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A brief overview on Fire Safety Measures in Houses of Multiple Occupation

Private Sector Housing

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Fire Safety (1)

- The information contained in this guide is only for general guidance and information purposes only. It should not be regarded or relied on as a complete or authoritative statement of the law. Given the changing nature of laws, rules and regulations. The HMO owner/licence holder/manager is responsible to ensure that any change to fire safety compliance is adhered too. It is not within the remit of the local authority or local fire authority to instruct responsible persons of how to manage fire safety within their HMO

- This guide has used the following pieces of guidance. It is strongly recommended that responsible HMO persons , familiarise themselves with the guidance :

Homestamp Guidance

Lacors Guidance

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Fire Safety (2)

General Principles

The fire precautions that the local authority require are mostly about things that can happen outside the residents' control. The Law takes the view that someone with overall control of the house must takes steps to protect everyone living in it.

"The main reason for insisting on fire precautions in HMOs is to provide early warning and stop the smoke and fire spreading to other parts of the houses before the occupants have a chance to escape."

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Fire Safety (3)

The level of risk within HMO's

"Analysis of national fire statistics have concluded: You are **six times more likely** to die in a fire if you live in any house in multiple occupation (HMO), compared with a single family house. The risk increases to **sixteen times more at risk of fatal injury** if you live in an HMO which is 3 or more storeys high."

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Fire Safety (4)

Important

This is a overview and not an in detail guide for all types of properties and will focus on the principles of fire detection and separation in the most common types of HMOs.

It will cover

- Type and grades of fire detection systems
- Fire separation and protected escape routes
- Fire egress windows
- Door locks and additional provisions for HMOs
- A few examples of types of system for common HMOs

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Type & Grading of Detection Systems

The design and coverage of fire detection systems is based upon fire risk assessment, type of tenure, and layout of property.

The British Standard Associated with Fire Alarm System Installations in Dwellings is BS5839 Part 6 2004. This part of the British Standard is split up into 3 categories of systems. These categories are as follows:-

- LD1 - Alarms in all circulation spaces that form part of escape routes and all areas where a fire might start, but not bathrooms, shower rooms or toilets
- LD2 - Alarms in all circulation spaces that form part of escape routes and rooms or areas that present a high fire risk
- LD3 - Alarms in circulation spaces that form part of escape routes

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Type & Grading of Detection Systems cont'd.

Further to category of system different grades of system may be specified. These are as follows:-

- Grade A - A full system with control and indicating equipment installed to BS 5839: Part 1
- Grade B - Detectors and sounders using simpler specified equipment
- Grade C - Detectors and sounders or alarms with central control
- Grade D - Mains powered alarms with an integral stand-by power supply
- Grade E - Mains powered alarms with no stand-by power supply
- Grade F - Battery powered alarms

Typical shared 2 storey student house tends to have a LD2 Grade D system.

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Separation and Protected route of escape

The need for fire doors or protected route depends upon the layout, number of storeys and tenure of the property in addition to the fire risk assessment. If they are required the following basic principles apply.

Fire Doors – fire doors are specific door rated to a fire resistance, general rule of thumb is that a well fitted solid door will provide a nominal 20 minute fire resistance. When fire doors are required we generally refer to FD30 specifications

An FD30 is a fire door rated to 30 minute fire resistance in an associated framing kit, the door will be hung on $1^1/_2$ pairs of 100mm stainless steel hinges and the door or frame may have the intumescent seal incorporated and a self closing device.

An FD30S is a FD30 door and associated fittings but will also include cold smoke seals.

