

## **Planning and Health: Forging New Alliances in Building Healthy and Resilient Cities**

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As populations across the globe face an increasing health burden from rising rates of obesity, diabetes and other lifestyle related diseases, health professionals are seeking to collaborate with urban planners to influence city design that supports healthy ways of living. Research demonstrates the links between modern epidemics and the way of life in cities. This paper presents an innovative, inter-disciplinary collaboration that brings urban planning and health together. Situated in a built environment faculty at one of Australia's most prestigious universities, the Healthy Built Environments Program brings planning academics, a health non-government organisation, local councils and private planning consultants together as partners in a state government health department funded consortium.

The Healthy Built Environments Program focuses its work in three strategic areas: research, workforce development and education, and leadership and advocacy. Research, which is interdisciplinary and policy relevant, has included undertaking a major comprehensive literature review. This established an Australian-relevant evidence base to support the development, prioritisation and implementation of healthy built environment policies and practices. Another ongoing study is examining the design features, social interventions and locational qualities in selected sites which positively benefit human health. Education and professional capacity building in the Program embraces formal courses, workshops, public lectures and e-learning resources. These focus on healthy built environment principles, as well as building skills in interdisciplinary practice to support productive collaboration between health professionals and planners. The third area of work is leadership and advocacy. This involves working with government and non-government agencies, the private sector and the community, advocating for closer links between health and the built environment.

Our paper presents an overview of the Healthy Built Environments Program and its major achievements. We conclude with a critical review of the challenges, revealing lessons for others in bringing health and planning closer together to create healthy and resilient cities for the 21<sup>st</sup> Century.

## **INTRODUCTION**

As Australia, along with other developed nations, faces increasing health costs from rising rates of obesity, diabetes and other lifestyle related diseases, health professionals are seeking to influence the design of cities to make them more supportive of healthy ways of living. Research is increasingly demonstrating close and irrefutable links between modern epidemics and the way of life in cities (Barton and Tsourou 2000; Corburn 2009; Dannenberg et al. 2011; Kent et al. 2011). Car-dominated transport, reduced opportunities for exercise, increased fast food availability and lack of social connection are all implicated. The health sector is focusing more and more on prevention but to be effective, health professionals need to work in collaboration with other professional groups, such as those from the built environment.

This paper describes an Australian initiative based in the state of New South Wales (NSW) to do just that – the Healthy Built Environments Program (HBEP). Arising from health concerns, the Program is uniquely situated within an urban planning and design context, and has a strong environmental sustainability focus. We begin our paper by contextualising the establishment of the HBEP in the broader theoretical terrain and then shift to an overview of how it came into existence. In the section that follows, we describe the main activities and achievements of the HBEP. The paper concludes with a critique of the challenges we have faced in this interdisciplinary space, revealing lessons for others working to create healthy and resilient cities for the 21<sup>st</sup> Century.

## **THE THEORETICAL TERRAIN: THE RELATIONSHIP BETWEEN HEALTH AND THE BUILT ENVIRONMENT**

There has been a shift in conceptualisations of health and disease from the treatment of illness in the individual to disease prevention and health promotion in populations. This has included increased focus on the impact of environments on collective well-being (McLeroy et al. 1988; Stokols 1996) and on the interdependence of environments and individual behaviour (McLeroy et al. 1988; McLeroy et al. 1992; Anderson and O'Donnell 1994; Sallis et al. 2006). Built environments have subsequently emerged as a focus in health research. This reinvigoration of the health-built environment interdisciplinary relationship embraces a range of themes. These include the built environment's impact on opportunities for utilitarian and recreational physical activity (Sallis and Glanz 2009; Ewing and Cervero 2010; Feng et al. 2010; Heinen et al. 2010); healthy food access (Burns and Inglis 2007; Pearce et al. 2009); exposure to nature and green space (Barton 2009; Abraham et al. 2010); community building (Berry 2007; Zhang and Lawson 2009); noise abatement (Gidlöf-Gunnarsson and Öhrström 2007); air pollution (Marshall et al. 2009) and crime (Landman 2009).

