

# PRP

## HAPPI hour

### Fire safety in specialised housing: an architect's overview

PRP architects are working with DLUHC on various areas of research into the Building Regulations Approved Documents including specialist housing

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‘what do the Building Regulations for fire say about these building both mentioning **care?**’

# extra care

I could see;

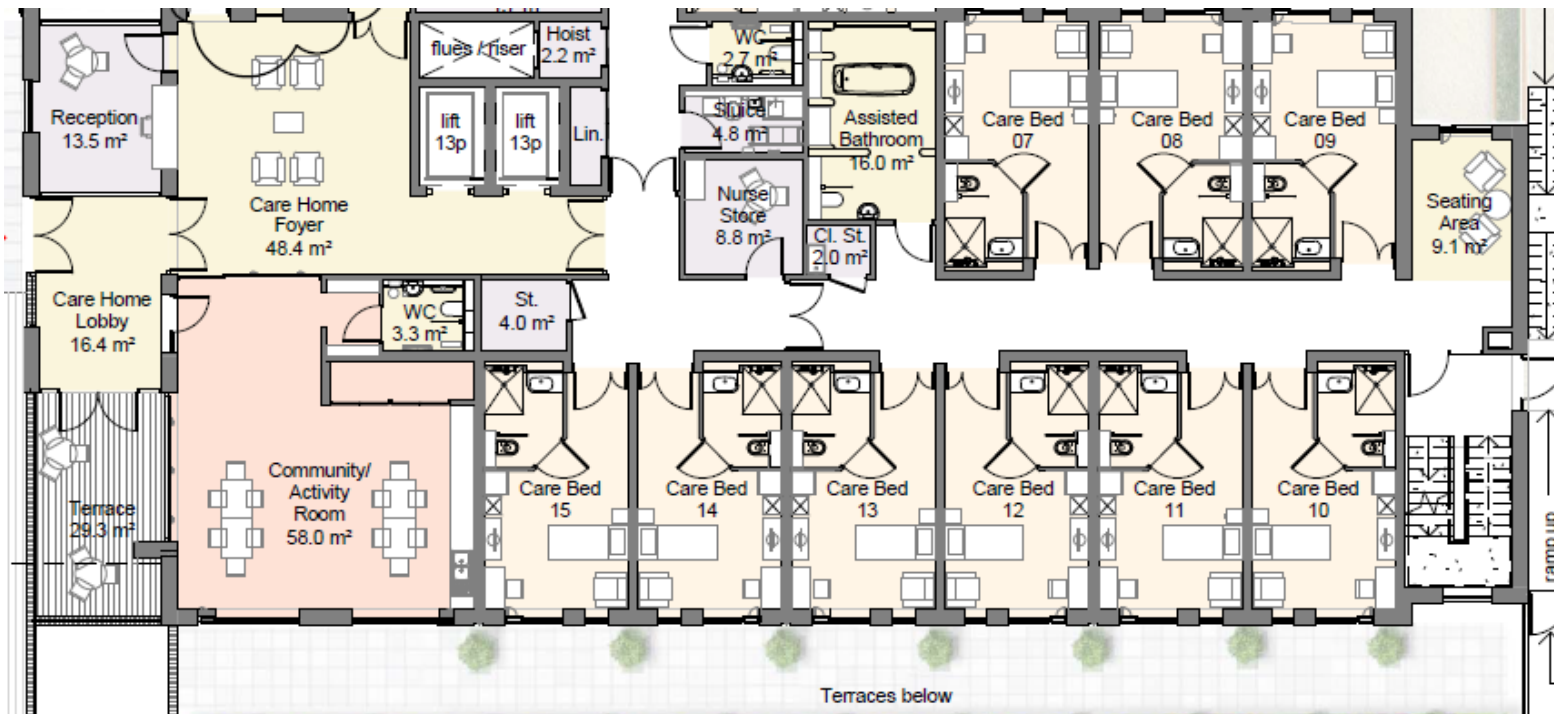
- flats
- communal and ancillary areas



# care home

I could see;

