

Fire Safety Consultants

ENGLAND & WALES

1 DAY COURSE

FIRE SAFETY IN PURPOSE-BUILT BLOCKS OF FLATS

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Training Dates for 2013

March

11 th	Fire Risk Assessment Refresher course	Surrey	
12 th - 15 th	3.5 Day Fire Risk Assessment course	Surrey	

April

17 th	New Guidance on Fire Safety in Purpose- Built Blocks of Flats	Birmingham
24 th	New Guidance on Fire Safety in Purpose- Built Blocks of Flats	London

May

13 th	Fire Risk Assessment Refresher course	Belfast
$14^{th} - 17^{th}$	3.5 Day Fire Risk Assessment course	Belfast

September

16 th Fire Risk Assessment Refresher course		Sheffield		
$17^{th} - 20^{th}$	3.5 Day Fire Risk Assessment course	Sheffield		

Bespoke courses can be tailor-made to suit your requirements.

All one day courses are charged at £185 + VAT

The cost of a 3.5 day FRA course is £525 + VAT

For further information and to book a course, please email: office@cstodd.co.uk or call

Terms and conditions apply





Fire Safety in Purpose-Built Blocks of Flats

National Guidance



C.S.Todd & Associates Ltd Fire Safety Consultants

Colin Todd - Director

Malcolm Hoare - Senior Consultant

www.cstodd.co.uk office@cstodd.co.uk

Why a New Guide?



- Impact of Fire Safety Order
- Limited guidance available
- Inconsistent enforcement
- · Unsuitable fire risk assessments.



Scope

- · Existing purpose-built flats
- Not a design guide
- Includes the flats as well as common parts.



Converted Flats



Guidance will be applicable to flats if conversion was carried out in accordance with the then current Building Regulations

Compartmentation will need to support a 'stay put' strategy

If not, 'LACoRS Guide' will be more appropriate.





Scope



- · Includes sheltered housing and cluster flats
- · Covers flats above commercial premises
- Does not cover HMOs



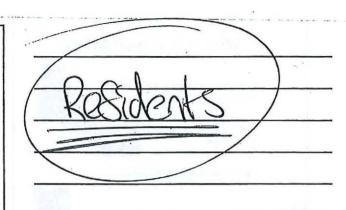
 Does not cover commercial parts or separate ancillary facilities.



Scope



- Includes owner-occupied, social housing and private rented flats
- Term residents covers all occupants
- Life safety not property protection
- Not operational fire-fighting
- Applicable to England only.



Approach



- General principles only
- Not prescriptive
- Provides benchmarks not rules
- Allows for alternative approaches.

Who is it Aimed At?



Those who manage and give advice on standards in purpose-built blocks of flats including:

- Private rented sector landlords ·
- Social housing providers
- Residents' management companies
- 'Right to manage' companies
- Managing agents or facility managers



Who is it Aimed At?



Enforcement officers in local housing authorities



- Enforcement officers in fire and rescue authorities
 - OFFICER
- Consultants and contractors carrying out fire risk assessments.



Relationship with Other Guidance



DCLG Sleeping Accommodation Guide



LACoRS Guide



Relationship with Other Guidance



Building Regulations Approved Document B



- British Standard 5588 Part 1 (er
- British Standard 9991:2011

Contents



Part A: Fires in Flats

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Part C: Fire safety law

Part D: Fire risk assessment

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Part F: Managing fire risk - Fire protection

Part G: Managing fire risk - Management

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Appendix 2: Steps in a FRA

Appendix 3: Selecting a competent fire risk

assessor

Appendix 4: Fire Safety Advice for Residents

Appendix 5: Examples of Fire Action Notices

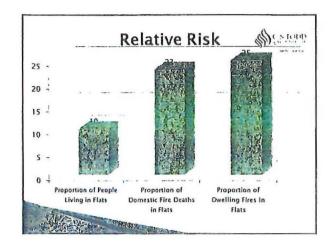
Appendix 6: FD & A Systems

Appendix 7-13: Case Studies Glossary

Biography Index



Part A: Safe as Houses? Fire in flats and their impact



Fires in Flats



High rise = high risk?

