

Canadian Institutes of Health Research – Institute of Ageing

A report on a study tour of the United Kingdom

Introduction

Between 8 and 12 March six leading researchers and three policy specialists from Canada with a strong interest in age-supportive built environments visited London and Edinburgh to meet with their UK counterparts. The visit was organised and funded by the British High Commission, Toronto, The Canadian High Commission, London, The Canadian Institutes of Health Research - Institute of Ageing (CIHR-IA) and KT-EQUAL, and hosted by the Cities Institute at London Metropolitan University and OPENspace at Edinburgh College of Art. Specific events were also organised and hosted by University College London, the Canadian High Commission and the Scottish Parliament. The study group was accompanied by members of those bodies which organised and hosted the visit.

The visit reflects the belief in the value of encouraging closer ties between researchers in the field of ageing and disability in the UK and Canada. Over the last decade a fruitful rapport has developed, assisted by formal and informal activities supported by a range of funding bodies. CIHR-IA has developed particularly strong links with those involved with the EPSRC EQUAL Initiative and the NDA programme. For example, this has resulted in support of bilateral workshops especially in the field of Assistive Technology and Dementia, the extension of NDA projects to include a Canadian dimension and valuable platforms to promote the development of a closer rapport between Canadian and UK specialists in ageing. Whilst there are some aspects of the UK approach to ageing research which Canadians find attractive, for example cross research council working, equally there are aspects of the Canadian approach which UK scientists and policy makers find just as appealing, such as the integration and focus on ageing provided by CIHR-IA.

For some time CIHR-IA has been monitoring the strong focus given to older people and the built environment by the EPSRC EQUAL Initiative and the EPSRC AUNT-SUE programme, and relevant NDA projects, as these covered a much broader range of issues than achieved with the CIHR-IA Ageing and Mobility Programme. Similarly, in the UK there is an awareness of important developments in Canada especially in the fields of bioengineering, rehabilitation and urban planning which are taking different approaches to those found in the UK. In addition there is already an extremely fruitful relationship between specialists in Canada and UK in the area of city design and regeneration. So, these provide a good basis on which to develop a stronger understanding and rapport between the two countries.

This report provides a summary review of the activities during the week-long visit and of the discussions which took place. Although space limitations prevent a full exposition of the activities during the week, copies of the presentations made during the week can be accessed at: <http://www.sparc.ac.uk/workshops/2010-03-08-age-supportive-built-environments/programme.asp> or, if viewing this document on line, by clicking on the titles in the boxes which precede the description of each presentation.

Monday 8th March 2010

The Board Room, London Metropolitan University

Programme

9.30 Arrive at London Metropolitan University

Holloway Road, N7 Tower Board Room

9.50 Call to order Peter Lansley (KT-EQUAL)

Introduction

Chair – Professor Graeme Evans

10.00am Introductions & Welcome

Professor Malcolm Gillies (Vice Chancellor, London Metropolitan University)

Professor Graeme Evans (Cities, SUE)

Professor Anne Martin-Matthews (CIHR-IA)

10.30am Canadian and UK representatives - introductions

11.15am Setting the Scene for urban environments in Canada and the UK

Professor Steve Shaw (Canada-UK Cities Group, British Association of Canadian Studies)

11.30am Coffee

Age-Friendly Environments

Chair- Professor Peter Lansley

11.50am Professor Anthea Tinker (Kings College London), *Age-friendly research, housing and cities – a UK perspective*

12.10pm Professor François Béland (Université de Montréal), *Age-friendly cities: the Canadian perspective*

12.20pm Discussion

Environments, Social Capital and Health

Chair – Dr Shiva Amiri (British Consulate General)

1.50pm Professor Leonie Kellaheer (CESSA, Cities Institute) *Environment & Identity in later life: basics*

2.05pm Professor Sheila Peace (Open University) *Environment & Identity in later life: developments*

2.20pm Professor Spencer Moore (Queen's University, Ontario) *Measuring and assessing the importance of social embeddedness on the health of Montreal adults.*

2.35pm Discussion

3.20pm Coffee

Older people, Civic design and older people's participation

Chair – Dr Susan Crawford (CIHR - Institute of Aging)

3.40pm Professor Ken Worpole (Cities Institute) *Designing with Dignity*

3.55pm Jo-Anne Bichard (Royal College of Art/Helen Hamlyn Centre) *The Weakest Link: Mobility and Public amenities*

4.10pm Discussion

5.10pm Response and Discussion Led and facilitated by Dr Vasanthi Srinivasan (Ontario Ministry of Health and Long-Term Care)

5.50pm Conclusion

Introduction and setting the scene

The scene-setting session which introduced the week provided valuable background to the focus and tenor of what was in store. The team was welcomed to London Metropolitan University by *Professor Michael Gillies*, its very recently appointed Vice Chancellor, who encouraged a deep and meaningful interaction in the field of ageing in urban environments so as to contribute even further support for longevity.

Also he provided reminders of the contrasting and desperate situation in many cities in the developing world. The challenges for these were of a different order of magnitude.

[Sustainable Urban Environments Programme](#)

Professor Graeme Evans, Director, Cities Institute, London Metropolitan University, introduced two significant EPSRC programmes, SUE (Sustainable Urban Environments) and EQUAL (Extending Quality Life). From an EPSRC perspective the ageing agenda was not separate from other agendas. By accepting a social rather than medical model a concern for older people was expected to inform all the work with a potential societal element which EPSRC sponsored.

SUE was a six year inter-disciplinary programme undertaken by a consortium of universities employing largely social scientists, engineers and town planners. It commenced in 2001 with a budget of £38m and was strongly user -ed by central and local government, industry, the design professions and third sector organisations. All of its work has been validated by end-user groups. Initially SUE concentrated on the Built Environment (Vivacity), Water and Waste, Transport (AUNT-SUE - Accessibility and User Needs in Transport for Sustainable Urban Environments), Knowledge Transfer and Metrics. Vivacity was particularly focused on the 24 hour City. Within this, prominence was given to the needs and role of older people who increasingly are staying put. AUNT-SUE especially considered issues of accessibility, urban design and transport. A major knowledge transfer programme is now in place (KT-SUE) to ensure that the findings from the programme are exploited.

[Introduction to CIHR-IA](#)

The work of CIHR-IA, one of 13 institutes of CIHR, was summarised by *Professor Anne Martin-Matthews*, Scientific Director, CIHR-IA. Since 2005 Mobility and Ageing has been one of the Institute's strategic priority areas, but whilst it had received many proposals which considered *intrinsic factors*, for example, concerned with nutrition, exercise and biomechanics, it had received few which considered the *extrinsic factors*, such as housing and transport, despite there being great interest in these factors at policy level. Canadian cities and other agencies have been at the forefront of the WHO Age-Friendly Cities movement. They have recently emphasised the need for the further development of the scientific basis of advice about the design and operation of the built environment. Presently, however, the capacity to undertake this type of work in Canada is quite fragmented.

[Urban Environments Canada - UK](#)

Professor Steve Shaw, London Metropolitan University and Director, Canada-UK Cities Group, British Association of Canadian Studies, spoke of the challenges of urban decline in the UK and, as a result of major initiatives, recent successes in city regeneration. Whilst city-living may have become more desirable, poor transport connections between cities and regeneration is dividing some cities, regeneration has been uneven and there has been a noticeable absence of older people in some regenerated cities. A recent colloquium organised by the *Canada-UK Cities Group* agreed an agenda for both countries which aimed to make cities greener, cleaner and healthier and especially to meet the needs of older people and poorer people. The Group, established three years ago, supported by the Canadian High Commission, encourages synergies between diverse groups, and collaboration between researchers and practitioners in Canada and the UK.

Age-friendly environments

[Age-friendly research, housing and cities](#)

Professor Anthea Tinker, King's College London, reviewed developments in responsibility for policy in relation to older people, housing and the built environment in the UK over the last 30 years. Numerous government departments have been responsible for housing and the built environment. Importantly during this period when considering the terminology used in government reports it could be seen that the focus had moved from the individual to the collective and the community. Although until the mid 2000s the focus had been largely on housing, *'Lifetime Homes, Lifetime Neighbourhoods'* published by DCLG/DH/DWP was one of the first major attempts to address wider issues of the environment. This had led to a determined attempt to bring together policies of housing, health and social care. However the relationship between these developments and the WHO Age Friendly Cities project was rather low key.

Recent housing policy had stressed the need for older people to remain at home, and for owner occupation. There has been an emphasis on the role of technology to aid independence and on specialised housing, most recently extra care housing. There has also been a concern about poor housing and the associated need for housing adaptations and thus the need to expand of the role of home improvement agencies. Recent housing research had been dominated by studies of extra care housing, the promise of assistive technology and the role of other new technology. The mundane and ordinary, such as the improved management of adaptations, had been shunned, despite the importance of housing adaptations to maintaining independence.

Anthea's recent research on remodelling sheltered housing and residential care homes to extra care housing was focused on the design and fabric of such buildings. Most of the schemes which had been considered had resulted in more accessible buildings, bigger and better flats and facilities, although sometimes there were discrepancies between sizes of flats, better gardens and general satisfaction amongst tenants. However remodelling with tenants in-situ, a not uncommon practice, is problematic and remodelling doesn't necessary cost less than building a new scheme. Most projects ran over budget, nor were there any savings on time.

On behalf of Help the Aged, Anthea and Simon Biggs, KCL, had undertaken the research on London for the WHO Age-Friendly Cities project, which was published in 2008. London was one of the 33 cities involved. Some key conclusions were: the need to think beyond families and the importance of wider support; the importance of local environments and short distances; facilitating shared interests between generations; older people can provide stability and continuity; the absence of 'neighbourhood'; and the need for community spaces. A well thought-out UK government response to the WHO report can be found in '*Lifetime Homes, Lifetime Neighbourhoods*'. However, the Mayor of London did not endorse the findings of the London study.

[Age-friendly cities: the Canadian perspective](#)

Professor François Béland, Université de Montréal, provided a Canadian perspective on the WHO Age-Friendly Cities project. After summarizing the main objectives of the project he discussed the way in which WHO Age-Friendly Cities guide is being taken forward in Canada at federal, provincial and territorial levels, with currently 150 communities working on implementation. Researchers are working with these communities, gaining first-hand knowledge of the realities of implementation at local level and evaluating the outcomes. The Canadian Association of Gerontology is working with the Public Health Agency of Canada and CIHR to actively promote age-friendly cities. It is bringing together different actors, initiating conferences and a journal and may become involved with promoting policy decisions.

Discussion

The *political reaction* to criticism of provision for older people: in London the WHO study was rejected by the Mayor but in Vancouver the reaction was more positive, possibly this was because of the Winter Olympics. The attractiveness of novelty: many of the changes required to create an age-friendly city are rather mundane and not eye-catching, politicians prefer bolder statements provided by new technology.

In Quebec there has been a serious attempt to raise the profile of older people with the appointment of a minister for ageing, and there are similar roles in Wales and the Republic of Ireland. However, in the UK there has been no move towards, say a ministry of ageing.

Cost was seen as an important factor. It was vital to provide an economic case to back-up research evidence about the benefits of improving the built environment. This was something which EPSRC was keen to encourage. Examples were given. Ontario was committed to a senior's strategy. A strong business case for keeping people at home and strengthening their access to primary care and care giving was made, with major savings in emergency care being demonstrated. "There can be no strategy without economics". Work in Vancouver has shown that, for example, it is more costly to maintain someone who is homeless than to provide accommodation, thus leading to various philanthropic initiatives. However, generally it was thought that work on the cost advantages of home care have not influenced service delivery, in either Canada or the UK.

In both there is the challenge of addressing the silo mentality of government, so that there can be more emphasis on the interplay between the *built environment and health*. This is exacerbated by the separation of, for example, provincial and city responsibilities and is not helped by the difficulties of identifying appropriate outcome measures. Obligations on public authorities to provide accessible environments are seen in different ways, especially as cities are not responsible for health, that resides with other authorities (for example, at provincial level Quebec has a minister for ageing), yet developing an age-friendly city has a dramatic impact on service delivery, for example, accessibility and managing snow in winter. However the UK DDA, for example, leads to a duty to provide accessible environments, although the focus is more towards new buildings and some alteration of existing facilities. Thus there is a need for more research on retrofitting the environment, especially in the UK, where 75% of the current building stock will be in use in 60 years time. Here there is a large divide between the built environment and the health research communities and the latter's adherence, along with that of policy makers, to the RCT model, which doesn't translate to this area.

