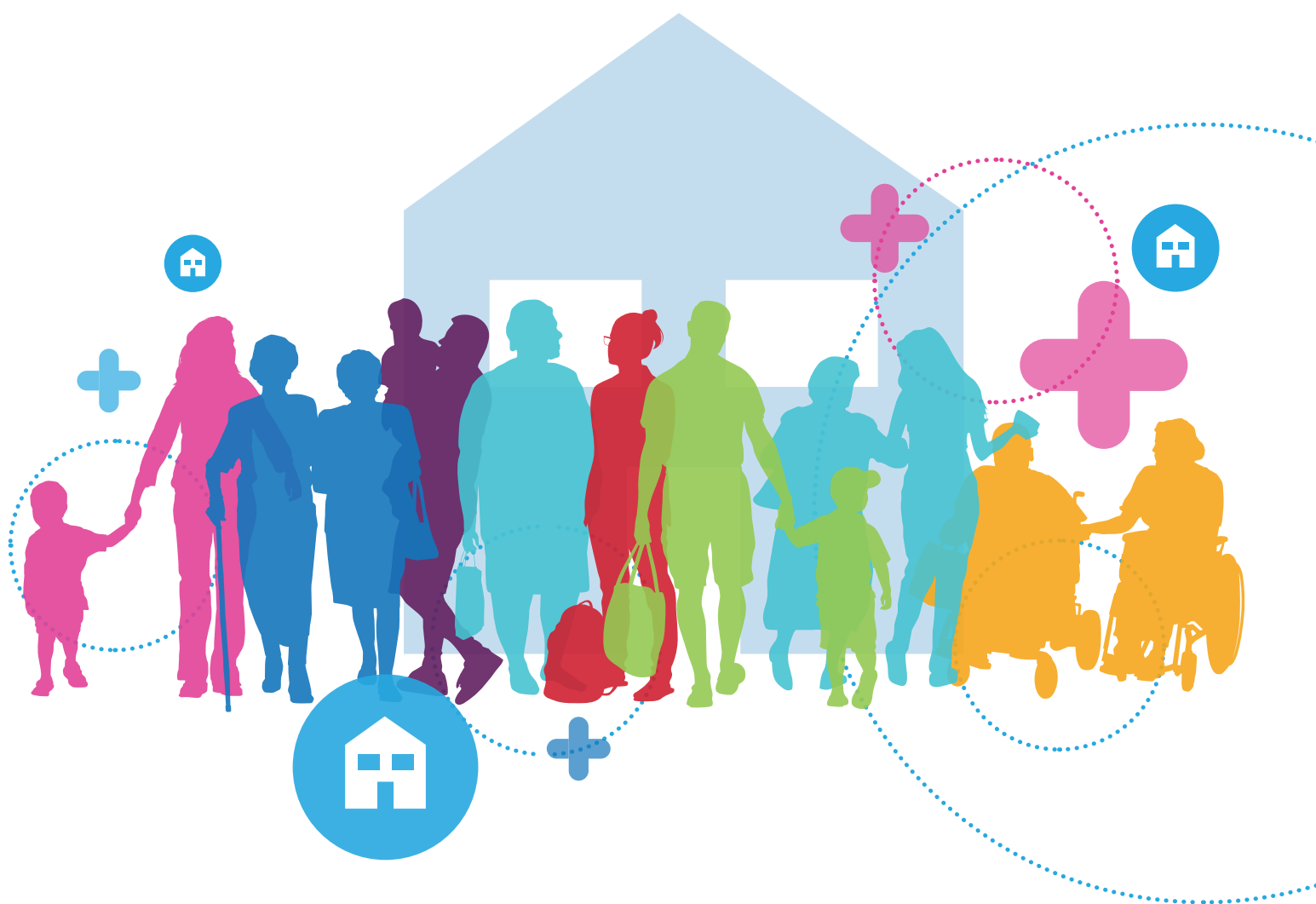


Centre for Excellence in Universal Design

# Universal Design Guidelines For Homes in Ireland





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Ms Helen Guinan, National Disability Authority	01
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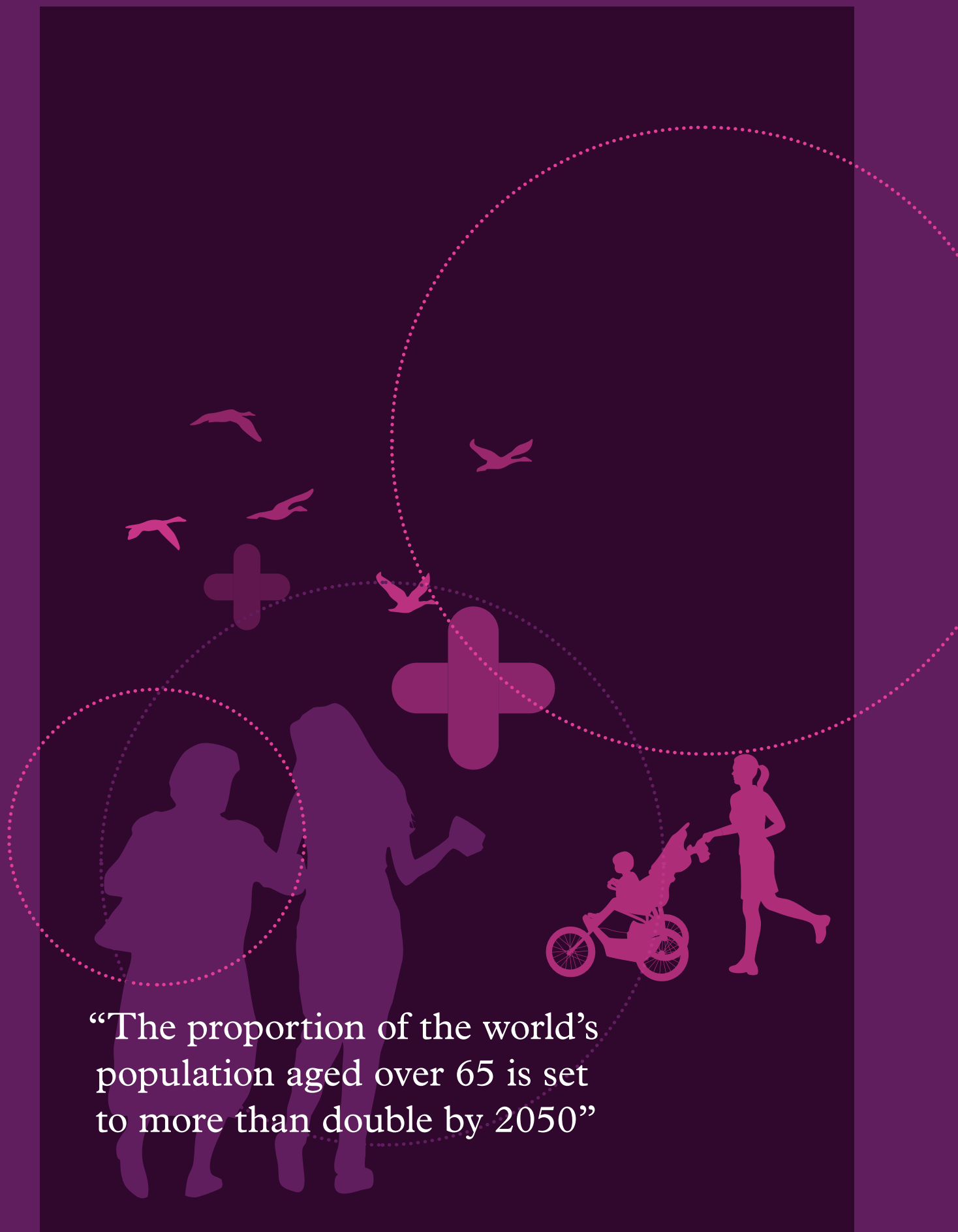
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“The proportion of the world’s population aged over 65 is set to more than double by 2050”

## Foreward

I am pleased to present these Design Guidelines for Universal Designed Homes for Ireland, produced by our Centre for Excellence in Universal Design at the National Disability Authority.

Our Centre has statutory responsibility to assist in the adoption of Universal Design of buildings and the built environment by those working in the field including for example; architects, landscape architects, engineers, planners, surveyors, developers, designers and those engaged in the construction of homes. The Guidelines for Universal Design Homes are important for everyone. They demonstrate how to design a home for life and take account of human diversity enabling individuals to interact with their environment to the best of their ability. They recognise the fact that for many of us, our abilities and needs may change over time.

