Stakeholder Advisory Group

- Brings together representatives of organisations with specialist knowledge or interest in how built environment design and bicycle technology affects cycling mobility and wellbeing amongst the older population.
- Established to support the project and advise on how to ensure the project findings have an impact within policy making and industry.

Agenda

- Welcome
- Introduction
- Project Overview
- Design for Wellbeing Call
- BOOM!
- Promoting Independent Cycling for Enhancing Later Life Experience and Social Synergy through Design
- Summary

Design for Wellbeing Call

- Call Title: Design for Wellbeing: Ageing and Mobility in the Quiet Environment
- Call Type: Grants: Complexity Engineering
- Closing Date: 30 September 2014

BOOM!

Promoting Independent Cycling for Enhancing Later Life Experience and Social Synergy through Design

1. Cycling offers the potential to support healthy ageing amongst older people (but 1 per cent of trips of people age 65+ compared to 9 per cent in Germany).
2. General absence of discourse on designing the built environment to support older people’s cycling.
3. Infrastructural projects continue to be implemented without knowledge of how their design affects older people’s mobility.
4. Need for understanding of how the growing electric bicycle (e-bike) market is shaping older people’s willingness and ability to cycle.
Signs that this is changing...

“...that’s because of the conditions, I suppose those are the people who feel able to cycle... What I want to see from these changes, and I think we will see, is far more women doing it, for more older people doing it.”

Andrew Gilligan
London Mayor’s Cycling Commissioner quoted in London Evening Standard 25/10/2014

Objectives

1. First, to develop a better understanding of how the design of the built environment and technology shapes older peoples engagement with, and experience of cycling, and how this affects their independent mobility, health and wellbeing.

2. Second, to develop a toolkit that advises policy makers and practitioners on how the built environment and technology could be better designed to support and promote cycling amongst current and future older generations in order to improve independent living, health and wellbeing.

Work Package Structure | Methods

1. Scoping 1 [WP2]: Investigate UK cities promoting more Inclusive Cycling amongst the older population compared with activity in the UK.

2. Scoping 2 [WP3]: Analysis of UK data to identify trends in older participants cycling and effects of programmes.

3. Diagnostic (cycling life-history) interviews [WP4] to understand the role of past experiences of cycling and the influence of life events.

4. Mobile interviews and observation [WP5] with participants to test cycling life history interviews and observe cycling experiences.

5. 8-week experimental bike trial [WP6] with new and returning cycling participants to measure how interaction with the built environment affects mental physical and mental wellbeing.

Testing novel research methods

Geo-locating & representing affect

Progress vs Plan
Second Stakeholder Advisory Group Meeting
22 October 2014

Sampling and Recruitment
Tim Jones, Nick Beale: OBU

Sampling Approach & Participant Journey

Population

Recruitment Summary [as at 20/10/2014]

<table>
<thead>
<tr>
<th>Wave 1</th>
<th>Applications <strong>No. (%)</strong></th>
<th>Invited *<strong>No. (%)</strong></th>
<th>Accepted **<strong>No. (%)</strong></th>
<th>Proportion of target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas</td>
<td></td>
<td></td>
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<tr>
<td>Oxford</td>
<td>129 (43)</td>
<td>82 (64)</td>
<td>33 (37)</td>
<td>210</td>
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<tr>
<td>Reading</td>
<td>63 (22)</td>
<td>36 (57)</td>
<td>21 (50)</td>
<td>70</td>
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<tr>
<td>Bristol</td>
<td>36 (14)</td>
<td>16 (53)</td>
<td>12 (75)</td>
<td>40</td>
</tr>
<tr>
<td>Cardiff</td>
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<td>31 (60)</td>
<td>27 (87)</td>
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<td>Total</td>
<td>297 (100)</td>
<td>125 (44)*</td>
<td>93 (74)</td>
<td>75</td>
</tr>
</tbody>
</table>

*No. (as a percentage across areas) **No. (as a percentage within area) ***No. (as a percentage of invited) ****Based on target n=30 ppts
Profile of applicants & participants

