

# INCLUSIVE DESIGN

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US: Barrier free and universal design - American with Disabilities Act (ADA)

UK: Extended from buildings and public places to include services (DDA - Disability Discrimination Act)

Europe: Extended to include ICT - Design for All

# INCLUSIVE DESIGN

Ensures that goods, services and environments are accessible to more people

Leads to more social equality and makes business sense

Challenge - understanding and quantifying the numbers of people adversely affected by decisions made during the specification and design process

Who does design exclusion affect?

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Who does design exclusion affect?

Elderly, disabled, economically vulnerable, those affected by changing technologies and work practices

# WHY INCLUSIVE DESIGN?

Response to the shortcomings of design for mass production, particularly in the end of the 20th century

People considered as universal types

The Measure of Man - Henry Dreyfuss (1960) - anthropometrics

Mean averages and dimensional ranges - led to design exclusion

Older people and those with disabilities then considered outside the workforce, outside consumer society and economically dependent.

Design for Inclusivity - Roger Coleman, John Clarkson, Hua Dong and Julia Cassim

# WHY INCLUSIVE DESIGN?

Special needs design - limited markets, small production, ineffective design

Slowly moving vocal movement towards integration and inclusive approach across design of products, services and environments

People are disabled not by impairments, but by social attitudes and the quality of design, irrespective of their capabilities

Inclusive and transgenerational design

Design for Inclusivity - Roger Coleman, John Clarkson, Hua Dong and Julia Cassim

# WHY INCLUSIVE DESIGN?

## Pioneers

Architects: Selwyn Goldsmith and building guidelines in the 60s, Ron Mace and the Center for Universal Design at NC State

Patricia Moore - project from 1979 - 1982

Victor  
Papanek



Design for Inclusivity - Roger Coleman, John Clarkson, Hua Dong and Julia Cassim

# INCLUSIVE DESIGN

Changing World:

2020

50% of UK population will be over 50

20% of US and 25% of Japan will be over 65

Changes?



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Changes?

Eyesight, hearing, dexterity, mobility, memory

Integration of disabled people into everyday life - access

Past - disability and aging considered to have no economic significance beyond welfare and healthcare

Immigration, socio-economic status, rural/city dwelling

# INCLUSIVE DESIGN

Examples:

The London Taxi - Pentagram Design

Wheelchair friendly, grab bars and other safety features



OXO Good Grips - Smart Design

Design of Experiences

Fitness for purpose



# INCLUSIVE DESIGN

a b c d e f

g h i j k l m

n o p q r s t

u v w x y z

typeface: Dyslexie Regular

# DESIGN EXCLUSION

Arises when the 'demands of using a particular product, within a given environment, exceed the capabilities of the user.

Can range from unable to use the product to frustrating to use

User capability: cognitive, sensory, and physical characteristics - physical, functional and experiential measures

Product demands: physical and behavioral characteristics

Interplay of demands + capability + activity context = level of exclusion

# DESIGN EXCLUSION

- Locomotion
- Reaching and stretching
- Dexterity
- Seeing
- Hearing
- Personal care
- Continence
- Communication
- Behaviour
- Intellectual functioning
- Consciousness
- Eating, drinking, digestion
- Disfigurement

# UNIVERSAL DESIGN

## **Center for Universal Design - North Carolina State University**

“The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.”

Equitable Use - The design is useful and marketable to people with diverse abilities

Flexibility in Use -

Simple and Intuitive Use

Perceptible Information

Tolerance for Error

Low Physical Effort

Size and Space for Approach and Use

# UNIVERSAL DESIGN

**Equitable Use** - The design is useful and marketable to people with diverse abilities

**Flexibility in Use** - The design accommodates a wide range of individual preferences and abilities

**Simple and Intuitive** - Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level

**Perceptible Information** - The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities

**Tolerance for Error** - The design minimizes hazards and the adverse consequences of accidental or unintended actions

**Low Physical Effort** - The design can be used efficiently and comfortably and with a minimum of fatigue.

**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



# DESIGN FOR DISABILITY

From spectacles

to eyewear



Design meets disability - Graham Pullin, MIT Press, 2011



# DESIGN FOR DISABILITY

Hearing aids



the beauty of  
inner space

Design meets disability - Graham Pullin, MIT Press, 2011

# DESIGN FOR DISABILITY

Prosthetics

Aimee  
Mullins



Design meets disability - Graham Pullin, MIT Press, 2011

# DESIGN FOR DISABILITY

Prosthetics

Jacques  
Monestier



Design meets disability - Graham Pullin, MIT Press, 2011

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