healthcare sector delivers a unique and complex set of challenges for the lighting designer not normally seen within other applications. This is due to, not only the wide variety of tasks undertaken in the environment, but the different users, duration of use and consideration for the necessary integration of lighting into the overall setting. This, along with on-going technological developments presents exciting opportunities for the lighting designer. Enabling them to provide the best possible lit environment considering the user, infection control, compliance and sustainability of any solution.

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Throughout this lighting guide we look at the different areas that are key to any healthcare development, assessing the varying needs of these spaces and the four key pillars that underpin our healthcare lighting proposition.



Patient and Staff Experience

The requirements of the user are paramount within any lighting proposal, but none more so than in a healthcare setting. Where the challenge lies in the volume and variety of users and their individual experiences and requirements. It's therefore important that within each application the user remains a design priority.

This user-centric approach enables the designer to be more creative and bolder in the solutions proposed. An effective lighting design is more than simply providing the correct lux level and uniformity across a room. Creating contrast, visual comfort and interest into a space can be achieved while still ensuring an energy efficient and compliant solution.

In order to deliver effective product solutions, Whitecroft Lighting monitor and support all on-going research, particularly into biodynamic / circadian lighting. This research examines the impact of colour temperature and intensity on people and the opportunity to 'mimic' the known influence of the natural daylight cycle on circadian rhythms.

As well as delivering visually stimulating lighting solutions, it is important to understand and decide how people should interact with them. Where appropriate, simple, intuitive lighting control systems will allow the user to take ownership of the lighting and create the environment they are most comfortable in. The effective use of wireless controls can be one way of delivering this functionality.



Infection control

Infection control and patient wellbeing is one of the most important elements in delivering the best possible environment.

However, simply providing IP65 luminaires throughout doesn't mean the best solution can be delivered. The designer must consider how the space will be used and the impact that the lighting has on delivering the correct level of infection control.

In addition to providing the correct IP rating, the product construction, ease of cleaning and protection against the chemicals that can be used in some applications must all be considered in picking the correct solution for any application.



Lighting Standards and Compliance

Below is a brief summary of the key documents that should be considered as a minimum within any lighting design:

SLL Lighting Guide 2

BS EN12464-1:2011

BS EN12464-2:2007

BS5266-1:2016

Healthcare Technical Memorandums

Building Regulations
(in particular Part B & Part L)

BREEAM & other energy
assessment programmes

Project specific room data sheets

These documents lay out the key lighting design criteria such as illuminance, glare and colour rendering values. However, to deliver what the SLL regard as a 'Good' lighting design, these guidelines should only be considered as the starting point or 'minimum' requirement. To truly deliver the best possible scheme, challenging and going beyond these requirements is a must.

The aim of modern and innovative lighting design and product solutions (lighting and controls) is to offer inspiring and welcoming environments that can deliver a positive impact for both patients and employees, whilst balancing infection control and energy considerations. Elements such as a biodynamic approach to lighting design, is one example of exceeding standards in order to provide the best possible solution.



Energy and Sustainability

As energy costs increase and, in turn, put increased pressure on budgets, the efficiency of LED is undeniable.

However, a sustainable solution must look at more than simply capital cost. It is important to keep in mind that whilst two LED luminaires may look the same from the outside, there may be significant differences in product quality.

A lower cost, lower quality LED product, for example, may not provide the correct lighting solution for the user (e.g. excessive glare or low illumination levels) or result in product fails (e.g. colour shift, driver failure). The rectification costs can therefore quickly outweigh any perceived savings initially offered.

Ward Areas

Lighting is one of the most challenging areas to design in the ward environment. The balance between patient rest and recuperation, hospital staff wellbeing and patient care performance is of paramount importance. Lighting must accommodate a diverse range of clinical duties, whilst still providing the greatest possible patient comfort. Including the provision of task specific illuminance values, from 5 lux for nightlight through to 1000 lux for patient examination and colour rendering at $\geq Ra90$. The integration of tunable white technology aligned with our innate connection to nature delivers the possibility of a true people-centred lighting design, improving staff wellbeing and accelerating patient healing.

Good glare control plays an important role in the creation of a comfortable and visually satisfying environment for the patient, particularly those who are confined to a bed in a reclining position. Well-designed lighting installations will minimise both discomfort and disability glare.

The prevention of infection transmission remains a priority in the ward environment. So luminaires designed with seamless and minimal horizontal surfaces which are wipe-clean will help reduce exposure to, and limit the spread of, infection.



Lighting Criteria

CIBSE LG2 and BS EN12464-1: 2011 set the standards for lighting levels in ward areas. The tables below give the specific lux levels for the different tasks.

CIBSE LG2

General Circulation Space:
100 lux at floor level

Patient Activity / Reading:
300 lux at bedhead

General Nursing Care:
300 lux whole bed

Nightlight:
5 lux at 0.85m /
0.5 lux max at pillow

Examination (Ra90):
1000 lux whole bed

Watchlight:
15-20 lux at bedhead

BS EN12464-1: 2011

General Circulation Space:
100 lux

Patient Activity / Reading:
300 lux

General Nursing Care:
300 lux

Nightlight:
5 lux

Examination (Ra90):
1000 lux

Watchlight:
5 lux

Energy Consumption

Combined Bedhead / Downlighter

T5 1x39W
/ 1x21W / 2x26W
174W



LED 83.5W



Daylight Control



Innovative lighting solutions for wall or ceiling mounting

For new build or refurbishment projects, encompassing all lighting states in a single unit removes the need for additional examination luminaires. For instance, the Florence+ bedhead luminaire delivers a combination of upward and downward light in an elegant low profile design, while the pre-assembled one-piece module Careline can be fitted into a standard suspended or plasterboard ceiling for a fully integrated ceiling solution.

