

# National Disability Conference 2016

## Ordinary Homes, Ordinary Places -

Planning, designing & building supportive communities  
for people with disabilities



Neil Murphy MRIA

Senior Built Environment Advisor, CEUD.

## Home & Place Design in Ireland from a Universal Design Approach

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

# Universal Design Assumes;

**Every person experiences barriers, reduced functioning, some form of disability – temporary or permanent – at some stage in life**



# Homes and communities are designed / provided for who?

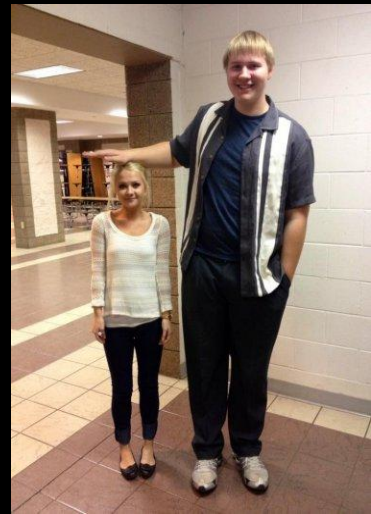
People of different ages, size, abilities or disabilities



# Age



# Size



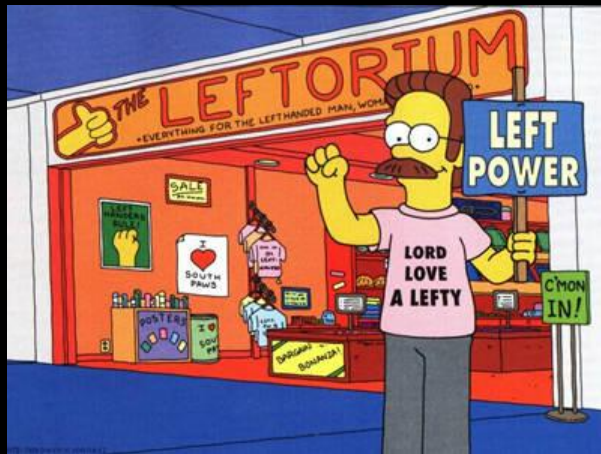
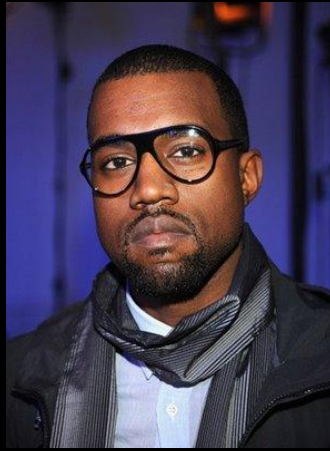


# Ability





# Disability



**Universal Design places human diversity at the heart of the design process so that buildings and environments can be designed to meet the needs of all users.**

## **7 Principles of Universal Design**

**Principle 1: Equitable Use**

**Principle 2: Flexibility in Use**

**Principle 3: Simple and Intuitive Use**

**Principle 4: Perceptible Information**

**Principle 5: Tolerance for Error**

**Principle 6: Low Physical Effort**

**Principle 7: Size and Space for Approach and Use**



Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch



# “The most important thing about design is how it relates to people.”

(Adapted from PAPANEK, 1972 ) Victor Papanek was a designer

and educator who became a strong advocate of the socially and ecologically responsible design of products, tools, and community infrastructures

## Universal Design principles help us to keep **people** as a main priority in design

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

# What are the results of poor design?

Building/Public Realm/Design users unhappy - demand changes

Client unhappy – demands changes

Design Team made unhappy by changes demands

Retro-fitting costs – client or government then tax payer

Designers in Ireland not equipped to stand-out abroad



Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch





Katie, born prematurely.  
Confined to a wheelchair.

Needed to access her  
home and get out &  
about...

Her mother lobbied the  
local Council (West  
Dunbartonshire, Scotland)



Council response –  
adhered strictly to the  
Building Regulations =  
£40k eyesore.

Local kids now use it as a  
skateboard ramp







**nda**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

**Universal Design is not a  
euphemism for accessibility  
as access features such as  
ramps & lifts are ‘potent  
symbols of separateness’**

(Polly Welch 1995 Associate Professor, University of Oregon,  
Eugene)



