



Housing LIN

Connecting people, ideas and resources

Factsheet 6

Design Principles for Extra Care Housing (3rd edition)

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PRP



Image: © Tim Crocker

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1. Who is this Factsheet for?

This updated factsheet is intended to be a practical tool for commissioners, designers, planners and developers when considering new extra care housing projects. In lieu of any standards in the sector, the schedule of accommodation in Section 7 is perhaps useful as a minimum standard for designing new buildings.

The factsheet signposts to the latest information on Building Regulations and standards as well as addressing some of the current issues facing commissioners and developers of Extra Care Housing such design considerations following the Coronavirus pandemic, fire, planning issues, sustainability, resilience to climate change, flood risk, indoor air quality and smart technology.

The information in the factsheet draws on the expertise of PRP who has considerable experience in designing innovative housing for older people and vulnerable adults, and showcases industry-accepted good practice examples.

Note: The factsheet does not cover the way care and support is commissioned in extra care housing. For further details on this, see the Housing LIN's Policy Technical Brief, *Care and Support in Housing with Care for Older People*¹, or the Urban Land Institute's later living guide, *Housing with Care*².

Background

In 2004, PRP produced guidance on *Design Principles for Extra Care* published by Housing LIN (Learning and Improvement Network) in the form of Factsheet no. 6. It accompanied the Department of Health's extra care housing capital programme, managed by the Housing LIN at the time.

The document, subsequently updated in 2008, has been one of the most frequently downloaded from the Housing LIN's online '*design hub*'³. It has also been referenced in government capital grant programmes, including the current *Care and Support Specialised Housing Fund*⁴ administered by the Greater London Authority and Homes England.

However, since the last revision there has been a significant reduction in the availability of public sector funding (both capital grants and revenue uncertainty), an increase in aspirations for design quality and a generational shift in the expectations of those reaching retirement age. The way that housing for older people is now being procured, designed, delivered and managed is very different. Models for extra care housing are now diverse and some flexibility is therefore suggested when using this guidance.

In 2009, the government published the first HAPPI report, *Housing an Ageing Population: Panel for Innovation*⁵. The report provided recommendations for accommodating a new generation of older people who have higher aspirations for lifestyle and housing quality in retirement. The report has been very influential in raising awareness of the need for new older people's housing and in promoting design quality. It also highlighted a more integrated approach to housing older people closer to the centre of existing communities. Over a decade on, this new version of Factsheet no. 6 builds on the HAPPI principles and offers the latest thinking in designing homes for people in later life.

1 www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Technical_briefs/HLIN_TechBrief_CareAndSupportInECH_2016.pdf

2 For more on finances, see Chapter 4 in the 2019 ULI later living guide, *Housing with Care*:
www.housinglin.org.uk/_assets/Resources/Housing/OtherOrganisation/ULI-Later-Living-Housing-with-care-guide-Intro.pdf

3 www.housinglin.org.uk/Topics/browse/Design-building/

4 www.housinglin.org.uk/Topics/browse/HousingExtraCare/FundingExtraCareHousing/DHCapitalFundingProgramme/

5 www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Other_reports_and_guidance/Happi_Final_Report.pdf

2. What is Extra Care Housing?

This chapter sets out what is commonly understood by the term extra care housing, distinguishing it from other forms of purpose-built accommodation for older people, such as sheltered or retirement housing.

Whilst there is no recognised definition for extra care housing, it can be summarised as:

'Self-contained apartments designated for older people in a setting where care and support can be provided as required from an on-site provider.'

The Housing LIN Factsheet no. 1, *What is Extra Care Housing?* (to be updated in 2020)¹ and accompanying videos, provide an introduction into what extra care housing is. Sometimes spoken about as an alternative to residential care, it is a housing typology designed to provide a supportive environment for residents. It enables older people to live independently, together with others and with the assurance that access to on-site personal care and support is immediately available when needed. A range of communal facilities are usually provided which offer an alternative lifestyle to living in isolation in the community. Retirement communities, assisted living or housing with care are other names for extra care housing, the former more commonly used by private operators.

Extra care housing residents have independent, self-contained apartments, are leaseholders or have tenancy agreements. It is distinct from registered care and nursing homes which are institutional models and cater for those with higher levels of dependency. Residents in residential care or nursing homes generally just have a bedroom with an en-suite shower-room and shared communal facilities. They do not have security of tenure - a tenancy agreement or a lease - and pay a weekly or monthly fee that is all-inclusive for 24-hour care, board and lodging.

The diagram overleaf attempts to define and clarify the differences between different typologies.

Location, tenure, care arrangements, scale, integration, lifestyle opportunity, development process and management arrangements has resulted in a diverse range of models for extra care housing. They include:

Typical extra care housing

Developments of between 50 and 120 apartments all under one roof offering residents a 'home for life' within a community of older people with access to communal facilities.

Extra care villages

Large scale extra care developments offering a 'home for life' with a wide range of communal facilities in a 'village centre'.

Continuing care retirement communities

Large scale developments, sometimes 'gated', including both housing and care typologies on one site to ensure continuity of care, together with a wide range of communal facilities providing a social focus.

Often located on more rural sites (see *Rural Housing for an Ageing Population: Preserving Independence or HAPPI 4?*), village developments generally cater for the private retirement market with leasehold apartments for sale, monthly service charges and various different arrangements for exit fees.

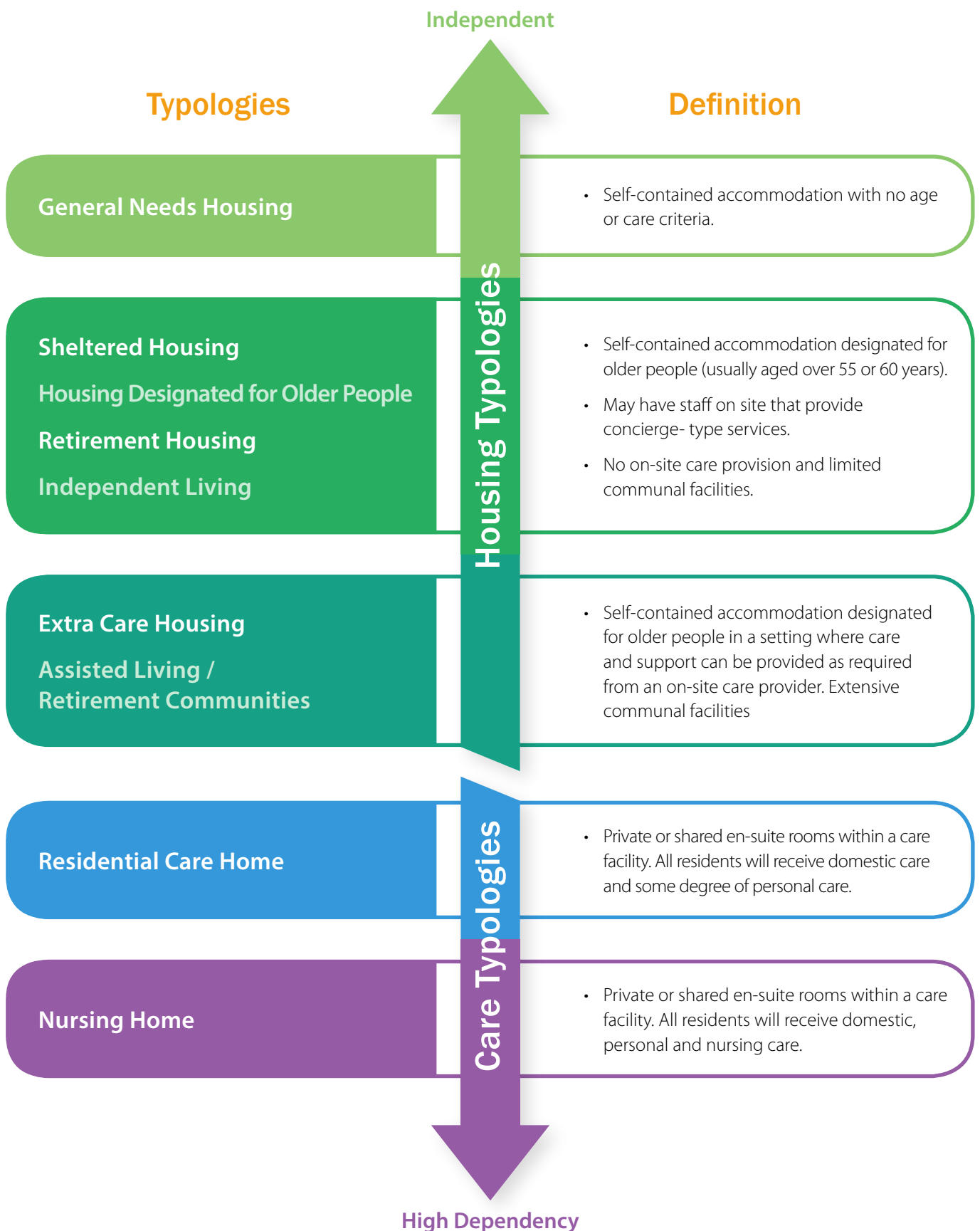
Community care hubs

A hub is flexible in its concept, configuration and in terms of the services and/or accommodation it might offer. Its raison d'être is to form the basis for an integrated approach to healthcare, care services and housing. Extra care housing can be included along with a range of residential accommodation offering short term and/or longer tenure options such as rehabilitation, respite care, dementia care or retirement housing. It will be tailored to the particular needs of a community in terms of the facilities and services that it provides but might include a crèche, GP surgery, day care, healthcare services, library, adult education facilities, a community hall, gym etc. There are also examples where the scheme has a retail offer; for example, a shop, pizzeria, hairdresser, or lets workspace commercially.

¹ www.housinglin.org.uk/Topics/browse/HousingExtraCare/what-is-extra-care/

² www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Reports/HAPPI-4-Rural-Housing-for-an-Ageing-Population.pdf

Continuum of Care



3. Planning and Consultation

This chapter provides an overview of the main planning considerations for extra care housing and relevant technical issues to help navigate the complexity of planning policy and associated practice.

Attitudes towards the provision of housing for older people can vary widely amongst planning authorities. Some local authorities can be resistant to the development of new housing for older people. This is due to concerns about anticipated future care costs and many are still unfamiliar with extra care housing and both the cost effectiveness and quality of life benefits it can bring. For example, the Housing LIN's 2019 report for Southampton City Council, *Identifying the health care system benefits of housing with care*¹, highlights the 'dividend' of extra care housing. This ranges from improvements to residents' quality of life, reductions in the use of health services and associated resources, and significant cost-benefits for the health system from the use of housing with care services.

Another useful report which illustrates the benefits of extra care housing, is the ExtraCare Charitable Trust commissioned research conducted by Aston University and Lancaster University².

Making the case

It may be necessary to build the case for extra care housing and the local need for each project. It might involve having to explain how extra care housing differs from retirement housing, general housing and care homes as described on page 5. There is a strong case for extra care housing from the wider perspective of addressing the challenges of demographic change, housing supply and choice, the affordability of caring for an ageing population and the wellbeing of older people through social interaction and independent living.

Establishing housing need: local and neighbourhood plans

An early desktop planning assessment can be very useful to establish a local authority's policy on housing provision for older people and the specific planning parameters for the site within the Local Plan. This will determine what housing needs assessments (SHMA Strategic Housing Market Assessment) have been undertaken by the local authority and whether these have included specific needs for housing its ageing population.

The Housing LIN has developed a modelling tool, *Strategic Housing for Older People Analysis Tool*³ (or SHOP@), that can assist councils forecast accommodation demand for older people; from sheltered/retirement housing to extra care housing by tenure (rental, shared ownership and leasehold).

The Local Government Association's 2018 report, *Housing an Ageing Population*⁴, predicts a shortfall of 400,000 homes for older people, including the provision of extra care housing. It shares lessons on how some councils have developed robust older people's housing strategies and plans. Post COVID-19, there is still expected to be demand for extra care housing amongst older people either as a 'care ready' housing choice in later life to meet their changing needs or an alternative to residential care.

In 2019, the revised MHCLG *National Planning Policy Framework*⁵ made explicit that "the size, type and tenure of housing needed for different groups in the community should be assessed and reflected in planning policies", including those for older people and disabled people. The guidance and other useful resources on planning housing for people in later life can also be found on the Housing LIN's planning portal⁶.

Note: At the time of writing, government is intending to publish a Planning White Paper.

1 www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Reports/HLIN_SouthamptonCC_HwC-Health-Care-System-Benefits_Report.pdf

2 www.extracare.org.uk/media/1169231/full-report-final.pdf

3 www.housinglin.org.uk/Topics/browse/HousingExtraCare/ExtraCareStrategy/SHOP/SHOPAT/

4 www.local.gov.uk/sites/default/files/documents/5.17%20-%20Housing%20our%20ageing%20population_07_0.pdf

5 assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

6 www.housinglin.org.uk/Topics/browse/Planning/

Use Classes, Section 106 and CIL

There remains a lack of awareness of the different models of 'housing with care' at planning level. Consequently, there is a high level of inconsistency as to how these developments are categorised in terms of their Use Class. For example, C2 (residential 'care'), C3 (general housing) or '*sui generis*' (it is neither one nor the other and therefore open to negotiation in planning terms on such matters as parking standards, affordable housing contributions, Community Infrastructure Levies etc.).

If the applicant is from the voluntary sector providing housing for affordable rental, the planning use class is not generally raised as a significant issue. However, for the private sector it can be critical in terms of viability as C3 can require varying levels of affordable housing contribution, CIL (Community Infrastructure Levy) and sometimes other 'planning gain' contributions under Section 106 agreements.

Some LPAs have chosen to classify all 'housing with care' as C2 with the intention of promoting the development of extra care housing/assisted living to meet local demand, while others classify extra care housing as C3 with a resulting requirement for affordable housing. For example, the new London Plan 2020 categorically requires all new extra care housing in London to provide on-site affordable housing in line with the policy for C3 general needs housing.