<table>
<thead>
<tr>
<th>Personal characteristics</th>
<th>Applicant profile per cent (N=287)</th>
<th>Participant profile per cent (N=92)</th>
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<tbody>
<tr>
<td>Sex</td>
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<tr>
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<td>30-39</td>
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<td>32</td>
<td>49</td>
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<td>70+</td>
<td>16</td>
<td>22</td>
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<tr>
<td>Mobility</td>
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<td>Main</td>
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<td>93</td>
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<td>2</td>
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<td>Full time/part time employed</td>
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</tr>
<tr>
<td>House/holiday/Other</td>
<td>42</td>
<td>54</td>
</tr>
</tbody>
</table>

Higher proportion of female, older & retired people in selected sample vs those who applied to take part.

Mobility profile of applicants & participants

<table>
<thead>
<tr>
<th>Mobility Characteristics</th>
<th>Applicant profile per cent (N=287)</th>
<th>Participant profile per cent (N=92)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household access to car</td>
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<td></td>
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<tr>
<td>Yes</td>
<td>92</td>
<td>92</td>
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<tr>
<td>Personal access to cycle</td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>93</td>
<td>90</td>
</tr>
<tr>
<td>How often cycled in last 12 months</td>
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<td></td>
</tr>
<tr>
<td>Never</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Rarely (once or twice)</td>
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<td>9</td>
</tr>
<tr>
<td>Occasionally (once a month)</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Regularly (once a week)</td>
<td>64</td>
<td>56</td>
</tr>
</tbody>
</table>
Work Package 2 Scoping Study Update
Policy and Literature Review, EU Case Studies and Urban Design Audit

Dr Emma Street and Dr Philip Black
University of Reading

Scoping study aims

• Review: through thematic analysis, the existing research in the broad fields of transport planning / mobility, gerontology, psychology / wellbeing and urban design;
• Analyse existing policy guidance (ageing, built environment, sustainable transport, wellbeing) and draw out best practice (EU case studies);
• Build evidence base (thematic bibliography/policy analysis) to inform and support other work packages, and enhance understanding of place-specific factors such as governance frameworks to support profiling of 4 UK case study cities;
• Develop urban design audit toolkit/methodology to analyse role of urban design factors in mediating cycling experiences.

European case study visits

• 2 x 3 day study visits to Munich in Germany and Seville in Spain, May and June 2014 to explore good practice in inclusive cycling
• Interviews with key stakeholders, cycle tours/visits (e.g. testing infrastructure), filming and audio recording
• Decision to focus on ‘atypical’ cycling cities and also to invite a northern/southern European comparison

Munich – some key findings

• Well-developed cycle policy based upon a consensual approach
• Recognition of the multiple benefits of cycling (e.g. BMW are ‘on board’)
• Stable political system with autonomy at the metropolitan level has supported this approach
• Mix of infrastructure including extensive network of segregated lanes but also shared spaces
• Inclusivity supported via targeted training programmes for older people
• Conflicts arising due to ‘popularity’, e.g. different speeds of cyclists and use spaces shared with pedestrians
• Uncertainties surround the level of ‘political will’ going forward

Seville – some key findings

• Seen a 10 fold increase in cycling rates between 2006-10 (from <1%-6% modal share, to around 72,000 daily trips)
• Extensive segregated cycle lanes credited for much of this + bike hire scheme (Sevici) + traffic management in historic centre
• Brave political decision-making building upon decades of campaigning + grassroots work to deliver rapid change
• Cycling seen as key to wider political ambitions to ‘reclaim the human scale’ of the city – ‘build a useful cycle network’ and ‘they [incl. non-cyclists] will come’
• Major uncertainties about future political (+financial) support at city-level
• Regional picture is more positive

Next steps + documentary ‘teaser’

• Interim report produced and to be revised
• Further mining of secondary data (e.g. documents + existing research data) to inform a revised report
• Further analysis of audio / video data to inform report and create a longer documentary highlighting the lessons learned
• Targeting early 2015 for docu + final report by next SAG
• Here’s a taster/teaser! http://vimeo.com/106933009
Policy review

Aims
• To map the policy environment according to the key thematic areas of the scoping study (ageing, design, cycling and wellbeing);
• To situate older cyclists within this review;
• To explore the ways in which older cyclists are represented within the policy literature.

