



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

DEVELOPMENT QUALITY REQUIREMENTS

**DESIGN STANDARDS
AND
GUIDANCE**

July 2005

PREFACE

Development Quality Requirements (DQR) set out more fully the Regulatory Code (the code) that protects public investment in registered social landlords in Wales, and safeguards the interests of their tenants and prospective tenants. Throughout, we use the more commonly understood term 'housing associations' to mean registered social landlords that are registered with the Assembly.

In addition to publishing statutory minimum standards the Welsh Assembly Government encourages housing associations and their Consultants to look at other sources of good practice and guidance.

Additional good practice guidance has also been produced by the Assembly from time to time and the intention here is to bring together requirements, supporting guidance and other useful reference sources in one comprehensive document.

To ensure a consistent good quality of internal layout is achieved and to exemplify Development Quality Requirements [DQR] a range of standard house types has been created (Pattern Book). This provides a selection of houses, flats and bungalows that are as flexible as possible to cater for most residents needs.

Since 1994 the Pattern Book has been developed through informal feedback from tenants, housing associations, designers and developers and amended to reflect legislative changes.

This commitment to review and develop the range and take account of user feedback is intended to ensure that standardisation does not lead to stagnation by providing a dynamic and continuous process. It places emphasis on functional space standards but still allows designers flexibility of arrangement.

Responsibility for producing well designed, good quality, housing is in the hands of the housing associations and their consultants. Standards and good practice guidance can only provide the basic building blocks and associations should exercise their responsibility as a client and as accountable bodies to take a critical interest in the housing they commission to ensure it is of the highest caliber.

The dwellings provided by housing associations should be of good quality and suitable for the needs of the intended tenants.

The standards and guidance are arranged as follows;

DEVELOPMENT QUALITY REQUIREMENTS

All housing acquired or developed by housing associations should meet Development Quality Requirements.

They are in two sections;

- **Requirements for all new dwellings built by housing associations**
- **Requirements for existing and rehabilitated dwellings built by housing associations**

GOOD PRACTICE GUIDANCE.

This provides supplementary guidance and points to additional sources of best practice

CONTENTS

DEVELOPMENT QUALITY REQUIREMENTS

1.0 DEVELOPMENT QUALITY REQUIREMENTS FOR NEW DWELLINGS

- 1. 1 Flexibility and Accessibility**
 - 1.1.1 General needs**
 - 1.1.2 Specific needs**
 - 1.1.3 Access to rear garden**
 - 1.1.4 Lifts**
- 1.2 Safety**
 - 1.2.1 Stairs and landings**
 - 1.2.2 Kitchens**
 - 1.2.3 Bathrooms**
 - 1.2.4 Fire Escape**
 - 1.2.5 Electrical installation**
 - 1.2.6 Heating and Water**
- 1.3 Space standards**
 - 1.3.1 General**
 - 1.3.2 Frail Elderly**
 - 1.3.3 Furniture Requirements**
- 1.4 Washing and Drying Clothes**
 - 1.4.1 General**
 - 1.4.2 External**
 - 1.4.3 Space for appliances**
 - 1.4.4 Airing cupboards**
- 1.5 Storage**
 - 1.5.1 General**
 - 1.5.2 Cupboards**
 - 1.5.3 Loft**
 - 1.5.4 External storage**
- 1.6 Sustainability and Energy Efficiency**
 - 1.6.1 General**
 - 1.6.2 ECOHomes Rating**
 - 1.6.3 Energy Efficiency**
- 1.7 Outside**
 - 1.7.1 Road safety**
 - 1.7.2 Children's play**
 - 1.7.3 Rear gardens**
 - 1.7.4 Layout**
 - 1.7.5 Car parking**
- 1.8 Security**
 - 1.8.1 General**
 - 1.8.2 Architectural Liaison Officer**
 - 1.8.3 Inspection**

2.0 DEVELOPMENT QUALITY REQUIREMENTS FOR REHABILITATED DWELLINGS AND EXISTING SATISFACTORY DWELLINGS

- 2.1 Flexibility and Accessibility**
 - 2.1.1 Future adaptation**
 - 2.1.2 Specific Needs**
- 2.2 Safety**
 - 2.2.1 Stairs and landings**
 - 2.2.2 Kitchens**
 - 2.2.3 Fire escape**
 - 2.2.4 Electrical and heating installation**
- 2.3 Space standards**
 - 2.3.1 General**
 - 2.3.2 Furniture Requirements**
- 2.4 Sanitary Provisions**
 - 2.4.1 Bathroom & WC Facilities**
- 2.5 Washing and Drying Clothes**
 - 2.5.1 General**
 - 2.5.2 Space for appliances**
 - 2.5.3 Airing cupboards**
- 2.6 Storage**
 - 2.6.1 General**
 - 2.6.2 Internal**
 - 2.6.3 External**
- 2.7 Energy Efficiency and Ventilation**
 - 2.7.1 General**
 - 2.7.2 Standards**
 - 2.7.3 Energy Rating**
- 2.8 Outside**
 - 2.8.1 Gardens**
- 2.9 Security**
 - 2.9.1 General**
 - 2.9.2 Secured by Design**

3.0 GOOD PRACTICE GUIDANCE

3.1 Pattern book

3.1.1 Background

3.1.2 Application

3.2.3 Interpretation

3.2 Adoption of Lifetime Homes Standards

3.2.1 Concept

3.2.2 Background

3.2.3 Implications for Pattern Book Range

3.3 Estate layout

3.3.1 General

3.4 ECO Homes

3.4.1 General

3.5 Housing people with specific requirements

3.5.1 Designing for Diversity

3.5.2 Wheelchair housing

3.5.2.1 General

3.5.2.2 Fundamental Requirements

3.5.3 Black Minority Ethnic (BME) Households

3.5.3.1 General

3.5.3.2 Context

3.5.3.3 Family structure

3.5.3.4 Security

3.5.3.5 Cultural distinctiveness

3.5.3.6 Internal layout

3.5.3.7 External spaces

3.5.4 Housing for the Elderly

3.5.4.1 Background

3.5.4.2 Scope

3.5.4.3 Development

3.5.4.4 Alternative Solutions

3.5.4.5 Basic Considerations

3.5.4.6 Qualifying Elements

3.5.4.7 Good Practice Tips

APPENDICES

A. Lifetime Homes standards

B. RNIB standards

C. Furniture sizes/ circulation requirements

D. Useful reading

1.0 DEVELOPMENT QUALITY REQUIREMENTS FOR NEW DWELLINGS

1.1 Flexibility and Accessibility

1.1.1 General needs

Homes should be designed so that they are flexible, responsive to both the changing needs of the occupants and to meet the changing needs of a variety of households who will occupy the building over its life.

This requirement will be satisfied if: -

- Dwellings are designed to meet the **Lifetime Homes Standards** as published by the **Joseph Rowntree Foundation** (see **Appendix A.**). Designing dwellings to these standards will result in homes that are accessible and convenient for all tenants and that are more adaptable to long term needs. It will ensure dwellings are accessible for the young, the old, single people, families and those who acquire a physical impairment.
- All houses have a **shower** (in addition to a bath) situated at ground floor/entrance level and suitable for use by a person in a wheelchair (see Wheelchair Housing Design Guide by Stephen Thorpe published by NATWHAG).
- All flats and bungalows have a **shower** in addition to a bath, and bungalows, ground floor flats and flats served by a lift should have a bathroom designed so that it is capable of adaptation for use by a person in a wheelchair.
- All dwellings with 3 or more bedrooms have a second wc and washhand basin.
- Dwellings are designed to meet the requirements of **Housing Sight** as published by the **Royal National Institute for the Blind**. This will result in homes that are accessible to tenants and their visitors who have sight problems. (See **Appendix B.**)
- Private stairs to flats have a maximum pitch of **35°** and are provided with handrails to both sides.

1.1.2 Specific needs

The general needs criteria that includes Lifetime homes requirements are not aimed specifically at people with disabilities who may for example require a

wheelchair but offer homes which are livable in and visitable by a wide range of people.

Where associations are providing accommodation for people with specific needs, they should be able to demonstrate that they are designed to reflect current good practice. Issues that should be considered are discussed in the accompanying good practice guidance.

For example housing provided for some black minority ethnic (BME) groups should take account of the individual family needs and the needs of the ethnic community. Associations should therefore consider the particular design requirements of the group and how these can be sensitively incorporated into the layout of the home and the general environment. This can best be achieved through working with BME community organisations and individuals at the start of the project, as they can advise on the needs of the different communities and assist with publicising the completed scheme to ensure full occupancy of the scheme.

Associations should avoid a prescriptive approach as there is great diversity amongst the different BME communities, and these communities are in the process of change. For further guidance see 'Accommodating Diversity- Housing Design in a Multicultural Society' (NHF & Home housing Trust; 1988).

1.1.3 Access to the rear garden

Convenient access from the kitchen to the garden should be provided. Where possible this should be achieved without the need to pass through the main living room or the front door. It is recognised that in some instances, particularly in high-density urban infill developments this cannot be achieved. In these instances associations should demonstrate that the alternative solution proposed does not inconvenience the tenant.

Where direct access from the kitchen to the garden cannot be achieved and in mid terraced houses it should be possible to reach the rear garden from the street without passing through the main living room.

