



## Visual guide to emergency lighting and signage

Emergency lighting needs to be provided in many premises to allow occupants to leave the building or area when power to the normal lighting fails. If the premises need to be evacuated, then the occupants need to leave the place they are, find the nearest exit route and proceed to a final exit door from the building and then, possibly, to a safe place of assembly away from the building.

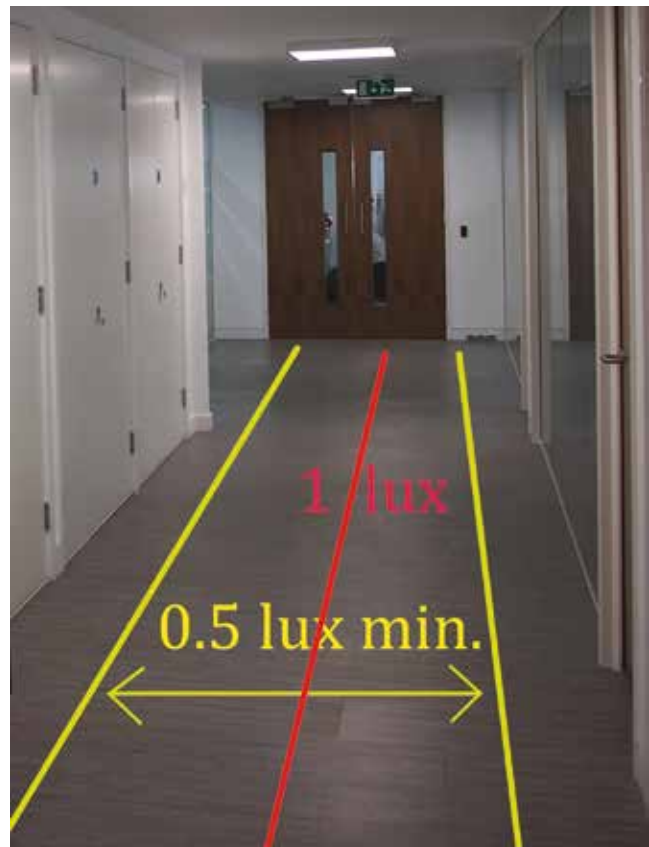
It is the responsibility of the building owner's designated 'responsible person' to carry out a risk assessment to determine if and where emergency lighting is required. Then the emergency lighting and exit signage can be designed by someone with the experience and understanding of lighting (uniformity, glare etc.) and emergency lighting installations.

This guide provides a simple checklist of key points and is not meant to be a comprehensive guide to legislative requirements or standards. For a comprehensive guide to the design, testing and monitoring of emergency lighting and signage systems, please refer to SLL LG12: *Emergency lighting* (2015).

### 1 Key steps in the design process



**Figure 1** Light open areas to 0.5 lux minimum to avoid panic amongst loose furniture and to aid in navigation in possibly complex spaces  
(© sylv1rob1/Shutterstock)



**Figure 2** Light escape routes to 1 lux along centre line and 0.5 lux over central 50% of width



**Figure 3** Light high-risk areas to 15 lux, or 10% of main lighting level if higher. This ensures dangerous or production processes can be safely and quickly shut down before people escape from the area (© (left) Guy Shapira/Shutterstock; (right) wavebreakmedia/Shutterstock)