Our aim is that these Guidelines will inform national policy and will be used in practice by all stakeholders - those who commission, design, build, provide and occupy homes. If new homes or alterations to existing homes are built to a Universal Design standard, they can meet the needs of the occupants regardless of their age, size, ability or disability. They will also meet their changing needs over time so that people can continue living in their own homes and communities as they get older or become disabled.

Ireland is unique in having a statutory Centre for Excellence in Universal Design. Our Centre has developed a wealth of expertise and resources to guide the design of the built environment, products, services, information and communication technologies. The Guidelines for Universal Designed Homes complements our series of Booklets; Building for Everyone - a Universal Design Approach. The Building for Everyone series provides general guidelines for buildings from a Universal Design approach. They complement current Building Regulations on home design and the wealth of guidance available for designing for special needs.

I would like to thank all of the stakeholders for their engagement in this process and our contractors; MCO Projects, PRP Architects and Detail Design Studio who worked with us to develop this publication, as well as the Housing Agency who provided the Universal Design Home Types Floor Plan Examples in Section 5 of this document.



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Chairman  
National Disability Authority

## The purpose in producing Guidelines for Universal Design (UD) Homes is to:

- Inspire people to think differently about better quality homes for everyone.
- Assist in the design and delivery of UD Homes through practical guidelines.



There's a **60%** chance that a new home will be occupied by a person with some form of disability at some stage

## About The Guidelines

The Guidelines are informed by research, a literature review of national and international best practice and guidance and a consultation process with key stakeholders.

- ➔ The concept of universally designed homes (*UD Homes*) is described in the introduction to the guidance.
- ➔ The design quality guidelines for **UD Homes** are provided in Sections 1–4 to assist better understanding of how to incorporate Universal Design into new housing design.

The guidelines are not intended to be overly prescriptive, but provide a flexible framework for designers to apply the guidelines creatively to all new home types through incremental steps described as **UD Homes** and **UD Homes +**. Although the guidelines enhance quality of life for everyone in their homes, they would not necessarily meet every need to accommodate an individual's personal factors, circumstance or choice. Therefore **UD Home + +** Guidance and design tips are also provided to raise awareness and assist in person-centred design.

This publication is informed by National Policies developed by the Department of the Environment, Community and Local Government (DECLG) such as the National Housing Strategy for People with a Disability 2011-2016 and the Quality Housing for Sustainable Communities 2007, the Department of Health's National Positive Ageing Strategy and the National Dementia Strategy 2014.

This publication has been co-ordinated with the guidance given in the Technical Guidance Documents to the Building Regulations but compliance with this document alone does not confer immunity from compliance with the Building Regulations.

Engagement with key stakeholders was carried out reflecting the diversity of home occupants, home providers and home designers. It is evident from consultation that to inspire the change in mindsets that is needed to mainstream Universally Designed homes in the future, consumer-focused information will be needed to communicate the Design Guidance, and act as a catalyst for cultural change in new home design.

The guidelines refer to Technical Guidance Documents (TGD's) such as Part D Materials and Workmanship, Part K Stairways, Ladders, Ramps and Guard rails, Part L Conservation of Fuel and Energy – Dwellings and Part M Access and Use, however we refer the reader to the DECLG website [www. http://www.environment.ie/en/](http://www.environment.ie/en/) for further detailed information.

Through the application of UD Homes Guidelines, customised features will be needed less frequently and therefore less costly, thereby improving the whole home design and development process for everyone in the future.





## Introduction

These Guidelines are a first step in the process of raising awareness and inspiring people to think differently about the benefits of universally designed homes. This section gives an overview of the wider context for Universal Design and the potential opportunity to address some of the global challenges society faces by future-proofing our homes through embracing Universal Design thinking.

**Universal Design** is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability.

When home environments are people-centred in design, convenient and a pleasure to use, everyone benefits. Simply put, Universal Design is good design.



