

The Design of Streets with Older People in Mind

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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





Exchanging Knowledge | Extending Quality Life



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

EPSRC

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 Baktie

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 Onger
Sustrans
Swindon Borough Council
The Orders of St John Care Trust
TRANSform Scotland

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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.**



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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



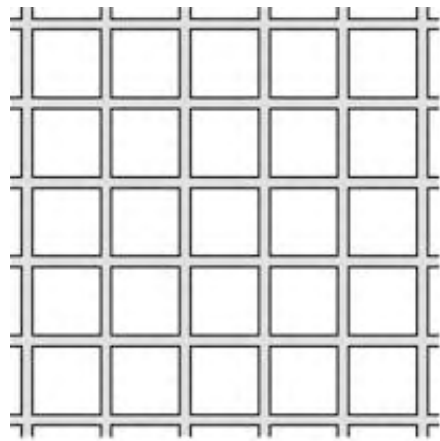
Urban form and layout

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

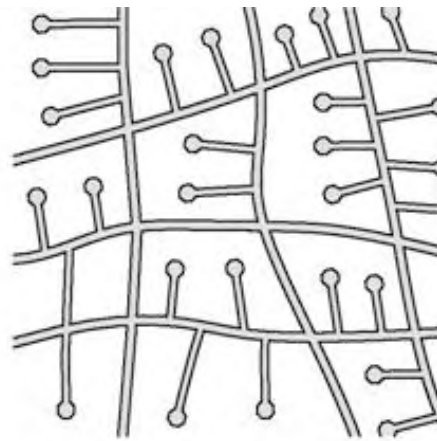
Small blocks laid out on an irregular grid with varying block lengths