Research questions
• How has the UK policy discourse on cycling evolved in the last 30 years?
• What are the predominant narratives surrounding cycling and design, ageing, wellbeing and design?
• At what point, and in what ways, did older cyclists begin to feature in policy?
• Is the older cyclist perceived as a policy problem or opportunity?

Outputs
• Archive of policy materials (e.g. documents, plans and references)
• Policy ‘map’ (Phase 1)
• Written report focussed on policy constructions relevant to issues that link to older cyclists (Phase 2)

Policy review – thematic areas

Policy review – phase 1 (Mapping)

Policy review – phase 2

• Developing an analytical framework to excavate greater detail about where older cycling ‘fits’ within wider policy discourses, e.g. on wellbeing, mobility (incl. cycling), ageing and design

Issues:
• Cycling from an ageing perspective is rarely addressed in ‘formal’ policy discourses and may be ‘hidden’ in policy sub-fields;
• Activity that does exist is often ad-hoc, localised and therefore hard to capture in a wider review of this kind.

Questions for further discussion:
• How extensive (i.e. at what scale, and in what policy areas) should the review focus?
• How can we capture ad-hoc and localised activities?
• What key terms or policy agendas might form a useful ‘entry point’? E.g. ‘active ageing’, ‘age friendly cities’, ‘inclusive cycling’ etc. other suggestions?
Currently a lack of understanding between urban design and transportation aspects of the built environment (Boarnet & Crane, 2007)

Urban design has neglected the cyclists perspective (Forsyth et al, 2009)

Cyclists the ‘forgotten middle’ in urban design discussions and principles (Black & Street, 2014)

Yet...

Good urban design has the power to aid in the provision of inclusive journey environments (Azmin-Fouladi et al, 2007), and;

Characteristics of the built environment are seen as key to successful policy interventions (Yen, 2009)

Audit Stage:
• University area / Town centre / Caversham / Oxford Road (Reading Urban Area)
• Urban design quality assessment (expert led) & digital mapping.

Community Engagement Stage:
• Focus groups and interviews (n.30/40)
• Q-Methodology (based upon audit findings)

Design Guidance Publication:
• Urban design recommendations for improving quality of cycling experiences in Reading
• Categorisation template for rating quality of Reading cycle routes relating to leisure rides

Audit Stage:
• Urban design audit of pre-selected routes in Cardiff and Reading
• Building on Cycling in Reading tool / principles / design guide

Eye-tracking:
• Tracking older cyclists engagement with built environment on actual journeys
• Interviews and discussion

Integration with WP5:
• Ability to cross reference data sets (EEG / Eye-tracking / GPS / Sonar / Sound / Go-Pro / Auto-ethnography etc.)
• Building on existing cycle audit tools
• Linking design, mobility, and ageing
• Individual perceptions of BE
• Integrating with wider Cb study
• Bespoke audit tool and detailed design guidance

The Audit Process:
Building on the work of Ewing et al (2013) – Urban design audit for walking

Audit tool:
• Built environment criteria
  - density; street width; open space; traffic; landmarks etc.
• Cycling attributes
  - infrastructure; topography; amenities & facilities etc.
• Urban design assessment
  - legibility; enclosure; complexity; transparency; scale etc.
• Technical Expert-Led Evaluation
  - ‘Objective’ measurement of urban design features (Moser, 2009)
  - Evaluating and rating UD qualities (video/stills)
  - 3-4 ‘experts’ – urban design / architecture / planning

