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The **design** Guide

Developing and
refurbishing housing
specifically for older
people

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Community & Housing Group
Strategy and Planning Department



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1.0 Introduction

This guide has been produced for anyone wishing to develop or refurbish housing specifically for older people. The need for a guide was established within the Older Persons' Housing Strategy in response to consultation with a range of statutory and voluntary agencies, together with older people. The guide is consistent with advice issued by the Office of the Deputy Prime Minister (ODPM) "Planning and Development Briefs - A Guide To Better Practice" together with "By Design" (ODPM/CABE) and Housing Corporation guidance "Scheme Development Standards" (April 2003). Over the past years there has been an increasing emphasis on design and the quality of new developments as expectations of consumers have risen. Housing designed for older people has increasingly seen problems of low demand that can be partly or wholly attributable to the design of the scheme. Bedsit style accommodation has become increasingly unpopular and many organisations have had to look at remodelling existing sheltered housing schemes to meet the growing demands and expectations of older people. However, excellence in design should not just be consumer led but should reflect an organisation committed to continual improvement as well as outcomes such as customer satisfaction and sustainability.

At the Tenant Participation Advisory Service for England's Annual Conference in 2001, a group of older delegates drew up a charter of older people's housing rights, some of which are reflected in this document:-

"Older people want the right to:-

- *A home for life*
- *Self contained housing with no shared facilities*
- *Prompt adaptations when necessary*
- *A secure home and neighbouring environment*
- *Safe, simple to operate features (for example, windows that are easy to open, big taps, and reachable switches)*
- *Resilient, slip resistant flooring*
- *A walk in shower*

- *Help tending the garden if necessary*
- *Efficient, low cost fuel*
- *Care and repair services that are easy to take up*

Above all, older people want the right to choose and dignity."

2.0 General Principals

There are six basic standards that the Housing Corporation have identified to achieve good design in housing developments that meet people's needs for:-

- Identity and character
- Privacy and security
- Accessibility - access to public transport, roads, parking near shops and facilities, signage and lighting, wheel chair use
- Screening from sources of noise, e.g. roads and railways

The six standards relate to:-

- The External Environment
- The Internal Environment
- Accessibility
- Safety and Security
- Energy Efficiency, environmental sustainability and noise abatement
- Maintainability, durability and adaptability

This document examines each of the above standards and provides advice and guidance on developing and refurbishing housing for older people. In addition, under each of these headings, Lifetime Homes Standards and Building Regulations, Part M identified. The Guide is not exhaustive and therefore advice is given on where to find additional information on specific subjects that are identified.

2.1 Lifetime Homes Standards (LHS)

The concept of lifetime homes emerged following the establishment of the Joseph Rowntree Foundation Lifetime Homes Group in 1991 in response to the recognition that many new homes do not adapt when people's needs change, e.g. the need for adaptations or dealing with a wheelchair. Lifetime homes feature 16 design standards (Appendix 2) to ensure that new developments meet the ongoing needs of occupants. Following an extensive consultation period, new Part M building regulations were put into force meaning that any housing built post October 1999 must adhere to the new regulations on accessibility. Lifetime homes complement Part M of the Building Regulations with the concept of flexibility that can ensure that new developments meet people's changing needs. Indeed they go somewhat further than the Building Regulations as does the Housing Corporation's Scheme Development Standards. Further guidance is available at www.jrf.org.uk.

2.2 Housing for the elderly

The Housing Corporation distinguishes between different types of accommodation for older people. This report refers to the following types of accommodation:-

- **Category 1** - self contained accommodation for the more active elderly, which may include an element of warden and/or call support and/or additional communal facilities.
- **Category 2** - self contained accommodation for the less active elderly, which includes warden or 24 hour peripatetic cover and the full range of communal facilities.
- **Frail elderly** - extra care or very sheltered supported accommodation, which may be either shared or self contained, for frail older persons. Includes warden or 24 hour emergency care, the full range of communal facilities, plus additional special features, including wheelchair user environments and supportive management. Specific guidance on design of extra care and very sheltered housing schemes including the management of such schemes is contained within the Department of Health's web-site at www.dh.gov.uk under 'Housing LIN'

(Learning and Improvement Network). Much of this guidance is reflected in the standards contained within this Guide.

The Housing Corporation is intending in 2004 to move away from the categories of sheltered housing and extra care above to the following description:-

"grouped retirement housing with access to support, or grouped purpose-designed retirement housing with access to care and support"

At the present time there is no universally accepted definition of extra care/very sheltered housing and design features vary from a village approach to individual self contained flats. In addition, facilities that may be offered can vary and although predominantly extra care housing has been provided for rent, there is a push by the Department of Health towards mixed tenure schemes and schemes for sale in recognition of the fact that many older people own their own home already and may wish to stay in this tenure.

- **Supported housing** - accommodation which may be either shared or self-contained, designed to meet the special needs of particular user groups (see the Housing Corporation's Guide to Supported Housing) and which includes supportive management and may also include additional communal facilities.
- **Housing for wheelchair users** - accommodation which may be either shared or self-contained, designed for independent living by physically disabled people and wheelchair users. Where such accommodation is incorporated within schemes containing communal facilities, an appropriate proportion of all such facilities should be wheelchair accessible.

2.3 Housing Quality Indicators (HQIs)

Housing Quality Indicators (HQIs) have been promoted by the Office of the Deputy Prime Minister since 1996. The Housing Corporation recommended the use of these indicators in its Scheme Development Standards and the use of HQIs became one of the benchmarks in assessing 'Egan compliance'. Since the publication of Scheme Development Standards in August 2000 HQI assessments need to be carried out by all housing associations in respect of their schemes and this

data is published on a national database www.hqiuk.com which is managed by the Building Research Establishment (BRE). Scores are assigned for different characteristics including unit size and layout. HQIs should be carried out at the initial design stages.

3.0 Design Standards

3.1 The External Environment

A joint CABE/ODPM publication "By Design" advises that a well-designed place should promote:-

- **Character in townscape and landscape** - by reinforcing and responding to locally distinctive patterns of developments, landscape and culture.
- **Continuity of street frontages and the enclosure of space** by development which clearly defines private and public areas.
- **Quality of the urban realm** - by creating public spaces and routes that are safe, attractive, uncluttered and work effectively for society at large, including older and disabled people.
- **Accessibility and local permeability** by creating places that connect with each other and are easy to move through putting people before traffic and integrating land uses and transport.

In addition to this CABE suggests that the following points should be borne in mind when designing new buildings:-

- **Function** - buildings should work - they should be fit for the purpose for which they are designed.
- **Appearance** - the building should be excellent in itself and appropriate to its surroundings. It should attract a favourable response from users and the wider public.
- **Context** - the project should be seen as a place not an isolated building, creating public space and contributing to the neighbourhood and its environment.

- **Buildability** - including ease of construction, the use of materials from sustainable and local sources, off site manufacture and the use of standard components.
- **Maintenance** - including energy use and repair costs estimated over the life of the building
- **Sustainable** - a project should use natural resources responsibly.

These issues are reflected by the Housing Corporation who have produced essential items in complying with external environmental factors of good design. These factors specify that the "*location, site layout and building orientation should provide a convenient, safe and attractive environment which provides visual and acoustic privacy*". A checklist of these requirements is included in Appendix 1. In addition, guidance available through DoH advises that signage to a new scheme should be clear and visible to those who may be partially sighted and tactile to those who may be blind. The Disability Rights Commission state that:

"The goal of creating beautiful and functional environments that can be used equally by everyone, irrespective of age, gender or disability, requires that the design process must be constantly expanding to accommodate a diverse range of users, as we develop greater understanding of their requirements, desires and expectations".