Údarás Náisiúnta Míchumais  
National Disability Authority



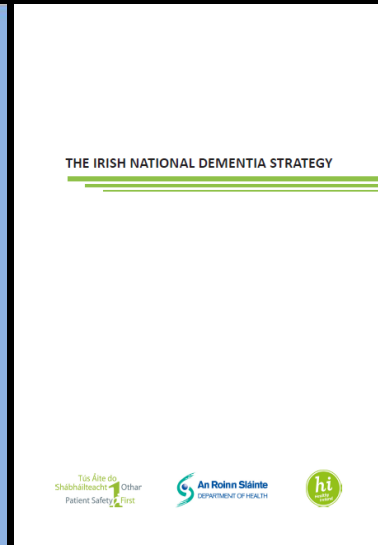
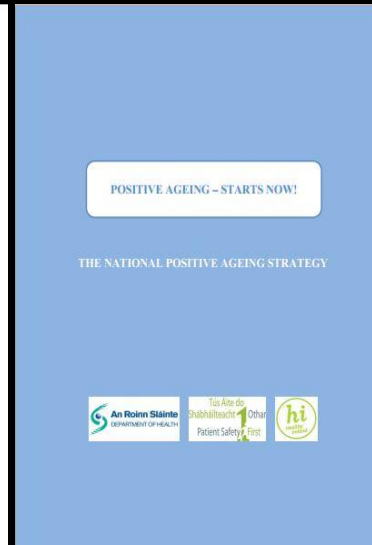
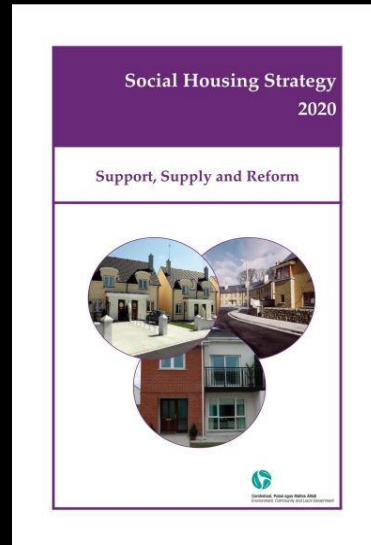
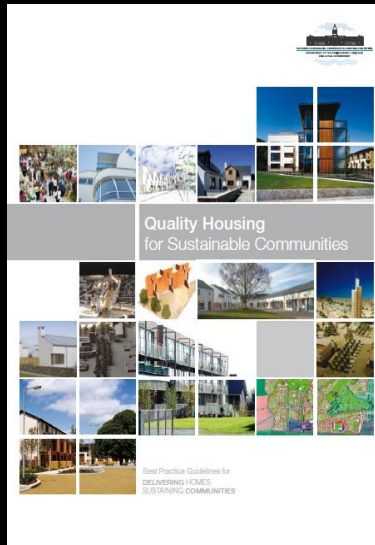
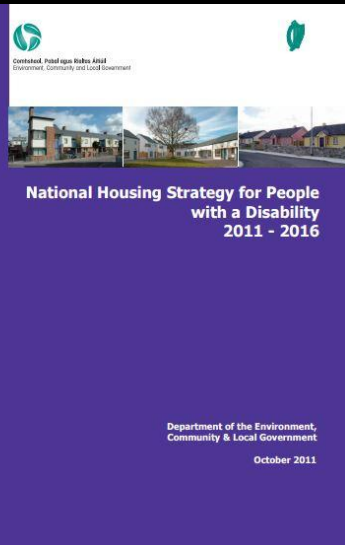
Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch



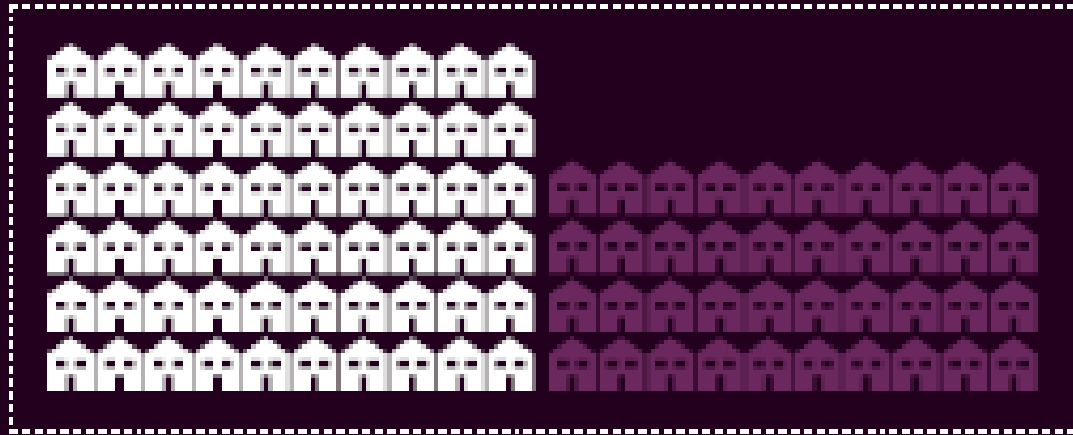
# Context: National Policies & Regulation

- 1.National Housing Strategy for People with a Disability 2011-16, DECLG
- 2.Quality Housing for Sustainable Communities 2007, DECLG
- 3.National Social Housing Strategy, DECLG
- 4.National Positive Ageing Strategy, DoH
- 5.National Dementia Strategy 2014, DoH



The U.D Guidance has been co-ordinated with the guidance given in the Technical Guidance Documents (TGD's) to the Building Regulations 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 2010 - Access and Use.