Although it has taken some time, the more social way of thinking about ageing has led to many initiatives based on the *involvement of older people* in identifying policies and putting them into practice. Good examples can be found in Quebec, but there can be difficulties with different groups which have different interests and, at times, conflicting objectives. For example, the development of linear networks of parks and tracks enabling people to cycle and jog, is promoting activities which some older people find intimidating. Another example is that of wheelchairs and buggies versus tables and chairs outside of cafes. In part the move to greater involvement of older people has been supported by human rights legislation, such that older people could and should now

expect major developments, especially in those areas shared with disabled people, although it may be optimistic for the expectation of a fully accessible environment to extend also to private housing by, say, 2025.

Environments, social capital and health

[Environment, Identity and later life: basics](#)

Professor Leonie Kellaher, CESSA, Cities Institute, London Metropolitan University, spoke on her long-term interest in older people and housing and the many different methodologies she has employed, some of which were very sympathetic to ensuring that participants are comfortable with being interviewed and in control of the topics discussed. Much of her work has concerned life in ordinary domestic settings. An EPSRC funded EQUAL study on the home as the context for the transition from domesticity to caring had involved a detailed ethnographic account of the use of space, furnishings, meaning of items, for example photographs, as well as full measurement of each of 60 dwellings. The analysis of configurations and use of space showed how the use of the home changed as the occupants grew older, and different design features became more important and, at times, challenging. An ESRC GO project had involved the compilation of photographic records, accounts of each tenant's housing history, data on health, mobility and finances and sketch plans. The findings were that older people in the sample tended to live in smaller settings than other age groups and probably as a consequence made fuller use of the space. In part this may be because space standards have declined, so recently built properties are smaller, and thus furniture is more difficult to accommodate. There needs to be better understanding of the design trade-offs between, say, having a larger bathroom but a smaller kitchen and an understanding of the importance of transitions between public and private spaces, for example the issue of bathrooms opening into a hall. Leonie considered that it was important for older people to be the agents of their own care, able to make decisions about even the arrangement of small items, so as to feel in control of their environments especially when they move to specialist housing, and thus helping to ward off the feeling of having become an object of care.

[Environment, Identity and later life: developments](#)

Professor Sheila Peace, Open University, who had frequently been a co-investigator with Leonie, described two recent studies, and again emphasised the value of user-led methodologies. In speaking about the national strategy for housing as embodied in *Lifetime Homes, Lifetime Neighbourhoods* she emphasised that above all else people wanted their views to be listened to. Her work on safer neighbourhoods, carried out in Aylesbury, as part of a JRF initiative, had

considered social interactions in urban spaces, for example how people used the centre of their town. Observation of eight sites around the town were undertaken by pairs of members of the lay public who had been trained to observe their own communities. They recorded numbers of people in these spaces and narratives of what was happening. The academic researchers also carried out street surveys and interviews with key stakeholders. The main findings were that: there were few intergenerational interactions outside of family groups, young children were rarely unsupervised, often there were large groups of unsupervised teenagers and generally urban spaces in the town were dominated by young adults. The use of spaces, whether they were busy or deserted was influenced by patterns of working and the school day. Older people were more likely to leave town early as part of an avoidance strategy of choosing where to be in certain locations at certain times. The study led to much discussion with policy makers, and although they may not have wanted to implement recommendations, findings are difficult to ignore when the community has been involved. Finally, policy makers needed to appreciate that this type of work is time consuming and expensive.

A very different and newly commenced study is an NDA project on *Transitions in Kitchen Living*. This will bring together biographical and oral history methodologies to look at individuals' experiences of kitchens, what has worked well and what hasn't, together with expertise in design, human factors and ergonomics. By concentrating on how kitchens reflect the changes in an individual's life, how older people feel about their current kitchen, and designing the kitchen to evolve naturally to meet lifetime needs, it should be possible to develop better guidance for architects, kitchen designers and occupational therapists.

[Measuring and assessing the importance of social embeddedness on health](#)

Dr Spencer Moore, Queen's University, Ontario, reviewed his work on social embeddedness on the health of Montreal adults. This introduced yet another methodology, which was using a social-ecological framework to include society, community, organisational, interpersonal and individual aspects, with a strong focus on inter-neighbourhood interconnectivity. Ageing adults are happier and safer when they live in familiar environments; social interaction is an integral and important aspect of healthy ageing. Ageing may result in changes in the patterns of spatial use and cognition. Findings were that: there were no apparent differences among age groups in neighbourhood perceptions or participation; there were significant differences in the spatiality of social ties among age groups which tend to be manifest in having social ties outside the neighbourhood; differences among age groups in lacking core ties outside the neighbourhood may be specific to low-income older adults; and, finally, enhanced consideration is needed for bridging ties which link people, particularly older adults, to resources outside their neighbourhood.

Discussion

The discussion mostly centred on clarification of the presentations, particularly the factors which generated shared use of spaces and which worked against this. Spencer's societal level work was seen to complement the individual level work of Leonie and Sheila, raising many suggestions for further analysis. The constraints were the cost of observational studies and the lack of suitable census data. There may be a need to further refine the concept of social capital to take account of a range of influences, such as the organisation of resources in a society, and cultural differences. Also discussed were issues of congregation and concentration in neighbourhoods, the strategic decision to move home and its impact on networks, and the relationship between cognition and social capital.

Civic design and older people's participation

[Designing with Dignity](#)

Professor Ken Worpole, Cities Institute, London Metropolitan University, spoke of the hospice movement, a recent social phenomenon which is largely the result of voluntary activities and is now found in every major town, with 250 hospices across the UK. The right to a good death has become a central driver of public policy. The design agenda for end of life care covers de-institutionalisation of palliative care and end of life practices. Of all UK National Health Services (NHS) complaints, 54% relate to dying people. Hospitals exist to cure – therefore death is seen as a failure. In a hospice, the design can transform the waiting, especially with de-medicalisation and acceptance of the beginning of the end. As to location, there is need for access to transport and facilities. Hospices are often domestic in appearance and are moving towards a secular design with single rooms. The garden is very important; signs are not necessary. However, now fewer people actually die in a hospice as hospices have a big outreach team of nurses; so, many people die at home.

Recently, there have been several initiatives to address the need for age-friendly design across many aspects of the built environment. A list of key design and architectural issues can be found in the HAPPI Report 2010 on '*Housing our Ageing Population: Panel for Innovation*' which calls for positive action in response to the UK's ageing population.

The weakest link: mobility and public amenities

Jo-Anne Bichard, Royal College of Art/Helen Hamlyn Centre, London, discussed the importance of the provision of public toilets and of continence management if older people are to be encouraged to enjoy the urban environment, travel and keep active. This is a delicate and important issue, which has a significant impact on quality of life and healthy ageing. The *bladder's leash* restricts the movement of many people. Based on a the *Vivacity 2020* SUE project, Jo-Anne listed and elaborated the problems resulting from the declining number of public toilets in UK today. The problem of closed, unsuitable or very poor toilets is worsening, with accessibility a frequent problem. The three key problem areas are: non-availability on journeys, hygiene and provision. Provision has declined as a result of the DDA which has encouraged local authorities to close facilities for fear of being accused of discrimination rather than solve accessibility issues. Her work has led to an audit tool from which 45 design features for toilets have been recommended. In a survey of 101 toilets which were audited not a single one met all recommendations. She also found that only 35% of people asked would use a public toilet.

A recently commenced project, TACT3, funded by NDA, is tackling incontinence through user-centred design and will be developing a range of solutions, from medical devices and assistive technologies through to innovatory toilet designs. This is a complex and expensive area in which to work, especially when taking a multidisciplinary, multicultural, multi-agency approach, one which is relevant not just to older people and disabled people but to all ages! Finally, the use of personas had been found to be particularly useful for communicating ideas to policy makers and practitioners.

Discussion

The two presentations covered issues which although important in Canada are not the subject of research or even much debate. Discussion of the hospice movement centred on: the trend towards caring for people who are dying at home (which accounts for up to 90% of those cared for by hospices), assisted dying (an area of considerable ethical debate), medical education (the younger doctor's training and instinct is to cure, a hospital is not a place for dying, although 50% of the beds are occupied by people aged over 65), the increasing interest being taken by architects in hospice design, and that the argument for the development of hospices can be underpinned by a very clear business case. Thought-provoking comments included: hospices learn from hotels; making a good death the fulfilment of a good life; lessons can be drawn for the better design and management of hospitals; not swapping institutional death for a painful death, more needs to be done in the area of pain management and practical problem solving; better education of the public so that their end-of-

life wishes are known before they become too frail; and, the reluctance of politicians to address these issues.

Differences between public expectations in Canada and the UK in respect of the provision and management of public toilets were discussed in great detail along with the possible need for the UK to change its model of provision and the prevailing culture towards provision. Developing a business case was difficult. It was recognised that with an ageing population the provision of more toilets and better seating was becoming more important; current practice in both countries were questioned. Given the extent of existing knowledge about the design of public toilets which can be gained from the literature describing previous laboratory-based design studies it was wondered whether more participatory design studies were necessary or whether this really is an area where the developments required were wholly in policy and practice.

Reflections on the day

Dr Vasanthi Srinivasan, Ontario Ministry of Health and Long Term Care, provided a policy maker's perspective on the proceedings of the day. She saw the cross-cutting nature of the issues presented as requiring the involvement of a range of ministries, and there was a need to capture the interest of senior politicians and advisers. When considering ageing in place the arguments for change to achieve best quality of care would need to be based on equitability and cost effectiveness. Whilst a country-wide initiative would be necessary it would need to be neighbourhood orientated and take account of the needs of diverse populations, emphasising the value of more residential options and the needs of care givers. The argument would recognise the issue of access to health care and the need for an increased supply of services. It would not follow the medical model. Rather there was a need to take pressure off of these services, for example by avoiding emergencies and crises. Evidence would have to be provided on which to build policy; the synthesis of existing evidence would be necessary, rather than longitudinal studies which take too long to generate evidence; politicians would need to be taken to see the realities of the situation, even encouraged to spend a day in a wheelchair; researchers, especially the new generation, would need to be better in the use non-technical language, responding rapidly to policy questions, and being able to offer cost-benefit analyses.

Discussion

The discussion which followed centred on how to attract the eye of the politicians. Amongst other suggestions were: it is good to get politicians into the lab since there is great value in getting them to experience the challenge of being old; and, that many ministers are looking for a good storyline, it is here that qualitative information can be effective.

Tuesday 9th March 2010 – morning

PAMELA premises, North London

Programme

9.30am Arrive PAMELA laboratory Tufnell Park

9.40am Welcome by Professor Nick Tyler
(Department of Civil, Environmental & Geomatic
Engineering, University College London)

9.50am Professor Peter Lansley and Professor
Anne Martin-Matthews, *The Rough Guide to
funding for ageing research*

10.30am Professor Nick Tyler, *Presentation of
PAMELA (pedestrian environment laboratory),
and Lab tour*

Introduction

Participants were welcomed to the PAMELA laboratory by *Professor Nick Tyler, University College London (UCL)* who also gave a synopsis of the history and standing of UCL.

A rough guide to funding ageing research

[The Rough Guide to Ageing Research - UK](#)

[The Rough Guide to Ageing Research - Canada](#)

Before viewing the laboratory *Professor Peter Lansley, University of Reading* and *Professor Anne Martin-Matthews* reviewed the current state of health of research funding in the UK and Canada. In the UK significant funding is available for ageing research from the UK Research Councils and a host of charitable bodies, some of which have sizeable resources, although most provide rather modest funding, and to some extent government departments. Charities play a significant role in funding work which does not fit the remits, interests or priorities of the research councils and government departments. The UK Research Councils became involved with Ageing Research in the late 1990s, since when there has been a series of programmes. The two most significant current programmes are NDA and LLHW which commenced in 2005 and 2008 respectively. These are cross-council programmes. The most long-lived programme is the EPSRC EQUAL Initiative which commenced in 1997 with the remit of social inclusion of older and disabled people. EPSRC pioneered the multidisciplinary, collaborative, user-engaged approach followed by EQUAL, a feature adopted by NDA and LLHW, and has introduced important devices for stimulating novel multidisciplinary proposals for ageing research, notably Sandpits and Network grants, which have also been adopted by other programmes. EQUAL has always had a strong KT dimension, supporting a series of activities to promote networking with non-academic stakeholders and the

advocacy of research to policy makers, the latest activity being KT-EQUAL. EPSRC has led in other ways, especially the engagement of early-career researchers and academics in ageing research, for example through SPARC which was jointly funded by BBSRC, the pursuit of novel approaches to research such as PAMELA and Crucible, both led by Nick Tyler, and in its pragmatic approach to fostering links between the UK and Canada. Other EPSRC programmes have an ageing element, for example SUE, and funding is also available through open competition via responsive mode applications.