A building should therefore be easy to use for everyone. No one should be expected to have to climb up steps or a steep ramp when level access could have been provided. In addition, choice of materials for colour contrast or acoustic properties can avoid later alterations at additional cost.

The location of a scheme is of key importance, particularly around housing being designed for older people, some of whom will have limited mobility. The right location should be accessible to local amenities as specified in Planning Policy Guidance 3 (PPG3) Housing, for example, healthcare facilities, retail, post offices, banking, public transport, leisure and public open spaces. PPG3 challenges developers and planners to take design seriously and stipulates that "*Good design is not an extra that can be ignored, it is central to creating more attractive living environments and central to delivering sustainable developments through: making more efficient use of land; promoting better accessibility to local facilities*

and public transport; supporting crime prevention and community safety; creating more socially inclusive communities; and, promoting energy efficiency". (PPG3). Although the emphasis of PPG3 is on urban design, some of the principles around good design can equally apply to any setting. Further guidance can be found at www.odpm.gov.uk. However, in the rural context the available of sites is of major concern and whilst a town centre location would be desirable in some instances, it is not always attainable.

Lifetime Homes Standards relating to the external environment include standards 1 - 4 respectively as detailed below:-

Lifetime Homes Standard	Description
1	Where there is car parking adjacent to the home, it should be capable of enlargement to attain 3300 mm width.
2	The distance from the car parking space to the home should be kept to a minimum and should be level or gently sloping.
3	The approach to all entrances should be level or gently sloping.
4	All entrances should be illuminated and have accessible level access over the threshold level and the main entrance should be covered.

These standards also relate to the Building Regulations, Part M.

3.2 The Internal Environment

The National Housing Federation's guidance contained within "*Standards and quality in development*" identifies a number of issues relating to the internal environment, recognised in the Housing Corporation's standards. These incorporate space standards, layout and relationship between different rooms, noise reduction, workable spaces including storage and addressing specific needs. The Housing Corporation specify that "*Internal environments should be comfortable, convenient, capable of sensibly accommodating the necessary*

furniture and equipment associated with specific room activities and be suitable for the particular needs of intended user groups."

For older people, space standards have tended to reflect a perception that older people require less space. The results of this tends to be that older people dispose of existing furniture in order to downsize into smaller accommodation. For example, living rooms where it is not possible to fit in a conventional three-piece suite let alone a dining room table and chairs. In addition, sheltered housing scheme designs have tended in the past to take the form of bedsit accommodation taking away privacy if the older person had a visitor to stay. In 1994 when the Elderly Accommodation Council carried out a major survey of sheltered housing, 25% of all sheltered housing was in bed sitting rooms, 67% comprised of one bedroom flats and two bedroom flats were less than 10% of all provision. The situation has not changed much a decade later although some providers have been working to phase out bedsits including South Lakeland District Council. Flats have tended to result in visitors walking through the bedroom in order to access the bathroom again restricting the older person's privacy.

Scheme designs should therefore, address these issues so that the maximum space can be awarded to individuals, and that best use can be made of living space. Of course the argument for quantity carries significant weight and this needs to be weighted against quality and evidence of need. There is recognition that changes have occurred in the size of units and new schemes and refurbishments tend to incorporate larger units in light of the guidance from the Housing Corporation and other bodies.

Internal design should be mindful of the promoting independence agenda, particularly around hazards in the home that could result in accidents in the home and falls. This is dealt with in more detail in 3.3 - Accessibility and 3.4 - Safety and Security.

A checklist of Housing Corporation standards relating to Internal Environments is attached at Appendix 2.

Lifetime Homes Standards identify the following standards that need to be built into new scheme designs:-

Lifetime Homes Standard	Description
7	There should be space for turning a wheelchair in dining rooms and sitting rooms, and adequate circulation space for wheelchair users elsewhere.
8	The living room should be at entrance level.
9	In homes of two or more storeys, there should be space on the entrance level that could be used as a convenient bed space.
10	<p>There should be a) a wheelchair accessible WC with b) drainage provision enabling a shower to be fitted in the future. In small two bedroom dwellings that have not achieved this, Part M standard WC will meet this standard as follows:-</p> <p>"A WC should be provided in the entrance storey of the dwelling and should be located so that there is no need to negotiate a stair to reach it from the habitable rooms in that storey. The WC compartment should provide a clear space for wheelchair users to access the WC. The washbasin should be positioned so that it does not impede this access. The clear usable space between the front of the WC bowl and the opposite wall/door should be a minimum of 750 mm. The distance from the central line of the cistern and the adjoining wall should be a minimum of 450 mm. Where oblique access is provided, there should be a minimum of 250 mm to the side of the door. The WC door will need to open outward."</p>
11	Walls in bathrooms and WCs should be capable of taking adaptations such as handrails. Reinforcements should be located between 300 and 1500 from the floor.

12	This standard applies only for accommodation with stairs which is unlikely in accommodation specifically built for older persons.
13	The design should provide for a reasonable route for a potential hoist from a main bedroom to the bathroom.
14	The bathroom should be designed to incorporate ease of access to the bath, WC and washbasin.
15	Living room window glazing should begin at 800 mm or lower and windows should be easy to operate/open.
16	Switches, sockets, ventilation and service controls should be at a height usable by all (i.e. between 450 and 1200 from the floor).

3.2.1 Accident Prevention and SMART Technology

The use of SMART/Assistive Technology & Community Alarms can enhance an individual's ability to remain independent and prevent admissions into long-term residential care. New schemes should look to integrate the use of SMART technology including the use of:-

- Movement detectors
- Falls detectors
- Flood detectors
- Smoke detectors
- CO detector
- Personal pendant
- Alarm technology

It may not be necessary to install all of the above and specific devices will need consideration according to the client group that the accommodation is being designed for.

3.2.2 Communal Areas

Communal areas require special attention to accessibility, security and lighting. Lifetime Homes Standards 5 and 6 state:-

Lifetime Homes Standard	Description
5	Communal stairs should provide easy access, and where homes are reached by a lift it should be fully wheelchair accessible. The minimum dimensions and control positioning/specification should be as described in the Part M standard, except that the internal dimensions of the lift should be 1100 x 1400 mm.
6	The width of the internal doorways and hallways should conform to the Part M Standard, except that when the approach is not head-on and the corridor/passageway width is only 900 mm, the doorway clear opening width should be 900 mm instead of 800 mm. The front door should have a clear 800 mm opening width.

In addition, the Housing Corporation identify specific requirements related to housing for the elderly and frail elderly and these are contained within Appendix 3. The standards relate primarily to lighting, lifts, entry phone systems, warden accommodation, and common rooms. For frail elderly they include communal toilets near the common rooms and dining room, linen stores, rooms for specialists e.g. chiropidists, hairdressers etc, carer facilities, and garden areas. In addition, the installation of hearing loop devices in communal areas at design stage should be considered.

3.3 Accessibility

Accessibility is a cross-cutting issue that covers the external and internal environment as well as the communal areas. The Housing Corporation's development standards specify that "external and internal environments should provide access for user groups and visitors with limited mobility". In addition, "Full accessibility and ease of manoeuvrability should be provided in environments designed for use

by wheelchair users" as detailed in the Lifetime Homes Standards and Building Regulations, Part M. A full checklist is provided at Appendix 3. Therefore, the situation of a new development is particularly important, for example, a development would be inappropriate if the location was on a steep incline that would be inaccessible not just to wheelchair users, but to many older people with mobility problems.

3.3.1 The Disability Discrimination Act 1995 (DDA)

The Disability Discrimination Act 1995 (DDA) places a duty on employers and service providers to make 'reasonable' adjustments to facilitate access for disabled people. New regulations come into force in October 2004 that encompass the physical features of a building that are likely to fall outside the scope of the Building Regulations. In addition, the Act applies to management and operational issues as to how services are provided. Therefore, any new developments and refurbishments must take account of the new regulations to ensure that new buildings comply. Further information can be found on the Disability Rights Commission's web-site at www.drc-gb.org.