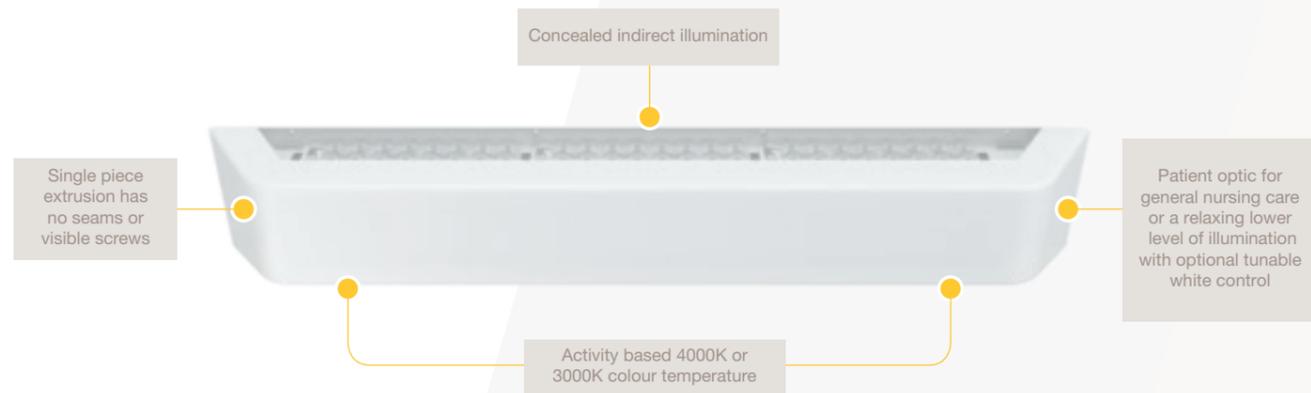
User Experience

Both these ward solutions offer the patient complete control over their environment, promoting wellbeing and encouraging healing. Simple bedside controls allow the patient to choose between pre-programmed scenes for daytime, night time and reading. Which can be easily overridden by nursing staff to provide the correct levels of illumination for general nursing care, examination and night time observation.

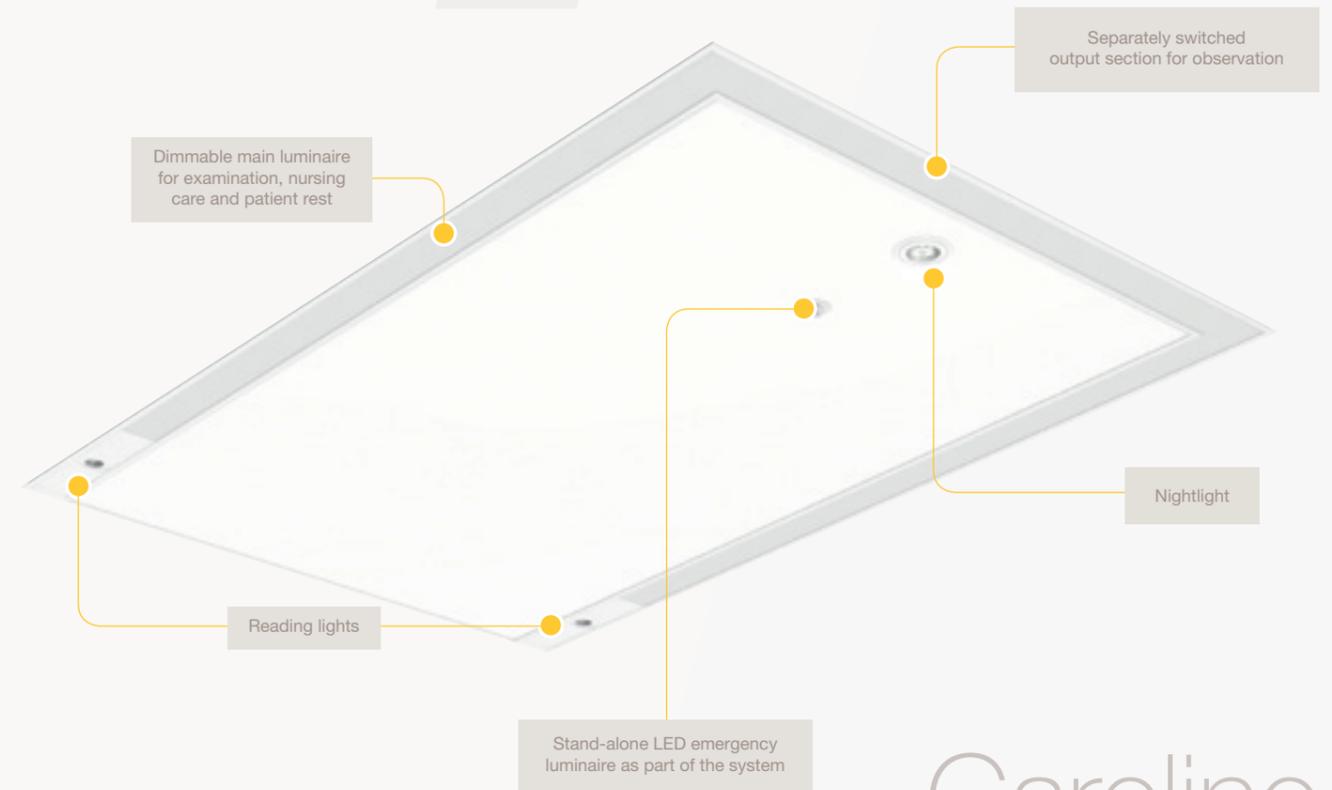
The option of tunable white gives the patient even more control with seamless graduation between cool and warm light. This enables the lighting to match natural body rhythms, further promoting both comfort and healing.

Infection Control

Integrated solutions optimise the prevention and control of infections. The solid wipe clean exteriors have minimal upward facing surfaces that can harbour dust and bacteria, so as to limit the risk of infection transmission.



Florence+



Careline



Patient at rest



General nursing care



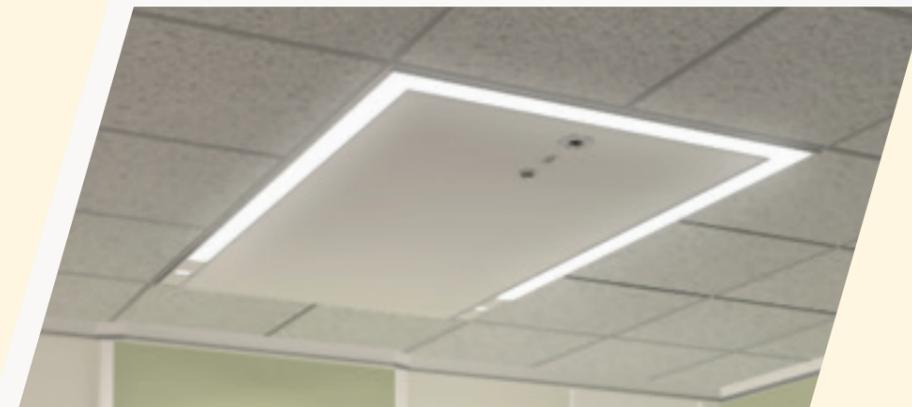
Patient examination



Patient reading



Patient observation



Theatre Suites and Recovery

With some of the most exacting and stringent requirements within the healthcare environment, operating theatre suites can be occupied for long periods of time. Creating an environment that enables nursing and surgical staff to operate safely, effectively and comfortably is therefore key within the lighting installation. As well as high illumination levels, excellent glare control to support effective working and staff comfort, $\geq Ra90$ colour rendering and flexibility of illumination through simple effective lighting controls, including crash conditions for recovery areas - will all help to deliver the best possible working environment.

