The Design of Streets with Older People in Mind

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I’DGO Research Consortium
www.idgo.ac.uk
I’DGO: older people getting outdoors

Consortium established 2003

• The aim is to identify the most effective ways to ensure that the outdoor environment is designed inclusively, to improve the quality of life for older and disabled people
• What features facilitate or hinder physical activity in outdoor spaces?
Inclusive Design for Getting Outdoors

I’DGO Consortium

OPENspace, Edinburgh College of Art
with Heriot-Watt and Edinburgh Universities

WISE (Wellbeing in Sustainable Environments)
University of Warwick

SURFACE Inclusive Design Research Centre +
Centre for Health, Sport and Rehabilitation Sciences
Research, University of Salford

Engineering and Physical Science Research Council

EQUAL Programme: Extending Quality Life for older and disabled people
I’DGO TOO Partners

Age UK
Building Research Establishment
CABE Space
Central Council for Physical Recreation
Cognatum Ltd
Dept for Communities & Local Government
Department for Transport
EDAW
EDI Group
Elwood Landscape Design
English Heritage
Greenspace Scotland
Guide Dogs
Health and Safety Laboratory
Homes and Communities Agency
Ian Wall
Institute of Highway Engineers
International Longevity Centre
Jacobs Babtie
John Gregory
Living Streets
Marshalls Paving
Mayer Brown
NHS Health Scotland
Peabody Trust
Peter Brett Associates
Phil Jones Associates Ltd
Places for People
PRP Architects Ltd
RNIB Access Consultancy Services
Royal Institute of British Architects
Scottish Government
Steve Ongeri
Sustrans
Swindon Borough Council
The Orders of St John Care Trust
TRANSform Scotland

INCLUSIVE DESIGN FOR GETTING OUTDOORS
Neighbourhoods for Life

WISE (Oxford Brookes U.) research project funded by EPSRC 2000-2003: Designing the outdoor environment to improve the quality of life of older people with dementia

Towns and villages in Oxfordshire and Berkshire

Older people with and without dementia

Interviews, accompanied walks and measurement of neighbourhood design characteristics

Recommendations for all scales from urban form to street furniture
I’DGO: Triangulation of methods

- Focus groups, semi-structured interviews and workshops with older people
- Workshops and questionnaire surveys of designers, planners and managers
- Questionnaire surveys with older people as participants
- On-site analysis of urban form and detailed design
- Behaviour-setting observations and accompanied visits with older site users
Why do older people need to get outdoors?

In our I’DGO study, older people living in an environment that makes it easy and enjoyable to go outdoors were more likely to be **physically active, healthier and more satisfied with life**.
Benefits and Barriers

Outdoor environments provide opportunities for **physical activity**, **contact with nature** and **social interaction**.

But in-depth interviews of 200 people aged 65+ in a range of locations in Oxfordshire, Gloucestershire and Greater Manchester showed that at least half faced problems in getting outdoors due to barriers in the environment and lack of supportive facilities.
Urban form and layout

WISE research on how urban form affects older people’s quality of life – what urban characteristics have the most positive impact?

Small blocks laid out on an irregular grid with varying block lengths

Gently winding streets

Minimal crossroads
Urban form and layout

A hierarchy of familiar types of streets, such as high streets and residential side streets – legible and easy to understand.
Urban form and layout

Moderate to large amounts of greenery enhance participants’ wellbeing, e.g. street trees, grass verges, small pockets of green space.
Neighbourhood open space – streets, parks etc.

OPENspace research based on a postal questionnaire

How do perceived quality and accessibility of neighbourhood open spaces affect patterns of activity?

- PLEASANTNESS
- LACK OF NUISANCE

- RECREATIONAL WALKING

- GOOD PATHS TO OPEN SPACE
- GOOD FACILITIES

- WALKING FOR TRANSPORT

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What features facilitate recreational walking in outdoor spaces?

Pleasantness of open space

- clean and well-maintained
- attractive trees and plants
- good for children’s play
- good for chatting with people
What features facilitate recreational walking in outdoor spaces?

Lack of nuisance

Young people: “They probably won’t harm you, but they look so threatening. They march up the road and ride the bicycles up and down the pavement.”
What features facilitate walking for transport?

Perceived quality of paths to local open spaces
- paths easy to walk on
- enjoyable to walk on
- no obstacles to getting to open space
What features facilitate walking for transport?

- Easy to get to places like parks using public transport
- Good facilities at destinations
  - enough seats to rest on in open space
  - cafes, toilets, shelters, etc
Does where you live make a difference?