3.3.2 Accessibility and the External Environment

The approach to a building needs to be carefully planned. Paths should be slip-resistant at least 900 mm wide and ramps should be at an appropriate incline as detailed in Appendix 3. Many buildings contain a threshold, however, for older people that can be another unnecessary obstacle unless it is fairly flat. The Lifetime Homes Standards 1 - 4 need to be borne in mind when considering accessibility as reported in 3.1 - 'The External Environment'. In addition, street layout needs to be designed in a legible and predictable way, for example the standard location and design of tactile surfaces in relation to the kerb edge and control boxes convey when it is safe to cross a road so to avoid pedestrian injuries.

Housing Corporation standards relating to the access into the building cover issues such as the distance between the main door and any secondary door into a lobby area. This needs to be of sufficient width and depth to allow easy access, particularly where a wheelchair user is concerned. A full list of

wheelchair accessible requirements is contained in Appendix 3 and these are compatible with 'Wheelchair housing design guide' published by Construction Research Communications Ltd. In addition, there needs to be thought to how access is gained, e.g. where are door levers situated, does the door open by remote sensor, what about an entryphone?

3.3.3 Accessibility and the Internal Environment

Once inside the building there needs to be consideration of passage widths, movement between floors, storage, lighting, dealing with callers, as detailed in Appendix 3. In order to make living space up to a wheelchair standard there are also many considerations such as:-

- **Kitchens** - extra space, lower units and worktops in the kitchen, accessible switches and controls, accessible appliances. SMART technology in extra care/very sheltered schemes could include a sensor that alerts staff if a cooker is left switched on or turns it off. An isolation switch should make safe electrical equipment. Designs should avoid the use of reflective surfaces, for example monochrome finishes that can be disorientating to anyone with visual impairments or learning difficulties. In addition surfaces that look slippery, even though they may not be, can make a person uneasy or insecure.
- **Bathrooms** - a 'wheel-in' shower or bath with the space to alter this around if need be, accessible controls, enough space to manoeuvre as specified in the LHS
- **Bedrooms** - extra space to access beds, furniture, fittings and facilities, accessible points and controls, entryphone point, main bedroom to bathroom future access route enabled by a full height knock out panel if required in the future, provision for a future hoist to run between the bedroom to the bathroom. For very sheltered schemes that may provide for clients with dementia, SMART technology could include a light that is automatically dimmed in the bedroom and full in the bathroom should the client get up during the night to prevent falls and then turned off when back in bed.
- **Doors and windows** - suitably positioned doors and windows with easy to access control to open and shut, inward opening doors to bathrooms/wcs and showers openable in emergency from the outside, self-closing doors capable of independent operation, glazing line at an appropriate height. SMART technology could allow for magnet detectors for clients who may wander in very sheltered/extra care schemes so that staff can be alerted in the door opens.
- **Services** - suitably positioned water stopcock, gas and electric main consumer units, suitable isolating valves to sink, washing machine, wc etc, flexible plumbing to adjustable fittings where required, low surface temperature radiators, suitable electrical and heating control fittings, provision of personal alarms and smoke alarms, suitable provision for future telephone and intruder alarm installation.

The Housing LIN contains guidance specifically for extra care schemes for older people with learning disabilities. The Guide covers extra care schemes for people with a learning disability and people with a learning disability that subsequently develop dementia. Many of the design recommendations are associated with ensuring the environment is familiar, both in terms of communal areas and in living spaces. In addition, SMART technology as indicated above can assist clients who have learning disabilities and/or dementia. The table below outlines a design process that could be taken into account when designing schemes that will be available for this client group.

Stage	Look at
Review each room	<ul style="list-style-type: none"> • Colour contrast, lighting and non-visual clues to find your way around
Function of room	<ul style="list-style-type: none"> • A room used often in a similar way might have a 'route' defined by colour, sound, texture, e.g. path from bedroom to bathroom. In a group home each person's own room door might be given a personal colour
Overall themes of building	<ul style="list-style-type: none"> • Consistent use of colour materials. Do all toilets have the same colour door? Do kitchens all have tiled floors?
Consistency	<ul style="list-style-type: none"> • Light switches similar and at same height, handrails consistent in style and shape
What needs to be variable?	<ul style="list-style-type: none"> • Lighting controllable - dimmer switches
Safety outside	<ul style="list-style-type: none"> • Lighting at night, steps and paths illuminated and contrast with surrounding areas
Front entrance	<ul style="list-style-type: none"> • Front door contrasts with surrounding area • Raised numerals at eye level • Door handles contrast with door, use of texture and colour, easy grip handles - 'D' or 'L' preferable • Letterbox should have wire basket to catch mail • Avoid large areas of glazed material • Good lighting present inside and outside • Consider defining route from entrance door to other parts of the building with rails or floor coverings
Corridors	<ul style="list-style-type: none"> • Limit obstacles, such as a radiator or cupboards
Activity areas	<ul style="list-style-type: none"> • Introduce additional lighting
Bedrooms	<ul style="list-style-type: none"> • Built in cupboards are preferred, again to limit obstacles in rooms
Bathrooms	<ul style="list-style-type: none"> • Use water-resistant coverings which are easy to clean • Matt finishes on walls and floor to minimise glare • Non-slip, waterproof flooring • Consider additional lighting focussed on toilet area
Kitchen	<ul style="list-style-type: none"> • Good lighting over cooker, sink and other task areas • Sliding cupboard doors to avoid walking into open doors • Non-reflective worktops in a neutral colour, against which both light and dark objects will contrast • Colour contrasts between wall and worktops, cupboards and floor • Raised edge at front and back of worktop to contain spillages • Non-reflective, slip resistant and waterproof floor finishes
Living/dining room	<ul style="list-style-type: none"> • Is there an easy way to orientate? • Bright, but adjustable lighting • Colour contrast between doors, walls and switches
Stairs	<ul style="list-style-type: none"> • Handrails to give guidance on route of stairs • Tactile cues to when top and bottom of stairs will be reached • Good contrast between handrails and walls • Good lighting • Highlighted and tactile edging to steps
External	<ul style="list-style-type: none"> • Contrasts between paths and parking and/or garden areas • Check for dangers: low fences, dustbin stores, raised kerbs, overhanging trees and branches

3.4 Safety and Security

The Government's public health Strategy "*Saving Lives: Our Healthier Nation*" identifies the prevention of accidents as one of four key priority areas. Every year over 1500 people over the age of 65 die as a result of falls in the home. The Strategy contains targets to reduce accidental death by 20% and injury by 10% by the year 2010. Research published by the DTI in 1999 gave an overview of where accidents are mostly likely to occur and preventative steps that can be taken. In "*The NHS Plan: A Plan for Investment, a Plan for Reform*" (July 2000) the Government sets out a commitment to provide better and new services for older people as well as recognising older people's desire to remain independent. The National Service Framework (NSF) for Older People (2001) identifies falls prevention as one of the eight standards that need to be achieved across health and social care services. As housing design can be one of the causes as well as a solution to falls it is important that schemes should take account of:-

- Lighting - particularly where stairs are concerned, in communal areas and throughout the accommodation.
- Slippery floors - specifications for flooring, particularly in bathroom and kitchen areas to ensure this is non-slip
- Steps and stairs easily and safely negotiated
- Inaccessible lights or windows - as mentioned under Internal Environment. Age Concern's Housing Access Audit (1996) also identifies inaccessible sockets, and mains controls
- Smoke alarms on every floor
- Kitchen, bathroom, shower and wc arrangements safe (1.2m minimum clear in front of kitchen equipment, in areas likely to be splashed - sheet floor finishes provided.