High levels of infection control in these spaces is more than simply down to IP rating. Whilst luminaire selection is typically minimum of IP65/54, infection control is also delivered through ensuring minimum horizontal surfaces, paint finish, protection against cleaning chemicals and correct optical material.

For example, LG2 recommends the use of luminaires with glass diffusers to prevent bacterial penetration through the optic material.

Operating theatres have long operational hours and downtime can be expensive.

Selecting luminaires with a long operational life through high quality LED and driver selection can ensure disruption is kept to a minimum. When maintenance is required, selecting luminaires with through-access capability will simplify access to the ceiling void without the necessity for additional access hatches.

Luminaires are commonly placed in a 'racing track' formation to ensure that a suitable illumination level is achieved, and the lighting solution doesn't impact on the position of other services and equipment.

Lighting Criteria

There are specific lighting levels stated for specific treatment areas, but in general the tables to the right indicate the requirements for most specialist examination areas. Colour rendering is specified at no lower than Ra80 for any treatment room.

CIBSE LG2

Operating Theatre:
1000 Lux at working plane

Recovery Areas:
500 Lux on trolley /
300 Lux circulation

Scrub Areas:
500 Lux at working plane

Anaesthesia Rooms:
500 Lux at working plane

Preparation:
500 Lux at working plane

Utility Rooms:
100 - 150 Lux at floor

BS EN12464-1 2011

Operating Theatre:
1000 Lux at working plane

Recovery Areas:
500 Lux on trolley

Scrub Areas:
-

Anaesthesia Rooms:
-

Preparation:
-

Utility Rooms:
300 Lux

Energy Consumption

Glass 1200mm x 600mm ($\geq Ra90$)



DTFN Elite LED Theatre



HDU LED



DTFU

Back access and through access options facilitate maintenance of services located in the ceiling void