# In Ireland...



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

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

National Council on Ageing and Older  
People (NCAOP)



**87% of people  
in Ireland  
would prefer to  
live in their  
own homes**

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch



# The Need to Respond;

People are living longer and...

- 80% of people acquire a disability from the ages of 18-64
- People aged over 65 will increase by 250% (2036)
- 1 in 3 new born will live to 100
- People over 80 will increase by 400% by 2041
- 95% of this population are active
- Implications for: Pensions, Health and **Housing**



“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**

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority

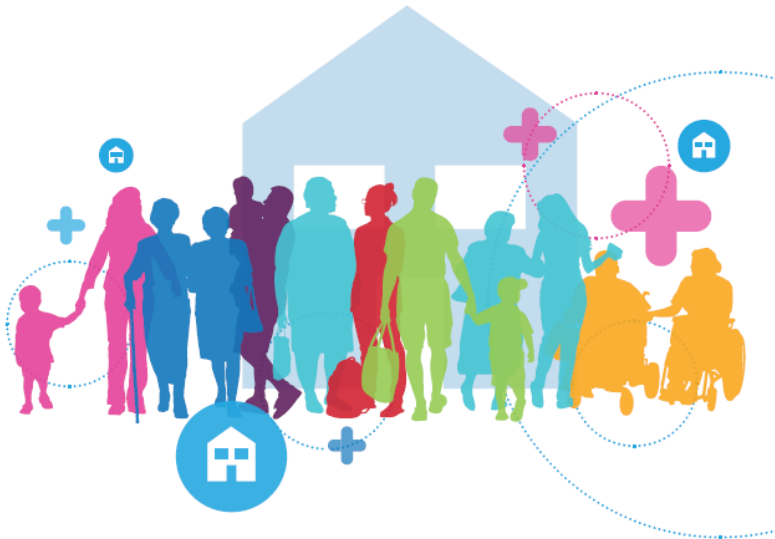


Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

Centre for Excellence in Universal Design

# Universal Design Guidelines For Homes in Ireland



2015

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

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

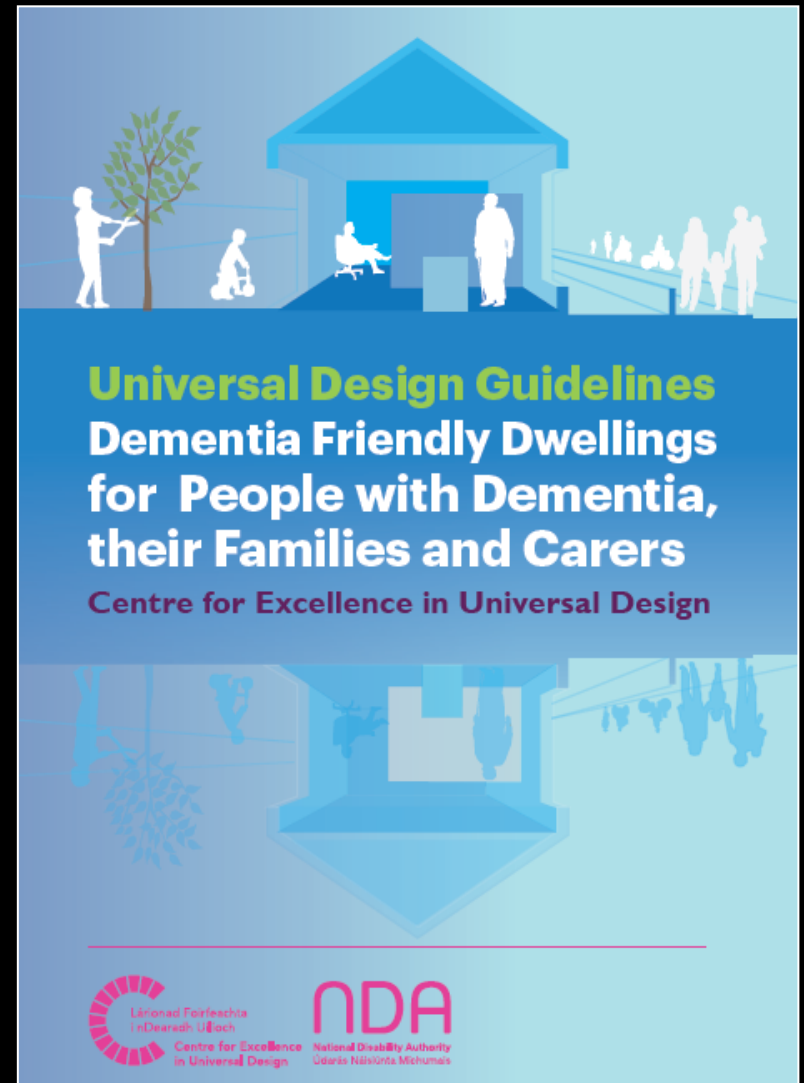
Lárionad Foirfeachta  
i nDearadh Uilíoch



