

# Mini-Cost Model of Housing with Care Project

Written by **Max Wilkes** of **Davis Langdon**.

This article originally appeared in issue no.45 of **Building** magazine, 2007, and is reproduced here with their kind permission.

## 1. FOREWORD

This case study reproduces an article published originally in issue no.45 of **Building** magazine, 2007. It provides an overview of extra care housing in general and concludes with a cost model based on a scheme of 16 self-contained single-bed flats and six two-bed homes located as a three-storey separate wing to a care home. The building also features a cafe/restaurant with kitchen, residents' lounge, staff rooms and ancillary facilities.

### Disclaimers:

- This case study is for information only and does not reflect any Department of Health policy or guidelines. The cost model merely offers a useful framework for understanding the capital outlay for this Extra Care Housing scheme.
- Within the broader field of Housing with Care, the scheme costed here should be defined as 'Close Care', rather than 'Extra Care'; however the financial model remains relevant.

We thank the author **Max Wilkes** of **Davis Langdon**, and **Building** for their kind permission to reproduce their article.

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## 2. INTRODUCTION

There are 9.4 million people aged over 65 in the UK, with 1.1 million over 80. By 2016 the number of over-65s is forecast to grow by 20% and the over-80s by 30%. In common with most housing sectors in the UK, there will be a significant demand for additional accommodation for these groups, and a further 130,000 units will be needed to maintain the current level of housing provision.

There is also a trend for people to move into sheltered housing at a later age – usually in their late 70s – compared with 20 years ago when the average age was the mid-60s. The higher age of residents may mean a higher level of care is required.

One response to this need is extra care housing, also known as “very sheltered housing”, or “assisted living”. This is specially designed housing with more personal care, more communal space and facilities than are found in a traditional sheltered housing scheme.

A commonly accepted definition of extra care housing is that residents have:

- Their own front doors for self-contained homes with a minimum floor area of 50m<sup>2</sup>. Dwellings have appropriate specialist design features and elements of assistive technology to promote independent living
- A legal right to occupy the property. This right may cover outright ownership, mixed tenure or rented. This differs from residential homes in that the residents have security of tenure rather than a licence to occupy
- Access, in most instances, to 24-hour on-site care
- Access to meals on site.

Because of the combination of services provided, it is unusual to find extra care homes built and managed as a separate development. Many are developed as a wing attached to a care home, allowing access to existing communal facilities.

There is a debate as to whether extra care housing can bridge the gap between traditional sheltered housing and nursing/residential care homes, or whether the sector can offer a substitute to care homes. Extra care housing is often viewed as a useful “step up, step down” facility where, because of the provision of on-site care and extra services, it can offer a useful setting for extended requirements such as post-hospital rehabilitation, or provide a practical alternative to fully-serviced care home places.

The design of extra care units and the services provided to residents allows couples to move into a home in circumstances where, for instance, one requires a high level of care. As circumstances change, the occupants will have security of tenure and continuing access to care services as required.

### **3. PLANNING**

Extra care provision is delivered by both the public and private sector. Given the high level of input from housing, healthcare and social services providers, the planning of these services requires a high level of inter-agency co-ordination.

The extent of extra care housing provision will be determined by a strategy put together by the local authority, social and housing services and primary care trust. This will enable the number of places required and level of care to be determined.

In the case of public sector provision, the involvement of the Housing Corporation at an early stage is beneficial as it helps with assessing the scheme within national and regional requirements. The Housing Corporation will also be able to comment on whether the scheme will be able to secure public sector funding.

The scale of the development will determine a number of factors. Larger schemes offer economies of scale, allowing for more extensive communal areas and a wider range of services.

The benefits of smaller schemes are that well located sites are easier to find and, thanks to simpler planning as well as shorter construction programmes, can usually be finished more quickly.

### **4. PROVISION OF HOUSING AND CARE SERVICES**

Public and voluntary sector provision in the sheltered and extra care sectors accounts for over 75% of schemes. Three-quarters of the over-55s are owner occupiers and are estimated to account for 80% of the UK's personal wealth. In the private sector, the purchase of extra care accommodation is seen as a way of remaining in the housing market once the principal residence is sold. Residents remain able to care for themselves with the support provided by extra care, and it is an attractive alternative to the cost of nursing home care.