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Separation and Protected route of escape (1)

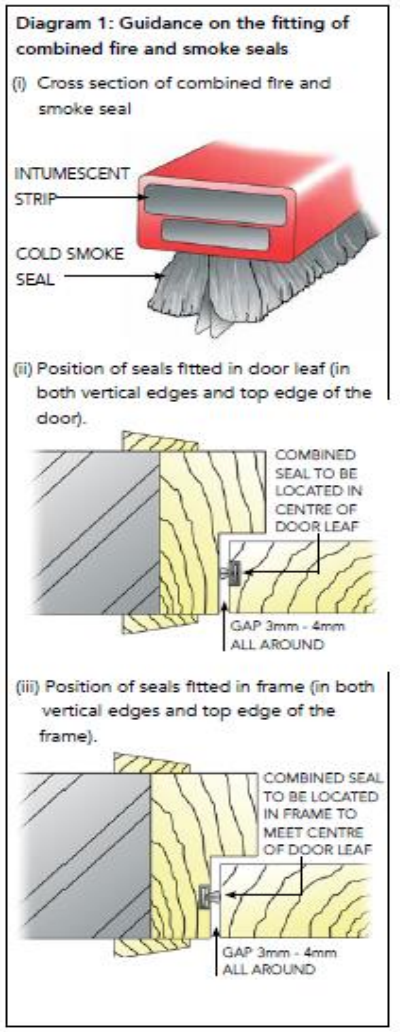
Fire doors continued:

The installation of the door is crucial to allow it to perform its intended function. In must be well fitted in the case of FD30 doors the gap between the frame and door should be 1-2mm and for FD30S is usually between 3-4mm but may vary dependant upon the manufacturers specification of the seals.

Gaps between the frame and wall when installing should be filled with a fire resistant material (such as an expanding foam product rated for this task)

Fire doors can also be rated to FD20, and FD60.

If the door requires a glass pane it must be 6mm Georgian wired glass.



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Separation and Protected route of escape (2)

Protected routes are not always needed in properties but for 3 storey properties they usually are required due to regulations around fire egress windows.

All escape routes out of HMOs must be kept clear of obstructions and should not contain items creating fire loading such as highly flammable wall and ceiling coverings such as polystyrene ceiling tiles.

Generally protected corridors are constructed to provide a safe means of escape with a 30 minute fire resistance. This is achieved by the installation of FD30 or FD30S doors (dependant upon storeys and layout of the dwelling). Solid walls are deemed to provide adequate separation but where stud partitions have been installed or ceilings/floors are in a poor state of repair additional works will be required to provide the necessary level of protection.

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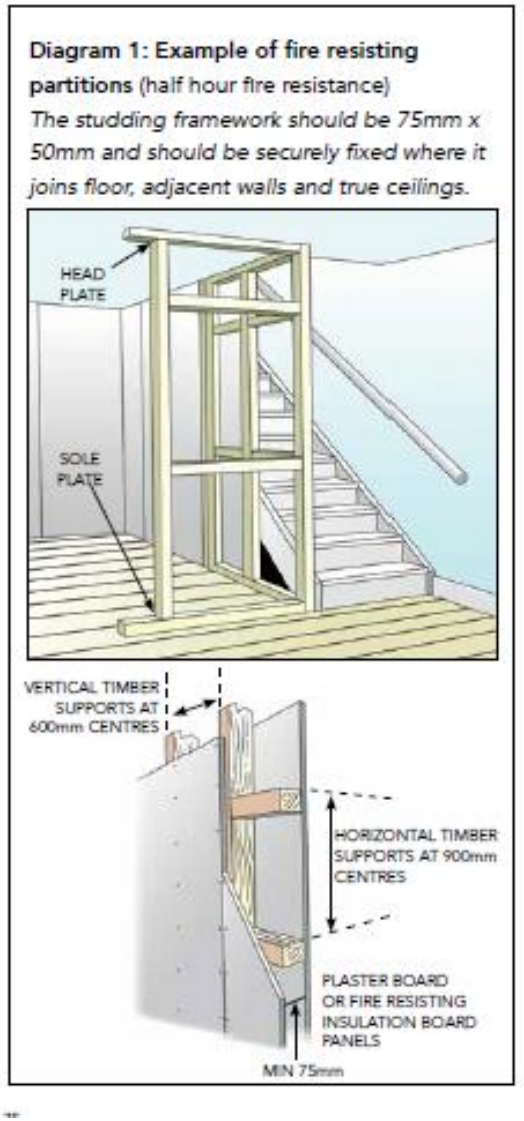
Separation and Protected route of escape (3)

Protected route continued:

Stud walls – a stud wall constructed of 75mm x 50mm timber frame with 600mm verticals, covered with 12.5mm plasterboard on both sides and skimmed finish or 12.5mm fire rated plasterboard unskimmed will achieve 30 minute separation.

