



# **Revision to Part E of Building Regulations**

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## **Purpose of presentation**

**To inform you of the new Building Regulations on fire safety.**

**The presentation will mainly focus on requirements for dwelling houses and outline some of the new requirements in non domestic buildings.**

**The presentation does not cover all the new changes.**

**The views expressed are my own opinions at this time.**

# Overview

## **Domestic**

Emergency egress windows  
Inner rooms  
Fire detection and alarm systems  
Sleeping galleries  
Other

## **Non domestic**

Small shops and offices  
Crèches  
Storeys divided into other uses  
Shop storerooms  
TBE used for design of schools

**European standards have also been included throughout the text  
of Technical Booklet E**

## **Domestic - Emergency egress windows**

**Escape windows are now referred to as emergency egress windows, and their size and locations have changed.**

**An emergency egress window opening has reduced in size to 0.33m<sup>2</sup> with a minimum dimension of 450mm. For example at 450mm high window requires a minimum width of 733mm.**

**Emergency egress windows are required to all upper floor habitable rooms that are not more than 4.5m above ground level ie first floor windows**

**Each storey requires two alternative escape routes, if this is not possible a storey emergency egress window is to be provided**

**Roofspace conversions to existing two storey dwellings require emergency egress windows to each habitable room, all provisions apply, same as storey emergency egress windows**

## **Differences between emergency egress windows to rooms and those for a storey**




### **Requirements for both**

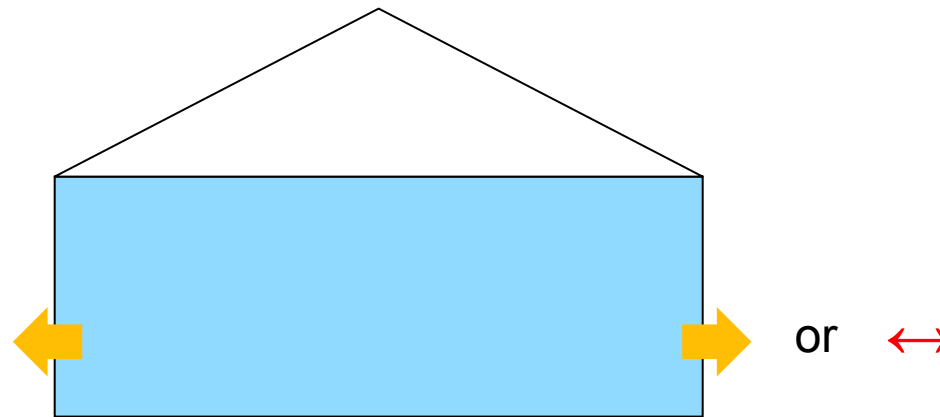
- **Same size**
- **Same opening height above floor level**
- **Leads to a place of relative safety, where it leads to an enclosed yard, the length of the yard is to be at least the height of the building**

### **Additional requirements for storey emergency egress windows**

- **To be located remotely from escape route**
- **Distance from bottom of window to eaves along slope of roof applies**
- **Windows on upper storeys to be located to facilitate rescue by ladder**

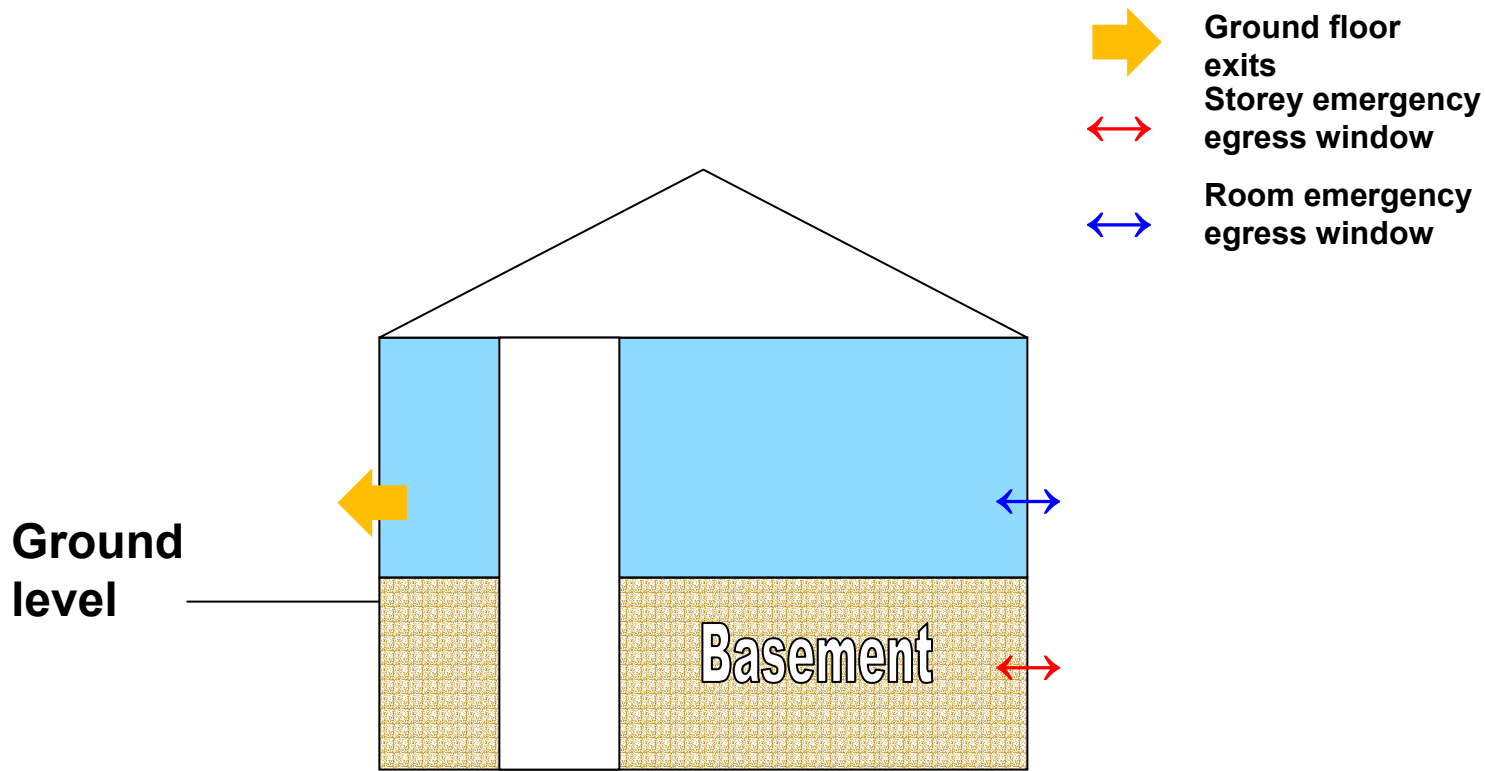
**Emergency egress windows can be reduced if bypass doors are used in addition to access doors from hallway**

