EUROPEAN HEALTHCARE DESIGN 2017
Universal Design: homes and healthcare buildings for an ageing population

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Human Experience Lab Fellow at
Perkins & Will & Co-Founder of
Clinicians for Design Group**

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Universal Design: homes and healthcare buildings for an ageing population

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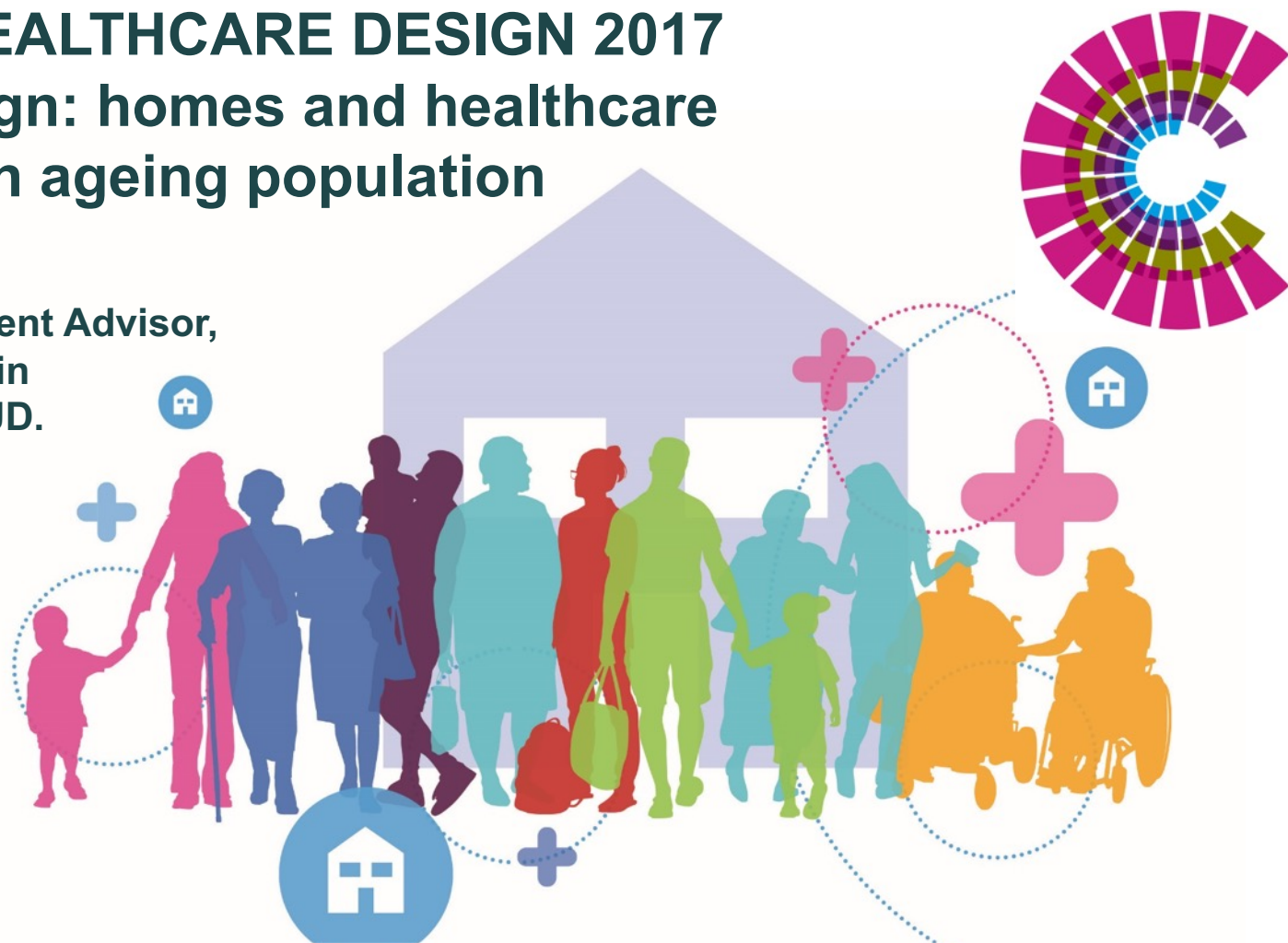
What is Universal Design?