- bedrooms with en suites showers
- communal and ancillary areas




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answer was

- extra care is treated like flat/dwelling stay put
- the Building Regs ADB vol 1 describes

ONLINE VERSION

 HM Government

The Building Regulations 2010

Fire safety

APPROVED DOCUMENT

**B**

**Volume 1: Dwellings**

Requirement B1: Means of warning and escape

Requirement B2: Internal fire spread (linings)

Requirement B3: Internal fire spread (structure)

Requirement B4: External fire spread

Requirement B5: Access and facilities for the fire service

Regulations: 6(3), 7(2) and 38

2019 edition incorporating 2020 amendments –  
for use in England

ONLINE VERSION

BUT additional measures may be needed...

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## grey area in purpose groups

Volume 1 purpose groups		FLATS
Title	Group	Purpose for which the building or compartment of a building is intended to be used
Residential (dwellings)	1(a) <sup>79</sup>	Flat.

**HOUSING WITH CARE IS GREY AREA BETWEEN**

Volume 2 purpose groups		CARE HOMES
Residential (institutional)	2(a)	<p>Hospital, home, school or other similar establishment, where people sleep on the premises. The building may be either of the following:</p> <ul style="list-style-type: none"><li>• Living accommodation for, or accommodation for the treatment, care or maintenance of, either:<ul style="list-style-type: none"><li>– people suffering from disabilities due to illness or old age or other physical or mental incapacity</li></ul></li></ul>

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## grey area causes confusion

- Building Control and Fire Brigade
- care home approach in extra care
- management operations
- evacuation strategy and compartmentation

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but ADB does refer to management

Appropriate fire safety design considers the way in which a **building** will be managed. Any reliance on an unrealistic or unsustainable management regime cannot be considered to have met the requirements of the regulations.

- additional measures are not set out in ADB guidance
- resident needs
- beyond Building Regs



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## and occupancy

### Sheltered housing

**0.11** While many of the provisions in this approved document for means of escape from flats are applicable to sheltered housing, the nature of the occupancy may necessitate some additional fire protection measures. The extent of such measures will depend on the form of the development.

- profile of occupancy could necessitate additional measures
- range of risks
- occupancy changes over time and future proofing
- additional measures barely in ADB guidance
- beyond Building Regs

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## a few specifics within ADB

**0.17** In **sheltered housing**, the guidance in Approved Document B Volume 2 should be consulted for the design of communal facilities, such as a common lounge.

- communal areas reference to ADB vol 2 (same as care home)
- may require reduced travel distances
- enhanced fire alarm
- no mention of other types of specialist housing

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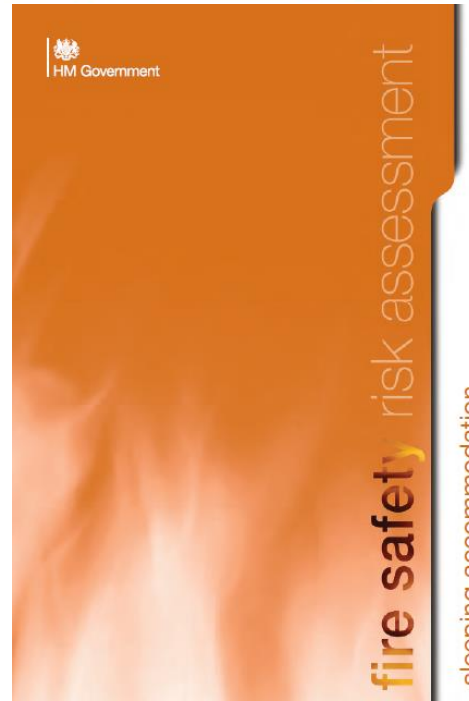
## other guidance