Ceilings – underdrawn with 12.5mm plasterboard and skimmed finish or 12.5mm fire rated plasterboard unskimmed

Floors – overlaid with 3.2mm oil tempered hardboard or 4mm plywood



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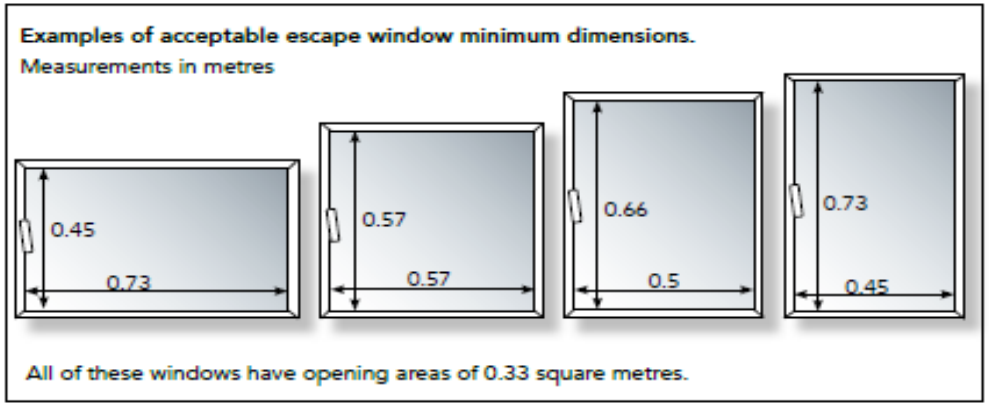
Fire Egress Windows

Where a window is installed as an alternative means of escape the following guidance must be referred to.

The openable part of the window must provide an unobstructed opening of 0.33msq with the height and width minimum dimensions of 450mm.

The internal sill height should be between 800-1100mm and the external cill height to floor cannot exceed 4.5m therefore not appropriate to install in a 3 storey dwelling and protected corridor is the more likely solution.



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Door locks and additional provisions

For all types of HMOs final exit doors and bedroom doors where locks are fitted require a lock that is capable of being opened from the inside without the use of a key.

Fire blankets must be installed in all kitchens that are compliant with BS 6575 (or equivalent). Fire blankets should be installed on a wall near an exit at a height of around 1.5m from the floor.