Universal Design is the design and composition of a building, an environment, product or service 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 Assumes;

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

"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

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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)

- 60 % chance a new home will be occupied by a person with a some form of disability at some stage

- 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

I want to grow old at home

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Universal Design Guidelines For Homes in Ireland
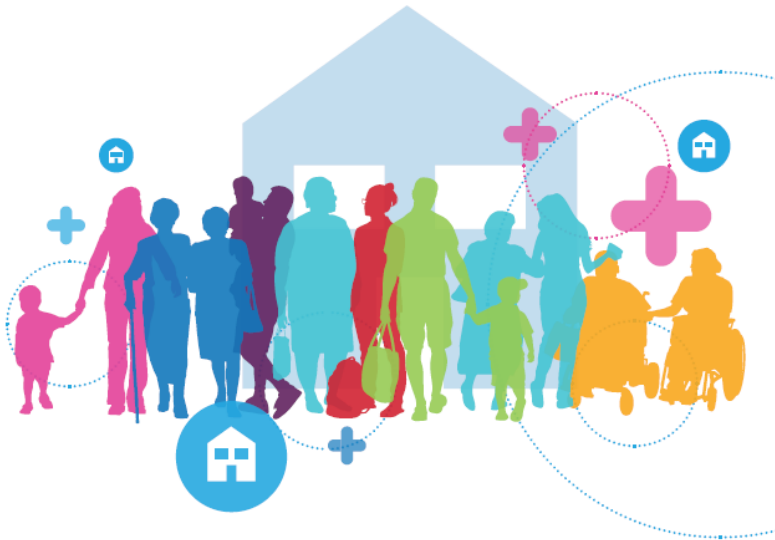
2015

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.

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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)

UD Home
UD Home ➕ Guidance
UD Home ➕➕ Guidance

Home Location and Approach 01

UD Home Guidance · Houses
UD Home Plus Guidance · 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.

Entering and Moving Around 02

UD Home Guidance · Houses
UD Home Plus Guidance · 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.

Spaces for Living 03

UD Home Guidance · Houses
UD Home Plus Guidance · Apartments

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.

Elements and Systems 04

UD Home Guidance · Houses
UD Home Plus Guidance · 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.

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Universal Design Home Types Floor Plan Examples 05

UD Home Guidance · UD Home Plus Plus Guidance
UD Home Plus Guidance

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UD Homes & Healthcare buildings 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**

Easy, safe, access from the immediate neighbourhood to the entrance to the home or healthcare building 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

Clever use of limited space designed for multi-purposes with wider entrances for homes and healthcare buildings 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, double buggies and patients who need extra assistance .