Development proposals should ideally be supported by a Transport Statement. This will provide information relating to the location of the development in the context of access to surrounding facilities and public transport. Use should be made of the Public Transport Accessibility Levels (PTAL) of the site to determine appropriate parking provision bearing in mind the mobility needs of residents. A parking 'stress' survey might be useful to assess the availability of on-street parking for visitors and staff.

Consideration should be given to the appointment of a specialist planning consultant with extensive knowledge of the sector to establish requirements at an early stage of the planning process.

For more information, on CIL and C2 and C3 Use Class Orders, visit the dedicated pages on the Housing LIN planning portal⁷.

Consultation

Stakeholders should be identified and involved early in the design process and consultation undertaken during the design development. Extra care housing should be discussed with local authority housing and adult social care departments, local GPs, NHS Clinical Commissioning Groups (CCGs) and other community interest groups to establish support and ensure the proposals are in line with local need.

Consultation with older people and prospective residents in the surrounding community can be very helpful in agreeing which facilities to provide in the communal area, to establish 'buy-in' and to avoid objections during the planning process. The Housing LIN has been working strategically with councils interested in commissioning extra care housing and a select number of operators and developers to engage with their residents/customers independently to better understand their future housing and aspirations.

The Housing LIN host an online 'tracker' of current planning consultations, compiled by Tetlow King Planning⁸.

⁷ www.housinglin.org.uk/Topics/browse/Planning/

⁸ www.housinglin.org.uk/Topics/type/Planning-Housing-for-Older-People-Developments-Tracker/

4. Design Aims and Principles

This chapter highlights a number of specific age-friendly design aims and principles that should underpin all extra care housing.

1. Inclusive Design

- Spacious, flexible and easily adaptable dwellings to meet residents' needs as they change. The aim must be 'a home for life' - as far as is practically possible.
- Barrier-free and easily accessible dwellings with lift access.
- Designed to mitigate the impact of physical disability, cognitive and sensory impairment to create an 'enabling environment'.

2. Aspirational Internal Environment

- Generous space standards.
- Maximum natural daylight through plentiful glazing.
- Maximum natural ventilation to apartments and circulation through dual aspect apartments where possible
- Avoidance of internal corridors with no views out or natural light or ventilation.

3. Care Ready

- An on-site care team providing 24-hour support as required by the residents.
- Accommodation designed to adapt and facilitate the delivery of care and support taking into account the dynamics of ageing over time, including disability and any health needs.
- Designed for the installation of smart technology when required. Hardwired and digital technology will become increasingly important in maintaining the independence, safety & security of residents.

4. Choice

- A choice between privacy and opportunities for social engagement through on-site activities and meeting spaces.
- An appropriate mix of accommodation with one, two bedroom dwellings and possibly some three bedroom dwellings (for private sale).
- A range of tenure options to cater for people's particular financial circumstances.

5. Appearance

- Attractive accommodation, both externally and internally, by virtue of its style, image, quality of materials, landscape, location and range of facilities.
- Contemporary external and interior design to appear as non-institutional as possible.
- A contextual design approach that integrates the development with its context in terms of scale and materiality.

6. Safety & Security

- A secure internal environment through progressive privacy and other security arrangements particularly where integrated with the wider community through sharing of facilities etc.
- A safe and secure external environment with consideration given to location, accessibility, topography, crime levels, etc.
- With Coronavirus in mind, an environment that can enable social distancing and infection control.

7. Energy Efficiency

- Energy-efficient with measures to avoid overheating as older people are more susceptible to extremes of temperature and are likely to spend a higher proportion of their time at home.

8. External Amenity

- Accessible, beautiful and secure amenity areas for outdoor living whether a private and/or communal garden, a balcony or terrace to stimulate social connectedness.

9. Location & Connectivity

- Located close to health, retail, leisure and entertainment facilities and/or good links to public transport.
- Located within existing residential communities so that family and social connections can be maintained.
- Appropriate levels of car parking, minibuss services, car pool arrangements or alternative transport strategy to address the particular site location, resident profile and tenure mix etc.

10. Community Facilities & Social Opportunity

- Designed for active ageing and offer a range of communal facilities, appropriate to the specific development, to promote social engagement, physical activity and the health and wellbeing of the residents.
- Facilities provided as a resource for the local community to promote opportunities for intergenerational activities on site and connection with the wider community.

5. The Brief – Issues Checklist

This is a useful checklist of the issues to consider at the early stages of designing extra care housing.

The development of the design and brief is likely to involve an iterative process as the specific site circumstances are considered and the development potential of a site is tested.

Note: Where the developer is distinct from the housing manager and care provider, it is very important for these latter agencies to be appointed early. Ensuring involvement in the scheme development from the outset, avoids consequences when it comes to the operation of the scheme that may only come to light when it is handed over into operational housing and care management.

The following is a useful checklist that can be used in early design discussions prior to signing off an initial brief:

- Target Market:** Age? Dependency levels? Economic profile?
- Tenure:** Affordable rental? Market rental? Shared ownership? Private sale? Mixed tenure?
- Scale of Development:** No. of apartments? No. of floors?
- Site Location:** Integrated or gated? Interface with community? Shared facilities?
- Care Provision:** Who will be the on-site care provider? What office/ sleep over space do they need?
- Housing Management:** Who will be provide this service? What office space do they need?
- Catering Strategy:** Full catering kitchen? Smaller café style service?
- Dwelling Typologies and Mix of Accommodation:** Apartments? Bungalows? Other? Sizes?

- Circulation:** Corridor access? Gallery access? Core & cluster? Independent external access? Hybrid?
- Garden & Amenity Provision:** Balconies? Winter gardens? Shared/communal garden? Roof garden? Outdoor leisure?
- Dementia Care Strategy:** Dedicated wing/ floor? Integrated approach? Other client groups?
- Communal and Ancillary Accommodation:** Range of facilities? Public access?
- Flexibility:** Exit strategy?
- Interior Design:** Budget & concept?
- Transport Strategy & Parking Provision:** Mini bus service? Car sharing? Ambulance bay?
- Mobility Scooter/Buggy Strategy:** Access to whole building or stored centrally?
- Security Strategy:** Progressive privacy/Security? Access control?
- Energy Strategy:** Central plant? Location of meters?
- Ventilation Strategy:** Solar shading? Night time vents? MVHR?
- Assistive Technology:** Smart technology/ Digital? telecare? Which warden call system? Other aids or equipment?
- Construction System:** Traditional? Framed? MMC?
- Fire Precautions & Means of Escape:** Sprinklers? Evacuation strategy?
- Refuse and Recycling Strategy:** Storage?
- Style & Character:** Traditional? Contextual? Contemporary?

6. Site considerations

This chapter offers advice on site-wide considerations for new extra care developments. It focuses on issues outside the building envelope and includes site selection, site layout, parking and landscape design.

Site location and selection

Where new extra care housing for older people is being planned, the location of the scheme(s) is extremely important. A good location within a 'lifetime neighbourhood' or 'age friendly city' enables the existing infrastructure to help maintain family and social networks, promote access to the wider community and can make it easier to attract staff. Ideally sites should therefore be:

- Well-served by public transport - bus stops, train stations etc.
- Easily accessible - Preferably a relatively flat neighbouring topography with dropped kerbs and pedestrian road crossings to promote access by ambulant older people, wheelchair users and mobility scooters.
- Close to local facilities - library, health facilities, post office, leisure & amenity.
- Close to facilities and shops - for example, at the heart of new or existing residential community.

Occasionally sites are developed purely due to their availability for redevelopment or affordability despite the fact that they are poorly located. In these cases, it is worth considering additional communal facilities so that residents are not isolated. For example, a small shop, cash machine, post box and minibus service to the nearest centre.

The demise of our high streets has presented new opportunities to design extra care schemes that directly integrate with our town centres. Not only will the residents benefit from the local amenities but the high street will benefit from being re-energised with new life and activity.

Community integration and intergenerational activity

One of the principal lessons from Europe and Scandinavia, as highlighted in the HAPPI report, was the holistic and integrated approach to housing and care for older people and its strategic location at the heart of residential communities.

Where the aim is to integrate the building within a new or existing residential community, a careful spatial analysis of the area or masterplan is required to inform the brief development in order to ensure that:

- The accommodation brief takes into account community and other facilities that are easily accessible in the area so that these are not duplicated unnecessarily within the development.
- New facilities within the development are shared where appropriate with the wider community to improve financial viability.

A useful example of community integration is set out in the Greater Manchester draft spatial framework. Its vision is expressly "to make Greater Manchester one of the best places in the world to grow up, get on and grow old."¹

Opportunities for intergenerational activity will also benefit the extra care residents and increase their wellbeing by reducing social isolation and providing a sense of purpose. This may be through community spaces or a cafe within the building or even a crèche or nursery so that young children and their parents are brought onto the same site as the extra care building.

For a range of resources on intergenerational housing, browse the Housing LIN's dedicated webpage².

¹ www.greatermanchester-ca.gov.uk/media/1710/gm_plan_for_homes_jobs_and_the_environment_1101-web.pdf

² www.housinglin.org.uk/Topics/browse/Housing/HousingforOlderPeople/intergenerational-housing/

The community café at Arden Quarter, Stratford is located on the building frontage to provide opportunities for the extra care residents to mix with the wider community.



Site layout

Access arrangements, topography, existing trees, landscape features, orientation, relationship to neighbouring properties and the public realm etc., will all influence the development capacity, layout and configuration of the building on the site. The following key design principles should be included;

- The entrance, parking and access arrangements should be immediately apparent on approaching the building/development.
- The main entrance should be clear and welcoming with a vehicular pick up/drop off zone close to the entrance doors.
- Dedicated visitor parking should be provided.
- There should be a safe and ideally level pedestrian access from the public highway to the front door of the building.
- Kitchen location and deliveries must be considered at the outset. Deliveries should be separate from the main entrance.
- Refuse location and collection must be considered at the outset so that there is no conflict with the entrance and pedestrian access.
- The building form should ideally be designed to enclose secure landscape garden areas and courtyards which cannot be accessed from the public realm.
- Ensure that the site layout allows for separation between the main entrance for visitors and residents and staff/ deliveries. Refer to Infection Control information under Section 7.

Scale of development

The scale of the development can be an important determinant in terms of the viability of an extra care housing scheme. If the intention is to provide a wide range of on-site communal facilities, ancillary and service accommodation, economies of scale will be critical in terms of viability. The minimum size of extra care developments is now considered to be 60 units. However, larger retirement village developments with extensive communal facilities often need to be 250 units or more to ensure financial viability.

The scale, massing and visual impact of the development must be carefully considered to respond to the local area and should not identify itself as housing for older people. Aside from appropriateness within its local context, there is no limitation on the number of storeys for older people's housing since barrier-free access will be necessary throughout and at least two wheelchair accessible lifts will provide access to all floors.

Parking provision

Parking standards will need to be negotiated with the planning/highways authority as there are often no defined standards for 'housing with care'. Discussions are often based on precedent on similar projects. Parking levels can vary depending on;

- **Tenure:** Private or shared ownership developments are likely to aim for 1:1 (100%) or more in order to satisfy market demand. Affordable housing will be much lower (around 40%).
- **Site location:** Town centre sites with good transport links might require very little or zero parking whilst similar scale developments on rural sites might attract relatively high levels of parking particularly in the absence of car sharing, minibuses or other arrangements.
- **A travel plan:** This might include a mini-bus service, a car-pool arrangement or other alternative transport arrangements that mitigate the level of car ownership.
- **Staff and visitor numbers:** It is likely that the planning application will require expected numbers as part of a Transport Statement to accompany the application.

Consideration will need to be given to the operational needs of the development including staff parking, providing emergency vehicle access including ambulances, drop off areas or parking for a mini-bus, and the refuse and service/delivery strategies.

Parking bays specifically for the use of residents and visitors are best being wider than the minimum 2.4m width to make it easier for residents and avoid damage to parked cars. Some fully wheelchair-standard bays of 3.6m should be provided with the remainder an intermediate width of between 2.6 and 2.8m. An alternative approach is to provide paired bays separated by islands of 600-800mm so that the passenger door can be opened to its full extent.

Landscape design

As set out in the PRP factsheet on landscaping for the Housing LIN¹, the role of attractive external amenity is critical for the health and wellbeing of the residents. Buildings should create and define recognisable, usable spaces, ideally sheltered and sunny, with the best possible outlook. Key considerations include:



Visibility

The garden should be an extension of internal communal spaces, ideally glimpsed from the main entrance and communal facilities.



Accessible

All paving must be laid level with even drainage falls, and be accessed from the building via level thresholds. Paths should be relatively level (no steeper than 1 in 20) and at least 1.5m wide. The ground and adjacent path must be level to avoid a trip hazard and all edgings laid flush. The surface should be even and slip resistant. Loose or bonded gravel is not appropriate but resin bound can be used instead.



Walking Opportunities

However small the garden, it is desirable to establish opportunities for residents to take a stroll. A route should be provided to take full advantage of features, views and points of interest in the garden with adequate seats for resting. The resident's journey should be varied, stimulating and circulatory. Dead-ends should be avoided unless they terminate in a feature or 'event'. Paths must be level and slip-resistant.



Sunlight

All schemes, however small, should include at least one sunny terrace area adjacent to the building to allow residents to sit outdoors on warm days for events and BBQs.



Security

It is important that residents perceive the garden areas as secure and safe from trespass. Areas at the front of a scheme may be open to the street but the areas intended for residents to walk, sit or garden should be clearly secured by appropriate fences or railings.



Interesting Features

Gardens should surprise and delight through sound, smell and touch as well as the visual senses. Moving water, for example, can create a refreshing, soothing sound on a hot day. A piece of sculpture or a feature such as a bespoke bench may provide a tactile experience that makes a particular spot in the garden memorable and familiar. Some schemes may also have an outdoor gym/ playground to encourage exercise.



