

Health at Warwick **update**

WISE ways: how the built environment affects our wellbeing



Anyone who has ever felt oppressed or depressed by the building they live or work in—and has wanted to wring the neck of the architect who designed it—will feel a breath of fresh air gust over them when they hear the views of Professor Elizabeth (Libby) Burton. She is a woman with a vision; a woman with a mission.

“When I trained as an architect, I was astonished to be told I had to stop thinking about people. My idea is ambitious, but I want to provide an alternative to traditional architecture, which is design for people, design for wellbeing—informed design,” she says.

Libby arrived at the University of Warwick in September 2009, becoming Professor of Sustainable Building Design and Wellbeing at the Institute of Health. She brought with her, her research group, Wellbeing in Sustainable Environments (WISE), which she had established and run for 5 years previously at Oxford Brookes University.

WISE has a substantial track record of conducting research into how the built environment—from buildings through to whole cities—affects the wellbeing, mental health and quality of life of residents and other users. Recently completed projects have included work on how design of the outdoor environment can help to improve the quality of life of older people, including those with dementia.

A centre of excellence

At Warwick, Libby wants to take WISE from strength to strength, by establishing a centre of excellence for knowledge and practice in designing the built environment

for health and wellbeing, using an evidence-based approach. She hopes that the pinnacle—eventually—will be to house the new centre in a building that demonstrates all the best features of “informed design”.

In Libby’s view, architecture has completely lost its way; lost sight of the impact that buildings and the built environment can have on people. “Unlike a piece of fine art hanging in a gallery, which people can choose to go and see or not, people have to live and work in buildings. The built environment does affect people, whether we like it or not, so we have a responsibility to them,” she says.

In her view, architecture became problematic because of the impact of modernism, which resulted in the tower blocks of the 1960s and 1970s. She explains: “The modernist architects did want to make life better for people—they wanted their tower blocks to raise people into the sun and fresh air. But the problem was, they got it wrong. They based these designs on their own ideas, not on any evidence base.” As a result, she concludes, architects retreated from having a social role and described themselves as artists instead.

At the same time, new approaches to building such as design-and-build and the advent of project managers who were not architects have further undermined traditional ideas of what an architect does. “Architects have been pushed into showing that they can do something that no one else can do, leading them to mystify the subject and make it inaccessible to people,” Libby adds.

First goals

Libby wants her plans to provide an antidote to what she sees as the toxic side of architecture. Her aim is to establish a

I want to provide an alternative to traditional architecture

Simulation studies could be one of the most exciting ventures

Calculating the costs to health of hazards in the home



Like Libby Burton (see main article), David Ormandy, professorial fellow at the University of Warwick and Head of the WHO Collaborating Centre for Housing Standards and Health, has spent many years of his working life considering the links between building design and health.

As reported in *Update* previously (Issue 3, 2003), David and colleagues were responsible for developing the Housing, Health and Safety Rating System (HHSRS) in 2000. The HHSRS turned existing methods of determining whether dwellings were safe and healthy on their heads. Instead of considering housing defects in terms of how much it would cost to remedy them, the HHSRS is used to assess the potential threat to health and safety posed by the defects. Cost is no longer the yardstick for how serious a defect is: often, only a very small outlay is needed to prevent very serious threats to health.

David gives as an example the need for safety catches on high windows: these are cheap to buy and fit, but if they are not in place, a child could fall out of the window and suffer a serious injury or even die. Similarly, it may cost very little to install a handrail on a steep staircase, but in its absence, someone could fall down it and die—each year about 500 people die from falling down stairs in the home. And a smoke alarm, costing a few pounds, could save the lives of an entire family in the event of a house fire.

In April 2006, the Government adopted the HHSRS as the prescribed method for assessing housing conditions in England and, later that year, in Wales.

Fuel poverty is a pejorative term

Excess winter deaths are only the tip of the iceberg

Costs to society

Since then, David's work has continued to focus on the health outcomes resulting from housing conditions. "The full implications of focusing on health outcomes did not occur to us when we were developing the HHSRS," he says, "but it has now become clear that these health outcomes resulting from poor housing conditions have cost implications to society."

For example, he adds, if someone falls down stairs and breaks a leg, he or she will go to hospital and receive treatment from a range of health services. If a house is damp and suffers from mould growth, the people living there may suffer respiratory illnesses such as asthma, and will also need medical treatment.

Once adopted in England, the HHSRS was incorporated into the English House Condition Survey (EHCS), which is carried out by the Building Research Establishment (BRE). Part of the work done in the EHCS has always been to put a cost on putting things right or making dwellings safer. Now, as well as identifying hazards and the cost of remedial works, the BRE has been able to compare that cost with the cost to the NHS of the health outcomes for those hazards.