3. Easy to understand, use and manage

Providing homes & healthcare buildings with a flexible lay-out with more easily adaptable internal walls **allows the home / building to expand or contract as the family grows or as patient space is required; this works for 'empty-nesters' ,for people living alone or independently with particular needs, the healthcare staff, patients & their families.**
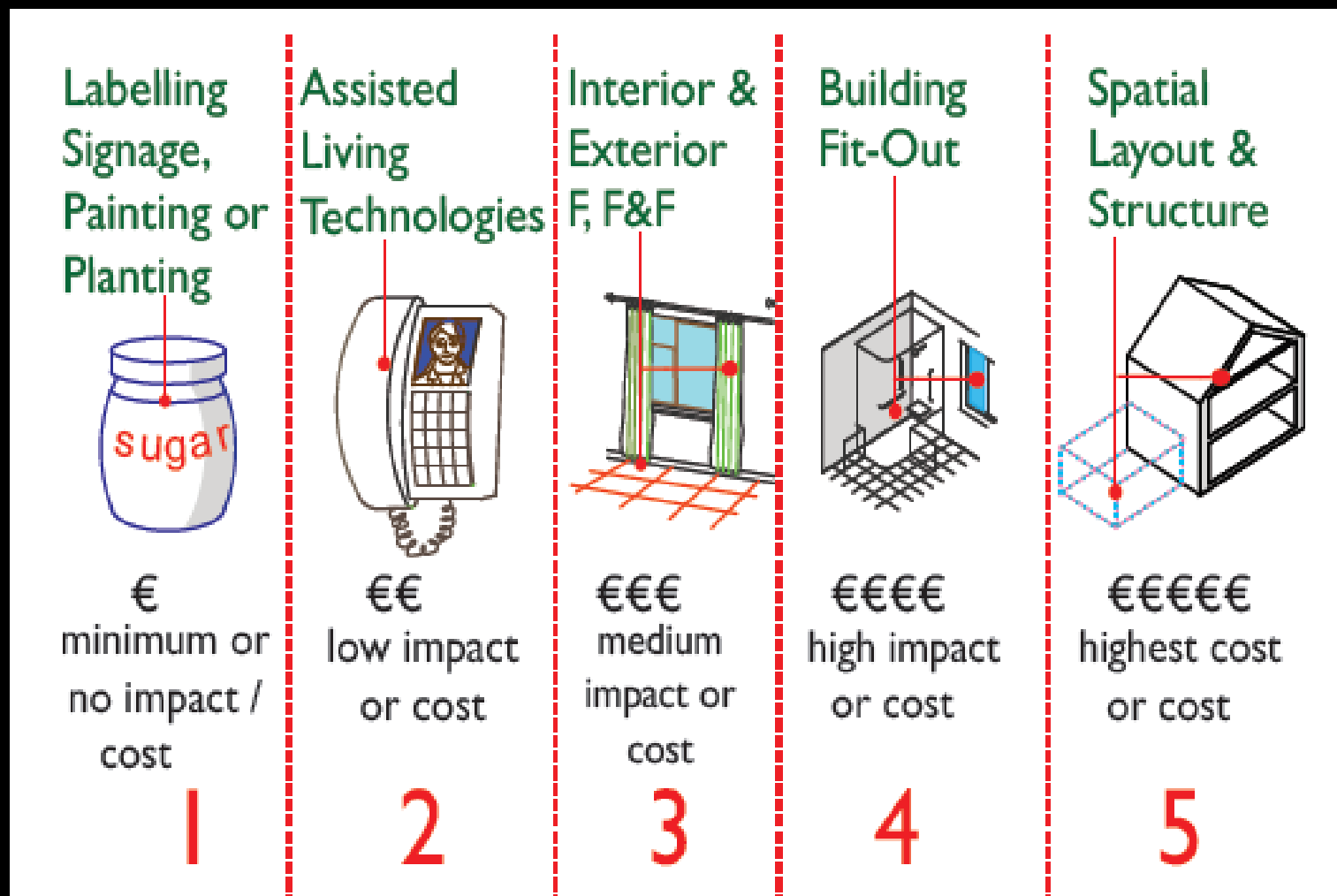
4. Flexible, cost effective and adaptable over time