The funding landscape in Canada is quite different to that of the UK. CIHR, the major federal agency for funding health research, operates across a wide territory defined by the operations of its 13 institutes, most of which are strongly oriented towards biomedical work. It has a clear mandate for knowledge development and translation. The bulk of funding is through open competition, although there are strategic initiatives, which usually require projects to incorporate funding from other agencies and, for example, the Catalyst Programme which provides small seed-corn funding to help position people in an area. CIHR-IA has five priority areas. Mobility is an important priority not least because mobility enhances social participation and functional ability.

CIHR-IA is actively pursuing international partnerships. For example with the UK there is a link with EQUAL in the AT for dementia area, a relationship with NDA in the form of support for Canada-based supplementary projects, and another with MRC concerning longitudinal surveys. There are also links with China and the EU.

PAMELA

Nick Tyler is currently managing a portfolio of £20m of research grants of which £12m is leverage funding. This includes Crucible, a LLHW Centre, which aims to establish centres of multidisciplinary research initially through enabling discourse and collaboration across a wide range of disciplines to be found at UCL. So far Crucible has distributed £400k of funding for projects which a research council would never fund, for example a project on the therapeutic effects of handling museum objects by people with dementia. Although a new project, because of its systemic effect on staff perspectives of research, it is leading to a move away from discipline specific research and already it has influenced the nature of its intake of research students. Through Crucible Nick is leading an MRC/EPSRC initiative on healthy ageing and the built environment in China.

The PAMELA laboratory, funded by EPSRC, is a life sized pedestrian environment where conditions can be controlled so as to study a very wide range of human–environment interactions.

For example, pavement surfaces, lighting and noise conditions can be changed, and the way in which individuals with different physical, sensory and cognitive abilities negotiate these studied. It is possible to simulate larger spaces through the use of sound reverberation techniques, to use different forms of lighting and to track movement (using overhead cameras and movement sensors). PAMELA is a multidisciplinary resource which is being used not just for studies of the improvement of the environment but also as a facility for exploring better ways of assessing the capabilities of individuals with particular impairments. An example was given of how ophthalmologists were using the lab to measure the functional impact of eye surgery and assess what people can do rather than to rely on tradition sight charts and tests found in the clinic. Another example was work for TfL on the impact of shared spaces where all kerbs and street furniture are removed, and another was on the configuration of opening doors on underground carriages to assist emergency egress.

Currently discussions are in place to move PAMELA to a larger facility to be shared with ASPIRE, a spinal injury centre, as a community project in the centre of what will be the post-Olympics site.

Tuesday 9th March 2010 – afternoon

Canada House, Trafalgar Square

Programme

The Science of Age-Supportive Built Environments Seminar with additional guests from the worlds of policy, practice and academia.

2.00pm Refreshments on arrival

2.15pm Welcome – Claude Boucher, Deputy High Commissioner for Canada; Dr Shiva Amiri - British Consulate General, Toronto

2.25pm Introduction – Professor Anne Martin-Matthews & Professor Graeme Evans

Health – Mental and Physical Challenges

2.40pm Chair's Introduction – Professor Peter Lansley

2.45pm Professor Rachel Cooper (Lancaster University) *Mental Health & the Urban Environment: Lessons from FORESIGHT*

3.05pm Professor Heather McKay (University of British Columbia), *The Challenge of Senior's Health and Mobility*

3.25pm Questions and Discussion, Lead discussant Glenn Miller (Vice President, Education and Research, Canadian Urban Institute, Toronto)

3.55pm Refreshments

Towards Solutions

4.25pm Chair's Introduction - Professor Graeme Evans

4.30pm Dr Russell Marshall, Professor Keith Case, Dr Diane Gyi & Dr Steve Summerskill, (Loughborough University) *Designing for Older People with HADRIAN*

4.50pm Professor Geoff Fernie (Vice-President Research, Toronto Rehab) *How to solve the every-day problems faced in later life*

5.10pm Questions and Discussion, Led and facilitated by Dr John Beard (Director, Ageing and the Life Course, World Health Organization)

5.50pm Conclusion

6.00pm - 8.00pm Reception Canada House

Speeches

Professor Anne Martin-Matthews (CIHR-IA).
John Armit (Chair, Olympic Delivery Authority & Chair, EPSRC)
Dr John Beard (Director, Ageing and the Life Course, WHO)

Seminar: The science of age-supportive built environments

The afternoon activities comprised a seminar at Canada House with invited guests from central and local government, industry, charitable bodies, the professions, and representative bodies and committees concerned with the built environment, older people and disabled people. It was followed by an early evening reception.

The seminar was introduced by *Mr Claude Boucher*, Deputy High Commissioner of the Canadian High Commission in London. In welcoming the participants to Canada House he emphasised the challenges which come from the expected exponential rise in the number of older people and the potential contribution to quality of life to be made by research. The UK is Canada's second largest

partner in science and technology, with plenty of opportunities to strengthen the relationship even further.

This welcome was followed by short introductions by *Dr Shiva Amiri*, British High Commission, Toronto, *Professor Anne Martin-Matthews*, *Professor Graeme Evans* and *Professor Peter Lansley*.

Health – mental and physical challenges

[Mental health and the urban environment](#)

As a result of her work on *Vivacity 2020*, *Professor Rachel Cooper*, Lancaster University, was asked by the UK Government Foresight Programme to review the effect of the physical environment on mental capital and wellbeing. Eight-five science reviews were conducted at all stages of the life span with the aim of collecting evidence around five key factors; learning through life, maintaining mental health, wellbeing at work and how the physical environment impacts this, learning difficulties and mental wellbeing through life. The evidence of the impact of the physical environment was extensive. For example, accessibility to quality environments positively enhanced learning through life, mental health problems were triggered and exacerbated by poor environments, work place stress was induced by poor control over the individual's environment, lack of fresh air and views, and an ability to learn was affected by lighting and air quality. However, whilst the detailed findings were extensive and complex, to some extent they were limited by the absence of much research on mental wellbeing, the lack of causal relationships and the subsequent reliance on preponderance of correlational studies. Subsequent workshops held as part of the review developed these findings to understand the current trends and their driving forces, in particular the impact on older people, and to make recommendations for policy interventions. The outcomes from the study provide a broad view of how the environment impacts mental health through the life course, and how current trends in the design of the built environment and policies in relation to it are both leading to improvements and creating a more difficult situation.

[The challenge of senior's health and mobility](#)

Professor Heather McKay, University of British Columbia, presented work relating to both children and older people. She gave as an example of a successful intervention her work on activity and health, a legacy project from the Olympics, which was promoting the benefits of healthy activity for 10 year old children. There had been unprecedented uptake, nationally and, more recently, globally. Heather's work with older people had a similar objective, to promote physical activity to benefit bodily functioning, including prevention of falls and hip fracture. Much of her work is focused on preventing and treating bone disease across the life-span, and in ensuring that

research knowledge is transferred. The geography of Canada has required the development of a large mobile research unit which is able to go to far flung regions to monitor older people and to those too impaired to visit a hospital. Findings from her team's work include: evidence of links between physical activity, especially strength activity and cognitive function; agility exercise leading to a reduction in falls and improvements in bone health; significant evidence on both the value to the individual and cost effectiveness of exercise interventions; the relationship between walkable neighbourhoods with local shops and lower BMI. Other work led by Larry Frank, a team member, is concerned with developing tools for policy makers and practitioners for improving walkability of urban environments using mapping and GIS methods. Her lab believes very strongly in nurturing alliances to ensure that the right questions are identified and that users are engaged from the beginning of a study so as to support credibility and assist with knowledge transfer.

Discussion

The discussion was led by *Glenn Miller*, VP, Canadian Urban Institute. He prefaced his comments about the impressive quality of research on urban design and the built environment undertaken in the UK before raising a number of issues with the presenters, especially: the challenge of encouraging activity in younger people so that habits they develop as children carry forward into adulthood; and the failure of many studies not to factor in the effect of environment (at an extreme, nowadays it may not be felt necessary to move, just sit at home not meeting anyone, because of both the impact of technology and the separated lives which many people live). In response it was considered important to develop alliances with transport policy makers so as to improve the environment but not in naive ways. Small changes can enhance walkability but there was a danger of creating a "too easy" an environment. Mitigating risk can result in a bland environment without intricacies. Linked to this, there may be a case for labelling levels of risk of different environments and the outcomes, as a signal to users.

Commercial issues were a frequent theme: the local shop is important but a supermarket is better value; phone ordering is popular but isolating, just as telecare might be; the complexity of shopping and merchandising leads to segregation although it should support integration; people need to feel safe getting to the shop; safety is a major issue in mental health and can be influenced by many factors including how spaces are lit.

Questions were raised about the importance of work on the intergenerational level: spaces and provision of facilities for the whole community need to involve consideration of younger people in their design; the intimate environment, preferred by older people, can be created,

so that for example, the park can be a focus for all generations; consideration must be given to paving, seats, toilets and other facilities.

It was commented that in UK there has been a big transfer of exercise from the outdoors (parks) to the indoor (gyms etc) and this has been quite heavily resourced. How to invest in outdoor spaces was much less well understood. Even where there has been investment, the spaces do not adequately cater for older people. For example it is not possible to sit in some public spaces without purchasing a cup of coffee! Questions were asked about how to design spaces to reduce health inequalities. In response it was suggested that many of the important design features were already well documented but it required a great deal of work to extract these. It was unlikely that planners and developers have done this. A senior figure in the world of planning commented that only recently had health consequences been a consideration in planning. These were not well integrated into guidance. He added that on the day of the seminar a new document had been published on sustainable construction but there was nothing comparable for health.

Final comments were made by Heather, that her group had established very convincing links between characteristics of the micro-environment and activity, by Rachel who opined that understanding the urban design decision-making process was the key to implementation, and by Glenn, who drew attention to the existing literature on healthy communities which was worth more attention from planners.

Towards solutions

[Designing for older people with HADRIAN](#)

Dr Russell Marshall, Loughborough University, considered the challenges for researchers when developing tools to support and encourage designers to design inclusively, not just for older people. Design practitioners need more support because information to assist inclusive design is patchy. Tools for handling data are not user-friendly. For example, helping the designer to develop an empathy for 'the individual as user' and thus being prepared to handle the resulting variability does not come easily, especially when there are time and budget constraints. Data on the capabilities of older people are often out of date, not appropriate to specific design tasks, limited in scope and accuracy, the latter because of small sample sizes. There are difficulties when handling data from the extremes of the population, and whilst data on physical capabilities may be available, there is little which takes account of the impact of, say, cognitive impairment.

HADRIAN is based on data from over 100 individuals with a range of abilities, biased towards those over 60, who form a virtual user group. A considerable amount of data has been gathered about the abilities of the members of the group thus providing a data base which can be explored in various ways, although most vividly by using the animated visualisation system based on digital human modelling, to get the virtual users to perform particular tasks. HADRIAN can ask all of the users to perform a particular task, for example exiting through a ticket barrier or using an ATM, and then identify who has problems. Exploring the data in this way can enhance the empathy of designers towards the needs of older people and support design decision making. The system has been used to assess various products. Validation of HADRIAN has shown that it is a good predictor of problems faced by users, and so can accelerate the design process so that designs can be better considered before they enter real-world trials. HADRIAN is now being used in the development of whole journal planners for TfL, whilst in research mode it will be used in the 'kitchen project' spoken about by Sheila Peace on Monday.

[How to solve the everyday problems faced in later life](#)

Professor Geoff Fernie, Toronto Rehabilitation Institute, University of Toronto, surveyed a great deal of work being carried out in his laboratories relating to falls and fractured hips and the consequent high rates of morbidity and mortality. Research into the causes and prevention of falls, and how to limit injury is well developed although there is a great deal more to be done, but sufficient to propose that it is possible to achieve a radical reduction in falls and hip fractures.

His lab has studied many hours of video footage of communal areas, for example, crossings at intersections, so as to identify actual falls and has analysed these in detail. Most falls are not slips and trips but loss of centre of gravity often due to environmental factors. Laboratory studies of perturbations to balance, sometimes using a moving platform, have been valuable to understanding the mechanisms of falls. Falls can be prevented through exercise and training. Practice is important. Stroke clinics, for example, can help people to recover the balance and ability to avoid falls. Removing hazards is a good place to start, but in the domestic setting scant attention is paid to designing out falls hazards compared to the attention given to fire precautions. Steps up to housing should not be necessary, the absence of hand rails should not be tolerated. In Canada the regulations insist on use of winter tyres but why not pay similar attention to winter shoe soles? Laboratory work is taking place to determine best heights of hand rails and the development of handrails which flash when an individual is nearby. The sole sensor developed some time ago, which has sensor strips around the edge, has reduced falls by half. The sturdy grip, a vertical floor to ceiling pole to assist balance and manoeuvring, has had world-wide success. So too the Toilet elevator, but not in the UK because of the different design of toilet pans. Work on flooring has developed materials which yield 35% of the impact force, enough to avoid a broken hip. Smoke

detectors have been redesigned to become falls detectors and emergency alarms, which enable dialogue with a call centre. A system to predict falls and detect poor nutrition is being developed.