Participation

If space allows, consider the inclusion of a small 'kitchen garden' area with vegetable beds, herb garden, compost bin/heap, greenhouse and/or potting shed for residents' use. Consider incorporating raised planters as a means of bringing plants closer to residents and enabling them to participate in gardening from a wheelchair or a standing position.



Shade

The provision of a shade must be considered where gardens are south facing. Consider retractable blinds, a well-located tree, pergola or trellis planted with deciduous climbers.

¹ www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Factsheets/HLIN_Factsheet35_Landscape.pdf



Sensory Planting

Year-round colour and interest in the garden are key for residents who may be sedentary, to enjoy outlook throughout each day. Spring bulbs, autumn leaf colour and winter blossoms, for example, should be carefully considered to establish variety and delight throughout the year. Specify easily recognisable and colourful flowering plants. Planting that incorporates colour and movement will stimulate the senses, and can be particularly significant for people with visual impairment. Do not specify plants with any poisonous components and any thorny or spiky plants, the risks for potentially confused or physically unsteady residents is higher than usual.



Wildlife

Almost all residents will welcome the presence of birds in the garden, and particular areas may be identified for feeders or nest boxes. Similarly planting and habitat that encourages butterflies and other insects will enhance biodiversity and create interest for residents, many of whom may spend considerable time sitting and 'watching the world go by'.



Infection Control

Access to meaningful external space is even more important for maintaining wellbeing and exercise during an outbreak of illness in the building. The garden should be sufficiently sized to accommodate several residents at once while social distancing. Walking routes should circulate so as to enable a procession in one direction which avoids cross overs. Several seats should be provided to enable several residents to sit down at once to talk whilst being 2m away from each other. Sheltered or covered spaces should be included to encourage residents to go into the garden for some fresh air, even during inclement weather.



Roof Gardens

Where sunny outdoor space at ground level is at a premium or there are opportunities for high level views, consider providing roof terraces. They should be accessible by lift and ideally associated with other communal facilities (e.g. an activity room, secondary lounge or conservatory). Non-climbable guarding to at least 1.8m height, preferably glass, will be required. Risk management in the event of residents with dementia attempting to climb over balustrading is considered more difficult in a roof garden situation than in the case of private balconies (which can be shut off when necessary). Paths must be level and slip-resistant.



Lighting

In addition to the typical bollard lighting of external areas for the purpose of safety and amenity, consider lighting effects to enhance the external space during the hours of darkness, particularly in schemes where a significant number of dwellings and communal spaces overlook a garden area and where the pleasure of the garden can be extended into the evening.



Maintenance

Provide external taps for garden watering purposes along with water butts and the specification of drought-resistant plant material to reduce the need for watering by hose or sprinkler.



Pets

If the operator has a pets policy, consider providing a dog walking area and bins.

'Beautiful landscaped gardens at Pilgrim Gardens, Evinston provide a wonderful amenity for residents with seating, interesting features, sun, shade and walking routes.'



7. Schedule of Accommodation

This chapter gives a schedule of accommodation in a tabular format. It highlights the anticipated spaces for extra care housing along with an area guide for each. It is acknowledged that every project is unique and the spaces provided will vary. The notes in the right-hand column provide further advice in this regard.

Dwellings		
Accommodation	Area Guide	Notes
1-Bed, 2 Person Dwellings	Min 54m ² (affordable sector)	<ul style="list-style-type: none"> Dwellings to generally exceed Building Regulations M4(2) <p>Note: Local authorities may require a percentage of dwellings to be fully wheelchair accessible and meet Building Regulations M4(3). This will necessitate larger dwellings.</p>
2-Bed ,3 Person Dwellings for Older People	Min 68m ² (affordable sector)	<p>Note: Private sector sizes will be defined by price point and local market requirements.</p>

Communal Spaces		
Accommodation	Area Guide	Notes
Communal Lounge	1.5m ² per dwelling Maximum 110m ² (plus store 6m ²)	<ul style="list-style-type: none"> Located so that it is visible and easily accessed. Views and access directly to a terrace and communal garden is preferred.
Residents' Tea Kitchen	8m ²	<ul style="list-style-type: none"> This can be within the communal lounge.
Dining Area Cafe / Restaurant / Bistro	1.5m ² per dwelling (as a guide) Maximum 110m ² (plus store 6m ²) Room could be smaller for café style provision or for two sittings	<ul style="list-style-type: none"> Served by regeneration or catering kitchen. Potential for catering to be provided by an independent commercial venture and shared by the community. <p>Note: Some proposals may not require catering if located close to other extra care developments, local restaurants or other options for meal provision are being considered.</p>
Hairdressing / Therapy / Consulting Room	Minimum 20m ²	<ul style="list-style-type: none"> Potential for hair salon to be an independent commercial venture with a shop front. In large villages consider having a separate hair salon and therapy/consulting room.
Activity / Quiet Rooms	Minimum 18m ²	<ul style="list-style-type: none"> Storage should be provided within this area. Number of spaces is dependent on size of the development.
Informal Seating Areas	3m ²	<ul style="list-style-type: none"> Along corridors, outside lifts and close to the main entrance. Number of seating areas is dependent on size and layout of the development.

Communal Spaces

Accommodation	Area Guide	Notes
Communal Accessible WCs	4m ² (2 minimum)	<ul style="list-style-type: none"> • Close to the entrance and lounge • Additional WCs are required if dining area open to the public.
Residents' Laundry Room	25m ²	<ul style="list-style-type: none"> • A laundry may not be required if space is provided for a washing machine within each dwelling (preferable for infection control). • Access to an external drying area is desirable.
Assisted Bathroom	18m ²	<ul style="list-style-type: none"> • One per project is recommended. • Keep the finishes and fittings as domestic as possible. • Provide assisted WC within a separate room or area for privacy.
Guest Room with En-suite Shower	24m ²	<ul style="list-style-type: none"> • En-suite should be wheelchair accessible. • Guest room may not be required where development is close to affordable overnight accommodation. • Where provided, the guest room can be used for occasional staff overnight stays.
Mobility Scooter / Buggy Store	1 mobility scooter per 5 dwellings (maximum of 10 scooters)	<ul style="list-style-type: none"> • As scooter storage is not required by planners, it is often useful to call this the resident cycle store to meet minimum cycle numbers. In reality few bikes will need to be stored and it can become a scooter store.

Staff and Ancillary Spaces

Accommodation	Area Guide	Notes
Reception / Managers Office	12 - 15m ²	<ul style="list-style-type: none"> • Close to the main entrance. • Consider ventilation and cooling of this room due to computer use.
Staff Office	18m ²	<ul style="list-style-type: none"> • Size will depend on anticipated number of staff in one shift. • Care team may require a separate office from the building management team. • Monitoring (telecare) and fire alarm equipment will be within this room. • Consider ventilation and cooling of this room due to computer use
Outreach / Home Care Office	6m ² per member of staff	<ul style="list-style-type: none"> • Required if outreach services are provided.
Staff Rest	15 - 20m ²	<ul style="list-style-type: none"> • To include kitchenette, comfortable seating and table for eating.

Staff and Ancillary Spaces

Accommodation	Area Guide	Notes
Staff Change	20m ²	<ul style="list-style-type: none"> To include lockers, changing space and at least one WC and shower.
Staff Laundry	25m ²	<ul style="list-style-type: none"> To include one sluice machine. If CQC are registering the building, provide a segregated in and out arrangement.
Catering Kitchen / Regeneration Kitchen	55m ² Regeneration Kitchen 70m ² Commercial Kitchen	<ul style="list-style-type: none"> Potential for catering to be provided by an independent commercial venture and shared by the community. 70m² includes stores, WC and desk space. <p>Note: Some proposals may not require catering if located close to other extra care developments, local restaurants or other options for meal provision are being considered.</p>
Main Refuse and Recycling Store		<ul style="list-style-type: none"> Refuse strategy to be agreed with Local Authority
Refuse Holding Stores	10m ²	<ul style="list-style-type: none"> May not be needed if the management team can commit to assisting residents with bringing refuse to a central store.
Cleaners' Storage	1m ² per 10 dwellings Maximum 8m ²	<ul style="list-style-type: none"> One for each floor or core.
General Storage	3m ² per 10 dwellings as a guide	<ul style="list-style-type: none"> In addition, consider providing storage for residents to rent out for large items.
Garden Store	5 - 10m ²	<ul style="list-style-type: none"> Could be provided as an external shed.
Lifts	All dwellings to be accessed by a minimum of 2 lifts	<ul style="list-style-type: none"> A minimum of 2 lifts: 1x13 person stretcher lift and 1x8 person lift.
Plant Room / Service Risers / Electrical Intake / Meter Room/ Comms Room		<ul style="list-style-type: none"> Size based on environment strategy, water storage and possible individual metering.

Cost Modelling

Accompanying this factsheet, the Housing LIN has also updated its *Cost Model: Extra Care Housing*¹. This document draws attention to issues associated with the design and procurement of extra care housing and factors that can influence construction costs. A selection of typical costs models are included at the end of the document.

¹ www.housinglin.org.uk/Topics/type/Cost-model-Extra-Care-Housing/

8. Building Design Considerations

This chapter focuses on the planning of new extra care buildings. It focuses on the spaces inside the building and includes the mix of apartments, layout of the communal spaces, security and infection control

Tenure, mix and number of apartments

The minimum number of apartments for extra care housing is now thought to be 60 in order that the housing management, care and support services and any additional facilities can be financially viable. To increase viability, operators are relying increasingly on mixed tenure developments with leasehold sale or market rental¹, cross-subsidising affordable rental and shared ownership accommodation.

Note: Mixed tenure housing with shared communal facilities and care, requires careful consideration of legal/financial issues, management and marketing. Agreement is needed prior to commencing the design as to whether the tenures will be integrated or segregated around the building. There have been several examples of mixed tenure extra care developments where the private or shared ownership elements are slow to be purchased and this could be a result of the design. For more on shared ownership in extra care housing, see the Housing LIN/ARCO's technical brief².

The proportion of one to two-bedroom units will be strongly influenced by the tenure and local market conditions. There is a good case for two-bedroom apartments in all housing for older people for the additional flexibility they provide. Private developments generally opt for predominantly two-bedroom dwellings with a small proportion of one-bedroom and perhaps a few three-bedroom units.

Unless a condition of grant, most social housing operators of extra care housing, particularly when in partnership with local authorities, require a greater proportion of one-bedroom apartments due to the capital cost of the second bedroom. However, building to HAPPI principles, it is still possible to design an attractive, smaller 'care ready' apartment for a single householder or couple. And where the occupier is dependent on housing benefit, this has the added advantage of keeping rent and service charges affordable.

Building layout

Whilst the layout of the building will be dictated by the brief and constraints of a site, there are a number of general layout principles that can be applied, as follows:

Wayfinding - The building layout should be simple in plan, avoiding long corridors with many changes in direction.

Service Arrangements - There should be a clear separation between 'front' door and 'back' door to ancillary and service accommodation such as kitchen, laundry and catering facilities with related refuse storage. Service access should be discretely located to avoid crossovers between residents' pedestrian areas and delivery vehicles.

Similarly, the ancillary/service accommodation and staff facilities should be discretely located within the building to minimise unnecessary staff circulation through residents' areas. Refer to section on Infection Control below. Direct access should ideally be provided from kitchen/catering areas to the dining/restaurant areas to avoid trolleys crossing residential corridors or communal areas of the building.

Public and Private Realm - The transition from the public to private realm should be carefully considered to differentiate semi-public and semi-private zones and reinforce the notion of defensible space.

Circulation - Routes and lift locations should be carefully planned to avoid long double-banked corridors. Consideration should be given to alternative circulation solutions such as single banked corridors, deck/gallery access offering an external front door, core and cluster arrangements where dwellings are clustered around a lift lobby, atria etc. These can provide routes of interest around the development whilst also assisting with way-finding for those with short term memory loss.

Infection control should be considered when planning the building (refer to section below). Open gallery circulation will minimise spread of infection and one-way routes around the building can be considered for use when social isolation is required.

Fire-fighting and means of escape must be considered from an early stage in the configuration of the layout and circulation routes and the fire strategy signed off by the end user. For more on fire safety in extra care housing, visit the Housing LIN's dedicated webpage³.

¹ For more private rental and housing for older people, see the Housing LIN's dedicated webpage: www.housinglin.org.uk/Topics/browse/Housing/HousingforOlderPeople/private-renting/

² www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Technical_briefs/HLIN_TechBrief_3_MixedTenure.pdf

³ www.housinglin.org.uk/Topics/type/Fire-Safety-in-Extra-Care-Housing-in-the-UK/



'Bright atrium spaces at St Bede's, Bedford are used in lieu of corridors to bring natural light into the heart of the plan and to assist with orientation.'

Orientation - Dwellings and principal communal spaces should be designed to ensure sunlight for part of the day to create a good balance of natural and artificial light. Single aspect north facing dwellings should be avoided. Use north aspect, shaded areas of the site for service spaces.

Configure the footprint/building layout to define usable external amenity (refer to landscape section in Chapter 5).

Visual Accessibility - Key communal areas such as lounges and dining areas should ideally be visible and easily accessible from the entrance/reception area. Views from the reception area through these spaces to the garden/amenity areas also provide a nice feature in terms of transparency, openness and orientation for way-finding.

Natural Surveillance – Locate management/administrative staff accommodation at a strategic location adjacent to the entrance and reception area.