1.1.4 Lifts

Flats with entrances three or more floors above the main entrance should be served by a lift. The lift is required to comply with Lifetime Homes Standards

1.2. Safety

1.2.1 Stairs and landings

Staircases are a frequent source of accidental injury, particularly to elderly people and young children. Risk should be minimised by ensuring that:

- no door opens off the landing space at the head of the stair;
- there are no tapered or winding steps;
- there are no windows, lighting fittings or ceiling hatches above the staircase.

1.2.2 Kitchens

The risk of accident can be reduced by providing a well-organised working area with adequate work surfaces for resting pans and food preparation and adequate space for appliances. Kitchens should be designed so that;

- there is a work surface each side of the sink bowl, one of which may be the sink drainer;
- there is a work surface each side of the cooker;
- the cooker is at least **100mm** from a corner base unit;
- all work surfaces are at least **400mm** long;
- a food preparation area is provided between the sink bowl or drainer and the cooker. It should be at least **1000mm** long measured along its front edge, preferably in a straight line. If it has to be arranged around a corner one front edge should be at least **800mm** long;
- spaces at least **620mm** wide are provided for a cooker and refrigerator. In most cases **620mm** wide spaces will be required for a washing machine and for a tumble dryer (see also under washing and drying clothes);
- the cooker space is not in front of a window and cooker control units are offset to one side so that they can be used without reaching over the hob;
- wall cupboards are positioned at least **150mm** away from the cooker space and such that they can be used without reaching over the hob space;
- people passing through do not have to enter “the work triangle”, an imaginary triangle formed by lines drawn between the cooker, sink and fridge positions;
- there is a clear space of at least **1200mm** in front of the cooker and **1000mm** in front of other units and appliances to permit safe operation;
- there are adequate and convenient storage cupboards for food, crockery and pots and pans. **1.1m³** in a two person dwelling, increasing by **0.2m³** for each additional person.

- there are enough convenient power sockets to avoid trailing flexes (not less than **3** double sockets above worktop level in addition to those at fixed appliance positions).

1.2.3 Bathrooms

It is easy to slip on wet surfaces. Bathrooms should be designed to minimise risks by:

- providing a standard **1700mm** bath with integral handgrips and slip resistant base;
- ensuring that walls are capable of providing secure fixings for additional grab rails and handles should they be needed;
- not placing a bath beneath a window;
- ensuring that the washbasin does not overhang the bath.

1.2.4 Fire Escape

Smoke detectors provided to meet Building Regulations requirements should have a sealed lithium back up battery with a **10-year life**.

1.2.5 Electrical installations

Under provision of power sockets will lead to overloading of adapters and excessive use of trailing flexes and extension leads.

The following is the **minimum** provision of power sockets:

- living rooms: **4 double**;
- dining rooms: **2 double** or **1 double** in the dining area of a kitchen/dining room;
- double and twin bedrooms: **3 double**;
- single bedrooms: **2 double**;
- further single sockets are required in halls and landings.

As a **minimum** TV aerial sockets and a telephone should be provided in suitable locations in the living room.

Additional items may be required to meet ECO homes target. (See Good Practice Guide **3.4**)

1.2.6 Heating and Water

All taps and showers, other than taps in kitchens and utilities, should have a thermostatically controlled water supply limited to a safe temperature i.e. for baths a **maximum of 46deg C**, showers and wash hand basins a **maximum of 41deg C**.

1.3 Space standards

1.3.1 General

Rooms need to be large enough to take the furniture which tenants can be expected to need, in a convenient layout for everyday living with adequate space to move about. The shape of a room, the position of doors, windows, radiators and whether it is necessary to pass through a room to other parts of the house can greatly affect the amount of useable space it provides.

Excessively long narrow rooms should be avoided. Single bedrooms should have an average width of at least **2.1m** and living rooms an average width of at least **3.1m** (or **3.3m** if it is necessary to pass through the room to other parts of the house).

All rooms should open off passageways.

In some houses where for example the living room is the full width of the house it is acceptable for the kitchen to open off, but not be open plan to it.

In some flats and bungalows, particularly those occupied by the elderly or people with reduced mobility it is acceptable for the kitchen to be open plan to the lounge or dining area. In this situation the kitchen should be configured so that it is not on a through route or has a door leading to another room or hall.

1.3.2 Frail Elderly Housing

Frail Elderly schemes (also commonly referred to as ExtraCare schemes) will probably contain a mixture of housing, health care, social services, and leisure elements. The facilities funded are those that are of direct benefit to the residents. (See also Good Practice Guidance **3.5.4**)

Features such as day care provision for example will not qualify for Social Housing Grant (SHG) but may form an integral part of the community care strategy. The additional funding for these non-housing elements (space and equipment) would be separately resourced.

It is important therefore to clearly differentiate between these different elements, as only the former will be eligible for SHG.

The fundamental SHG funded housing provision and the associated space standards for these are defined below.

- **Flats**
 - **2 Person 1 Bed (minimum 50m²)**
 - **3 Person 2 Bed (minimum 65m²)**

All flats should be built to Wheelchair Standards with the exception of the double bedroom and the kitchen, which should be equivalent to the comparable general needs flat.

Flats should have a wheelchair accessible shower with connecting door to the principal bedroom.

- **Staff Areas**
 - Manager's office.
 - Carer's Office.
 - Kitchen manager's office.
 - Staff toilet(s).
 - Staff rest/locker room.
 - Sleep over room.
- **Service Area**
 - Laundry.
 - Kitchen.
 - Snack preparation.
 - Meter room (depends on whether individual or central metering).
 - Lift plant room.
- **Ancillary Areas for Residents/visitors**
 - Lounge area(s).
 - Dining room.
 - Hair salon.
 - Assist bathroom.
 - Communal disabled toilet(s).
 - Shop.
 - Guest room(s)
- **General/Circulation space**
 - Reception.
 - Heated corridors.
 - Lift(s) to all floors above ground floor.
 - Staircases.
 - Emergency alarm system.

- **Storage**
 - Cleaners store.
 - External store.
 - Waste store.
 - Wheelchair storage.
 - Kitchen storage.
 - Linen storage.
 - General storage.
- **External**
 - Car parking.
 - Drying area.
 - Garden/ patio/sitting out space.

1.3.3 Furniture Requirements

Plans are required to demonstrate a suitable room layout using the standard furniture sizes and associated circulation space requirements set out in **Appendix C**.

Minimum furniture requirements are as follows:

Living rooms

- armchairs and settees to seat the maximum number of occupants plus one visitor;
- **3** small or two large storage units;
- a television.

Dining areas

- a dining table and chairs to seat the maximum number of occupants.

Single bedrooms

- a single bed and beside table;
- a medium chest of drawers;
- a desk;
- a single wardrobe (free standing or built in).

Double/twin bedrooms*

- 2 bedside tables;
- a large chest of drawers;
- a dressing table;
- 1 double or 2 single wardrobes (free standing or built in);
- double or 2 single beds.

*In houses one bedroom should be able to contain a double bed and further large bedrooms twin beds. In flats and bungalows large bedrooms should allow for either a double bed or twin beds.

1.4 Washing and drying clothes

1.4.1 General

There should be adequate facilities for washing, drying and airing clothes.

1.4.2 External drying facilities

All houses and flats should be provided with suitable and robust facilities. Where this is not practicable in flats alternative drying facilities i.e. a tumble dryer should be provided.

1.4.3 Space for appliances

All dwellings should have space, power and plumbing connections for a washing machine.

All dwellings except one bedroom flats with access to an external clothes line should also have space and power connections for a tumble dryer, positioned so that it can be vented directly to the outside air. These spaces will normally be in the kitchen but may be in a utility area.

1.4.4 Airing cupboards

Cylinder cupboards should be fitted with a reasonable amount of shelving (**minimum 1m²**). Dwellings without hot water storage should have a heated airing cupboard. Access to the airing cupboards should be from a circulation space or bathroom.

1.5 Storage

1.5.1 General

Dwellings should have adequate and convenient general storage.

1.5.2 Cupboards

Homes should be designed to provide:

- a total capacity (including the airing cupboard and accessible under stair space but excluding any built in wardrobes and kitchen units*) of **minimum 3m³** in dwellings for up to **3** people and **5m³** in larger dwellings;
- a tall cupboard suitable for storage of brooms etc., opening off a passageway or kitchen and fitted with high level shelving for storage of cleaning materials out of reach of small children.
- where a tall cupboard is provided as part of the kitchen storage any capacity over and above the minimum requirement for kitchen storage can count towards general storage

1.5.3 Loft

Lofts should have a boarded area of **minimum 8m²** easily reached from the ceiling hatch. The boarded area should be adequately lit.

1.5.4 External storage

Houses and bungalows should have a robust and lockable garden store large enough for an adult bicycle. The size of the store will be determined by the ECO homes target rating but should never be less than **2m²**.

1.6 Sustainability and Energy Efficiency

1.6.1 General

Associations should take every opportunity to develop schemes that contribute towards achieving a sustainable housing stock.

1.6.2 ECOHomes Rating

All general needs schemes and housing for the elderly should be built so as to achieve a British Research Establishment (BRE) '**ECOHomes**' rating level of '**GOOD**' (see Good Practice Guidance **3.4**).

Associations should adopt the same standards in the development of homes for people with specific needs but it is recognized that the target score will not always be achievable.

