

New London Architecture

An introduction to the requirements of The Building Regulations 2010 (as amended)

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Introduction

Who we are



London Building Control Ltd are one of the largest Corporate Approved Inspectors. LBC work to industry codes and building control performance standards to ensure our building control process provides added value - reducing unnecessary bureaucracy, delays and costs for our clients. With offices in London, Manchester, Welwyn Garden City, Chichester and Exeter we offer a high-level service for commercial, public sector and residential projects.

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Our Professional Team

The expertise of our professional team spans all sectors of construction from domestic work through to complex multi-million-pound developments throughout England and Wales. We offer a professional service, fast and efficient, as an alternative to those traditionally provided by Local Authority Building Control. Over many years London Building Control has built strong working relationships with building design professionals who offer innovative and practical design solutions in areas such as fire engineering, energy and acoustic assessors.

Our clients are important to us, so we take the time to listen to their needs and align our experience and expertise to ensure they are met. LBC's surveying team provide advice on all areas of compliance within Building Regulations. We provide pre-application advice and assistance to design teams throughout the process to ensure building regulation compliance.

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Alan Stokes BSc(Hons), FRICS, FCABE, MIFireE, C.BuildE

Alan is an experienced and qualified member of the LBC team. With over 40 years Building Control experience, including approx. 20 years running a successful Building Control Surveying department he has provided expertise and advice on a variety of projects. In addition, Alan has provided regular training sessions specialising in Fire Safety and Accessibility to a variety of audiences, including the Royal Institute of Chartered Surveyors (RICS), Local Authority Building Control (LABC) and the Fire Authority.

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Today's topics for discussion

The Building Regulations – will provide a brief highlight into the recent changes to Part B (Fire Safety), those due to come into force later this year and the changes to primary legislation.

Accessibility and Facilities - an introduction to the guidance in Approved Document M Volume 1 in respect of Categories 2 & 3.

Active Fire Precautions - we will consider Early Warning Fire detection, Emergency lighting provisions, Water Suppression systems and Fire curtain provisions.

Residential Fire Safety - an overview of the methods of demonstrating suitable fire safety by following the code options and will review the flexibility you now have in design.





The Building Regulations 2010

The requirements are supported by relevant guidance in **Approved Documents** that show how the requirements can be met.



There is no obligation to use this guidance if the applicant chooses to satisfy the requirement in some other way



The Building Regulations 2010

Part B Fire Safety

Volume 1 Dwellings

Volume 2 Buildings other than dwellings

Changes influenced by Dame Judith's report post Grenfell and is aimed at residential fire safety

Building a Safer Future

Independent Review of Building
Regulations and Fire Safety:
Interim Report

December 2017
Dame Judith Hackitt CBE FRSA

On 9551

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The Building Regulations 2010. Part B Fire Safety

What has recently changed?

21st December 2018

Fire resistance of external wall to relevant buildings
Approved Document B guidance and Regulation 7 for
'relevant buildings', primarily residential with a floor
more than 18m above ground level





The Building Regulations 2010. Part B Fire Safety Vol 1 Dwellings

What other changes have been published

26th November 2020

Sprinkler and wayfinding guidance for flats with a floor level more than 11m above ground level

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The Building Regulations 2010. Part B Fire Safety Vol 1 Dwellings

What other changes are planned?



Review of the ban on the use of combustible materials in and on the external walls of buildings including attachments

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The Building Regulations 2010. Part B Fire Safety Vol 1 Dwellings

What other changes are planned?



Draft Building Safety Bill

Presented to Parliament by the Secretary of State for
Housing, Communities and Local Government by Command
of Her Majesty July 2020

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The Building Regulations 2010. Part B Fire Safety Vol 1 Dwellings

What other changes are planned?

The Ministry for Housing Communities and Local Government (MHCLG) has published the draft Building Safety Regulator Bill ahead of pre-legislative scrutiny, in which HSE is formally named as the new regulator.