Using this information, the BRE has calculated that poor housing is costing the NHS more than £600 million every year. In addition, the BRE concluded that, because the cost to the health sector is thought to be around 40% of the total cost to society, the cost to society of poor housing is over £1.5 billion a year.

In a similar but smaller-scale project, David has also worked with local authorities, examining the cost benefits to the health sector that flow from housing improvements by local authorities. "We have shown from this work that investments in housing stock by local authorities can deliver cost savings to the health sector. No one had looked at this before but we have shown that it is the case," David says. One finding from this study was that small-scale interventions, such as a one-off cost of £50 to make stairs safer in one house gave an estimated annual cost saving to the NHS of £353.

There has been significant international interest in the HHSRS and related work. David has collaborated with government departments in New Zealand, the US, and Romania. He has also collaborated on the production of the World Health Organization's Children's Environment and Health Action Plan for Europe. This document was endorsed by 53 Member States attending the Fifth Ministerial Conference on Environment and Health in Parma, Italy, in March 2010.

Energy precariousness

Another project, also with international collaborators, has involved investigating the potential health effects of “energy precariousness”. Working with Véronique Ezratty of the Medical Studies Department of edf, the French energy supplier, David has taken a new look at the problems of cold homes.

He says: “We are using the term ‘energy precariousness’ because to us, the term ‘fuel poverty’ seems to be pejorative and implies that the problem is just about people who are too poor to heat their homes. They may be on a low income but the main problem is that their house is difficult to heat. If the house was energy efficient, they may not struggle economically to heat it—it is not necessarily a poverty problem.”

David also points out that many earlier UK studies into the health effects of very cold weather have used the number of excess winter deaths as the main measure of health impact. “The problem is that excess winter deaths are only the tip of the iceberg,” he says. “There

Poor housing costs the NHS £600 million every year

are many other potential health outcomes from energy precariousness. For example, you will have dampness if the dwelling is not heated properly. You may try to economise on lighting, which could increase the risk of accidents, such as falling downstairs. If you are not using the electricity, you may use other forms of lighting, such as candles, which increase the risk of fire. And if you seal up all the windows to stop draughts and stop the heat escaping, the indoor air quality may deteriorate.”

In short, the consequences of energy-inefficient dwellings are much more serious than the headline figure of excess winter deaths might suggest. David is currently working with Véronique to produce a position paper that will summarise their views.

Further Reading

Davidson M, Roys M, Nicol S, Ormandy D and Ambrose P. (2010) *The Real Cost of Poor Housing*. Bracknell: IHS BREpress. Available from BRE online bookshop: <http://www.brebookshop.com/details.jsp?id=325326>

continued from page 1

multidisciplinary set of professionals—like-minded architects, engineers, urban designers, occupational therapists, public health doctors and so on—who will work with her and her colleagues on new courses and new research projects.

The new centre will turn out people who will be well versed in evidence-based design—in understanding what makes people feel good in certain environments and why, and how to create buildings and environments that people will enjoy using and living in, based on tested evidence about what works.

A first step towards this goal will be a new module on Health, Wellbeing and the Built Environment, which will be available at the University of Warwick from September 2010, for students taking Masters degrees in Public Health, and in Engineering. It may also become available as an option for students at Warwick Medical School.

Students will also soon be able to apply to take a Masters course in Health, Wellbeing and the Built Environment. This course will begin in September 2012.

There are few similar courses on offer anywhere in the world. In the US, the Centre for Health Design offers a certification system for architects in evidence-based design for health-care facilities. London South Bank University runs an MSc in Planning Buildings for Health—but this is also limited to the design of health-care facilities.

The built environment does affect people, whether we like it or not

Funding difficulties

In this virtual disciplinary vacuum, Libby has found it difficult to get research projects off the ground, and, particularly, to obtain funding. She says: “The very little research that is happening in this area has been done by epidemiologists, public health academics, environmental psychologists and other disciplines, but very little is coming from the built environment discipline.” The results of the pre-existing studies are interesting but, because those conducting them lack understanding of design, they on the whole do not generate vital design guidance, she points out.

To rectify this problem, Libby is trying to set up an international network of people who are doing relevant work. “This type of research has to be multidisciplinary, and in order for me to do the research well, I need to have good collaborators who know about the things that I don’t know about—things like wellbeing or cognitive health or whatever outcome I am interested in.”