All ECOHomes ratings should be undertaken and certified by a **BRE Licensed Assessor**. It is important to appoint the assessor very early in the development process as advice on design and specification is an integral part of the service and can help to achieve the standard in the most cost effective manner.

1.6.3 Energy Efficiency

The ECOHomes rating system is flexible and allows some choice in the way the overall target score is achieved.

Irrespective of the ECOHomes score achieved the minimum standard for energy efficiency in all dwellings should meet the **Best Practice Standard** (basic requirements) set by The Energy Efficiency Best Practice in Housing, **General Information Leaflet 72** (www.est.org.uk/bestpractice)

1.7 Outside

1.7.1 Road Safety

Road layouts should be designed to reduce traffic speeds particularly where children are likely to play. Children will inevitably want to play with friends in the street and areas where children are likely to play should be clearly visible to drivers.

1.7.2 Children's Play

To be successful, formal play facilities are best provided as part of a strategic approach to provision within a neighborhood (See Six-Acre Standard published by National Playing Fields Association www.npfa.co.uk). Any decision to provide play areas within schemes should be the subject of discussion with the local authority.

Where play areas are provided, care needs to be taken to ensure they are overlooked by dwellings whilst not creating nuisance to adjacent properties.

1.7.3 Rear Gardens

Rear gardens should be safe for small children to play in, convenient to use, easy to maintain and reasonably private. To achieve this, gardens should:

- have a **minimum useable** area of **40m²** for houses and **30m²** for bungalows, including a nominally level paved area no smaller than **3m x 3m**, easily reached from the back door;
- have no part of any additional **useable** area sloping **toward** the house more steeply than **1:8**;
- have no part of the remaining area sloping away from the house more steeply than **1:12** (ideally **1:15**);
- have a paved access to the drying line and any garden gate;
- have boundaries between gardens of **minimum 1200mm** high and built of nothing less substantial than timber close boarded fencing;

- where it is not possible to reach the rear garden without passing through the house a discreet refuse bin compartment should be provided at the front.

Refer also to '**Good Practice Advice Site Layout Design for New Housing Schemes**' (page 12) Tai Cymru 1988

1.7.4 Layout

Lifetime homes criteria (see **Appendix A**) set the standards for accessibility and movement between car parking spaces and the home.

Housing developments should also be designed to be barrier free so that all people including people with specific needs can move easily between dwellings, can move around the estate, can transfer easily to public transport and can access local amenities and shops.

It is important therefore to consider the needs of people with mobility problems and visual impairment when designing infrastructure and the public realm.

Estate layouts should therefore:

- have dropped kerbs at likely crossing points;
- have footpaths which are unobstructed by street furniture, landscaping or cars in adjacent parking spaces;
- use tactile surfaces to warn of hazards and provide information for people with a visual impairment. For further guidance see 'Guidance on the use of Tactile Paving Surfaces'-DTLR 1998.

1.7.5 Car Parking

Careful consideration should be given to car parking provision to ensure that it fits sympathetically into the general environment. Unless there is evidence of high levels of car ownership, or a specific planning requirement, provision should not exceed **1 space per dwelling plus 1 visitor's space per 3 dwellings**.

Parking spaces should be designed so that: -

- they are at least **4.8m** long x **2.4m** wide, or if also serving as the footpath to the front door a minimum of **3.3m** wide (in other situations for example on a footpath linking the front of the dwelling to the garden gate the combined width can be reduced to **3.1m**);
- residents car spaces are clearly and conveniently related to the house served or securely enclosed within the rear garden;

- no parking space is within **2m** of a window;
- visitors' parking is overlooked by as many dwellings as possible.

1.8 Security

1.8.1 General

All developments are required to comply with **Secured by Design**, the Police Force's housing design security scheme.

(See Secured by Design Standards- www.securedbydesign.com)

This, among other things, gives **minimum** specification requirements for windows, doors, security lighting, fencing and gates.

1.8.2 Architectural Liaison Officer

The Police Architectural Liaison Officer should be consulted at an early stage and in any event prior to formal submission for detail planning approval. Sufficient detail should be provided for an assessment to be made (where the Welsh Assembly Government standard specification is used only site layout drawings will normally be required), and confirmation obtained that all necessary features have been incorporated.

1.8.3 Inspection

The Architectural Liaison or Crime Prevention Officer may wish to visit the site under construction and should be authorised to do so.

When individual dwelling addresses and postcodes are agreed they should be passed to the Architectural Liaison Officer.

The Architectural Liaison Officer should be invited to inspect the completed scheme and final approval of SBD compliance should be obtained prior to dwellings being occupied.

2.0 DEVELOPMENT QUALITY REQUIREMENTS FOR EXISTING AND REHABILITATED DWELLINGS

2.1 Flexibility and Accessibility

2.1.1 Future adaptation

New houses are required to be designed to be flexible and adaptable to meet the changing needs of occupants.

This is a more difficult goal to achieve in Rehabilitated dwellings due to constraints imposed by the existing structure. Associations should however, wherever it is practical and cost effective to do so, take every opportunity to include features into projects that will result in homes that are flexible and capable of adaptation.

The Lifetime Homes Standards (see **Appendix A**) should be used as a reference source for exploring the opportunities available on individual projects. For further guidance related to improvements to existing properties see 'Lifetime Home Improvements' published by the Joseph Rowntree Foundation.

2.1.2 Specific needs

Where associations are rehabilitating homes to provide accommodation for people with specific needs, they should be able to show that they are designed to reflect current good practice.

For example housing provided for some black minority ethnic (BME) groups should take account of individual family needs and the needs of the ethnic community. Associations should therefore consider the particular design requirements of the group and how these can be sensitively incorporated into the layout of the home and the general environment. Studies have shown that there can be a need for larger homes amongst BME and particularly Asian communities. This need could be met by the rehabilitation of two adjoining properties so that they are connected internally to accommodate an extended family. This property could revert to two individual dwellings if the need changed or new tenants moved in.

2.2 Safety

2.2.1 Stair and landings

Staircases are a frequent source of accidental injury, particularly to elderly

people and young children. Where an existing staircase is considered to be exceptionally hazardous, structural modification may be required. Where safety can be materially improved at modest cost, for example by adding an extra handrail, this should be done.

2.2.2 Kitchens

The risk of accident can be reduced in a well-organised working area with adequate work surfaces for resting pans and food preparation and adequate space for appliances. All kitchens should provide:

- space at least **600mm** wide for a cooker and a refrigerator. In most cases a **600mm** wide space will also be required for a washing machine (see also under washing and drying clothes). The cooker space should be safely positioned in relation to doors, windows, wall units, electric sockets, etc.;
- enough clear space in front of the cooker and other units and appliances to operate safely (**1200mm** in front of the cooker, otherwise **1000mm**);
- an adequate work surface for safe and convenient food preparation (**500mm** deep, **800mm along the front edge if straight, 1000mm** if 'L' shaped);
- adequate and convenient storage cupboards for food, crockery and pots and pans;
- at least **1** convenient power socket close to the main food preparation worktop in addition to those at fixed appliance positions.

Where it is necessary to create a new kitchen or to replace an existing one, new or replacement kitchens should, whenever possible at reasonable cost, be designed in accordance with Development Quality Requirements for New Dwellings ensuring in particular that:

-
- there is a work surface each side of the sink bowl, one of which may be the sink drainer;
- there is a work surface each side of the cooker;
- the cooker is at least **100mm** from a corner base unit;
- all work surfaces are at least **400mm** long;
- a food preparation area is provided between the sink bowl or drainer and the cooker. It should be at least **1000mm** long measured along its front edge, preferably in a straight line. If it has to be arranged around a corner one front edge should be at least **800mm** long;

- 1 double power socket is positioned close to the main food preparation area.

2.2.3 Fire escape

Homes should allow easy escape by:

- having an escape route from the bedrooms to an external door that does not pass through another room. If this is not possible, alternative means of escape should be agreed with the fire officer;
- having a suitably located hard wired, linked smoke detector with a sealed lithium back up battery with **10 year life** on each floor;
- ensuring that window locks, where fitted to bedroom windows, do not have an automatic locking action.

2.2.4 Electrical and heating installations

Existing installations should be checked and certified safe by a qualified person. Any cost-effective opportunities to increase the number of power sockets should be taken.

2.3 Space Standards

2.3.1 General

Plans are required to demonstrate a suitable room layout using the standard furniture sizes and associated circulation spaces set out in **Appendix C**. However, the Welsh Assembly Government recognises that sometimes individual rooms in an otherwise acceptable dwelling may fall just short of the standard required, and that to enlarge the room in question is not possible or cost-effective.

In such cases some tolerance on circulation space requirements shown in the Appendix is acceptable (up to **100mm** would normally be regarded as reasonable). It is emphasised, however, that these circulation space requirements are already modest, as is the amount of furniture allowed for.

2.3.2 Furniture Requirements

Minimum furniture requirements are as follows:

- **Living rooms**
 - armchairs and settees to seat the **maximum** number of occupants;
 - **3** small or **2** large storage units, one of which may be in the dining area (in single person dwellings, requirements reduces to **2** small or **1** large unit);

- a television.
- **Dining areas**
 - a dining table and chairs to seat the **maximum** number of occupants.

