

Universal Design and Lifetime Homes

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South Dublin County Council

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Centre for Excellence in Universal Design

National Disability Strategy

National Disability Strategy launched in September 2004

- Disability Act 2005
- Formation of Centre for Excellence in Universal Design January 2007

Aims of the Centre for Excellence in Universal Design (CEUD)

Standards

- Stimulate research
- Participate in Standardisation work nationally and internationally
- Provide advice to stakeholders
- Encourage compliance

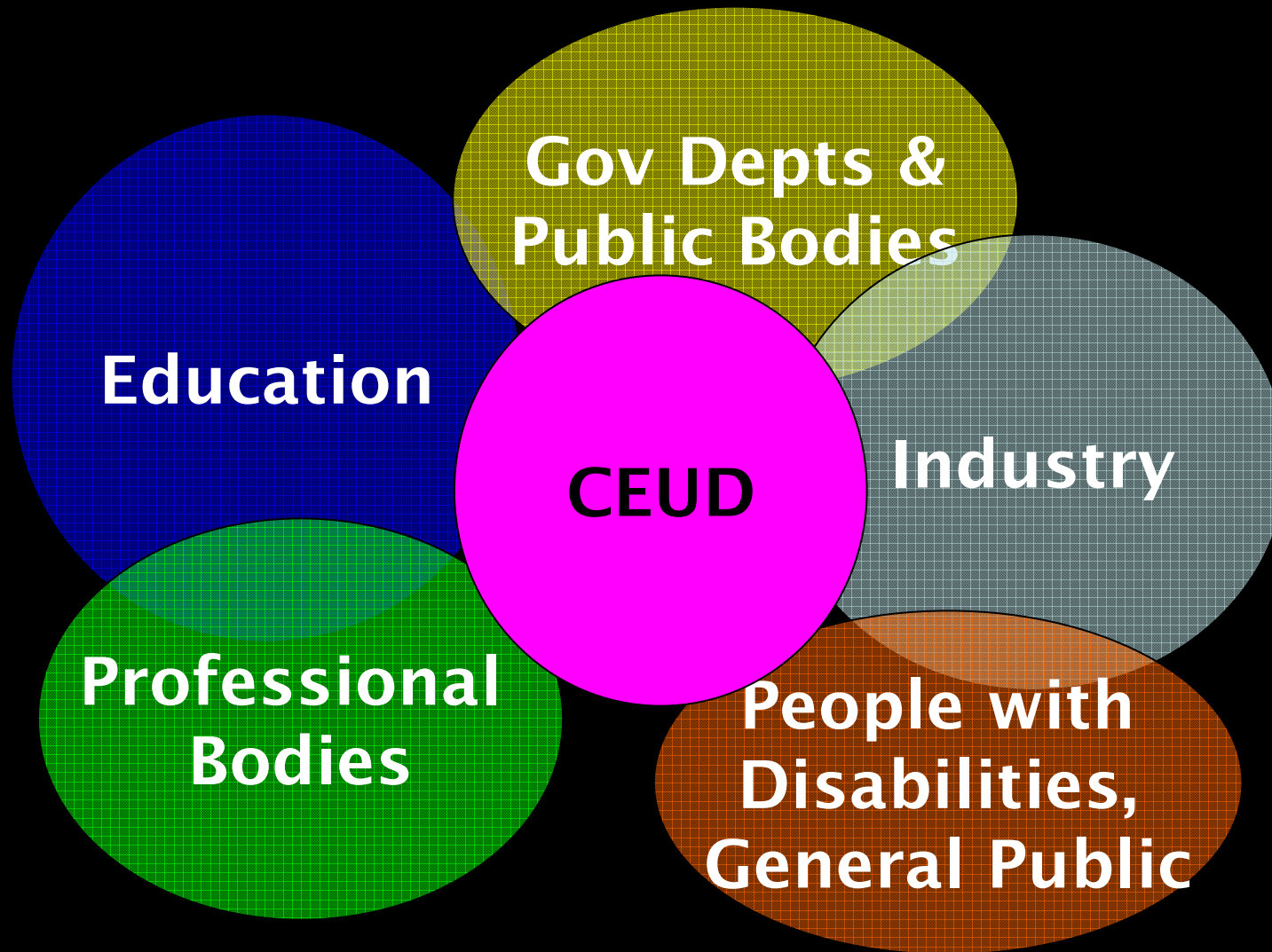
Education and Professional Development

- Incorporation into design curriculum
- Application of Universal Design for Learning approach to teaching and examinations

Awareness

- Best practice database
- Promote awareness and understanding

CEUD Stakeholders



What is Universal Design?