## 'Parent' document



## 'Child' Document



**Launch in May 2015 as part of Year of Irish Design**

# The Universal Design Guidance is provided in a three tiered system described as;

- **UD Home**; optimising flexibility, adaptability and usability for everyone;
- **UD Home + (plus)**; providing for greater accommodation of people's changing needs over time;
- **UD Home ++ (plus plus)**; guidance and design tips are also provided to raise awareness and assist in person-centred design (Individual home or apartment build)



# Home Location and Approach

## 01



UD Home Guidance

UD Home Plus Guidance

Houses

Apartments

Universal Design Homes should be appropriate to their context and create a strong sense of place. Attention to detail and high quality materials are essential to ensure longevity of use. Well-designed housing will be appreciated and treated well by the people who live there.

## Section 1 – Home Location and Approach



- 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.



# Entering and Moving Around

## 02



UD Home Guidance

UD Home Plus Guidance

Houses

Apartments

Attention to detail, taking into consideration the different sizes and capabilities of people over their lifecycle, can make Universal Design Homes easy and safe to enter and move around for everyone. Good design decisions can allow the home to adapt to changing requirements over time.

## Section 2 – Entering and Moving About the Home



- 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.

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

# Spaces for Living 03



UD Home Guidance

UD Home Plus Guidance

Houses

Apartments

## Section 3 – Spaces for Living



- ➔ 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.

Living areas should be large enough for furniture to be arranged in different ways, and with enough clear, unobstructed space for movement and activities. Thoughtful design decisions can ensure that spaces are easier for everyone to use, and provide flexibility for future adaptations.

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

# Elements and Systems 04



UD Home Guidance

UD Home Plus Guidance

Houses

Apartments

The building elements and systems should create a comfortable home that is easy to manage and understand, and affordable to run. The UD Home should promote well-being and good health, and anticipate the changing needs of diverse occupants, including children and older people.

## Section 4 – Elements and Systems



- 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.

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch



# Universal Design Home Types Floor Plan Examples 05



UD Home Guidance

UD Home Plus Plus Guidance

UD Home Plus Guidance

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.

## Section 5 - Universal Design Home Types - Floor Plan examples



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.



# 5.1 - 2 Bedroom 3 Person Terrace House Layout to TGD Part M - Indicative Floor Plan Example

Ground Floor Plan



Part M



# 5.1 - 2 Bedroom 3 Person Terrace House Universal Design layout - Indicative Floor Plan Example

Ground Floor Plan



UD Home



# 5.1 - 2 Bedroom 3 Person Terrace House Universal Design layout - Indicative Floor Plan Example

Ground Floor



UD Home +



# 5.1 - 2 Bedroom 3 Person Terrace House Universal Design layout - Indicative Floor Plan Example

Ground Floor



UDHome ++



**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:**



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

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch



# 1. Integrated into the neighbourhood



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.



## 2. Easy to approach, enter and move about in

Part M 2010  
Section 1.1  
Approach to  
buildings other  
than dwellings(f)  
there should be  
no single steps;

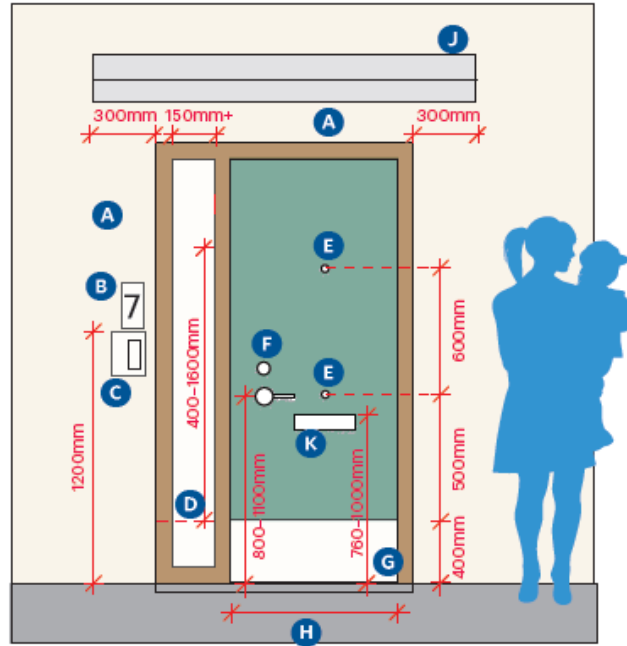


Clever use of limited space designed for multi-purposes with wider entrances works for young families who need ease of movement for strollers, for children's play areas, or for extra storage or shelving space, and it also works for wheelchairs and double buggies.