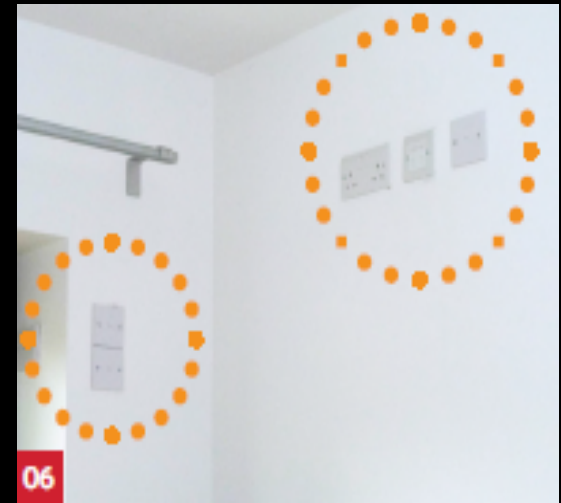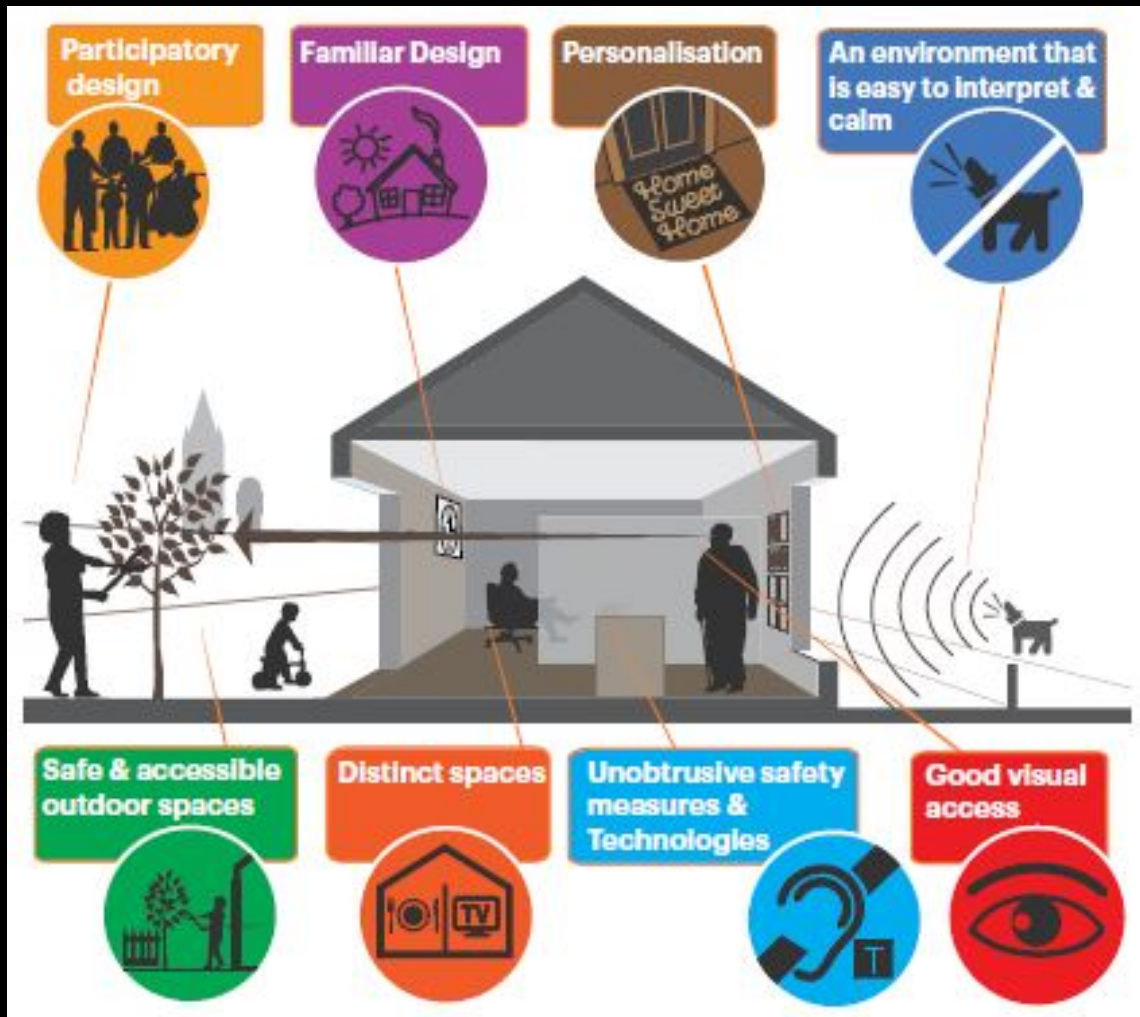
Ease of movement and simple control of the home & work environment and systems works for everyone, but also improves quality of life for people with temporary injuries, those with a disability who need to move safely around their home & healthcare buildings, and works for older people who are vulnerable to accidents both in their homes & in hospital spaces.