One person bedrooms

- a single bed and bedside table;
- a medium chest of drawers (this may be in an adjacent box room or on the landing if it does not impede circulation space);
- a single wardrobe (free standing or built in).
- **Two person bedrooms**
 - one bedroom should be able to contain a double bed and further large bedrooms **2** single beds or a double bed;
 - a bedside table;
 - a large chest of drawers (this may be in an adjacent box room or on the landing if it does not impede circulation space);
 - a dressing table;
 - one double or two single wardrobes (free standing or built in).

2.4 Sanitary Provisions

2.4.1 Bathroom & WC Provision

- All dwellings should have a bathroom with a bath, washhand basin and wc. (the wc. may be separate). In circumstances where it is practically impossible to provide a bath a shower will be acceptable.
- All dwellings provided with a bath should also have a shower.
- In dwellings with more than one bedroom it should be possible to reach the bathroom without passing through a bedroom.
- Houses for **6** or more people should have a second wc. with a washhand basin.

- Houses for **8** or more people should have a second bathroom or shower room.
- Bathrooms should not be more than one storey away from the bedrooms

2.5 Washing and Drying Clothes

2.5.1 General

There should be adequate facilities for washing, drying and airing clothes.

2.5.2 Space for appliances

All dwellings should have space, power and plumbing connections for a washing machine. If an external clothesline cannot be provided there should also be space and power connections for a **600mm** wide tumble dryer, positioned so that it can be vented directly to the outside air. These spaces will normally be in the kitchen but may be in a utility area.

2.5.3 Airing cupboards

Cylinder cupboards should be fitted with a reasonable amount of shelving (minimum **1m²**). Dwellings without hot water storage should have a heated airing cupboard.

2.6 Storage

2.6.1 General

Dwellings should have adequate and convenient storage space.

2.6.2 Internal

- a tall cupboard suitable for storage of brooms, etc.;
- high level shelving for storage of cleaning materials out of reach of small children;

2.6.3 External

Houses and bungalows should have a robust and lockable store large enough for an adult bicycle (**minimum: 2m²**).

2.7 Energy Efficiency and Ventilation

2.7.1 General

Meeting heating bills can be difficult for many tenants. Associations should do whatever they reasonably can to minimise the cost of heating homes to a comfortable level.

Improving the energy efficiency of dwellings will help to;

- Reduce running costs for the tenant
- Provide a more comfortable internal environment at an affordable cost
- Reduce maintenance costs
- Maintain or increase property value
- Reduce global and local pollution and conserve fuel resources.

The improvement of the energy efficiency in existing dwellings that are to be refurbished should be based on;

- Establishing an energy strategy for the projected life of the building.
- Choosing the most suitable and cost effective package of measures for the property in question.

It is recognised that it will not be technically possible or cost effective to include all the energy efficiency measures in every dwelling and that the content of choice of improvement measures will depend on the individual property characteristics including limitations imposed by the form of construction.

2.7.2 Minimum Standards

The following standards should be achieved in all refurbishment schemes receiving SHG funding.

These are **minimum's** and Associations will be expected to improve upon these values where possible.

- 'U' Values
 - Walls to have a minimum 'u' value of **0.45 Wm² K***
 - Roofs **0.16**
 - Windows **2.00** (where replaced)
 - Ground floor **2.00** (where replaced)
- Doors and windows should be draught proofed
- Gas central heating installed where gas is available
- Primary hot water pipe work to be fully insulated
- Controlled ventilation introduced to reduce condensation (rates of between **0.5** and **1.0** air changes per hour)
- Landlord supplied electrical appliances to be '**A**' rated
- Compact Fluorescent Lamps (CFL's) in high usage areas i.e. living rooms, halls landings and all communal and security lighting.

Advice for designers on how to approach the putting together a pack of energy efficient refurbishment measures is contained in **GOOD PRACTICE GUIDE 155** Energy Efficiency Best Practice in Housing. www.est.org.uk/bestpractice

As an alternative to achieving the target 'u' values and specific measures referred to above a Target SAP** can be set. A rating of **75** should be regarded as an **absolute minimum** and should be exceeded wherever practically and financially feasible.

SAP ratings allow comparisons of energy efficiency to be made and can show the likely effect of improvements to a dwelling in terms of energy use. They can be used at the design stage to improve energy efficiency and reduce future bills and CO² production.

* If the only possible solution is external wall insulation the 'u' value should be **0.35 Wm² K**

2.7.3 Energy Rating

An energy rating should be obtained and kept for each completed refurbished dwelling using the Standard Assessment Procedure (SAP)

SAP is the UK Governments standard methodology for home energy rating. It provides a reliable means of calculating the energy efficiency performance of dwellings. The SAP scale runs from **1 (the least energy efficient) to **120** (extremely energy efficient)

2.8 Outside

2.8.1 Gardens

All family homes should have convenient access to a garden

Rear gardens should be safe for small children to play in, convenient to use, easy to maintain and reasonably private.

To achieve this a garden should:

- contain a nominally level area no smaller than **10m²** which can be directly reached from the house;
- have a paved access to the drying line and any garden gate.

2.9 Security

2.9.1 General

All existing and rehabilitated dwellings should provide tenants with a reasonable level of physical security.

2.9.2 Secured by Design

Where it is necessary to replace doors, windows or fencing, the replacements

should comply with the requirements of Secure by Design, the Police Force's housing design security scheme. (www.securedbydesign.com)

Cost effective measures should also be taken to upgrade the security of components that are to be retained.

3.0 GOOD PRACTICE

3.1 Pattern Book

3.1.1 Background

During 1992 a joint Working Party consisting of representatives from Tai Cymru, the Welsh Federation of Housing Associations, the House Builders Federation and Building Employers Federation considered the feasibility of producing a rationalised design system for social housing in Wales.

The decision to produce a Pattern Book of house types was taken in order to both ensure consistently good quality and improve cost effectiveness in building houses. The range was developed following close consultation with the above organisations and copies of the initial publication became available and were issued in September 1993. Since this date the range has been developed to take account of feed back, changes in Building Regulations and best practice.

3.1.2 Application of range

The Pattern Book exemplifies the Development Quality Requirements and it is anticipated that a proportion of the newbuild housing programme carried out by housing associations will be delivered using standard types.

There is a Pattern Book plan for most situations but it is recognised however that particularly with the growth of urban regeneration a bespoke design may be appropriate. For example;

- infill developments with site constraints;
- where an existing vernacular or street scene should be respected;
- schemes for specialised client groups;
- schemes where the site topography demands a unique solution;
- areas within a larger development e.g. corners where a change in house type is essential to develop character;

3.1.3 Interpretation of Pattern Book Plans

Rationalised design is about improving efficiency and consistency of quality. This does not mean that the same external style should be imposed on every scheme undertaken by a housing association.

Rather than imposing standard solutions and thus limiting a designers creative ability the Pattern Book range should allow for more resources to be concentrated on the overall design of an estate

The pattern book is a series of standard floor layouts and designers therefore have the freedom to develop elevations and use materials, which reflect the specific context of each site.

Although advice on the use of the standard plans has been widely disseminated since its introduction in 1993 it is apparent that there still exists some confusion as to the degree of flexibility available to the designer particularly when considering external appearance.

The plans deliberately avoid any direct influence on elevation treatment. Window positions on the layouts are indicative only and are included to illustrate their relationship to the furniture. The size and position of doors and windows should therefore be decided by the designer to reflect the particular scheme under consideration.

Where appropriate the use of reduced storey heights and rooms in the roof utilising dormer style windows or rooflights are acceptable provided DQR are not compromised

Similarly no form of construction or material choice is indicated so that decisions on materials, on types and styles of window, on roof pitches, juxtaposition of units, massing of buildings etc are all left to the designer. The plans are suitable therefore whether timber frame, steel frame or traditional methods of construction are adopted.

Additional elements for example porches, canopies, bay windows etc are also left to the discretion of designers and can be added where necessary to meet functional or aesthetic requirements.

Furniture layouts, location of windows, heat sources, and power tv points shown on the plans exemplify compliance with DQR and providing that it can be demonstrated that an alternative furniture layout still meets the functional requirements, designers are free to choose the size, style and location of external doors and windows to suit site specific requirements.

In the past some designers have successfully modified the layout of a standard plan to meet specific requirements so that many essential features remain unaltered.

No overall dwelling sizes will be stated on the final plans. Only **minimum** critical dimensions required to meet functional requirements will be indicated. The overall shell size will therefore be determined by the method of construction adopted for the external wall and on the type of internal partition chosen.

Notional overall dimensions and comprehensive internal dimensions have been included on the draft plans to help to explain the principles.

3.2 Adoption of Lifetime Homes Standards

3.2.1 Concept

The Lifetime homes concept is all about making homes more flexible and responsive to the changing needs of the occupants.

The lifetime homes specification comprises **16** major standards for incorporation into a home in order to increase flexibility, offer tenants choice and improve accessibility.

Lifetime homes are not aimed specifically at people with disabilities who would require a wheelchair but rather homes which are livable in and visitable by a wider range of people than homes built to current standards. They would therefore also be suitable for people with a very wide range of disabilities, older people or people having to adapt to different circumstances.

3.2.2 Background

In April 1998 the Chartered Institute of Housing (Wales) published a report entitled Lifetime Homes in Wales that assessed the attitudes towards, and perceptions of Lifetime Homes amongst housing providers in Wales. Subsequently a steering group representing all the major interests considered the implications of developing the lifetime homes concept in Wales and to assist the Welsh Assembly Government in considering future policy options.