In the affordable sector, registered social landlords will normally provide rented accommodation with shared ownership tenure as a further option. Many of the tenants will be referred by local social services.

In both the private and public sectors, the direct costs of housing, building management and charges for care and other sectors are kept separate. For example, there will typically be an annual service charge to cover repairs and maintenance, which will also purchase an element of domestic assistance. Other services, such as meals and additional care, will be charged for separately.

The Care Standards Act favours a separation of housing and care functions, but there are two approaches to providing additional services:

- Separate provision of the building management and services provision, which recognises that housing providers may not be the best care

providers. The housing provider is responsible for looking after the maintenance, warden duties and management issues. Local authority social services or a contracted third party will organise the provision of the care services, from domestic assistance to meeting agreed levels of nursing care. The local authority continues to have a role in monitoring and ensuring that the care provider delivers the correct standard of care.

- Integrated care and housing services provided by the same organisation with the intention of providing a seamless operation, with the local authority ensuring that the standard of care is met.

## **5. NEW BUILD OR REMODELLING EXISTING SHELTERED HOUSING STOCK**

As people move into sheltered accommodation at a later stage in life, many existing sheltered housing schemes have been identified as being unsuitable to meet the higher level of needs. As a result of this, and because of the general condition of some of these buildings, a significant proportion of existing sheltered housing is approaching the end of its useful life. Many earlier sheltered housing developments are now seen as difficult to let as a result of small unit size, poor location, and a low level of facilities such as shared bathrooms or lifts.

However, in some instances, the option of remodelling an existing building may provide an alternative to new build. Remodelling typically involves “cutting and carving” of the existing building to provide the larger flats that the market now expects, introducing cost and programme uncertainty associated with the condition of the building. In addition to the renewal of services and finishes, work to the building fabric and so on will also be needed to meet regulatory requirements such as Part L. Other problems in converting existing buildings include dealing with the constraints of a building’s depth and orientation, circulation routes or changing levels.

Greater individual and communal space requirements, together with constraints on vertical circulation and services runs, and raised expectations for care facilities may make remodelling of existing accommodation unviable.

## **6. DESIGN CONSIDERATIONS**

- Self-contained accommodation. Either one or two-bed self-contained flats with full kitchen and bathroom facilities. The typical unit sizes are 50-60m<sup>2</sup> for a one-bed unit and 60-70m<sup>2</sup> for a two-bed unit. Privacy for the residents is a key concern; flats should be located away from communal and heavily trafficked areas. The space for flats is typically about 65% of a development with circulation accounting for a further 15%
- Arrangement of communal facilities. Two approaches to the arrangement of facilities can be adopted. The first uses central

communal facilities to serve all residents. The second is based on a cluster arrangement of smaller lounges, assisted bathrooms and so on. This helps to overcome the perception of a development being large scale and institutionalised

- Mobility considerations. Lifetime homes standards with regard to sizing for wheelchair access, provision of grab rails, suitable ironmongery and so on, are a basic requirement. Space for storage of personal mobility aids in communal areas, together with parking provision for pavement scooters also needs to be allowed for
- Accessibility features. Visual aids such as lighting, colour and tactile surfaces should be used imaginatively to enliven communal spaces and to help with wayfinding.

Other accessibility features such as hearing loops should be provided in all communal spaces, and use of damping to reduce reverberation should be considered for larger spaces

- Additional services. In addition to the communal facilities often found in sheltered housing (residents' lounge, guest suite, laundry), extra care schemes are likely to include space for additional services such as a restaurant, health and fitness facilities and hobby rooms. Care equipment such as assisted baths may be found.
- Staff accommodation. The facilities for staff involved in the management of the building and the provision of care services will typically include an office and sleepover room.