Progressive privacy

The transition from public to private areas should be clearly defined and appropriate security measures should be provided. The term 'progressive privacy' describes the zoning of a scheme to restrict access to residential areas for both security and privacy reasons. This is of particular importance for outward facing developments that are intended to be integrated with the wider community. The four zones within a scheme might be described as:

1. **Private zone:** The private zone is the dwelling itself, to which only the resident and invited guests have access.
2. **Semi-private zone:** The semi-private zone comprises those circulation areas and communal spaces that only residents and their invited guests may use (assisted bathroom, residents-only lounge, etc.) .
3. **Semi-public zone:** The semi-public zone comprises any circulation areas and communal spaces to which the public have access at certain times (restaurant, activity space, IT suite, and hairdresser etc.) .
4. **Public zone:** In some circumstances a fourth category - a public zone - may exist. For example, if the scheme incorporates a drop-in centre or other facilities that are shared with the wider community which the general public can access without restriction.

Access to a semi-public zone (zone 3) will typically be controlled by a fob-controlled door-entry system, for staff or residents. Lift access is normally provided at the interface between the semi-public and semi-private areas on the private side of the controlled entrance. Careful consideration needs to be given to the method of door-entry between the semi-public and semi-private zones (zones 3 and 2). Residents should not be required to come down in person to allow access to their guests.

Visitors

The transition from public to private areas should be clearly defined and appropriate security measures should be provided. Consider including formal and informal spaces for use by different types of visitor, families and those from the wider community. Depending on the location and nature of the development, consideration should be given to the provision of a guest room.

Staff

Depending on the size of the extra care housing development, there will be a substantial staff presence which may include as a minimum; housing management and administrative/maintenance staff, catering staff, cleaners, home-carers and other support staff. Staffing arrangements should be clarified at the outset as part of the initial briefing process to ensure that adequate provision is included for work and rest areas and, if appropriate, overnight facilities.

On-site care and support staff will normally require easy access to all areas of the building. Care and support should be provided discretely. For example, it should not be necessary to take utility trolleys through main public spaces. Ancillary and service accommodation should be conveniently and discretely located.

On-site care and support staff require comfortable and functional facilities such as a changing areas, staff room and office space. The staff rest room should have adequate levels of daylight and if possible linked to a small external amenity space. And depending on how the care is commissioned locally, there may also be a need for overnight accommodation.

Staff should enter the building separately from residents and visitors via a secondary door and there should be facilities for showering and changing immediately available for use in the event of needing to control infection.

Where the development has other amenities or on-site services operated in and/or from the scheme, consideration must also be given to these staffing needs, including any volunteers, and their access requirements.

Scooter storage

Mobility Scooters are becoming an increasingly popular means of transport amongst older people. It is essential, therefore, that adequate, well located storage is provided and that a strategy is developed for their use as this can have a significant impact in terms of the layout of the building, width of circulation routes, storage facilities etc. Use of scooters inside the building can cause expensive damage to the decoration and particularly to automatically opening doors and lifts, and will have an impact of the fire strategy. A central store, close to the main entrance is therefore recommended, ideally with access directly from the outside of the building.

For more information on mobility scooter usage, read the Housing LIN case study⁴. In addition, there is an Erosh guide (members only).

Refuse storage

Some extra care housing operators include information on refuse and recycling in their residents' handbook. This includes useful tips on food waste, recycling and disposals of larger objects.

In terms of design, a strategy for refuse and recycling should be considered early in the process, consulting with the housing managers and the local authority to develop a strategy that should:

- Establish whether to provide one central store or several localised collection points.
- Consider travel distances for frail residents.
- Make provision for separate storage for kitchen/service areas.
- Ensure that refuse collection points are within limits set by the local authority.
- Ensure that if refuse vehicles are required to enter the site, adequate and safe turning area is provided.
- Ensure that residents are supplied with correct information on local refuse and recycling arrangements.
- In larger developments, consider the provision of satellite refuse 'holding' stores and possibly refuse chutes to avoid excessive travel distances for residents.

Refuse stores are a weak point for criminal activity. Ensure that the inner door is fob controlled to ensure no unlawful entry to the building and the external doors are locked to prevent arson within the refuse store.

⁴ www.housinglin.org.uk/Topics/type/Turning-the-corner-managing-the-use-of-mobility-vehicles-from-a-housing-perspective/

Interior design

Well designed interiors will dramatically influence the overall impact and success of a development. Allow a sufficient budget so that an interior designer can be employed to ensure an attractive, enabling and non-institutional design which complements the architectural style and concept.



Welcoming Foyer

A welcoming entrance with a bespoke reception desk will provide reassurance that there is a level of service and point of contact. Nearby seating is critical as the entrance can be an important social hub for residents to meet.



Colour, Texture & Pattern

Use of strong colours and textures will bring energy and interest to the interior. Feature walls can be used to aid orientation and highlight a significant place like the location of lifts or a communal space. Large patterns or abstract art should be avoided as they will be confusing to residents with dementia.



Historic References

An interior design concept that is borne out of a theme that local people can relate to, for example, a historic context, local material or a local industry will provide familiarity for residents and a conversation starter.



Hotel Style

Communal areas designed like hotels give a sense of pride in the environment and promote sociability.



Themed Floors

A themed palette of colours and artwork can be used to give each floor a unique feel and assist with wayfinding.



Contrast

Visual contrast between walls, floors, furniture, handrails and switches/sockets is particularly important within extra care buildings where a high number of residents may have visual impairments. A 30-point difference in LRV should be provided in residents apartments in addition to the communal spaces (which is required by the building regulations in any case).



Floor Finish

Level and flush thresholds should be provided between different floor finishes to avoid trip hazards and the colour of two adjacent floor finishes should be tonally the same to avoid residents from mistaking the change as a step or thinking the darker colour is a hole.



Surface Treatment

Too many hard surfaces can create an environment where conversation is difficult for those with hearing impairments. Sound absorption should therefore be considered by use of carpets, curtains and upholstered furniture as well as books and accessories on shelves.



Appropriate Furniture

Provide different seating options to give residents a choice to suit their comfort and mobility needs. Chairs should be fitted with armrests and both chairs and sofas should be on legs to allow residents to position feet slightly back to assist with standing. Fabrics should be impervious, antibacterial and flame-retardant



Lighting

Lighting design is a key element of the interior design and choice of light fittings should be carried out in consultation with the architect, interior designer and client rather than being provided under a performance specification in the building contract. Avoid repetitive ceiling mounted fittings in the corridors and communal spaces as this will look institutional and can cause glare.

High levels of light are important to ensure residents with impaired sight can carry out tasks, however lighting design should be domestic and alternative mood lighting for different activities should be provided in key spaces.

As an example, different switching and/ or dimming arrangements could offer bright light from recessed spot lights or softer lighting from pendants/ wall lights in the lounge and restaurant.

Kitchens should all have pelmet lighting above the worktops.



Signage

Internal signage should only be provided where absolutely necessary to ensure a domestic feel. Communal lounges and key spaces should be easily identifiable through design and glazed screens/ doors. Directional signage will be required to flats and facilities at each floor level outside the lifts and stairs.

The choice of signs should be considered as a key element of the interior design package to ensure it works with the overall concept. Signage should be stylish and easily legible and those with a shiny background or projecting letters which cast shadows should be avoided.



Maintenance

The choice of materials should be considered carefully to facilitate easy maintenance and hygienic cleaning. This could include antibacterial plasterboards, vinyl floors and the replacement of ceramic tiles and grout with attractive vinyl wall finishes

For more on interior design, read the Housing LIN factsheet (also written by PRP), *Can Interior Design Improve the Quality of Life in Extra Care Housing?*⁵.

5 www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Factsheets/HLIN_Factsheet_34_Interior_Design.pdf

'Careful interior design within the entrance area at Quadra in Hackney has created an attractive and welcoming space for residents to meet'



What is a 'healthy' extra care development?



Resilience

Built-in through sustainable drainage systems and permeable surfaces to mitigate flood risk; and passive cooling techniques to minimise urban heat island effect and summertime overheating



Healthcare

Care teams and therapy services on-site to facilitate rapid, timely and convenient access to healthcare requirements



Safety and Security

Developments feel safe and secure through strong community cohesion, active public space, safe and well-lit pedestrian routes and traffic calming measures



Communal Amenities

A wide range of communal spaces provide stimulating environments for leisure, fitness, recreation, family, and social engagement, and play a key role in combatting social isolation and promoting physical fitness



Noise Control

Good sound insulation to residential accommodation and quiet communal spaces, and induction loops fitted to accommodate hearing requirements in noisy spaces



Enabling Environments

Accessible and inclusive developments that support independent mobility and personal empowerment



Active Gardens

Communal gardens designed to promote active lifestyles, wellbeing and social interaction through on-site active gardening provision





Good Air Quality

Generously landscaped grounds and sensors to detect and mitigate poor air quality from external sources, such as traffic and energy generation



Colours

That promote balance, wellbeing and relieve stress and anxiety, whilst meeting the needs of visually impaired residents



Healthy Eating

On-site restaurant/cafe provision and local food growth that provide a range of healthy food options and encourage healthy eating



Design

Interiors and architecture that maximise opportunities to restore, inspire, and uplift the spirit



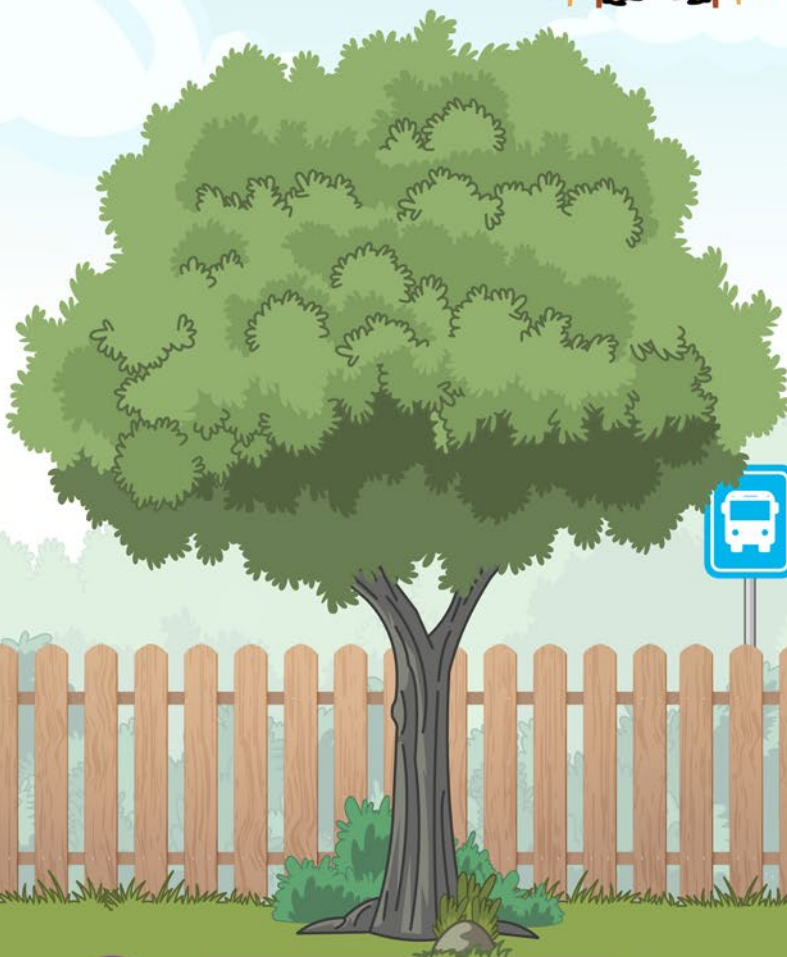
Healthy Homes

That promote physical health, mental wellbeing and good family relationships



Active Design

Residents enjoy safe, secure and walkable access to on-site and local amenities, public transport and pedestrian routes to the wider community, to improve levels of physical activity



Green Spaces

Diverse and well-maintained range of on-site green spaces and biodiverse habitats to promote community interaction, fitness and mental wellbeing



Quiet Space

Provision of settings for a range of 'quiet' activities, including focused study/work, privacy, thinking, relaxation and meditation

9. Infection Control

Minimising the spread of infection whilst nurturing social interaction

COVID-19 has had a devastating impact on our older generation. In light of the current pandemic, it is important to consider how later living communities can be better designed to respond to the challenges of bacterial and viral spread, whilst also addressing the distressing impact of self-isolation and social distancing. Building owners, managers and care staff have had to cope in unprecedented conditions to keep residents and each other safe, happy and together.

In extra care housing the accommodation is fully self-contained and this enables residents to self-isolate quite easily during a pandemic. In addition, with the right training and protection for staff, it is possible to deliver a high level of support and security to residents which includes access to outdoor space, meals, deliveries, virtual social events, safety information and personal interaction with staff.

The ideas presented here are for consideration and discussion for each project and may indeed have a financial impact on build costs and this must be acknowledged. There will be conflicting requirements for cost-efficient space planning and a desire to ensure the environment is domestic rather than clinical. The ideas should be taken further into interior and landscape design concepts where the building and its finishes create an intuitive sense of how to move around the building and enjoy life, safely.

Good practice design ideas

Planning for a pandemic, winter flu or norovirus outbreak is likely to be similar. There are measures that can be considered vital all year round and those that can be brought into play temporarily. These initial ideas should be developed and considered in the context of legal rights of tenure and the ability for staff to manage additional tasks which could be asked of them.



Main entrance for residents and visitors

- Ideally the main entrance and foyer should only be used for residents and their visitors. Consider staff access and deliveries via a separate entrance. This may not be easy to manage, although it is already standard practice to have a separate delivery access point for catering supplies and associated refuse.
- The lobby at the main entrance should have the ability for the inner and outer doors to be controlled independently. This is already good practice to control heat loss and gusts of winds into the foyer. A facility for visitors to speak to staff via an intercom or hatch from outside the building (or within the lobby) should be provided. This will allow staff to redirect deliveries to an alternative entrance or control access for visitors whilst they are under-cover.
- Hand washing facilities should be provided in a discreet place very close to the entrance and clearly signposted so that all visitors and residents can wash their hands on entering the building without the need to enter any rooms or touch any door handles. An area for two basins could be designed within the lobby area of the unisex disabled WCs, stylishly set into a fitted cabinet, easily cleaned and just out of sight.
- Water and drainage could be provided between the lobby doors to allow a temporary hand wash basin to be installed during a crisis.