No greater likelihood of a fatality in a high-rise block than low-rise block Bungalow more likely to result in a fatality than in high-rise block

Risk? The risk is in the dwelling not the building

The second second

Stay Put policy?
In 2009/10, over 8,000 fires in blocks of flats – only 22 fires required evacuation of 5 or more people by Fire and Rescue Service.



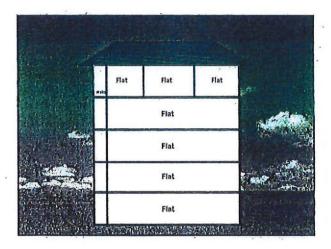
Part B: Fire Safety -How blocks of flats differ from other residences

DESIGN PRINCIPLES



PURPOSE BUILT FLATS AND SHELTERED ACCOMMODATION





Evacuation Strategy



- No requirement for simultaneous evacuation of purpose-built blocks
- · 'Stay put policy' is different from other buildings
- Residents in flat of origin evacuate and call the Fire Service - all other residents safe to remain in their flats
- · Fire and Rescue Service attendance is a factor?



Disabled Evacuation (Stopp



- Evacuation of disabled residents
- Who is responsible?
- 'Stay Put' policy
- Personal Emergency Evacuation Plans?
- Information for Fire and Rescue Service?





Part C: The law governing fire safety in blocks of flats

Fire Safety Legislation



Legislation applicable to existing flats:

- Regulatory Reform (Fire Safety) Order 2005
- Housing Act 2004
- Building Regulations 2010 (Material Alteration)

Building Regulations



- > Need to consider material alterations within flats
- · Classic contraventions are internal doors and flat entrance doors
- Powers to require rectification exist for only 12 months
- Regularisation possible.

Fire Safety Order



PREMISES

FIRE SAFETY DUTIES

RESPONSE REPERSON RISK ASSESSMENT RELEVANT PERSONS

GENERAL FIRE PRECAUTIONS



Premises



- Applies to common parts only up to and including flat entrance doors
- Plant rooms, store rooms etc
- Flats are classed as domestic premises and are outside the scope of the Order.



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Responsible Person – Article 3



- · The Employer
- Person having control of premises includes a person who, by virtue of a contract or tenancy, has an obligation of any extent in relation to
 - · Maintenance or repair of premises
 - Maintenance or repair of anything in or on the premises
 - · The safety of the premises.

Responsible Person



- Freeholder
- · Social and Private Landlords
- · Residential Management Company
- · Right to Manage Company
- Managing Agent
- If workplace, the Employer



Other Persons Having Control Article 5(3)



- A Wide Range of People with duties under the Order
- · Definition Depends on Contracts
- Managing Agent may be RP or may be Other Person
- · Contractors Fire Risk Assessors

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Relevant Persons



- Any person who is, or may be, lawfully on the premises
- Any person in the immediate vicinity of the premises and who is at risk from a fire on the premises
- Residents Visitors Contractors
- Not fire-fighters on operational duties

Risk Assessment - Article 9 1000



· 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 needed to comply with the Order.

General Fire Precautions



- Measures to reduce risk of fire and fire spread
- · Means of escape



- Measures for securing that means of escape can be safely and effectively used
- · Means for fighting fires
- · Means for detecting and giving warning
- Action to be taken in event of fire training -Instruction - procedures.





Risk Assessment



Must record prescribed information if:

5 or more employed - Licence applies Alterations Notice is in force



Prescribed Information includes:

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Significant findings - measures taken measures that will be taken (Action Plan) -Any group of relevant persons especially at risk (disabled/vulnerable).



Housing Act 2004



- Housing Health and Safety Rating System
- One of the 29 hazards covered by the HHSRS is fire
- The system is risk based and uses a formula to generate a numerical score which determines the action taken.



Housing Act 2004



- HHSRS is applied to individual dwellings and the common escape routes used by the residents of that dwelling
- Overlap in legislation between the Housing Act and the Fire Safety Order
- Potential for overlap in enforcement
- Useful for enforcement of measures within flats (internal doors, ventilation ducts).