The multidisciplinary nature of the work also presents a stumbling block when it comes to seeking funding. A reviewer from a public health background, for example, may not appreciate some of the finer points of engineering theory that a research

continued on page 4

continued from page 3

proposal refers to. Problems such as these may lead Libby to locate her efforts more closely in one particular discipline—perhaps in public health.

Multidisciplinary collaborations

Plans will firm up as time goes by, and as collaboration with a wide range of professionals continues. David Ormandy, professorial fellow at the University of Warwick and Head of the WHO Collaborating Centre for Housing Standards and Health (see side panel) has become an Associate of WISE and will be involved in delivering the new module and Masters course. In addition, the following people have also confirmed their interest in teaching the new courses:

Professor Roderick Lawrence,
University of Geneva;
Professor Taner Oc,
University of Nottingham;
Dr Judith Torrington,
University of Sheffield; and
Sebastian Macmillan,
University of Cambridge.

Studies carried out to date have only scratched the surface

Potential collaborators on new research projects include:

Dr Chris Stride, University of Sheffield;
Professor Sarah Stewart-Brown, University of Warwick;
Professor Elizabeth Maylor, University of Warwick;
Professor Scott Weich, University of Warwick;
Professor Alan Chalmers, University of Warwick;
Professor Pia Christensen, University of Warwick.

The diverse interests of those listed above—statistics, public health, psychology, epidemiology, psychiatry, simulation and the wellbeing and education of children—testify to the potential for innovative collaborative multidisciplinary projects—the type of work that studies carried out to date have only begun to scratch the surface of.

Housing and mental health

Libby has already collaborated with Scott Weich on a study that looked at the relationship between the characteristics of housing and people's mental health (including depression and anxiety). She says: "Interestingly, we found that—after controlling for all other key variables—people were more likely to be depressed if they lived in a block of flats that had deck access—in other words, if they reached their flat along an outside open or semi-enclosed corridor rather than from a corridor within the building. We don't know what the mechanism for this correlation is, or whether it is causal. We would like to be able to explore that finding further and do similar studies."

Other work has shown that it is not the density of population in urban areas that adversely affects people's mental health, but the form of the buildings they live in. For example, the density of people living in a four- or five-storey courtyard development may be the same as that of people living in tower blocks, but studies have indicated that their mental health problems are likely to be less severe than those living in the tower blocks. Other projects may investigate the interaction between the amount of trees and plants in the environment, and mental health.

The link with Professor Alan Chalmers provides the opportunity for possibly one of the most exciting ventures. "Alan is an expert on virtual reality and simulation," Libby says, "so we are working on developing a project that would allow us to simulate urban environments and put people in them, to study the effects on them of changing certain design parameters."

Let's hope that none of the architects responsible for some of the worst design mistakes of the 60s and 70s are around to take part in that experiment. The temptation to lock them into an unfriendly virtual urban environment and throw away the key might be just too much to bear...

Co-Director Professor Gillian Hundt

T +44 (0)24 7657 3814
E Gillian.Hundt@warwick.ac.uk

Co-Director Dr Davide Nicolini

T +44 (0)24 7652 4282
E Davide.Nicolini@wbs.ac.uk

Administrator Jas Bains

T +44 (0)24 7652 3164
F +44 (0)24 7652 4415
E j.k.bains@warwick.ac.uk

For further details about research in health, medicine and social care at the University of Warwick: www.healthatwarwick.ac.uk

Institute of Health

School of Health & Social Studies
The University of Warwick Coventry CV4 7AL UK

Libby Burton's recent publications/papers

Burton E and Sheehan B. (2010) Care home environments and wellbeing: identifying the design features that most affect older residents. *Journal of Architectural and Planning Research* (in press).

Burton E and Torrington J. (2007) Designing environments suitable for older people. *CME Geriatric Medicine* **9**(2): 39-45.

Sheehan B, Burton E and Mitchell L. (2006) Outdoor wayfinding in dementia. *Dementia: The International Journal of Social Research and Practice* **5**(2): 271-281.

Mitchell L and Burton E. (2006) Neighbourhoods for life: designing dementia-friendly outdoor environments. *Quality in Ageing – Policy, Practice and Research* (Special Edition: the EQUAL Initiative) **7**(1): 26-33.

Burton E. (2009) Spaces across the life course. Invited paper at the *Hope in the Built Environment* Conference at Cumberland Lodge, 18-20 November.

Burton E. (2009) Dementia-friendly design in the outdoor environment. Keynote presentation at *Provision for Dementia in Extra Care Housing* seminar, Bristol, 24 November. Organised by Research in Practice for Older Adults.

Burton E. (2009) The impact of the built environment on quality of life. Keynote paper at the Joint ICE and EPSRC Showcase, *Design of the Built Environment for the Ageing Population*, London, 3 February 2009.