-  **Ground floor exits**
-  **Storey emergency egress window**
-  **Room emergency egress window**



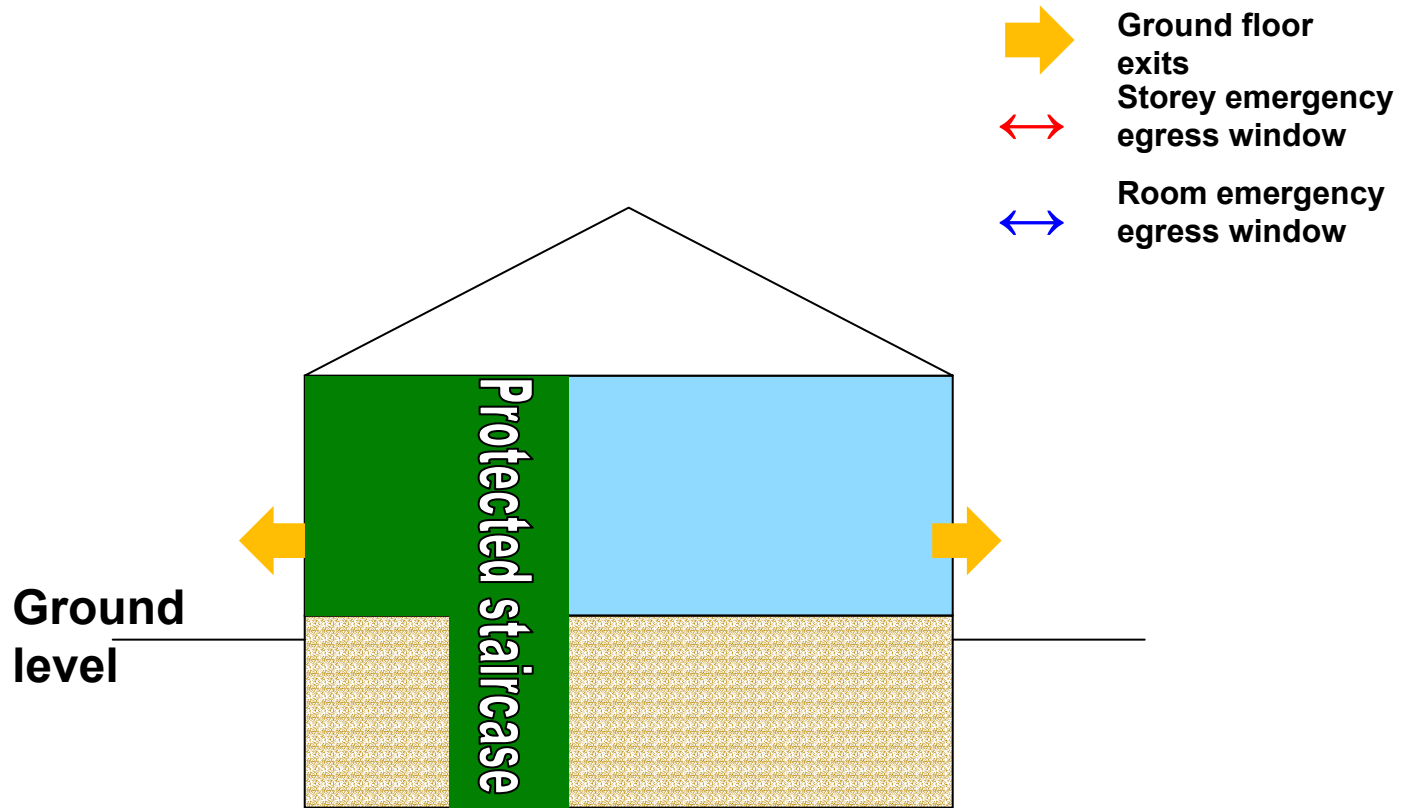
**Single storey dwelling**

**Two storey exits**



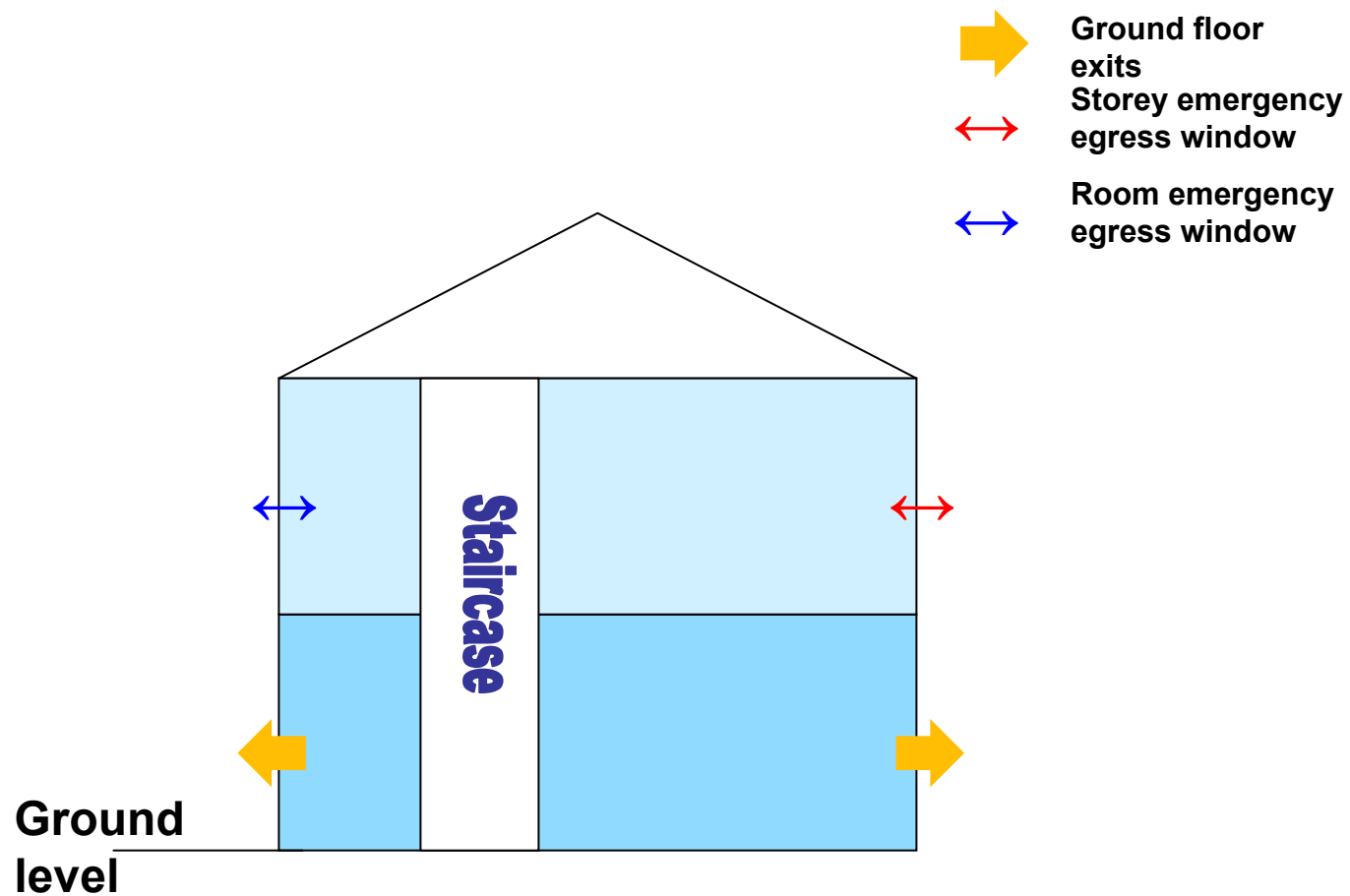
