Introducing Assistive Technology into the Existing Homes of Older People

5th December 2002
Chartered Institute of Building

Presented by:
Keith Bright
Research Group for Inclusive Environments
School of Construction Management and Engineering
The University of Reading, UK.
What are the main functional problems of older people that affect their ability to remain in their own homes?

- mobility
- transfers
- dexterity
- bending/stretching
- cognitive impairments
- visual & auditory impairments
- limitations of stamina
Most common problem areas in the home

- access in/out of the home
- access around the home
  - horizontal and vertical circulation
- bathrooms
- kitchens
Access in/out of the home

**Mobility**
- steps - grab rail, handrail, ramp, vertical short rise lift
- threshold - levelling, feathering, ramping

**Dexterity**
- locks, handles

**Vision**
- colour contrast, lighting
Levels of adaptation

Level One

 Provision of facilities and appliances common to all building types and in any location e.g.

- windows and fastenings
- taps
- handrails
- switches and sockets
- decorating to provide suitable contrasting etc.
Levels of adaptation

Level Two

Level One plus minor structural or layout changes to accommodate increasing needs for mobility assistance e.g.

- stair lifts
- movement of (or openings in) partitions to accommodate the needs for wheelchair access within a room
- bath lifts
Levels of adaptation

Level Three
Levels One and Two plus long term suitability of the building type/construction to undertake major costly structural or layout changes or extensions to accommodate long term needs in terms of assistance with mobility e.g.

- removal of major load-bearing walls
- provision of downstairs toilet and bathroom facilities
- extensions to the building
Key Areas being addressed

- strategies for AT for providers
- how users view and use AT
- assessing user needs
- guides to relevant AT
- assessing adaptability of homes
- costs and benefits
- policy implications
Adaptability of homes – issues to consider

- access into property: thresholds, steps, lifts, handrails
- type of structure
- space: width of doors & stairs, circulation space
- decoration/lighting
- proximity and number of sockets
- intercoms, alarms and sensors
- types of windows and doors
- wall mounting and types of internal partitions
Summary of property types inspected

- high rise flats
- non purpose built warden aided maisonettes
- semi detached houses - traditional and non traditional
- Victorian terraced
- Victorian flats
- detached bungalows - traditional and non traditional
- sheltered (1.5 & 2)
- very sheltered (2.5)
- tenements
- wheelchair accessible
- modern flats
What is AT?

High Tech
- environmental controls
- automatic doors
- openers
- stair lifts
- through floor lifts
- motion light detectors
- door entry systems

Low Tech
- grab rails
- lever taps
- adapted chairs
- lighting
- colour contrast
- signage
- adjustable table and sink
- door/window furniture
- adapted toilet facilities
Research questions

- what is the potential of AT?
- how suitable is existing housing for AT?
- what are the experiences of older people with regard to AT?
- what are the costs and outcomes?
- what are the implications?
Outputs in general

- up to date picture linking housing types with older people’s needs and available technology.

- Appraisal of costs, installation and maintenance of AT related to different levels of need including worked examples.

- Contributing to and gaining from the forefront of current thinking on AT in the home.
Question that is being addressed

how far, and at what cost, can the housing stock be modified to accommodate the AT that can enable older occupants to remain in their homes?
Example of property assumption - threshold

• if existing threshold is < 15mm, no action required
• if existing threshold between 15mm & 25mm, feather threshold
• if existing threshold >25mm, lower threshold
Example of property assumption – wheelchair accessible bathroom

- if existing size of bathroom is 2100mm x 2500mm or 2200mm x 2400mm, no action required

- if existing size of bathroom is less than 2100mm x 2500mm or 2200mm x 2400mm, enlarge bathroom
Enlarging bathroom – options considered

- incorporate existing airing cupboard
- relocate central heating boiler
- move partitions into adjoining room
- swap with another room e.g. bedroom
- create space on ground floor
- build extension
- no action
Space: door & stair width
Space: door & stair width
Space: door & stair width
Difficult to adapt properties

- changes in floor level within the same floor
- small bathrooms and no scope for enlargement
- bedsits & one bedroom
- restricted space around the property - for construction of ramps, scooter storage, extensions etc
- restricted accommodation layout
Space: circulation areas
Space: circulation areas
Bathrooms
Kitchens
Sockets: number & position
Intercoms, alarms, sensors
Windows and door types
Windows and door types
Internal partitions and wall mountings
Lighting in the home
Initial Study Funded by The Thomas Pocklington Trust
Lighting the Homes of Visually Impaired People

Objectives - Initial Work:

- Appraise current literature, research and available technologies
- Identify areas of deficiency in lighting standards and recommendations
- Collect information on lighting technology
- Establish a web site
Lighting the Homes of Visually Impaired People

Real World Data Gathering:

- Investigate user needs of domestic lighting
- Visit 24 homes to assess the nature and extent of lighting provision in the homes
- Providing 12 houses with various lighting fixtures and gaining information about their use/suitability
- Ask questions and take measurements
- Carry out a questionnaire linked to the surveys
Lighting the Homes of Visually Impaired People

The Questionnaire:

- a questionnaire has been developed to be completed by visually impaired people regarding lighting in the home
- Links will be made with previous research on colour, lighting and low vision (e.g. Projects Rainbow and Crystal)
Overhead fluorescent lights
Directional spotlights
Uplighters
Lighting the Homes of Visually Impaired People

Outputs:

- articles for journals directed at the community care professional
- produce guidance specifically for The Thomas Pocklington Trust and others
- publish material for refereed academic journals and conferences
Lighting the Homes of Visually Impaired People

Outputs:

- provide input to the Standards and Regulation process
- contribute to the Code and Guide recommendations of the Society of Light and Lighting (SLL)
- manage the project web site
Examples
The End

www.reading.ac.uk/ie