Burton E. (2008) Creating Neighbourhoods for Life. Keynote paper at the College of Occupational Therapists' (Specialist Section – Housing) Annual Conference, *Building Homes for Life: Planning Ahead for an Ageing Society*, Aberdeen, 6-7 November.

Burton E, Mitchell L and Dempsey N. (2009) Urban form and the wellbeing of older people. Paper presented at the *47th International Making Cities Livable Conference on Cities for Health & Well-Being*, Portland, Oregon, USA, May.

Mitchell L and Burton E. (2009) Neighbourhoods for Life: designing inclusive outdoor environments. Paper presented at the *47th International Making Cities Livable Conference* in Portland, OR, USA, May.

Burton E and Mitchell L. (2008) Urban renaissance housing: implications for the wellbeing of older people. *5th Warwick Healthy Housing Conference*, 17th-19th March, University of Warwick.

Burton E and Mitchell L. (2008) Older people and the urban renaissance. *OISD: School of the Built Environment Conference*, 15th January.

Mitchell L and Burton E. (2008) Designing Neighbourhoods for Life. *OISD: School of the Built Environment Conference*, 15th January.

David Ormandy's recent publications/papers

Keal M, Baker M, Howden-Chapman P, Cunningham M and Ormandy D. (2010) Assessing housing quality and its impact on health, safety and sustainability. *Journal of Epidemiology and Community Health*, in press.

DiGuseppi C, Jacobs D, Phelan K, Mickalide A and Ormandy D. (2010) Housing interventions and control of injury-related structural deficiencies: a review of the evidence. *Journal of Public Health Management and Practice*, in press.

Ormandy D. (2010) Shifting the focus from defects to the effects of defects. *Open House International*, in press.

Ormandy D, Bryson J, Battersby S, Nicols S and Flynn R. (2010) *Linking Housing Conditions and Health*. Wigan: Regional Leaders Forum for the North-West (4NW).

Davidson M, Roys M, Nicol S, Ormandy D and Ambrose P. (2010) *The Real Cost of Poor Housing*. Bracknell: IHS BRE Press.

Ormandy D (ed.). (2009) *Housing and Health in Europe: the WHO LARES Project*. Oxford: Routledge.

Ormandy D. (2009) "The right to healthy housing: putting health at the centre of English housing policies." In: *Contributions, Rapport Public 2009*, Conseil d'Etat Paris, France: La Documentation Française.

Carr H, Cottle S and Ormandy D. (2008) *Using the Housing Act 2004*. Bristol: Jordans.

Gilbertson J, Green G, Ormandy D and Stafford B. (2008) *Decent Homes: Better Health: Ealing Decent Homes Health Impact Assessment*. Sheffield: Sheffield Hallam University.

Burridge R and Ormandy D. (2007) Health and safety at home: private and public responsibility for unsatisfactory housing conditions. In: *Journal of Law and Society* **34**(4): 544-566.

Ormandy D. (2007) Home: haven or accident blackspot? A review of the causes of home accidents. In: *International Journal of Environment and Pollution* **30**(3/4): 404-410.

Ormandy D. (2007) "Housing conditions and health." In: Dowler E and Spencer NJ (eds). *Challenging health inequalities: from Acheson to Choosing Health*. Bristol: The Policy Press, pp. 111-125.

Ormandy D and Davis M. (2007) "Regulating the market." In: Hughes D and Lowe S (eds). *The Private Rented Housing Market: Regulation or Deregulation?* Aldershot: Ashgate, pp. 85-103.

Green G, Gilbertson J and Ormandy D. (2006) *Decent Homes: Better Health: Sheffield Homes Health Impact Assessment*. Sheffield: Sheffield Hallam University (A4, 33pp).