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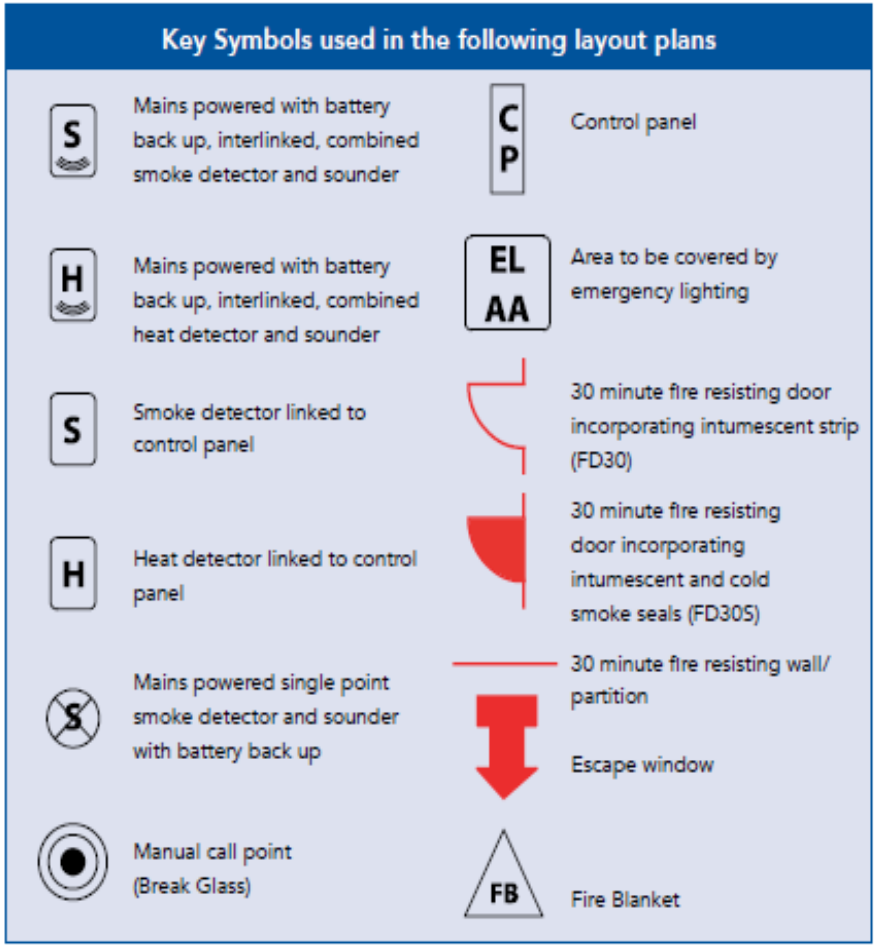
Worked examples

The following slides will show an example of the following types of properties

- Shared 2 storey 3 bedroom dwelling (student house)
- Shared 3 storey 6 bedroom dwelling (student house)
- Bedsit 2 storey 6 bedroom dwelling (cooking in rooms)
- Bedsit 3 storey 7 bedroom dwelling (shared kitchen)



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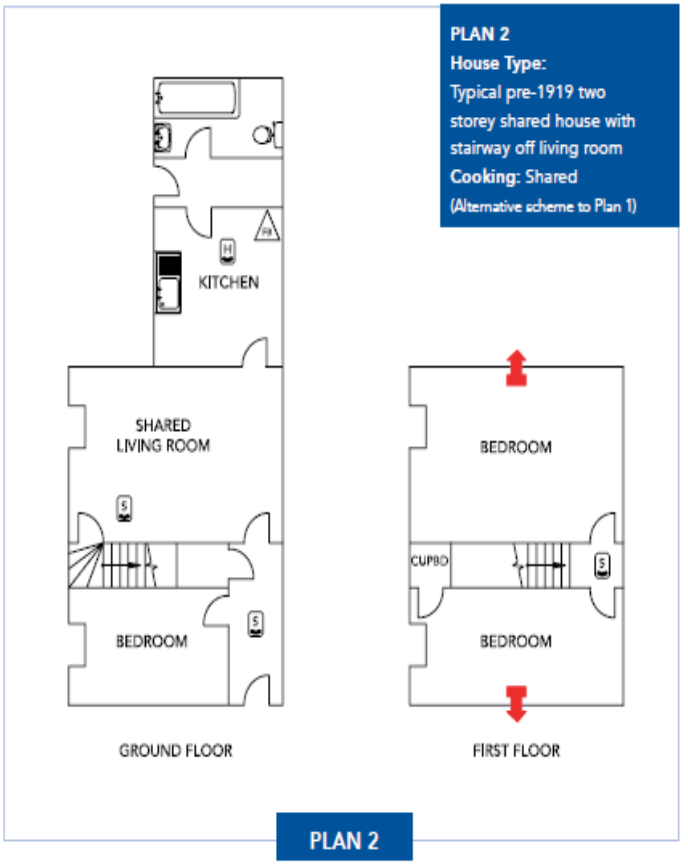
Typical Shared House

Example 1
2 storey 3 bedroom shared house with escape route via communal lounge.

LD2 Grade D System.

When determining whether it is a shared house or bedsit it is based upon the commonality of the tenants.