The government has asked HSE to establish a new building safety regulator in the wake of the Grenfell Tower disaster and following recommendations in the 'Building a Safer Future' report by Dame Judith Hackitt.

The new regulator will oversee the safe design, construction and occupation of high-risk buildings so that residents are safe and feel safe. It will be independent and give expert advice to local regulators, landlords and building owners, the construction and building design industry, and to residents.



Accessibility & Facilities

The variable requirements in Part M vol 1

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The Building Regulations 2010

Access to and use of buildings

APPROVED DOCUMENT

M

Volume 1: Dwellings

M4(1) Category 1: Visitable dwellings

M4(2) Category 2: Accessible and adaptable dwellings

M4(3) Category 3: Wheelchair user dwellings



Optional requirements

- 0.3** Requirements M4(2) and M4(3) are 'optional requirements' as defined in the Building Regulations. An optional requirement only applies where a condition that one or more dwellings should meet the relevant optional requirement is imposed on new development as part of the process of granting planning permission. Where no condition is imposed, dwellings only need to meet requirements M4(1). Compliance should be assessed against only one of requirements M4(1), M4(2) or M4(3) for any given dwelling.
- 0.4** Where any part of an approach route, including vertical circulation in the common parts of a block of flats, is shared between dwellings of different categories, Section A of the optional requirement for the highest numbered category of dwelling served will apply to that part of the approach route.
- 0.5** Where a local planning authority sets a planning condition for Category 3 (wheelchair user) housing it can specify which dwellings should be wheelchair accessible by including in the planning permission a condition stating that optional requirement M4(3)(1)(b) applies. Where no such condition is applied, optional requirement M4(3)(1)(a) will apply by default requiring that dwellings should be wheelchair adaptable.
- 0.6** The person carrying out building work must inform the building control body where any optional requirements apply.



Approved Document M

Part M Access to and use of buildings

Volume 1: Dwellings

M4 has been replaced by a new requirement 'Access to and use of dwellings' which differs from other requirements by containing two sets of 'Optional Requirements' that are alternatives to a mandatory baseline;

Category 1 – Visitable dwellings

Minimum provision capable of being visited by a wide range of people including wheelchair users



Category 2 - Accessible and adaptable dwellings

A higher level of accessibility that is beneficial to a wide range of people who occupy or visit the dwelling with particular benefit to older and disabled people including some wheelchair users. Features to enable common adaptations.

Category 3 - Wheelchair user dwellings

Suitable, or potentially suitable through adaptation, to be occupied by wheelchair users



Who decides the level of access?

The above options will be decided by the Local Authority Planning Department dealing with the permission for a new dwelling or a housing site.

For example if there is a proposal for a new housing site, the planners will decide how many should be built under each of the above categories. These numbers will change on a site by site basis.

If the planning permission does not state a category, then it is assumed that there is no specific category for any of the dwellings and M4(1) should be followed for all.



M4(1) – Visitable dwellings

Generally, M4(1) remains the same as the Previous guidance in Approved Document M, for new dwellings.

M4(2) – Accessible and Adaptable Dwellings

These must meet the requirements set out in M4(1) plus:

- All occupants of the housing development must be able to approach bin stores.
- Gateways 850mm and 300mm leading edge, canopies and lighting at principal entrance.
- Where there is a parking bay - allowance so that it can be future widened to 3.3m





- Drainage for all paved areas must be installed with suitable falls to ensure there is no standing water etc.
- All flats are to be provided with a lift. (It may be agreed by planners that all Category M4(2) and (3) dwellings can be located on the ground floor of a block of flats to eradicate the installation of a lift).
- Principal living areas are to have low level windows no more than 850mm from the floor.