NFCC specialised housing focus

BS9991 includes specialised housing

fire risk assessment guide sleeping

fire safety in purpose-built blocks of flats



## BS9991 specialised housing

does describe wider specialised housing

	<i>Housing specifically for people with a level of need who require support and care services</i>
Sheltered/retirement	Independent living (own front door) Can include 24 h alarm system, warden, lounge, programme of activities
Very sheltered/assisted living	Independent living with managed on-site care and support services Features as above; can also include meals, domestic help, assisted bathing
Extra care	Independent living with managed on-site care and support service Features as above; can also include hairdressing service, 24 h staff
Close care housing	Independent living with on-site care and support linked to a care home
Retirement villages	Large developments (often 100+) with a range of housing types and levels of care and support (sheltered, very sheltered/extra care, close care and nursing care) on one site

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## BS9991- residents

- designers need to consider the **characteristics of the residents** of the building and incorporate an appropriate range of fire precautionary measures to secure a suitable level of fire safety
- consideration also needs to be given to the residents **changing level of need** over time to ensure that the building is future-proofed for an ageing population

BS9991 proposes design features

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## NFCC specialist housing guide

- **Person Centred Fire Risk Assessment**
- range of likely person centred fire risk assessments
- how these might require responses from the building design
- waiting until actual residents are in place too late for the design
- NFCC proposes design features



The person-centred fire risk assessment involves the following 9 steps:

- |         |   |
|---------|---|
| Step 1: | Consider the characteristics, behaviours and capabilities of the resident that may lead to fire risk. |
| Step 2: | Determine the potential causes of fire and the existing measures to prevent fire.                     |
| Step 3: | Identify any circumstances that could lead to the rapid development of fire.                          |
| Step 4: | Identify existing measures to protect the resident if fire occurs.                                    |
| Step 5: | Consider capacity of resident to respond appropriately to fire alarm signals or signs of fire.        |
| Step 6: | Consider ability of resident to make their way to safety.   |
| Step 7: | Determine the level of risk to the resident from fire.  |
| Step 8: | Prepare action plan.  |
| Step 9: | Determine period for review of the assessment.  |

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## Regulatory Reform Order

Once the **building** is in use, the management regime should be maintained and a suitable risk assessment undertaken for any variation in that regime. Failure to take proper management responsibility may result in the prosecution of an employer, **building** owner or occupier under legislation such as the Regulatory Reform (Fire Safety) Order 2005.

- fire risk assessment potentially requires additional features not required in B regs
- BUT assessment not required until building is in use
- too late for designers...
- Fire Brigade could inspect risk assessment and demand new expensive changes to the building even though compliant with ADB