Staff

- Staff changing, lockers and showering facilities could be provided immediately inside a secondary staff/entrance so that staff can wash and/or change when entering or leaving the building. It is important to be able to store clothes and personal items from home, before putting on PPE if required.
- Access to the catering kitchen directly from the outside is essential with dedicated staff hand washing/ changing space located immediately adjacent to the entrance.



Movement within the building

- By considering the already essential fire escape strategies, plan for increased routes to move around the building to lessen the potential for contact with others when necessary. Reduce bottle-necks and the need for two-way traffic in confined spaces. This will affect the location of lifts and stairs and necessitate passing bays in corridors.
- It may be useful to include additional cross corridor doors on hold open devices to enable further levels of 'lockdown' or to guide people to take alternative routes.
- Incidental spaces within circulation areas can act as passing or pausing points. Even small moments of social interaction and views out can be facilitated when such spaces occur.
- Fob controls could be programmable so that in the event of having to lockdown and subdivide the building, residents could be discouraged from entering certain areas of the building.
- Ideally there should be multiple access points to the garden and out of the building, which again could be controlled with fob access.



Storage

- Additional storage for PPE, ventilators, sanitation equipment etc. should be planned for.
- Storage local to each zone or floor of the building should be provided
- Consider multiple cleaners stores with at least one per floor.



Multi-purpose and flexible use spaces

- The ability to re-purpose a room or space can be essential during a pandemic. For example, use of spaces for storage areas and staff sleepover instead of guest sleepover areas, spaces for treatment and also prayer, reflection and relaxation have become very important.



Natural ventilation

- Natural ventilation is scientifically proven to reduce the spread of respiratory viruses. The provision of generous window openings, opening roof lights etc. will therefore assist with infection control.
- Ventilation to circulation corridors should be maximised by means of ensuring external windows or a mechanical system.
- Advice can be sought from an M&E consultant to design a ventilation strategy which ensures a positive air flow around the building and sufficient air changes to reduce the spread of airborne viruses.
- Open deck access would enable the optimum provision of natural ventilation, light and opportunities for social interaction at a distance. This would bring huge benefits.
- Balconies are essential for providing residents with safe access to some outside space. Opportunities for shared balconies off communal areas and circulation spaces could be considered.
- The added benefits of generous windows and roof lights are the ability to maximise natural light, communicate the weather, orientate and allow views of activities outside the building for occupants.



Deliveries

- Provide a separate entrance for kitchen deliveries and a clean separate space for disinfecting/wiping down.
- Supplies for management should be immediately stored in a holding room close to the main entrance
- Consider providing a holding area or post room within the foyer for personal deliveries in the event that it is not possible to deliver directly to residents' apartments.
- Where deliveries are 'held' this could be for an amount of time to avoid contamination from external sources or for wiping down/ disinfecting etc.
- A generous shelf or cupboard could be provided outside each resident's front door for parcels or meals to be delivered without going into the apartment.
- Ideally deliveries and collections should avoid overlap with the main entrance, communal spaces or residential corridors. This does not necessarily require a different location on the site.



Communication

- Technology will play an important and on-going part in keeping residents informed, socially connected and healthy (used for medical assessments and consultations). Individual smart tablets and communal information screens have been used with great effect and should be accommodated in the IT/ comms specification of any new building. Investment in good wi-fi coverage to avoid the need for hard wired add-on technology is critical.



Considerations for the building plan

- Passing points in corridors or on deck access should be considered to ensure that in the event of social distancing it is possible to pass others without being closer than 2m. Passing points could be provided via occasional 'pop-out' balconies, seating bays or recessed entrances.
- Sliding folding walls could be included to large areas of open plan communal space so that the spaces can be used differently in the event of a health crisis (e.g. testing area, storage of PPE or for family visits).
- Front doors to apartments should be arranged at least 2m apart.
- Fixed kitchen windows into corridors could be included to provide social connection for the residents and a safe way for staff to discretely check on resident's wellbeing. Feedback from extra care schemes that have internal windows to flats has been really positive during the COVID-19 social isolation.
- Projecting balconies should be at least 2m apart and full width balconies should be capable of accommodating a 2m high screen in the event of needing to social distance from adjoining neighbours' balconies.
- Locating one of the main communal rooms adjacent to the front of the building with a large sliding/folding window could provide an opportunity for residents to safely see and speak to family members via supervised visits in the event of having to socially distance.



Sanitation

- Hand washing with soap rather than the use of hand sanitizer is proven to be more effective in reducing the spread of infection. The new normal will see hand sanitiser or washing stations being placed in locations we are not used to seeing, already some station platforms have handwash facilities.
- Hand washing stations should be considered at all entrances and additionally at each lift/stair landing. These should be well designed to avoid the building looking clinical. As a minimum, no-touch hand-sanitiser dispensers should be provided, there are some good examples which are operated by foot.
- Residents should all be provided with a washing machine in their own apartments to avoid the need to use a shared laundry.
- All doors to communal rooms and corridors could be provided with PIR operated automatic openers to avoid contamination via door handles. Cross corridor doors needed for fire reasons could be on hold open devices.
- A staff laundry, where required, should be designed to sufficiently separate clean and dirty linen with a clear route in and out of the room (like that of a care home).
- The choice of materials should be considered carefully to facilitate hygienic cleaning. This could include antibacterial plasterboards, vinyl floors and the replacement of all ceramic tiles and grout with attractive vinyl wall finishes such as those by Multipanel. Copper has strong antiviral properties and could be considered for high touch areas.
- The ability to be able to clean bathroom and kitchen spaces needs careful attention to detail with services boxed in.



Gardens and external space

- Access to meaningful external space is even more important for maintaining wellbeing and exercise during an outbreak of illness in the building.
- The garden should be sufficiently sized to accommodate several residents at once while social distancing
- Walking routes which circulate so as to enable a procession in one direction which avoids cross overs
- Several seats should be provided to enable multiple residents to sit down at once to talk whilst being 2m away from each other.
- External furniture should be chosen so that it can be wiped down between use.
- Sheltered or covered spaces should be included to encourage residents to go into the garden for some fresh air, even during inclement weather. These areas could also be used for visiting relatives and friends without the need to go through the building.
- Several access points should be provided to the garden to avoid each zone of the building coming through the main entrance and communal spaces. Access through the stairs may achieve this.
- Balconies arranged around a courtyard provide visual contact with other residents.

Ideas for additional measures during a pandemic like Covid-19



Deliveries

- In the event of a health crisis, allocate space for deliveries and sorting, all residents could receive their everyday essentials from a single delivery rather than multiple deliveries. Holding areas either in the building or stand-alone units outside could be incorporated into the crisis planning.



Visitors

- During a lockdown scenario or health crisis, if any visits are allowed and thought to be beneficial to a resident's wellbeing, a safe arrangement for pre-arranged and supervised visits from family could be considered. This could be within a generous lobby or air-lock at the entrance, using a glazed or sliding/folding screen for separation. Seating on either side would allow relaxed visits and conversation.
- Alternatively, a 'pop-up' shelter in the entrance courtyard or back garden could be provided for supervised visits. Meeting outside is a real option and should be considered when setting out landscape designs.
- A traffic light system in the lobby could be included to control movement in and out of the building.



Meals

- The kitchen could be designed and sized to be capable of three meals a day for all residents. If necessary, residents could have meals delivered to their apartments, avoiding the need to shop or receive food deliveries during a lockdown scenario. This is particularly important to consider where kitchens are fitted out as a 'regeneration' or 'reheat' only service.
- Trolley space would need to be allocated close the main kitchen and, on each floor, or zone of the building.
- Access to the kitchen should be directly from the outside with staff wash space and changing located immediately adjacent to an external door.

10. The Dwelling

This chapter considers the design of extra care dwellings. Care must be taken to ensure that apartments are attractive, generous spaces with maximum natural light and ventilation. Large windows will also provide a strong connection with the outside world and wider community.

Entrance

- Recess the front door to provide a semi-private, defensible space at the entrance to the dwelling.
- Recessed entrances create domestic accents along linear corridors and are useful for accommodating a dwelling number, wall lighting and a shelf. Subject to fire regulations, the recessed area and shelf can be personalised with pictures, plants or residents names and assist with wayfinding.
- Fit a free-swing door closer to the front door. A solid front door with a full height opaque glazed side light is desirable. Provide two spy-holes in the front door, one at 1500mm above floor level and the other at 1100mm to suit wheelchair users. Wide angled spy holes or door scope viewers for those with sight impairment should be provided.
- A letterbox should ideally be positioned in the front door. Letterboxes to be a minimum of 750mm above finished floor level with a letter cage installed hall side of the door. Ensure the front door opens to a minimum of 90° with the letter cage fitted.

Hall

- Ensure that hall doors do not clash and door swings facilitate easy access around the home.
- If the hallway is internal, provide borrowed light if practical.
- Identify a space to accommodate a folded wheelchair/ walking aids.

Storage

- Storage must be provided in accordance with the Described National Standards but consider that residents may be moving into extra care from their family home and may require additional storage for lifelong possessions.
- Include built-in tall storage for large items such as a vacuum cleaner, ironing board, mop, suitcases and coats.
- Consider external storage on the balcony for potting materials.
- Consider external stores adjacent to the front door on developments with gallery access.

Lounge

- The design of the living area is critical, since residents will spend most of their time here. Special care must be taken to ensure the lounge is a generous, well-proportioned, attractive space (3m is suggested as a minimum).
- Provide maximum natural light and views out via large windows which are shaded to avoid overheating.
- Provide level access from the lounge to the dwelling's private external amenity space.

Kitchen

- Generally kitchens should be designed to exceed the standards for accessible and adaptable dwellings and as a minimum must conform to Building Regulations (AD part M) category M4(2). 'L-shaped' or 'U-shaped' layouts are preferred to gallery style kitchens for ease of use.
- Provide a clear space of 1200mm in front of all fittings and allow space for a 1500mm turning circle or 1400mm x 1700mm turning ellipse within the kitchen.
- Agree at the outset whether the kitchen is to be designed to accommodate future wheelchair users. Three levels of adaptations are possible: an adjustable, cantilevered worktop that allows clear space under the worktop for a wheelchair, a lowered area of worktop (with or without cupboards under) to suit a user for whom a 900mm worktop is too high or the complete replacement of the whole kitchen to suit specific needs.
- If specific wheelchair apartments are required (as specified by planning policy or client), kitchens need to be provided to wheelchair standards AD part M4(3). They must be large enough to enable a wheelchair to manoeuvre freely and safely. As a minimum, allow space for a 1500 x 1800mm turning ellipse. Specialised reduced height cabinets, appliances and work surfaces should be provided.
- An open plan kitchen/ lounge creates a barrier free arrangement with increased accessibility and sociability for the residents. It also creates a greater sense of space within the dwelling and brings increased daylight into the kitchen area. One floor covering should be used to both areas to avoid a trip hazard when carrying food or hot drinks.
- Provide a minimum of 3.5m run of worktop (measured along the leading edge) including the inset hob and sink units.
- D-handles are suggested.
- Provide carousel shelves within corner base units to improve accessibility. Use of pull down basket wall unit storage should be considered.
- Consider providing glazed doors to at least two wall units that will allow those with dementia to find stored items more easily.
- Where possible provide some shallow open shelving to supplement the wall and base cupboards.
- Mixer taps with lever or cross handles should be provided to the sink (separate hot and cold taps are suggested within designated dementia care units). Provide a thermostatic mixer to limit the maximum hot water temperature as suggested by an M&E consultant.
- It is suggested that kitchens must provide space, plumbing and electrics for a washing machine. If a communal laundry is provided this could be reconsidered.
- Provide a space for a tall fridge freezer, rather than an under counter fridge.
- Floor finish should be slip-resistant.
- Gas hobs should be avoided. Induction hobs are suggested with front controls to limit potential for scalding.
- When a window is fitted above the worktop; a remote window opening control should be considered.

Bedroom

- At least one bedroom within a dwelling should be capable of accommodating a 1.5m wide double bed with space around it to allow a wheelchair user access to all parts of the room. It should be possible for a wheelchair user to gain access to the far side of the bed to open and close curtains and then to return without needing to reverse.
- A direct link to the shower/bathroom should be allowed for; either by fitting a door or providing a room-height knockout panel within the partition wall (see shower room). This should be allowed for when designing furniture layouts.
- Space for the use of mobile hoists or space and appropriate layout for the use and installation of ceiling mounted hoists should be provided.
- The path between the furniture must be at least 800mm for wheelchair users.
- Allow space for a 1500mm turning or 1400mm x 1700mm turning ellipse within the room.
- Ensure maximum natural light in bedrooms via large windows with transoms low enough to view the outside from being in bed.
- Consider night ventilation via opening vents which do not compromise security.