- Dwelling must be provided with a provision for a future stair lift/lift. This will require a suitable power supply to the stairs etc. Stair width minimum 850mm
- Bedrooms must have minimum direct route to the window at least 750mm wide. This means that the rooms should be suitably sized to ensure that when a bed/wardrobe/drawers etc. are in place they will not be detriment to the width of the path to the window.
- Appendix D of the AD provides sizes of bedroom furniture that must be shown on the proposed plans when submitted for plan checking.



- Walls must be adapted to allow for future grab rails in bathrooms/ around the stairs etc.
- There should be drainage provided for a future level access shower room on the ground floor.
- Window handle locks to the ground floor level must be between 850mm and 1200mm.
- Consumer units between 1350 and 1450mm

M4(3) – Wheelchair accessible dwellings

These must meet the requirements set out in M4(1), M4(2) plus:



- Scooter/wheelchair storage must be provided to all dwellings.
- Where there is a rise across the development over 300mm a stepped approach must also be provided along with a ramp. Ramps must have an incline of no more than 1:15.
- Communal entrances – if power assisted doors are not going to be provided initially, provisions for the future must be installed such as power etc. This will also be required to every flat door.



- Bedrooms must have minimum direct route to the window at least 1000mm wide.
- This means that the rooms should be suitably sized to ensure that when a bed/wardrobe/drawers etc. are in place they will not be detriment to the width of the path to the window.
- Appendix D of the AD provides sizes of bedroom furniture that must be shown on the proposed plans when submitted for plan checking.



- Depending on the number of bedrooms provided in the dwelling specified space/storage must be provided. For example a three bedroom house should be constructed with 2.5m of storage space not including wardrobes etc.
- Provisions for through floor lift must be provided with power supply.
- Stairs are to be installed in accordance with the guidance followed for ambulant person's stairs.



- Living spaces including bedrooms will have a minimum size. The kitchen worktop length will vary depending on the number of persons in each dwelling.
- All bedroom ceilings must be capable of taking a load of 200kg for possible future hoist requirement.
- Door entry systems will be required at the front entrance with answering systems at the head of the bed in the main bedroom and in the lounge.

Guidance within the Approved Document supports the functional requirements of Part M



**Changing Places
Effective 1st January 2021**



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Active Fire Precautions

When and Where are they needed?

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- Automatic Fire Detection
- Emergency lighting
- Water Suppression systems
- Fire Curtains



Automatic Fire Detection

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10.1.2 Smoke Detectors

Two classes of smoke detector are commonly used:

- a) ionization chambers smoke detectors, which operate on the principle that the electrical current flowing between electrodes in an ionization chamber is reduced when smoke particles enter the chamber;
- b) optical smoke detectors, which operate by detecting the scattering or absorption of light by smoke particles.





Domestic guidance

BS9991, ADB vol. 1 and BS5839 part 6

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BS 5839-6:2019



BSI Standards Publication

Fire detection and fire alarm systems for buildings

Part 6: Code of practice for the design, installation,
commissioning and maintenance of fire detection and fire
alarm systems in domestic premises

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What's the appropriate system for my building?

- Consider - Life Safety and Property Protection requirements?
- Consider Clients requirements, Insurers requirements and Building Regulation life safety provisions
- Refer to guidance (BS5839 part 6 domestic or BS5839 Part 1 commercial)
- Commercial also refer to BS9999 - Risk profile helps to refine choice of system





Emergency Lighting

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BS 5266-1:2016



BSI Standards Publication

Emergency lighting – Part 1: Code of practice for the emergency lighting of premises

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General requirements of a system

- Uniform light distribution
- No debilitating glare
- Lux requirements -**Defined Escape routes -1lux and >60m2 open plan - 0.5lux**
- Locations
- Duration periods

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Suppression

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- General requirements of a system
- Types of system available
- Where is suppression required
- What type of suppression is permitted?
- Where can this be used as a compensatory feature?



Sprinklers (Property or Life?)

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Watermist Suppression



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Where is suppression required?