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

Universal Design is not a euphemism for accessibility, as access features such as ramps & lifts are ‘potent symbols of separateness’ (Welch 1995)

Universal Design Assumes

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



The 7 Principles of Universal Design were developed in 1997 by a working group of architects, product designers, engineers and environmental design researchers, led by the late Ronald Mace (Design Pioneer, internationally recognized Architect) in North Carolina State University

7

Principle 1: Equitable Use

The design is useful and marketable to people with diverse abilities.



Principle 2: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.



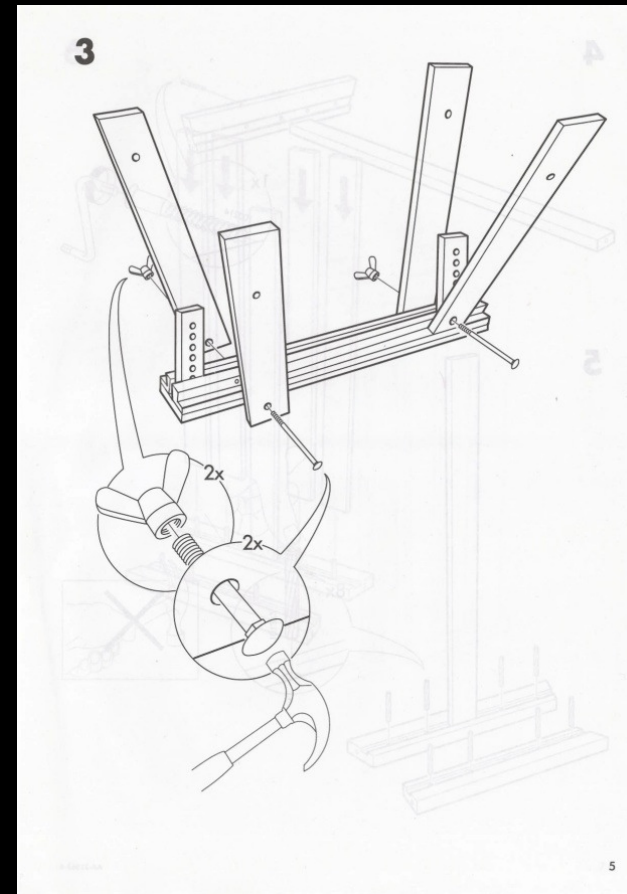
A user at a computer table. The table height can be easily adjusted to suit different user needs.



Right & left-handed scissors

Principle 3: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.



Principle 4: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

橋本 Hashimoto		茶山 Chayama	
次郎丸 Jiromaru		別府 Befu	
賀茂 Kamo		六本松 Ropponmatsu	
野芥 Noke		桜坂 Sakurazaka	
梅林 Umebayashi		薬院大通 Yakuin-odori	
福大前 Fukudai-mae		薬院 Yakuin	
七隈 Nanakuma		渡辺通 Watanabe-dori	
金山 Kanayama		天神南 Tenjin-minami	

Each station is color coded and is identified in English, Japanese, and by its accompanying unique symbol. Symbols generally relate to the station's surroundings.



Looking down the length of the symmetrical platform, lighting accentuates train doorways and the adjoining gates that prevent riders from falling onto the tracks.
Nanakuma Line, Japan

Principle 5: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.



Principle 6: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.



A person with a transmitter or a cell phone that is RFID compatible can hear wayfinding cues to help guide themselves into or out of a station. Making a fare vending machine accessible for all users

Principle 7: Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.