Theoretically, this shift reflects the growing ecological orientation of the health promotion field (McLeroy et al. 1988; Stokols 1996; Cerin et al. 2009; Langille and Rodgers 2010). Ecological models of health promotion are underpinned by the understanding that health promoting and preventing interventions need to be considered across multiple levels and contexts. Often these contexts are simplified in the literature as the individual, social and environment, however more comprehensive theorisations of health ecology also recognise the role of the large-scale economic and political influences that shape local context (Richmond et al. 2005; Mayer 1996).

The ecological orientation emphasises that the most effective health interventions will be tailored to place (Mitra et al. 2010) and the people living in that place. It is acknowledged that individuals of different ages (Carver et al. 2010), socio-economic and cultural backgrounds (Dahmann et al. 2010; Franzini et al. 2010; Turrell et al. 2010) and genders (Bonham and Wilson 2012) will respond to interventions in varying ways. Ecological theories also recognise the role of educational programs, policy change and economic incentives

(Rodríguez et al. 2009), while acknowledging that environmental change can also be a relatively low cost platform on which to build later targeted interventions (Brownson et al. 2006). Ecological models are based on the idea that comprehensive approaches to health promotion need to consider interventions at multiple scales and in different contexts.

The ecological orientation has been used to demonstrate links between the modern epidemics of chronic non-communicable diseases and the way we live in cities. As a result, health professionals increasingly recognise the importance of the built environment in directly affecting people's health. Further, and most importantly, there is growing appreciation of the central role that planners play in providing environments which support healthy behaviour. Indeed, and perhaps ironically, this goes back to the origins of the discipline which arose out of concerns for human health (Thompson 2007). A century ago, planning was strongly aligned with public health objectives to prevent the spread of contagious diseases. Nevertheless, this close relationship was not sustained as planning moved to focus on urban policy development, design and environmental sustainability, while public health largely pursued a medical model (Botchwey et al. 2009).

At the international level, recognition of the need to embrace a broader understanding of health goes back to the 1970s when the World Health Organization (WHO) commissioned the development of a program of public health reform which today is known as Health21 (Barton and Tsourou 2000). In 1986 this led to the declaration of the Ottawa Charter for Health Promotion at the first International Health Promotion Conference, and the establishment of the WHO Healthy Cities Project. In 1992 the United Nations Agenda21 emerged from its Earth Summit Conference in Rio de Janeiro, Brazil, linking environmental sustainability and human health (Barton and Tsourou 2000). Both Health21 and Agenda21 today underpin the WHO Healthy Cities Project, which links health and sustainable development at the local level.

## **HEALTHY BUILT ENVIRONMENTS IN AUSTRALIA**

In Australia, the health sector has spearheaded policy initiatives to bridge health and the environment. Most recently, the Australian Government undertook national reviews of health promotion and the health system more generally (National Preventative Health Task Force, 2009). The views of urban planners and designers have informed key recommendations. Multiple voices have been encouraged in other forums. The Australian Academy of Science's 2006 Fenner Conference, Urbanism, Environment and Health, brought together researchers, policymakers, industry and community across a range of disciplines and sectors (Capon and Dixon 2007). Other significant integrative work includes that of the Heart Foundation. Its Victorian Division published the seminal resource 'Healthy by Design' in 2004 (National Heart Foundation of Australia 2004). The Heart Foundation's work in this area has continued resulting in a raft of policy guidelines and practice case studies (Heart Foundation 2013).

The health portfolio in Australia is traditionally managed by state, rather than federal government. NSW is Australia's largest state, housing approximately 32% of the nation's population (Australian Bureau of Statistics 2011). In the past two decades, the body responsible for health in this state, NSW Health, has increased its engagement in healthy planning issues to increase its influence over the shape of the urban environment. This operates within a capacity building framework highlighting the importance of organisational development, workforce training, resource allocation, partnerships and leadership as both individual and interlinked and interdependent components (NSW Health Department 2001).