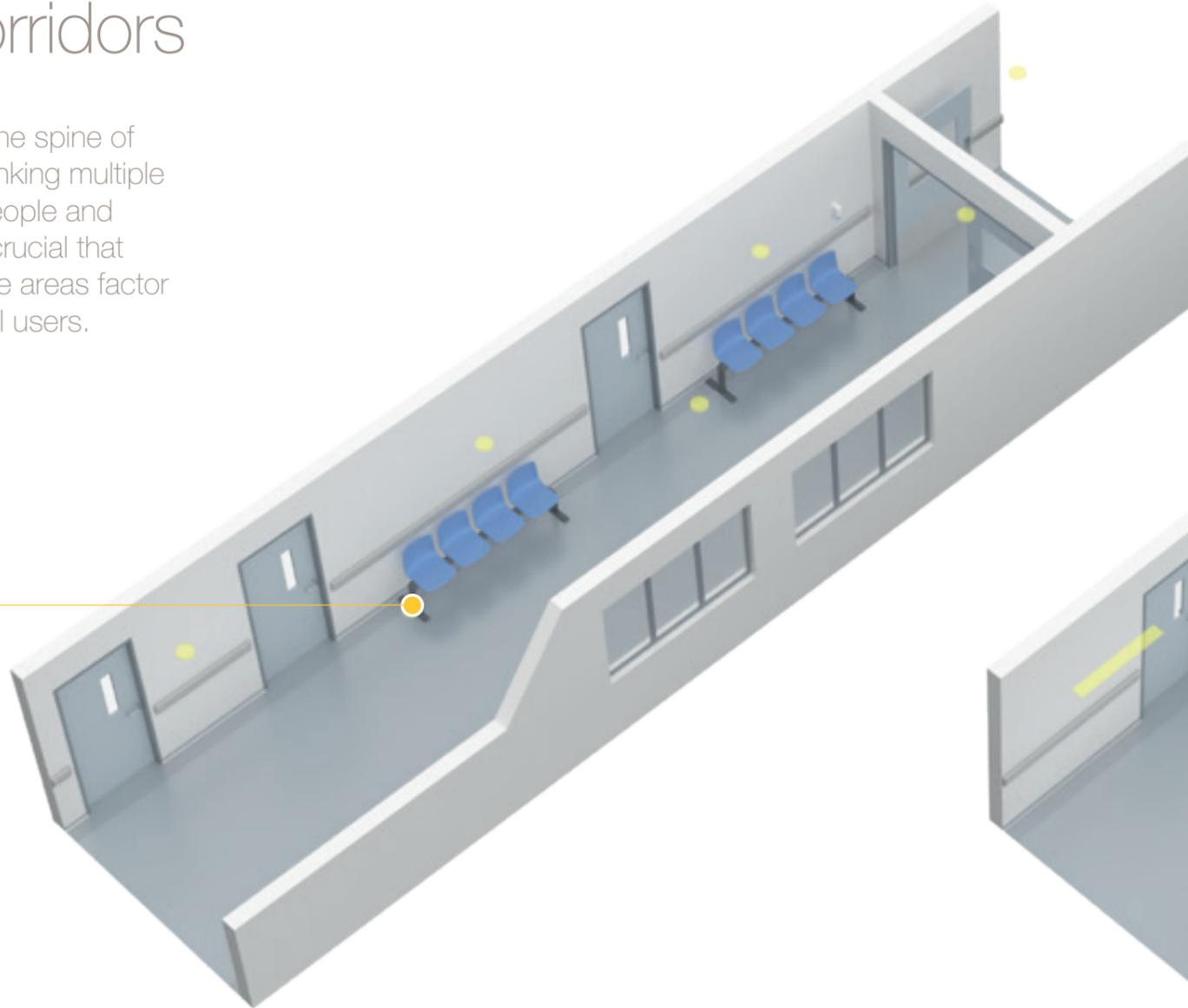


Clinical Corridors

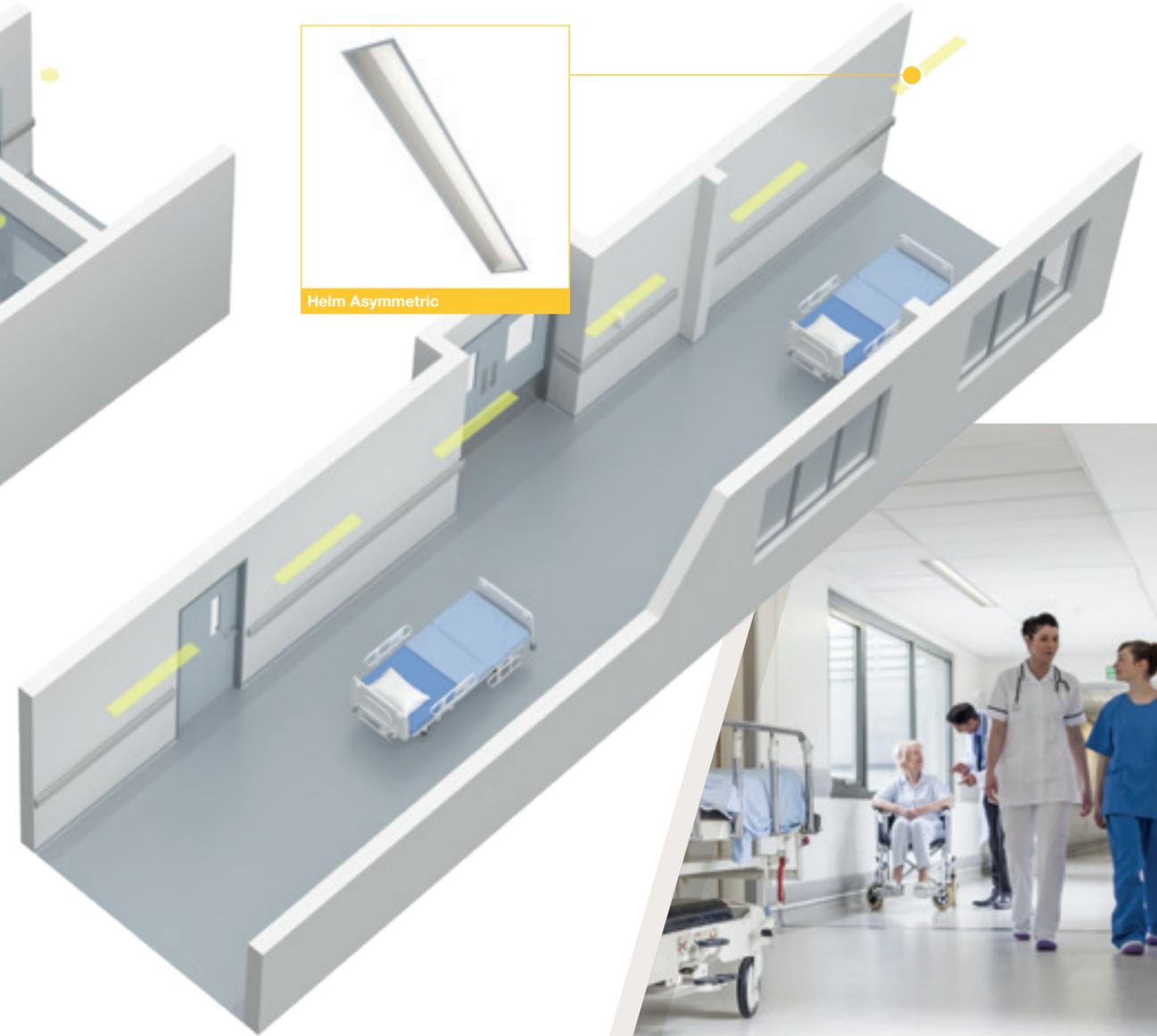
Circulation spaces are the spine of any healthcare project linking multiple departments for both people and services. It is therefore crucial that lighting solutions in these areas factor in the requirements of all users.



Mirage LED



Helm Asymmetric



Lighting Criteria

Lighting levels in circulation areas can vary depending on the time of day. As corridors can be operated at different lighting levels, dimming luminaires should be employed to maintain uniformity rather than switching alternate luminaires.

CIBSE LG2

Circulation - Daytime:
200 lux at floor

Circulation - Night-time
50 lux at floor

Corridors - Ward Areas
Night-time:
5 lux at floor

BS EN12464-1: 2011

Multi-Purpose Corridors:
200 lux

Corridors - Cleaning:
100 lux

Circulation - Daytime:
100 lux at floor

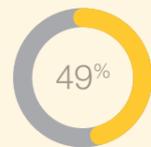
Circulation - Night-time
50 lux at floor

Energy Consumption

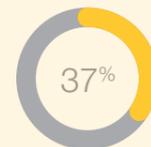
1200mm x 150mm luminaires



T5 1x54W = 60W



LED 29.5W



Daylight and Presence Control

Patients

It is important to ensure that lighting is positioned and controlled in a way that delivers comfort and reduces wasted nuisance light. This can be achieved by mounting linear luminaires off centre, reducing uncomfortable glare during patient transit. Thus preventing the effects of light and dark continuous motion to recumbent patients passing through the area. Ward areas benefit at night time or during periods of rest when corridor light levels are set to a low ambient illumination level and light spill into these bedded areas is kept to a minimum.

Visitors

A main thoroughfare from entrance areas. Welcoming, bright and well-lit wall surfaces, illuminated signage and directional indicators will assist visitors finding their way to see patients. The use of luminaires with smooth surfaces will help in providing the perception of cleanliness and create visual interest. Occupancy control can be integrated into a corridor solution, the use of setback functionality rather than turning off completely will prevent the impression that an area is not accessible and ensure safe passage.

Building Managers

It is important that circulation spaces requiring 24 hour illumination provide a simple to maintain and efficient solution. With LED luminaires in particular, products which have a low output degradation (L value) and minimal colour shift (SDCM) over the anticipated life of the installation should be considered. Balancing luminaire efficiency with patient comfort is possible with the right product solution. Precedence should be given to luminaires which are easy to clean, have been designed in accordance with Building Regulations and which are sympathetic to the infection control needs of the department.

Consulting, Examination and Treatment

Rooms equipped for consultancy, examination and treatment share a variety of uses and bring their own challenges to the lighting design when considering both the needs of the medical professional and the often-anxious patient.

In most areas, a luminaire with a good quality light source and easy to clean surface will provide the correct levels of illumination and infection control. However, there will be instances where the type of treatment demands a higher degree of protection.

From the patient's perspective luminaires which bring visual interest to the environment, creating a sense of comfort, are preferable. Make best use of energy with intelligent lighting control to monitor ambient light levels as well as occupancy, maximise available daylight and reduce unwanted light.



Lister

IP65 rated where treatment demands a higher level of infection control. Incorporating Nhex prism diffusing technology for areas of VDT use and to minimise discomfort glare to patient and practitioner.

Duo3 Evo

Cascade LED

Diffusing light and graduating brightness, this optimised lighting distribution enhances both facial recognition and even room surface illumination

Lighting Criteria

Illumination levels vary in these spaces dependent on the type of examination and treatment being undertaken. However, in all spaces consideration for the correct colour rendering ($\geq Ra80$) and compliance to EN12464-1:2011 and use of computer screens.