### Technical Sketch:

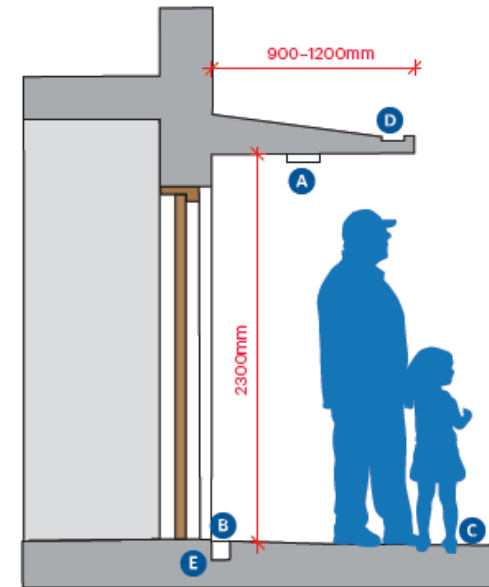
Elevation dimensions for front entrance doors for houses.



- A Lighting position option: internal or sensor activated.
- B Well-lit and clear home number.
- C Well-lit home entry system no higher than 1200mm above floor level.
- D Vision panel from 400–1600mm as a minimum.
- E Door viewers at 900mm and 1500mm above floor level.
- F Door lock positioned above the door handle.
- G Kick plate 400mm high to protect base of door.
- H Clear opening width of between 800 and 900mm.
- J Canopy overhangs door and vision panels by 300mm on each side.
- K Letterboxes at a height between 760 and 1100mm above floor level.

### Technical Sketch:

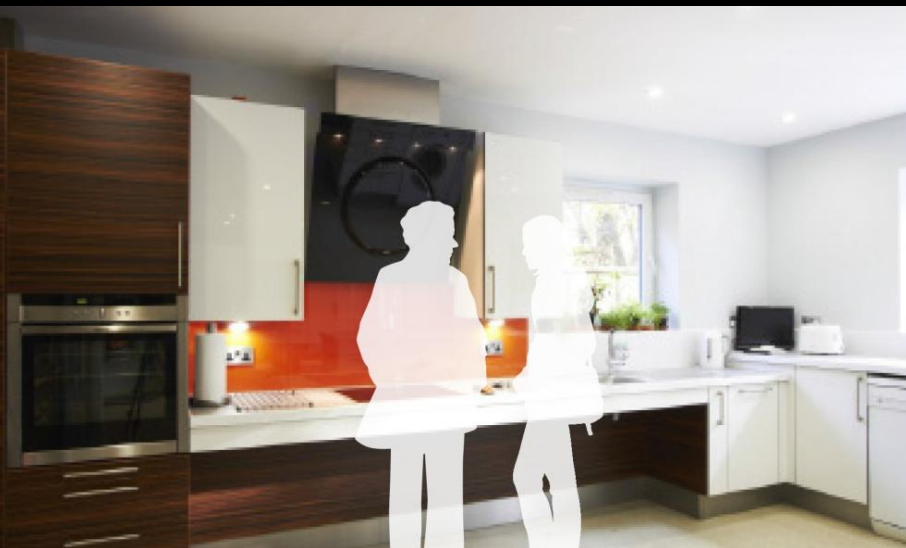
Section dimensions for front entrance doors.



- A Lighting position option: internal or sensor activated by sensor or internal switch.
- B Proprietary threshold with maximum height of 10mm.
- C Paving at maximum 1:60 gradient.
- D Canopy to provide weather protection.
- E Flush drainage strip.