**Figure 4** Ensure any junctions and isolated steps along escape routes are directly lit



**Figure 5** Ensure all fire-fighting equipment and break-glass call points are directly lit



**Figure 6** Ensure dry and wet risers are directly lit



**Figure 7** Light disabled people's refuge areas, equipment and call points

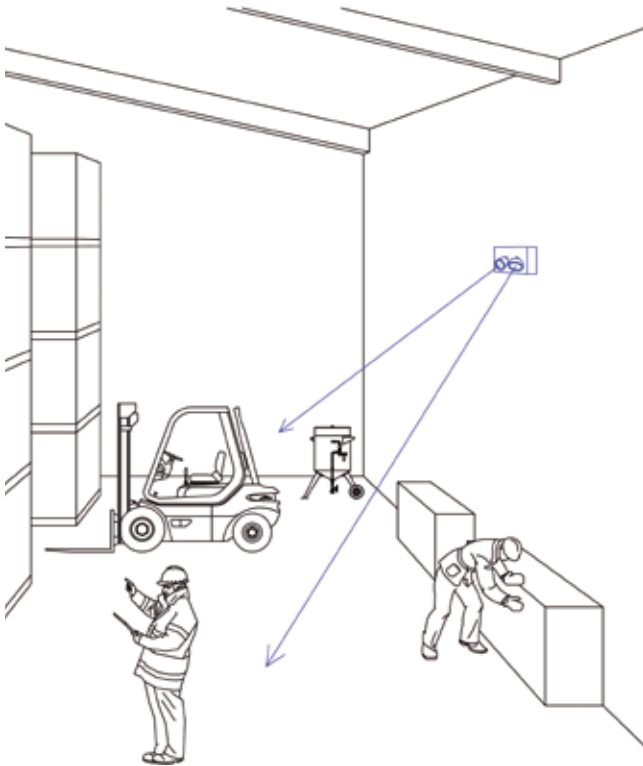


**Figure 8** Light all toilets for disabled people



**Figure 9** Light all toilets with floor area over 8 m<sup>2</sup>

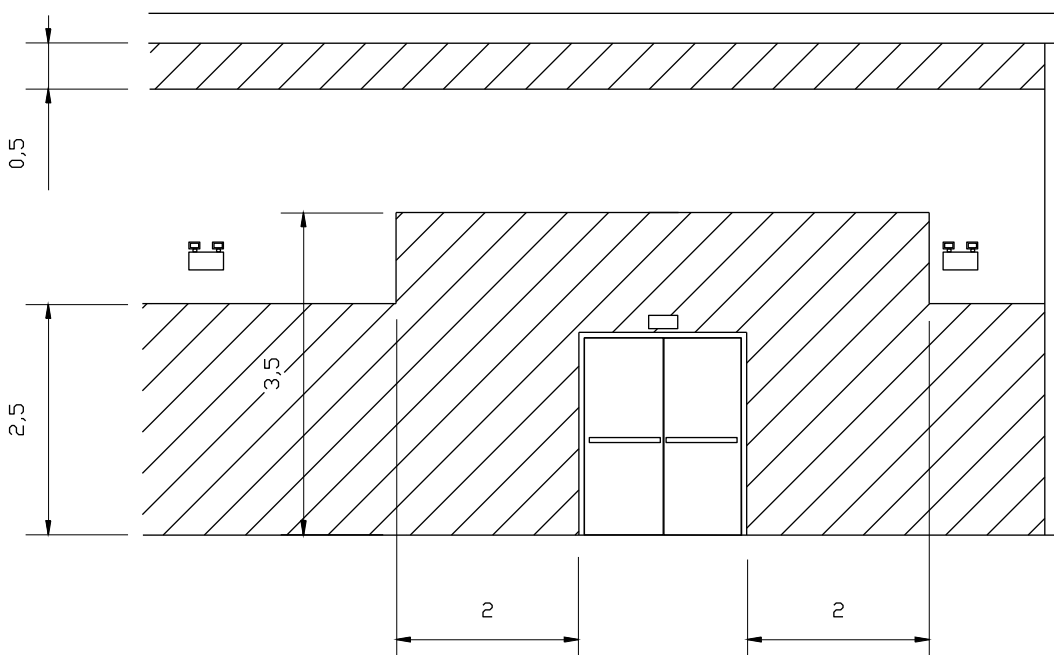
## 2 Use of spot style lights



**Figure 10** Only use spot style emergency light to light down over large open areas



**Figure 11** Do not place spot style lights at low-level or where they may dazzle escapees trying to find an exit



**Figure 12** Do not place spot style units in shaded areas

### 3 Stair lighting



**Figure 13** Light escape staircases well to ensure that people joining at each level can safely merge with those descending the stairs. Rescue services may need to go up the same stairways as evacuating people going down



**Figure 14** Ensure disabled peoples' refuges on landings and their intercoms are directly lit



**Figure 15** General access stairs should be covered even if they are not designated as escape stairs



**Figure 16** Directly light final escape doors to ensure escapees can operate any opening mechanism or unusual security release buttons (© Mehmet Cetin/Shutterstock)

## 4 Exit signs

Exit signs need to be visible at all times, not just when the power to the normal lights fail. If a building needs to be evacuated under normal circumstances all the lights are on and people will look around for their nearest exit — the signs need to be the right size for the viewing distances and not be obscured.



**Figure 17** Check that an exit signs can be seen from any point in a corridor or open space



**Figure 18** Check that arrows on exit signs direct people from that space towards the final exit — avoid possible confusion



**Figure 19** Check that exit signs are the correct size for their viewing distance. Large signs are available for big spaces



**Figure 20** Ensure that exit signs are roughly along normal lines of sight and not installed too high above normal eye-line. In an emergency would you have seen the exit sign in this image?



**Figure 21** Ensure exit signs are not obscured by other hanging lights or signs. There are two exit signs in the image here



**Figure 22** External exit signs may be needed for alleyways and divided routes leading towards place of safety

## 5 Beyond the final exit

Once outside, escapees need to disperse safely or proceed to a safe assembly point. In an area-wide power cut there will be no lighting from streetlights or surrounding buildings.