The Steering group was unanimous in its view that the introduction of LTH standards would result in significant benefits for individual residents and for the wider community and recommended that the Welsh Assembly Government require that all social housing in Wales be built to the standards.

As a result the Welsh Assembly Government resolved to adopt the standards and set an implementation date of April 2001.

3.2.3 Implications for pattern book range

The houses, flats and bungalows in the LTH range are further refinements of the basic principles established as the Pattern Book housetypes have been refined and developed over the last 7 years.

The flats and bungalows in particular are very similar to those in the previous range, and the changes required to incorporate Lifetime Homes principles are minimal as they already had bathrooms which met the standard. Internal changes have been restricted to improvements in circulation.

The flats are designed so that when used in mixed developments they are of a scale and shape which allows them to blend with houses on the same estate. The walk up flats has proved to be very successful and as well as integrating well with the houses they offer tenants their own front door at ground level.

Common access flats have also been used successfully as bungalows thus increasing the flexibility of the range.

The most significant improvements/changes to the house layouts as a direct result of introducing LTH standards come with the introduction of a fully wheelchair accessible ground floor toilet and improvements in circulation spaces.

It is anticipated that the range will expand as demand for new types are identified.

3.3 Estate Layouts

3.3.1 General

Rather than imposing standard solutions and thus limiting a designer's creativity ability the pattern book range should allow far more design effort to be concentrated on the overall design of an estate. Examples showing ways of using the pattern book plans to achieve a successful layout which can both benefit the tenant and the community can be found in the Good Practice Advice **Site Layout Design for New Housing Schemes** (published by Tai Cymru 1998). The examples shown are not based on specific sites or the need to meet specific brief requirements but are a demonstration of the fundamental design principles, which apply to any housing project.

3.4 ECOHomes

3.4.1 General

The ECOHomes rating is an environmental monitoring system for homes developed as part of the **BREEAM (Building Research Establishment Environmental Assessment Method)** programme of environmental assessments.

The performance of a house is expressed on a scale of;

- **PASS**
- **GOOD**
- **VERY GOOD**
- **EXCELLENT**

It considers the broad environment concerns of climate change, resource use and the impact the new development has on the existing development. It deals with quality of life issues and encourages the provision of a healthier and safer internal environment.

It is a flexible assessment tool and associations can choose from the options available in order to develop the most appropriate aspects of sustainability to suit the particular development or to compliment their own sustainable development strategy.

The issues assessed are;

- **ENERGY**
- **WATER**
- **POLLUTION**
- **MATERIALS**
- **TRANSPORT**
- **ECOLOGY AND LAND USE**
- **HEALTH AND WELLBEING**

Further information can be obtained from;

BRE (www.bre.co.uk/ecohomes)

Sustainable Homes (www.sustainablehomes.co.uk)

3.5 Housing People with Specific Requirements

3.5.1 Designing for Diversity

Buildings, including houses, and the environment they are in should be usable by and accessible to everyone whether they have a physical impairment, are elderly, have a sensory impairment, or parents with prams or just bringing home the shopping.

Designers should therefore be looking at providing homes and surroundings capable of accommodating all peoples ordinary and specific needs both physical and cultural within a mixed community.

3.5.2 Wheelchair Housing

3.5.2.1 General

Standard solutions are not appropriate for people who regularly use wheelchairs as designs need to be responsive to the specific need of tenants.

No specific design standards are published for grant funded wheelchair housing schemes.

Normally the accommodation for wheelchair users will be in the form of a ground floor flat or a bungalow.

Designers should consider the following;

- Wheelchairs come in many sizes and types and can be manual or electrical so
in the majority of cases they are tailor made to suit individual needs.
- The ability to control and manoeuvre the wheelchair will vary and some users require assistance.

3.5.2.2 Fundamental Requirements

In any home designed for use by person(s) in a wheelchair some fundamental requirements will however need to be considered:

- **Manoeuvrability**

It is essential that the wheelchair user can visit all parts of the home both inside and out, see also **Site Layout Design for New Housing Schemes** for general principles of design related to external spaces. It is also important to consider not only the immediate surrounds of the home but the wider environment so that access to other parts of the neighbourhood, community facilities, schools etc is made as easy as possible.

- **Transition from car/home**

The transition from the parking space to the front door should be made as easy and direct as possible and be well lit. There should be sufficient space adjacent to the car for transfer to a wheelchair, which in some cases might involve a helper, and this alighting space should be as flat as possible.

The route from the car to the front door should also be flat, direct, smooth and slip resistant. If possible the alighting space and the path to the door should be covered. In normal circumstances a car port will provide adequate protection, however as an alternative where a site is very exposed a garage large enough to allow the transfer manoeuvre and which also has a door into the house may provide the most satisfactory solution.

- **Thresholds**

The platform immediately outside the door should be large enough to allow easy operation of the door controls by a person sitting in a wheelchair and should be well lit. The transition from outside to inside from a stationary position is very difficult for a wheelchair user so ideally the threshold should be flat. It is accepted that often a small upstand [restricted to a maximum of **15mm** by part M of the Building Regulations] is required to provide a weather barrier where necessary but this should be viewed as a last resort, the aim is to provide as flat a threshold as possible. It is also important to provide sufficient space immediately inside the front door to allow, for example, transfer to an inside chair or for the chair to be stored.

- **Circulation.**

It is essential that sufficient space be allowed in every room for the wheelchair to

be manoeuvred between furniture and fittings. A design solution that keeps corridors and right-angled bends to a minimum is preferred. Caution however should be exercised to ensure that corridors are not so wide as to produce an institutional feel to the home.

Direct access from the kitchen to the dining area is important so that a person in a wheelchair has no barriers to negotiate.

- **Bathroom flexibility**

Bathrooms should be designed to enable all fittings to be approached and used by a person in a wheelchair. A range of transfer options should be offered to allow flexibility.

The provision of a separate fully accessible WC and shower should be considered particularly in a dwelling designed to accommodate **4** or more people.

The main bathroom should be designed to take a bath and a shower to meet the needs of a wide range of occupants.

- **Kitchen flexibility**

Kitchens should be designed to enable all fittings to be approached and used by a person in a wheelchair. Adjustable worktops which provides a degree of flexibility should be considered particularly at the sink and preparation areas and switches and sockets provided on the front face of worksurfaces.

The majority of storage should be at low level to allow ease of access.

- **Storage**

The location of storage areas should be carefully considered to ensure that a person in a wheelchair could gain access. Any corridor space therefore should be wide enough to allow for outward opening doors and cupboard depths shallow enough so that the full depth is accessible. This is particularly relevant in kitchens.

In addition to the general storage for the needs of the family space may be required for a second wheelchair or for battery charging or for other mobility aids.

Also the amount of linen storage should reflect the needs of specific tenants. In some cases a dedicated laundry room may be justified.

Many useful publications exist to give essential guidance to designers and highlight best practice. [See **Appendix D**]

3.5.3 Black, Minority Ethnic (BME) Households

3.5.3.1 General

Consideration of the needs of BME groups should be an integral part of the design process. They should not be treated as an afterthought and design requirements should be incorporated in a sensitive way so as to preserve cultural identity as well as ensuring that the completed project harmonises with its surroundings. This can best be achieved through working with BME community organisations and individuals at the start of the project, as they can advise on the needs of the different communities and assist with publicising the completed scheme to ensure full occupancy of the scheme.

Associations should avoid a prescriptive approach as there is great diversity amongst the different BME communities, and these communities are in the process of change. For further guidance see 'Accommodating Diversity- Housing Design in a Multicultural Society' (NHF & Home Housing Trust; 1988).

3.5.3.2 Context

To develop sensitive solutions it is important that Designers have an understanding of the social and cultural context of the client group. For example layouts that are based on housing overlooking a common courtyard can be an effective way of satisfying a range of needs.

3.5.3.3 Family structure

An understanding of the family structure and the concept of the extended family are vital if the design solution is to be successful. For example in many cultures it is important to separate male and female spaces within the home which will obviously result in an increase in floor area.

3.5.3.4 Security

Security is a very important issue as minority ethnic groups are more likely to be victims of crime and discrimination. A well thought out layout can help minimise any feeling of vulnerability. It is recommended therefore that the police force ALO be consulted very early in the design process to discuss any additional/specific requirements.

3.5.3.5 Cultural distinctiveness

The question of whether a development should reflect the culture by standing out from its surroundings or be designed to blend in needs to be thoroughly explored. The most successful schemes are those where traditional shapes and building forms are subtly reflected so as to create a cultural identity without producing a development which is out of context.

Religious practices also impacts on the design solution and can range from features that can be incorporated easily like shrines to features which have a much greater impact like the requirements associated with ritual washing.

3.5.3.6 Internal layout

Many of the design features and concepts associated with Lifetime Homes

related to flexibility and adaptability will suit ethnic communities. For example the concept of flexible living with sleeping areas not being confined to the designated bedroom is common, as is the social use of the kitchen in addition to its prime function of food preparation, and the requirement for generous entrance halls. There are good practice examples of properties being designed to be as adaptable as possible, such as pair of semi detached properties that are connected internally to accommodate an extended family, but that can revert back to separate dwellings if the family's needs change or new tenants move in.