CIBSE LG2

- Consulting
300 lux

- General Examination
500 lux

- Treatment
300/500 lux

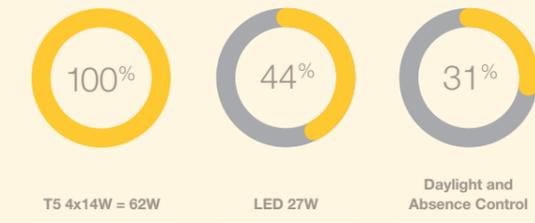
BSEN12464-1:2011

- Examination Rooms
500 lux

- Treatment
300/500 lux

Energy Consumption

600mm x 600mm IP44

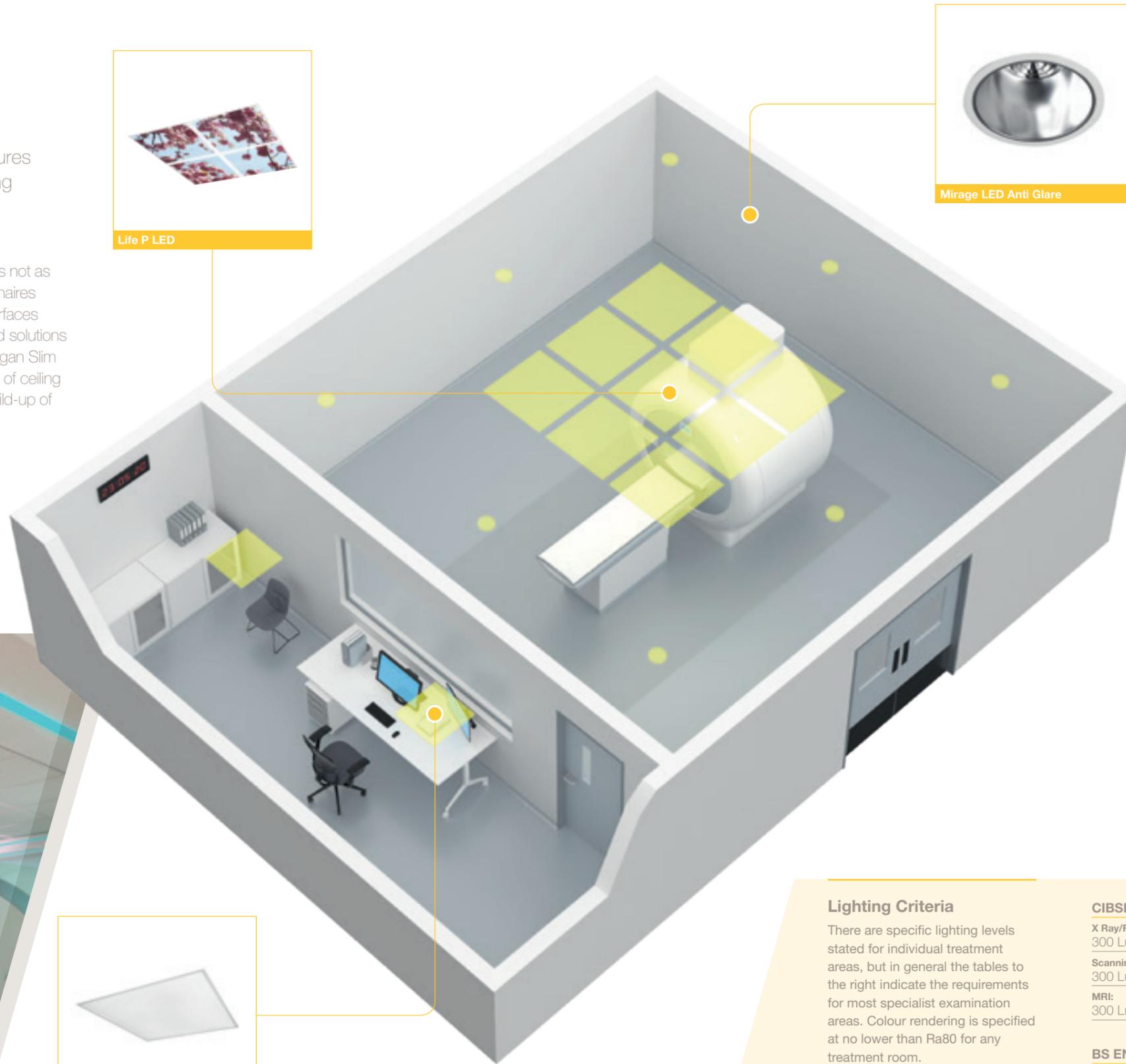


Specialist Examination Area

Specialist examination areas cover a range of procedures that are all potentially stressful for the patient - including CT, MRI scanning, X-Ray, Radiology, Radiotherapy, Chemotherapy, Fluoroscopy and Ultrasound.

It is therefore important that creative lighting solutions in these areas promote a relaxing and reassuring environment. When entering the room and during prolonged periods of examination and treatment, the lighting should help ensure that the patient feels at ease. Best practice lighting will be sufficiently functional to allow medical staff to carry out duties efficiently and safely, including dimming during the use of specialist equipment, whilst softening a typically sterile environment.

Although infection control is not as critical in these areas, luminaires without upwards facing surfaces should be used. Recessed solutions such as Life P LED and Tegan Slim will accommodate a range of ceiling types and minimise the build-up of dust and bacteria.



Life P LED



Mirage LED Anti Glare



Concert MRI

The use of luminaires with a ferrous metal content are not allowed in MRI areas, Concert MRI offers a non-ferrous metal low energy solution for these specialist applications.



Avenue Metro Recessed



Tegan Slim



Lighting Criteria

There are specific lighting levels stated for individual treatment areas, but in general the tables to the right indicate the requirements for most specialist examination areas. Colour rendering is specified at no lower than Ra80 for any treatment room.

CIBSE LG2

X Ray/Fluoroscopy:
300 Lux at working plane

Scanning and CT Room:
300 Lux at 1m

MRI:
300 Lux at working plane

BS EN12464-1 2011

Scanner Rooms:
300 Lux

Waiting Areas

Waiting areas and entrance atria are often the first impression of a healthcare building and an important opportunity to reduce any feelings of stress and anxiety in both patients and visitors. Thoughtfully designed lighting will foster a feeling of reassurance, making the time in the waiting area less stressful. Pendant luminaires provide excellent illumination levels and add visual interest in higher ceiling areas, while in lower level ceilings recessed coloured lighting can be used to aid navigation and create zoned spaces.

Queen Elizabeth University Hospital Glasgow



The Christie NHS Foundation Trust, Manchester



Lighting Criteria

The lighting criteria defined by both CIBSE LG2 and BS-EN12464-1 are outlined below:

CIBSE LG2

Waiting Areas:
200 lux at floor

Atria:
200 lux at floor

Reception Desks:
500 lux at desk height

BS EN12464-1: 2011

Waiting Areas:
200 lux

Atria:
200 lux

Reception Desks:
300 lux

Laboratories

In Clean Area facilities, protection from the ingress of dust and liquids is paramount, but the degree of protection required can vary depending on its classification and the needs of the space. Luminaires must be easy to clean and maintain, without harbouring dust and dirt. Whilst these requirements are at the forefront of Clean Area luminaire design, lighting quality and user comfort should not be sacrificed in pursuit of these goals.