## The Changing Landscape — The Need for Universally Designed Homes

**UD Home design builds upon social and technological advancements in Ireland and internationally. The consultation process with stakeholders that informs these guidelines highlighted a need for better quality housing design for everyone in Ireland for the future.**

The rapid changes in our society, our lifestyles, and lifetime patterns means the concept of an 'average person' or 'typical family home' is becoming increasingly less relevant. Living longer, with improved health, is one of the great successes of our society. People regardless of age, size, ability or disability are positively contributing to the social, economic and cultural life of our communities. However, finding suitable and appropriate homes that can accommodate our changing needs over time can be difficult – whether for families with young children, a person with a temporary or permanent injury, someone with a disability, or an older person living independently. Universal Design can meet everyone's needs through flexible homes designed to adapt to lifecycle and lifestyle patterns of people over time.

There is also an evident need to meet an increase in the Social Housing demand, and an unmet market need for people with a disability and older people who increasingly want to live independently in homes that work well and look good. This publication has been co-ordinated with the guidance given in the Technical Guidance Documents to the Building Regulations but compliance with this document alone does not confer immunity from compliance with the Building Regulations.

**87% of people would prefer to remain  
in their own homes as they age**

National Council on Ageing and Older  
People (NCAOP)



## The Benefits of UD Homes

We all have changing needs at different stages in our lives – changes in family, lifestyle or health circumstances. A *UD Home* can adapt and change with us by factoring in at the outset key design features that benefit the quality of life of everyone in the home. The application of Universal Design thinking to our homes recognises our differences and accommodates them through the integration at the outset of the design and construction stages of:

- ➔ Flexibility and ease of adaptability to meet people’s changing needs over time in a cost effective way;
- ➔ Sustainable design to improve comfort and energy efficiency; and
- ➔ Smart technologies to enable ease of living independently for longer.

Living in a UD Home helps to avoid the need for re-location or costly building works as you or your family’s needs change over time. Integration of smart infrastructure and energy efficient systems at the outset of home design avoids costly re-fits and also benefits everyone in terms of comfort, efficiency and quality of services.

It is not about a ‘one-size-fits-all’ model – the UD Home environment enables the widest possible number of people to participate at home, in society, and to live independently. For a housing provider, builder or developer, a UD Home thereby provides a competitive advantage as the home offers a more attractive market proposition for the widest range of potential residents.

UD Homes are about good design, efficiency and a broader market need.

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**Future-proofed homes are comfortable and cost-effective quality homes.**

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UD Homes work well for everyone and look good. They are mainstream in aesthetics not separate or distinct for special needs – and are designed to 4 key Principles:

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1. Integrated into the neighbourhood.
  2. Easy to approach, enter and move about in.
  3. Easy to understand, use and manage.
  4. Flexible, safe, cost effective and adaptable over time.
- 

*For Example:*

- ➔ **Easy, safe, access from the immediate neighbourhood to the entrance to the home** works for everyone whether you are carrying shopping, with small children, or for an older person living alone.

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- ➔ **Clever use of limited space designed for multi-purposes with wider entrances** works for young families who need ease of movement for strollers, for children’s play areas, or for extra storage or shelving space, and it also works for wheelchairs and double buggies.

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- ➔ **Providing homes with a flexible lay-out with more easily adaptable internal walls** allows the home to expand or contract as the family grows; this works for ‘empty-nesters’ and works for people living alone or independently with particular needs.

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- ➔ **Ease of movement and simple control of the home environment and systems works for everyone,** but also improves quality of life for people with temporary injuries, those with a disability who need to move safely around their home, and works for older people who are vulnerable to accidents in their homes.

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- ➔ **Smart home services and entertainment enjoyed by everyone** in their homes can also work for the integration of assistive technologies for people with a disability, or for older people living alone.