Accident prevention can minimise older people's admissions into hospitals, as well as increasing their independence. The DoH web-site contains some useful guidance on the design of very sheltered/extra care schemes, some of which is contained within the 'Accessibility' Section of this Guide. The Housing Corporation standards specify that "*Scheme design should ensure the provision of*

safe internal and external environments which minimise the opportunities for accidents in the home". Appendix 4 sets out the standards that relate to safety and security.

3.5 Security

The building design and grounds should promote a secure environment and not provide dark passages and potential escape routes. The layout should promote natural surveillance by not including areas that cannot be seen clearly. Lighting again is very important to promote a safe environment and to help reduce the fear of crime which is often more prevalent amongst older people. External doors, frames, fixings and locks should meet 'Secured by Design' standards. Secured by Design is a flagship initiative by the UK Police aimed at 'designing out crime'. To facilitate security standards, it is advisable to meet with a Crime Prevention Officer who can advise all aspects of crime prevention and security issues. More information can be found at www.securedbydesign.com.

3.6 Energy Efficiency, environmental sustainability and noise abatement

The Department of Health's document "*Quality and Choice for Older People's Housing*" (2001) identified that older people recognise the need for:-

"Increased insulation, help with heating and other energy saving measures are needed in older people's homes."

The Housing Corporation specifies that "*schemes should incorporate cost-effective energy efficiency measures*"

For new build schemes the HC essential standards include the need to provide evidence of energy efficient standards set out in the 'Good Practice Standard' outlined in the Government's Housing and Energy Efficiency Best Practice programme 'General Information Leaflet 72'. The Housing Corporation recommends that new build schemes go further than this and achieve the 'Best Practice Standard' contained within the same leaflet. In addition the standards require that account should be taken of the generally higher temperatures required and prolonged heating required for older people. Low energy lights need to be provided as standard and any appliances if included need have an energy rating 'A'. The standard asks for leaflets to be

provided on the energy efficient use of the home. A full list of requirements is set out in Appendix 5.

The HC advise that *"Schemes should endeavour to incorporate measures which aid environmental sustainability"*. An essential requirement of this for newbuild schemes is an 'Ecohomes' rating level of 'Pass' certified by a BRE licensed assessor, however, the Housing Corporation recommended that new developments should seek a 'Good' 'Ecohomes' rating. Further HC recommendations are contained in Appendix 5. The BRE Environmental Assessment Method (BREEAM) is one of the most widely used methods of reviewing and improving the environmental performance of buildings. Since BREEAM was launched in 1990 increasingly UK builders are adopting the standards of environmental design and management. The homes version of BREEAM is called 'Ecohomes' and covers new homes, conversions and sheltered accommodation. 'Ecohomes' covers seven categories including energy, water, pollution, materials, transport, ecology and land use, health and wellbeing. A system of credits is used to determine a score such as pass, good, excellent. It is best if advice on the requirements is sought from BRE at an early stage of development at which point particular requirements can be built in to the scheme at little cost. There is specific guidance relating to sheltered housing and a 'bespoke' assessment criteria that can be used. For further advice information this can be downloaded from the website at www.bre.co.uk.

3.6.1 Noise Abatement

Depending on the location of a scheme, external noise can present an issue. Where external noise may be a problem a sound survey should be carried out and appropriate sound insulation measures can then be incorporated within the scheme, e.g. triple glazing. In addition, flats should incorporate suitable sound insulation measures that can prevent management issues once the scheme is fully occupied, e.g. from neighbour complaints who can hear their neighbours too well. Therefore, the plans should try to minimise shared walls and floors where at all possible.

The Housing Corporation's Scheme Standards specify that *"schemes should be designed to incorporate measures which aid the abatement of noise generated externally and internally"*. A checklist of these standards is contained within Appendix 5.

3.7 Maintainability, durability and adaptability

It makes good business sense to design a building with components that are easy to maintain and widely available as well as being durable saving on responsive maintenance work and allowing for a planned approach to future maintenance programmes. In addition, the concepts within the Lifetime Homes Standards can allow a building to be easily adaptable to changing needs as a result of illness or disability so that a home can be a 'Lifetime' home in a literal sense. This can allow for the future installation of support aids such as hoists and rails and the clever use of ducting could allow the building to be used for smart cabling for assistive technology where the need arises to allow residents to maintain their independence supporting one of the main themes of the NSF for Older People.

The Housing Corporation's Scheme Standards identify four key requirements around the maintainability, durability and adaptability, namely:-

- *"Service installations should be unobtrusive and provide access to inspection, routine maintenance and repair of boilers, pump valves and other similar components;*
- *Durability, suitability and replacement availability should be taken into account in the selection and use of building components, materials, fittings, fixtures, furniture and equipment;*
- *Mortgageability and durability issues should be taken into account when traditional components are combined in innovative ways or when innovative house building systems are used;*
- *Dwelling design should assist housing sustainability by improving the scope for future adaptation."*

Appendix 6 sets out the full requirements covering essential and desirable components.

4.0 Consultation and Engagement

A good practice guide produced by ODPM entitled "*Planning and access for disabled people*" for planners and developers advises the best way to deliver inclusive buildings and spaces is to consult with the groups of people who could be potential customers on their requirements at the earliest stage of development. In addition, consultation and engagement with key stakeholders is essential so that all views can be taken on board. Obviously, the technical requirements in relation to the design of older persons' housing as set out in documents such as the Housing Corporation Scheme Standards or Building Regulations must be adhered to, and consultation with stakeholders can complement these regulations with additional design features that perhaps may not have been considered. Not only can this foster good relations with prospective residents, taking their needs into account, but it can also prevent additional expense where significant changes have to be made to a scheme due to a lack of knowledge of the needs of the client. Consultation and engagement should be an integral part of the ongoing management of any new scheme.

5.0 Conclusion

The development of good quality homes for older people that cater for their current and future needs as well as aspirations will not only increase a scheme's desirability, but ensure that it has a long-term future and is sustainable. Good design is a recurring theme in Government planning documents such as PPG1 and 3 as well as the Housing Corporation Scheme Standards. It is therefore, not a desirable, it is a must. This Guide provides a resource for anyone planning or developing new housing for older people. Signposting to other resources throughout the Guide will assist the reader in accessing further information and advice.

Copies of this Guide can be obtained from the Community and Housing Department, South Lakeland District Council, South Lakeland House, Lowther Street, Kendal, Tel: 01539 733333, ext 7439 (ask for Julie Jackson). In addition, a copy has been placed on the Council's web-site at www.southlakeland.gov.uk.