**Dwelling with basement**

**Storey exit at basement**



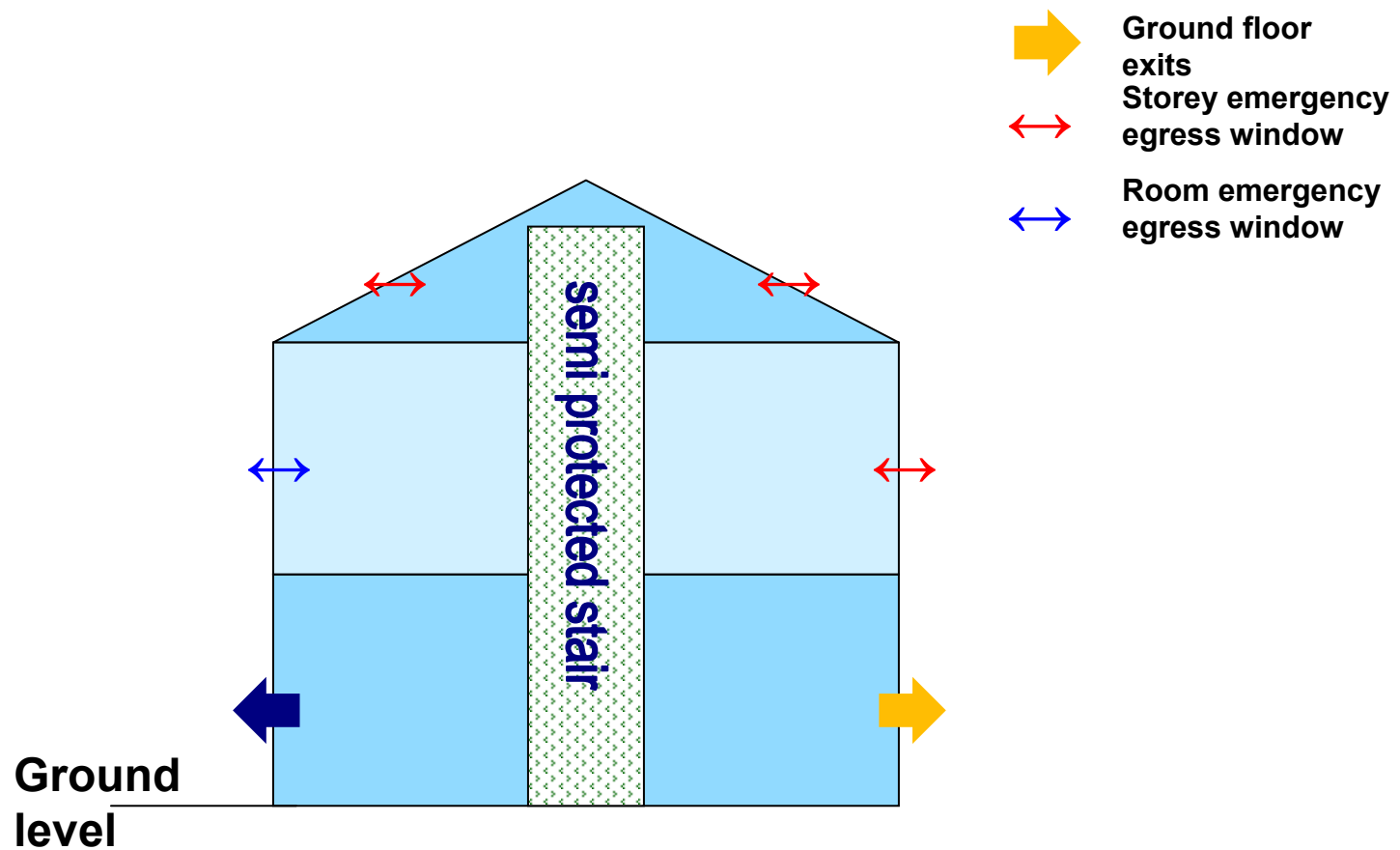
## Dwelling with basement

No emergency egress windows in basement but protected staircase



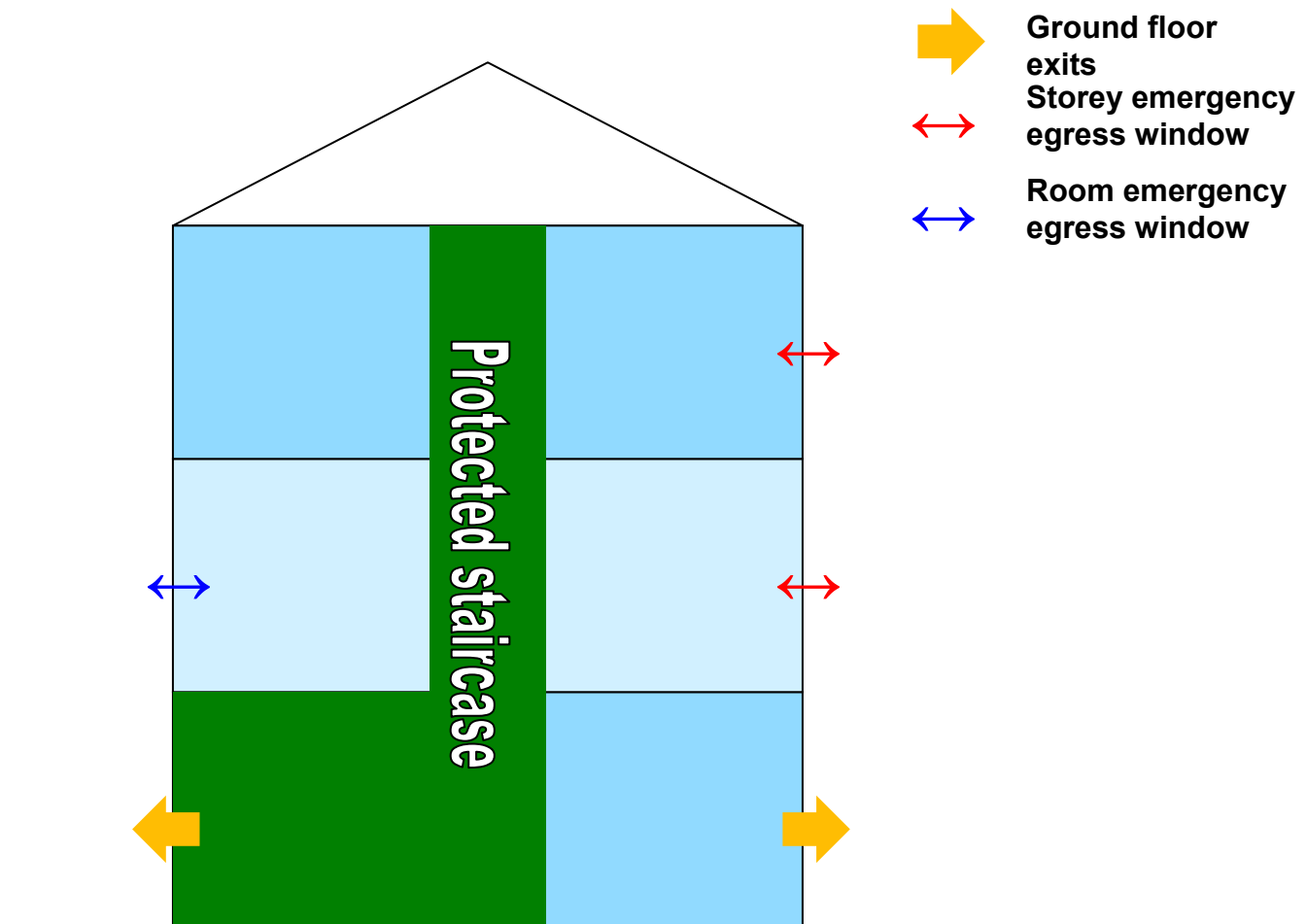