Lighting Quality

The use of premium optics with advanced glare control technology allows for worry free specification and compliance to the most stringent requirements of BS EN12464-1.

Room Integrity

The need to prevent the ingress of dust and liquid presents a challenge to the design of efficient luminaires. Unique design solutions will ensure that IP performance is not compromised. Features such as single piece frame gaskets and solid aluminium jacking brackets prevent contamination from the ceiling void, whilst flush fixings to the front frame reduce the risk of bacterial contamination.



DTFU and Lister share a revolutionary development in optics, the use of edge-lit optics with Nhex-prism diffusing technology delivers superior glare control.



DTFU



Lister

Our flagship DTFU luminaire has a seamless front frame with no visible screws and is IP65 rated to the front face, and IP54 at the back bringing the highest level of ingress protection

Lister shares the same high performance IP65 rating to the exposed front frame, with IP20 to the back

Lighting Criteria

Lighting levels in laboratories and clean area facilities need to accommodate a wide range of visual tasks.

CIBSE LG2

Laboratories:
500 lux at working plane

BS EN12464-1: 2011

Laboratories:
500 lux

Energy Consumption

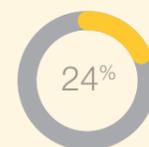
600mm x 600mm IP65/20



T5 4x24W=102W



LED 35W



Daylight and Absence Control

Mental Health

Balancing the requirements to provide lighting in a mental health setting that not only aids patient wellbeing, but delivers a safe environment for patient and staff alike across a wide range of treatments presents significant challenges to the designer.

Whilst product selection and construction may have to be such that it needs to be robust, tamper proof and reduce risk of harm or self-harm, it is important that the overall lit effect supports, where possible, both patient and staff overall wellbeing.



Mirage LED Anti-ligature

Meets the testing requirements of the Adult Medium Secure Services Guide: 2011

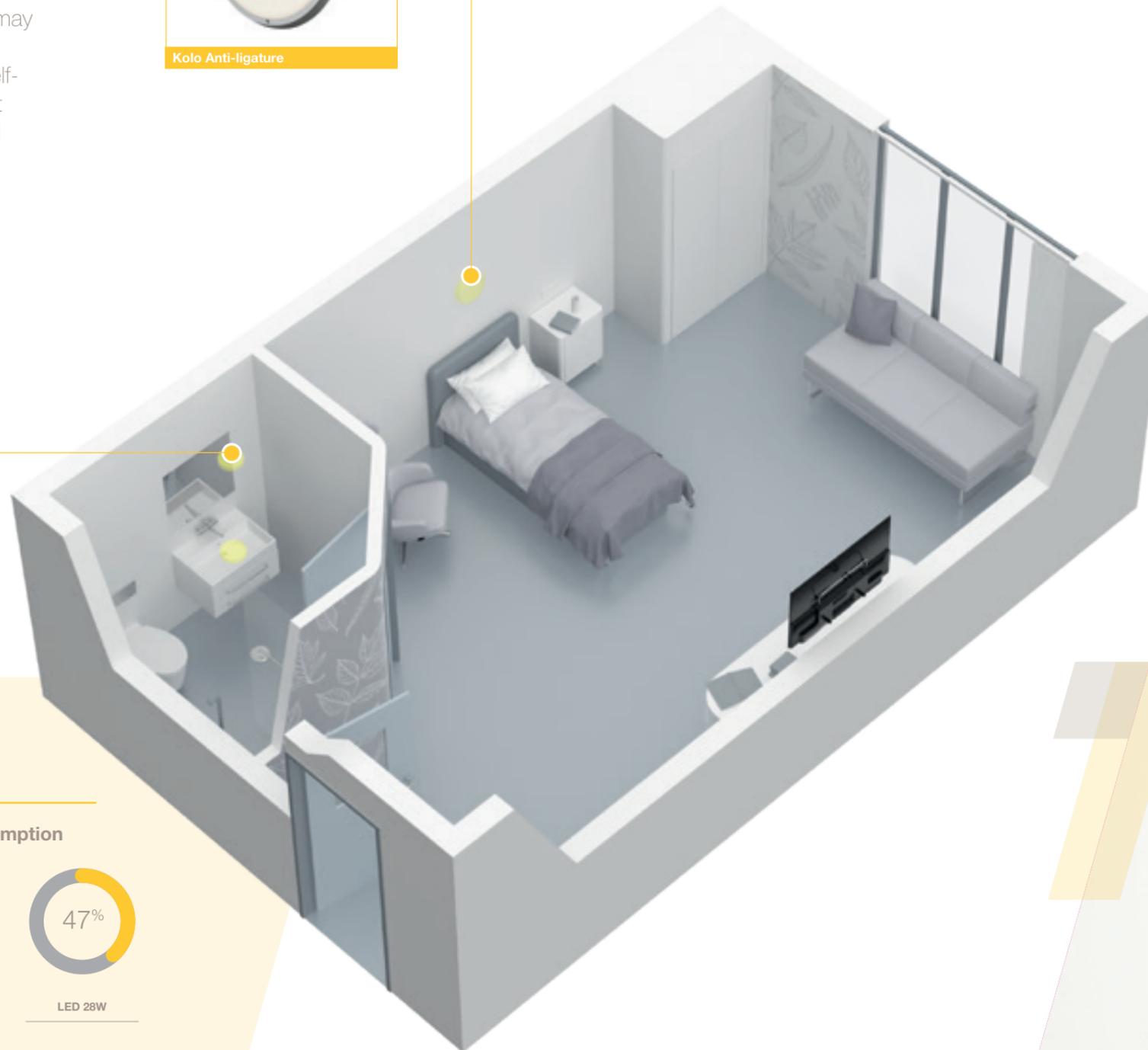


Kolo Anti-ligature



Cascade LED Tunable White

Advanced optics deliver a series of different colour temperatures to change the mood of the space and of the occupants of the space



Lighting Criteria

Further guidance can be sought within the latest version of LG2: Healthcare Buildings, Department of Health Environmental Design Guides and The Environmental Design Guide for Adult Medium Secure Services: 2011. Early consultation with the trust / members of staff involved with the treatment of these patients will ensure the best possible solution is delivered for these environments.

Energy Consumption



Elderly Care

With an increasing elderly population, the demands on healthcare services to deliver effective treatments and care will continue to grow. For general healthcare treatments, guidance is similar to that advised throughout the relevant standards. However, for elderly patients, there is a further matter to consider – the need to create, within the healthcare environment, comfortable safe spaces with a domestic feel.

Balancing higher illumination with careful glare control will support the increased visual impairment of elderly people and maximise comfort. While to aid clear wayfinding in transient spaces, bedrooms and dayrooms, the lighting must contribute to the overall environment in making changes in height, direction clearer to the user.