The laboratory also has a system similar to PAMELA, aimed at accelerating products into the market place, for example: an adapted house, to develop and test new products and systems; a special stair rig with which it is possible to disturb balance and study the effects; and, an outdoor environment in which it is possible to change multisensory stimuli, for example, visual and sound environments and to simulate snow and wind, to provide the context for studying individual behaviour including that of drivers.

There is a need to gather more data on real falls assisted by simulation and for better evidence on the case for AT, the development of modified footwear, best practice for rehabilitation and the value of protective flooring. *With the knowledge which is available and potential for collaboration across countries hip fracture resulting from falls could be reduced by half.*

Discussion

Dr John Beard, Director, Department of Ageing & Life Course, WHO, opened the discussion by commenting on the need for a global perspective of ageing, especially as ageing in developing countries is accelerating more rapidly than in developed countries, for example, Brazil. By 2050, 80% of the world population of older people will be in developing countries. The challenges were immense; the creation of more care facilities for those in need; the development of an environment which enables older people to remain productive for longer; and, the need to reduction in the incidence of long term conditions, not least the prevention of falls and their consequences. WHO has instigated a network of age friendly cities and is reaching agreement to include further countries such as Ireland, Slovenia and China. There is, however, a need to build a better evidence base to justify interventions and convince others. Presently the evidence on causation is very limited and in need of more rigorous research across different sectors and continents.

Some questions for the speakers: the relationship between intergenerational links and lifetime homes; the compromises when retrofitting existing homes with the aim of achieving lifetime homes standards because of space constraints; the unintended consequences of tactile paving being uncomfortable and hazardous for some people whilst helping others; knowing when to “roll out” findings. In response was a detailed discussion and illustrations of design responses which had been effective and others which had not: for example, the value of visitability required of new housing, having a bathroom at the same level as the entrance and one other room – good for periods of illness as well as for disability; and the issues involved when judging the risks and rewards of taking a product to market before commercialisation yet needing investment at an early stage. A plea from the floor was made to involve older people at an early stage in product design

and testing. This is not too difficult and there are many ways to engage older people and they can invite others - snowball sampling. It was commented that there was also a need also to send researchers into the community to observe older people. Researchers need to be immersed in the environment.

In response to presentation of data on deaths by smoke and fire v. falls a question was raised about older people's perception of risk and whether this was a barrier to implementing change. In response it was suggested that older people are very frightened of falls and often will not go out in winter so a downward spiral in activity and health is created. It was wrong to advise people to stop doing things. There was further discussion on the reasons for falls, Surprisingly video footage had shown that aggression, sometimes from other older people, for example in care homes, is a contributing factor, albeit small.

A fairly extensive discussion prevailed on vision and sight loss. Vision loss has not had a high profile in ageing research and there is more scope for getting vision issues into work on falls. Vision is also important in car driving. The issues raised included: Uneven lighting as a cause of falls; poor understanding of lighting by those who advise older people and those with sight loss; cognitive load especially when unwell or when getting up at night when coupled with dehydration; individual differences; and impact of poor illumination when taking medication.

In summing up the session John Beard brought the audience back to a more optimistic frame of mind: the challenge is to use older people as a resource, not to see them as a burden.

Reception

The seminar was followed by a reception also in Canada House for about 70 people at which short speeches were given by:

Professor Anne Martin-Matthews, Scientific Director, CIHR-IA

John Armitt, Chairman, Olympic Delivery Authority & Chairman, EPSRC, and

Dr John Beard, Director, Ageing and the Life Course, WHO.

Wednesday 10th March 2010

The Board Room, London Metropolitan University

Programme

9.15am Arrive HR, LondonMet

Accessibility

Chair – Professor Graeme Evans

9.30am Juliet Solomon (AUNT-SUE)

Benchmarking Older People's Travel Needs

9.45am Professor Philippa Clarke (University of Michigan) *Social Participation among Older Adults with Disabilities: The role of the Urban Environment.*

10.00am Professor Elizabeth Burton & Dr Lynne Mitchell (Warwick University and I'DGO) *Designing for wellbeing in the built environment*

10.15am Discussion

10.45am Coffee

11.15am Professor Roger Mackett (UCL), *Using AMELIA to improve accessibility for older people.*

11.45am Professor Antonio Paez (McMaster University, Ontario) *Older people's travel behavior: evidence from Canada*

12.00pm Discussion

Review and General Discussion

Chair – Professor François Béland

1.30pm Lead discussant Dr John Millar (Executive Director, Population Health Surveillance, Provincial Health Services Authority, British Columbia)

2.15pm Professors Anne Martin-Matthews, Peter Lansley, Graeme Evans, *Summary and Wrap Up, Next Steps*

3.00pm Depart for King's Cross

4.00pm Train King's Cross to Edinburgh Waverley station

Accessibility

[SUE - further background](#)

The final day in London was kicked-off by Graeme Evans, who gave some further background to SUE before a series of presentations all on the theme of accessibility.

[Benchmarking older people's travel needs](#)

Juliet Solomon, Cities Institute, London Metropolitan University, made a presentation on the benchmarking of older people's travel needs, part of the work undertaken within AUNT-SUE. A UK government report on creating a more effective transport system *Making the connections* had given indicators of the time it took individuals to reach places from home, but these were mainly school, college and work, although travel to hospital and GP's surgery had been considered. This and other previous research had looked at the time taken but had not checked on what older people want to do in terms of travel. For example, whilst time is important for some, issues such as accessibility are more important. Indeed, the transport function is multi-factorial for older people.

Using the English *National Travel Survey* as a starting point, Juliet's research tried to find what people really want. Through this a number of preliminary benchmarks were identified; a provisional list of journeys and reasons for these journeys. Results showed: need for food shopping without difficulty - twice a week, comparison shopping, reaching daytime activities which provided some purpose to the day – 2 to 10 times a week, post office (if still open) and medical trips - on average just twice a month. The work had shown that the difficulties of reflecting in a research report individual-level details of social exclusion due to, for example, changes in bus routes and bereavement, since these are so varied, but it is very clear that the medical costs arising from isolation are significant.

[Social participation amongst older adults with disabilities](#)

In her presentation on the role of the urban environment on social participation among older adults with disabilities *Professor Philippa Clarke*, University of Michigan, regarded disability as a social construct, a consequence of the environment, how environment promotes or inhibits activity. In North America there has been an increased focus on some of those environmental issues which impact activity but less on the impact of the environment on disability, such as poor street conditions, pavement conditions, no pavements, and rubble. As a result older people can become sedentary because of unsafe outdoor conditions and their social participation can decline significantly. Using the *Chicago Community Adult Health Study*, which was based on face-to-face interviews with over 3000 individuals, Philippa's research has brought together issues of social participation, activity limitations due to physical, sensory and cognitive impairment, and characteristics of the urban environment. Social participation is reflected in activities such as social interaction, preventive health care, and voting behaviour. Direct observational methods were used to gather data on aspects of the surrounding environment of respondents with information on, for example, the street, churches, and presence of trees. (There was a high level of inter-rater reliability.) These were used to characterise the wider neighbourhood (for example, measures of neighbourhood decay, social disorder, residential security. Extensive statistical analyses highlighted, for example, that for more vulnerable people not able to walk far, neighbourhood security is significant for achieving social integration. For people with moderate and severe impairment, traffic impacts upon their access to health care. Voting behaviour is also affected by levels of social participation. The results suggest that small changes to the environment promote social inclusion and social participation, a finding which both urban planners and policy makers should find attractive.

Designing for wellbeing in the built environment

Professor Elizabeth Burton, University of Warwick (WISE – Wellbeing in Sustainable Environments, and a member of I'DGO), provided the background rationale to her involvement with wellbeing-related research. Although an architect by background she wanted to challenge current practice through academic activity and through exploiting the benefits for society of inclusive design and achieving a balance in the environment between social and economic issues. Architects need to acknowledge their social responsibilities and that mistakes have been made by the profession due to not consulting with the communities they serve. In recent years there have been developments from which her work has benefitted, for example the introduction of the DDA, a shift in health policy to preventive care leading to a demand for more advice on how to design healthy communities and the use of health impact assessments. The evidence of the direct and indirect impacts of environment upon wellbeing and both physical and mental health is growing. There are short term and long term effects due to where you live over time. For good health there needs to be: for example, opportunities for exercise, access to nature, environments which are dementia friendly and promote respiratory health, a good diet through access to facilities, traffic calming and healthy housing with suitable staircases. There is rapidly growing interest in the area but there are major methodological challenges: for example, difficulties of obtaining user views, and the lack of standardised measures of the built environment so people tend to adopt what is easiest ignoring important but less tangible aspects. Economic analysis is often fundamental to any enquiry.

Discussion

Initial discussion centred on where best to make investments to make housing safer, covering from policy to detailed design: the healthy housing rating system developed by David Ormandy at the University of Warwick, the issue of housing policy being split across government departments, safer stairs have shallower gradients so need more space, and the need for better guidance on design of hand rails and treads. It then moved to the relationship between the individual and neighbourhood: for example, because people cluster in neighbourhoods by income, how can environment and socio-economic issues be disentangled. To which the response was, by the use of proxy measures and multi-criteria data sets. The situation of disabled people being a minority and more poor people being disabled raises issues of will politicians can be mobilised to represent the interests of disabled people because of the condition of their local environments. There were no strong suggestions apart from: apocalyptic projections can be useful; and the familiar discussion about the way in which responsibilities for health and social care in both countries are divided between different departments and levels and that this makes for difficulties. It was suggested that in such complicated situations rather than trying to specify the means it was more

appropriate to specify targets and then to seek ways of achieving these. If this cannot be done then no politician will be convinced. This led to a discussion of whether the source of the problem for environmental age-related research was really a KT problem and of recipients not being willing to listen, whereas they might be more receptive when offered straightforward findings from health research. Here it was suggested that there were so many agencies involved, and responsibility for the built environment has been so devolved to the private sector, at least in the UK, that influence could be achieved only from the top down, through government policies and investment. A good example is what had happened following the implementation of the DDA.

Accessibility

[Using AMELIA to improve accessibility for older people](#)

Professor Roger Mackett, UCL, presented AMELIA, part of AUNT-SUE, a tool for improving accessibility for older people. This links closely with Juliet's work. As part of its transport policy, the government requires local authorities to consider social inclusion but it does not provide the tools with which to do this. This project aims to develop a user-friendly GIS-based methodology for planners when considering the enhancement of the life of citizens by increasing accessibility. Basically, it is a policy analysis and decision-support tool which can help policy makers to understand the options, of say, where money might be best spent on improvements, rather than a decision-making tool. The tool draws on a GIS data base of information about streets in a specific location (for example, crossings, dropped kerbs, seating, lighting, location of toilets, car parks and access barriers) and transport routes, so that it is possible to map the possible routes of an individual travelling from one place to another (for example, home to city centre), drawing where appropriate on information about disability prevalence. The cost of possible modifications to the environment are also included (for example, better lighting and more dropped curbs) so as to understand both the impact of a modification on the number of individuals who might benefit from the modification and the cost of the modification. An example of the use of AMELIA was given with planners and the community in the ancient town of St Albans. Here there is conflict between preserving the historical environment and improving accessibility. Consultation took place with older people in St Albans on three imaginary walks through the town, identifying barriers and noting all these on a map. The researchers assessed how many more shops could be reached by people coming to town by car if these barriers were removed. Barriers considered included cost-effective improvements to accessibility such as kerbs at recommended height, crossings every 100m, wider pavements, benches, better lighting and more toilets.