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.

5 scales of interventions, Adaptations or design

T.Grey, TrinityHaus

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

750

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

750

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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

Problems...

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Solutions - Cat & Kitten Doors

Broome Lodge, North Dublin, Ireland

Sheltered Housing Scheme

- 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^2 -1 bed, 80m^2 - 2 bed
- Review of costs for first time UD homes versus costly adaptations to Clúid's (AHP) existing housing stock.
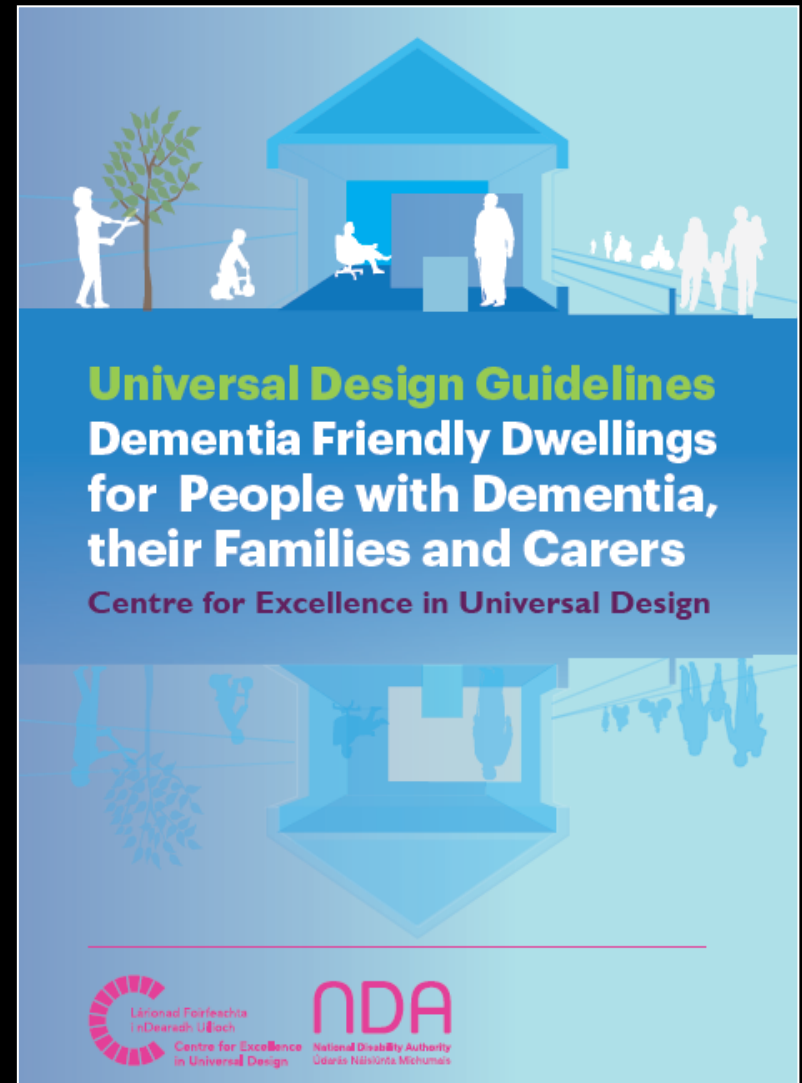

clúid housing

Costs

cluíd housing

- **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)**

'Parent' document

'Child' Document

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Universal Design Guidelines For Homes in Ireland

2015

Universal Design Guidelines Dementia Friendly Dwellings for People with Dementia, their Families and Carers

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Údarás Náisiúnta Michumais

Launch in May 2015 as part of Year of Irish Design

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Universal Design Guidelines

Dementia Friendly Dwellings for People with Dementia, their Families and Carers

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Approximately two-thirds of people with dementia in Ireland live in their own homes…

"enable people to age with confidence, security and dignity in their own homes and communities for as long as possible" (National Positive Ageing Strategy 2013)

Symptoms common to all types of dementia

Impaired rational thinking, judgement, and problem-solving.

Difficulty with memory (initially short-term but progressing over time to long-term memory difficulties).

Problems learning new things.

Increasing dependence on the senses.