Special attention should be paid to the design of the kitchens, particularly the provision of the correct type and volume of storage, and of bathrooms to allow for different bathing habits and rituals

3.5.3.7 External spaces

The garden and crop cultivation is very important to some groups and careful consideration should therefore be given to the size and orientation of the garden and also that adequate measures are taken to ensure that all contamination is removed.

In schemes for elders the provision of safe communal gardens should be considered

3.5.4 Housing for the Elderly

3.5.4.1 Background

Independent accommodation for Elderly people is provided currently by associations in the form of bungalows or flats that are either served by a lift or are in the form of **2** storey flats with the upper storey being served by an 'easy going staircase'.

In January 2003 The Welsh Assembly Government published a 'Strategy for Older People in Wales'.

One of the 7 stated strategic aims is '*to promote the provision of high quality services and support which enable older people to live as independently as possible in a suitable and safe environment and ensure acute, primary and specialist services are organised around and responsive to their needs*'.

A key strategic objective in fulfilling the stated aim is '*to promote an adequate supply of special forms of housing which meet the varying and changing needs of older people and ensure they can remain independent as long as possible*'.

The numbers of people age **75** and over in the UK is increasing and pressure is mounting to find flexible, cost effective housing solutions for frail elderly people that also recognises the desire to prolong independent living.

Extra Care or frail elderly schemes cater for the needs of elderly people including those requiring a high level of support. They fall between established models of sheltered accommodation and residential care homes.

Extra Care can offer many advantages;

- It simplifies the provision of support by allowing resources to be used more efficiently. Care workers for example can deal with more people as they are concentrated under one roof.
- It allows people maximum independence with the assurance that help if needed is close by and provides additional features such as assisted bathing and meal provision.
- It allows people to stay in their 'home' within the extra care facility as long as possible and therefore takes some of the pressure off registered care homes.
- The additional services and facilities means that people can receive rising levels of support whilst remaining in their own 'home'.
- Resources that also serve the wider community i.e. day centre provision may be included.

The Extra Care concept is as much about the way the scheme is managed and support services are provided as it is about the facilities provided. Individual schemes will be developed therefore to meet the strategic requirements of the local authority, health authority and social services, the three key partners involved.

3.5.4.2 Scope

Extra Care is about providing 'a home for life' which people can move into and live independently in self contained accommodation whilst receiving an appropriate level of care and support.

The manifestation of the Extra Care /frail elderly concept can take many forms and it is not the intention of this guide to be overly prescriptive or to favour any one particular form or to encourage a rigid approach to design.

To be successful any scheme will respond to a long-term strategy for the provision of appropriate accommodation for the most vulnerable of our elderly population developed by the key partners.

Schemes may therefore include facilities for providing medical treatment and for varying levels of care in addition to providing living accommodation.

They may also include lifestyle-enhancing leisure features such as shops and gymnasiums.

3.5.4.3 Development

Extra Care schemes that we see today have developed from the Sheltered Housing concept much favoured in the 1980's. These earlier schemes were designed on the assumption that people shared most facilities and private space was reduced accordingly. 'Bedsides' or 'Flat-lets' were in common use and these were modest in area, with only basic kitchen equipment provided.

In the 1990's changing aspirations, particularly the desire for larger self-contained accommodation resulted in landlords having problems with letting flats and the number of voids increased.

To meet these changing aspirations today's Extra Care schemes put more emphasis on the needs of the individual and their right to independence.

Flats in the Extra Care schemes are seen as 'home' and provide the same facilities as the equivalent house, flat or bungalow so that people can be as independent as their individual circumstances will allow.

The most fundamental changes have taken place in the way schemes are run. The residents care packages, catering, cleaning etc are more likely to be provided separately and not the responsibility of the housing provider.

Care packages are commonly provided by Social Services (including night -time and emergency cover), or, as is becoming more popular, contracted out.

Similar arrangements are also made to contract out catering, cleaning, ground maintenance etc.

The traditional role of Warden, who was on call twenty four hours per day, is therefore being replaced by Managers who tend to work nine to five, five days a week.

3.5.4.4 Alternative Solutions

Several Housing Associations in England have developed expertise in the provision of Extra Care schemes. The model they are using can be seen as a direct development of the 1980's sheltered housing schemes but with greater emphasis on private space provision.

The standards are evolving as experience is gained on each scheme and are intended to be flexible to meet the different requirements of Managers, Local Authorities and Social Services who are seen as key partners in the developing and running of Extra Care schemes.

The model is developed around the provision of self-contained flats to wheelchair standards thus enabling tenants maximum independence.

The major difference resulting from the independent approach (i.e. the provision of self-contained wheelchair accessible flats) is the reduction in communal spaces. Lounge areas for example are now considered to be activity spaces and are not intended to accommodate all residents for a significant period of time.

Provision can vary as some schemes may be designed to fulfil a day centre role. In this case communal dining and lounge/activity space will increase to reflect this.

Other more radical approaches like the 'Retirement Village' concept are being pioneered today. These projects provide care at many levels ranging from sheltered housing to high dependency nursing all within the same 'village' complex and require a high level of capital investment.

The large investment required is usually raised by partnerships between Local Authorities, housing associations, Health Care Providers, Developers, Charitable Funders and Corporate sponsors.

These schemes cater for a wide range of people from those who are receiving state subsidy to those who are self-funding.

To be viable a site of about 5-7 acres is needed to accommodate 150-200 units with an investment from multiple sources of £10-£15 million over an extended period. One scheme in the Midlands for example only receives 19% of its funding from the Housing Corporation.

The concentration of 30 to 40 flats may not suit strategies developed in rural areas where the population is more dispersed. As more emphasis is being placed on the needs of the individual a model with small clusters of flats near existing villages may provide a more sensitive solution. Social, medical and care packages could however still be organised on a regional level with for example a central kitchen serving the dispersed units.

3.5.4.5 Basic Consideration

- **Flexibility**

The demand and need for Extra Care accommodation may vary. It is therefore important to design schemes that are capable of responding to change. For example where integrated blocks are used they should be capable of being adapted into housing suitable for different client groups in part or as a whole as demand dictates.

This future change in occupation should be tempered by the desire to integrate

all domestic building forms so that client group identification is not obvious. This is one reason why mixed developments have always been encouraged, with walk up flats being hard to distinguish from family housing. There are also housing management issues where too many flats are provided off a common circulation space.

The desire to integrate the different types of housing may prove difficult as extra care schemes are normally in the form of concentrations of flats served from common circulation spaces. As a result they will stand out in the typical urban setting. This may not be a problem initially but may result in stigmatisation if the scheme reverts entirely or in part to general needs use.

- **Independence**

Homes should be designed on the assumption that people wish to live independently. Support and Care packages can be added progressively as residents needs change.

- **Critical Mass**

To make best use of care and support resources it is important where possible (particularly in urban situations where land is more expensive) to concentrate accommodation and support provision.

The critical mass of schemes may for example vary from low twenty unit schemes to schemes of forty plus.

3.5.4.6 Qualifying elements for Social Housing Grant (SHG)

Schemes will inevitably contain a mixture of housing, health care, social services, and leisure elements. The facilities funded are those that are of direct benefit to the residents.

Features such as day care provision for example will not qualify for SHG but may form an integral part of the community care strategy. The additional funding for these non-housing elements (space and equipment) would be separately resourced.

It is important therefore to clearly differentiate between these different elements, as only the former will be eligible for SHG.

3.5.4.7 Good Practice Tips

Much good practice guidance is available. The following points are therefore just some of the considerations when developing a scheme specific brief

- **Spatial Relationships.**

- The following spatial relationships are given as guide. They will of course vary depending on design solutions and site constraints.

Flats	65%
Ancillaries	20%
Circulation	15%

- **External**

- More residents are using motorised buggies so a garage with charging facilities of suitable size needs to be provided.
- The boiler room should be sited on an external wall with external access, preferably a separate structure.
- The provision of car parking spaces should be carefully considered. Not only are more residents keeping their cars but as a direct result of services being contracted out parking for support staff may also be required.
- A dedicated space for an ambulance and a bus may be required.

- **Ancillary Spaces**

- The main entrance door should be easy for elderly people to operate and consideration should be given to providing automatic doors, preferably sliding doors.
- Consideration should be given to providing guestrooms. A ratio of **1 per 25** residents is about right.
- **3** washing machines for **26** residents should be the **minimum**.
- Shelving should be provided in stores.
- Central secure storage for residents belongings (e.g. suitcases) should be considered
- All circulation spaces and ancillary spaces should be accessible to all and built to wheelchair standards.
- All staff should have access to a shower and kitchen staff should be also be provided with a changing room
- Staff should be provided with lockers
- The principles of barrier free design i.e. environments that are designed so that they are accessible to and usable by people with mobility problems including people with sight impairment should be adopted throughout the

building.