As part of a focus on organisational development strategies, strategic documents and action plans recognise the importance of urban planning for health. This was also identified as a key priority for the NSW Government in the first NSW State Plan (NSW Government 2006),

with further clarification about the role that urban planning plays in relation to health in the NSW State Health Plan 2006-2010 (NSW Department of Health 2007a). In addition, the 2007 health prevention strategy *Healthy People NSW* prioritised action to 'create environments that promote health and well-being' (NSW Department of Health 2007b, 17). This strategy also identified health impact assessment (HIA) as a key 'tool to strengthen health input into planning decisions' (NSW Department of Health 2007b, 18). This focus on health and planning issues has been maintained throughout Government electoral changes and significant structural health reforms at both state and federal levels. The most recent health prevention strategy for 2012 to 2017 includes action on building and maintaining health environments as a key priority (NSW Ministry of Health 2012). Strategic plans for particular health promotion issues have also incorporated healthy planning considerations. For example, the NSW Breastfeeding policy includes breastfeeding friendly environments as a priority action area (NSW Department of Health 2011).

Workforce development has always been a key issue given the theoretical and practical differences in the traditional role, purpose, and training of planning and health professionals. NSW Health invested in a capacity building program for its staff on the use of HIA (Harris-Roxas and Simpson 2005). This saw HIAs successfully used on a number of projects with local and regional partners during the last ten years (for an example see Neville et al. 2005). To further support the development of NSW Health staff's capacity to influence healthy design and the built environment, the 'Healthy Urban Development Checklist' was created (NSW Department of Health 2009). The Checklist assists health staff in providing feedback and advice on development policies, plans and proposals. In addition, it facilitates partnerships and collaboration between NSW Health, planners and developers.

The work of regionally based health services in healthy built environment projects and policies has been recognised in awards from the planning sector. The Hunter New England based health service has been an acknowledged leader. It won the 2011 Planning Institute of Australia award for work developing and testing a model for engaging with Aboriginal and Torres Strait Islander communities on the effect that the built environment has on their health and well-being (McGuinness et al. 2011).

NSW Health has also focused on inter and intrasectoral partnership building. From 2004 as a founding member of the NSW Premier's Council for Active Living (PCAL), NSW Health championed projects to strengthen the physical and social environments in which communities engage in active living (PCAL 2013). As well, NSW Health entered into a partnership with the NSW Commission for Children and Young People in 2011 to look at a range of age specific built environment concerns (NSW Office of Communities 2013). Healthy built environments is now one of NSW Health's key preventive health priorities.

With the built environment increasingly viewed as an important determinant of health, and the evidence base continuing to grow, NSW Health realised that more was required. This extended to supporting a comprehensive framework for building workforce capacity, as well as a strategic method of supporting policy relevant built environment research. Knowing that this is a cross sectoral issue with significant complexity, it was considered that an innovative and different approach was required to increase the integration between the health and planning sectors. In the next section we describe this approach.

## **THE HEALTHY BUILT ENVIRONMENTS PROGRAM**

Following a formal tender process, NSW Health selected the City Futures Research Centre, situated in the Faculty of the Built Environment at the University of NSW (UNSW), to establish the Healthy Built Environments Program (HBEP). Under the leadership of an urban planner (Susan Thompson) and public health physician (Anthony Capon), a five year contract was awarded to an interdisciplinary consortium from academic, government, private

and non-government organisations with expertise across health, urban planning and design. Core funding from NSW Health totals AUD1.5million over the five year period 2010 to 2014, with infrastructural support from UNSW.

The HBEP is situated in one of Australia's largest faculties of the built environment which includes all of the design and planning disciplines concerned with individual buildings (their interiors and what is between them), through neighbourhoods, to the urban region, city and beyond. Positioning the Program within a built environment faculty has offered the opportunity to influence the built environment professions to incorporate healthy planning provisions in their training, strategic direction, policy formulations and decision making.

The overarching aim of the HBEP is to revitalise the relationship between the built environment and health professions so they can work together to create places that support people being healthy in their everyday lives. The Program's vision is that built environments will be planned, designed, developed and managed to promote and protect health for all people. This vision is realised through the HBEP's three strategic areas of operation involving its key stakeholders and partners:

1. Interdisciplinary research on the relationship between health and the built environment.
2. Capacity building, education and workforce development.
3. Leadership and advocacy on health and the built environment.

Below we outline each of these strategic areas to provide an overview of the Program's interconnected ways-of-working. These bring the interdisciplinary efforts of researchers, educators, practitioners and policymakers from the built environment and health sectors together in the prevention of contemporary chronic disease. Readers can obtain further information, as well as access the resources mentioned below, by engaging with the Healthy Built Environments Program website (HBEP 2013).