**Figure 23** Light areas outside of final exit doors to assist escapees in moving any external obstructions and to assist them move away from the doorway quickly and safely



**Figure 24** Exits with steps or slopes directly outside need to be well lit



**Figure 25** Continue emergency lighting and exit signage externally to a place of safety. All external stairways from exits need lighting



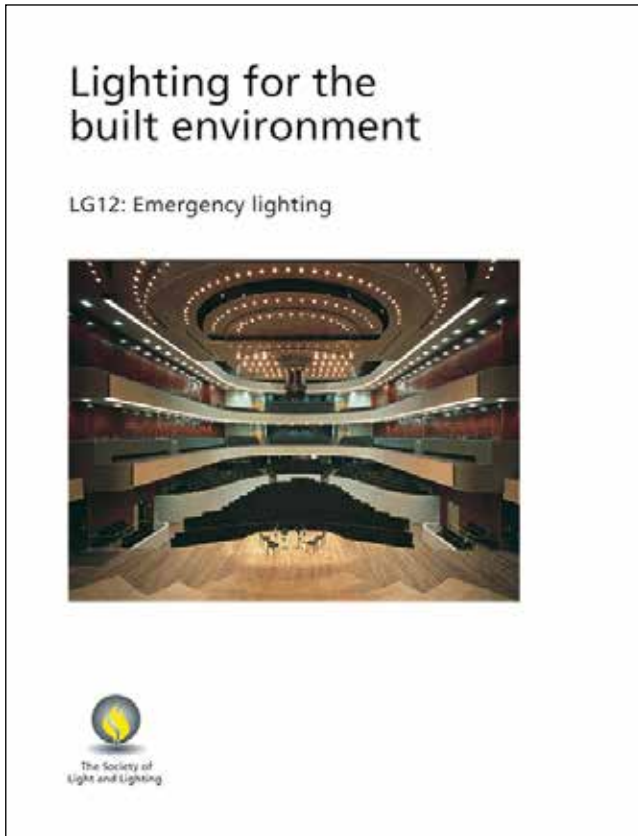
**Figure 26** Emergency lighting and signage are needed on rarely used external escape routes, which may be wet or covered in snow/ice



**Figure 27** Light areas along back routes and alley ways from final exit doors. There is a break-glass exit release on the gate here



**Figure 28** Provide lighting and signage along any escape routes over adjacent roofs



10 **Lighting Guide 12: Emergency lighting**

**3.4.5 High risk task area** (Area where hazardous activity occurs that is to be made safe or terminated or where people may pass by.)

Area size	As defined by task size, location and plane
Design illuminance	Minimum 10% of maintained illuminance on the reference plane but at least 15 lx
Uniformity	≥0.1 (minimum/average)
Disability glare	Intensity limit in $\theta = 60^\circ$ to $90^\circ$ band
Response time	Design value 0.5 s and to end of duration
Duration	Period for which the risk exists to people
Colour rendering	The lamp source should be better than $R_a = 40$

Figure 3.8 Example of a high risk area

**3.4.6 Areas requiring emergency lighting due to risk assessment**

**3.4.6.1 Kitchens** Sudden failure of the normal lighting in areas where staff are preparing or transporting hot food is potentially dangerous. Consideration should be given to the illumination needed to be able to use equipment in a safe condition. For example, in a supply failure emergency, lighting should be sufficient to enable hot food in transit to be located safely. Electrical and gas fired equipment should be turned off to ensure that a fully safe condition exists whilst the area is evacuated.

Response time	0.5 seconds
Duration	30 minutes (minimum)
Light level	15 lx at the working plane

**3.4.6.2 First aid rooms** These are now a mandatory requirement of BS EN 1838 (BSI, 2013b). Consideration should be given to the illumination needed to complete simple medical procedures, e.g. applying a bandage.

Response time	5 seconds
Duration	30 minutes (minimum)
Light level	15 lx at the working plane

**3.4.6.3 Treatment rooms** Consideration should be given to the illumination needed to complete complex procedures e.g. minor operations or dentistry. *Note:* operating theatres are outside the scope of this guide; refer to SLL Lighting Guide LG2: *Hospitals and health care buildings* (2008).

Response time	0.5 seconds
Duration	30 minutes (minutes)
Light level	50 lx at the working plane

**3.4.6.4 Refuge areas for people with impaired mobility** At refuge call points, and in the area for transfer of people from wheelchairs to evacuation sleds as applicable, a higher level of illumination than for escape route lighting is recommended.

Response time	5 seconds
Duration	Full rated of system
Light level	5 lx at the working plane

The Society of Light and Lighting produces a comprehensive 65-page lighting guide to all aspects of emergency lighting, including the required uniformity and lighting levels for various areas; glare limits for luminaires and installation and maintenance requirements. Details of this and other SLL publication may be found here: <https://www.cibse.org/society-of-light-and-lighting-sll/lighting-publications>

Author: Paul Ruffles BSc CEng Hon-FSLL FCIBSE

Photographs by Paul Ruffles except where stated otherwise.

© The Society of Light and Lighting 2020

Published by the Society of Light and Lighting, 222 Balham High Road, London SW12 9BS, UK. Tel: +44 (0)20 8772 3680. Fax: +44 (0)20 8673 3302. e-mail: [sll@cibse.org](mailto:sll@cibse.org). Web: [www.sll.org.uk](http://www.sll.org.uk)

The Society of Light and Lighting is part of the Chartered Institution of Building Services Engineers, registered charity no 278104.

The information in this Factfile is provided in good faith and to the best of knowledge of The Society of Light and Lighting is a correct interpretation of the relevant research data. However, neither The Society of Light and Lighting nor the Chartered Institution of Building Services Engineers take any responsibility for the use of the information provided by members of the Society.