Gently winding streets

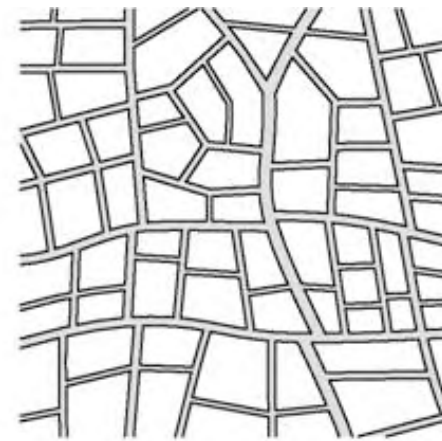
Minimal crossroads



uniform grid pattern



'lollipop' pattern



irregular grid pattern

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

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**

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I'DGO TOO: ongoing research

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 +

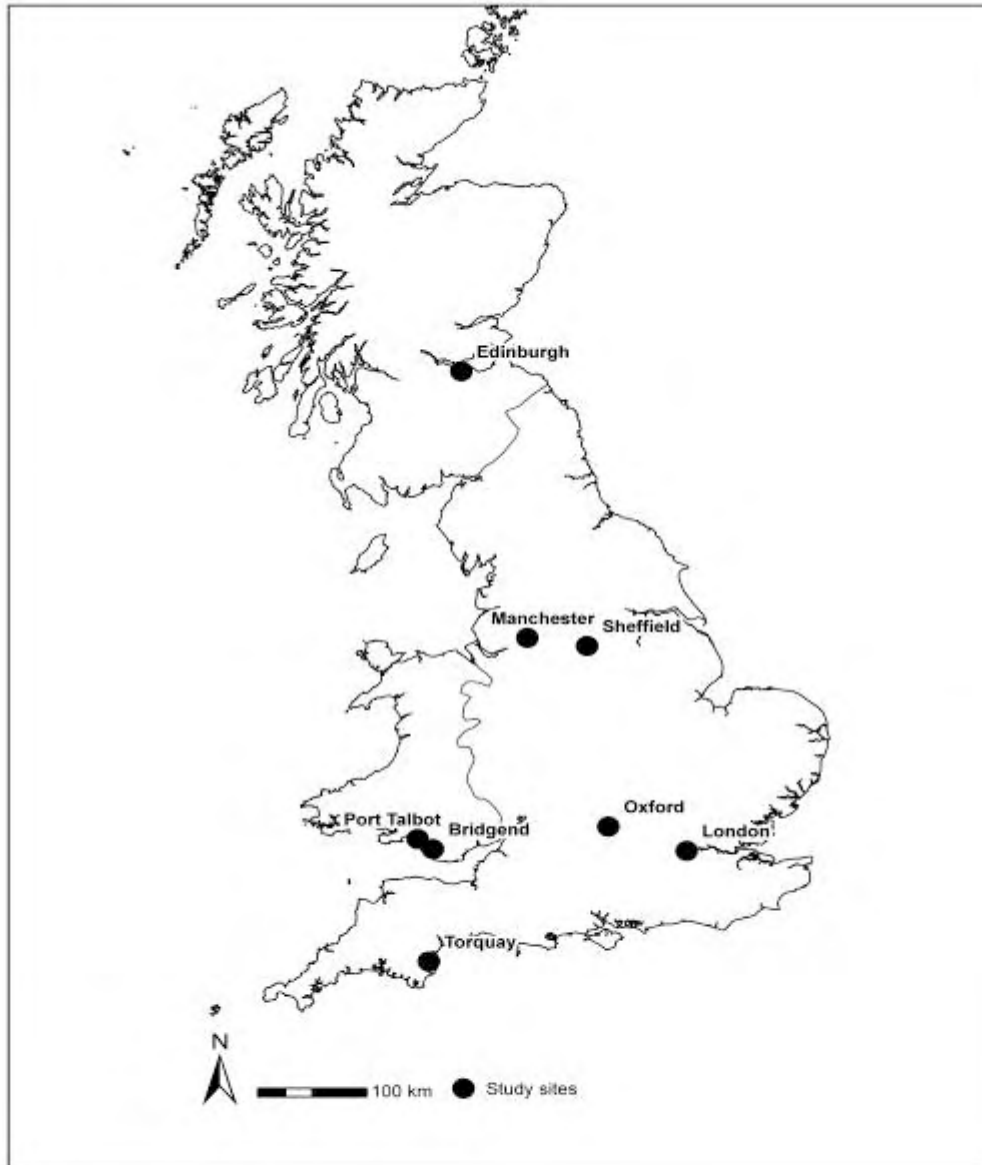
9 shared space project sites

- Sustrans ‘DIY Streets’
- Edinburgh Home Zone

9 matching control sites

Almost all sites are in areas of multiple deprivation

Sites





DIY: Brooke/Evering Rd - London



DIY: Castle St - Port Talbot



Control: Geldeston Rd - London



Control: Crown St - Port Talbot

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

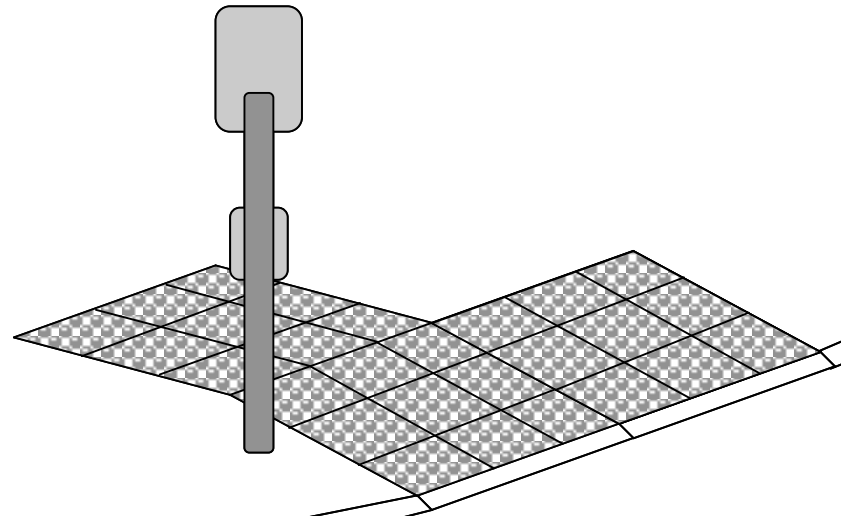
Street audits

Used to record the physical features of streets and open spaces

Tactile Paving



Department for Transport Guidelines



“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”



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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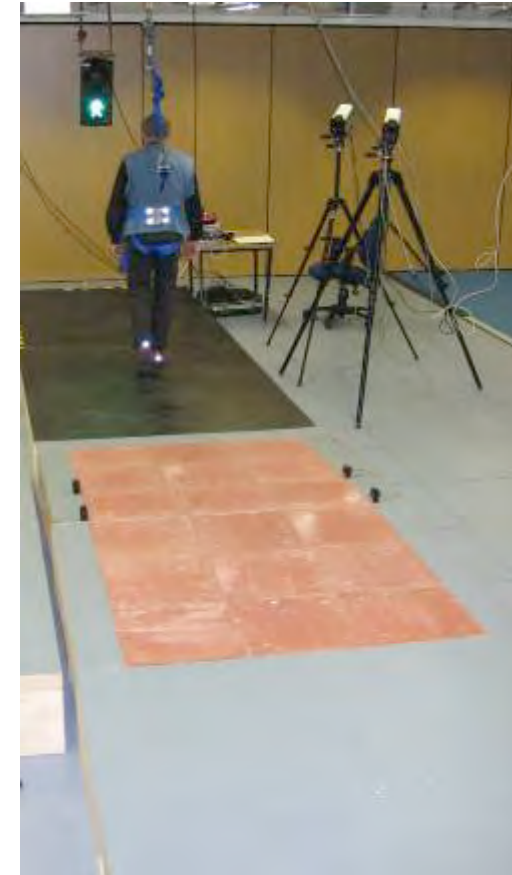
Preliminary analysis of real world cases suggests...

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

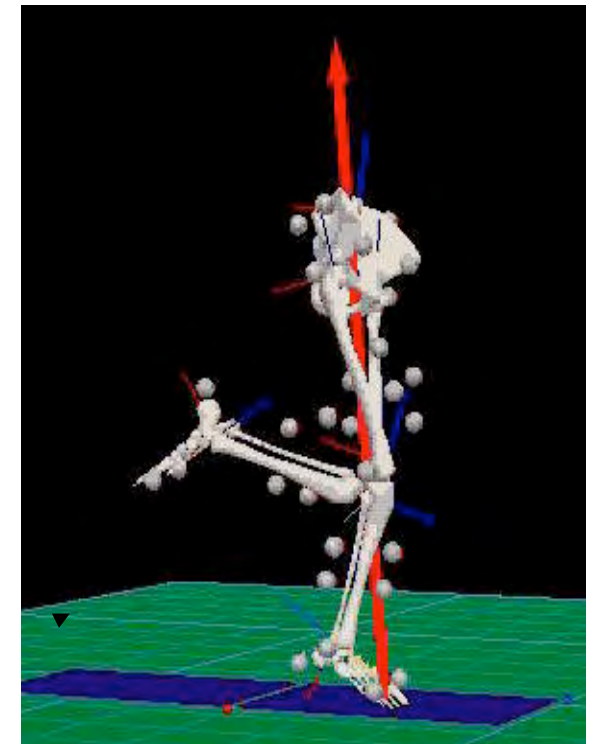




Motion capturing system

Force Plate

Model of human gait based on motion capturing



I'DGO TOO: places for people



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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)



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