Outputs:
• Urban Design and Cycling Audit Tool
  - Key quality indicators ranking / rating template
  - Assess current cycle routes audit potential cycle routes
• Design Guidance Publication
  - Part of cycleBOOM practitioners tool-kit
  - Highlighting best practice examples
  - Template for route categorisation - ‘quality’ ratings of UD principles specific to cycling
  - Reimagined UD principles for practitioners / local authorities / communities
• Academic / Educational Impact
  - Engaging UD discipline with cycling perspectives
  - Rearticulating traditional principles to include cyclists
  - Opportunity for further research
Audit aim:

• To design, develop, and conduct a comprehensive urban design audit specific to cycling - resulting in a bespoke audit tool and published design guide for policy makers and practitioners

• Identify the attributes, features and principles that influence or contribute to quality urban environments for cyclists - and how these environments can be achieved both retrospectively and through future development initiatives

Feedback....

• Reading Borough Council Funding
• Recognising need for urban design solutions that do not neglect cycling
• Support / Endorsements
• CTC
• International architecture firm
• Conferences
  • MobilTUM – Munich, 2014
  • The role of urban design in cycling behaviours and healthy ageing
  • Royal Geographic Society (with IBG), London, 2014
  • Black and Street (2014) ‘The power of perceptions: Exploring the role of urban design in cycling behaviours and healthy ageing’
• Academic Literature
  • Forsyth and Krizek (2011) ‘Urban Design: is there a distinctive view from the bicycle?’
• Royal Geographic Society (with IBG), London, 2014
• Active age in place: The role of urban design in facilitating life-long mobility
• AIBr, Madrid, 2015
• Urban design’s ‘forgotten middle’: Revealing the cyclists’ perspective

Work Package 2 Scoping Study Update
Policy and Literature Review, EU Case Studies and Urban Design Audit

Dr Emma Street and Dr Philip Black
University of Reading

Work Package 3: Examining Existing Data
Headline Statistics

Dr Kiron Chatterjee
University of the West of England (UWE)

Headline Statistics

Cycling Life History and Cycling Mobility Observation Interviews: The Naturalistic Approach

Heather Jones: UWE
Ben Spencer: OBU
Objectives

Through individual life histories of cycling reveal

- Whole-life view on engagement with cycling
  - Behaviour change and continuity in relation to life events and transitions and evolving social and physical settings
  - Practice of contemporary cycling
- Experience and narratives of cycling and ageing
  - How cycling is affected by later adulthood transitions? e.g. changing work patterns, family structure, roles, health
  - Adaptive, restorative and diminishing changes
  - Outlook for future cycling

Methods

Life grid Timeline Interview Ride Interview

Cycling Life History: Grid

Cycling Life History: Timeline

Cycling Life History: Google Street View

Cycling Life History: Google Street View
Bike and bike storage

Methods

Life grid Timeline Interview Ride interview

Observed ride: GPS

Ride video: RA camera

Post-ride interview

Emerging themes – avenues for analysis

- Heterogeneity in cycling pathways:
  - Discontinued | (re)discovered | continued
- Influences on pathway:
  - Body | gender | environment | social | culture
- Cycling niche:
  - Enduring: knowledge | skills
  - Adapting: bike | kit | timing | skills | company | routes
  - Explorative: mentors
- Later life:
  - Transitions: retirement | residential moves | family roles | motivation
  - Niches established and evolved
Emerging themes – avenues for analysis

- **Performance:**
  - Avoid conflict | considerate | etiquette

- **Practice:**
  - Unhurried | challenged - ‘keeping up with traffic flow’ | keeping the cycling flow | expert manoeuvres | awareness of risks and capabilities

- **Experience:**
  - Pleasure | anxiety | accomplishment | connection to place

Wellbeing and cognition trial

- Participants are asked to cycle for an 8 week period
  - 3 times a week for 30 minutes each time
- They complete a diary of the rides they take
  - Including other physical activity undertaken
- Take GPS device on the rides with them
  - recording the route
- Cognition and wellbeing are measured before the trial (pre-trial) and after (post-trial)

Domains measured

- **Wellbeing/affect**
  - SF36 – mental health score
  - PWB
  - SL
  - PANAS

- **Physical health**
  - SF36 – physical health score
  - Physical Activity Scale for the Elderly