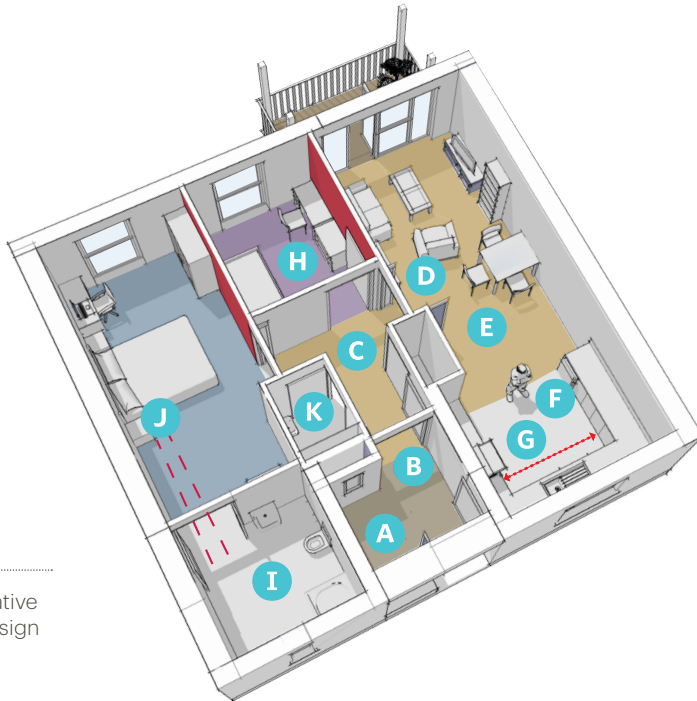
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These illustrations highlight key design features in existing case studies that are in line with a universal design approach. However, please note that the floor plans are not fully compatible with a UD Home.

## Social Housing in Dundalk Town Centre

Existing case study plans with key universal design features highlighted:

2-bedroom apartment, 74 m<sup>2</sup>.



**Note:** Plan is indicative of key Universal Design features.

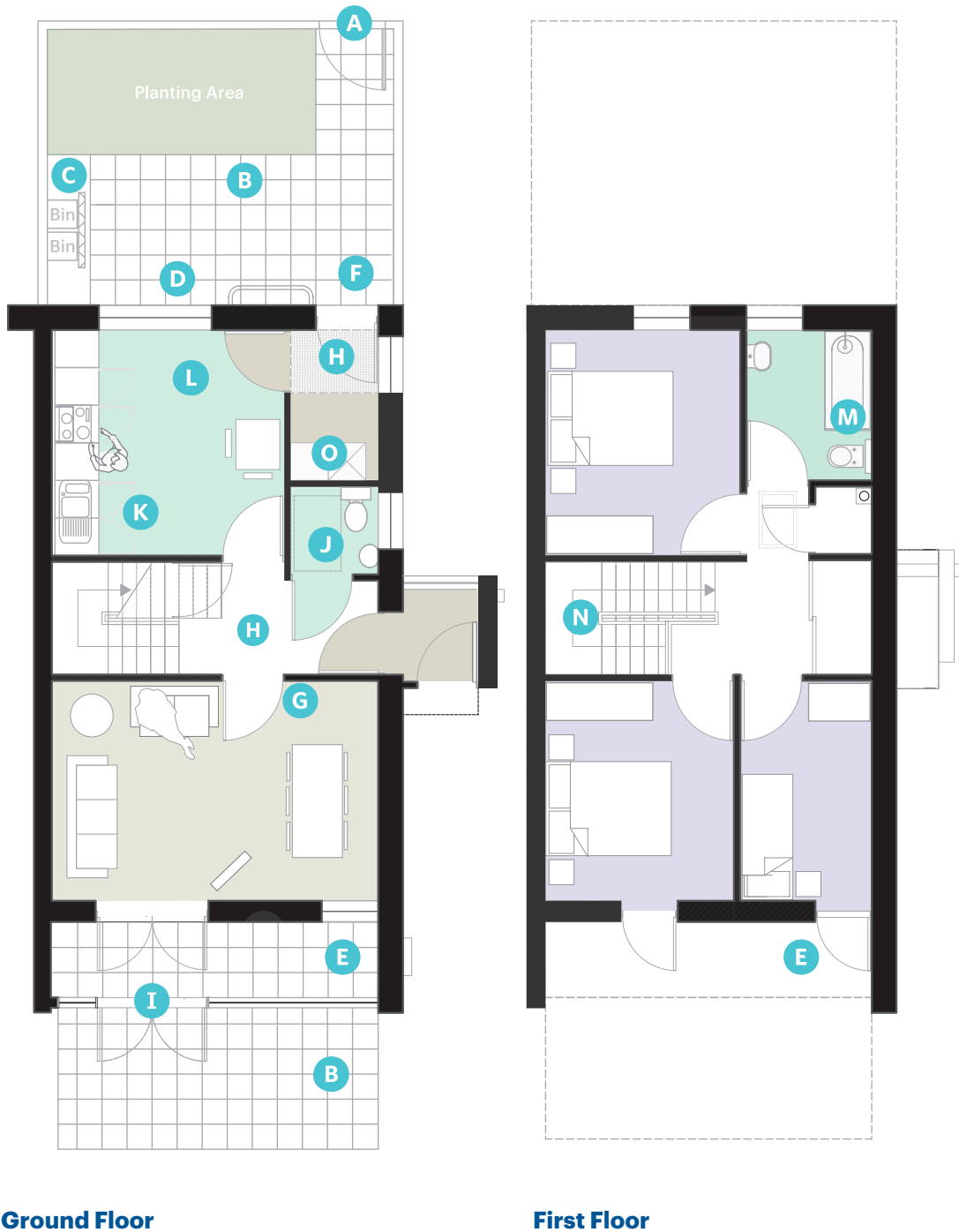
### Design features that are in line with a universal design approach:

- A** Multi-purpose porch with power point (could be also used for an electric wheelchair or buggy).
- B** Entrance door with a clear width of circa 1000mm.
- C** Wide hallway of circa 1200–1500mm with storage.
- D** Flexible width door openings called ‘cat and kitten’ doors.
- E** Circa 1800—2400mm turning circle in all habitable rooms.
- F** Kitchen arranged in a ‘U’—shape, with the door outside the kitchen area.
- G** 1800mm between opposing work surfaces.
- H** Easily adaptable with ‘soft-spots’ eg internal walls to change from two-bedroom lay-out to one larger bedroom (highlighted in red).
- I** Bathroom immediately adjacent to the main bedroom.
- J** Provision of ‘hard-spots’ eg in ceiling construction for hoist track to be installed in bedroom.
- K** Accessible WC.

## Social and Affordable Houses in Rural County Cork

Existing case study plans with key universal design features highlighted:

3-bedroom semi-detached house, 104 m<sup>2</sup>.



**Note:** Plan is indicative of key Universal Design features.

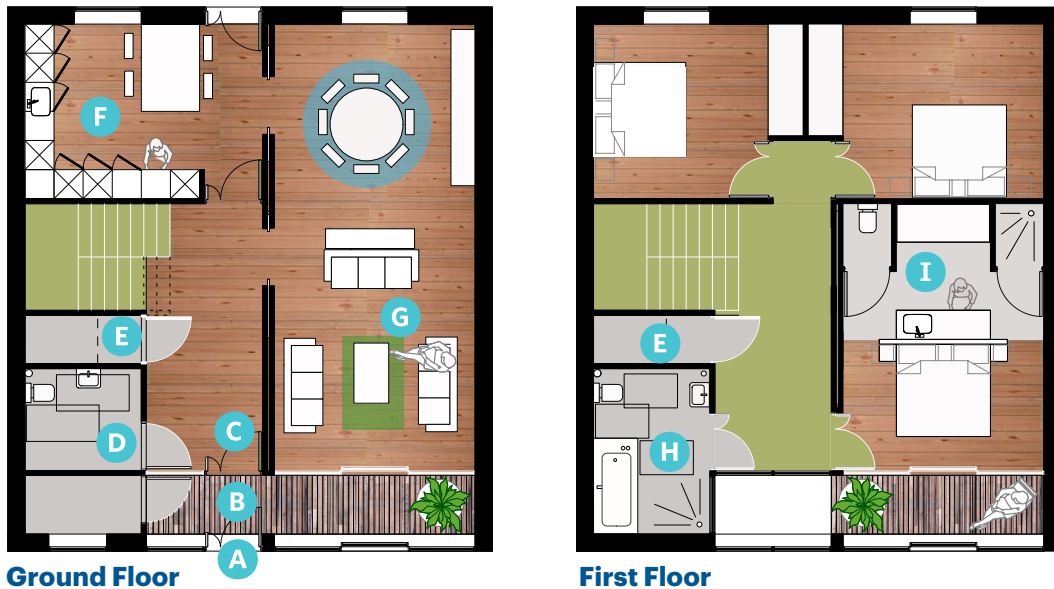
**Design features that are in line with a universal design approach:**