Fare gates accommodate a wide variety of users. Note that the gate assembly is long enough so that exiting passengers do not have to slow or stop walking in order for the gate to open. The gate has multiple smart card targets to speed fare collection. Nanakuma line, Japan



The interior of the 100% ultra low floor Alstom Citadis tram has both wide open areas as well as 2X2 seating. Bordeaux light rail, France



Centre for Excellence
in Universal Design

Lárionad Foirfeachta
i nDearadh Uilíoch

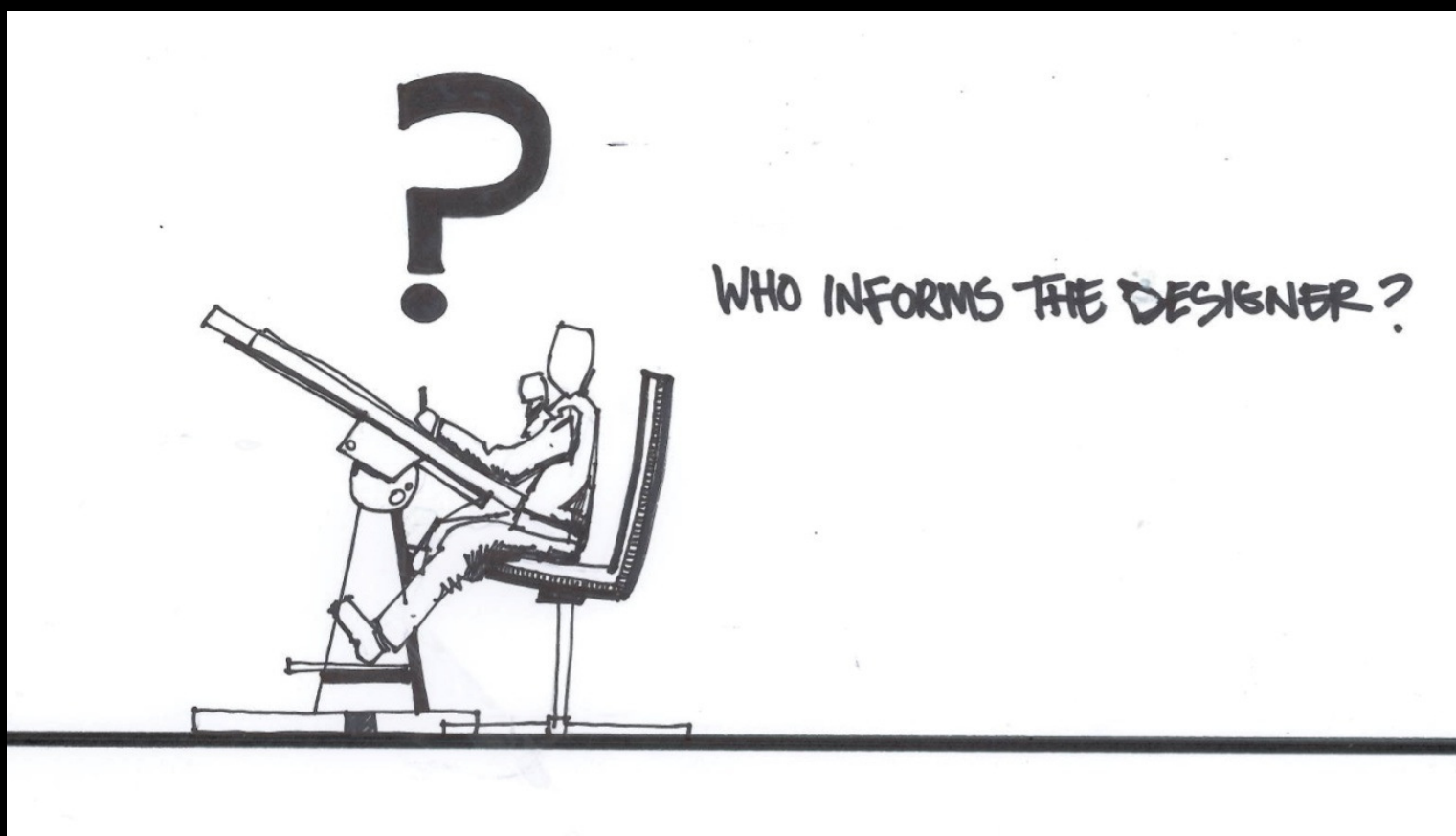
NDA

National Disability Authority
Údarás Náisiúnta Michumáís

Lifetime Homes Standards & Guidance document for Ireland

CEUD aims to develop guidance for the design of Lifetime Homes (LTH) in a way that enables access for all users, regardless of age, size ability or disability. One major obstacle in the take-up of Universal Design by the building industry is a lack of relevant knowledge and skills. The various professional actors in the production – consumption – maintenance lifecycle of home design need appropriate training in order to successfully implement a Universal Design approach.

- Do Designers / users understand the concept of Universal design & Lifetime Homes?



How Lifetime Homes Came About / History