- Schools by Assessment
- Tall buildings
- Residential Care by Assessment

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As a recognised compensatory feature in Approved guidance BS9991 & BS9999

B1 – Extend travel distances

B1 – Allows inner rooms above first floor level

B3 – Increases compartment sizes

B3 – Reduce Structural Fire resistance

B4 – Boundary space separation half the requirements

**B5 – Extend the distance and access from pump
appliances to building**



Fire Curtains

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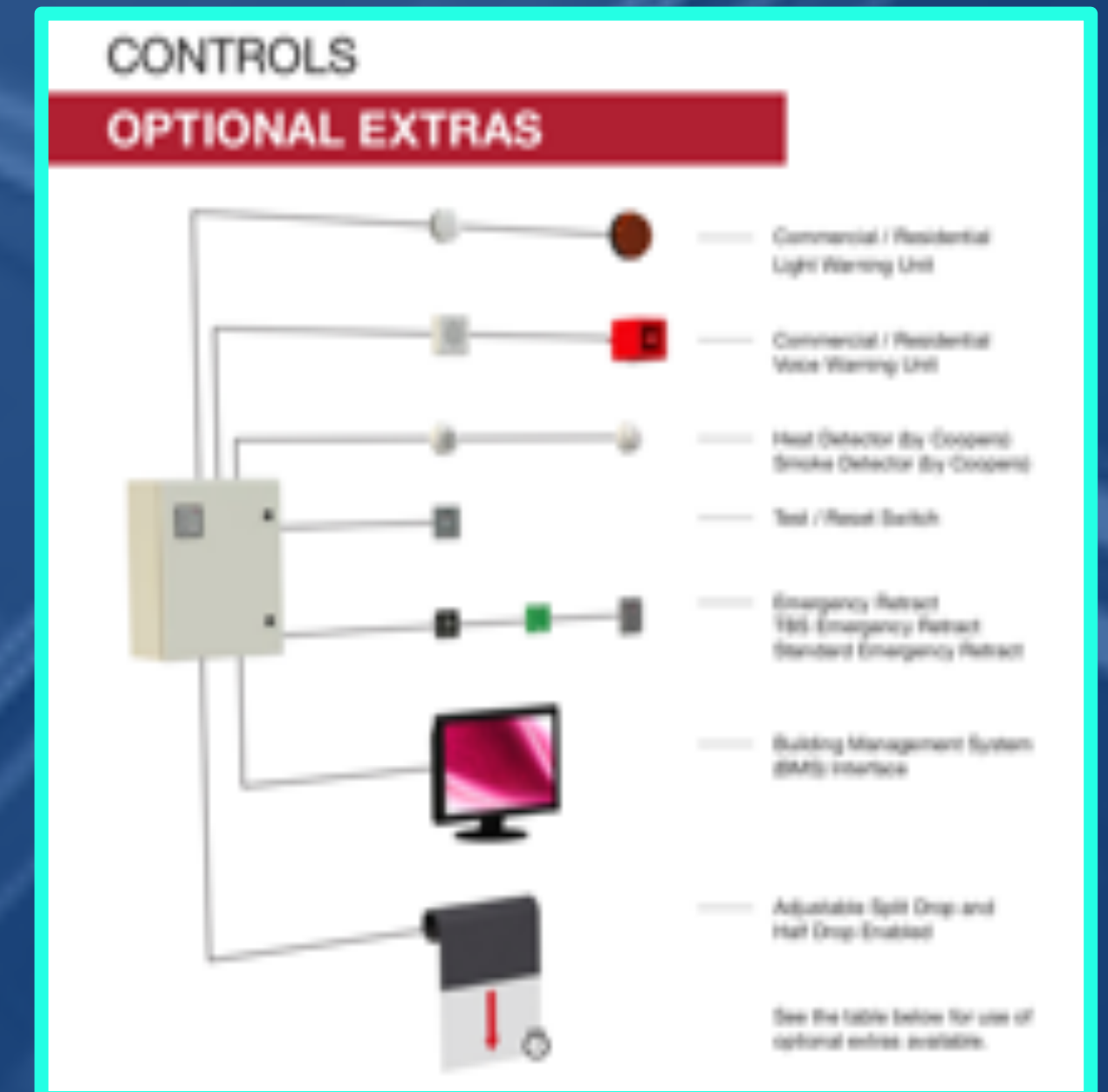
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- Where do they have their uses
- In maintaining protected escape routes
- Compartmentation and fire containment
- Forming ceiling smoke reservoirs
- Allowing unobstructed free circulation but protection of escape routes when needed
- B4 Boundary condition situations