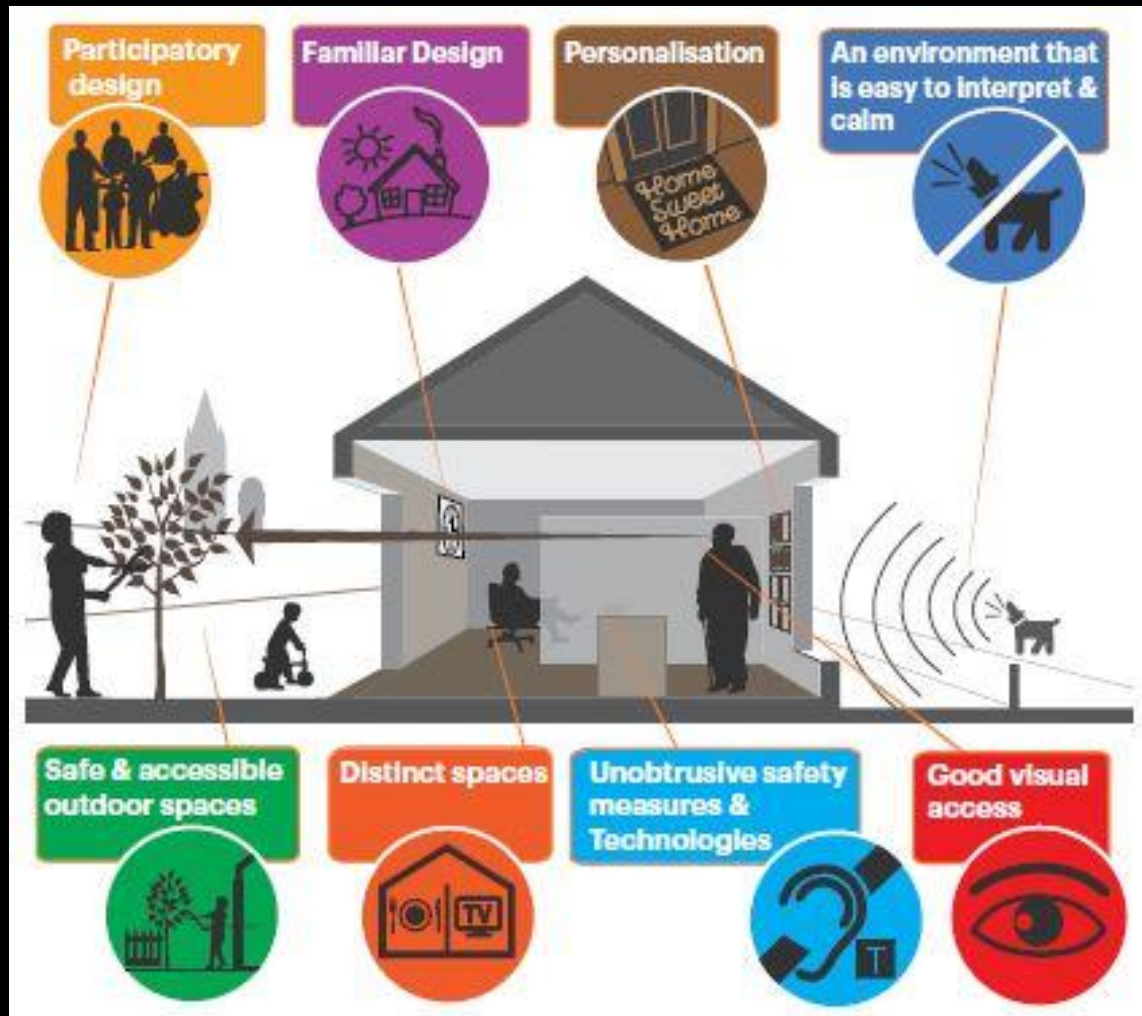


### 3. Easy to understand, use and manage



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.

## 4. Flexible, cost effective and adaptable over time



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.

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.



Design for new build and existing dwellings;

# 5 scales of interventions, Adaptations or design



Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

Labelling  
& Signage



€

min. / no cost

1

AT& AAL,  
Telecare

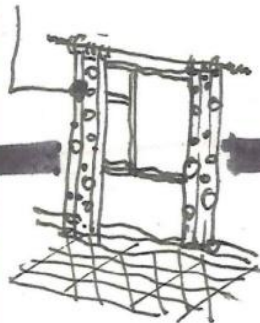


€€

low cost

2

Interior &  
exterior  
F, F&F

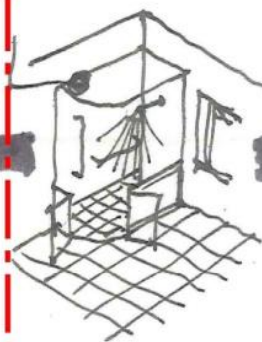


€€€

medium cost

3

Building  
Fit-out

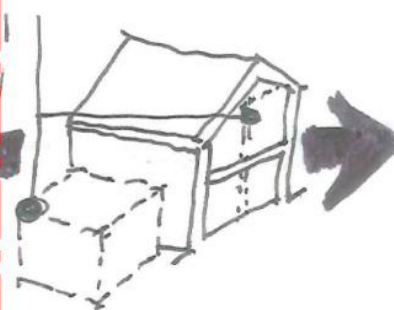


€€€€

high cost

4

Spatial  
Layout &  
Structure



€€€€€

highest cost

5

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

# Traditional 'Medicalized' Model of Home Adaptations

**“Obliging people to have things they do not like, or about which they have reservations, may result in wholly wasted expenditure”**

(Heywood F. 'Money Well Spent' 2001)