## **7. ASSISTIVE TECHNOLOGY**

Residents of extra care housing are likely to become progressively frail during their stay. At the same time, society expects all people to be provided with privacy and personal freedom. To overcome these opposing demands and provide a safer environment for residents, sensors and other systems can be used. Assistive technology spans a range of sophistication. The main elements cover:

- Property-based systems. These are the basic alarm systems such as emergency call systems, intruder alarms, smoke and carbon monoxide sensors and so on. The level of monitoring can be increased as dependency increases – for example, flood detectors with automatic shut-off valves can be installed under washing machines or baths. Activation of property-based systems will initiate a call to on-site staff or a call centre
- Security, control and communication systems.

The general minimum standard accepted is the Secured by Design scheme. Technology can provide extra security services for the residents such as CCTV, or security cameras linked to the television. In addition to security, residents can benefit from devices linked to the

building management system to control lights, heating, ventilation and monitor equipment failure. Communications covers home entertainment systems such as the provision for satellite, cable and broadband

- Monitoring technology. Remote monitoring is comparatively rare. Movement sensors can be used to detect inactivity. Other systems include fall monitors or entry/exit monitoring. These systems are all aimed at providing an appropriate level of care without compromising a resident's privacy
- Smart technology. Systems designed to help residents overcome physical limitations may include remote controls used to operate windows and curtains, lighting, hoists and other equipment. Provision for "telemedicine" for remote medical care may begin to be made over the next few years.

## **8. COST MODEL**

The cost model is based on a scheme of 16 self-contained single-bed flats and six two-bed homes located as a three-storey separate wing to a care home. The scheme is developed to housing association standards. The building also features a cafe/restaurant with kitchen, residents' lounge, staff rooms and so on, giving a gross internal floor area of 1,400m<sup>2</sup>

The building is constructed using a traditional facing brick cavity wall on strip footings with reinforced in-situ concrete floors. The roof is constructed of concrete tiles on softwood trusses. Windows are softwood, and internal division is based on metal stud partitions. Services include gas-fired heating systems with low surface temperature radiators, lighting and nurse call alarms.

The unit rates are derived from design and build tenders and are current at third quarter 2007 based on a South-east location.

The building-only cost is £1,114/m<sup>2</sup> which equates to £97,500 per apartment. This compares to mid-quartile costs collected by the Building Cost Information Service of £950-1200/m<sup>2</sup> for extra care housing.

The costs exclude enabling and external works and external services. The costs of non-fixed furniture and fittings, VAT and professional fees are omitted. Unit rates should be adjusted for programme, procurement route, location and site conditions.