## Two storey dwelling

**First floor, one storey exit window and one exit window for each habitable room**



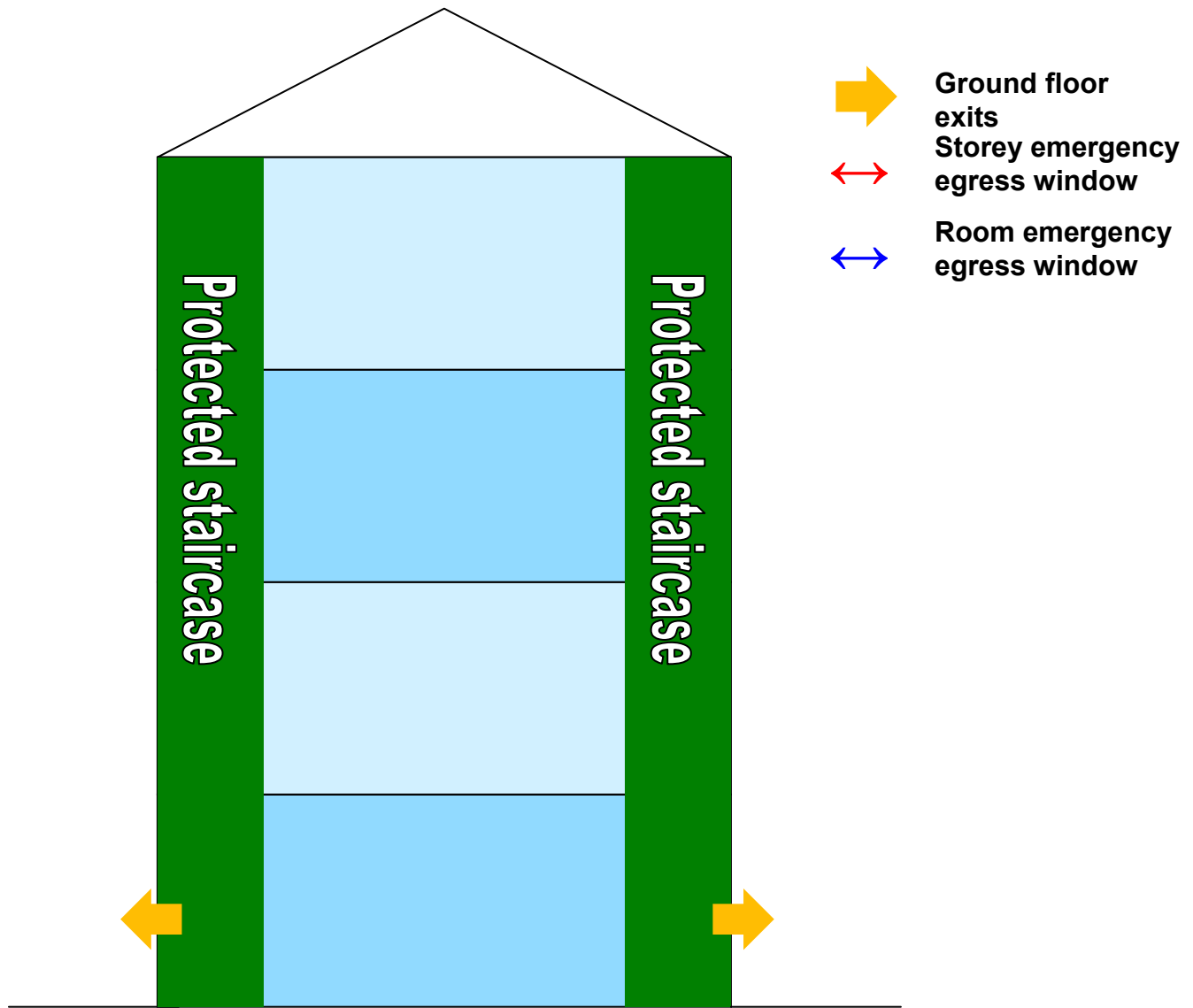
## Two storey dwelling with roofspace conversion

Storey emergency egress windows on second storey habitable rooms