References

- Scheme Development Standards (Housing Corporation: 2003)
- Planning and Development Briefs - A Guide To Better Practice (ODPM)
- By Design (ODPM/CABE)
- Lifetime Homes Standards (Joseph Rowntree Foundation: 1991)
- Avoiding Slips, Trips and Broken Hips Campaign 1999-2002 (DTI/Help the Aged)
- Wheelchair housing design guide (Construction Research Communications Ltd: 1997)
- Saving Lives: Our Healthier Nation (DoH)
- The NHS Plan: A Plan for Investment, a Plan for Reform (DoH: 2000)
- The National Service Framework (NSF) for Older People (DoH: 2001)
- Research in the Pattern and Trends in Home Accidents (DTI: 1999)
- Ecohomes 2003 Guidance (BRE: 2003)
- Secured by Design Guidance (www.securedbydesign.com)
- The Suffolk Extra Care/Dementia Design & Management Guide (Suffolk County Council Social Services Department: 2003)
- The Suffolk Very Sheltered Housing Design and Management Guide (Suffolk Joint Planning Group: 2001)
- Inclusive Design - Creating Inclusive Environments (Disability Rights Commission: 2001)
- Planning and Access for Disabled People (ODPM)
- Better Places to Live by Design: A Companion Guide to PPG3 (ODPM/CABE)
- Extra Care Housing What Is It - Factsheet 1 (DH:2003)
- New Provision for Older People with Learning Difficulties - Factsheet 3 (DH: 2003)
- Models of Extra Care and Retirement Communities - Factsheet 4 (DH:2004)
- Heywood, F., Oldman, C. & Means, R (2002) Housing and Home in Later Life Buckingham: Open University Press

Housing Corporation Scheme Standards

- External Environment

Appendix 1

1.1.1	Location, site layout and building orientation should provide a convenient safe and attractive environment which provides visual and acoustic privacy
	Tests of compliance - essential items:
1.1.1.1	Location convenient for: <ul style="list-style-type: none"> • healthcare facilities/doctor's surgery? • local retail - food and general? • post office and public telephone? • automatic banking machine/bank? • pre-school/nursery/primary school/secondary school? • play facilities: 5-12 year olds and over 12 year olds? • park/public open space? • public transport: bus, tram, train, or underground? • major commercial centre? • leisure/sports facilities?
1.1.1.2	Development integrated with the surrounding streets, area and aspects?
1.1.1.3	Aesthetically the buildings are compatible with and/or enhance the environment?
1.1.1.4	Clear delineation of public space, community space and private space?
1.1.1.5	Public spaces within the project connected via clear well lit paved routes?
1.1.1.6	Orientation and dwelling grouping enhances occupant privacy and noise protection?
1.1.1.7	Refuse areas convenient, accessible, robust and inconspicuous
1.1.1.8	Appropriately located play areas suitable for a range of age groups are provided?
1.1.1.9	Suitable and sustainable soft and/or hard landscaping areas provided?
1.1.1.10	Suitable hard paved drying area with firm even access and drying facilities provided?
1.1.1.11	Lockable external stores/sheds provided for dwelling occupants?
1.1.1.12	A canopy, porch or recess (with illumination) provides shelter to the dwelling main entrance?
1.1.1.13	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com
	Tests of performance - recommended items:
1.1.1.14	Withdrawn (covered by 1.1.1.17)
1.1.1.15	Withdrawn (covered by 1.1.1.17)
1.1.1.16	Density considerations outlined in the 'Urban Design Compendium' adopted?
1.1.1.17	Advice on visual impact of high profile schemes sought from the Commission for Architecture and the Built Environment?
1.1.1.18	Housing Quality Indicators (HQI) target profiles for the scheme determined prior to scheme design?

1.1.2	Private vehicular access together with suitable access and turning for emergency, public utility and other large service vehicles should be provided.
1.1.2.1	Vehicular access convenient for deliveries and public services?
1.1.2.2	Road designs and layouts planned to restrict vehicle speeds?
1.1.2.3	Where shared (pedestrian and vehicle) surface roads (private and service vehicular access) are used no more than 25 dwellings in a cul-de-sac are served?
1.1.2.4	Shared driveways (designed for private access only) do not serve more than 5 dwellings?
1.1.3	Parking reflecting the particular needs of user groups should be provided.
	Tests of compliance - essential items:
1.1.3.1	Parking provision reflects current and planned future needs of dwelling occupants?
1.1.3.2	Parking locations enable natural surveillance?
1.1.3.3	Individual spaces comprise a suitable hard area minimum 2.4m x 4.8m?
1.1.3.4	Where in-curtilage, one space has adjoining firm even surface of 900mm (o/a 3.3m x 4.8m)?
1.1.3.5	Where grouped, 10% of spaces provided at minimum 3.3m x 4.8m?
1.1.3.6	Where grouped, parking areas are identifiable with the groups of dwellings they serve?
1.1.3.7	Where grouped, parking areas are within 30m of intended dwelling entrances?
1.1.3.8	Where grouped, parking areas and associated access paths are well and sensitively lit?
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com
	Tests of performance - recommended items:
1.1.3.9	In-curtilage parking provided for houses and bungalows?
1.1.3.10	Where grouped, allocated parking provided?
1.1.3.11	Parking and servicing considerations outlined in the 'Urban Design Compendium' adopted?

Housing Corporation Scheme Standards

- Internal Environment

Appendix 2

1.2.1	Internal environments should be comfortable, convenient, capable of sensibly accommodating the necessary furniture and equipment associated with specific room activities and be suitable for the particulars needs of intended user groups.
	In assessing spatial and other features associated with achieving comfort and convenience, including necessary provisions for furniture, fittings, equipment, services and controls, the Housing Corporation will have regard to the internal environment section of the National Housing Federation's (NHF) publication 'Standards and quality in development'.
	<i>Generally</i>
	Tests of compliance - essential items:
1.2.1.1	Dwelling layout minimises noise transmissions (1.5.3 also refers)?
1.2.1.2	Convenient relationship between rooms?
1.2.1.3	Circulation space sensible for the room activities?
1.2.1.4	Adequate space for sensible furniture arrangements for all room activities?
1.2.1.5	Space to move larger items of furniture?
1.2.1.6	Space for whole family and occasional visitors to gather?
1.2.1.7	Space for a small worktop or similar in single bedrooms?
1.2.1.8	Space for an occasional cot in main bedroom (family units)?
1.2.1.9	Space for a pram or pushchair (family units)?
1.2.1.10	A bath, WC and basin?
1.2.1.11	A separate additional WC and basin (5p units and above)?
1.2.1.12	Appropriate additional provision and / or fittings provided in extended family units?
1.2.1.13	Secure storage areas for harmful substances, medicines, etc.?
1.2.1.14	Enclosed storage: food, utensils, washing and cleaning items?
1.2.1.15	Enclosed storage: brooms and tall equipment?
1.2.1.16	Enclosed storage: linen and heated airing?
1.2.1.17	Space for hanging outdoor clothes?
1.2.1.18	Space and connections for cooker, fridge/freezer and washing machine?
1.2.1.19	Adequate and sensibly situated electrical outlets, switching and controls?
1.2.1.20	Aerial point with conduit and draw wire provision?
1.2.1.21	Whole house heating or equivalent low energy super-insulated building solution?
1.2.1.22	Heating or alternative provides temperatures suitable for room use?
1.2.1.23	Individual tenant control of room temperatures?
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com
	Tests of performance - recommended items:
1.2.1.24	Living room not an essential part of circulation?
1.2.1.25	Essential storage not accessed only in living room?