## COST BREAKDOWN: EXTRA CARE HOUSING

	<b>Total cost £</b>	<b>£/m<sup>2</sup></b>	<b>% gifa</b>
<b>Substructure</b>	<b>80,800</b>	<b>57.71</b>	<b>5.2</b>
Site clearance, excavation, disposal: 250m <sup>3</sup> @ 35 Concrete strip footings with masonry walls: 140m @ 170 Reinforced insitu ground floor slab: 470m <sup>2</sup> @ 80 Lift pit – excavate and construct lift pit: Item @ 5,000 Below slab drainage: 470m <sup>2</sup> @ 12			
<b>Frame and upper floors</b>	<b>56,400</b>	<b>40.29</b>	<b>3.6</b>
Precast concrete flooring: 940 m <sup>2</sup> @ 60			
<b>Roof</b>	<b>54,500</b>	<b>38.93</b>	<b>3.5</b>
Softwood timber trusses (measured flat on plan): 470 m <sup>2</sup> @ 16,450 90 thick board insulation at roof level (measured flat on plan): 470m <sup>2</sup> @ 10 Concrete roof tiles (measured as roof area): 520m <sup>2</sup> @ 45 Soffit, fascia and verge details: 140m @ 35 uPVC rainwater gutters and downpipes: 250m @ 20			
<b>Stairs</b>	<b>20,000</b>	<b>14.29</b>	<b>1.3</b>
Precast Concrete stairs with mild steel balustrades and softwood handrails (rate per flight): 4nr @ 5,000			
<b>External walls, windows and doors</b>	<b>163,500</b>	<b>116.79</b>	<b>10.4</b>
Brick and block insulated cavity walls: 500m <sup>2</sup> @ 160 Softwood framed double glazed windows: 110m <sup>2</sup> @ 450 Aluminium frame sliding patio doors for communal areas: 12m <sup>2</sup> @ 500 Single aluminium external door, ironmongery: 6nr @ 1,500 Glazed entry canopy with automatic opening doors: Item @ 15,000 Double leaf steel external door, ironmongery; to plant rooms: 2nr @ 2,000			
<b>Internal walls and partitions</b>	<b>80,300</b>	<b>57.36</b>	<b>5.1</b>
Blockwork to corridor party walls: 450m <sup>2</sup> @ 55 Blockwork cavity party walls between apartments: 265m <sup>2</sup> @ 55 Metal stud partitions to internal apartment walls: 770m <sup>2</sup> @ 50 Glazed screens: 10m <sup>2</sup> @ 250			
<b>Internal doors</b>	<b>100,700</b>	<b>71.93</b>	<b>6.5</b>
Fire door – single panelled moulded doors and frames; stainless steel ironmongery; as external door to apartment: 18nr @ 950 Fire door – single softwood veneered doors and frames; stainless steel ironmongery; to internal doors within flats and communal areas: 85nr @ 750 Fire door – single softwood veneered doors and frames; stainless steel ironmongery; to communal and kitchen storage spaces: 10nr @ 700 Double softwood veneered doors and frames; vision panels, magnetic door holder, stainless steel ironmongery, 30 minute fire resistance: 6nr @ 1,800 Single softwood door and frame to kitchen; vision panel; stainless steel ironmongery; hinged to swing both ways: 2nr @ 1,000			

<b>Wall finishes</b>	<b>67,900</b>	<b>48.5</b>	<b>4.4</b>
Plasterboard with skim and emulsion paint to blockwork wall surfaces: 1460m2 @ 20 Emulsion to metal stud partitions: 1540m2 @ 4 Ceramic tiles: 100m2 @ 50 Softwood skirtings and decoration: 950m @ 10 Softwood hand rails to corridors: 450m @ 40			
<b>Floor finishes</b>	<b>61,900</b>	<b>44.21</b>	<b>4.0</b>
75 thick screed to floor and stairwells: 1340m2 @ 15 Carpet and underlay to apartments: 680m2 @ 30 Heavy duty carpet tiles to communal areas and corridors: 310m2 @ 25 Vinyl sheet flooring and coved skirting: 260m2 @ 40 Floor hardener to screed to plant rooms: 50m2 @5 Floor finishes to internal stairs: Item @ 3,000			
<b>Ceiling finishes</b>	<b>34,300</b>	<b>24.5</b>	<b>2.2</b>
Plasterboard ceiling with skim and emulsion paint: 950m2 @ 25 Moisture resistant plasterboard ceiling, skim and emulsion to wet areas: 350m2 @ 30			
<b>Furniture and fittings</b>	<b>92,000</b>	<b>65.71</b>	<b>5.9</b>
Kitchens to apartments, to enable accessibility, fittings only, no white goods: 16nr @ 2,000 Fittings and fixtures to apartments inc. wardrobes, headboards: 16nr @ 1,500 Allowance for mirrors, vanity units, towel rails, bedroom shelving etc: 16nr @ 500 Allowance for signage: Item @ 2,000 Allowance for shelving to communal areas: Item @ 1,000 Allowance for fittings and white goods to cafe drinks bar, staff rest room, laundry: Item @ 10,000 Allowance for reception desk and servery counter: Item @ 15,000			
<b>Sanitary fittings</b>	<b>37,000</b>	<b>26.43</b>	<b>2.4</b>
WCs to apartments or assisted bathrooms: 18nr @ 450 Wash hand basins to apartments or assisted bathrooms: 18nr @ 250 Showers to apartments and guest bedroom including mixer tap, shower rail fittings: 18nr @ 450 Disabled toilet, including WC, wash hand basin, grab rails and other fittings: 4nr @ 1,200 Allowance for grabrails to apartment bathrooms: 16nr @ 150 Assisted bath: 1nr @ 7,000 Sink & slop hopper: 1nr @ 1,400 Cleaners' sink: 1nr @ 700			
<b>Services installations</b>	<b>5,000</b>	<b>3.57</b>	<b>0.3</b>
Equipment for laundry and sluice usage: 1nr@ 5,000			
<b>Disposal installations</b>	<b>14,000</b>	<b>10</b>	<b>0.9</b>
uPVC pipework and fittings as waste, soil and vent installation: 1400m2 @ 10			
<b>Hot and cold water installations</b>	<b>38,500</b>	<b>27.5</b>	<b>2.4</b>
Cold water system, per point: 70nr @ 300 Hot water system, per point: 50nr @ 350			
<b>Space heating air treatment and ventilation</b>	<b>112,000</b>	<b>80</b>	<b>7.1</b>
Gas heating with low surface temperature radiators and boiler: 1400m2 @ 70 Mechanical ventilation: 1400m2 @ 10			