**Three storey dwelling**

**Protected staircase and storey exit to second storey**



Two protected staircases to third floor and above

## Access rooms to inner rooms

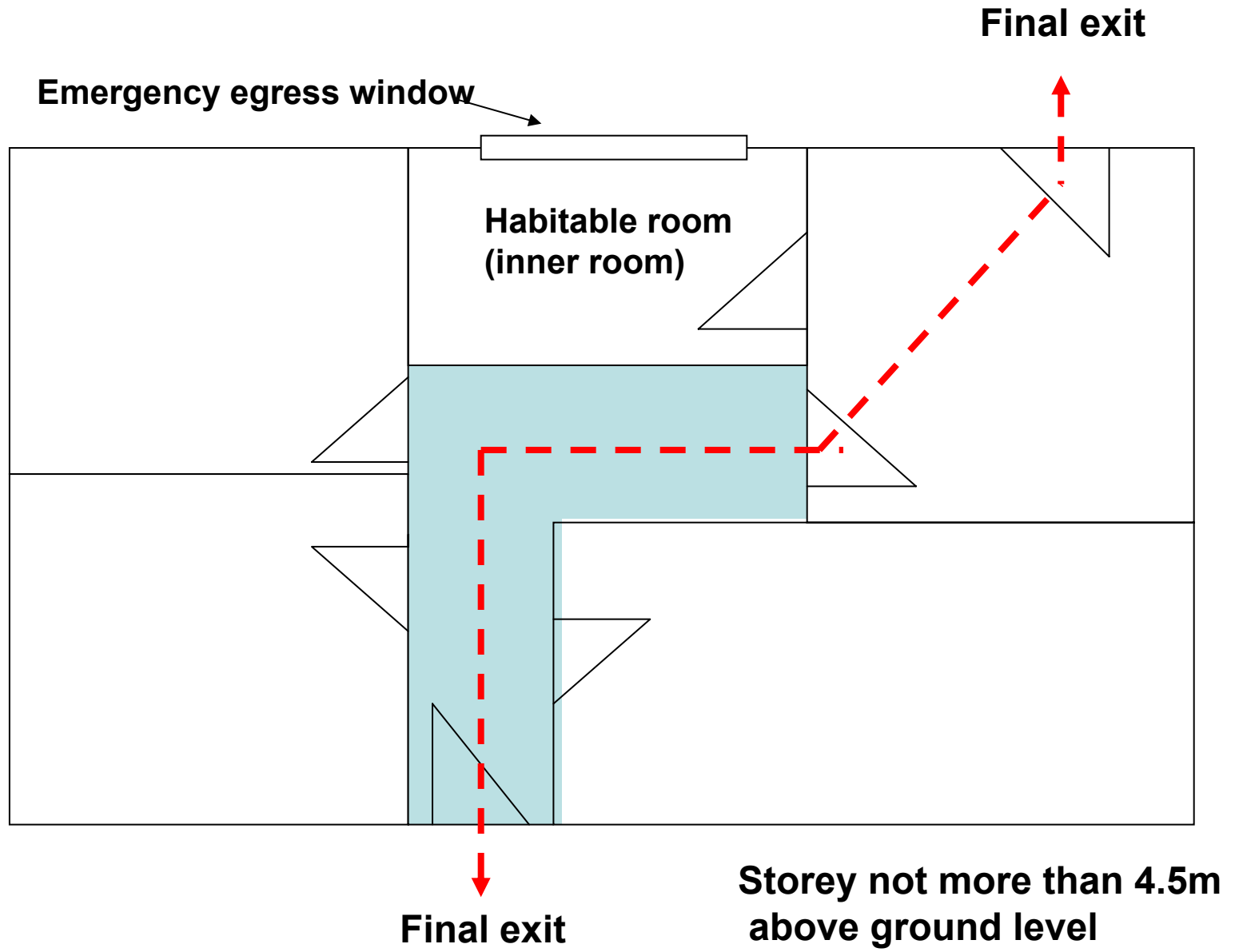
**Habitable rooms can be access rooms to all rooms**