- **Cognitive function**
  - Compare pre-trial to post-trial score

Measures of cognitive function

**Executive function:**
- Plus minus: accuracy & time taken
- Verbal Fluency score
- Letter Updating memory score
- Stroop: accuracy & reaction times
  - Congruent
  - Incongruent
- Go-no-go: accuracy & reaction time
- Eriksen: accuracy & reaction time
  - Congruent
  - Congruent

**Memory:**
- CERAD
  - Immediate accuracy
  - Delayed accuracy
  - MMSE accuracy

**Spatial reasoning:**
- Rotation task accuracy & time taken to complete
- Mazes: number of errors & time taken to complete

**Auditory reaction time (ART)**

Preliminary data

- Two participants have completed the trial:
  - “Padraic” – Case 1
  - “Ulrick” – Case 2
- Analysed data from four of the cognitive tests:
  - Eriksen
  - Stroop RED
  - Go-no-go or STOP!
  - Auditory Reaction “BEEP”
Results – Reaction time for the tests

- Erikson
- Stroop
- Go-no-go
- Auditory

Speed-accuracy trade-off

Reaction time increased

Reaction time decreased

Accuracy

- Erikson
- Stroop

Summary

- Improvement on the cognitive tests
- Reaction times improved for most
- When reaction times increased, much higher accuracy
- Practice effects? Control group
- Still need to investigate well-being
- Both participants that have completed enjoyed the trial

Practical issues

- Training
- Bike issues
- Compliance
- Rides
- Diary
- GPS - forgetfulness
- Attrition
- Completing all the tests pre and post

Roundtable 1

1. Do you have any comments on our methods & approaches?
2. Do you have any comments on the emerging results?
3. Do you have any views on potential frameworks and methods of analysis?
Staging Mobilities

Designing

products

suited
to

the
growing
market
of
older
people

Developing more inclusive neighbourhoods, towns and cities

Designing products suited to the growing market of older people
Engagement beyond the academy

Oxford Mail

University into society puts older people in the saddle

22 October 2014

 Outputs | Impact: Presentations to date
• UK-Ireland Planning Research Conference | 10 September 2014 | Oxford Brookes University
• Cycling and Society Annual Symposium 2014 | 8 September 2014 | Newcastle
• RGS-IBG Annual International Conference 2014 | 27 August 2014 | London
• mobilTUM 2014 | 19 May 2014 | Munich
• Eco2Mobility: Mobility and Social Inclusion workshop | 20 March 2014 | Ghent.
• Older People & Ageing Research & Development Network (OPAN Cymru) | 11 December 2013 | Swansea University.

 Outputs | Impact: Future Events?
• Cycling and Society Annual Symposium, Sept. 2015 & Sept. 2016
• PTRC 4th Annual Transport Health and Wellbeing Conference, April 2015
• Ageing & Cognition 2015, April 2015
• Velo City 2015, June 2015
• Royal Geographical Society with IBG 2015, August 2015
• BSG Annual Conference 2015, Sept. 2015
• 8th European Public Health Conference, October 2015
• Association of American Geographers Annual Meeting, April 2016
• 14th World Conference on Transport Research, June 2016
• 6th International Conference on Traffic and Transport Psychology, August 2016

 Outputs | Impact: Future Project
• Special session on ‘Design for Wellbeing: Ageing and Velo-mobility in the Built Environment’. RGS with IBG, August 2016
• Special session on ‘Researching with older people’, 7th ESRC Research Methods Festival, July 2016
• Two (2) school visits per area (e.g.to give a session as part of Citizenship class on issues around older people’s mobility).

Roundtable 2

Policy Review
• How extensive (i.e. at what scale, and in what policy areas) should the review focus?
• How can we capture ad-hoc and localised activities?
• What key terms or policy agendas might form a useful ‘entry point’? E.g. ‘active ageing’, ‘age friendly cities’, ‘inclusive cycling’ – other suggestions?

Second Stakeholder Advisory Group Meeting
22 October 2014