- **In late the 1980's** Habinteg UK developed the concept of Lifetime Homes with the Helen Hamlyn Foundation whilst working on the design of housing for older people.
- **In the early 1990's** Habinteg UK took idea of Lifetime Homes to the Joseph Rowntree Foundation (JRF) to promote and develop the concept.
- **In 2008** JRF formally handed back promotion role to Habinteg UK as well as the technical role.

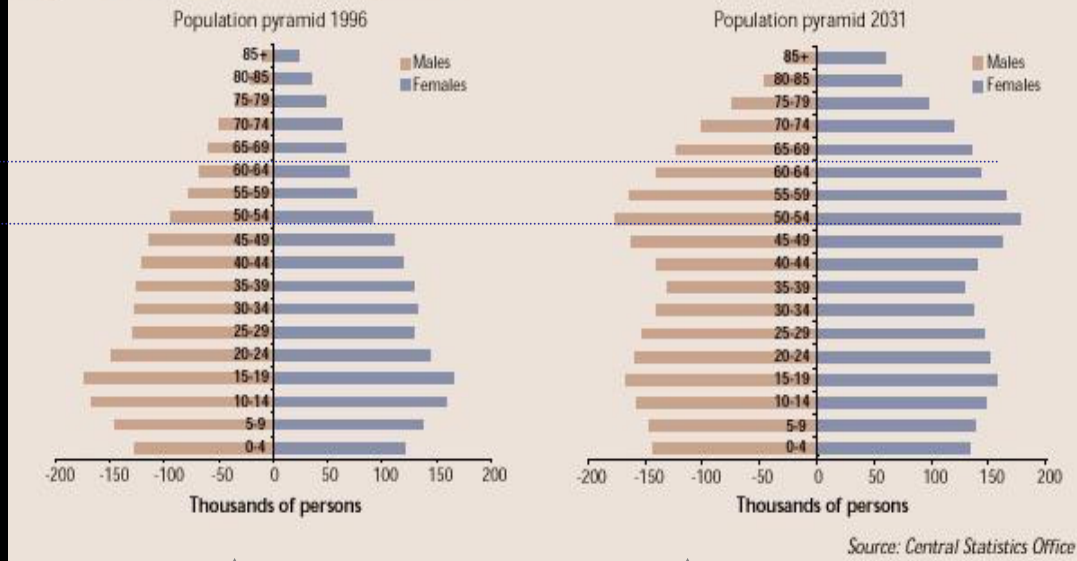
The Need for Lifetime Homes

People are living longer

- Implications
 - Longer living
 - Dependency
 - Workforce
- Getting it right
 - From burden to bounty
 - Participation & inclusion
 - Dignity and respect
- Getting it wrong
 - Depression
 - Suicide
 - Homeless deaths

80 & over
65 & over

Figure 3.5 CSO Irish population projections



Total population :
4,253,800

Population 65 & over :
467,920 (11%)

Total population :
5,568,220

Population 65 & over:
1,002,280 (18%)

Lifetime Homes is a Part of the Universal Design Movement

There are simple principles to Universal Design which relate to the whole built environment

- Ease of use.
- For everyone – whatever age, sex, state of health, abilities or disabilities.
- Flexible and adaptable design built in.
- Universal thinking right from the start and right in the heart of the design process; and
- An overall design concept as well as a set of technical standards.