MAY	27	Institute of Health Training
		<p>An Introduction to the Ethical Approvals Required for Studies Involving Human Participants Krysia Saul Warwick Medical School, University of Warwick</p> <p>Conducting research in healthcare and in other industries when human participants are involved requires specific approval. This in turn entails becoming familiar with the necessary procedures and complicated on line application forms. This is not rocket science, yet every year a number of students end up having to change the title of their projects or dissertations because they did not take the necessary steps or they did not apply on time. At the same time, a number of researchers are put off from conducting research in healthcare and contiguous sector because they are intimidated by the process.</p> <p>If you are not familiar or not up to date with these procedures and you or your students are considering conducting research that will involve human participants, you are invited to attend this introductory short course on the Ethical and Other Approvals Required for Studies Involving Human Participants.</p> <p>The event is organised by the Institute of Health in collaboration with the Warwick Medical School and supported by the Learning and Development Centre.</p> <p>@ 12.30pm-2.30pm, Room R1.03, Ramphal Building, University of Warwick</p>
JUNE	2	Institute of Health Seminar and Book Launch
		<p>Seminar: Altitude and Attitude: The Spread of Khat (Mairungi) in Uganda Book: Ethnic Identity and Development: Khat and Social Change in Africa Susan Beckerleg Institute of Health, School of Health and Social Studies, University of Warwick</p> <p>Eighty years ago in Uganda, migrant Somalis and Yemenis started to harvest wild khat and to teach farmers to cultivate the plant that is chewed for its stimulant qualities. As khat chewing has become a popular Ugandan pastime, it is seen as a threat to law and order. Traders and consumers are harassed by the police, and one district authority has banned khat. New production areas, such as Uganda, share many common features with established khat production in Ethiopia and Kenya. African khat producers operate an unregulated industry untouched by multi-national companies. Khat production is indigenous development that provides prosperity without donor assistance.</p> <p>@ 12.30pm-2.00pm, Room S0.98, School of Health and Social Studies, Social Sciences Building</p>

To book a place, please contact Jas Bains at j.k.bains@warwick.ac.uk or phone 024 7652 3164 or visit www.warwick.ac.uk/go/ioh

JUNE	9	Sub Saharan Africa Research Network and Institute of Health Seminars
		<p>1) Parliamentary Committee Experiences in Promoting the Right to Health in East and Southern Africa Professor Leslie London (School of Public Health and Family Medicine, University of Cape Town)</p> <p>2) Accessibility to Maternity Services: Review of Human Rights Approaches Professor Nomafrench Mbombo (School of Nursing, University of the Western Cape)</p> <p>Lunch provided. Please RSVP for catering purposes: j.k.bains@warwick.ac.uk @ 12.00pm-2.30pm, S0.98, School of Health and Social Studies, Social Sciences Building, University of Warwick</p>
JUNE	16	Institute of Health/Institute for Advanced Study Public Lecture
		<p>Identifying the Content for a Novel Vision-Related Quality of Life Questionnaire for Visually Impaired Children and Young People Dr Valerie Tadic MRC Centre of Epidemiology for Child Health, UCL Institute of Child Health</p> <p>Objectives: To describe a child-centred approach to identifying the content for a novel self-report questionnaire for assessing vision-related quality of life (VQoL) of visually impaired children and young people. We defined QoL as 'self-discrepancy' between the child's current experiences (Actual self) and their hopes and expectations (Ideal self), after Eiser et al (2000).</p> <p>Methods: Individual semi-structured interviews were conducted with 32 VI children and young people, age 10-15 years, randomly selected and stratified by age and visual acuity to be representative of the population of children attending two ophthalmic hospital outpatient clinics. The interviews lasted approximately an hour and followed a topic guide based on vision-related issues developed from a focus group of VI children, through a literature review and consultation with professionals. Collaborative qualitative thematic analysis was undertaken to identify underlying conceptual themes and derive draft questionnaire items, using the children's own language wherever possible. An expert reference group of VICYP, face-to-face interviews with VI children, and expert 'Delphi' consensus by the multidisciplinary research team were used to reduce, evaluate and refine the items in terms of their importance, comprehensibility, difficulty and response format.</p> <p>Results: 874 potential questionnaire items were initially generated spanning the following themes: Social relations, acceptance and participation; Independence and autonomy; Psychological and emotional well being; Future - aspirations and fears; Functioning - home, school and leisure and Treatment of eye condition. This was reduced to a 47-item questionnaire through the procedures detailed earlier. Each questionnaire item is presented as a vignette describing a VQoL issue from an 'illustrative' child's perspective. The respondent child reports on how much they are like (Actual self), and also how much they want to be like that child (Ideal self), using a 4-point Likert-type scale ranging from 'not at all' to 'exactly'. The lower the absolute discrepancy between the Actual and Ideal self, the higher the child's subjective VQoL.</p> <p>Conclusions: A child-centred approach to identifying the content for a self-report VQoL questionnaire is feasible. We suggest this is critical to capturing the VI children's subjective perspective of the impact of living with impaired vision, and will ensure that future VQoL instruments adhere to prevailing approaches in paediatric QoL literature.</p> <p>@ 12.30pm-1.30pm, Room S0.98, School of Health and Social Studies, Social Sciences Building, University of Warwick.</p>

To book a place, please contact Jas Bains at j.k.bains@warwick.ac.uk or phone 024 7652 3164 or visit www.warwick.ac.uk/go/ioh