Enforcement

- The Fire Safety Order generally enforced by fire and rescue authorities
- The Housing Act (HHSRS) enforced by local authorities
- Enforcement Protocol.



Enforcement Options Scatton



Fire Safety Order:

Notice of Deficiencies - Action Plan Enforcement Notice - Prohibition Notice Alterations Notice.

The Housing Act:

Improvement Notice - Prohibition Order Emergency remedial action.

Building Regulations:

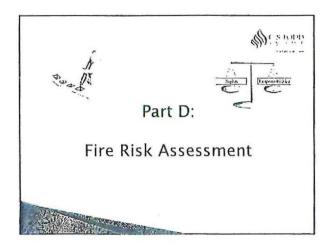
Rectify unauthorised material alterations Regularisation of unauthorised work.

Private Leasehold Flats & CASTODD



- Legal implications:
- The freehold company may have limited rights of entry and no powers to enforce in leasehold flats
- In many cases the flat entrance doors will belong to the leaseholder
- May have to consider action against individual leaseholders.

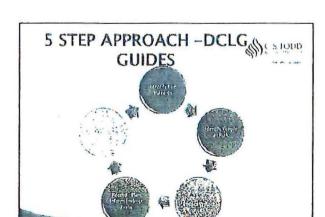




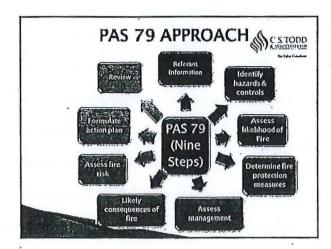
Popular Misconceptions



- FRA carried out at design stage
- FRA is carried out as snagging exercise
- FRA needs to be carried out by consultants
- FRA needs to identify all latent defects.



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Fire Risk Assessment - 4 Types



- Type 1 Common parts only (non-destructive) survey to satisfy FSO
- Type 2 Common parts only (destructive) survey if there are concerns over structural deficiencies and fire spread beyond flat of origin into common



Fire Risk Assessment – 4 Types



- Type 3 Common parts and flats (non-destructive) survey that goes beyond scope of FSO
- Type 4 Common parts and flats (destructive) survey that goes beyond scope of FSO if there are concerns over fire spread.



COMPETENCE



- Discussed in ACOP under management regulations
- Competence means having sufficient training and experience or knowledge and other qualities
- A competent person in employer's employment is preferred
- Employer involvement is necessary
- Nomination of others does not absolve employer of responsibility
- External services will be advisory only

(cont.)

COMPETENCE (cont.)



- Competence does not necessarily depend on particular skills or qualifications
- Simple situations may require only:
 - An understanding of relevant current best
 - An awareness of the limitations of own experience and knowledge
 - Willingness and ability to supplement experience /knowledge, when necessary, by external advice

COMPETENCE



- **NEW COMPETENCY** CRITERIA FOR FIRE RISK **ASSESSORS**
- THIRD PARTY CERTIFICATION

Certificate

BAFE SCHEME SP205

of Competence

UKAS ACCREDITATION



C.S. TODD Part E: Managing Fire Risk -**Preventing Fires**

Fire Hazards



Fire Hazards



- Smoking: > Policy
- Controls
- Signs





Arson:

- Secure Boundaries
- Access Control
- Security CCTV
 External Housekeeping



Fire Hazards



- Good Practices IET Regulations
- **Competent Contractors**
- Inspection and Testing fixed installations

Gas:

- Gas Safe Regulations
- Inspection and Testing



Meters and services in stairways

Generally not a significant risk.

Fire Hazards



Heating and Ventilation Systems:

- · Regular maintenance and servicing
- · Fuel cut off devices

Lightning:

- · BS EN 62305 provides advice
- · If fitted regular inspection and testing

Contractors:

- · Control of works on site
- · Policy permits to work etc.

Housekeeping



Storage in common areas:

- Refuse
- Recycling
- · Prams, bikes

Storage in plant, boiler rooms and service riser cupboards.





Housekeeping



Two alternatives discussed:

- Zero tolerance
- Managed use

Zero Tolerance



- Simple to adopt
- No ambiguity
- Easier to police
- Not risk proportionate
- Penalises those who could manage common parts
- Denies chance to improve living environment.