Lifetime Homes: the 16 criteria

1. Car parking
2. Access from car parking to dwelling
3. Approach to entrances
4. Entrances
5. Communal stairs and lifts
6. Widths of doorways and hallways
7. Wheelchair circulation and turning space in living and dining rooms
8. Living room at entrance level
9. Bed-space on entrance level
10. Wheelchair accessible entrance level WC and drainage for shower
11. Bathroom walls capable of having grabrails fitted
12. Stair-lifts/through-floor lifts
13. Route for hoist
14. Ease of access in bathroom
15. Glazing in living rooms
16. Switches, sockets and controls



Great Northern Haven, Dundalk, Ireland Intelligent Lifetime Housing

GREAT NORTHERN HAVEN

Designed by MCO Projects, the Great Northern Haven is a demonstration housing project of 16 homes which represents a unique collaboration between Dundalk Town Council, the HSE Northeast and Dundalk Institute of Technology.

THE ENERGY EFFICIENT HOME

Sustainable design features include use of a derelict town centre site, high levels of insulation, a central wood pellet boiler, mechanical ventilation heat recovery and a green roof for water attenuation.

LIFETIME ADAPTABLE HOME MODEL

The building is designed to meet the changing needs of residents over time. An extensive wiring system in the homes enables new telehealth and monitoring equipment to be added almost anywhere. This can enable the remote monitoring of an illness so that a resident can live independently with peace of mind



1. **Car parking** - Where car parking is adjacent to the home, it should be capable of enlargement to attain 3.3m width.



2. Access from car parking to dwelling - The distance from the car parking space to the home should be kept to a minimum and should be level or gently sloping.



3. Approach - The approach to all entrances should be level or gently sloping.

4. Entrances - All entrances should be illuminated, have level access over the threshold and have a covered main entrance.



5. Communal stairs - should provide easy access and, where homes are reached by a lift, it should be fully accessible.



6. Doorways & Hallways - The width of internal doorways and hallways should conform to Part M (Building Regulations, Technical Guidance Document) except that when the approach is not head on and the hallway width is 900mm, the clear opening width should be 900mm rather than 800mm. There should be 300mm nib or wall space to the side of the leading edge of the doors on entrance level.



- 7. Wheelchair Accessibility** - There should be space for turning a wheelchair in dining areas and living rooms and adequate circulation space for wheelchairs elsewhere.
- 8. Living Room** - The living room should be at entrance level.



9. Two or more storey requirements - 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 W.C - In houses with three bedrooms or more there should be a wheelchair accessible toilet at entrance level with drainage provision enabling a shower to be fitted in the future. In houses with two bedrooms the downstairs toilet should conform at least to Part M.

11. Walls in the bathroom and WC - should be capable of taking adaptations such as handrails.





12. Lift Capability - The design should incorporate provision for a future stair lift and a suitably identified space for a through the floor lift from the ground floor to the first floor, for example to a bedroom next to the bathroom.



13. Main Bedroom - The design and specification should provide a reasonable route for a potential hoist from a main bedroom to the bathroom.



14. Bathroom Layout - The bathroom should be designed for ease of access to the bath, WC & wash basin.



15. Window Specification - Living room window glazing should begin no higher than 800mm from the floor level and windows should be easy to open/operate.



16. Fixtures & Fittings - Switches, sockets, ventilation and service controls should be at a height usable by all (i.e. between 450 and 1200mm from the floor).

Traditional approach is design for special needs



Led by Building Regulations:

- Purely functional
- Format room layouts - Doc M packs
- Convenient for professionals
- High prices
- Stigmatising

Traditional ‘Medicalised’ 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)



Research Findings

Age-related Limitations

- Bending & Stretching
- Hand & Wrist Dexterity
- Visual Acuity
- Safety



Universal Design Responses

- Adjustable-height wall-mounted products
- Lever operated taps & controls
- Colour contrast & controls at correct height
- Thermostatic Controls
- Slip Resistant

Universal Design



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Lárionad Foirfeachta
i nDearadh Uilíoch