**A kitchen can only be an access room**

- **to a conservatory or utility room provided these inner rooms have suitable emergency egress windows**
- **to habitable rooms, where the kitchen and inner room is on the same storey and the kitchen is part of an alternative escape route leading to its own final exit**

**(note stairs cannot discharge into kitchen or hallway if kitchen is part of hallway from a different storey)**

# Habitable inner room off a kitchen



Access rooms to inner rooms can't

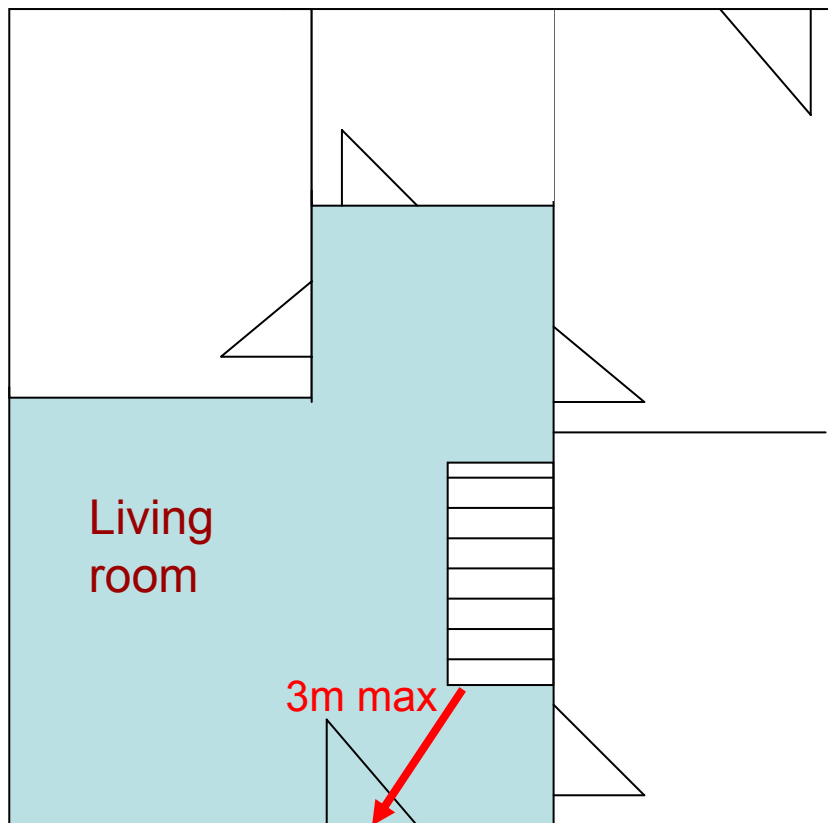
**Habitable rooms can be access rooms to all rooms**

**Where an upper floor habitable room discharges into another habitable room at a lower level, the upper floor habitable room**

- **Shall not be more than 4.5m above ground level**
- **The bottom of the stair shall not be more than 3m from a final exit door, or door into hallway**
- **Escape window needed in inner room**

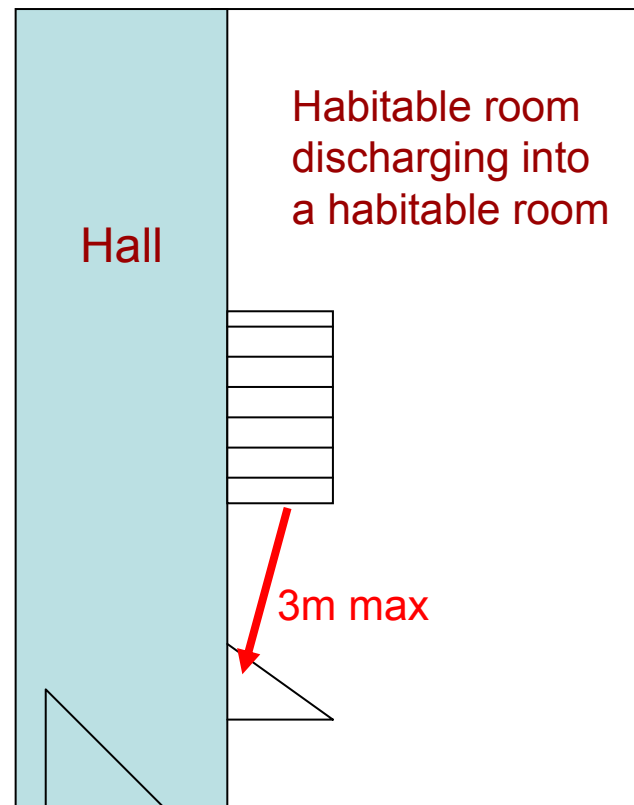
## Example A

Living room converts staircase into 'habitable room'



Ground floor

## Example B



Ground floor

Inner rooms require emergency egress windows  
Upper storey not more than 4.5m above ground level

# **Fire alarm and detection**

**Basic system for dwelling houses with storeys less than 200m<sup>2</sup>**

**Smoke alarms to comply with BS 5446-1 2000 and heat alarms with BS 5446-2 2003 and installed in accordance with paragraphs 1.25 to 1.33**