Fear anxiety and increased sensitivity to the built and psycho-social environment.
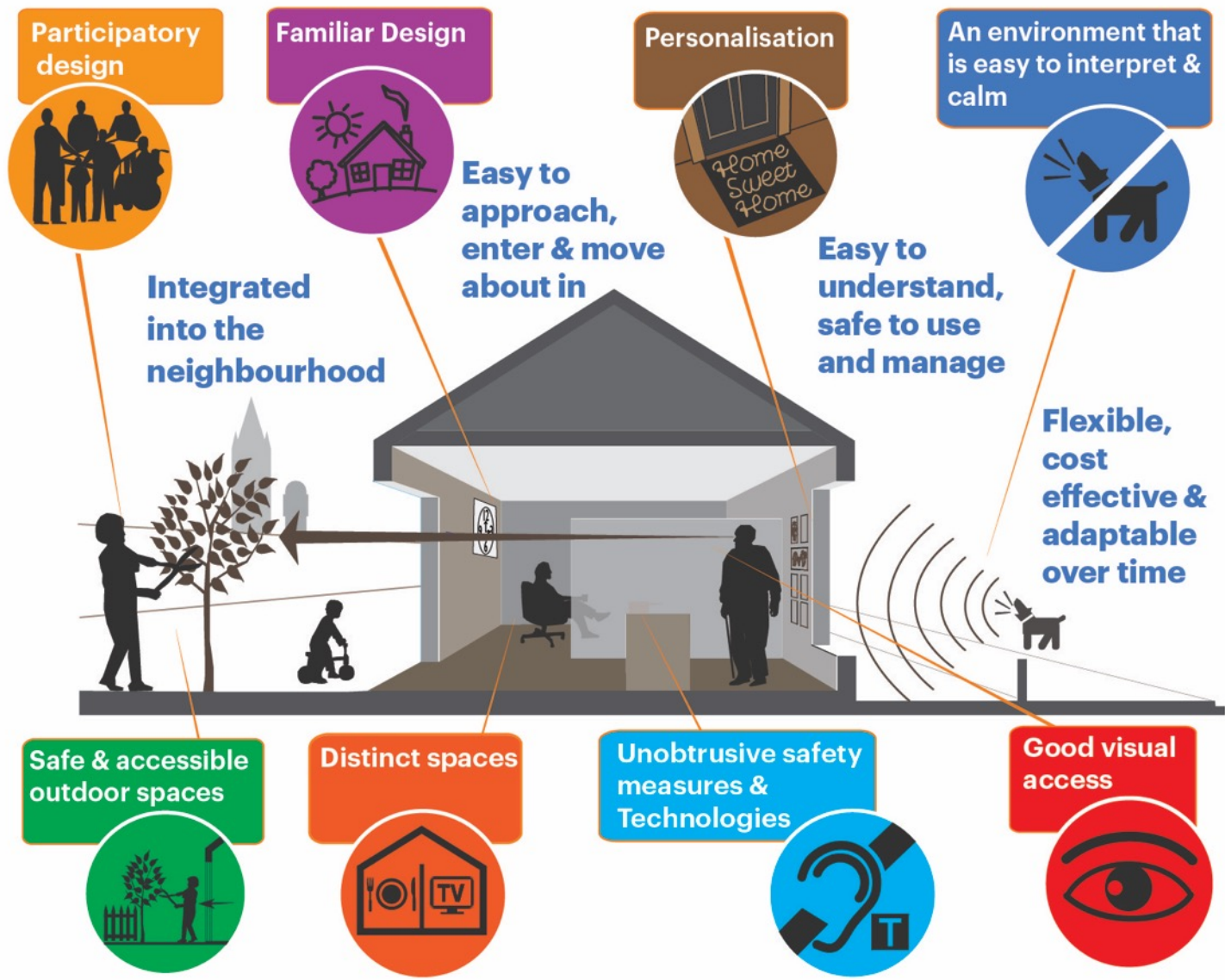
Age-related health Issues

Health difficulties.