- The advantages of providing a backup generator should be considered.
- Bin stores should be designed to allow for recycling.
- Bike storage should be provided in the buggy store
- A central storage facility for new and used oxygen bottles should be considered, possible adjacent to the buggy store to make access easy for delivery and collection.
- The lighting in the communal areas should be flexible to allow for different levels to be used. Consideration should be given to separating feature lighting from general lighting.
- **Flats**
 - Attention to detail is important. e.g. location of disability aids, grab rails, the provision of a convenient shelf adjacent each flat door and colour coding corridors.
 - A direct link between the bedroom and bathroom suitable for wheelchair access should always be provided.
 - Bedrooms should be designed to ensure that a specialised bed like for example that provided by Social Services could be accommodated. These beds are usually bigger than a standard bed and the location of the emergency pull cord and siting to give sufficient circulation space should be carefully considered.
 - The layout of the bathroom should reflect the possibility that some residents need help with showering and the location and type of shower fitting should be carefully considered to make assistance by a carer as easy as possible.
 - Consider providing a permanent 'night light' in the bathroom.
 - Direct access from individual ground floor flats to the garden should be considered but the introduction of a large number of uncontrolled access points may conflict with Secured By Design (SBD) requirements.
- **Health and Safety**
 - Low surface temperature radiators should be used.

- Wheelchair accessible toilets should be positioned on each floor.
- A cleaners cupboard should be provided on each floor and be equipped with a suitable sink.

APPENDICES

- A. Lifetime Homes standards**
- B. RNIB standards**
- C. Furniture sizes/ circulation requirements**
- D. Useful reading**

APPENDIX A

LIFETIME HOMES STANDARDS

Extracts from a report for the JOSEPH ROWNTREE FOUNDATION

Meeting Part M and Designing Lifetime Homes

	Lifetime Homes standards	Specifications and dimensions which meet the Lifetime Homes standards	Notes
1	Where there is car parking adjacent to the home, it should be capable of enlargement to attain 3300mm width	The general provision for a car parking space is 2400mm width. If an additional 900mm width is not provided at the outset, there should be provision (e.g. a grass verge) for enlarging the overall width to 3300mm at a later date	
2	The distance from the car parking space to the home should be kept to a minimum and should be level or gently sloping	It is preferable to have a level approach. However, where the topography prevents this, a maximum gradient of 1:12 is permissible on an individual slope of less than 5 metres or 1:15 if it is between 5 and 10m, and 1:20 where it is more than 10m.* Paths should be a minimum of 900mm width	*Providing there are top, bottom and intermediate landings of not less than 1.2m excluding the swing of doors and gates.
3	The approach to all entrances should be level or gently sloping	See standard 2 above for the definition of gently sloping	
4	All entrances should: a) be illuminated b) have level access over the threshold and; c) have a covered main entrance	The threshold upstand should not exceed 15mm (see detailed examples on pages 16-17)	
5	d) Communal stairs should provide easy access and; e) Where homes are reached by a lift, it should be fully wheelchair accessible	<p><i>Minimum dimensions for communal stairs</i></p> <p>Uniform rise not more than 170mm Uniform going not less than 250mm Handrails extend 300mm beyond top and bottom step Handrail height 900mm from each nosing</p> <p><i>Minimum dimensions for lifts</i></p> <p>Clear landing entrances 1500 x 1500mm Min. internal dimensions 1100 x 1400mm Lift controls between 900 and 1200mm from the floor and 400mm from the lift's internal front wall</p>	

6	The width of the doorways and hallways should conform to the specifications in the next column	<p><i>Doorway clear opening width (mm)</i></p> <p>750 or wider</p> <p>750</p> <p>775</p> <p>900</p> <p>The clear opening width of the front door should be 800mm. There should be 300mm to the side of the leading edge of doors on the entrance level.</p>	<p><i>Corridor/passageway width (mm)</i></p> <p>900 (when approach is head-on)</p> <p>1200 (when approach is not head-on)</p> <p>1050 (when approach is not head-on)</p> <p>900 (when approach is not head-on)</p>	
7	There should be space for turning a wheelchair in dining areas and living rooms and adequate circulation space for wheelchair users elsewhere	<i>A turning circle of 1500mm diameter or a 1700x1400mm ellipse is required</i>		
8	The living room should be at entrance level			
9	In houses of two or more storeys, there should be space on the entrance level that could be used as a convenient bed-space			
10	There should be: a) a wheelchair accessible entrance level WC, with b) drainage provision enabling a shower to be fitted in the future*	<p>The drainage provision for a future shower should be provided in all dwellings</p> <p><i>Dwellings of three or more bedrooms</i></p> <p>For dwellings with three or more bedrooms, or on one level, the WC should be fully accessible. A wheelchair user should be able to close the door from within the closet and achieve side transfer from a wheelchair to at least one side of the WC. There should be at least 1100mm clear space from the front of the WC bowl. The shower provision should be within the closet or adjacent to the closet (the WC could be an integral part of the bathroom in a flat or bungalow)</p> <p><i>Dwellings of two or fewer bedrooms</i></p> <p>In small two-bedroom dwellings where the design has failed to achieve this fully accessible WC, the Part M standard WC will meet this standard*</p>		
11	Walls in bathrooms and toilets should be capable of taking adaptations such as handrails	Wall reinforcements should be located between 300 and 1500mm from the floor		

12	The design should incorporate: a) provision for a future stair lift b) a suitably identified space for a through-the-floor lift from the ground to the first floor, for example to a bedroom next to a bathroom	There should be a minimum of 900mm clear distance between the stair wall (on which the lift would normally be located) and the edge of the opposite handrail/balustrade. Unobstructed 'landings' are needed at top and bottom of stairs	
13	The design should provide for a reasonable route for a potential hoist from a main bedroom to the bathroom	Most timber trusses today are capable of taking a hoist and tracking. Technological advances in hoist design mean that a straight run is no longer a requirement	
14	The bathroom should be designed to incorporate ease of access to the bath, WC and wash basin	Although there is not a requirement for a turning circle in bathrooms, sufficient space should be provided so that a wheelchair user could use the bathroom	
15	Living room window glazing should begin at 800mm or lower and windows should be easy to open/operate	People should be able to see out of the window whilst seated. Wheelchair users should be able to operate at least one window in each room	
16	Switches, sockets, ventilation and service controls should be at a height usable by all (i.e. between 450 and 1200mm from the floor)	This applies to all rooms including the kitchen and bathroom	

APPENDIX B

RNIB STANDARDS

(Extracts from 'Housing Sight' reproduced with permission of the RNIB)

1. Approach

- 1.1 Appropriately chosen and located planting of a distinctive shape, colour or fragrance should be provided at the approach to a home.
- 1.2 Pathways to the home and any ancillary buildings, such as garages and sheds, should be smooth, hard and non-slip, even when wet.
- 1.3 The route from the street to the entrance of the home should be well lit.
- 1.4 Different dwellings within a street should be clearly distinguishable and identifiable.

2. Front door and hallway

- 2.1 Door furniture should be conveniently positioned and easily identified through the use of tactile 'touch-detection' and contrasting colour or tone with the door itself.
- 2.2 Collection boxes should be provided on the rear of the letterbox, positioned in the centre of the door.
- 2.3 A dimmer switch, contrasted in colour or tone against its background, should be provided in the hallway and positioned on the wall opposite the hinge side of the door.

3. Downstairs WC

- 3.1 All fixtures and fittings used within the WC should be highlighted from the wall/floor against which they are positioned.
- 3.2 A large flush handle should be provided on the open/transfer side of the WC cistern, away from the adjacent wall.
- 3.3 A plunger plug should be provided within a hand-basin.
- 3.4 Taps should be consistent around the house, both in terms of design and the positioning of hot and cold outlets.
- 3.5 All surfaces should be non-reflective and non-slip flooring should be used

4. Kitchen

4.1 A rounded edge, non-reflective kitchen worktop should be installed which should contrast in colour or tone with the floor and adjacent wall and units.

4.2 Kitchen units should contrast in colour or tone with adjacent surfaces and handles should contrast against the unit itself.

4.3 Care should be taken to ensure easy and safe access to any kitchen equipment.

4.4 Kitchen lighting should be adaptable and evenly distributed.

4.5 Task lighting should be installed under kitchen wall units.

5. Circulation

5.1 Good lighting levels should be provided over stairs.

5.2 A handrail should be provided on both sides of the staircase of a circular or oval profile, which is contrasted in colour from the adjacent wall and should continue for 300mm past the top and bottom stairs (*1)

5.3 A lift should include contrasted and tactile indication on the call and control buttons.

6. Bathroom

6.1 A level access shower and separate bath facility should be provided with a non-slip finish to the bases.(*2)

6.2 Contrasting grab-rails should be provided within the shower cubicle and on the wall adjacent to the bath.

6.4 A bath should be provided with a thermostatically controlled hot tap.

6.5 The shower curtain or screen should contrast in colour or tone with the adjacent surfaces.

6.6 The leading edge of the shower screen door should be contrasted against the shower screen itself.

7. Windows and doors

7.1 If window coverings are supplied, vertical blinds should be provided.

7.2 Doors should contrast in colour or tone from the surrounding walls and the leading edge of the door should also be further contrasted from the rest of the door itself.

7.3 Internal doors should be hinged to open flat against walls.(*3)

7.4 Door handles should be a lever-action and contrast in colour or tone with the door itself.

8. Utilities

8.1 The positioning of switches, sockets, ventilation and all service controls should be consistent around the whole house.

8.2 All switches, sockets and controls in the home should be contrasted in colour or tone against adjacent surfaces.

Communal access homes

9.1 In homes with communal access, security entry intercom systems should be installed.

9.2 In homes with communal access level, firmly fixed entrance matting should be provided in the lobby.

9.3 On communal stairs a highlighted nosing on the edge of each tread and riser should be provided.

9.4 Lift landing spaces should be defined from the surrounding floor by a change in tone and texture of floor covering.

9.5 The floor of the lift car should contrast tonally with the walls.

9.6 Lift emergency communication systems should include audible indication to confirm that the call has been received.

Note: We have specifically not repeated any recommendations regarding lifts where they are already covered by BS8300:2001.