Courtesy Alison Wright

# Universal Design Homes





# Universal Design Homes



**Alison Wright Design for Armitage Shanks 2005 with Occupational Therapist Kate Sheehan**

# Both Part 'M' Compliant



Standard Doc 'M' Pack



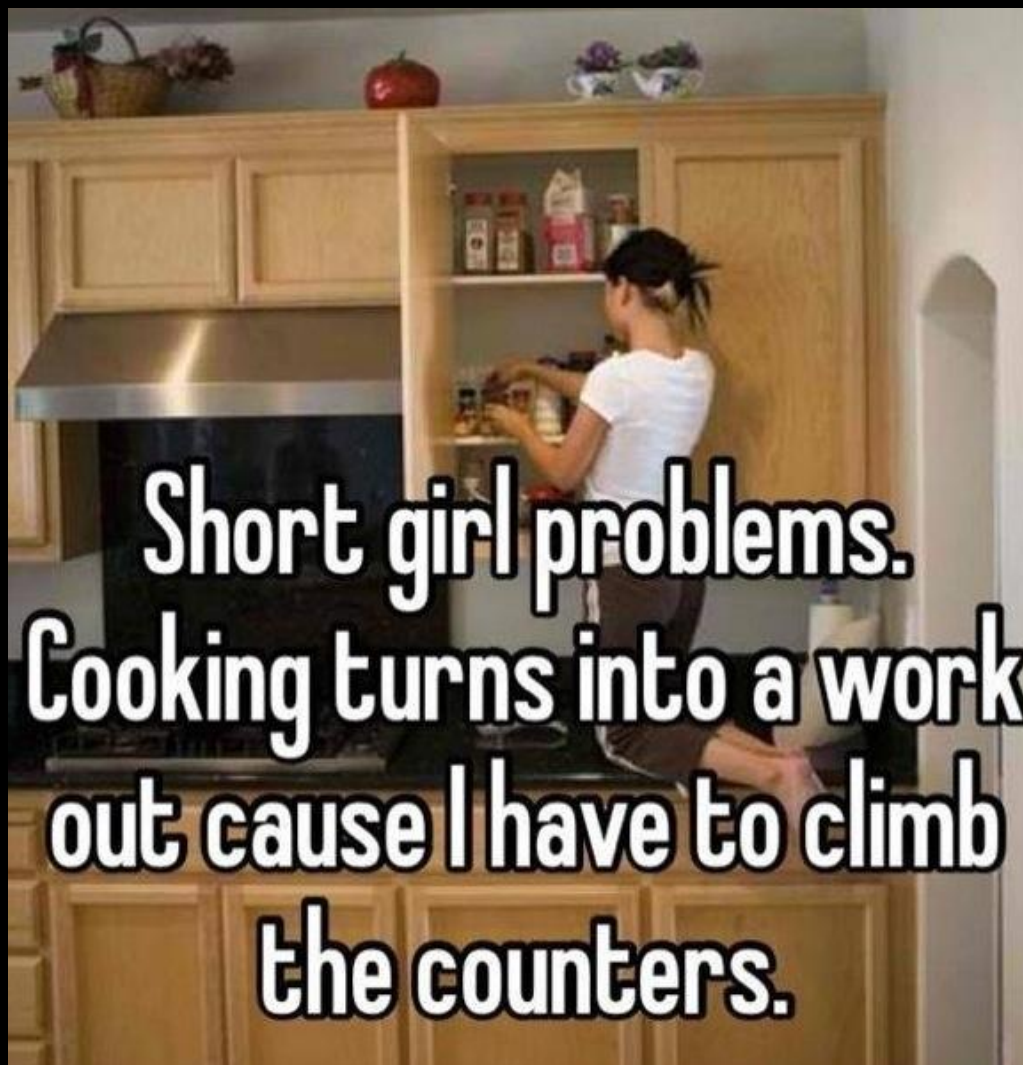
# Universal Design Home Wet Room



**Green tile pattern denotes U.D Home soft spot to allow future opening to create en-suite bathroom.**

**The ceiling has been reinforced at construction stage based on construction drawings to allow for future ceiling hoist.**







# Solutions...



06

Good design uses space efficiently and makes it easy for everyone to access stored items.



07

Pull down racks from wall cupboards bring the shelves close enough to the seated person to make access easy.