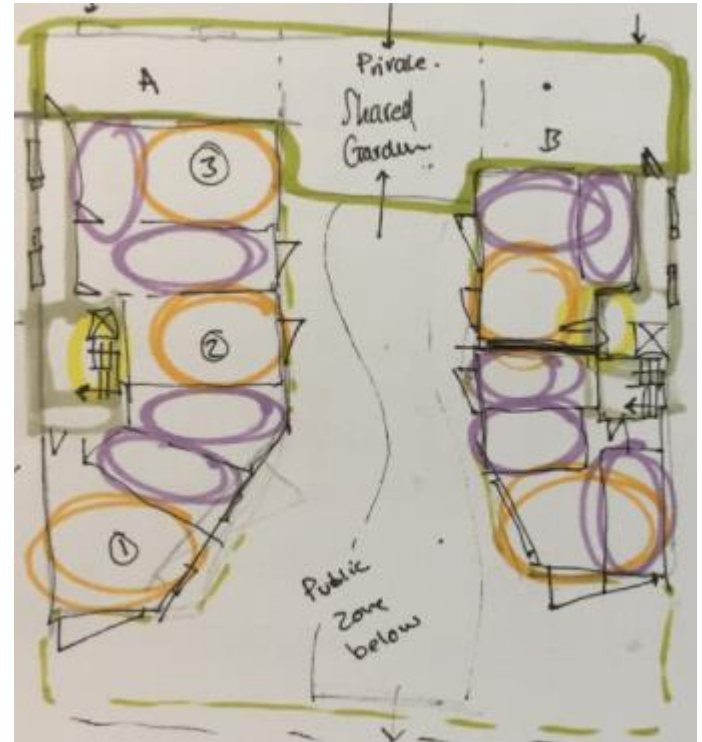


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design process

## right people in the room early in design

- client team to include operational side not just development team
- resident profile and ability to escape unaided
- client commence fire risk assessments pre planning
- fire engineer early appointment on all projects
- early engagement with Brigade





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## guidance limits to ADB

- no extended internal flat travel distances
- no open plan flats where occupants cannot escape independently
- no extended travel distances where occupants cannot escape independently
- no escape window strategy
- no crawl past escape strategy



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## features beyond ADB

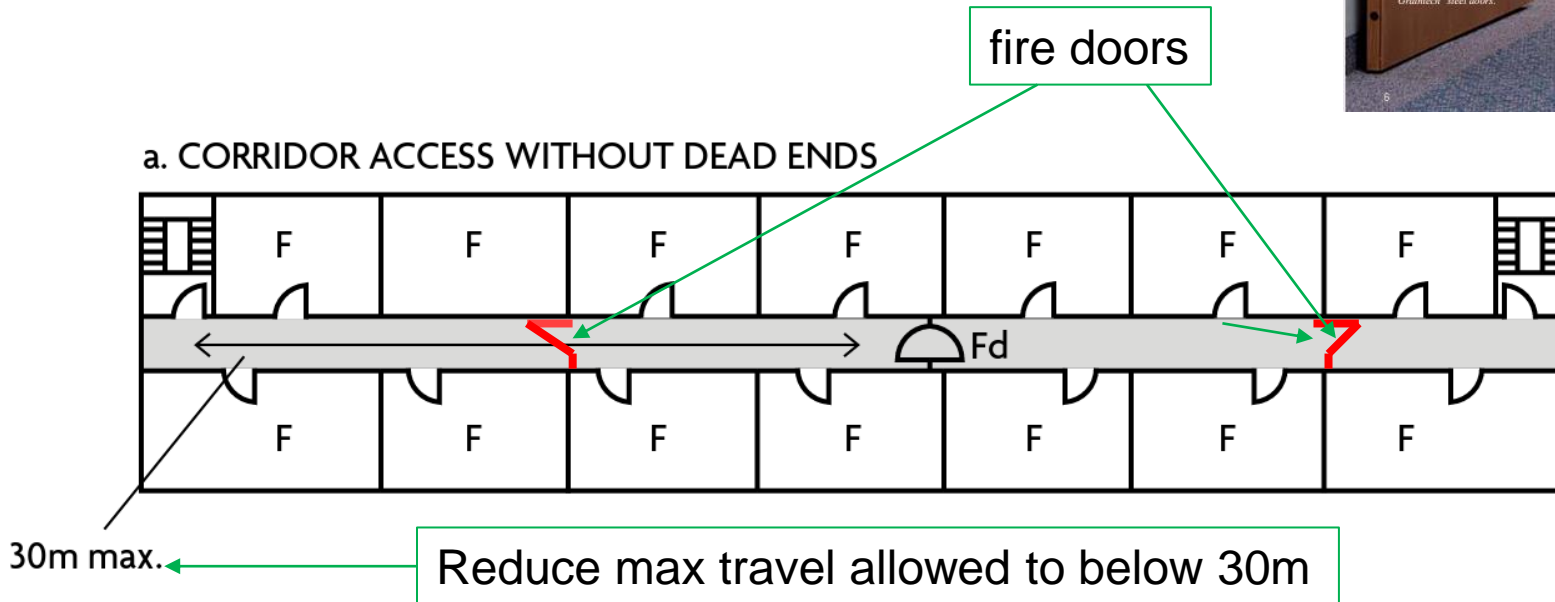
- extra cross corridor fire doors
- generous refuges in stairs
- evacuation lifts
- scooter store fire protection
- sprinkler protection high risk residents
- fire alarms to suit sensory limitations
- L1 fire alarm throughout high risk residents
- telecare linked