- Controls
- Linked to detection
- Obstruction alerts
- Operation alert
- Manual retract buttons
- Half drop facility
- Types
- Smoke or Fire resistance
- Radiant heat provision



Residential Fire Safety

Design and flexibility

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Residential Means of Escape

Houses

- The options

Apartments

Within apartments

- Open plan and Inner room provisions
- Gallery floors
- MOE - Floor is not more than 4.5m above GL
- MOE – Floor more than 4.5m above GL

The Common parts



Houses

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Houses 2 storey

- **Means of escape**
Floors not more than 4.5m above GL
- **Ground floor:**
Direct access to an exit
or
Egress window for inner rooms
- **First floor:**
Egress window for habitable rooms
or
Internal protected stairway



Houses 3 & 4 storey

Means of escape – Internal planning
Floors more than 4.5m above GL
Protected escape route or open plan with suppression and smoke protected access to first floor escape window

Means of escape – Internal planning
Floors more than 7.5m above GL
Protected escape route plus alternative exit or suppression



Houses

Inner rooms ADB

- Acceptable as a kitchen, laundry, utility, dressing room, bathroom or gallery
- Any room, not more than 4.5m above GL that has an egress window
- An inner-inner room may be acceptable if it falls under one of the above uses, and, not more than one door separates the room from an interlinked smoke alarm and none of the access rooms are a kitchen



Houses

Escape windows ADB

- Max height of cill 1100mm
- Min height 800mm or 600mm for a window in the roof
- Locks (with or without removable keys) can be fitted with a release catch which may be child resistant
- They should remain in the open position to allow persons escaping.

Basement lightwell escape

- Alternative escape via fixed non corrosive robust ladder (max 70 degree pitch) with stepped rungs and guarding accepted.





Houses – Open plan
ground floor

ADB options for three storey:

- Suppression to ground floor plus
- Separation of ground floor from first floor to allow top floor smoke free access to a first floor escape window plus
- Enhanced fire detection grade D2 LD1 plus
- Kitchen remote from escape route

Or

- Smoke curtain to protect escape route from habitable accommodation as far as the final exit plus
- Enhanced Fire detection grade D2 LD1



House Loft
Conversions

Two storey house becoming three storey

Options for protected stairway ADB vol 1

- Replace existing doors to protect stairway with FD20 doors (including bathrooms if they include a heat producing appliance)

Or

- if the existing doors are robust solid doors at least 32mm thick and fit well in their frames these can be retained with enhanced fire detection Grade D LD1

Notes. All glass in doors to be fire resisting in both situations.



Within apartments

Allowable variations without calculated Fire Engineering solutions

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Within apartments

BS 9991: 2015

Open plan flats – Para 9.7

- Open-plan flats that have bedrooms as inner rooms without alternative MOE, may be permitted provided that the flat is fitted with a sprinkler system and a Grade D LD1 alarm
- **Note** *Should not be used for sheltered housing or extra care housing*



Within apartments

BS9991 Open plan flats Conditions to allow inner rooms

- Size should not exceed 16m x 12m
- Single level only [**no gallery**]
- Minimum room height of 2.25m
- The kitchen should be enclosed if the area of the flat exceeds 8m x 4m

Note: Flats smaller than this should have cooking appliances remote from the flat entrance

Thank you for listening

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