## **1. Research**

The HBEP fosters interdisciplinary research which is policy relevant for professionals working in urban planning, design and public health. The HBEP has completed a major scholarly literature review examining the role of the built environment in supporting human health as part of everyday living (Kent et al. 2011). The principal aim of the Review is to establish an evidence base that supports the development, prioritisation and implementation of healthy built environment policies and practices. The HBEP's Literature Review proposes three key built environment interventions to support health and well-being:

- i. The Built Environment and Getting People Active.
- ii. The Built Environment and Connecting and Strengthening Communities.
- iii. The Built Environment and Providing Healthy Food Options.

These built environment interventions or domains address three of the major risk factors for chronic disease in the Australian community – physical inactivity, obesity and social isolation. The Review engages with a comprehensive range of robust and valid evidence across the health and built environment disciplines. It is very much focused on assisting policy makers in the planning and health professions who need access to the latest evidence to support the implementation of policies that promote supportive environments for physical activity, social interaction and healthy eating. The Review identifies current gaps in the evidence to inform future research directions. It includes an annotated bibliography of key research articles and a glossary of terms to assist practitioners, policy makers and researchers working in this interdisciplinary realm. The policy-practice advice has been

further reinforced by the release of a set of concise Fact Sheets. In 2012, this project won an Excellence Award for 'Cutting Edge Research and Teaching' from the Planning Institute of Australia (NSW Division).

The Literature Review is updated via a regular fortnightly summary of new work that relates to the three key domains of healthy built environments – Getting People Active, Connecting and Strengthening Communities and Providing Healthy Food Options. The Review, Fact Sheets and updates are freely available on the Program's website.

The HBEP is engaged in different research projects funded from a range of institutions. An Australian Research Council (ARC) Linkage Grant called 'Planning and Building Healthy Communities: A multidisciplinary study of the relationship between the built environment and health' has been underway for over two years. This study examines how urban environments support health and well-being. Tracking residents' behaviours, attitudes and perceptions, the research fills a gap in current knowledge about how urban environments manage and promote good health. The research aims to identify the design features, social interventions and locational qualities in selected sites which positively benefit human health. The project has Australian research partners from the health and built environment sectors working together. As part of the methodology for the project, we have developed a detailed audit instrument to undertake the built environment assessments (Mitchell and Thompson in review). The study is due for completion in 2014.

In 2011, the HBEP completed a smaller project funded by the Australian Housing and Urban Research Institute (AHURI). This work involved a focused examination of the health impacts of housing. The study identified the current level of knowledge and major research questions. Further, it attempted to prioritise these, proposing ways to best explore the highest priority research and policy development needs. An 'Investigative Panel' comprising leading researchers, public health and housing policy officials from across Australasia and New Zealand was convened to do this. The final refereed report includes the outcome of the panel as well as background literature (Phibbs and Thompson 2011).

A Research Strategy to facilitate the development of priorities for policy relevant healthy built environments research was completed in 2012. It was informed by the research gaps identified in the Literature Review (Kent et al. 2011), together with stakeholder perceptions of what is needed to move the healthy planning policy and practice agenda forward. This Strategy was approved by NSW Health and has initiated a mapping project to assess the breadth of key organisational involvement in healthy built environment work across NSW.

## **2. Capacity Building, Education and Workforce Development**

The HBEP undertakes innovative, cross-disciplinary educational activities to build the capacity of the existing and future workforce to deliver healthy built environments. The focus is on the NSW health workforce and encompasses a raft of diverse educational opportunities. There is an emphasis on working in relationship with the regulatory urban planning system. This involves learning about the legislation, as well as the culture of planning and its interface with public health. Networking with urban planners to develop contacts for referrals and to seek advice is an important aspect of this learning. Late in 2012 the HBEP embarked on a series of day-long workshops across rural and metropolitan regions. These workshops introduce the NSW planning system and address how the health implications of policies, plans and development proposals can be considered by health and related stakeholders to influence decision making in planning. Key resources to assist are presented, including the excellent 'Healthy Urban Development Checklist' (NSW Department of Health 2009), 'Healthy Spaces and Places' (2013), the work of the Heart Foundation (2013) and the PCAL website (2013). The workshops have proved popular with

professionals beyond health, including community workers, sustainability officers and local government planners wanting to work in healthy built environments.