<b>Electrical installation</b>	<b>121,000</b>	<b>86.43</b>	<b>7.8</b>
Sub-mains installation: 1400m2 @ 15 Small power installation: 1400m2 @ 35 Lighting and general luminaires; emergency lighting: 1400m2 @ 35 External lighting generally: Item @ 2,000			
<b>Gas installations</b>	<b>6,400</b>	<b>4.57</b>	<b>0.4</b>
Gas installations, all costs associated with gas supply: 16nr @ 400			
<b>Lift installations</b>	<b>25,000</b>	<b>17.86</b>	<b>1.6</b>
Eight-person wheelchair lift to serve three floors: Item @ 25,000			
<b>Protective installations</b>	<b>3,000</b>	<b>2.14</b>	<b>0.2</b>
Lightning protection, earthing and bonding: Item @ 3,000			
<b>Communication installations</b>	<b>84,000</b>	<b>60</b>	<b>5.3</b>
Fire alarm installation: smoke detectors: 1400m2 @ 15  Call systems – warden call, data IT, assistive technology, disabled WC alarms: 1400m2 @ 30 Telephone, TV and data cabling: 1400m2 @ 15			
<b>Specialist installations</b>	<b>14,000</b>	<b>10</b>	<b>0.9</b>
BMS controls: 1400m2 @ 10			
<b>Builder's work in connection</b>	<b>13,800</b>	<b>9.86</b>	<b>0.9</b>
Forming holes and chases etc allowance @ 3%: Item @ 13,800			
<b>Preliminaries</b>	<b>227,000</b>	<b>195.71</b>	<b>17.6</b>
Management costs, site establishment and site supervision. Contractor's preliminaries, overheads and profit @ 17.5%: Item @ 225,100 Testing and commissioning of building services installations: Item @ 8,000 Allowance for design reserve @ 3%: Item @ 39,000			
<b>Total cost building only</b>	<b>1,560,000</b>	<b>1114.29</b>	<b>100</b>
(square metre rate based in gifa)			

## OPTIONAL CHANGES

	<b>£/m<sup>2</sup> gifa</b>
Timber frame and upper floors in lieu of masonry	£31.00
Replace in-situ concrete slab to substructure with beam and block floor	-£6.00
Replace precast concrete planks with beam and block flooring	-£8.00
Replace softwood windows with composite timber/aluminium windows	-£1.75
Provide conservatory	£8.50
Steel balcony, framework, hardwood flooring and opening french window (each)	£2.50

## LOCATION FACTORS

The breakdown is based on price levels current in the South-east and should be adjusted by the following factors for other regions:

Inner London	£1.07
Outer London	£1.02
South West	£0.94
East Midlands	£0.93
West Midlands	£0.95
East Anglia	£0.95
Yorkshire and Humberside	£0.98
North West	£0.95
Northern	£1
Scotland	£0.99
Wales	£0.93

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The Housing LIN welcomes contributions on a range of issues pertinent to Extra Care housing. If there is a subject that you feel should be addressed, please contact us.

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