1.2.1.26	Two separate living areas are possible?
1.2.1.27	Direct access from living to private open space?
1.2.1.28	Dining room is separate from kitchen?
1.2.1.29	Beds in all bedrooms can be accommodated in more than one position?
1.2.1.30	All double bedrooms can accommodate twin beds?
1.2.1.31	One or more bedrooms has direct access to washing/WC?
1.2.1.32	Glazing line in living/dining/bedrooms no higher than 810mm above room floor level?
1.2.1.33	Withdrawn
1.2.1.33a	Hot water taps to baths have a thermostatically controlled supply?
1.2.1.34	Shower over the main bath with the necessary wall tiling and screening?
1.2.1.35	Space for two people to have casual meals in kitchen?
1.2.1.36	Direct access from kitchen to private open space?
1.2.1.37	Worktop-cooker-worktop-sink-worktop sequence not broken by doors, passages or tall units
1.2.1.38	1.2m min. run between cooker and sink?
1.2.1.39	500mm min. clear work top each side of cooker, wall units set back min. 100mm?
1.2.1.40	Space for auxiliary equipment such as microwave, dishwasher, etc.?
1.2.1.41	Principles of 'Accommodating diversity' incorporated?
	<i>Communal areas and landings</i>
	Tests of compliance - essential items:
1.2.1.42	Well lit halls and corridors?
1.2.1.43	Passenger lift provision appropriate to user group?
1.2.1.44	Passenger lifts capable of accommodating a wheelchair and an accompanying person?
1.2.1.45	Lift buttons operable from wheelchair?
1.2.1.46	Lift provided to any wheelchair dwelling entrance level above ground floor entrance level
1.2.1.47	Lift provided to any frail elderly dwelling entrance level above ground floor entrance level
1.2.1.48	Lift provided to Sheltered (Cat1) unit entrance level 7.5m above ground floor entrance level
1.2.1.49	Lift provided to Sheltered (Cat2) unit entrance level 3.0m above ground floor entrance level
	Tests of performance - recommended items:
1.2.1.50	Graffiti/dirt resistant finishes?
1.2.1.51	Entryphone security to main entrances of blocks of flats?
1.2.1.52	Lift provided to any dwelling entrance level 7.5m above ground floor entrance level?
1.2.1.53	Lift provided to sheltered (category 1) unit entrance level 3.0m above ground floor entrance level?
1.2.1.54	Lift provided to sheltered (category 2) unit entrance level above ground floor entrance level?
	<i>All housing for the elderly</i>
	Tests of compliance - essential items:
1.2.1.55	Bathroom and WC doors open out or sliding where internal space limited?

1.2.1.56	External override door lock and handholds in bathrooms and WCs?
1.2.1.57	A wheelchair accessible shower, non slip, with side seat (optional in lieu of bath)?
1.2.1.58	Where provided showers should have mixing valves which are thermostatically controlled?
1.2.1.59	Hot water taps to fittings for resident's use should have a thermostatically controlled supply?
1.2.1.60	Required room temperatures are maintained by low surface temperature radiators or other equivalent?
1.2.1.61	Easy rise staircase (max. 35° or halfway landing) (with handrails both sides - Cat2)?
1.2.1.62	Electrical outlets and switches positioned for use by the elderly?
1.2.1.63	Telephone line facilities provided?
	<i>Supported housing (self-contained)</i>
	Tests of compliance - essential items:
1.2.1.64	Cooker, fridge/freezer?
1.2.1.65	Furniture, fittings, fixtures, carpet etc. Provided?
	<i>Communal facilities - housing for the elderly or self-contained supported housing</i>
	Tests of compliance - essential items:
	<i>Note: In addition to the essential items of 'All housing for the elderly', all of the elements of 'Communal facilities' must be incorporated in schemes designated as sheltered category 2 or frail elderly. However the incorporation of any elements of 'communal facilities' is optional in the case of sheltered category 1 or supported housing (self-contained) schemes.</i>
1.2.1.66	Warden accommodation or 24 hour peripatetic cover?
	<i>Common room</i>
1.2.1.67	Sized for sensible furniture provision for residents/visitors?
1.2.1.68	Heated, comfortably and appropriately furnished?
1.2.1.69	Wheelchair accessible?
1.2.1.70	Near to a WC with basin?
1.2.1.71	Provided with an adjacent chair store?
1.2.1.72	Provided with an adjacent tea kitchen?
	<i>Associated communal facilities</i>
1.2.1.73	Laundry room with sink, auto-washing machine, tumble-dryer, bench and extract ventilation?
1.2.1.74	Guest room: twin bed size, basin, heated, comfortably furnished and situated near a WC?
1.2.1.75	Circulation areas heated and appropriately furnished?
1.2.1.76	Office facility near main entrance?
1.2.1.77	Pay phone and cloakroom?
	<i>Frail elderly</i>
	Tests of compliance - essential items:
	<i>Residential staff</i>
1.2.1.78	Resident manager accommodation or 24 hour emergency care cover?

	<i>Individual facilities</i>
1.2.1.79	Sheltered category 2 scheme criteria provided?
1.2.1.80	Individual dwellings to wheelchair user standards: sub-section 1.3.2 criteria incorporated?
	<i>Communal facilities</i>
1.2.1.81	Communal facilities - elderly or supported housing facilities provided?
1.2.1.82	Communal areas wheelchair user accessible: relevant sub-section 1.3.2 criteria incorporated?
1.2.1.83	Communal toilets near the common room and dining room?
1.2.1.84	Central linen store?
1.2.1.85	Shared laundry facilities for residents' own use?
1.2.1.86	Sluice room or sluice washing machine provided?
1.2.1.87	Suitable room/s for visiting specialist care service providers (hair-dressing, chiropody etc.)?
1.2.1.88	Carer facilities: staff room, toilets, changing room and sleep-over room/s?
1.2.1.89	A fully equipped assisted bathroom provided?
1.2.1.90	A wheelchair entry shower facility provided?
1.2.1.91	Adequate central and/or dispersed catering facilities?
1.2.1.92	Where dispersed, 1 (min.) catering facility to be usable from a wheelchair?
1.2.1.93	Adequate furniture, fittings, fixtures and floor coverings provided?
1.2.1.94	Maintained garden or seated open area?
	<i>Shared housing or shared supported housing:</i>
	Tests of compliance - essential items:
1.2.1.95	Apportionment of private/shared spaces appropriate?
1.2.1.96	Bedroom not shared?
1.2.1.97	Shared bathrooms and WCs conveniently located?
1.2.1.98	Bathroom sharing restricted to maximum 1 bath, 1 shower, 1 WC and 1 basin per 5 persons?
1.2.1.99	Separate shower provided if bathroom shared by more than 2 people?
1.2.1.100	Separate WC provided if bathroom shared by more than 2 people?
1.2.1.101	Cooker, fridge/freezer (and washing machine if not provided elsewhere)?
1.2.1.102	24 hour access to shared kitchen facilities?
1.2.1.103	Furniture, fittings, fixtures, carpet etc. provided?
1.2.1.104	Schemes for 6 or more sharing residents - additional facilities provided situated near main communal area: <ul style="list-style-type: none"> • central and/or dispersed catering facilities? • laundry facility with coin-in-the-slot machine? • small interview/reception room? • pay phone and cloakroom? • WC with basin?
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com

Housing Corporation Scheme Standards

- Accessibility

Appendix 3

1.3.1	External and internal environments should provide access for user groups and visitors with limited mobility.
	<p>Some further interpretation of the following tests may be found in the accessibility section of the NHF's publication 'Standards and quality in development'. The technical illustrations appendix is particularly helpful.</p> <p>Note: The Corporation's internal requirements are not mandatory for upper floor flats and maisonettes accessed by communal staircases without communal lift provision and individual first floor exposed access 'walk-up' flats. Ground floor units and any upper floor units accessed by communal lift are required to meet the Corporation's accessibility requirements.</p>
	Tests of compliance - essential items:
1.3.1.1	<p>Approach to the dwelling:</p> <ul style="list-style-type: none"> • paths slip-resistant and smooth, 900mm wide, max. cross falls 1:40, shallow crossings? • ramps max. 5m at 1:12 or max. 10m at 1:15? • protected edges to pathways where higher than adjoining levels? • entrance landing, nominally level, min. 1.2m x 1.2m (inward opening door)? unavoidable steps (not to occur within ramps), max. riser 150mm, min. going 280mm? • paths protected with handrail or like where adjacent drop in level exceeds 380mm? contrasting textures or kerb used to distinguish between foot and vehicular access? dropped kerbs used at roadway crossings? • path gateways provide min. 850mm clear opening (no step at gateway)?
1.3.1.2	<p>Main entrance to the dwelling (including main entrance from communal lobby or landing):</p> <ul style="list-style-type: none"> • clear opening min. 800mm? • nominally flat threshold (max. upstand 15mm)?
1.3.1.3	<p>Other doorways at entrance level:</p> <ul style="list-style-type: none"> • secondary external doors min. 750mm clear openings? • internal doors min. 750mm clear openings (wider where turning from 900mm passage)?
1.3.1.4	<p>Ground floor passageways (includes upper floor units accessed by communal lift):</p> <ul style="list-style-type: none"> • passage widths min. 900mm generally (750mm where limited intrusions e.g. radiators)? • where turning into 750mm doorway, area of wider passageway provided or doorway width increased? • where corridors turn 90°, protruding corner splayed or one passageway 1200mm wide?
1.3.1.5	Entrance level WC and basin provided (all units)?
1.3.1.6	Staircase suitable for future BS stair-lift, in terms of width and top and bottom landings?
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com
	Tests of performance - recommended items:
1.3.1.7	Accessible paving outside external door?