A variety of shorter seminars, public lectures, interactive forums and UNSW TV videos also feature in the HBEP's educational offerings. We regularly invite visiting international experts to present lectures and in one case, a field trip showcasing exemplars of healthy built environments across the Sydney metropolitan area was organised. A walkability audit exercise and a built environment audit have also been held to give participants hands-on experience with such tools. As much as possible, lectures are recorded and placed on the HBEP website, as are UNSW TV videos featuring HBEP staff. These e-learning resources are promoted to non-metropolitan colleagues and will be augmented with more specific lectures, key resources (additional videos and readings), together with a guide for learners. Further, as part of its commitment to developing the capacity of rural and remote professionals, the Program has compiled specific policy relevant research for healthy built environments in rural and regional localities.

The HBEP's work in education also utilises current course offerings at UNSW to build the capacity of health professionals. In the first year of its operation, a new postgraduate subject called 'Healthy Built Environments' was introduced and specifically linked to the HBEP. The course focuses on the role of the built environment in supporting healthy behaviour for diverse communities. It examines the ways in which health and built environment professionals are collaboratively addressing the epidemic of chronic disease associated with sedentary and socially isolated urban living. Current research, legislative and policy frameworks, together with best practice from Australia and abroad, are critically evaluated. The challenges of inter-disciplinary research, policy development and implementation are also considered. Classes involve a mixture of lectures, participant discussion and critical review, hands-on experience with different tools, and a group presentation and debate. This course is specifically designed for students undertaking post graduate studies in built environment and health and, as part of the HBEP funding agreement with NSW Health, is available to six public health practitioners at no fee on an annual basis. To participate, the health professionals have to agree to fully engage with all aspects of the course. This has now happened for three years with some outstanding results both in the classroom and back in the office.

An undergraduate course 'Healthy Planning' is also offered. It is an inter-disciplinary elective for senior undergraduate students studying to be either built environment or health professionals. The students who complete the class go into their professional lives with an appreciation of healthy built environments. Some of the planning students choose to do their final year thesis research project on a healthy planning topic. These have included food security, farmers' markets, walking trails, outdoor gyms and, at Masters level, independent activity in childhood. Exemplary thesis reports are placed on the HBEP website forming part of the online resource library.

Doctoral research is also conducted under the umbrella of the HBEP. To date research topics have encompassed cultural barriers to the uptake of active transport, planning for healthy ageing in a supportive built environment, the implications of hotter temperatures for activities in public spaces, and the importance of local neighbourhood green space and connecting walkways for older residents.

### **3. Leadership and Advocacy**

Leadership and advocacy to bring health and the built environment closer together is the third area of concern for the HBEP. This involves mapping key points of influence to build stakeholder partnerships with government and non-government agencies, the private sector and the community. We outline the main leadership and advocacy initiatives below.

The Program has a formal Advisory Board of healthy built environment stakeholders representing academia, government, and the not-for-profit and private sectors. The Advisory Board meets every quarter and is instrumental in ensuring that the HBEP is aware of relevant initiatives in health and the built environment, as well as the most appropriate ways to build stakeholder partnerships. A regular quarterly e-newsletter is sent to approximately 300 interested stakeholders. Reporting on major HBEP initiatives in a two page, plain English and easy-to-read format, copies of the newsletter are placed on the HBEP website.

An important aspect of the HBEP's Leadership and Advocacy activities are its regular submissions to major inquiries reviewing planning and health regulation and policy. We have made submissions on Australia's National Urban Policy, different stages of the NSW Planning Systems Review, and the Sydney Metropolitan Strategy Review. In every case, the HBEP's submissions argue the case for inclusion of health as a foundation of a sustainable environment. At the time of writing, as a result of coordinated and extensive advocacy, the recently released White Paper, which is part of the NSW Planning System Review, includes an explicit health related objective within the proposed planning legislation (NSW Government 2013). If successful this would see the first healthy built environments objective in a NSW planning Act – also at the vanguard of national and international best practice.