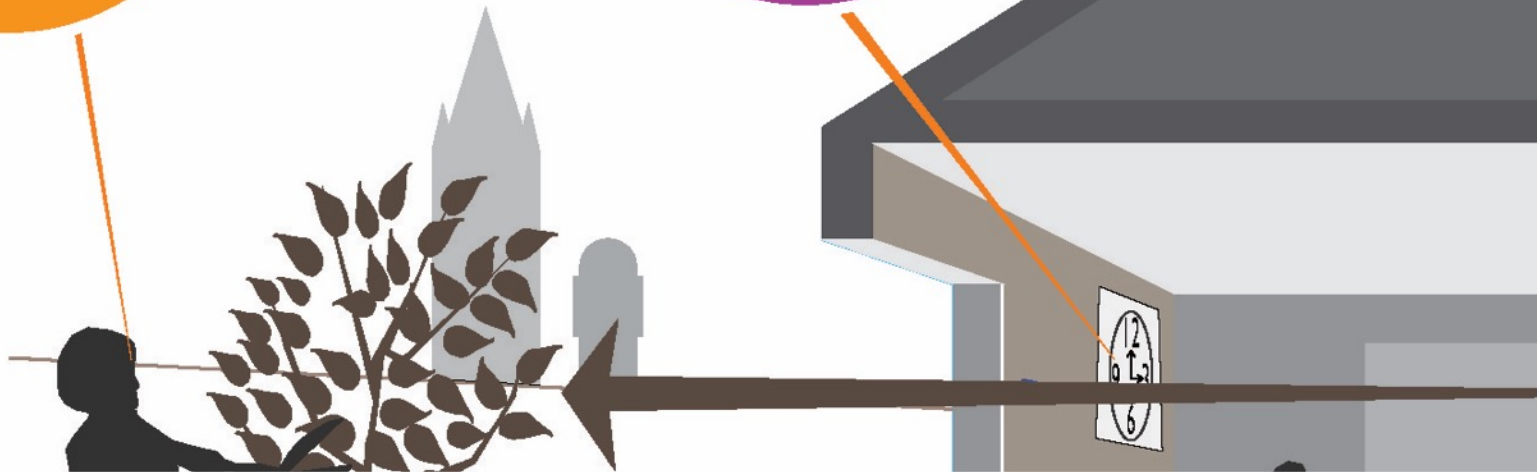**Mobility difficulties.**

Visual difficulties.

Hearing difficulties.

Participatory design

Familiar Design

Personalisation

An environment that is easy to interpret & calm

Integrated into the neighbourhood

Easy to approach, enter & move about in

Easy to understand, safe to use and manage

Flexible, cost effective & adaptable over time

Safe & accessible outdoor spaces

Distinct spaces

Unobtrusive safety measures & Technologies

Good visual access

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Participatory design

Familiar Design

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Distinct spaces

Unobt[...] measu[...] Techno[...]

Dementia Friendly Hospitals

Making the entire patient journey dementia friendly

Supported by the Health Research Board

Research Report
Partial Draft
September 2016

**For Steering Committee Review Only

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www.trinityhaus.tcd.ie

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Des O'Neill
Professor of Medical Gerontology,
Trinity College Dublin &
Consultant Geriatrician,
Tallaght Hospital,
Dublin.
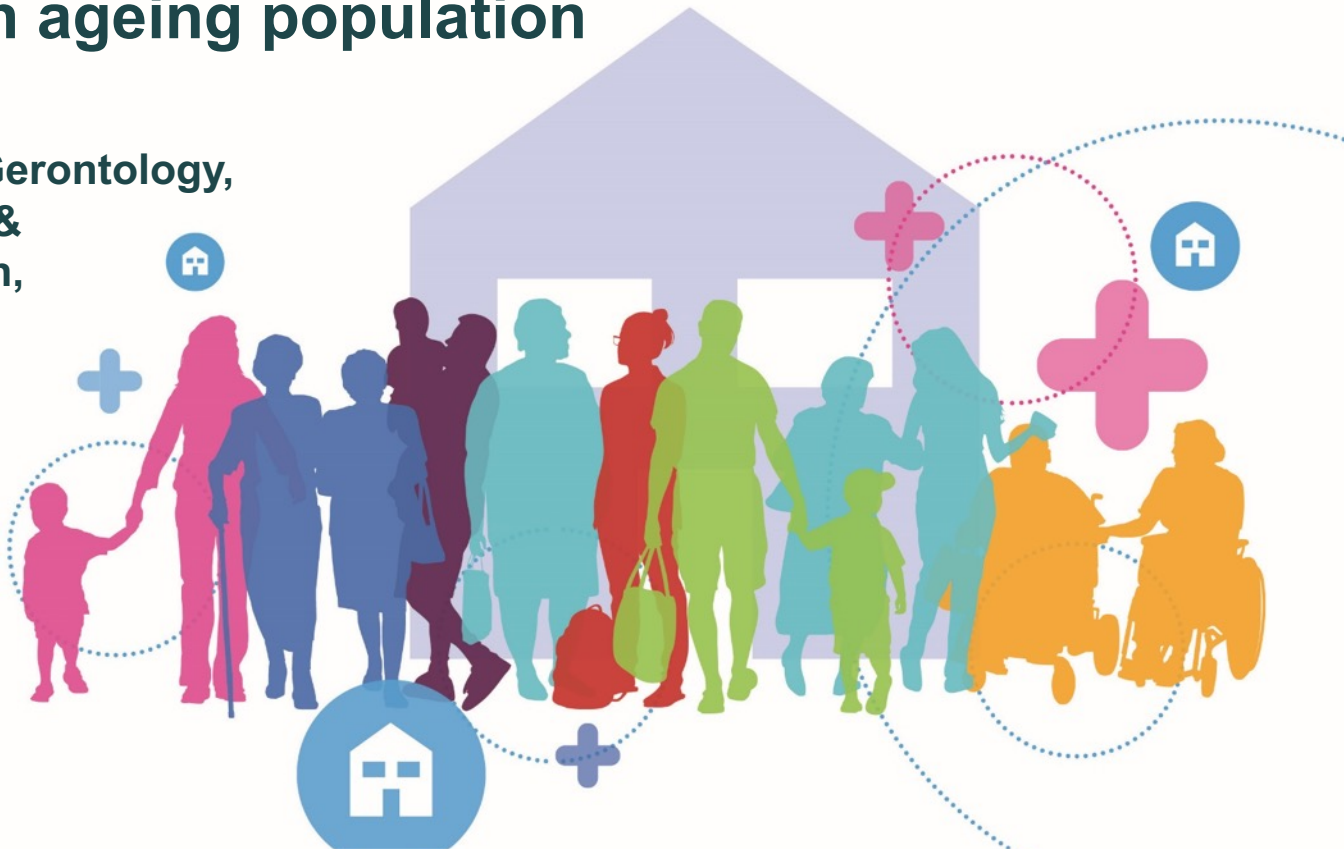
- Interindividual variability