1.3.1.8	All external doors wheelchair accessible?
1.3.1.9	Ground floor WC is fully wheelchair accessible?
1.3.1.10	Living room situated at entrance level?
1.3.1.11	In dwellings of more than one storey, a ground floor space could be used as a bedspace?
1.3.1.12	Adequate space for turning of a wheelchair in kitchens, dining areas and living rooms?
1.3.1.13	Stair configuration: full flight at 35° pitch or half landing within a stair of 42° pitch?
1.3.1.14	Door handles, switches and thermostats, etc. set between 900-1200mm above floor?
1.3.1.15	Socket outlets set between 450-600mm above room floor level?
1.3.2	Full accessibility and ease of manoeuvrability should be provided in environments designed for use by wheelchair users.
	In assessing the extent to which this standard has been met the Housing Corporation will have regard to the 'Wheelchair housing design guide' (WHDG CI/Sfb 848-1997) published by Construction Research Communications Ltd. The Housing Corporation's requirements comprise all of the WHDG published requirements.
	Tests of compliance - essential items:
	<i>Compliance with WHDG sections</i>
1.3.2.1	Moving around outside <ul style="list-style-type: none"> paths slip-resistant and smooth, 1200mm wide, max. cross falls 1:40, shallow crossings? ramps max. 5m at 1:12 or max. 10m at 1:15? protected edges to pathways where higher than adjoining levels?
1.3.2.2	Using outdoor spaces <ul style="list-style-type: none"> path gateways provide min. 850mm clear opening? accessible paving outside external door? accessible clothes drying facilities? accessible route from external door, external storage and external gate?
1.3.2.3	Approaching the home <ul style="list-style-type: none"> car port - slip-resistant smooth paved area min. 5.4m x 3.6m, covered at a height of 2.2m? accessible route to entrance? (Note: may overlap car port paving) entrance landing, nominally level, min. 1.5m x 1.5m? canopy min. 1.2m x 1.2m set at max. height 2.3m? lighting to transfer space, route and entrance with PIR detectors and internal switching?
1.3.2.4	Negotiating the entrance door <ul style="list-style-type: none"> clear opening min. 800mm, relevant approach space, accessible threshold? suitably positioned: secure lock, latch with lever pull handles, or remote system? suitable provision for future installation of remote controlled door opener?
1.3.2.5	Entering and leaving, dealing with callers

	<ul style="list-style-type: none"> • clear space upon entering for transfer to second chair? • adjacent storing and charging of wheelchair, turning space min. 1.5m x 1.2m? • suitably positioned: post collector and provision for future installation of entryphone?
1.3.2.6	<ul style="list-style-type: none"> • Negotiating the secondary door • external nominally level landing min. 1.5m x 1.5m? • clear opening min. 800mm, relevant approach space, accessible threshold? • suitably positioned: secure lock (or multi-locking), pull handles and stays? • external lighting to door and routes with PIR detectors and internal switching?
1.3.2.7	<p>Moving around inside/storing things</p> <ul style="list-style-type: none"> • all passage widths min. 900mm • where 90° turn, protruding corner splayed or one passageway 1.2m wide? • where 180° turn necessary, passageway 1.5m wide? • clear door opening min. 775mm, relevant approach and operating space? • storage depth and width, in combination with shelving layout, provides suitable access?
1.3.2.8	<p>Moving between levels</p> <ul style="list-style-type: none"> • where provision on more than one level: vertical through-floor lift to BS5900 (1991), full range of safety features, space to use?
1.3.2.9	<p>Using living spaces</p> <ul style="list-style-type: none"> • extra space for wheelchair user to circulate, transfer, use furniture and operate fittings?
1.3.2.10	<p>Using the kitchen</p> <ul style="list-style-type: none"> • extra space, suitable worktop and fitting layout for practical use by a wheelchair user? • clear manoeuvring area min. 1.8m x 1.4m? • kitchen storage in a position and format which is largely wheelchair user • accessible? • built-in hob and oven, extra serviced spaces for three appliances (or four in 5p+ units)? • all controls and socket outlets accessible, remote and labelled switching as required? • suitable internal refuse arrangements manageable from wheelchair?
1.3.2.11	<p>Using bathrooms/WC's</p> <ul style="list-style-type: none"> • 5p+ units: both a 'wheel-in' shower and bath fully installed? • for units of less than 5p: either a 'wheel-in' shower or bath provided, with space provided to change installation in the future from shower to bath or vice versa? • for units on schemes with separate assisted bathing facilities, a 'wheel-in' shower fully installed, with space provided to change installation to a bath in the future. • 'wheel-in' shower provision fully accessible with dished floor (min 1000 x 1000) fitted with floor drain? (Note: provided beneath or adjacent to bath if bath fully installed initially). • 4p+ units: second WC provided with opposite hand transfer arrangement to main WC?

	<ul style="list-style-type: none"> • layout ensures independent approach, manoeuvre, transfer and use of all fittings? • suitable positioning of fittings to showers, baths and WCs, with all fittings selected • for ease of operation?
1.3.2.12	<p>Using bedrooms</p> <ul style="list-style-type: none"> • extra space to ensure wheelchair user access to beds, furniture, fittings and facilities? • sensibly positioned: double socket outlets, TV/FM points, two-way light, entryphone point? • main bedroom to bathroom future route enabled by full height knock-out panel, or other means? • suitable provision for future hoist to run between main bedroom and bathroom?
1.3.2.13	<p>Operating doors</p> <ul style="list-style-type: none"> • door construction suitable for subsequent fixing of pulls or other fittings? • all doors have suitably positioned, easily operated handles, pulls, etc.? • inward opening doors to bathrooms/WC/showers openable in emergency from outside? • any self-closing doors used are capable of independent operation by wheelchair user?
1.3.2.14	<p>Operating windows</p> <ul style="list-style-type: none"> • opening and ventilation controls operable by wheelchair user manual/geared/power)? • windows opening over paths do not create hazards? • glazing line in living/dining/bedrooms no higher than 810mm above room floor level? • full width transoms avoided in window areas below 1.5m above room floor level?
1.3.2.15	<p>Controlling services:</p> <ul style="list-style-type: none"> • suitable control of mains water stopcock, gas and electric main consumer units? • suitable isolating valves to sink, washing machine, WC, etc.? • flexible plumbing to adjustable fittings, where provided? • low surface temperature radiators in restricted areas? • suitable electrical and heating control fittings provided? • suitable provision of personal alarms and for smoke alarms? • suitable provision for future telephone and intruder alarm installation?
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com