A student house tends to be shared whilst working professionals or individuals who rent a room tend to be defined as a bedsit property.



Alternatively, to the preferred option of Plan 1, means of escape can be achieved by providing a detector/sounder in the communal areas and providing escape window openings from the first floor habitable rooms to provide a secondary means of escape in the event that the primary escape route is compromised.

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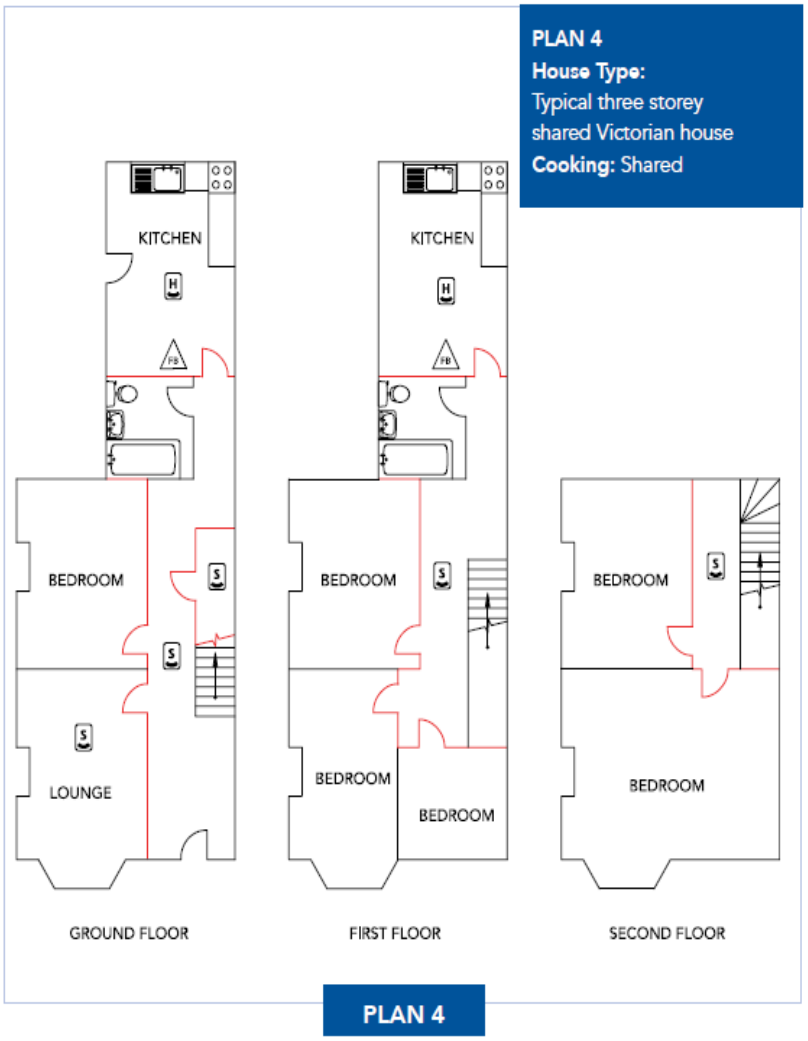
Typical Shared House cont'd

Example 2
3 storey 6 bedroom shared house with protected escape route.

LD2 Grade D System

Lower risk premise therefore well fitted solid doors are accepted on protected route – preferable FD30

Emergency lighting maybe required.