Shower room

- Care should be taken with the design of the en-suite shower room to ensure that the overall look is domestic and attractive. The use of well-chosen large format wall tiles throughout, wall lights and shelves will ensure the space is not just practical but also attractive.
- A direct link to the bedroom should be allowed for, either by fitting a door or providing a knockout panel within the partition wall. This should be taken into consideration when arranging the fittings. The 'knock-out' panel should extend to the ceiling to allow for the fitting of a ceiling hoist track.
- At least one door into this room should open outwards. External override door locks should be fitted so access can be gained in the event of a user collapsing against the door and requiring assistance.
- A flush floor shower should be provided to allow wheelchair access. The shower curtain should have a weighted hem and be long enough to touch the floor, in order to prevent water from spilling out of the shower area. The shower head should be mounted on a proprietary vertical grab rail (rather than the vertical slide bar which is normally provided as part of the shower system) to avoid residents pulling the shower off the wall in the event of slipping. The grab rail should allow height adjustment of the shower head between 900mm and 1800mm above finished floor level.
- Mixer taps with lever or cross handles should be provided to the basin (separate hot and cold taps are required within designated dementia care units). Hot water to shower and wash basin to be fitted with thermostatic mixing valves that limit the maximum temperature (as advised by the M&E consultant).
- Wash hand basin should not have a full pedestal as this can make it difficult to reach for wheelchair users. The front rim of the basin should be at a height of 800-850mm and should be fixed in such a way that it can be leant on safely.
- Close coupled/ concealed cistern, wheelchair accessible WC should be fitted with paddle-style flush handle and heavy-duty seat and cover. Seat height should be agreed with the client to suit the client group (550mm is suggested).
- All wall areas should be capable of taking the fixings / loads from future grab rails, shower seats etc.
- Glass shelves or screens must be frosted, have sufficient manifestation or a solid edge, as they are not as visible to those with a visual impairment.
- Floor finish should be slip-resistant for bare feet. Wall tiling should be matt finish, in colours that contrast in tone with fittings and grab rails.
- Emergency pull cord to be positioned between the WC and shower.

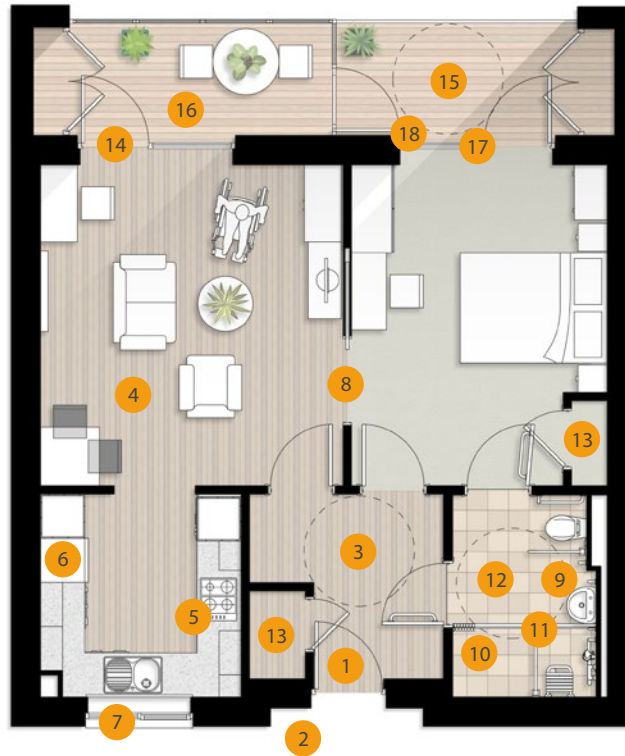
Private external amenity space

- All dwellings should have private external amenity space in the form of a patio, balcony or winter gardens. Winter gardens are particularly appropriate for older people sheltering the external amenity space from wind, rain and noise.
- Privacy to ground floor patios can be improved by a planted trellis or screen, particularly where patios are paired due to adjoining dwellings. Security of all patio areas should be considered to ensure the resident can make good use of their private external space. Hedges and planting can help to screen the patio.
- Normal height balustrading is considered appropriate for balconies provided the access door can be locked with a removable key in the event that a resident with dementia maybe using the balcony.
- For external spaces above ground level accessed by people with dementia refer to – *'Designing balconies, roof terraces and roof gardens for people with dementia'*¹ by Mary Marshall published by the *Dementia Services Development Centre at the University of Stirling*.

¹ www.tandfonline.com/doi/full/10.1179/175016811X13020827976762



One bed dwelling example



Entrance

1. Potential for views to the outside on entering.
2. Recess to apartment entrance to allow personalisation and space to prevent blocking the circulation.

Hall

3. Space for a 1500mm diameter wheelchair turning circle.

Living Room

4. Generous area with open plan living for easy access.

Kitchen

5. Electric induction hob with controls at the front for easy access.
6. High level oven to avoid the need to bend down.
7. Optional kitchen window will allow views into the corridor or external walkway.

Bedroom

8. Optional pocket door between lounge and bedroom provides open plan living and optimum natural light.

Shower Room

9. Knee space under basin.
10. Full height weighted shower curtain fitted.
11. Level access shower, floor to shower room to fall gently to shower area.
12. Shower room adaptable for future installation of grab rails and shower seats.

Utility

13. Optimum storage to allow for M&E equipment and meters contained within utility cupboard.

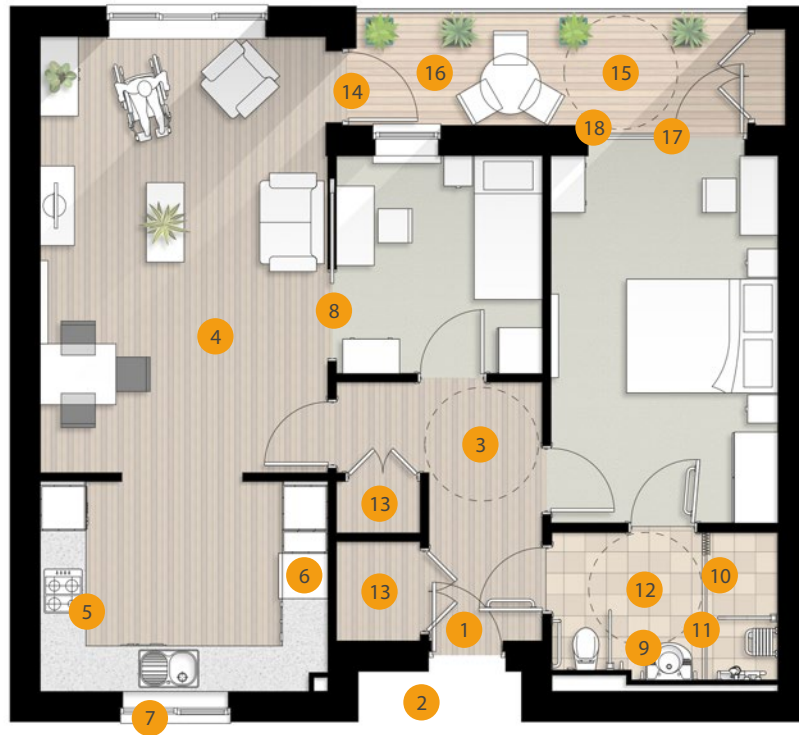
Balcony

14. Level access to balcony.
15. Generous balcony with space for wheelchair turning circle.
16. Consider the inclusion of winter-gardens.

Windows

17. Large windows to provide ample daylight.
18. Consider full height 'vent' panel to allow for night time ventilation.

Two bed dwelling example

**Entrance**

1. Potential for views to the outside on entering.
2. Recess to apartment entrance to allow personalisation and space to prevent blocking the circulation

Hall

3. Space for a 1500mm diameter wheelchair turning circle.

Living Room

4. Generous area with open plan living for easy access.

Kitchen

5. Electric induction hob with controls at the front for easy access.
6. High level oven to avoid the need to bend down.
7. Optional kitchen window will allow views into the corridor or external walkway.

Bedroom

8. Optional pocket door between lounge and bedroom provides open plan living and optimum natural light.

Shower Room

9. Knee space under basin.
10. Full height weighted shower curtain fitted.
11. Level access shower, floor to shower room to fall gently to shower area.
12. Shower room adaptable for future installation of grab rails and shower seats.

Utility

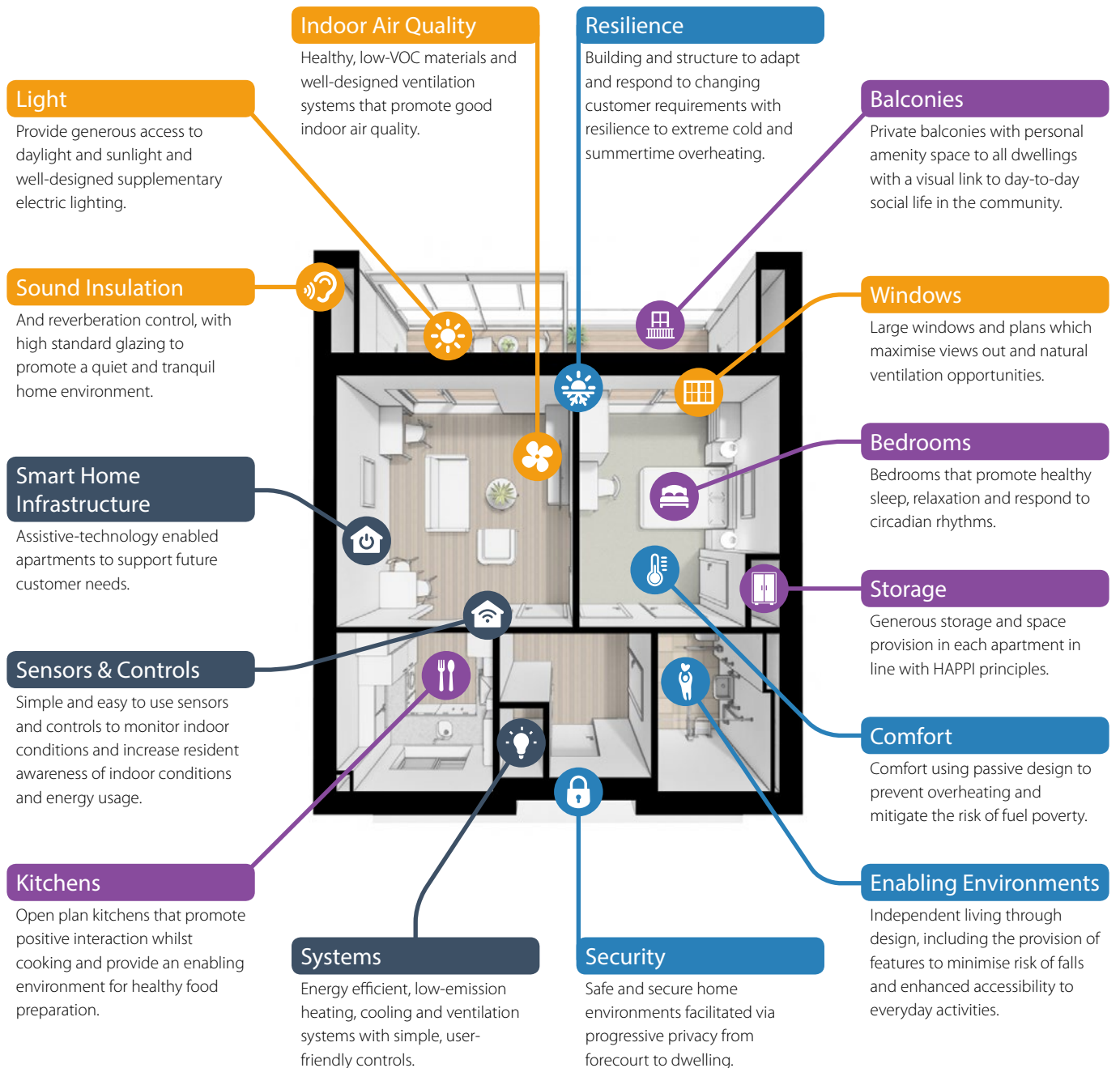
13. Washing machine, M&E equipment and meters contained within utility cupboard.

Balcony

14. Level access to balcony.
15. Generous balcony with space for wheelchair turning circle.
16. Consider the inclusion of winter-gardens.

Windows

17. Large windows to provide ample daylight.
18. Consider full height 'vent' panel to allow for night time ventilation.



11. Technical Considerations

This chapter focuses on technical issues which are specific in designing for older people. With the Grenfell tragedy in mind, and following an extra care housing scheme being gutted by fire recently (with no loss of life), the chapter pays attention to fire safety and prevention in the way extra care housing is designed and operated. It also features advice in relation to sustainability and smart technology.

Fire protection and means of escape

Early consultation with the client, design team and building control officer/approved inspector is essential to agree the fire strategy for new extra care housing developments as the design and layout of the building will be dependent on this.

Designers must make the building owners aware of their obligations under the Regulatory Reform (Fire Safety) Order 2005. It places a duty on the building owner to carry out documented risk assessments on the building and its occupants in the event of fire, and devise specific fire safety measures to suit the circumstances. For extra care housing, the client must assess the level of need of the prospective residents so that fire precaution measures can be determined; known as 'The Risk Assessment'.

In the Building Regulations, extra care housing is classified as 'Group 1 Residential' on the basis that the building provides apartments for individual occupation under tenancy agreements or as leaseholders (including care provision). The basic requirements for means of escape and fire precautions as set out in the Building Regulations (AD part B) are sometimes in conflict with other design objectives and best practice in designing for older people. Such as facilitating ease of movement, visual accessibility and design features that aim to provide an attractive and homely environment.

Although not currently required under the Building Regulations, strong consideration should be given to both the avoidance of flammable materials within the external fabric of the building (even where less than 18m), and the inclusion of a sprinkler system. Both are likely to become obligatory in the near future. The building regulations are currently under review for this sector so it is essential to stay up to date.

Engineered design solutions for fire safety by a specialist consultant involving the use of sprinklers, fire shutters, automatic opening smoke ventilators etc., can provide a more appropriate approach than simply following the letter of the requirements set out in the Building Regulations (AD part B). Solutions which vary from Building Regulations must be wholly understood by the building owner and responsibility for the solutions taken on by the specialist consultant (including suitable indemnity insurance).

Consider the following fire precautions and means of escape for extra care housing:

- The alarm system should be linked to the warden call system and have both audible and visual signals to alert those who are hard of hearing or have visual impairment.
- 'Free-swing' door closers should be linked to the fire alarm to all fire doors operated by residents (entrance doors to apartments in particular) so that doors with closers are not too heavy for residents.
- Cross corridor fire doors should be on 'Hold Open' magnetic fittings to prevent doors creating visual and physical barriers and creating institutional looking corridors. The magnets will be linked to the fire alarm and will close in the event that the fire alarms are activated.
- Additional smoke and heat detectors to specified locations; for example, in kitchens it is sensible to include additional detectors due to the number of residents who may forget they have left something on the hob or burn toast.
- Mobility scooters/buggies must not be parked or charged in communal corridors or escape routes.