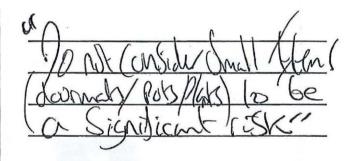


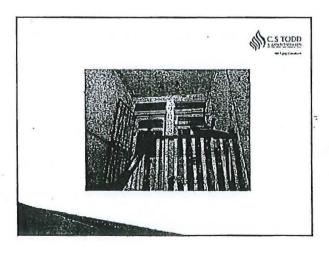
Managed Use



- · Makes block 'homely'
- · Benefits elderly and disabled people
- · Removes need for communal stores
- Can be risk specific
- · More difficult to adopt
- · Scope for misunderstanding
- · More difficult to 'police'.







Housekeeping

Bicycles, Prams etc:

- · Good management security
- · Should not pose an obstruction

Mobility Scooters:

- · Risk assess in common areas
- · Need good management security
- · No charging in common areas.

Part F: Managing Fire Risk - Protection Fire Safety Measures

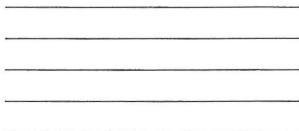


Benchmark Standards

- We wood
- Not reasonable or risk proportionate to apply current standards
- Need to consider and review original design against current benchmark (History)
- Risk assess the need to seek improvements for the safety of residents.



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Compartmentation (M)C.S.TODD



- › Adequate compartmentation is a basic requirement in all blocks of flats.
- Fire separation between flats between flats and the common parts - between common parts and ancillary accommodation.
- Standards have changed over the years the standard prior to the 1960's will be different to that of today.

Current Standards



In new purpose-built flats the following should be constructed as compartment floors and walls:

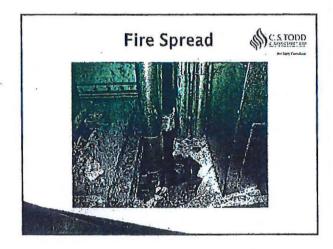
- Every floor between storeys
- Every wall separating a flat from any other part of a building
- Every wall separating a refuse storage chamber
- 60 minutes fire resistance (small converted 30 min)
- Blocks of flats over 30m in height automatic sprinkler system in

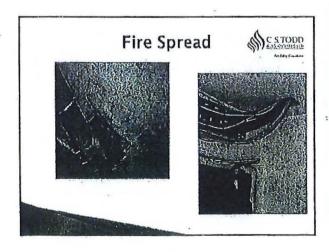
Existing Blocks C S TODD In principle the risk increase with the height, size and number of flats in a block: In 2 to 5 storey blocks - with a limited number of flats - it might be possible to accept 30 minutes fire resistance within the overall risk assessment. • 6 Storey and above - should be 60 minutes. **Existing Blocks** Where adequate fire separation can not be met or readily achieved by upgrading, compensatory measures may need to be considered: Improving existing MOE Improving fire protection to escape routes Provision of AFD Provision of sprinklers.

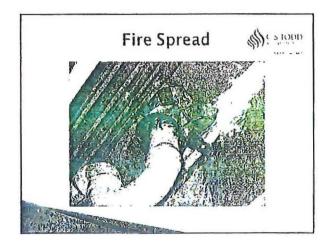
Fire Spread

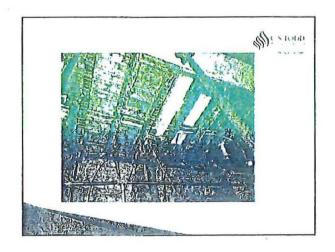


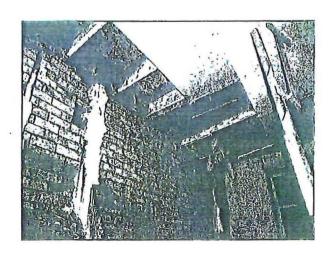
- The potential for fire spread in both the common parts and within flats should be considered.
- Ventilation ducts, service risers, refuse chutes and flues.
- · Fire Dampers Shunt Ducts
- Fire stopping around services, pipes and cables where they pass through walls and floors.
- Enclosure of shafts or risers in fire resisting structure with fire doors.