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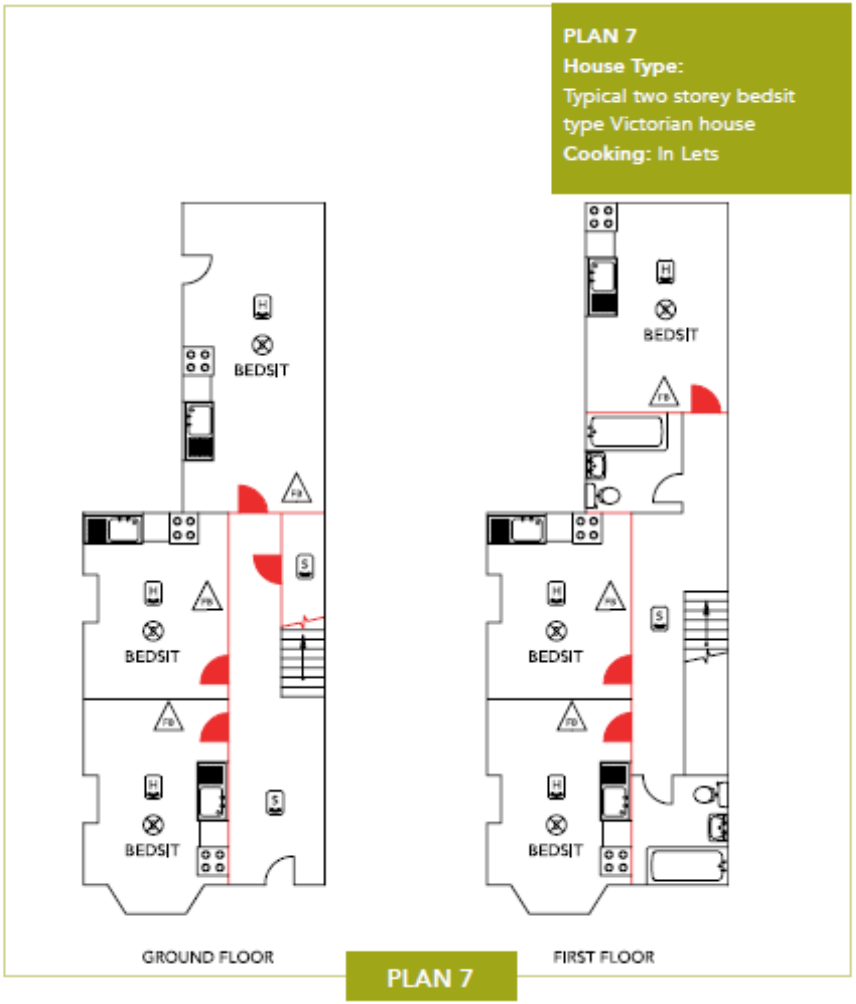
Typical Bedsit Accommodation (With Kitchenette)

Example 3
2 storey 6 bedroom house with protected escape route.

Mixed system
LD2 Grade D System interlinked
LD2 Grade D single point smoke detectors

Escape Route FD30S, or alternative fire egress windows to all units

Emergency lighting maybe required.



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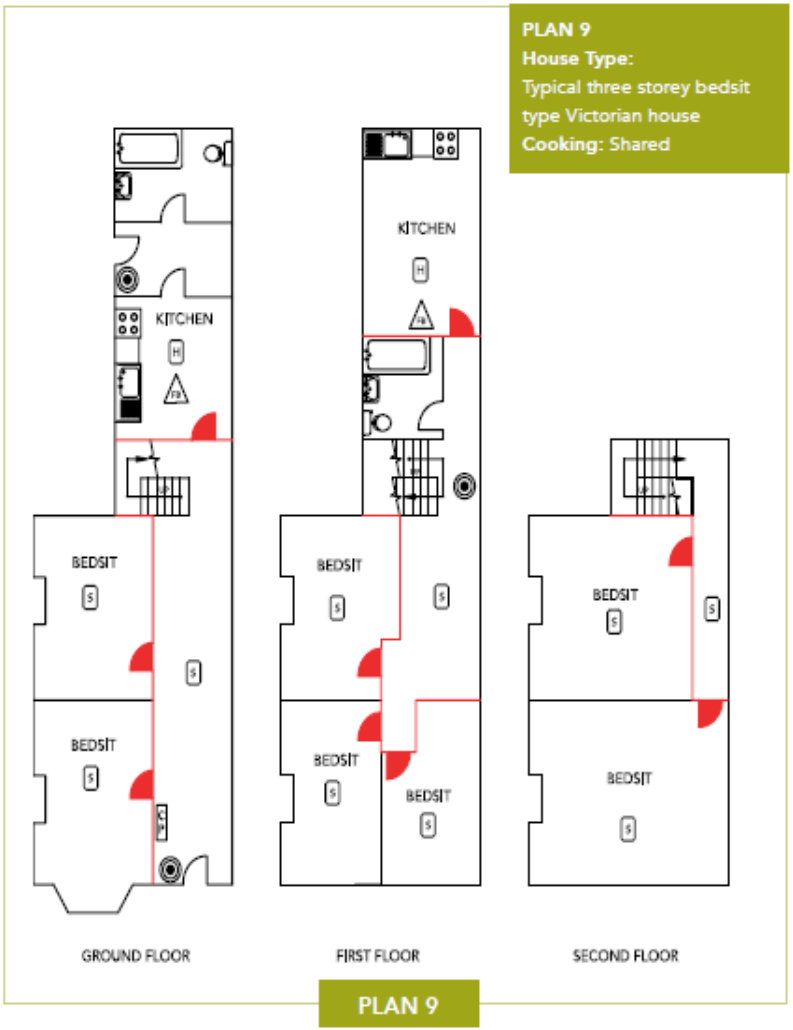
Typical Bedsit Accommodation