- Furnished seating areas to corridors and landing should provide an appropriate level of fire resistance and must be agreed by a fire officer/engineer.
- Extra care housing generally involves a 'stay put' fire strategy for residents but stairs and corridors may require refuge areas if required by particular clients/ authorities.
- Where older people are potentially incapable of independent evacuation, a fire protected area should be accessible within 7.5m of the entrance to a dwelling (e.g. by using additional cross corridor doors on hold open magnets).
- Consider the inclusion of a fire fighting lift where residents may not manage the stairs and the building management cannot accept responsibility for assisting them.

For comprehensive guidance refer to: *Fire Safety in Specialised Housing* published by the Chief Fire Officers Association in May 2017¹.

Sustainable design

As evidenced by the Building Research Establishment, poor housing costs the NHS £1.4billion². Older people are particularly vulnerable to negative health effects from environmental factors. Cold, damp, poorly designed homes with low air quality can present risks of arthritis, rheumatism, mental health problems, asthma and allergic rhinitis, allergies such as eczema and conjunctivitis, amongst others. The main areas of concern are:

- Climate change (both in terms of environmental and social resilience), especially due to the effect of high temperatures, overheating and flooding.
- Inappropriate air quality, mainly resulting from emissions from materials, inappropriate ventilation and the intake of poor-quality external air.
- Excessive noise pollution, resulting from nearby busy roads, building services plants and inappropriate location of sensitive areas within the building.
- Insufficient access to daylight and sunlight, resulting from over shading from nearby buildings and/or overall building orientation.

Extra care housing should therefore be designed and built with these considerations in mind and appropriate measures should be implemented.

Energy efficiency

Building regulations are increasingly demanding higher levels of fabric energy efficiency and better performing systems. The risk of not considering cost-effective passive design strategies at the outset of new projects may mean increased costs in the long run in order to comply with minimum requirements and customers being ill-equipped to handle future rises in energy fuel prices.

How to mitigate?

Fabric performance – Aim to achieve a 10% improvement on current building regulations

Passive design – Optimise form, massing and orientation for energy efficiency and passive solar heating. Include solar shading devices

Heating – Implement the highest performing heating and cooling system as the budget allows. Use communal systems wherever possible

Renewables – Consider increased integration of low carbon energy generation in order to improve resilience.

For more information, read *Maximising the Benefits of Passivhaus* a useful report on passivhaus and supporting older residents³.

¹ www.nationalfirechiefs.org.uk/write/MediaUploads/NFCC%20Guidance%20publications/NFCC_Specialised_Housing_Guidance_-_Copy.pdf

² www.bre.co.uk/filelibrary/pdf/87741-Cost-of-Poor-Housing-Briefing-Paper-v3.pdf

³ www.housinglin.org.uk/_assets/Resources/Housing/OtherOrganisation/Maximising_the_Benefits_of_Passivhaus.pdf

Overheating

Overheating is a key climate change issue that will not only affect building performance and structures but also the wellbeing of residents. Older people are at an increased risk of heat-related illness, such as strokes, as they are less able to adapt to higher temperatures. The problem is made worse by the fact that they are often at home for most of the day and therefore exposed to peak day temperatures.

New buildings tend to be better insulated and more airtight which means they are well suited to winter but can mean they are prone to overheating if not coupled with an effective ventilation system.

How to mitigate?

Overheating analysis – Appoint a specialist consultant to carry out overheating analysis using dynamic thermal simulation modelling prior to making a planning application

Ventilation systems – Ensure sufficient ventilation for the recommended air changes per hour now and in the future. Consider dual aspect apartments with cross ventilation and the inclusion of ventilation grills that provide natural ventilation without compromising security.

Solar shading – Ensure solar shading is included at planning stage to the south, west and east facing façades of buildings to reduce solar gain.

Window design – Improve the glazing specification and modify building orientation to mitigate overheating. Consider reducing window sizes.

Fabric first approach – Aim for thermal mass and traditional building systems with sufficient insulation. Lightweight construction such as timber frame and light gauge steel reduces thermal mass and the ability of the building fabric to absorb heat and reduce peak internal temperatures.

Respite – During prolonged heat waves a natural ventilation system may be insufficient to reduce temperatures to an acceptable level. Provide air conditioning to at least one of the communal areas as a respite for residents during a heat wave.

Educating staff and residents – Correct use of the building is critical, e.g. opening windows when it is hotter outside can result in making the overheating problem worse and leaving openable winter gardens closed during the summer will overheat apartments. The onus will be on staff to assist and support vulnerable residents. Ease of use, accessibility of controls and simplicity should be key considerations.

For more information, read *Building Comfort for Old Age*, a useful report on designing and managing thermal comfort in low carbon housing for older people⁴.

Flood risk

Flooding has been identified as one of the key climate change risks for the UK. Most applications will need to be accompanied by a site-specific drainage strategy that demonstrates compliance with the NPPF (National Planning Policy Framework). Drainage should be considered early in the development planning and design process in order to incorporate cost effective solutions at the earliest opportunity. The provision of SUDs is now a requirement for all major developments unless they are otherwise impractical to implement. CIRIA provides technical construction guidance on SUDs, while various Lead Flood Authorities are publishing their own.

⁴ www.housinglin.org.uk/_assets/Resources/Housing/OtherOrganisation/Thermal_Comfort_report.pdf



'The design for Windmill Court, Chingford incorporates dual aspect apartments with generous glazing which is protected from overheating by recessed balconies or brise solieu. Winter gardens are provided to part of the balcony which can be opened up in summer to provide full width balconies.'

How to mitigate?

Flood risk analysis – Carry out flood risk analysis at feasibility stage. Flood risk can be assessed by consulting flood risk maps developed by the Environment Agency. Collect all available information pertaining to the site prior to the submission, such as a strategic flood risk assessment, local flood risk management strategy, surface water management plans and flood risk maps.

SUDS – Consider including Sustainable Urban Drainage Systems (SUDS) in new developments. Find out Local Plan requirements for SUDs including biodiversity, ecology, water quality, open space, maintenance and landscape which may impact sustainable drainage delivery.

Daylight and sunlight

The health and wellbeing benefits associated with daylight and sunlight are of particular importance to older people as they often spend more time indoors and may suffer from sight loss which can be aided by natural light.

Where sunlight and daylight are not considered during the planning process it can lead to new homes that will rely heavily on artificial lighting for daily activities. Lack of access to solar gain can mean higher heating costs and a risk of low Vitamin D and seasonal affective disorder (SAD).

Ground and lower floor units are at a higher risk for loss of daylight and sunlight amenity on high-density schemes, especially ones that are in a courtyard configuration.

How to mitigate?

Orientation – Consider the building orientation to avoid apartments which are north facing and single aspect. East or West facing apartments are ideal. South facing apartments should be provided with solar shading.

Window design – Ensure windows are sized to suit internal conditions rather than being designed uniformly to suit elevational intentions. Lower floor windows should generally be larger to ensure maximum natural light and higher windows smaller to reduce the likelihood of overheating.

Sun path diagrams – Use sun path diagrams to understand unavoidable shade from surrounding buildings and trees throughout the year as well shade that will be created in the gardens and proposed elevations as a result of the proposed design.

Daylight and sunlight calculations – Commission a specialist consultant to perform, as a minimum, spot checks for daylight and sunlight based on the worst performing units within the new building and where required by planning, analysis of the impact on neighbouring properties. Use BRE guidelines for good practise recommendations.

Design measures – Mitigation measures may emerge from the findings of daylight and sunlight studies, such as lighter finishes, relocated balconies, changes to internal layouts or window enlargement.

Indoor air quality

There are no current regulations for indoor air quality but the amount of chemicals and pollutants entering buildings is growing. Poor air quality has a major impact on health, comfort and wellbeing of residents. Older people also tend to spend longer periods of time at home, which, when combined with more prevalent health conditions, may lead to heightened risk from poor air quality.

Pollution sources include outdoor contaminants, internal emissions from paints and other products, finishes and furnishings, humidity and mould growth. In new buildings insufficient levels of ventilation can lead to a decrease in air quality and an increase in moisture and condensation build up.

How to mitigate?

Materials - Select materials for the finishes (e.g. paint, ceiling tiles, wall coverings, flooring, adhesives and sealants) which will not expose residents to substances such as formaldehyde or volatile organic compounds. Use the Paints European Directive and British Standards to understand the emission factors.

Exposure risk assessment – Employ a consultant to carry out an exposure risk assessment prior to development followed by testing and analysis of the completed project. Where necessary carry out a pre-occupancy flush out of any contaminants.

CO² sensors – Include sensors to each apartment and key communal spaces.

Ventilation – Ensure flexible ventilation options are provided to suit different resident needs and locate intakes away from external sources of air pollution. Consider additional mechanical ventilation to circulation and staff areas. Shallow room depths, passive stack, humidity control outlets and dual aspect apartment design will all assist with ventilation.

Heating and water

Vulnerable older people with limited mobility, reduced heat sensitivity or dementia are particularly at risk of injury from hot water or heating systems. Controls must be provided to ensure that hot water is less than 44°C at outlets in accommodation accessed by older people. If radiators and towel rails are required they should be specified with a low surface temperature so that the maximum accessible surface temperature does not exceed 43 °C. Thermostatic controls should be specified at the top of radiators for ease of access.

Underfloor heating is often specified for older people's housing to avoid dangers from hot surfaces. Being a slow response system, it is particularly effective for older people who are likely to be home all day rather than other user groups who will switch the heating off while they are at work, expecting a quick response in the evenings. Care must be taken to ensure that residents understand how the controls work for underfloor heating as it can be confusing or frustrating if the slow response is not recognised. Adequate space must be provided within the dwelling for heating manifolds.

Cold weather is also a particular risk for older people, and many older people are reluctant to heat their properties to an adequate temperature due to fears over fuel costs. During the winter months, consider setting the heating controls to provide a minimum temperature within dwellings. Minimum Home Temperature Thresholds for Health in Winter, published October 2014, by Public Health England recommend the following minimum temperature thresholds;

Daytime – 18°C (65F) threshold is particularly important for people over 65yrs or with pre-existing medical conditions. Having temperatures slightly above this threshold may be beneficial for health.

Overnight – 18°C (65F) threshold may be beneficial to protect the health of those over 65yrs or with pre-existing medical conditions. They should continue to use sufficient bedding, clothing and thermal blankets or heating aids as appropriate.

Noise pollution

Older people are more likely to have hearing impairments and therefore be adversely affected by external noise pollution. Sound insulation and acoustic performance of the building fabric is therefore of particular importance to ensure a harmonious living environment.

How to mitigate?

Site selection – Site extra care housing away from major roads and sources of high-level external noise.

Internal planning – Noise sensitive rooms such as bedrooms should not be located adjacent to noisy communal spaces or plant rooms without additional acoustic insulation to reduce both airborne and impact noise.

Smart homes and assistive technology

From voice activated devices to remote sensors in the home, the potential for assistive technology, telecare and telehealth to foster greater independence, health and wellbeing of older people is immense. The adoption of this 'smart' technology is on the cusp of offering unprecedented personal choice at an affordable cost.

Internet based services

The provision of secure and dependable Wi-Fi to each individual apartment so that residents can use internet-based services from SmartPhones, e-readers, SmartSpeakers, tablets, SmartTVs, PC/ laptops, printers etc. is absolutely essential, as has been proved under COVID-19. There has been a significant growth in internet usage by older people and benefits include;

- **Social engagement** through video calls, participation in online communities, social networks etc.
- **Healthy lifestyle** through accessing information, renewing prescriptions, transmitting vital medical information to the GP etc.
- **Staying fit** through exercise apps and fitness trackers
- **Education** and learning new things through news channels, educational resources, online courses and hobbies.
- **Shopping** online for groceries and presents for friends and family.
- **Entertainment** from watching and listening to stimulating programmes and music from catch up.
- **Booking** trips and holidays, planning journeys, buying tickets for events.
- **Smart Control** for heating and lighting and power use.
- **Independence** from staying busy, organised and entertained through all of the above.

During the lockdown required by COVID-19, older residents increasingly engaged with internet based services including online banking, shopping, communicating with family and staff were able to communicate safety information to residents.

Smart hubs

In addition to Wi-Fi as noted above, apartments should be provided with a hard-wired 'Smart Hub' for assistive technology/ telecare. The hub will be connected with the warden call system, fire alarm, door entry cameras and care staff.

It can also be tailored to suit the personal needs of each resident with assistive technology options to support independent living and complement the delivery of care.

For example, sensors can be used to detect movement, changes in routine, use of equipment, heat, carbon monoxide, falls, bed pressure, door monitoring, seizure predictors etc. Smart devices can then be used for monitoring, alerting staff to safety issues and for the remote control of electrical devices, heating etc.

The smart hub is also an opportunity for the management team at each extra care building to provide an information service to residents via a touchscreen tablet with simple menus and controls. Bespoke voice alerts and on-screen information could include daily activities, newsletters, calendars, restaurant menus, maintenance requests, GP advice, easy access to the internet and chat rooms.

Infrastructure

Infrastructure should be designed and incorporated to allow flexible technology solutions. Whilst there is a move away from hard-wired assistive technology solutions to GSM (roaming SIM) and Wi-Fi enabled equipment and services, until the technology has advanced further, new buildings should incorporate the hardwiring necessary to provide high-speed broadband and Wi-Fi connectivity throughout. Consider Cat 6 Ethernet data cabling to enable a variety of individually tailored technology solutions to be implemented on a 'plug and play' approach. The cabling should come from a central comms cabinet located in a ventilated room in a suitable position (i.e. secure but accessible for maintenance purposes). Spare capacity should be allowed for an assistive technology provider to fit additional network hardware in the comms room and apartments as required.