Reals addressing of Confidency?

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Means of Escape



Principles - Means of Escape (\$\text{SCS, IODD} \text{CS, IODD} \text{Principles}\$



Considered in two parts:

- From flat of origin into common escape route
- Using common escape route to a place of safety.



Principles - Means of Escape



Escape from flat of origin (not part of Fire Safety Order):

- Safety of residents in their own flats

Internal flat layout - means of escape

Provision of smoke/heat alarms.



Principles – Means of Escape



Common escape routes:

- > Safety of residents outside their own flats
- Use of common stairs/balconies
- Fire protection of escape routes.



Flats - Internal MOE

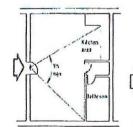


OPTIONS:

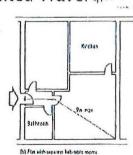
- Flats with a floor not more than 4.5m above ground - similar to a house
- Flats with a floor more than 4.5m above ground:
 - Limited travel distance
 - Protected hall
 - Alternative exit/s.

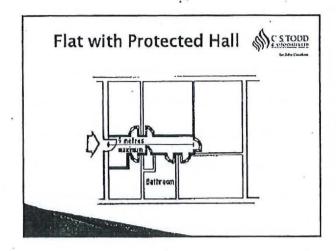


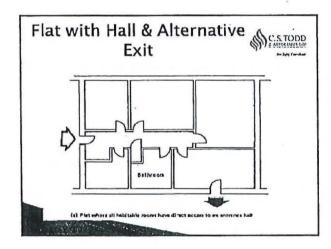
Flat with Limited Travel

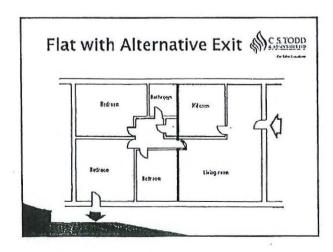












SHELTERED HOUSING STOOP



- · Most flat designs incorporate limited travel distance or alternative exits
- · Protected halls and lobbies with self-closing doors within the flats are seen as an obstacle to older residents.



Flats - Internal MOE



Common Issues:

- Removal of fire resisting walls
- Fire doors removed or changed
- Self-closing devices removed/disabled
- Bedrooms become inner rooms
- Alternative exits removed or blocked
- Alternative exit via shared balcony
- Excess travel distance



Means of Escape in the Common Parts



Means of Escape





Two options available:

- Protected corridors or lobbies leading to a protected stairway and limit travel
- Provide independent alternative escape routes.

Protected Corridor or Lobby & Caroon

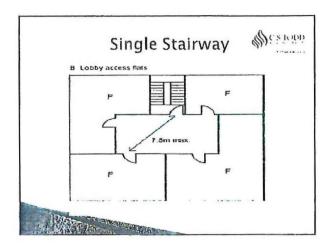


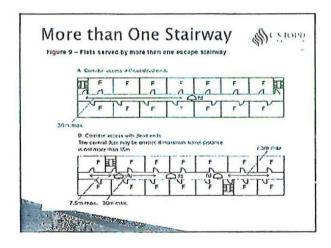
- Corridor or lobby is a protected route with fire resisting walls and doors (includes flat entrance door)
- Stairway is enclosed in fire resisting construction
- Smoke control to protect stairway
- Restrict surface finishes in escape routes.

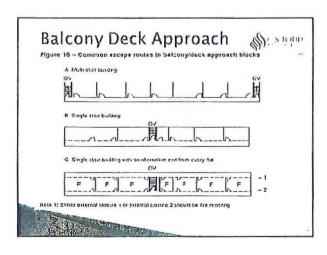
Single Stairway



- Small purpose built blocks
- Top floor not more than 11m above ground - no more than 3 storeys above ground storey.
- Protected lobby or corridor limit travel distance (4.5m or 7.5m)
- If only 2 flats per floor internal hall in flats provides protection to stairway.