Older people's travel behaviour

Professor Antonio Paez, McMaster University, considered mobility in ageing from the perspective of 'time geography' and which differentiated between travel as a necessity or a luxury. This considers how people make decisions about where and how to go. The history of cheap transport has led to sprawling developments so that transport is now essential. Growing trends are car ownership, ageing in place and the ending of cheap transport. So what can be expected from this and how can 'time geography' provide information? This perspective accepts that: a) resources are distributed geographically across space; b) a person can only be in one place at a time; and, c) there is a time budget with only 24 hours in a day. There is a set of operating constraints such as the person's physical ability to move and 'coupling constraints', for example, doing activities with others. Lifestyles influence travel behaviour including speed of travel. Older people have fewer spatially fixed commitments as they are not working. Their time budgets become relaxed. In older people time constraints are relaxed but other constraints are greater. This can lead to changes in spatial behaviour. Older people have capability constraints: bladder, mobility, disability and driving cessation can change speed of movement entirely so they cannot reach so many locations. 'Time geography' provides a framework for understanding all this. Quality of life is affected by limited ability to travel, driving cessation and being forced to walk more.

Discussion

Although the two presentations had considered largely public transport another issue of concern was that of older drivers and their capabilities (the Canadian project Can Drive had made a major contribution to this). There was a need to address the transition from driving to the use of public transport. The discussion briefly considered the role of physicians in this process before turning to the assumptions made by Antonio's model and the validation of AMELIA. It was felt easy to understand the AMELIA model and that this was useful if it is used to stimulate thinking about problems in logical ways. Antonio's model was also seen as useful for communication to a non-academic world. It was explained that AMELIA used a number of assumptions and although it had been validated in part, and its outputs had led to modifications to the environment in St Albans, ideas for further validation would be welcomed. The ready-reckoner worked well for policy makers with limited budgets to spend on improving accessibility. It was mentioned that there had been similar experience with a related approach for calculating the cost of housing adaptations. This was still based on assumptions but policy makers were less concerned with these and more interested in relative rather than absolute cost of the options explored. However it was suggested that there was need to provide evaluations which went beyond money to include QALYs. Discussion about the need for better data inevitably centred around the need to involve

commercial organisations, such as those which run shopping centres and supermarkets, since these collect a considerable amount of data on customers and foot-fall in shopping centres. A discussion on methodology, how to influence policy makers, gender differences then followed.

Review

Dr John Millar, Provincial Health Services Authority, British Columbia, led a general discussion on the first three days of the study tour. He commented on the prevalence of long term conditions amongst older people who used such massive public resources that limiting chronic disease was high on the political agenda. It was such a complex area with large intersecting agendas for example, inequalities, obesity, sustainability and climate change, that policy makers could be paralysed from taking action. So there is a need to take on the challenge of complexity and identify the levers for action. The built environment was problematic due to a lack of evidence. In his work he is able to call on the work of the *Healthy Built Environment Alliance*, a multi-disciplinary inter-sectorial group, a KT engine, which meets periodically and which has moved from just sharing knowledge to taking action. In British Columbia there is now a curriculum on the health impacts of the built environment for health providers for those studying environmental health and public health. A similar curriculum is being developed for planners. Of course these are about the life course not just age-friendly issues. John believed that there were eight key areas for generating healthy built environments and that these were well understood. They could be grouped as: Connectivity - mixed use, density; Food - access to healthy food and restricting junk food; Transport; Outdoor activity – crime, snow; Aesthetics – pleasant, facilities; Recreational facilities; Housing; Other settings – workplace, health care. There were many issues and questions to be addressed, academics would do well to spend more time thinking about population health intervention research.

Thursday 11th March 2010

Board Room, Edinburgh College of Art

Programme

9.15am Welcome

Professor Ian Howard, Principal, Edinburgh College of Art

Professor Catharine Ward Thompson, Edinburgh College of Art, Director OPENspace

Professor Anne Martin-Matthews, Scientific Director, CIHR-IA

9.40 am *Getting outdoors with I'DGO*

Professor Catharine Ward Thompson, OPENspace Research Centre (Edinburgh College of Art) and I'DGO; Professor Marcus Ormerod and Rita Newton, SURFACE Inclusive Design Research Centre (Salford University) and I'DGO

10.40 am Refreshments

11.00am *Out and About in Canada*

Chair - Dr Shiva Amiri, British Consulate General

Professor Antonio Paez (McMaster University, Ontario), *Riding cars with seniors: accessibility implications of mode of travel.*

Professor Geoff Fernie (Vice-President Research, Toronto Rehab), *Accessibility and safety of outdoor environments for seniors and people with disabilities*

12.00 noon End of Morning Session

12.30pm *Lunch at the Scottish Parliament with members of the All Party Group on Ageing.*

2.30pm Return to ECA

2.45 *Physical and Mental Wellbeing*

Chair – Professor **François Béland** (Faculty of Medicine, Université de Montréal)

Dr Claire Fitzsimons (Human Movement Science, Strathclyde University), *Exercise for wellbeing and fitness in older adults*

Professor Philippa Clarke (University of Michigan), *Cognitive Function in the Community Setting: The neighborhood as "Cognitive Reserve"*

3.45pm Refreshments

4.15pm *Spaces for Society*

Chair – Professor François Béland (Faculty of Medicine, Université de Montréal)

Professor Judith Phillips (Swansea University), *Older people's use of unfamiliar space*

Professor Spencer Moore (Queen's University, Ontario), *Neighbourhood social environments, age, and park use in Montreal*

5.15pm *Facilitated discussion on key issues*

lead discussant: Glenn Miller (Vice President, Education and Research, Canadian Urban Institute, Toronto)

Introduction

The welcome by *Professor Ian Howard*, Principal, ECA, and scene setting by *Professor Catharine Ward Thompson*, ECA, and *Professor Anne Martin-Matthews* was followed by a series of presentations about the work of the I'DGO consortium (Edinburgh, Salford University and Warwick University).

Going outdoors

[I'DGO - CWT](#)

Professor Catharine Ward Thompson explained the aim of I'DGO as being to identify the most effective ways to ensure that the outdoor environment is designed inclusively and to understand those features which hinder or facilitate physical activity in outdoor spaces. The project involved five universities and several dozen partners representing the full range of stakeholders, central, regional and local government, industry, transport operators, professional bodies, charitable foundations of many different hues, older people's and disabled people's organisations and individual professionals. The project had required the development and validation of a variety of methodologies, measures and instruments, extensive data collection largely through interviews, and detailed analysis. There had been major investment in development of methodologies for understanding the trade-offs between specific environmental features which encourage and discourage walking for transport and in recreational spaces (for example, traffic, trees, facilities), and the impact of location of open space in relation to an individual's home. The resulting 'conjoint analysis' (an approach favoured by NICE) was particularly valuable for communicating the findings to policy makers, especially in that it showed older people were prepared to accept some less desirable features of an open space if it met other criteria which they considered more important. Such an analysis could be important when considering how best to improve existing facilities with a limited budget. Guidance developed as a result of this work has been widely disseminated and has been used and referenced by the UK government and WHO.

More recent work by the OPENspace Research Centre has focused on Home Zones and other types of 'shared spaces', pedestrian-friendly neighbourhoods; a relatively new and controversial feature to urban design in the UK although well-established in the Netherlands. This is also looking at what are termed 'personal projects' pursued by older people in order to understand their activity behaviour. Here too new methodologies are being developed and integrated using activity diaries, accelerometers, street audits and behaviour observations, each with their own challenges for the research team, especially at the analysis stage.

[I'DGO - RN](#)

[IDGO Tactile Paving Brochure](#)

Rita Newton, Salford University, provided a vivid tour of the built environment and the challenges it posed for older and disabled people, highlighting some interventions of the SURFACE Inclusive Design Research Centre in the design of new facilities without which would have been very unsatisfactory. I'DGO was as interested in how an older person gets from A to B, as it is with the

accessibility of outdoor destinations. Her team was particularly involved with the detailed design of the street and the neighbourhood, their walk-ability and consequent impact on quality of life, for example the design and location of seating, bus stops and shelters, and street furniture. There was particular involvement with the design of tactile paving, how it was used in practice, the extent to which it was laid in accordance with DoT guidelines (almost never!), older people's perceptions and approach to using it (viewed negatively by many) and the relationship between the design of tactile paving, the biomechanics of ambulation and risk of falling. This work is leading to a tactile paving toolkit. Laboratory-based work was taking place evaluating smooth granite paving and blister tactile paving at a pedestrian crossing with crossing traffic lights set to different conditions. Other research being carried out by the team, in conjunction with a wide range of stakeholders and communities, was the development of visions for walking and cycling in 2030 and how the design of streets and the design of the urban environment would have to change to facilitate these.

Discussion

A range of issues were discussed:

- How to evaluate the costs and benefits of the approach proposed by l'DGO; at one level this can be seen to have been accepted as it fits the philosophy of life-time neighbourhoods which the government is keen to promote, although there is still along way to go in terms of cost-benefit analysis. However, the ability to use tools developed by l'DGO to demonstrate the trade-offs between certain desirable features in a neighbourhood and its green spaces provides a very practical tool for, say, local communities, politicians and officials to identify and discuss how funds might be best spent on improvements. This is especially useful when considering the interplay between factors related to the individual (for example, living alone) and preferences (for example, trees, seating).
- Difficulties of shared use of pavements by pedestrians, cyclists and scooters, especially when scooter users regard their scooters as replacements for cars. There are many associated issues of regulation and standards failing to keep pace with the rapid development of scooter technology and design. Able-bodied and disabled people have quite different perceptions of the role and function of scooters and wheelchairs which need to be factored into discussions of regulation and standards.
- The rapidly changing technology to support research on activity and exercise (GPS, accelerometers) and how the use of these devices could influence the behaviour of participants.
- Going down steps puts the biggest strain on older people in terms of strength, mobility and ability to coordinate different motor functions; were there similar issues with tactile paving. This led to discussion of safety issues for participants when undertaking work on the quality of pavements outside, whereas in a laboratory it is possible to use safety harnesses.

- Bus shelters in Canada typically have lots of advertisements. Was there any evidence that this is an incentive or disincentive to older people? The answer was, not categorically, but participants in I'DGO research have said that advertisements can be off-putting because: people inside the shelter can't see the bus (or potentially dangerous people) arriving; people outside the shelter can't see if they are about to enter a dangerous environment. However, some research in Canada had found that older people think advertising 'cancels out' otherwise negative perceptions of place.
- Anti-social behavior - this had been reported in the first phase of I'DGO as a disincentive hindering older people's self-reported use of outdoor space.

Out and about in Canada

[Riding Cars with Seniors](#)

Dr Antonio Paez, McMaster University, provided a time-geography perspective on the accessibility implications of the mode of travel and in particular highlighted important differences between older people and other groups – more relaxed time constraints but greater capability constraints, although the implications of these are ambiguous. He introduced a novel framework for considering a variety of factors affecting trip generation, for example, age, licensing status and vehicle ownership and how these impacted, for example, spatial patterns, mode of transport, distance travelled, and accessibility issues.

[Accessibility and Safety of Outdoor Environments](#)

Taking how to avoid hip fractures as an example and illustrating his talk with many video clips and work being carried out by his research team, *Professor Geoff Fernie*, Toronto Rehabilitation Institute, University of Toronto, reviewed a wide range of possibilities for avoiding falls and hip fracture. Observations of falls in the real world, logged by video cameras at intersection crossings and sophisticated analysis of their recorded content, coupled with laboratory work, for example, using a multi-axis perturbation platform, were providing a much improved understanding of falls. From these it was possible to develop better advice on the design of the environment, safety measures and exercise and training regimes, which were also being developed by the laboratory. Removing hazards should be a priority. Steps were a particular major hazard. The majority of 12,000 deaths a year in Canada are due to falls from stairs inside or steps outside the home, compared with 327 deaths of all ages due to house fires. Methods to augment balance can make a major difference. The SoleSensor, SturdyGrip and Toilevator developed at the laboratory have become major items in the catalogue, commercially viable and are saving lives. Developments being trialled include: energy absorbent flooring, attractive jewellery to replace the community

alarm pendant which so many people avoid wearing. In prospect is the opening of the final phase of a new laboratory, equipped with mock-ups of buildings, streets and with real-world simulators, for example, a stairway, many of which will be employed to gain a better understanding of falls, their prevention and avoidance of their consequences. Geoff also spoke at length about the importance of winter clothing, backed up with impressive data about the dangers arising from inadequate clothing especially headgear.

Discussion

Initially some methodological questions were raised about the measurement of journeys. Antonio had defined a trip as going to a destination with a purpose regardless of how far, whereas some surveys missed out small trips on foot, for example, going a few hundred yards to the post box, often because these surveys were more concerned about car usage rather than activity. Other surveys omitted such fundamental issues as whether an individual could actually get out of their house!