Continued research is going into the use of daylight and artificial light on our circadian rhythms, and particularly on the wellbeing of dementia patients. The research is looking at the adjustment of the light source in colour and intensity to deliver an environment that can have a positive impact on the elderly and those living with dementia.



Standalone Facilities

The importance of an effective approach to healthcare lighting design extends beyond the hospital and into the community. As does the challenge to accommodate a wide variety of tasks, users and experiences.

Whether it's a smaller community clinic addressing basic health needs or a larger medical centre offering specialist services, lighting has a dual purpose. It must provide adequate illumination for critical tasks but also promote a welcoming stress-free environment for patients, visitors and staff.

As lighting requirements change between treatment rooms, patient waiting areas and staff amenities so must the choice of luminaire.

Maintaining room integrity and preventing the spread of infection can be achieved with an improved IP rated luminaire with concealed fixings that is easy to clean.

Architectural feature pendant luminaires with integrated intelligent lighting control in waiting areas will help make patients feel as at ease and as comfortable as possible. While, at the same time, maximising energy savings through daylight regulation.



Oculus



Mirage LED



Lister

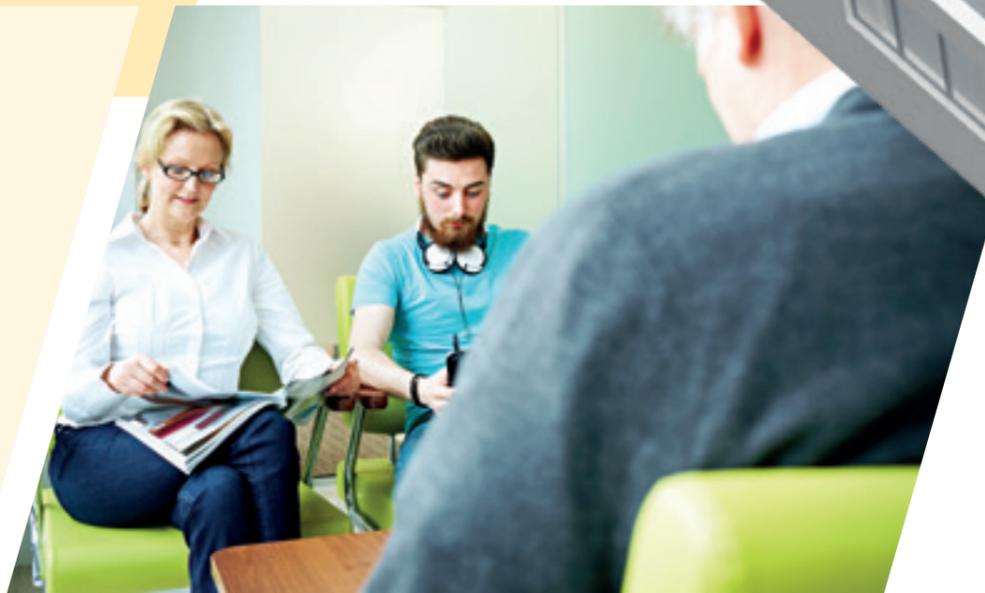


Cygnus SY

Effective exterior lighting with high levels of uniformity and cylindrical illuminance helps to create a welcoming first impression whilst ensuring the safety and security of pedestrians and vehicles

Lighting Criteria

The guidance from CIBSE LG2 is that the information contained in Parts A and B of the guide should be sufficient to carry out the lighting design on the majority of departments within the health care system.



Ancillary Areas

Integral to the efficient functioning of the healthcare environment, the activities undertaken in the numerous ancillary areas in a building can vary considerably. Lighting must therefore focus on functionality and the protection requirements as well as features and aesthetics, to ensure a safe and comfortable environment

In areas such as plant rooms, maintenance and housekeeping, inadequate lighting can conceal slippery floors, trip hazards or other potentially dangerous situations, causing accidents. Hospital pharmacies provide a huge quantity of medications per day, so effective lighting is important in order to reduce the potential for errors when preparing and distributing medicines. Consideration given

to luminaires with good glare control will safeguard staff against discomfort or reduced visibility.

The potential for reduced energy consumption is significant in areas where lighting is often not required for long periods of time. Integration of energy saving lighting control, with room occupancy detection, will ensure that no luminaire is on when it doesn't need to be.



Tegan Slim

Slim body profile with a choice of optics



Stylus

Solid construction with optional louvre and diffuser system



ACL Industry

IP66 rating and corrosion resistance for challenging environments

Outdoor Amenities

The primary goal of exterior lighting is to provide safe transit for building users with minimal upward lighting and unnecessary light pollution.

In pedestrian areas and car parks, high levels of uniformity are required and, to aid facial recognition, cylindrical illuminance should be considered. On roadways careful selection of road classifications should be taken, as slower traffic flow may mean that a lower level of illuminance is required than in normal highway lighting.

The lighting design must take into account these differing needs, and provide clear separation between pedestrian and motor traffic. Additional lighting requirements for areas such as pedestrian crossings and disabled parking bays can be covered through the careful positioning of luminaires.

Smart lighting control systems in parking areas achieve much lower operating costs, whilst still enhancing safety and security. Maintain set levels of illuminance during occupied periods, or reduce illumination levels when no presence is detected.

Lighting can adjust to accommodate both vehicle or pedestrian traffic, as well as automatically detecting daylight and dimming the light down to conserve energy when nobody is present.

Lighting Criteria

When planning lighting for outdoor amenities, consideration should be given to the following standards and guidance:

Standard / Guidance

BS EN12464-1
Lighting – Indoor Workplaces

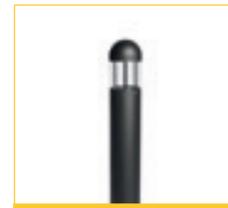
BS EN12464-2
Lighting – Outdoor Workplaces

BS 5489-1
Lighting of roads and public amenity areas

Secured by Design Lighting against crime
A Guide for Crime Reduction Professionals