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## extra cross corridor fire doors

- 7.5m from every flat front door
- creates safe compartment within reach of all front doors
- similar to care home compartmentation
- on hold opens linked to fire alarm



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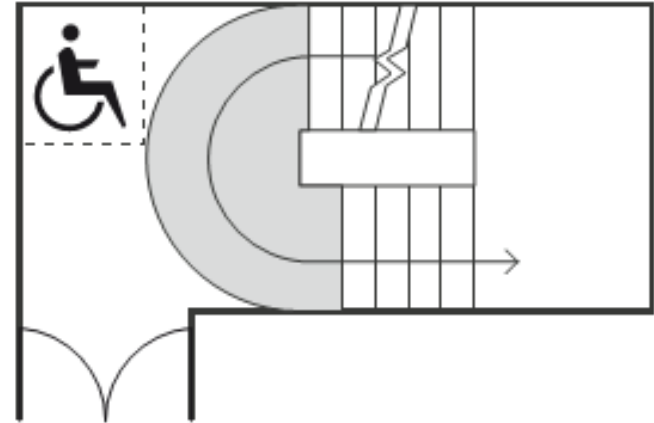
## refuges

- in escape stairs
- one or more people
- call point



Diagram 21 Refuge formed in a protected stairway

See para 4.8



Provision where access to the wheelchair space is counter to the access flow within the stairway



Wheelchair space



Occupied by escape flow

from ADB vol 2 other than dwellings

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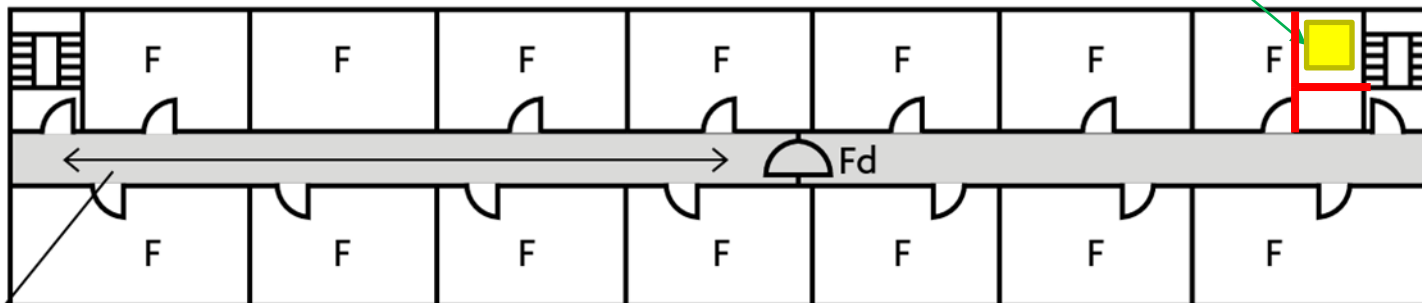
## fire evacuation lifts

- require additional power
- fire lobby protection
- car size to suit requirements
- number to suit requirements



evacuation lift

a. CORRIDOR ACCESS WITHOUT DEAD ENDS



30m max.



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## scooter fire protection

- scooter fire risk
- protected store
- Fire Brigade access
- sprinkler coverage



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## summary

- client assess future resident profiles and range of needs
- client run a draft risk assessment in tandem with design process
- client to consider management and operational input during design
- fire strategy agreed early
- future proof approach ie not designed to the minimum
- avoids costly changes to mitigate risks once in use
  
- Thankyou