Wi-Fi and mobile phone signals can be affected by the use of metallic building materials (e.g. cladding and insulation) and internal fittings (e.g. large mirrors and TV screens). Building contracts should ensure that the signal strength is designed and tested accordingly to make sure it provides adequate coverage for residents after everyone has moved into the new building. Boosters may be required if the strength is not sufficient.

To access an extensive range of information on technology enabled care and housing and telecare, visit the Housing LIN's *Going Digital* webpages⁵.

⁵ www.housinglin.org.uk/going-digital/

12. Designing for Physical Frailty, Cognitive and Sensory Impairment

This chapter, divided into five sections, takes a look at how extra care housing can be designed to mitigate the effects of physical frailty, cognitive and sensory impairments which become more prevalent as we get older.

In employing the term 'older people', it is important to emphasise that it covers a very large section of the population which is as diverse in its social, educational and economic profile as the population at large. People are living longer and in relatively good health. Those in the 65 to 75 age bracket are enjoying an 'extended middle-age'¹. They are the 'baby boomer' generation characterised by their relative affluence and greater expectations for lifestyle opportunity in retirement. However, extra care housing should be flexible, adaptable and enabling to mitigate the effects of physical frailty, cognitive and sensory impairments. It should be designed to accommodate several generations of older people within the one scheme, across a 40-50 year age span (55-100+).

Designing for physically frail people

- The building should have level access throughout, avoiding both internal and external steps, stairs and even ramps as far as possible. Door thresholds must be level.
- 'Free-swing' door closers linked to the fire alarm should be fitted to the front door of dwellings and other doors regularly used by residents where overhead closers are required. Fire compartment doors should be held open on magnetic pads or hold-open type door closers linked to the fire alarm. This will avoid the hazard and frustration associated with heavy overhead door closers.
- Specify appropriate ironmongery, taps etc. for older people with limited dexterity.
- 926mm width doors should be provided to apartment entrances and communal doors in the building to enable wheelchair access. Door widths within apartments are often specified at 864mm in order to optimise space standards and a domestic ambiance. However, some developers provide 926mm throughout.

- Specify level-threshold showers. Locate showers away from doors and detail a fall to the floor outlet. Shower-head rail to be a proprietary grab rail to avoid residents pulling the shower off the wall in the event of slipping.
- Specify wall construction in the shower-room to enable grab handles, shower-seats, and other mobility aids to be fitted to suit individual resident needs.
- Specify electrical sockets and switches at an appropriate height.

Designing for people with dementia or cognitive impairment

All housing for older people should be designed to take into consideration that a proportion of residents may suffer from varying degrees of dementia. There are different approaches adopted by developers to accommodating people with dementia with some providing a separate wing or floor of apartments from the outset and others following an integrated approach on the premise of avoiding the need to move people who develop the condition during their stay.

Sometimes health and safety issues related to older people with dementia can conflict with other attractive design features such as the provision of generous fenestration, balconies, gallery access, roof terraces etc. A risk assessment should be carried out by the housing manager to inform appropriate design solutions that balance health and safety concerns with providing an attractive and homely environment.

All new developments should incorporate dementia friendly design principles throughout. Good practice in relation to designing for dementia includes the following design considerations:

- Building layouts should be simple in plan with circulation routes that minimise the length of corridors and changes in direction. Double-banked corridors should be minimised or include sitting areas where natural light can be introduced.

¹ 'Accommodating Our extended Middle Age', The hanover@50 debate 2013



'Changes in colour tone at each floor and atrium spaces at Campbell Place in Fleet assist with orientation'.

- People suffering from short term memory loss are less likely to become confused and frustrated if they are able to clearly see and understand their surroundings. This is often referred to as providing a 'visually accessible' environment; i.e. an environment where there are good visual cues, such as the use of colour, strategically located memorabilia (that trigger longer-term memory), clear signage, views to the outside and views from circulation spaces into communal spaces.
- Open plan arrangements provide maximum visual accessibility, however, in the absence of fire engineered solutions, where compartmentalisation is required, provide glazed screens and doors to communal areas to enable residents to enter a room with the confidence of knowing what is going on inside.
- Care must be taken when selecting colours and materials. Changes in colour and or tone in floor finishes or contrasting threshold strips may appear as a step or barrier to a resident with dementia and deter some residents from entering a space or even lead to a fall. Ensure strong contrast is used where the walls and floors meet and on steps. Avoid large patterns in carpets which can look uneven or dirty to some residents.
- Provide views out or a seating bay to distract from 'dead-end' situations at the end of corridors. A small window or locked door will cause frustration to some residents.
- Ensure domestic features are incorporated to ensure rooms are recognisable e.g. fire places, coffee tables and book shelves in lounges and traditional dining tables and chairs in dining rooms.
- Mirrors can be distressing to some people with dementia. Avoid the use of large mirrors in lifts and communal areas where there are likely to be residents with dementia. In addition, mirrors should not reflect outside views as this increases confusion.
- Select artwork and wallpaper carefully. Photographic and historical images will mean more to residents with dementia as they have a stronger long term memory. Images of some animals may distress some residents, while abstract or impressionistic pictures/ papers will be confusing if residents are partially sighted or losing colour definition.

For more information and to access a selection of resources on dementia-friendly design, visit a dedicated page on the Housing LIN website².

² www.housinglin.org.uk/Topics/browse/HousingandDementia/Design/

Designing for people with visual impairment

There are a number of design considerations that can significantly mitigate the effects of visual impairment. For example, measures include:

- The use of colour schemes with contrasting tones to highlight features within the building and avoid 'visual clutter'. There should be a light reflectance value contrast of at least 30 points between the floor, walls and ceiling to *all areas of the building* so that those with visual impairment can have an increased awareness of spatial dimensions. There should also be the same amount of contrast between ironmongery, doors, door frames, grab rails, handrails/dado rails and walls to make it more visible to those with visual impairment. Avoid dark colours or black flooring to lifts as this can appear as a void.
- Generous fenestration to provide good day-lighting.
- Avoidance of multiple light fittings in a regimented array, as this may cause severe glare as well as being clinical and institutional in appearance. Balance ceiling mounted fittings with the use of wall mounted fittings and include dimmer switches and/or multiple switching in order to vary the 'mood' without compromising on optimum light levels when required.
- Avoid sharp contrast between highly lit and dark spaces, as the ability of one's eyes to adapt to different levels of light decreases with age.
- Avoid glossy, shiny surfaces, especially on the floor, as this confuses those with visual impairment. Matt finishes are more suitable.
- Avoid highly patterned floor surfaces and worktop surfaces as this makes objects set against them harder to distinguish.

For more information and to access a selection of resources on sight loss, home and the built environment, visit dedicated pages on the Housing LIN website³.

Designing for people with a hearing impairment

Well designed interiors can dramatically influence the overall impact and success of a development:

- The importance of adequate sound separation and reduction of reverberation is especially important in older people's housing where some residents will suffer from hearing impairments.
- Consider the acoustic separation of noisy rooms, such as laundries, lifts, plant rooms and other communal spaces from residents' living, sitting and sleeping areas and improve on the requirements of the building regulations where budget permits.
- Specify a high acoustic absorbency for finishes in large spaces with higher ceilings such as lounges and dining rooms to reduce echoes.
- Provide hearing loops in the larger communal areas.

Other groups

Whilst extra care housing is predominantly aimed at older people, it is increasingly also being provided for other groups such as adults with learning disabilities, younger people with dementia, young veterans, those with physical disabilities and for bariatric care.

For more information and to access a selection of resources on housing for people with a learning disability, including design and technology, visit the Housing LIN website⁴.

³ www.housinglin.org.uk/Topics/browse/sight-loss-home-the-built-environment/

⁴ www.housinglin.org.uk/Topics/browse/HousingLearningDisabilities/

13. Design Standards and Guidance Documents

Space and accessibility standards

There is very little statutory design guidance or relevant housing standards pertaining specifically to housing for older people.

The National Technical Standards published by the government in March 2015, did not make specific provision for older people's housing. The standards set out new minimum sizes for general needs housing and describe three levels (categories) for accessibility in the National Building Regulations. Application of these categories to specific new developments is determined by local authority planning departments. The three categories for accessibility in the Building Regulations are as follows:

- **M4(1)** – Category 1 is based on Part M of the Building Regulations (baseline general needs). All new development must comply.
- **M4(2)** – Category 2 is broadly based on Lifetime Homes standards (adaptable general needs). This requires lift access to all levels.
- **M4(3)** – Category 3 is broadly based on the *Wheelchair Housing Design Guide*¹ (intended for a wheelchair user from the outset).

The following commentary is based on PRP experience in designing for older people. Its inclusion in this guidance is intended to provide a basis for making a case for space and accessibility standards between Category 2 and Category 3 in the interests of viability and practicality.

Category 2 will not safeguard the level of accessibility regarded as good practice extra care housing. Category 3 involves very onerous spatial requirements for kitchens and bathrooms in particular, and if widely adopted in housing for older people would add considerably to the cost and viability of these developments.

Good practice in terms of housing for older people is characterised by providing sufficient space to accommodate the accessibility requirements of people as their needs change with ageing. This level of provision could be described as 'wheelchair lite' and as such, falls somewhere between Category 2 and Category 3.

It therefore falls to the developer to make a case for an appropriate level of accessibility on a project by project basis in the pre-application discussions and within the Design and Access Statement accompanying each new application.

The situation is complicated further in that some local authorities require a percentage of any new housing development (including extra care housing) to be Category 3 (wheelchair standard). It is arguable that it would be inappropriate to apply different accessibility standards within extra care as it would be impractical to move frail older people from one apartment to another as their needs change. Discussion with the planning authority should therefore commence as early in the process as possible to find out if they are agreeable to a single appropriate level of accessibility across a development.

¹ *Wheelchair Housing Design Guide* (3rd edition), Habinteg Housing Association with Stephen Thorpe. cae.org.uk/product/whdg/

Accessibility standards: Wheelchair 'Lite'

There are a number of requirements in M4(3) that are regarded as excessive for extra care housing, such as 3.25 (space standards for wheelchair storage and transfer), 3.32 (worktop lengths and height adjustability in kitchens) and 3.36 sanitary fittings. The following space provision and specification could be considered as Wheelchair 'Lite' Standards (or Category 2.5 in terms of Part M):

- A furnished layout plan that illustrates that a minimum of 800mm clear is provided for wheelchair access between furniture items.
- 1400mm wheelchair turning circle space in key areas such as the entrance lobby/hallway, kitchen, shower-room, and the living and bedrooms.
- A minimum door nib of 200mm where a door is in the corner of a room opening towards the approach side.
- Minimum metric door leaf size of 926mm for the entrance door to apartments and doors in communal areas.
- Minimum imperial door leaf size of 864mm within apartments.
- Level access throughout.
- Wheelchair standard lifts.
- Door ironmongery to provide 'free-swing' closers where overhead closers are required for fire protection purposes.

HAPPI – Housing our Ageing Population: Panel for Innovation

As highlighted earlier, the first HAPPI report was published in December 2009. There are 10 key design recommendations for the next generation of housing for older people which provide a very useful checklist for housing developers, managers and professional teams working in the sector. There are now many exemplar developments in the UK that implement the recommendations of the HAPPI report. Some of these have been featured in RIBA's guide, *Age Friendly Housing: Future Design for Older People*².

The original HAPPI report along with HAPPI 2, 3 and 4 reports³ which have followed over the last 10 years, and commissioned by the All Party Parliamentary Group on Housing and Care for Older People, have had a major influence on the quality and profile of new housing for older people. Furthermore, a recent survey on the sector's plans for growth over the next five years, recognised the importance of HAPPI. It revealed that 80% of respondees are looking to build to the HAPPI design principles⁴.

At the time of writing, the government has launched its RIBA Home of 2030 competition⁵. The competition seeks to develop a home that will help tackle the key challenges facing our society. One of the four criteria within the competition brief is to demonstrate new typologies and products that are age friendly and inclusive.



² www.architecture.com/riba-books/books/residential-and-domestic-buildings/product/age-friendly-housing.html

³ www.housinglin.org.uk/Topics/browse/Design-building/HAPPI/

⁴ www.surveymonkey.co.uk/r/Growing-H-w-C

⁵ www.ribacompetitions.com/homeof2030/register.html

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About PRP

PRP Later Living are passionate about designing homes where residents feel secure and proud to live. We have a team of over 30 architects dedicated to designing and delivering housing and care environments for older people. We work with charities, local authorities, housing associations and private developers and cover all stages of the design process from inception to completion. Our projects range from small specialist dementia care homes to large retirement villages offering a range of tenures. Our drive for design quality complements our expertise in this sector, resulting in award-winning, truly innovative buildings which are efficient to run and make a real difference to the people who live within them.

Contact: surrey@prp-co.uk

Twitter: [@PRP_News](https://twitter.com/PRP_News)

The logo for PRP Architects, consisting of the letters 'PRP' in a bold, red, sans-serif font.

About the Housing LIN

The Housing LIN is a sophisticated network bringing together over 25,000 housing, health and social care professionals in England, Wales and Scotland to exemplify innovative housing solutions for an ageing population.

Recognised by government and industry as a leading 'ideas lab' on specialist/supported housing, our online and regional networked activities, and consultancy services:

- connect people, ideas and resources to inform and improve the range of housing choices that enable older and disabled people to live independently
- provide insight and intelligence on latest funding, research, policy and practice to support sector learning and improvement
- showcase what's best in specialist/supported housing and feature innovative projects and services that demonstrate how lives of people have been transformed, and
- support commissioners and providers to review their existing provision and develop, test out and deliver solutions so that they are best placed to respond to their customers' changing needs and aspirations.

To access a selection of related resources on designing extra care housing, visit our 'design hub' at:

<https://www.housinglin.org.uk/Topics/browse/Design-building/Design/>

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