- Ageism

- Positivities of ageing

- Structural lag

We are born copies….

…but die as originals

Aging
IN THE
Right Place

Stephen M. Golant

"OLD? ME? NEVER!"

Sarah, 55

AT SEVEN SEAS WE BELIEVE: AGE, IT'S JUST A NUMBER.

Successful or Optimal Ageing

SYSTEMATIC REVIEWS/META-ANALYSIS

I May Be Frail But I Ain't No Failure

Sandra Richardson, MD,[1] Sathya Karunananthan, MSc,[2] Howard Bergman, MD[3]

[1] Division of Geriatric Medicine, MUHC, McGill University, Montreal, QC; [2] Department of Epidemiology, Biostatistics & Occupational Health, McGill University, Montreal, QC; [3] Division of Geriatric Medicine, Jewish General Hospital, McGill University, Montreal, QC.

CNBC

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Smartphones struggle to connect with the elderly

Rob O'Brien - Special to CNBC.com
Sunday, 22 Sep 2013 | 2:15 AM ET

CNBC

Digital Vision | Eternity in an Instant | Getty Images

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Gerontology

Environmental

Policy

Biology

Social

Health

Psychology

Cultural

Imagined bodies: architects and their constructions of later life

CHRISTINA BUSE*, SARAH NETTLETON*, DARYL MARTIN* and JULIA TWIGG†

The indoor environment and the integrated design of homes for older people with dementia

J. van Hoof[a, b], H.S.M. Kort[a, c], M.S.H. Duijnstee[a, d], P.G.S. Rutten[b], J.L.M. Hensen[b]

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EBD

Evidence Based Design

1

Journal 1: Aged Care

evidence-based strategies for the design of aged-care environments

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Adaptation: Altering the House to Restore the Home

FRANCES HEYWOOD

School for Policy Studies, University of Bristol, Bristol, UK

Architecture and the Swedish welfare state: three architectural competitions that innovated space for dependent and frail older people

JONAS E. ANDERSSON*

"…socio-political visions not only create new paradigms in elder-care, but also require architectural prototypes to innovate social policy"

Design Fast and Slow..

- Pragmatic good sense
  - Lifetime Housing
  - CEUD guidelines
  - …..

- More research/scholarship/knowledge
  - Policy
  - Participation
  - Social
  - Meaning of home
  - Aesthetics…

- # If you design for the old, you include the young: if you design for the young, you exclude the old

Bernard Isaacs

Brief Report

Assisted Living in 1489

Carol A.B. Warren, PhD
Carol A.B. Warren

Department of Sociology, University of Kansas, Lawrence.

Department of Sociology, University of Kansas, Lawrence.

Much has been written about theories of aging in premodern times, but much less is known about theories of residential care. This article describes a handbook prescribing the building, staffing, and running of residences for seniors: *The Gerontocomos,* to as gerontokomieon, and the administrator of these institutions as the gerontokomos (Zerbi, 1988, p. 6).

Scholarly and medical interest in the process of aging was (after the long pause of the Dark Ages)

Thank you

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