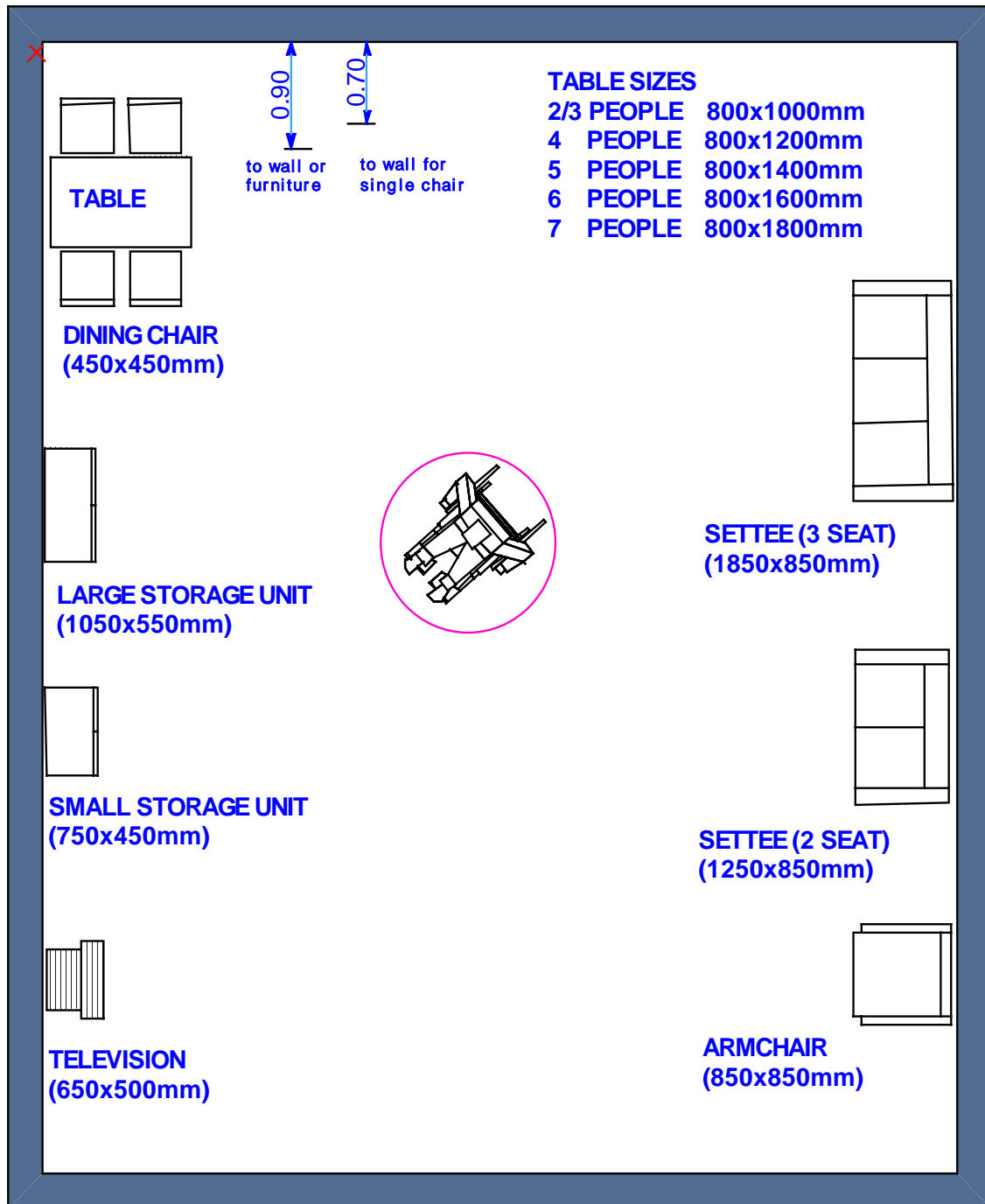
***1** this is not always possible where a traditional straight flight stair is used but the 300mm continuance should always be provided to one side

***2** in flats and bungalows a separate shower is not required providing that the bathroom is designed so that it is possible to replace the bath with a level access shower.

***3** where this is not possible a layout that will allow strategic positioning of furniture will be required.

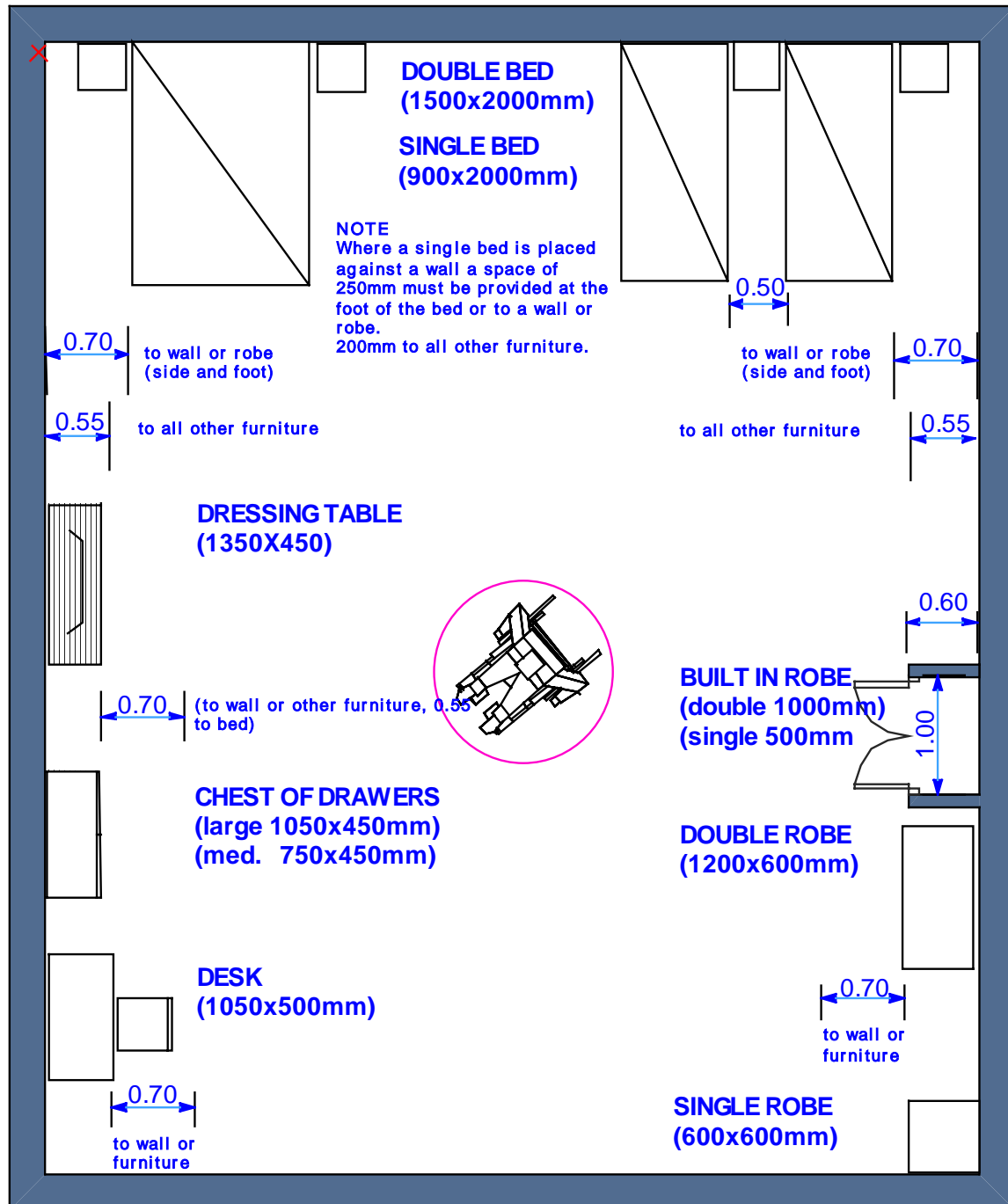
APPENDIX C SPACE STANDARDS

a. Living Rooms (n.t.s.)



APPENDIX C SPACE STANDARDS

b. Bedrooms (n.t.s.)



APPENDIX D

USEFUL READING

Designing Life Time Homes	Joseph Rowntree Foundation
Meeting Part M and Designing LifeTime Homes	Joseph Rowntree Foundation
Life Time Homes in Wales	Chartered Inst. of Housing
Scheme Development Standards	Housing Corporation
Standards and Quality in Development	National Housing Fed
Building Sight	RNIB
Wheelchair Housing Design Guide	NATWHAG
BRE Housing Design Handbook	BRE
Good Loo Design Guide	Centre on Environment for the Handicapped
Accommodating Diversity	NHF/Home Housing
People Streets and Movement	
Essex Design Guide	
Secured by design	ACPO
Time for Design 2	English Partnerships
Making places	English Partnerships
Technical Advisory Note(Wales) 12 Design	National Assembly for Wales
Housing Sight	RNIB (Cymru)
Construction Waste Good Practice Guide	CRIBE