Housing Corporation Scheme Standards -Safety and security

Appendix 4

1.4.1	Scheme design should ensure the provision of safe internal and external environments which minimise the opportunities for accidents in the home.
	Tests of compliance - essential items:
1.4.1.1	All windows can be safely operated?
1.4.1.2	Not used
1.4.1.3	Not used
1.4.1.4	Opened doors and windows are not obstructive or hazardous?
1.4.1.5	Lighting adequate for safety?
1.4.1.6	Stairs and steps can be safely negotiated?
1.4.1.7	Smoke alarm on every floor?
1.4.1.8	Kitchen, bathroom, shower and WC arrangements safe <ul style="list-style-type: none"> • 1.2m min. clear in front of kitchen equipment? • in areas likely to be splashed, sheet floor finishes provided
	Tests of performance - recommended items:
1.4.1.9	Stairs free of winders or tapered treads?
1.4.1.10	Switched lighting in stores with volumes over 1.2m ³ ?
1.4.1.11	Low surface temperature radiators provided?
1.4.2	Security provision for internal and external environments should be appropriate for scheme location and building types and should reflect advice obtained from local police Architectural Liaison Officers/Crime Prevention Design Advisers prior to detailed planning stage. In assessing the extent to which this standard has been met the Corporation will: <ul style="list-style-type: none"> • liaise with Police authorities to ascertain the extent of liaison undertaken by HAs and their partners; • have regard to the extent that the guidance in the relevant 'Secured By Design' Design Guide has been incorporated.
	Tests of compliance - essential items:
1.4.2.1	Scheme specific advice obtained from local police design advisers prior to detailed planning?
1.4.2.2	Secure side/rear fencing provided, any side or rear gates lockable and to full fencing height?
1.4.2.3	Layout avoids unnecessary through routes and minimises hiding places?
1.4.2.4	Site layout maximises natural surveillance?
1.4.2.5	Ground floor and other easily accessible windows tested to BS 7950:1997-enhanced security?
1.4.2.6	Key operated locks or laminated 6.4mm glass to ground floor or easily accessible windows?
1.4.2.7	Not used
1.4.2.8	External doors/frames/fixing/locking meet Secured by Design standards?
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com
	Tests of compliance - recommended items:
1.4.2.9	Fused spur for security alarm provided?
1.4.2.10	'Secured by design' certification obtained?

Housing Corporation Scheme Standards
Energy efficiency, environmental sustainability
and noise abatement

1.5.1	Schemes should incorporate cost-effective energy efficiency measures.
	Tests of compliance - essential items:
	<i>Newbuild</i>
1.5.1.1	Evidence available to show that the energy efficiency standards for NEW HOUSING accord with the 'Basic requirements' of the 'Good Practice Standard' outlined in the Government's Housing and Energy Efficiency Best Practice programme 'General Information Leaflet 72'. (See www.housingenergy.org.uk > publications > search > "GIL072".)
1.5.1.2	Design of housing for vulnerable user groups takes account of the higher temperatures and extended heating periods associated with such groups?
1.5.1.3	Low energy external lights provided?
1.5.1.4	Where supplied, fridges, freezers and washing machines have an energy label of A?
1.5.1.5	Dedicated leaflets provided for tenants on energy efficient use of the home and it's controls?
	<i>Rehabilitation</i>
1.5.1.5a	Evidence available to show that the energy efficiency standards for rehabilitation and refurbished housing comprise a package of energy efficiency improvement measures compatible with the opportunities matrix on page 4 of the 2001 Edition the Government's Housing and Energy Efficiency Best Practice programme 'Good Practice Guide 155 (2001 Edition)'. (See www.housingenergy.org.uk > publications > search > "GPG155".)
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com
	Test of performance - recommended items:
	<i>Newbuild</i>
1.5.1.6	Evidence available to show that the energy efficiency standards for new housing accord with the 'Basic requirements' of the 'Best Practice Standard' outlined in the Government's Housing and Energy Efficiency Best Practice programme 'General Information Leaflet 72'. (See www.housingenergy.org.uk > publications > search > "GIL072".)
	<i>Rehabilitation</i>
1.5.1.7	Evidence available to show that the energy efficiency standards for REHABILITATION and refurbished housing comprise a package of energy efficiency measures compatible with the matrix on page 4 of the 2001 Edition the Government's Housing and Energy Efficiency Best Practice programme 'Good Practice Guide 155 (2001 Edition)', and which include: <ul style="list-style-type: none"> • upgrading to 'Best Practice' levels set out on page 4 of GPG 155; and • occupant consultation/energy advice measures as set out on page 33 of GPG 155 (2001 Edition). (See www.housingenergy.org.uk > publications > search > "GPG155".)
1.5.2	Schemes should endeavour to incorporate measures which aid environmental sustainability. HAs and their partners will find the publication 'The Green Guide to Housing Specification' (1999) published by Construction Research Communications Ltd on behalf of the BRE an essential aid in meeting the criteria needed to attain the minimum and recommended environmental rating for homes as set out below.

	Tests of compliance - essential items:
1.5.2.1	For new build schemes, an 'EcoHomes' rating level of 'Pass' certified by a BRE licensed assessor?
1.5.2.2-5	Not used
	Test of performance - recommended items:
1.5.2.6	Engineered design options which allow the use of land with poor bearing strata by: lightweight frame construction? modular construction? pile and beam foundations?
1.5.2.7	Consultation with water supply company regarding scheme specific water saving measures?
1.5.2.8	Tenant option of water butt provision?
1.5.2.9	Separate identifiable container provided for collection of recyclable waste?
1.5.2.10	For new build schemes, an 'EcoHomes' rating level of 'Good' or better certified by a BRE licensed assessor?
1.5.3	Schemes should be designed to incorporate measures which aid the abatement of noise generated externally and internally.
	Tests of compliance - essential items:
1.5.3.1	Where significant external noise sources are likely to cause disturbance: <ul style="list-style-type: none"> • a sound survey has been carried out by a specialist and recommendations reported? • appropriate sound insulation measures are incorporated?
1.5.3.2	Not used
1.5.3.3	Positioning of opening casements minimises transmission of two-way air-borne noise?
1.5.3.4	Not used
1.5.3.5	Handing of dwelling plans and measures to minimise shared walls and floors incorporated?
Prompt	Housing Quality Indicators (HQI) assessments carried out and data submitted to www.hqiuk.com
	Test of performance - recommended items:
1.5.3.6	Triple glazing where externally generated noise levels are high?
1.5.3.7	Not used

Housing Corporation Scheme Standards
Maintainability, durability and adaptability

Appendix 6

1.6.1	Service installations should be unobtrusive and provide access for inspection, routine maintenance and repair of boilers, pumps valves and other similar components.
	Tests of compliance - essential items:
1.6.1.1	Readily accessible for inspection?
1.6.1.2	Accessible for routine maintenance and repair?
	Tests of performance - recommended items:
1.6.1.3	Unobtrusive piping and ductwork?
1.6.1.4	Economic in layout?
1.6.2	Durability, suitability and replacement availability should be taken into account in the selection and use of building components, materials, fittings, fixtures, furniture and equipment.
	Tests of compliance - essential items:
1.6.2.1	Durability and suitability appropriate for position of use?
1.6.2.2	Regular site inspections by employer's agent or clerk of works?
1.6.2.3	Pre-handover inspection undertaken by HA and/or appointed consultants?
	Tests of performance - recommended items:
1.6.2.4	Good quality furnishings, fittings and equipment?
1.6.2.5	Compatibility with existing fittings and equipment?
1.6.2.6	Availability of replacement parts and components?
1.6.2.7	Not used
1.6.2.8	ISO9000 quality assurance certified contractors and consultants utilised?
1.6.2.9	'Considerate Constructors Scheme' utilised?
1.6.2.10	Accreditation by either: <ul style="list-style-type: none"> • The National House-Building Council? • Zurich Building Guarantees? • Buildplan? • Building LifePlans Ltd?
1.6.2.11	Use of site operatives holding 'Construction Skills Certification Scheme' (CSCS) registration certification specified?



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