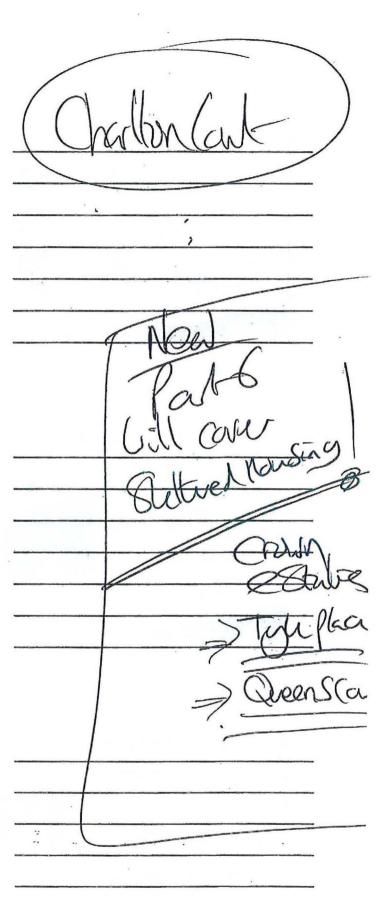




Means of Escape



- External Stairways
- Escape over flat roofs
- Basement stairs
- Stairs serving enclosed car parks, boiler rooms.



Security Locks - Access Systems

- Security locks on all exits should be easily openable without the use of a key
- · Security gates and grilles
- Electronic security locks to final exits must fail safe and may require an override control



SHELTERED HOUSING MESTODE

- Schemes vary in size, complexity and facilities provided
- Some may have on-site staff, many don't
- · Extra care schemes
- Limitations of residents should be taken into account



MEANS OF ESCAPE

- Provide protected corridors or lobbies leading to a stairway
- Limit travel distance from flat entrance door to a stairway, lobby or corridor door
- Most residents should be capable of escape without outside assistance.



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TRAVEL DISTANCE



- · An elderly or disabled resident should not have to travel far in a corridor to reach a place of safety
- · 7.5 metre travel distance from each dwelling entrance door to a fire door giving access to:
 - A protected stairway
 - A protected lobby
 - A door subdividing a corridor.

TRAVEL DISTANCE



- Cross-corridor doors provide smoke control by limiting the length of the corridors
- · Corridors should be provided with some form of smoke ventilation
- Travel distance in communal areas and community rooms should be relevant to risk
- If provided, escape lifts should comply with

PROTECTED CORRIDORS



- Ancillary accommodation such as communal lounges and kitchens should be separated with 30 minutes fire resistance
- Cupboards containing electric distribution equipment and meters, cleaners and store rooms should be separated with 30 minutes fire resistance
- Boiler rooms and other high risk rooms should be 60 minutes fire resistance

DISABLED EVACUATION



- · Evacuation of disabled residents
- · 'Stay put' policy
- Personal emergency evacuation plans
- · Information box.

Smoke Control



- Smoke control design has changed over the years
- Current guidance is based on smoke containment to protect the common stairways – smoke dispersal was used in earlier design guides
- Natural or mechanical ventilation of lobbies or corridors is required where they adjoin stairways

Smoke Control



 Natural smoke ventilation in lobby/corridor can be:

The state of the s

- Permanently open (PV) Manually openable (OV) - Automatic opening (AOV)
- Current guidance for single stairway is AOV – multiple stairways is OV's
- Mechanical ventilation includes pressurisation systems.

Smoke Control



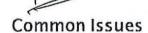
- Protected stairways also require some means to ventilate smoke that may ente the stairway.
- Minimum 1metre square vent at head of stairway.
- In multiple stairways this can be OV in single stairway it should be AOV.



Blocks that

Do Not Meet Current

Design Benchmarks





- > Blocks with increased travel distance
- > Flats that open direct onto stairways
- · Blocks with unsatisfactory smoke control
- Fire resisting doors that do not meet current standards.