- A** Easy to use pedestrian gate circa 900mm wide.
- B** Permeable paving that is firm, non-slip, non-reflective, and suitable for all weathers.
- C** Easily accessible bin storage area near entrance to utility and kitchen.
- D** Paved area of circa 1800mm across full width of house.
- E** Enclosed terrace as a wintergarden.
- F** Level or gently sloping external landing outside each entry point of circa 1500 × 1500mm.
- G** Circa 300mm clear space on the leading edge of doors.
- H** Circa 1800mm wide entrance hall with storage and natural light, rear door entry also provides cloak store.
- I** Level transition at all doors.
- J** Entry level WC of circa 1500 × 1800mm with side transfer space and outward opening door.
- K** Easily adaptable kitchen with space for occasional eating.
- L** Ease of movement through kitchen.
- M** Bathroom of circa 2100 × 2500mm that can be easily converted at a later date into a shower room.
- N** Straight and simple flights of stairs with no winders.
- O** Utility room with space for washer and dryer adjacent to kitchen.

## House in Dublin Suburbs

### Existing case study plans with key universal design features highlighted:

3-bedroom semi-detached house, 104 m<sup>2</sup>.



**Note:** Plan is indicative of key Universal Design features.

### Design features that are in line with a universal design approach:

- A** Flexible width 'cat and kitten' doors with level threshold.
- B** Large porch and wintergarden with access to store.
- C** Wide entrance hall for many functions with natural light and access to storage.
- D** Entrance level WC large enough to be adapted to a shower room should that be required in the future.
- E** Store room with 1500×1000mm potential aperture for future installation of through-floor lift.
- F** Large kitchen in an 'L' shape that is not a thoroughfare in the house and doors are outside the kitchen area.
- G** Large and flexible living room and dining room with ample space to access all areas for everyone.
- H** Large and accessible family bathroom.
- I** Ensuite and dressing room adjacent to main bedroom that could be easily adapted in the future.
- J** Bedrooms with ample space to access all areas for everyone.



## Apartment in Dublin Inner City Centre

### Existing case study plans with key universal design features highlighted:

2-bedroom apartment, 89 m<sup>2</sup>.



**Note:** Plan is indicative of key Universal Design features.

### Design features that are in line with a universal design approach:

- A** Living Room with ample clear unobstructed space.
- B** Kitchen is not a thoroughfare and located next to dining space.
- C** Minimum 1200mm between facing work surfaces.
- D** Double bedrooms of circa 12m<sup>2</sup> located close to bathroom.
- E** Bathroom easily adaptable with ample clear space and storage.
- F** Bath with firm side access of circa 1100 × 700mm.
- G** Store and Laundry room.
- H** Balcony of circa 1800mm in depth.
- I** Entrance hall adequate for different uses with storage for coats, buggies etc.

## **UD Homes —**

### Informing future national policy and practice

**The provision of UD Homes guidance is to inform the cultural change needed in the planning and delivery of quality homes and sustainable communities. The Guidelines therefore include the wider neighbourhood context of the home location, recognising the importance of social interaction, community and local services.**

Ireland's home design has to adapt and change to meet a new paradigm shift in our future society. Given the overwhelming preference for people as they get older to live in a familiar environment close to family and friends, more and more homes need to be designed and built with ease of use as a core feature. Home services, and management of resources such as water, waste and energy will in future be transformed by enabling technologies. New models of care and welfare are also being transformed, with innovation in assistive care technologies driving change towards non-institutional, community oriented, home based care services.

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**No other force is likely to shape the future of national economic health, public finances, and policy making, as the irreversible rate at which the world's population is aging.**

Standard and Poor, Global Ageing 2010

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*UD Homes* can create an enabling home environment for the widest possible number of people by providing opportunities for easy adaptations. By smartly designing-in ease of use and the infrastructure for smart technologies at the outset, the home can provide a supportive environment to optimise participation and activity throughout our lifetimes.

*There is an opportunity to increase awareness of Universal Design Principles across all care and housing related professions and services. There is also an opportunity to inform other strategic areas such as energy efficient home design, smart cities and sustainable communities.*



*The UD Home* Guidelines can help inform the implementation of a new approach to better quality public and private sector housing in Ireland and can also play an important role in how Ireland plans for its ageing population in our society. There is an opportunity to think differently about the planning and delivery of housing and this is timely in light of recent Government policy such as the National Housing Strategy for People with Disabilities 2011-2016 and National Implementation Framework, the Quality Housing for Sustainable Communities 2007, the National Positive Ageing Strategy 2013 and the National Dementia Strategy 2013 and “commitment to promote and support Universal Design, particularly to ensure accessible housing”.