Courtesy Alison Wright

NDA

National Disability Authority
Údarás Náisiúnta Míchumais

Universal Design



Both Part 'M' Compliant



Universal LTH Bathroom



Image courtesy Alison Wright

- Integral drain creates wet room facility
- Bath panel with toe recess for carer
- Wheelchair accessible WC & basin
- Slip-resistant flooring

Universal LTH Bathroom



Wheelchair accessible WC

- Adjustable in height
- Easy push flush panel
- Moves away from language of 'design for disability'

Universal LTH Wet Room



Green tile pattern denotes LTH wall knock-out panel to create en-suite bathroom for hoisting

Universal LTH Kitchen



Westwood Park, Bradford for Habinteg UK 2006

KBB Review
Award Winner
2007

'Home' not 'Hospital'



CEUD Work in the Built Environment

- Revision of Building for Everyone (BfE)
- Lifetime Homes National Guidance
- Seminars – Education for CEUD/NDA Staff, professionals involved with the Built Environment plus end users.
- Providing advice & information

Building for Everyone (BfE) Revision 2009-2010

- 1 Book turned into 9 Booklets
- Informing about Universal Design
- Promoting Universal Design in the Built Environment
- Aimed at professionals working in the Built Environment & the general public
- Increase in technical drawings & photographs

Building for Everyone (BfE) Booklet series 1-9



- External environment & approach
- Entrances & horizontal circulation
- Vertical circulation
- Internal environment & services
- Sanitary facilities
- Facilities in buildings
- Building types
- Building management
- Planning

Building for Everyone (BfE) A Universal Design approach

Building for Everyone is NOT Part M

BfE references Part M as the minimum standard.

BfE 2010 is good practice.

If a building is to be built to minimum standards
then use Part M 2010

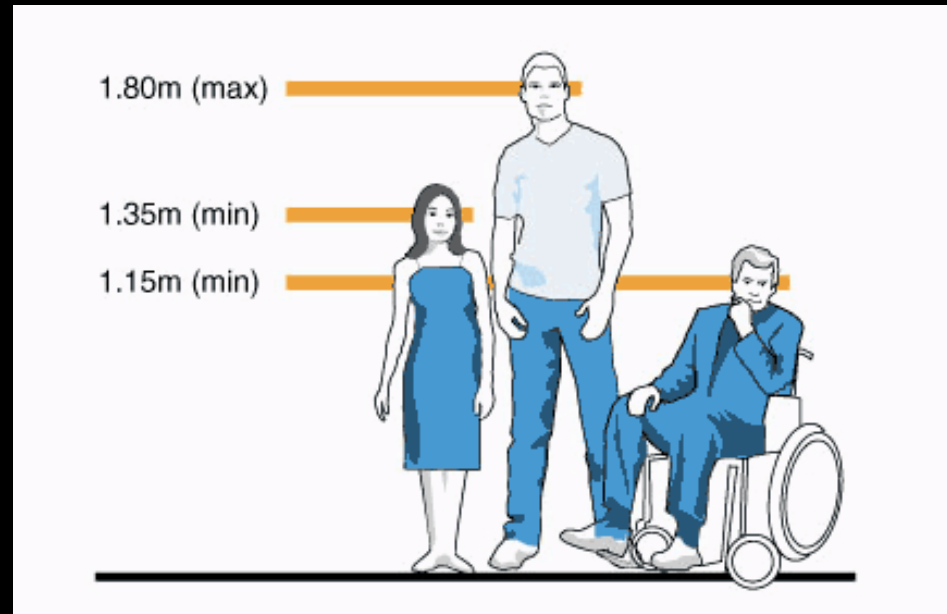
If a building is to be built using Universal Design
principles then use BfE 2010

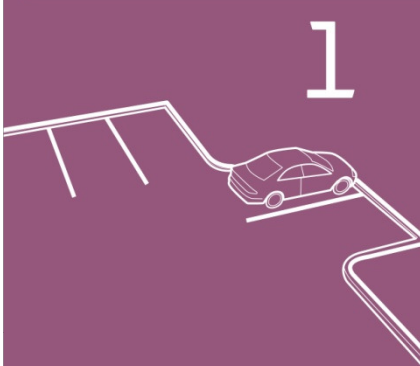
Dimensions and references throughout BfE are based on combined guidance from many of the international standards and guidelines.