Fire Resisting Doors Options based on risk assessment: Accept original (notional) fire door Upgrade the door (upgraded) strips and seals Replace with FD30S door and frame.	
Increased Travel Distance Single Direction Escape: Unventilated lobby/corridor 4.5m – 6m accepted Increases to 7.5m – upgraded doors Beyond 7.5 should be ventilated Ventilated lobby/corridor 7.5m to 10m accepted 10m to 15m upgraded doors, PV or AOV Beyond 15m FD30S doors, AOV	
Escape in two directions lobby or corridor: Increase from 30m to 40m accepted TD in excess of 40m – replacement FD30S doors, AOV or detection - specialist advice.	

Flats Opening Directly onto Stairway Up to 4 storeys: Notional



Notional 30 minute doors, OV or windows

5 to 6 storeys:

Upgraded 30 minute doors, OV windows, internal hall with FR doors to kitchen/lounge

Over 6 storeys:

FD30S doors, AOV, Internal protected hall, detection.

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Unsatisfactory Smoke Control & SS TODD



- Single stair: flats opening directly on to stairs Up to 6 storeys OV, over 6 storeys AOV/PV.
- Single stair: lobby/corridor; up to 6 storeys OV, over 6 storeys AOV or PV in lobby/corridor
- Flats designed on smoke dispersal: consider cross corridor doors and OV or PV in corridor.

Fire Resisting Doors



Options based on risk assessment:

Accept original (notional) fire door.

Upgrade the door (upgraded) strips and seals.

Replace with FD30S door and frame.

Fire Resisting Doors



- Doors must be good fit in frame 3/4mm gaps
- In good condition no openings (cables, locks)
- Fitted with self-closing device rising butt hinges should be changed.



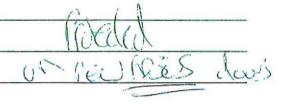
Fire Resisting Doors

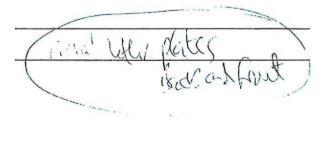


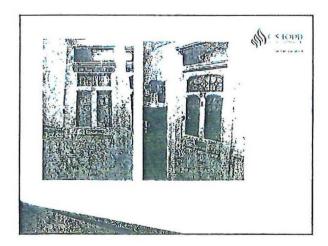
Other issues:

- · Glazing in and over the door
- · Letterbox
- · Spy hole
- · Cat flap.









Fire Resisting Doors



Single stair with doors from flats opening directly onto stairs:

- 4 storeys Notional 30 minute doors
- 5/6 storeys Upgraded 30 minute doors
- Over 6 storeys FD30S doors and frames.

Fire Resisting Doors



Multiple stairways, lobby/corridor:

- Satisfactory TD, notional 30 minute doors should be acceptable
- Increased TD or unsatisfactory smoke. control upgraded 30 minute doors or replacement FD30S and frames.

Fire Resisting Doors



External balcony or deck access single stairway (dead ends):

- Notional door FD 20 (SC still required)
- Any glazing over 1.1m not required to be FR, FR letterbox not essential

External balcony or deck access multiple stairways or alternative MOE:

Flat entrance doors not required to be FR.

Refuse and Chute Rooms & STOPP

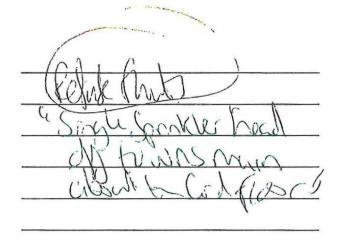


Current standard:

Ideally entered direct from open air, 60 minute FR, not in protected stairways or lobbies

Existing blocks:

- Refuse/ bin rooms in stairway or corridor enclose in FR and provide PV
- Refuse chute in stairway or corridor, enclose in FR, provide shutter in bin room and/or sprinklers in bin room.