ILP GN01:2011
Guidance Notes for the Reduction of Obtrusive Light

Park Mark®
The Safer Parking Scheme



Broadwalk RS

Amenity bollard with 360° horizontal light distribution



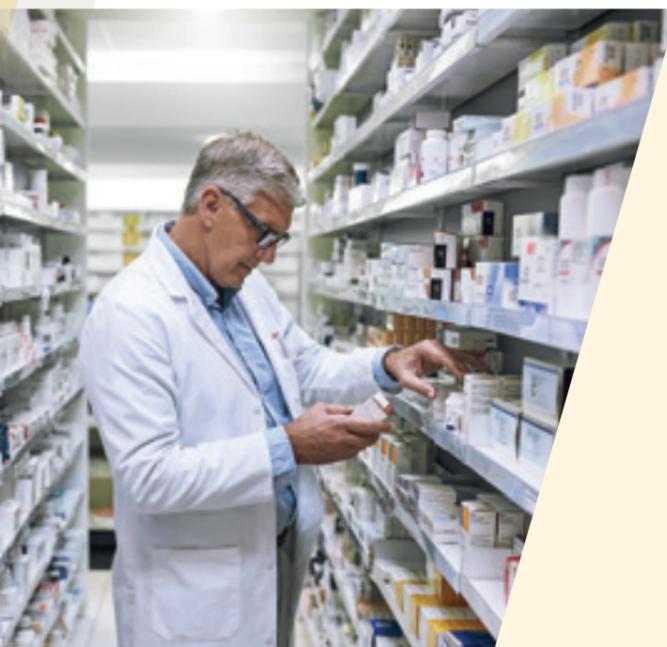
Sirocco Park

High efficacy ultra slim post top lantern delivering up to 148 ll/cw



Kolo - IP65

Combining style and efficiency, attachments create further visual interest



Lighting Criteria

Levels of illumination vary depending on the ancillary area, the tables below give examples of lighting criteria defined by both CIBSE LG2 and BS EN12464-1:

CIBSE LG2

Drug Stores
500 lux at desk

Laundry Rooms
300 lux at bench

Plant Rooms
300 lux at floor

Supplies Stores
300 lux at floor

BS EN12464-1: 2011

Decontamination Rooms
300 lux

Plant Rooms
200 lux

Stores (general)
100 lux

Stores (packing & handling areas)
300 lux

Energy Consumption

Surface Batten



Dumfries and Galloway Royal Infirmary



Lighting Controls

While reducing energy costs in any 24/7 environment can be challenging, autonomous operation across multiple spaces can offer significant opportunity for savings. Lighting controls are primarily used as an energy-saving tool, however, they can offer much more in terms of patient comfort, building flexibility and integration into wider building management systems.

Entry level controls packages offer simple stand-alone switching or dimming of a group of luminaires. These use both presence detection and daylight dimming to reduce the energy load in an area of the building.

These can be customised as technology evolves to provide an interface with Building Management Systems and vital building information such as full analytics of the building operation from a web based portal.

Intelligent wireless controls systems will react to complex occupancy patterns and modify their behaviour as the building use changes.



Typical Application Areas

Circulation and Transition

With illumination on approach or continuous low-level lighting, no occupant or patient need enter a space in darkness. Clever features such as “Min Light” deliver low energy minimum light levels for assured occupant safety and patient comfort.

Consulting Rooms

Lighting automatically adjusts to accommodate varied occupancy patterns, and specific scenes can be set to optimise the use of space. What is more delay times can be modified so that no luminaire is on when it doesn't need to be, such as once no occupancy is detected.

Clinical Spaces

Ensure appropriate lighting is always available for performing critical tasks but off when no staff or patients are present.

Supportive Care

Adjust the light source colour of any tunable white luminaire via comprehensive colour temperature control to create an environment that users are most comfortable in.



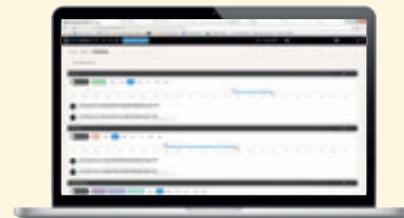
Energy Performance

Assess energy consumption by time of day, and day of week, and correlate with occupancy. Also compare energy consumption across functional areas/zones to identify opportunities to trim light levels or dwell times.



Maintenance

Receive real-time notification of luminaire location, usage, faulty fixtures, and status information about drivers and light source.



Emergency Lighting Testing and Reporting

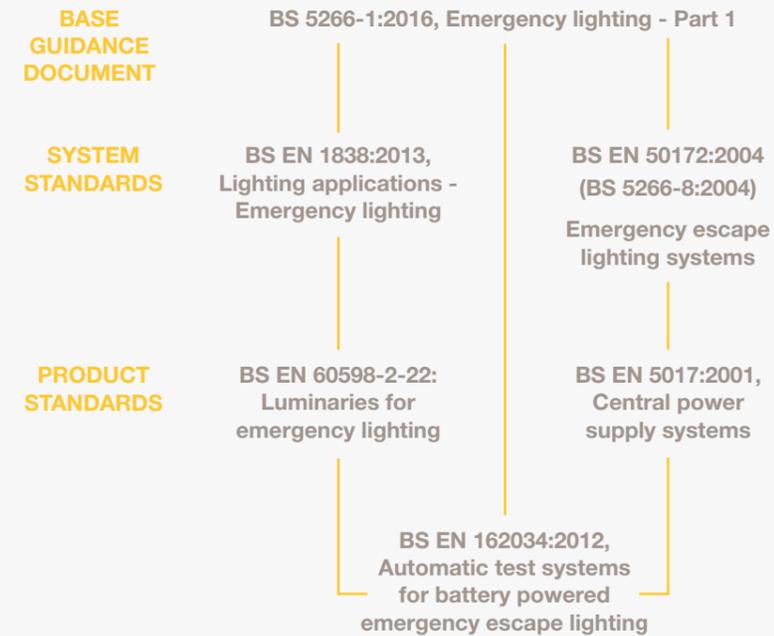
Schedule and record emergency lighting central automatic testing in accordance with local standards to support the scheduling of predictive maintenance.

Emergency Lighting

Emergency lighting provision is an important part of any lighting scheme. Particularly in the healthcare environment, where the 24-hour nature of the operation presents its own challenges. In the event of a power failure, a secure, effective, non-disruptive emergency solution is vital in order to ensure the safe evacuation, movement or continuation of any medical procedure. Early consultation with the appropriate person(s) responsible for the provision of emergency lighting, will ensure that the lighting design supplied is such that considerations, including areas identified as high risk, will be delivered.

The use of the Whitecroft Florin LED bulkhead allows the designer to provide an effective emergency lighting strategy by allowing a flexible design to be employed through careful positioning and simple maintenance of the emergency lighting units.

A list of the main lighting standards is provided below.



Product selection and system design for the emergency lighting should consider:

- Ease of maintenance
- Flexibility of design
- Parasitic energy consumption
- Minimising patient disruption
- Testing & reporting

Any emergency system requires regular and annual testing. The use of central emergency testing and reporting systems to ensure an effective emergency provision is therefore in place at all times. The Whitecroft Organic Response Portal allows for simple set-up of scheduling and recording of the emergency lighting system to deliver compliance to BS EN 62034:2012.



Florin E3 High Level

Specifically designed for high risk or high output emergency task lighting for compliance with BS5266 Part 1 2016



UK Head Office

Whitecroft Lighting Ltd
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