Do you live within 10 minutes’ walk of a local open space?

Such participants were *twice as likely* to achieve the recommended levels of healthy walking activity (2.5 hours/week) as those living further away.

Do you have good paths on the way to your local open space?

Such participants were *twice as likely* to achieve the recommended levels of healthy walking activity (2.5 hours/week) as those with poor quality paths.
What older people told us they prefer - detailed aspects of street design
Light traffic on walking routes
Permeable buffer zones between busy roads and footways e.g. trees, grass verge
Wide, flat, smooth, non-slip footways

- Separate from cycleways
- Clear colour and textural contrast to walls and kerbs
- Clean and well maintained
- Plain and non-reflective

Tarmac or asphalt preferred - smooth, even, not slippery, safer from tripping, comfortable to walk on
Easy transition at level changes (1)

- Ramps to be used for level changes
- Steps as an alternative (some people prefer steps)
- Steps and ramps clearly marked and well lit with handrails and non-slip, non-glare surfaces
Easy transition at level changes (2)

- Provision of dropped kerb important
- Tactile dropped kerb needs further research

“really uncomfortable”
“I prefer to walk around them”
“I don’t feel safe, I feel I may trip”
Unobstructed walkways

- Obstructions from poorly maintained paving seen as hazardous
- Cars parked on pavement are major problem
Controlled crossing points

- Crossings with lights preferred (easy and safe)
- Audible and visual signal provided
- Short crossing distance important
Detailed design issues

Buildings, facilities and street furniture should clearly communicate their uses

– not a case of traditional versus modern but clarity of design
Clear, simple, easily visible and understandable signage
Frequent, warm, supportive seating, well maintained and safe

Sturdy public seating with back rests and preferably arm rests - “Arm rests are good for getting up and down”

In warm, soft materials, e.g. wood
Bus stops and shelters

- Weather protection
- Seating
- Personal safety
- Seeing the bus
Sufficient, well maintained, safe and open, ground level toilets – not these!
Phase 2 study 2007-2011

I’DGO TOO: Inclusive Design for Getting Outdoors 2
EPSRC EQUAL Programme 5

INCLUSIVE DESIGN FOR GETTING OUTDOORS
Work at three different levels of detail, to research:

- the implications of high-density urban housing on residential outdoor space, such as gardens and balconies,
- pedestrian-friendly approaches (such as Home Zones) in street environments and
- the practical consequences of using tactile paving (designed to assist people with visual impairment) for older people in the urban environment
Main Research Questions

Does the implementation of Shared Space projects, such as Home Zones, result in environments where older people:

• Go outside more often?
• Spend more time outside in the local environment?
• Have better social networks?
• Have a better quality of life?
Research Design

Longitudinal study comparing sites before and after Home Zone or shared space principles implemented – opportunity for a ‘natural experiment’

**Data collection** Participants - UK residents 65 years +

- 9 shared space project sites
  - Sustrans ‘DIY Streets’
  - Edinburgh Home Zone
- 9 matching control sites

Almost all sites are in areas of multiple deprivation

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Sites
Data Collection Methods

Structured interviews – Neighbourhood Open Space (NOS) Questionnaire
Health
QoL
Outdoor activities: Personal Projects
Perceptions of the physical environment
Frequency of going outdoors

Physical activity
Accelerometer measure and activity diary for the period of one week

Behavioural observations
Systematically observe activity patterns in streets

Street audits
Used to record the physical features of streets and open spaces
Tactile Paving

“feels as if you are going to twist your ankle on it”
“makes me feel unsafe, I feel I might trip & it hurts my feet”
“I prefer to walk around it”

Department for Transport Guidelines
Objectives of the study: (tactile paving as an indicator of hazards)

• To examine how blister and corduroy tactile paving is designed, sited and laid;

• To identify older people’s perceptions and approach to using tactile paving;

• To quantify the relationship between tactile paving design parameters and the biomechanics of ambulation and risk of falling.
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Preliminary analysis of real world cases suggests...

Wide variability in the design, siting and laying of blister and corduroy paving;

Considerable deviation from design guidance primarily due to variation of contexts;

Maintenance of paving may have a critical effect on pedestrian safety.
Experimental design in the lab

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Force Plate

Model of human gait based on motion capturing

Motion capturing system

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I’DGO TOO: places for people
Our research has led to guidance on designing inclusive environments - see www.idgo.ac.uk/design_guidance/streets.htm (recommended by the WHO Age-Friendly Cities Guide)