It was suggested that the presentations had been set in the context of cities which were predicated on the car. This was seen as a real problem for some Canadian cities. Examples were given of how to reduce car usage some neighbourhoods had been designed with streets which were very windy and narrow (great for street hockey) to deter car traffic but which, consequently, buses could not use. Yet shops were on the periphery, and too far away to be accessed on foot especially by older people. It was extremely difficult to retrofit neighbourhoods like this, and to introduce the shops and amenities. There were other examples of recent investment in accessible housing, but without the necessary infrastructure of amenities and transport to support these. Quite simply the homes were in the wrong place!

The substance of Geoff's presentation, especially the need for better winter clothing, not least hats, was thought to be under-appreciated by many public health specialists. This led to discussion of the design of winter clothing and the difficulties of designing what might be quite bulky clothing which was easy to put on and remove, in contrast to much of the winter clothing available for small children! In turn there was discussion about the extent to which the economic case had been made for investment in clearing snow and ice from pavements so as to reduce falls, hip fractures and other injuries. Whilst the economic case was so powerful it was not helped at all by the way in which the responsibilities of different agencies were distributed and the resulting silo mentality of these agencies.

Vist to the Scottish Parliament

During the lunch break the Canadian delegation toured the Scottish Parliament and were entertained to lunch by members of the *Cross Party Group on Older People, Age and Ageing* which was hosted by Robin Harper, MSP on behalf of this group.

Physical and mental wellbeing

[Wellbeing and Fitness in Older Adults](#)

Following lunch *Dr Claire Fitzsimons*, Strathclyde University, presented the work of SPARColl which is concerned with the benefits of an active life style for older adults. Across all age groups only about 20% of Scottish men and women are taking exercise at the level recommended by government and other health advisers. The likelihood of exercise being taken was dramatically affected by a combination of individual and environmental factors, but changing the environmental factors alone was not sufficient, there needed to be behavioural change. SPARColl is concentrating on increasing walking and reducing sedentary time, for example, by developing walking interventions which can be promoted by GPs during routine consultations, and monitoring subsequent activity. This has been successful in promoting walking and in the subsequent maintenance of walking activity. Consideration of reducing sedentary behaviour is currently concerned with the development of a suitable activity logger which offers feedback to the wearer. This seems to be having the desired effect, but the increments in activity are quite small.

[Cognitive Function in the Community Setting](#)

Dr Philippa Clarke, Michigan University, spoke about work concerned with cognitive function in the community setting. She reviewed a host of literature which relates cognitive decline to features of life styles, social deprivation and the environment before introducing her study of over 3000 individuals, interviewed in 343 neighbourhood clusters in Chicago. A wide range of measures of the urban environment were compiled to distinguish the individuals in terms of their urban context. The interviews included demographic and cognitive indicators, information about physical activity, social integration and civic engagement. Detailed statistical analysis revealed some rich associations including: neighbourhood affluence is associated with higher cognitive function. This operates in part through physical and social resources in the neighbourhood and may operate as a cognitive reserve for those at higher risk of cognitive decline. The work is being extended to take advantage of new information sources on the built physical and social environment.

Discussion

Methodological issues relating to each of the presentations were discussed, some relating to the detailed implementation of Claire's study (for example, compliance when wearing monitors and pedometers, reliability of self reports), others relating to the analysis of Philippa's data (for example, the relationships between individual-level and neighbourhood-level variables and how these interact, especially the influence of neighbourhood facilities and how to separate the individual-level from neighbourhood-level effects, say, of the impact of a recreational facility). It was suggested that analysis may be made more difficult if individuals who like to walk choose neighbourhoods where they can walk. So what exactly is being measured when they are surveyed – the influence of self-selection? However, it was suggested that many people do live in supportive environments yet are failing to take activity. Both presenters commented on the difficulties of securing funding for further work.

Discussion then centred on the nature of activity programmes for older people in Canada and the UK, of identifying optimal exercise targets for exercise, the appropriateness of the 10,000 steps a day (which it was claimed is based in young Japanese men), and of Clair's work where the aim was to encourage people to become more active, initially through walking, but hopefully leading them to take part in other exercise activities – yoga, Pilates etc.

Spaces for society

[Older people's use of unfamiliar space](#)

Professor Judith Phillips, Swansea University, spoke about her work on how older people explore and navigate unfamiliar spaces as pedestrians, an important issue for older people and for planners when designing for an ageing population in any local area. A complex methodology is in place but centred on the abilities, reactions and views of a sample of older people from Swansea who were taken to visit Colchester, an English town with which they were completely unfamiliar. These had prior psychological assessments and then during the visits their ambulatory ECG and spatial behaviour were monitored and verbal narratives recorded and the characteristics of the built environment assessed through a variety of other means, including film footage and still photographs of key features such as signage, important junctions and significant buildings. Detailed findings do not just show the difference in how people navigate familiar and unfamiliar environments, but a raft of implications for policy and practice, as well as issues about how the meaning of space can change as people age.

[Neighbourhood social environments, age and park use](#)

Dr Spencer Moore, Queen's University, briefly presented a literature review of research on the use of parks and recreational settings, noting a wealth of benefits which have been identified, for example, better physical and psychological health, fewer visits to doctors and higher self-reported health than non-users. He also noted that although it is known that social participation declines with age, and the benefits for older people of visiting parks well documented, little is known about how the use of parks by older people is related to the nature of the social activities that take place in them and the influence of age composition of a neighbourhood on participation. A questionnaire survey, with a sampling frame based on Montreal census tracts (neighbourhoods or wards) involving over 900 individuals considered distances of local parks from respondents' homes, their use of local parks, participation (*Formal instrumental*, for example, in neighbourhood associations, environmental groups, educational associations; *Formal expressive*, for example, in social clubs, religious groups, nationality groups) and social demographic data coupled with information on neighbourhoods and park proximity. Strong relationships between key variables were revealed leading to a number of observations. Older people living in areas with an older population are more likely to use parks than older people in areas with a younger age structure. This may relate to sense of safety, stronger neighbourhood networks, park quality and amenities which support older people, and possibly accessibility to the parks. Formal expressive participation contributes possibly to greater participation in neighbourhood based activities, whereas formal instrumental tasks take time away from this engagement. Proximity matters.

Discussion

The presentations made during the day were summarised by Glenn Miller. He highlighted a wide range of issues:

- I'DGO had demonstrated that a sense of satisfaction increases with regular outdoor activity. This may seem an obvious conclusion but really it is very complex with lots of nuances as illustrated by the powerful interactive model of trade-offs. The idea of the complete journey and travel chain are important, since it links life-time homes with life-time neighbourhoods, and the need to balance the quality of the journey with the quality of the destination.
- Spencer's work was closely related and showed that park users have better health, but activity declines with age. However where there are lot of older people they are more likely to use the parks then where there are few. Neighbourhoods do go through demographic cycles with the associated changes in use of spaces.
- Work at Strathclyde had shown the importance of walking, and making improvements over the base line level and maintaining this. However, even though modifications to the environment

may be needed if individuals are to be encouraged to undertake more walking there still needs to be a willingness to want to change.

- The importance of a high level of amenity was also illustrated by Philippa's work which showed the impact of socio-demographic factors on activity, not least on individuals with lower cognitive function in underprivileged neighbourhoods.
- Judith had been applying both a theory of place and a theory of ageing, looking at the reality of inclusive design through the life course. An interesting perspective was talking to the planners about viewing the environment through the eyes of the tourist. So with a view to improving tourism this could help to build the business case for change.
- Not surprisingly, access to the car has a huge influence of mobility, but the situation is very different in suburban and down-town settings. Two comments by Antonio were worth repeating. "Losing the car defines becoming old." "Transit is democratically inconvenient."
- The hazards of winter and the physiological and practical impacts of not being prepared for winter are not properly appreciated, by individuals, for example not wearing a hat, or by planners. There was important evidence presented by Geoff which showed that winter promotes risky behaviour.
- Glenn concluded by commenting on the incredibly rich range of presentations which had brought-up a many issues, especially the challenges of extending the study of the individual to that of the neighbourhood.

The general discussion centred on the issue of the extent to which older people were deterred from using parks frequented by youths because of potential unsocial and unpredictable behaviour. To counter this it was suggested that they were encouraged to use parks frequented by older people partly both because of the absence of such behaviour and also because it was more likely that they would meet other older people and have an interaction with them. The issue of the generations being scared of each other was raised. Often teenagers feel excluded – because the general public dislikes youngsters playing around in open spaces. This was not a new form of behaviour, teenagers have always hung around and have indulged in showing-off, that is part of growing up. What has changed is the way this is viewed by society. It was also suggested that so many factors are in play that there was a danger of concentrating on the needs of just one generation. Real change in the provision of better parks and public green spaces will be achieved only through multi-agency action.

The discussion turned to the generation and use of research evidence, especially the balance between laboratory based work, of which little had been presented during the day, and population based research. Although seen as complementary it was suggested that whilst the population-based work is vital to improving understanding and setting the scene, more laboratory work was

needed to generate the detailed information which is required by standards and code writers. A lively debate followed, particularly on issues of the extent to which both types of work could be informed by theory, could include all the critical variables and generate evidence of value. This led to consideration of what influences policy makers – principally the issues of the day, and the manner in which research evidence can be dismissed or accepted. Often laboratory based work is too complicated and plenty of reasons for bias can be found to reject population based work! Of course investigator driven research is vitally important, but expectations should be realistic. Inevitably policy is top down, although well-packaged findings can be attractive to the politicians. Here it is important in locating who has the brief for a particular area. For example, if there is no one in government with the remit for, say, public health in government then public health research is unlikely to have much clout: similarly for ageing. There must be appropriate public institutions waiting to take up findings.

Friday 12th March 2010

Board Room, Edinburgh College of Art

Programme

9.15am Welcome

Professor Catharine Ward Thompson,
Edinburgh College of Art (Chair)
Professor Anne Martin-Matthews, CIHR-IA

9.30am Meeting the needs of an ageing population in Scotland

Government & Policy: John Storey, Head,
Older People and Age Team, Scottish
Government

Transport: John Smart, Chartered Institution
of Highways and Transportation

Industry : Mark Butt, Regional Manager,
Mayer Brown Ltd

10.15am Discussion

10.45am Refreshments

11.15am Policy and Partnerships for Government and Community: A Canadian Perspective

Dr John Millar, Executive Director, Population
Health Surveillance, Provincial Health Services
Authority, British Columbia

Professor Heather McKay, Department of
Orthopedics and Family Practice, University of
British Columbia

11.45am Questions and Facilitated Discussion on key issues posed by policy makers and practitioners

Facilitator Professor Catharine Ward
Thompson, ECA; Lead discussant Dr Vasanthi
Srinivasan, Director, Ontario Ministry of
Health and Long-Term Care

1.30 pm Site Visits and subsequent discussions organised by Keith Irving and
Janice Gray. Living Streets and Petra Staats,
SusTrans

4.00pm Return to ECA, Tea/Coffee

4.15pm Final discussions facilitated by
Professor John Frank, Director, MRC-CSO
Scottish Collaboration for Public Health Policy

5.15pm pm Reflections Professors Catharine
Ward Thompson, Anne Martin-Matthews &
Peter Lansley

5.45pm Close

7.30pm Dinner

Debriefing for Canadian Party

Meeting the needs of an ageing population in Scotland: policy and practice

[Policy Issues - JS](#)

Three short presentations offered quite different perspectives on the challenges faced by policy makers, professionals and industry. *John Storey*, Scottish Government, reviewed the demographics of ageing in Scotland, highlighting the increase in life expectancy and healthy life expectancy in recent years but noting that the gap between these is increasing and that life expectancy in Scotland is poor on a European comparison. The increase in number of older people is making major inroads into government expenditure on health, social care and housing. Along

with other countries there is a call for the retirement age to be raised. *All our Futures: Planning for a Scotland with an Ageing Population* was published in 2007. This involved and has since led to extensive consultations with older people. The main commitments in the report have been delivered – *See the person not the age* campaign, a National Forum on Ageing, the Scottish Centre for Intergenerational Practice, and stakeholder events. Many activities are taking place in the community to support older people. A major concern for government is the need for health improvement and dealing with major health inequalities.

Policy and professionalism - JS

In his role in the transport sector *John Smart*, Chartered Institution of Highways and Transportation, has been responsible for commissioning and implementing research for the Highways Agency, and especially involved with Road Safety. How do we improve the safety of roads for an ageing population? Ageing has not been utmost in his mind, but rather providing for all. The keys are accessibility and design for all. Often it is the first and last mile that people have to travel that are the most difficult and most important, buses have to go where people want transport, vehicle design is very important, and there needs to be a favourable pricing structure. *Safe Accessibility*, issues covered include: low hazards, minimal steps, home zones have had a very favourable impact in neighbourhoods pushing traffic away in a significant way, making areas busy so that people feel safe (inner cities used to be so quiet at weekends and intimidating), risk-free routes with a special emphasis on lighting, surfaces which are easy to replace, environmental features (sufficient resting points, ergonomic design, visual differentiation between surfaces and street furniture, single level surfaces, vehicle speed, signage). How is his organisation contributing to this? The institution is the leading UK body and has branches worldwide. It works with government helping to formulate and influence policy and with other organisations to help them develop sustainable effective travel plans for their staff, and it delivers technical knowledge in many different ways. The Institution is working extremely hard to develop and encourage the application of the principles of inclusive design.