FIRE SAFETY SIGNS AND NOTICES





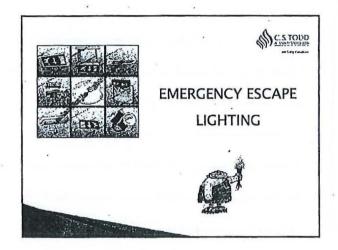
Signs and Notices

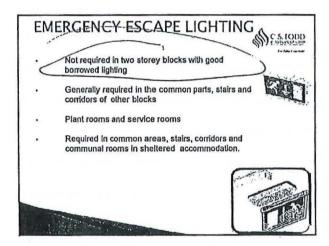


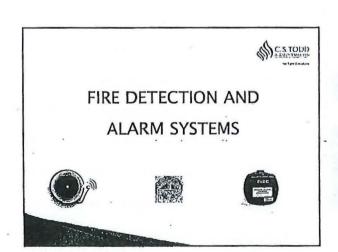
- Generally no requirement for 'FIRE EXIT' signs in single staircase blocks
- 'FIRE EXIT' signs required to indicate alternative routes
- Signs on doors
- General fire safety notices.'

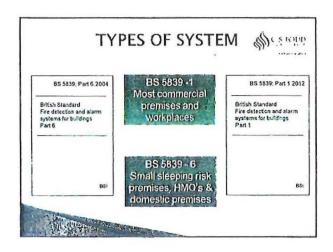




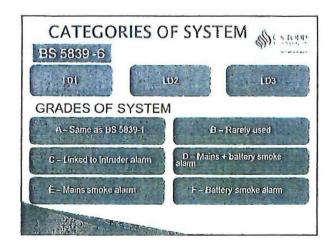












FIRE DETECTION AND ALARM & C.S. TODD



No requirement for a common fire detection and alarm system in general needs purpose-built blocks



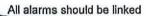
- Against the principles of 'stay put'
- May be required for automatic vents.



Means of Giving Warning in Individual Flats



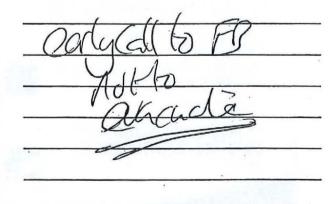
- Individual flats should be provided with a minimum of a Grade D LD3 system with smoke alarms in the circulation spaces in accordance with BS5839-6.
- There may be a need to upgrade to an LD1 or LD2 system with additional smoke and heat alarms in individual flats as compensation or higher risk groups.





OBJECTIVES OF FIRE ALARM SYSTEM IN SHELTERED HOUSING

- A) ALERT RESIDENTS TO FIRE IN THEIR OWN FLAT
- B) ALERT F&RS (BUT MINIMIZE FALSE ALARMS)
- C) EARLY WARNING OF A FIRE IN COMMUNAL **FACILITIES**



SHELTERED ACCOMMODATION



· If no common facilities, no requirement for a common alarm



- If there are common facilities, L4 or L5 system to cover common areas linked to a call centre
- No sounders in flats, not designed for simultaneous evacuation
- Early call facility to Fire & Rescue Service.



SHELTERED ACCOMMODATION



Common alarm should only sound in:



- Common escape routes
- Warden accommodation
- Communal areas or ancillary accommodation

It should not sound in flats - stay put



SHELTERED ACCOMMODATION

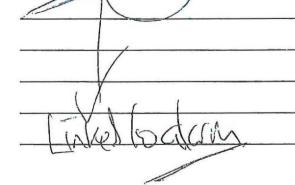


- Individual smoke and heat alarms within each flat should be linked
- · Smoke alarm in hall, lounge, and smoke alarm or sounder in bedroom



- Heat alarm in kitchen
- Generally these would be linked to a social alarm centre with call back facilities and provision to pass call onto Fire and Rescue Service.





Fire Extinguishers



Generally no requirement for provision of fire extinguishers in common parts



- Extinguishers required in plant and service rooms
- Required in ancillary accommodation in sheltered accommodation, such as kitchens and laundry rooms.

Fire-Fighting Facilities



Dry and wet rising mains, fire fighting lifts.

No requirement to provide or upgrade facilities in existing blocks.



However, there is a requirement to maintain what is provided.

Part G:

Managing Fire Safety



- Person responsible to manage fire safety
- Access to competent advice
- Inspections/visits by staff
- Communication with residents
- Fire safety arrangements-
- Testing and maintenance.





.Communication



Engaging with residents:

- Fire prevention (inc security)
- Action in the event of fire
- What 'stay put' means
- Policy on common parts
- Pitfalls of alterations
- How to test smoke alarms
- Use of Residents' Handbooks.