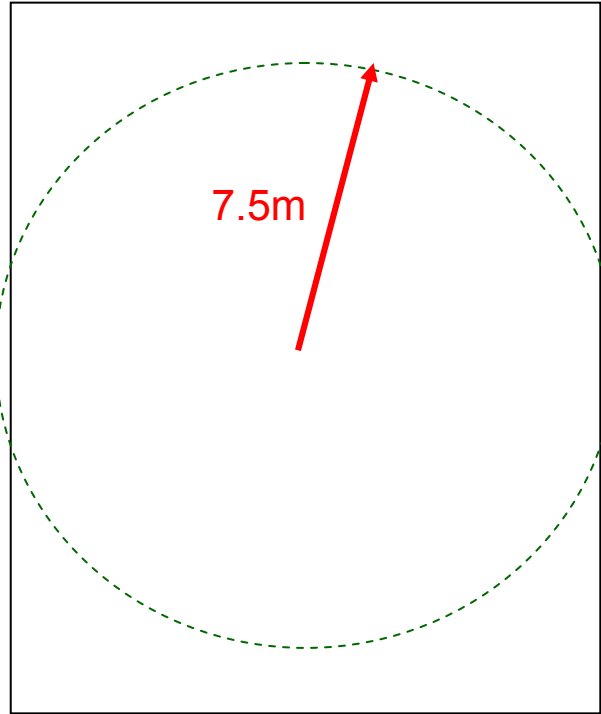
**eg battery back, interconnection between detectors and positioning of detectors, etc**

**Or, use Grade D category LD2 standard to BS 5839-6 2004 with heat alarms in kitchen and smoke alarms in principal habitable room**

## **New requirements**

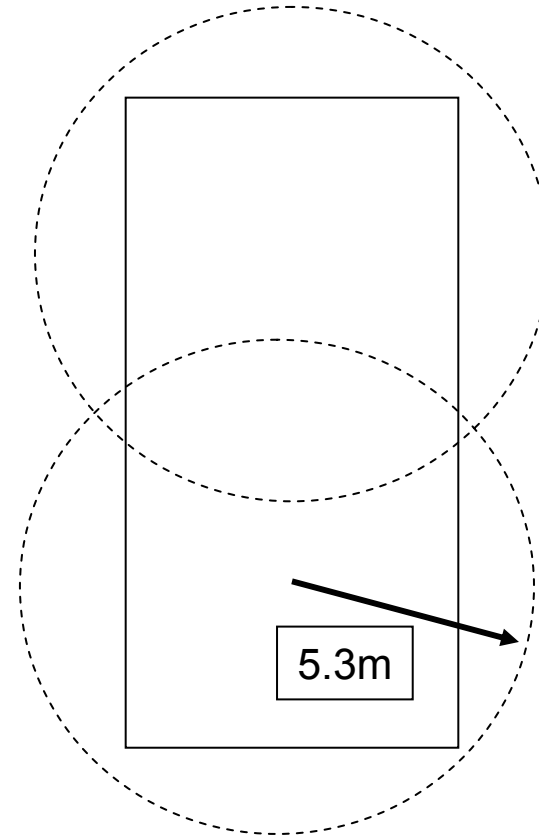
**Smoke detection in principal habitable room (most frequently use habitable room for daytime living purposes), no point of room more than 7.5m from detector**

**Heat detection in kitchens, no point of room more than 5.3m from detector**



**Living room**

**Coverage of one smoke detector is insufficient**



**Kitchen**

**Takes two heat alarms for kitchen**

## **Fire alarms continued**

**Additional provisions are needed for dwellings with any storey over 200m<sup>2</sup>**

**Grade B category LD2 to BS 5839-6 2004 system to be fitted in dwellings where any storey exceeds 200m<sup>2</sup> and there is no more than 3 storeys. Includes heat detection in kitchen and smoke detection in principal room.**

**This means a fire alarm and detection system is needed, comprising of detectors, sounders, control and indicating panel, standard fire resisting cable**

**Grade A category LD2 to BS 5839-6 2004 system to be fitted in dwellings where any storey exceeds 200m<sup>2</sup> and there is more than 3 storeys. Includes heat detection in kitchen and smoke detection in principal room.**

**This means a fire alarm and detection system is needed, comprising of detectors, manual call points, sounders, control and indicating panel, standard fire resisting cable**

## **Fire alarms continued**

**Roofspace conversions will require full alarm and detection systems. Type of system depends on storey size and height of dwelling**

**Flats and maisonettes require basic system as for dwelling houses**

**Flats and maisonettes with any storey over 200m<sup>2</sup> require a fire alarm and detection system to BS 5839-6 2004 Grade D Category LD2 with heat detection in kitchen and smoke detection in principal habitable room**

## **Sleeping galleries**

**Not more than 4.5m above ground level**

**3m from bottom of stair which leads to gallery to door into room containing gallery**

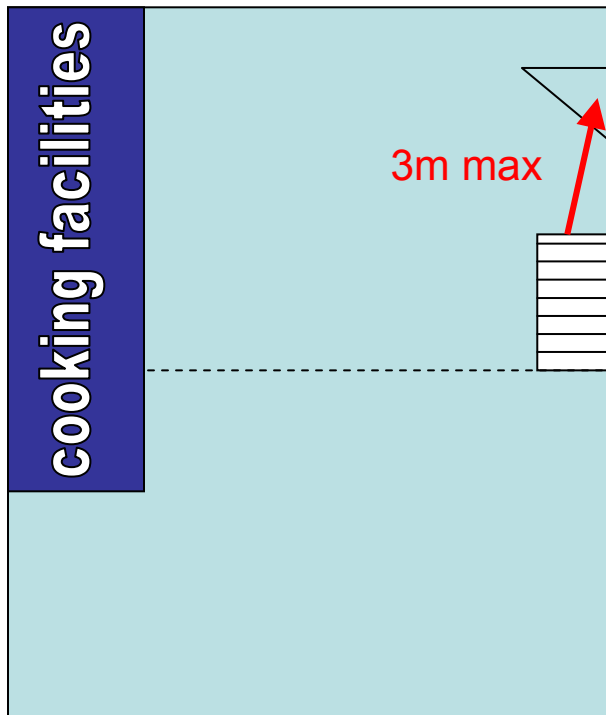
**Maximum area of 30m<sup>2</sup>**

**Where the distance from the top of the access stair to any point in the gallery exceeds 7.5m, and alternative means of escape is to be provided that is remote from stair (can be emergency egress window)**