Policy and Practice - MB

Mark Butt, Mayer Brown Ltd, discussed Shared Space initiatives: theory, politics, campaigns for and against, practical considerations and the need for research on both opinions and design issues. The development of effective delineators is a particular issue, especially kerbing.

Discussion

Shared Space schemes to improve the public realm generated much discussion. Adopting in the UK the shared space philosophy found on the continent was progressing in urban centres, but only slowly. Some schemes are working well and others are being implemented but there *are* concerns, as expressed – for example – in the Say NO to Shared Streets campaign fronted by Guide Dogs for the Blind. Implementation is not always straightforward in existing areas, although there can be more success when shared space is designed-in from scratch such as in regeneration areas. There was much discussion about detailed design issues and the concerns of the public especially about the absence of kerbs, although it was suggested that from experience in Canada kerbs can be positively dangerous (not least when there is snow) and that maybe attention needs to shift to the need for flat space whether or not it is shared.

Discussion moved to the involvement of the community in developing the policies of the Scottish Government. We were told that these were extensive and had led to many initiatives, driven in part by a realisation of the demands from the demographic shift if changes do not take place. The influence of the media and the balance of evidence when developing policies were also considered. Examples were given of different governmental responses to the Royal Commission on Long Term Care (Scotland, for instance, being the only UK government to adopt the recommendation for free long term care for the elderly) and to initiatives such as concessionary bus travel for seniors.

A Canadian perspective

Dr John Millar, Provincial Health Services Authority, British Columbia, and *Professor Heather McKay*, University of British Columbia, responded with a Canadian Perspective.

Policy and partnerships - JM

John Millar outlined some of the challenges currently faced by policy makers in British Columbia, the need for more data especially to understand the health, needs and motivations of a diverse population with varied lifestyles, from city dwellers to those in very remote and isolated areas, and with a range of ethnic backgrounds. He touched on the different levels of policy making and administration in Canada, and many issues familiar to those from the UK in relation to the split in the allocation of responsibility for older people's issues and need for more integration across agencies.

[Policy and Partnerships - HM](#)

Heather McKay, gave examples of how basic research undertaken by the Center for Hip Health and Mobility had found its way into practice to benefit many members of the population. She then turned to the issue building partnerships to ensure that research leads to improvements in practice. Using further examples she highlighted the stages of: beginning with the end in mind, knowing the stakeholders, telling a compelling story supported by powerful evidence, and providing innovative solutions.

The view of a policy maker was offered by *Dr Vasanthi Srinivasan*, Ministry of Health and Long-Term Care, Ontario. She suggested that what she could take away from the week was how evaluation of policy programmes can be used to provide continuous learning for policy makers and others and how research must guide that process. She then went on to describe how this was managed by the Government of Ontario. The approach was to encourage academics to undertake the basic research but for her office, which undertakes entirely meta-analyses, to provide the brokerage function. The office employed very well-educated people to translate basic research work for policy makers, who typically do not read more than 2 pages. However what was produced was more than abstracts; it provided the ‘evidence hooks’ for policy makers and for her. When making presentations to key committees, typically she had 25 minutes maximum and 10 slides in which to present a new issue and to convince the policy makers that it was worth taking notice.

For example, ageing is the big issue, within which the built environment and mobility are critical. Demographic data can be used to show the opportunities as well as challenges. From this she can offer three priority issues, but not five, that would be too many, and show how these issues join up. It’s not wise to continue to put forward new information unless it has clear contact with what has been introduced before. Then the options have to be presented. These must include an assessment of costs and benefit. Creativity is required for this stage. Each option is discussed with the pros and cons; this can be quite rather cryptic. At each stage all slides and presentational material are footnoted to the relevant research. The next stage is to show the effect – that policy changes, a new strategy or new legislation might have and whether current legislation can be built on. After the discussion with policy makers, there is then a need to re-engage the researchers to work out a response to the issues raised and to ask for deeper evidence.

It is important for her department to be building its knowledge base all of the time for the future as much as the present, so the basic work needs to be taking place. Basic researchers can identify gaps and start to work on these, generating valuable evidence, just as policy makers can when they look for the evidence.

Discussion

The general discussion pursued many themes. Issues of complexity were raised. How can we ensure that we have a clear message for policy makers without getting bogged down with all the details of complexity so that there is no starting point? One response was that we need to position the issues in an understandable but not too simplistic way. We have to present the issue first to see whether it is palatable and then return with some of the complexities later when an initial response has been received.

How do we manage the disconnection between academic and policy makers in terms of time scales? It was recognised that both sides struggle, so we have to look to balance up the way we work. This can be helped by having intermediate researchers, such as those in Ontario, who can move things along more quickly,

There was some discussion about the difficulties of securing large funds to do large-scale research which feeds policy makers quickly, and the need for sufficient capacity to undertake intervention research. The challenge of getting the big grants, is to have to have a lot of foresight about, for example, an environmental change, where research evidence could make a difference and then getting into a position to influence policy interventions. This can be very very difficult. So how do we get the people who will use the policy level into the room with the researchers? The experience of John Frank's unit in Scotland was that it took three years to get the rapport. After this time, the need became that of seeking a big grant, but experience of this in the UK is very limited and the research community is unable to respond effectively.

Another approach is through *Portfolio Management* of the activities of a laboratory or a team. Research teams can be built which can handle a range of work, basic to applied, and these can become familiar with working to different time scales and demands from funders and clients so that they can respond to policy makers. Of course they do have to have a credible shop window, so presentations and PR are very important. Basically it's a political process, getting politicians involved with the work of a team and being prepared to spend a lot of time in discussion with them, sometimes being politically astute and even rescuing politicians from going down paths which they are likely to regret. So here there are issues of building a critical mass of staff with the workload and flexibility to enable this type of working, and being able to accept the ambiguities and paradoxes of applied research which at times involve the pursuit of, for example, the development of existing systems, which may not be very good in the hope that in due course there will be the demand for something much better. This is where basic research can become of value. Also it should be remembered that many researchers do latch onto issues for the rest of their lives and

can become an important source of information and expertise, ready to be called upon when needed, provided that policy makers and their advisers know of their existence.

The final issue was of the role of CIHR and similar bodies in relation to taking research into policy. On the one hand it was accepted that bodies such as CIHR and the RCs in the UK had to be politically aware and accept the demand that they should support research which will have impact and for more effective KT of that which they support. But some felt that there was too much pressure on researchers to be involved with policy influencers; those who want to use research results should seek out the researchers just as the Ontario Government is doing.

Living Streets

After an initial briefing on the work of Living Streets, the afternoon comprised a visit to some streets in Edinburgh to view and discuss the issues faced by older and disabled people in using these streets. This was organised by *Keith Irving* and *Janice Gray* from Living Streets and *Petra Staats* of Sustrans. The experience was part of a Healthy Neighbourhood Workshop (HNW). These are normally delivered in partnership with Living Streets and Sustrans, as well as other organisations such as Greenspace Scotland and Cycling Scotland. In addition, local expertise is drawn upon for each workshop, for example officers from various council departments and, where practicable, councillors and other relevant stakeholders, to explore policy and physical measures that will make local neighbourhoods more conducive to physical activity.

Many issues were identified by the three groups of participants, and not all the solutions proposed by some groups found favour with the others. There was considerable discussion about the use and misuse of tactile pavement, especially instances of it being wrongly sited, thus giving potentially dangerous information to those for whom it was intended.

Research and policy

The final session was concerned with the relationship between research and policy. By way of explaining his presence as a Canadian working for the Scottish Government, John Frank offered some lessons for those who have to get research findings and insights into policy making. The background was provided by a series of reports produced in the UK over the last ten years which made a diagnosis that public health research had failed to inform decision makers largely because of insular academic silos located too far away from the real world. Academic work developed with no understanding of how the other side worked. Successive reports pointed out the need to

restructure so that analysis could lead into effective interventions. In the event a large investment was made in five centres one of which is in Scotland where the Scottish Government joined with MRC to set up a small unit to inform decision makers from local authorities through to government officials responsible for Scotland-wide initiatives. The unit has attracted a good number of academics who are keen to influence policy and practice. It brings together eight Scottish universities with expertise in public health, with staff formed into teams built around four stages of the life course rather than the usual way of focusing on specific areas of disease or risk factors. Health in Scotland is below what it should be given its socio-economic indicators. There are some major challenges.

John drew on his considerable expertise to speak expansively about the relationships between research and policy. To influence policy, projects have to come to fruition at the right time. Windows of opportunity open and they close, and often timing cannot be predicted, so findings and individual researchers have to be in the right place at the right time. Quite often this cannot be achieved. For example, the proposal for the minimum pricing of alcohol in Scotland has failed even though a great deal of evidence was available. Based on discussions (especially with Edinburgh cab drivers, an intelligent bunch, very aware of public opinion), the underlying issue was that of fairness: it was unfair to penalise a responsible drinker because some drinkers were irresponsible.

The government had some very good data on the impact of price increases on consumption, and a policy was developed to raise the minimum price so as to reduce consumption. This wasn't a tax, the retail chain (shops, brewers, distillers etc) could keep the extra money generated. However, the brewers and distillers lobby was against it. They emphasised that it was unfair, was not going to work (although much evidence was available suggesting that it would), and the minimum price wouldn't change the price of some of the most disreputable lines of alcoholic beverage. However it was the fairness issue which warned off politicians from all parties from backing the proposal.

It could be argued that the public health specialists failed to listen to the average person, the fairness issue, and, for example, did not push sufficiently the arguments about public welfare, costs arising from drink-induced criminal behaviour, or the legacies for society and the public purse. There needed to be a clearer argument in order to convince the average person.

Discussion

The discussion extended the story about the minimum pricing of alcohol. For example, all sorts of arguments were put forward, often by the commercial lobby, for example, that the move would be seen as protectionist and could lead to an international trade dispute. Yet most countries have minimum prices, although this wasn't made clear by those proposing the legislation. (Social reference pricing is the term used in Canada.)

There was a difference between legislation in relation to alcohol and that relating to smoking in public places, especially pubs. For example the evidence on the ill effects of passive smoking was very persuasive and for this the legislation was concerned with eliminating involuntary exposure, whereas with alcohol it was directed towards individual voluntary personal behaviour. Also, as a result of a long-term campaign and evidence, the politicians had already made up their minds about the smoking ban and the battle with the tobacco companies never happened, unlike with alcohol; the culture had already moved on. Here the lesson may be that rational argument may not win through. Facts have to be brought forward early to build the case, good advertising campaigns, perhaps backed by key charities, and the effort must be sustained. A senior civil servant thought that all was not lost and that the minimum price argument will come back after the next election. However more evidence has to be introduced. There is much data about the health consequences of alcohol, and for example some shows a significant rise in deaths following the liberalisation of licensing. These powerful stories will be needed to drive the next round.

There are similar issues when considering diet. The effect of a poor diet is well known and there is clear evidence to show that diet will change in direct response to changes in food prices. This could inform a move away from unhealthy foods. However would any politician back a bill to change the price of food to help the health of the public?

Often the advice to public health researchers trying to influence government has been that academics need to line up with different stakeholders, say, the commercial sector and food firms. Through working across the stakeholders progress towards new understandings and agreements may be reached. Food firms often want to go in quite a different direction yet they need to show that they are corporately responsible. Examples were given of where they had come on board with labelling, placing goods in stores so as not to attract the attention of children, and with not advertising certain products to children. However examples were also given of where the way forward was directly against the interests of food producers, such that they would leave the table rather than sign up to key recommendations.

This raised the issue of where, for researchers, the boundaries should be with these organisations and where integrity was compromised. Was there a danger that by promoting their work more strongly researchers would be trading-in their credibility? By pushing too hard they would be seen as having an agenda! There had been some celebrated examples of scientists whose work had been influential and then of them being roasted in public. One response was that the choice for researchers was clear, either to choose to be distant from the world, or to get involved but remain aware of where the conflicts of interest may reside. This was not an unusual issue for those in engineering research who are continually exhorted to commercialise their work, as indeed many wish to do.