Example 4
3 storey 7 bedroom house with protected escape route.

LD2 Grade A system with control panel

Escape Route FD30S

Emergency lighting maybe required.



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Common Issues

- The mixing of standards i.e. taking some elements from shared and bedsit type accommodation but not satisfying either
- Installing FD30 doors with intumescent strips, without cold smoke seals
- Installing cold smoke seals in rooms with no detection
- Installing FD30's fire rated doors without doors closers
- Installing fire doors without fire rated hinges (BS EN 1935 standard)
- Mixing battery powered and hard wired smoke detectors
- Damage to fire doors
- Excessive gaps around fire doors (more than 3mm)
- Damage to smoke detectors
- Missing or inappropriately cited fire blankets
- Lack of egress windows in properties where required
- Sources of ignition on means to escape routes (i.e. fridges, freezers, tumble drier)

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Fire Risk Assessments

The Regulatory Reform (Fire Safety) Order 2005

- "9.—(1) The responsible person must make a suitable and sufficient assessment of the risks to which relevant persons are exposed for the purpose of identifying the general fire precautions he needs to take to comply with the requirements and prohibitions imposed on him by or under this Order."

- 6) As soon as practicable after the assessment is made or reviewed, the responsible person must record the information prescribed by paragraph (7) where—

- (a)he employs five or more employees;

- (b)a licence under an enactment is in force in relation to the premises; or

- (c)an alterations notice requiring this is in force in relation to the premises.

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What Should a Fire Risk Assessment Include (1)

- **Step 1 - Identify fire hazards**
  - sources of ignition
  - sources of fuel
  - sources of oxygen

- **Step 2 - Identify people at risk**
  - people in and around the premises
  - people most at risk

- **Step 3 - Evaluate, remove, reduce and protect from risk**
  - evaluate the risk of a fire occurring
  - evaluate the risk to people from fire
  - remove or reduce fire hazards
  - remove or reduce the risks to people
  - detection and warning
  - fire-fighting
  - escape routes
  - lighting
  - signs and notices
  - maintenance

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What Should a Fire Risk Assessment Include (Part 2)

- **Step 4 - Record, plan, inform, instruct and train**
  - record significant findings and action taken
  - prepare an emergency plan
  - inform and instruct relevant people; co-operate and co-ordinate with others
  - provide training

- **Step 5 - Review**
  - keep assessment under review
  - revise where necessary

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Questions & Contact

It is important to state that this is intended as a guide and does not cover all options.

Further information can be found in the

- LACORS Housing – Fire Safety guidance

- Homestamp – A guide to Fire and Security Protection in Multi-Occupied Residential Properties.

- Alternatively contact Stoke-on-Trent City Council Private Sector Housing Team or Newcastle-under-Lyme Borough Council

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