# Problems...







## Solutions - Cat & Kitten Doors

**NDA**

Údarás Náisiúnta Míchumais  
National Disability Authority



Centre for Excellence  
in Universal Design

Lárionad Foirfeachta  
i nDearadh Uilíoch

# Broome Lodge, Cabra

## Sheltered Housing Scheme



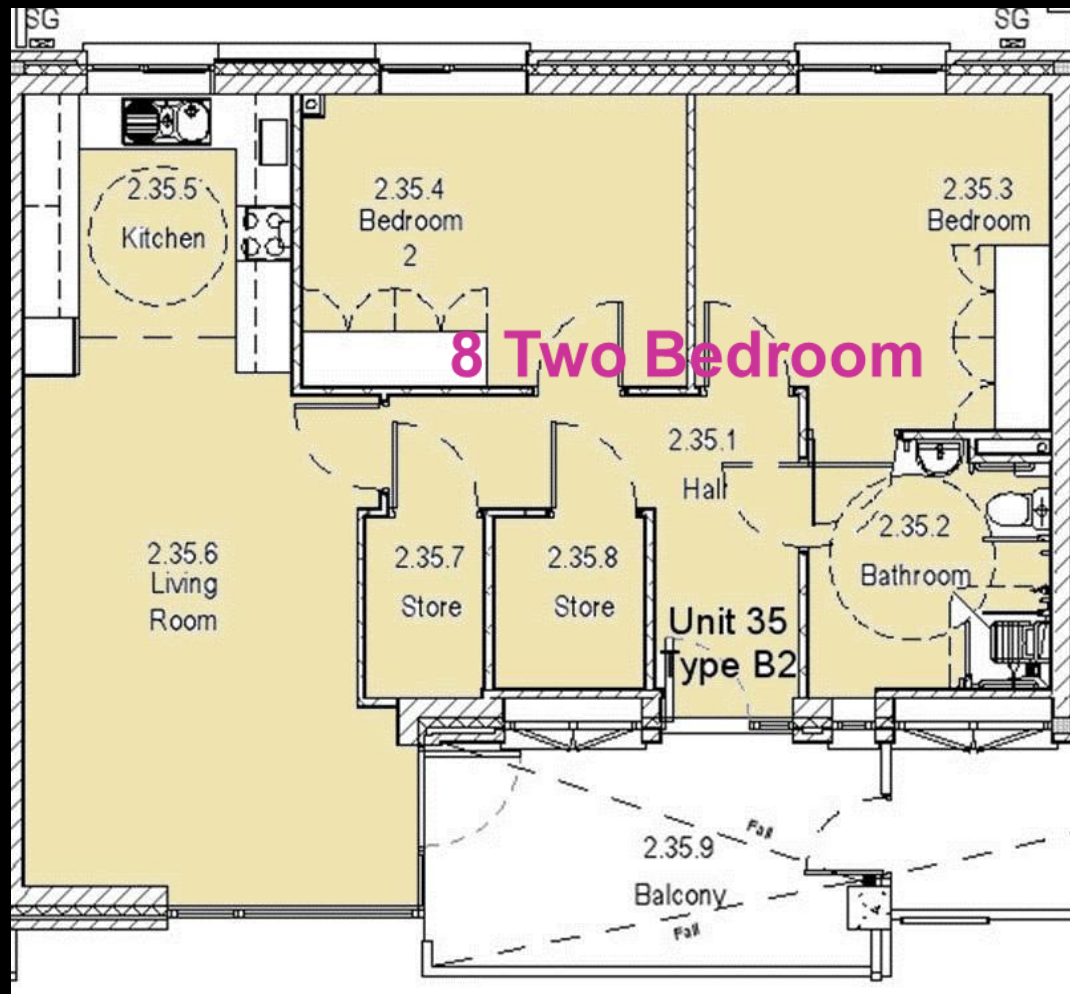


# Broome Lodge, Cabra

- 43 apartment development
- Mix of 1 & 2 bedroom
- UD principles adapted overall, 10 apartments fully UD designed
- Size of UD units comparable with Dublin City Council Development Plan standards,  
55 m<sup>2</sup> -1 bed, 80m<sup>2</sup> - 2 bed
- Review of costs for first time UD homes versus costly adaptations to Clúid's existing housing stock.



# Typical Layouts



# Costs

- Average Apartment Construction Cost = **€163,500** (inclusive of VAT)
- Extra over for UD design is approximately **€ 4,150** construction cost (incl. of VAT) per apartment which equates to **2.5% uplift**
- It equates to **2.1% increase** in the overall project development cost. Inclusive of VAT, On-Costs, finance costs and legal costs
- **Benefits of UD – No retrofitting or adaptation cost for Clúid.**
- **Reduced capital cost for Local Authorities( Grants)**



**Food for thought...it took 30,000 years to put wheels on suitcases -**



**2012 was the 40<sup>th</sup> anniversary of the wheeled luggage**





# Thank you

[www.universaldesign.ie](http://www.universaldesign.ie)

<http://universaldesign.ie/Built-Environment/Housing/>

[nmurphy@ceud.ie](mailto:nmurphy@ceud.ie)

# Copyright materials

This presentation is protected by US and International Copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.

© Centre for Excellence in Universal Design  
at the National Disability Authority, Ireland 2016