**Any cooking facilities in the room containing the gallery to be remote from stair or enclosed in 30 minute fire resisting construction**

# Sleeping galleries

Ground floor



Gallery



Not more than 4.5m above ground level

Where distance exceeds 7.5m an emergency egress window that is remote from stair is required

## **Passenger lifts**

**Passenger lifts serving storeys above 4.5m (three storeys or more) to be located in a protected staircase or shaft**

# **Non domestic**

## **Crèches for ancillary use**

**To be located on ground floor adjacent to an external wall with two exits. One of these exits to be a final exit**

**Where crèche cannot be located on ground floor it should be located as near the ground level as possible and**

- Two exits required, one a storey exit,**
- Not located above parents/ guardians location, unless their escape route is through it, and**
- Not located in a basement unless it has an open side and the final exit is at ground level**

## **Means of escape using unprotected stairs para 1.66**

**Can be used in small offices and shops provided they are not used as bars or restaurants.**

**Designed for single occupancy**

**Building consists of not more than a basement, ground floor and first floor**

**Floor area of any storey does not exceed 90m<sup>2</sup>**

**Number of people is low ie 60**

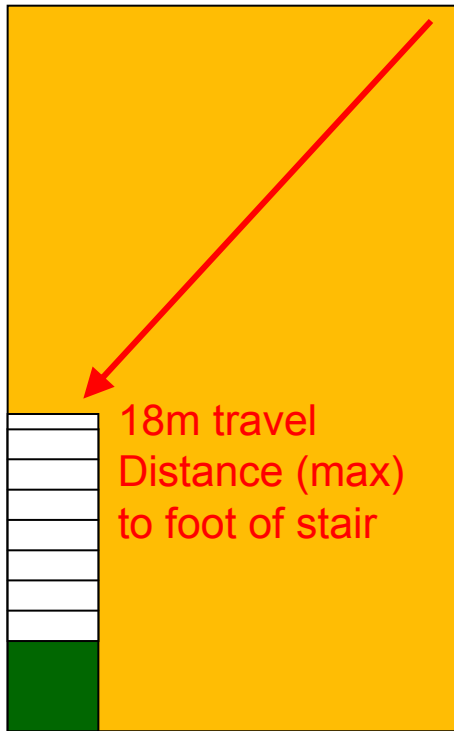
**Stair does not connect more than two storeys**

**Stair discharges not more than 3m from final exit**

**Travel distance 27m on ground floor, 18m to head of first floor unprotected stair, or 18m to foot of basement stair, direct distance of 2/3 the travel distance to be taken where layouts are unknown**

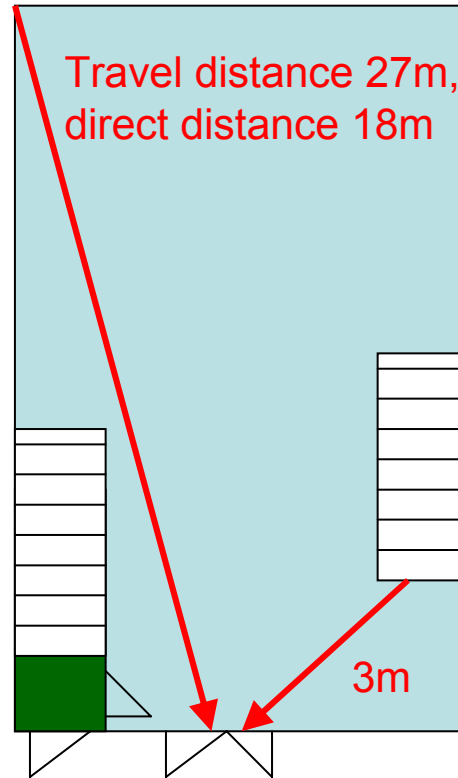
# Small shops and offices

## Basement



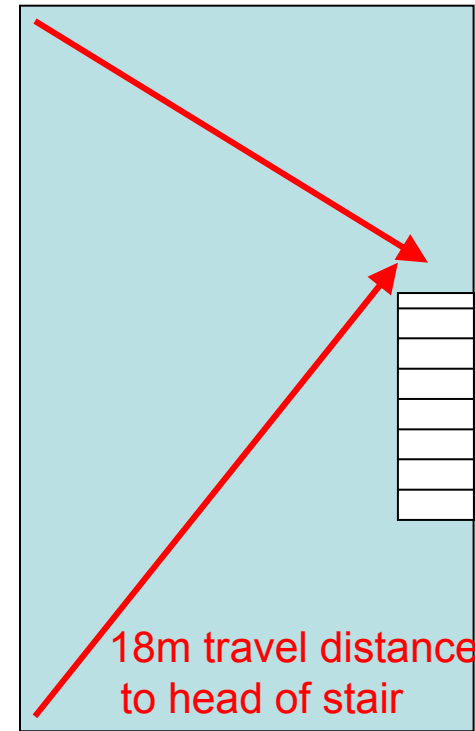
**Stair between basement and ground floor enclosed**

## Ground floor



**Final exits**

## First floor



**Unprotected stair between ground floor and first floor**

**Floor area on any storey not to exceed 90m<sup>2</sup>**

## **Storeys divided into other uses (paragraph 1.49)**

**Where a storey has an ancillary use for the consumption of food or drink by customers the following is required**

- Two escape routes**
- Escape routes to lead directly to a storey exit without entering a kitchen or place of special fire hazard eg boiler rooms**

## **Shop storerooms (paragraph 1.92)**

**Where the siting of a fully enclosed store within a shop prejudices the means of escape, it requires 30 minutes fire resistant enclosure, unless**

**It has a suitable fire alarm and detection system or automatic sprinkler system**

## **Schools**

**Technical booklet E is now the principal design guidance document for schools**

**Some specific requirements for schools e.g. special fire hazard classification for kitchens, technology rooms, etc**

**Specific requirements for width of corridors table 1.4**

## **Other**

**External escape routes**

**Insulating core panels & use of double skinned insulated roof sheeting at the junction of compartment walls**