The guidance is in compliance with National Building Regulations and Technical Guidance Documents (TGD’s) as set down by the Department of Environment, Community and Local Government (DoECLG).

Universal Design is an evidence based approach to design, learning from what works well for people. This provides an opportunity for professional development, and new skills in the design and construction industry. *UD Homes* can also provide an opportunity for innovation and enterprise development such as technologies to support independent living for everyone, universally designed home appliances, furniture and fittings that could be developed for international markets.

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**In Australia, Government policy states that all new homes will be of an agreed Universal Housing Design standard by 2020.**

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## The Guidelines for UD Homes are intended to influence innovative solutions in the longer term for:

- Informing national policy to support a Universal Design approach;
- Informing a balance of regulation, enforcement and creativity in home design;
- Encouraging joined-up thinking between different professions and services;
- Assisting the integration of Universal Design into the design, planning and building process;
- Encouraging a people-centred approach to the creation of enabling home environments;
- Highlighting and demonstrating the social and economic imperative for embracing Universal Design.



## How to Use the Guidelines in Sections 1–5

### The Guidelines document comprises:

- ➔ Four sections of guidelines that flow from the outside of the home, to inside different rooms within a home, to specific elements and systems;
- ➔ Each section describes design considerations with photos of existing homes to communicate universal design features;
- ➔ Design quality guidelines with indicative floor plans and sketches of technical details are provided that can be applied to any home type;
- ➔ Guidance is provided in a two-tiered system described as: **UD Home** optimising flexibility, adaptability and usability for everyone; **UD Home ⊕** providing for greater accommodation of people's changing needs over time;
- ➔ **UD Home ⊕⊕** guidance and design tips are also provided to raise awareness and assist in person-centred design;
- ➔ Section 5 sets out example plans of various typical home types and the impact of the three tiers of Universal Design guidance on these plans;
- ➔ Appendices include the consultation process, a bibliography of references and a glossary of terms.

## At A Glance — UD Home Design Quality Features

### Section 1 – Home Location and Approach

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- ➔ Homes integrated into the neighbourhood, with clear, safe, routes from bike, car or public transport to the entrance of the home.
  - ➔ Space designated near entrances for accessible car-parking and a drop-off space for an adult carrying a child, carrying shopping, someone on crutches, a person in a wheelchair, an older person or a person with visual difficulties.
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### Section 2 – Entering and Moving About the Home

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- ➔ Level thresholds at doorways for simple, easy movement and ease of cleaning and maintenance.
  - ➔ Wide front door and internal doors for ease of movement for all.
  - ➔ More spacious entrances and hallways for multipurpose uses and ease of movement within the home.
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## Section 3 – Spaces for Living

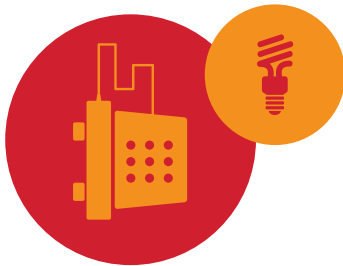
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- Flexible or open-plan layouts with some 'soft-spots' like internal walls that can easily be removed for cost effective adaptation as the family expands or contracts.
  - Reinforced walls and ceilings as 'hard-spots' around the toilet, shower and bath to support the easy installation of handrail and drop down supports as required.
  - Enough space in a bedroom for easy manoeuvring and access to an adjacent bathroom.
  - Flexible space in living rooms for social interaction.
  - Enough space for a kitchen to adapt easily for different layouts.
  - A toilet at entrance floor level that can adapt to a shower room.
  - Enough space for integrating space for laundry, storage and refuse.
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## Section 4 – Elements and Systems

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- Sockets, light switches and window sills at levels that are within easy reach and view for everyone.
  - Details like lever door handles and taps that are easier to use for everyone, especially young children.
  - Easy control and use of systems and the capability to integrate smart entertainment, energy efficiency and security systems or assistive technologies.
  - Choice of materials and colour, with fittings and finishes that are easy to use, maintain and are attractively and smartly designed.
  - Optimised use of natural light, ventilation and energy efficiency.
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## Section 5 - Universal Design Home Types - Floor Plan examples

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➔ The following section shows indicative floor plans for a variety of unit types, that show the implications of the guidelines in a practical and visual way.

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