Final thanks

A final round of thanks was given by *Catharine Ward Thompson, Claire Hastings* of the British High Commission, *Anne Martin-Matthews* and *Peter Lansley*. The week had been an adventure, a lot of ground had been covered, there was much to digest and to consider, especially for future CIHR activities. On the basis of the buzz during the week, the quality of networking and tentative proposals which were already emerging a much was expected to happen in the next six months, including further exchanges, new partnerships and alliances, and national and bilateral research proposals.

Evening dinner

A final debriefing for Canadian participants took place on Friday evening. This provided an opportunity to review the week's activities and the potential influence of these on future activities. There was little doubt about the value of the week for the development of future research in Canada and bilaterally with the UK. Participants had met colleagues from both countries with whom they felt they could work and would wish to work. One of the most immediate tasks was to share with others in their home institutions and in their professional networks the excitement and energy which the week had generated. Developing strategies for a greater involvement with the field, for new lines of investigation as a result of perspectives generated during the visit, and establishing enduring relationships with others in Canada and the UK would take some time. This was true for CIHR-IA as well. However at both the individual and Institute level there were some embryonic ideas which could be developed quite quickly and a commitment to pursue these ideas as vigorously as possible.

Convenor's reflections

Peter Lansley, spoke about some themes and issues which had recurred throughout the week. Some were hardly unexpected and reflected the mix of participants. For example:

1. *The importance of being able to influence policy makers and politicians*

The summaries given above amply illustrate the valuable perspectives of the three Canadian policy makers/influencers and those from the UK who participated in the tour and the way they obtain, manage and introduce research-based information so as to influence policy.

2. *Models of innovation*

Their insights also raised issues about the effectiveness of traditional models for research, especially the way that these hindered the development of a close relationship with policy makers. Added to this were the changing expectations of the public and groups, partly due to an increased sensitivity about human rights but also because of better knowledge about the factors which can impact health. The influence of the media on expectations was important as well as the potential value of the media to promoting research. Recognising the importance of the business case to the promotion of any research into policy was fundamental. At several junctures it was made clear that the traditional linear model of research had its place but that those who wanted to have a direct influence could not expect this to be very effective. There was a choice of mode of operation for researchers, and there was a choice for government in the way in which it interfaced with the research community.

Other recurring issues related to the topics of the research which were presented and the methodologies employed.

1. *Neighbourhoods*

- The relationship between individual level and neighbourhood level factors was demonstrated very convincingly during the presentations made about work in Canada and the UK. However, the approaches were quite different. Clearly there may be some value in exploring how studies undertaken in one country could be replicated in the other. For some of these much will depend on the availability of, for example, suitable census data or large scale surveys which are able to characterise neighbourhoods.
- This is an area where some quick wins could be achieved through close Canada-UK collaboration.

2. *Tools, Products and Approaches*

- More generally the tools and methodologies described had an intriguing sense of the “same but different”. For some there was sufficient commonality to be able to suggest that researchers in Canada and the UK can assist each other in the development of their work and provide confidence in the approaches taken by each other. In other cases there may be opportunities for replication. Clearly there are some good opportunities in relation to design and engineering-based studies, not least pavement design and choice of surfaces.

3. *The Urban Environment*

- One of the reasons for the study visit was to showcase UK research in the field of the sustainable urban environment. Whilst there were many commonalities and places where research in Canada and the UK touched, generally this was not the case for the more strategic areas of urban design. We learned during the week that there was quite a strong relevant community of researchers in Canada but these were largely detached from those communities

with an interest in ageing issues, partly because this research community is not strongly related to agencies primarily concerned with health. Clearly there is a challenge here, for those with expertise and familiarity with, for example, the mission and workings CIHR to develop links with this research community.

- Moving from the strategic to the operational there should be plenty of common ground, especially in the transport field. Although, for example, driving was not considered during the week, other transport modes were, and both countries have very strong communities of transport researchers some of whom are involved with ageing issues. They need to be brought together.
- Similarly moving to the micro-biological level, although UK work in the areas linking, say, health, exercise and nutrition in the context of the urban environment was not emphasised during the week, there should be good opportunities here as well.

The tenor of the week and the rapport which developed between those from Canada with those from the UK confirmed the great value of pursuing bilateral links between Canada and the UK. It is clear that there is much to be gained from working together on those issues which are of considerable importance to older people, their families, society and government. By working together research progress can be accelerated, findings validated and valuable outcomes achieved much more effectively than by working apart. Both countries have small research communities. By working together they can achieve the critical mass and momentum that will bring real benefits to older people in both countries.

Acknowledgments

This transcript relies heavily on notes of the proceedings of the London leg of the study tour made by Professor Gail Mountain and Verity Smith, and recordings of the proceedings in Edinburgh made by Máire Cox. We are very grateful for their support.

Further Information

Available from the Convenor: Professor Peter Lansley p.r.lansley@reading.ac.uk

Appendix - The Science of Age-Supportive Built Environments, CIHR - Institute of Aging

Study Visit to UK, 8th-12th March 2010, London and Edinburgh

Participants and their Organisations**Canada**

Professor Anne Martin Matthews, Scientific Director, Canadian Institutes of Health Research - Institute of Aging <http://www.cihr-irsc.gc.ca/e/8671.html>

Dr Susan Crawford, Deputy Director, Canadian Institutes of Health Research - Institute of Aging, in Vancouver <http://www.cihr-irsc.gc.ca/e/8671.html>

Dr Caroline Martin, Science and Technology Advisor, Canadian High Commission, London (London only) http://www.canadainternational.gc.ca/united_kingdom-royaume_uni/

Dr John Beard, Director, Department of Ageing & Life Course, WHO (London only) <http://www.who.int/ageing/en/>

Professor François Béland, Faculty of Medicine, Université de Montréal <http://www.med.umontreal.ca/>

Dr Philippa Clarke, Research Assistant Professor, Survey Research Center, University of Michigan <http://micda.psc.isr.umich.edu/>

Professor Geoff Fernie, Vice President, Toronto Rehab <http://www.torontorehab.com/research/index.cfm>

Professor Helen McKay, Department of Orthopaedics and Family Practice, University of British Columbia <http://www.orthosurgery.ubc.ca/index.html>

Dr Spencer Moore, School of Kinesiology and Health Promotion, Queen's University <http://www.queensu.ca/skhs/index.html>

Dr Antonio Paez, Associate Professor, School of Geography & Earth Sciences, Associate Member of School of Civil Engineering, McMaster University <http://www.science.mcmaster.ca/geo/>

Policy specialists:

Dr John Millar, Executive Director, Population Health Surveillance, Provincial Health Services Authority, British Columbia <http://www.phsa.ca/default.htm>

Glenn Miller, Vice President, Education and Research, Canadian Urban Institute, Toronto <http://www.canurb.com/>

Dr Vasanthi Srinivasan, Director, Ontario Ministry of Health and Long-Term Care <http://www.health.gov.on.ca/>

UK - London Leg

Professor Graeme Evans, Director, Cities Institute, London Metropolitan University <http://www.citiesinstitute.org/>

Professor Peter Lansley, Director, KT-EQUAL, University of Reading <http://www.sparc.ac.uk/workshops/2010-03-08-age-supportive-built-environments/www.sparc.ac.uk>

Dr Shiva Amiri, Science and Innovation Officer, British Consulate General, Toronto <http://ukincanada.fco.gov.uk/en/>

Claire Hastings, British Consulate General, Toronto <http://ukincanada.fco.gov.uk/en/>

Verity Smith, Coordinator, KT-EQUAL, University of Reading <http://www.sparc.ac.uk/workshops/2010-03-08-age-supportive-built-environments/www.sparc.ac.uk>

Jo-Anne Bichard, Helen Hamlyn Centre, Royal College of Art

Professor Elizabeth Burton, Professor of Sustainable Building Design and Wellbeing, Institute of Health, Warwick University

Professor Keith Case, Professor of Computer Aided Engineering, School of Mechanical and Manufacturing Engineering, Loughborough University

Professor Rachel Cooper, Director, Lancaster Institute of Contemporary Arts, Lancaster University

Professor Malcolm Gillies, Vice Chancellor, London Metropolitan University

Dr Diane Gyi, Senior Lecturer, Department of Ergonomics, Loughborough University

Professor Leonie Kellaher, Director, Centre for Environmental Studies in Ageing, London Metropolitan University

Professor Roger Mackett, Centre for Transport Studies, University College London

Dr Russell Marshall, Senior Lecturer, Department of Design and Technology, Loughborough University

Dr Lynne Mitchell, Research Fellow, Institute of Health, Warwick University

Professor Gail Mountain, Director, KT-EQUAL, University of Sheffield

Professor Sheila Peace, Faculty of Health and Social Care, The Open University

Nick Pizey, Independent Consultant

Juliet Solomon, Principal Research Officer, Cities Institute, London Metropolitan University

Professor Steve Shaw, Canada-UK Cities Group, London Metropolitan University

Dr Steve Summerskill, Lecturer, Department of Design and Technology, Loughborough University

Professor Anthea Tinker, Institute of Gerontology, King's College London

Professor Nick Tyler, Head of Department, Department of Civil, Environmental & Geomatic Engineering, University College London

Professor Catharine Ward Thompson, Research Professor of Landscape Architecture, OPENspace, Edinburgh College of Art (ECA) <http://www.openspace.eca.ac.uk/index.htm>

Professor Ken Worpole, Architect, Writer and Environmentalist, London Metropolitan University
Dr Chloe Heywood, Materials, Mechanical & Medical Engineering Manager

A further fifty participants, principally from government, industry, professional bodies and charities, attended the Tuesday afternoon seminar.

UK - Edinburgh Leg

Professor Catharine Ward Thompson, Research Professor of Landscape Architecture, OPENspace, Edinburgh College of Art (ECA) <http://www.openspace.eca.ac.uk/index.htm>

Professor Peter Lansley, Director, KT-EQUAL, University of Reading <http://www.sparc.ac.uk/workshops/2010-03-08-age-supportive-built-environments/www.sparc.ac.uk>

Dr Shiva Amiri, Science and Innovation Officer, British Consulate General, Toronto <http://ukincanada.fco.gov.uk/en/>

Claire Hastings, British Consulate General, Toronto <http://ukincanada.fco.gov.uk/en/>

Anna Orme, OPENspace/I'DGO Administrator, ECA <http://www.openspace.eca.ac.uk/index.htm>

Mary Craig, KT-EQUAL/I'DGO Lobbyist, ECA <http://www.openspace.eca.ac.uk/index.htm>

Máire Cox, KT-EQUAL/I'DGO Communicator, ECA <http://www.openspace.eca.ac.uk/index.htm>

Dr Claire Fitzsimons, Lecturer in Human Movement Sciences, Department of Sport, Culture and the Arts, University of Strathclyde
Professor Ian Howard, Principal, Edinburgh College of Art (welcome)

Professor Alastair Macdonald, School of Design, Glasgow School of Art

Rita Newton, SURFACE Inclusive Design Research Centre, University of Salford

Professor Marcus Ormerod, Director, SURFACE Inclusive Design Research Centre, University of Salford

Professor Judith Phillips, Professor of Gerontology and Social Work, Swansea University

Professor Philip Rowe, HealthQWest Research consortium - Function for Living Programme, University of Strathclyde

Policy Makers and Practitioners:

Mark Butt, North-West Regional Manager, Mayer Brown Ltd

Professor John Frank, Director, Scottish Collaboration for Public Health Research and Policy (SCPHRP), Medical Research Council (MRC) and Chief Scientist Office (CSO)

Janice Gray, Healthy Environments Officer, Living Streets

Margaret Hickish, Architecture and Design Scotland

Keith Irving, Scotland Manager, Living Streets

Dr Hilary Lapsley, Research Manager, Chief Scientist Office, Scottish Government

Diarmaid Lawlor, Architecture and Design Scotland

Rowan Norrie, Wellness and Health Innovation Project, Innovation Centre

Nick Pizey, Independent Consultant

Dr Linda Sheridan, Scottish Government

John Smart, Chartered Institution of Highways and Transportation

Petra Staats, Active Travel Programme Manager, Sustrans

John Storey, Head, Older People and Age Team, Equality Unit, Scottish Government

Glenda Watt, Strategy Manager, A City for All Ages, City of Edinburgh Council

Raymond Young, Architecture and Design Scotland

Members of the All-Party Committee on Ageing of the Scottish Parliament

Most of the presentations made during the study tour can be accessed at:

<http://www.sparc.ac.uk/workshops/2010-03-08-age-supportive-built-environments/programme.asp> or if viewing this document on line then by clicking on the titles in the boxes