A range has been given instead of a single optimum dimension as this provides more flexibility to designers.

BfE + Universal Design = Broader spectrum of the population

- **Size**
- **Age**
- **Ability**
- **Disability**



<p>Building for Everyone External environment and approach</p> <p>1</p>  <p>□ □ □ □ □ □ □ □ □ □</p>	<p>Building for Everyone Entrances and horizontal circulation</p> <p>2</p>  <p>□ □ 2 □ □ □ □ □ □ □ □</p>	<p>Building for Everyone Vertical circulation</p> <p>3</p>  <p>□ □ 3 □ □ □ □ □ □ □ □</p>	<p>Building for Everyone Internal environment and services</p> <p>4</p>  <p>□ □ □ □ 4 □ □ □ □ □ □</p>	
<p>Building for Everyone Sanitary facilities in buildings</p> <p>5</p>  <p>□ □ □ □ □ 5 □ □ □ □ □ □</p>	<p>Building for Everyone Facilities</p> <p>6</p>  <p>□ □ □ □ □ □ 6 □ □ □ □ □ □</p>	<p>Building for Everyone Building types</p> <p>7</p>  <p>□ □ □ □ □ □ □ □ 7 □ □ □ □ □ □</p>	<p>Building for Everyone Building management</p> <p>8</p>  <p>□ □ □ □ □ □ □ □ □ □ 8 □ □ □ □ □ □</p>	<p>Building for Everyone Planning and policy</p> <p>9</p>  <p>□ □ □ □ □ □ □ □ □ □ 9 □ □ □ □ □ □ □ □</p>

Previous Seminars

Shared Space

Lifetime Homes interior design

Lifetime Homes in Policy & Practice

Universal Design in Legislation, Policy and Practice

Achieving Participation through Universal Design

Better Design through User Participation

<http://www.universaldesign.ie/newsandevents>

<http://www.universaldesign.ie/newsandevents/eventarchive>

24 hour Universal Design Challenge

Design Week 2009
6th - 7th November
Dublin

www.trinityhaus.tcd.ie



<http://www.universaldesign.ie/newsandevents/awardsceremony24houruniversaldesignchallenge>



24 Universal Design Challenge 2010



24 Hour Universal Design Challenge: 26th-27th November 2010
Dublin City Centre - Radisson Blu Hotel, Golden Lane, Dublin 8



For further information & team member applications please contact:
James Hubbard at jhubbard@cud.ie or 01-608 0488





Standards, Education, Awareness

Case Study

The OXO "Good Grips" range of kitchen utensils began with a goal: to produce a vegetable peeler that was easy to hold and use, regardless of strength or manual dexterity. This resulted in OXO applying a Universal Design approach when designing any of their kitchen products.



[» Read more case studies and examples](#)

Welcome!

The Centre for Excellence in Universal Design is dedicated to enabling the design of environments that can be accessed, understood and used regardless of age, size and ability. We do this by contributing to the development and promotion of standards, education courses and

Explore & Discover



Discover [what is Universal Design](#), its [Principles](#), [background and history](#), related [policy and legislation](#). See the [benefits](#) of adopting Universal Design.

[Go to Explore & Discover](#)

Teach & Learn



Find an educational or training [course](#) on Universal Design, see what [current research](#) is happening or browse [publications on Universal Design](#).

[Go to Teach & Learn](#)

Use & Apply



Apply the Principles of Universal Design to the [Built Environment](#), [Products and Services](#) or in [IT and the web](#) through the use of standards and guidelines.

[Go to Use & Apply](#)

Get involved

- > Learn about the Principle of Universal Design
- > Come to an event on Universal Design
- > Join the Universal Design for ICT mailinglist
- > See relevant guidelines and standards

Latest

- > **6th Apr:** Career opening - Product designer
- > **5th Mar:** Published new design standards
- > **11th Feb:** CEUD announce 3 new educational partners

About the Centre

- > What we do
- > The CEUD's vision
- > Main activity areas of the CEUD



Thank you

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www.universaldesign.ie