In addition to these leadership and advocacy initiatives, presentations are frequently given to health and built environment professionals at different forums including conferences and industry meetings. While all unique and responsive to the specifics of the particular gathering and needs of the organisers, an overarching aim of these presentations is to disseminate healthy built environment research and practice case studies. In this regard, a regular 'Healthy Built Environments' column has become a significant contribution to the urban planning profession in NSW. Every three months, HBEP Director Thompson and Strategic Consultant Capon write for the Planning Institute of Australia's NSW journal 'New Planner'. This provides an excellent platform to inform planning practitioners and city policy makers about the latest in healthy built environments, inspiring the profession to plan healthy and sustainable spaces and places. Over the past three and a half years, a comprehensive set of short articles has evolved which together provide a good background to the principles of healthy built environments, as well as giving readers useful resources for evidence-based policy and practice. A special issue of 'New Planner' in June 2012 solely focused on healthy built environments gave HBEP a further opportunity to communicate with the urban planning community. All columns and the special issue are on the HBEP website.

## **CHALLENGES IN MOVING FORWARD**

Progression of the healthy built environments agenda requires formation of strong interdisciplinary relationships. This process will inevitably encounter practical and theoretical discord that needs to be acknowledged and addressed. Common themes of friction identified through our experience relate to different understandings of the complexity of context, different ways of thinking about the nature of evidence required to justify policy change, and more general misconstructions about ways to mix policies and disciplines. These themes highlight some of the practical challenges to planning for healthy built environments, revealing lessons for others working to create healthy and resilient cities for the 21<sup>st</sup> Century.

### **Context**

The need for consistent and objective measurement of built environment and physical activity variables is a commonly cited weakness in research on the built environment and health. As an example, Kirk et al. (2010) recommend standardisation of measurement in seeking to characterise 'obesogenic' environments. This comprehensive review of 146 primary studies concludes that the 'environment may play a critical role in obesity development, prevention and management, but we have yet to determine the best method

for measuring that effect accurately and consistently, or develop an appropriate theory to encompass this very complex and dynamic system' (Kirk et al. 2010, 116). There are other studies recommending consistency in measurement of built environment variables. These include Cunningham and Michael (2004) measuring the impact of the built environment on older people's physical activity, Davison and Lawson (2006) and Davison et al. (2008) measuring environmental characteristics associated with children's physical activity, and Pucher et al. (2010) and Heinen et al. (2010) analysing the built environment's impact on cycling.

Policy responses will differ according to spatial context, demographic and cultural character, environmental quality and temporality. As an example, the state of NSW covers an area of approximately 800,628 square kilometres, and while the population is highly urbanised, the distances between regional centres creates significant practical issues. These issues range from the need to respond and work with communities from diverse cultural backgrounds and in a variety of social contexts, to the need to take into account the health impacts of different bio-physical geographies. Distance, in itself, presents difficulties. It isolates professionals, limits opportunities for education and acts as an impediment to workforce retention. Indeed, a key focus of the HBEP has been to conduct workshops outside of metropolitan areas, which are complemented by a raft of online resources. The HBEP has also made a particular effort to gather and disseminate relevant rural and regional planning case studies from a variety of Australian and international sources.

The geographical and cultural diversity inherent to NSW demonstrates the way recommendations for standardised measurements risk underestimating the complexity of people in place. This is particularly the case when attempts are made to compare results between and across populations and locations. And while there is a role for standardising some variables (such as the use of body mass index as a way to define the healthy weight range), standardised measures should not be viewed as a prerequisite to prove the relationship between the built environment and health.

Acknowledging contextuality in relation to research into the health determinants of place must not be viewed as an impediment to the search for elements of commonality. It needs to be taken seriously in both the application of research to policy, and the design of future research agendas. Research on health and the built environment has addressed ways to avoid the 'excuse' of context (see, for example, Black and Macinko 2008), with the strongest recommendation being that methods should be transparent and at least situated within, but not necessarily echoing, the existing research agenda. This implies that future research should build on the findings of previous work, and comprehensively detail the measures and methods used.

## **Evidence of Causality**

Linked to the common call for standardisation is an identified need to establish that the relationship between the built environment and health is a causal relationship. Studies have consistently found a significant association between health and the built environment, generally through cross sectional research, however associations are insufficient to establish true causality.

Establishing non-spuriousness by removing confounding variables (such as residential self-selection) is often cited as a major weakness in research on the health-built environment relationship (see for example Tzoulas et al. 2007; Reynolds et al. 2009; Story et al. 2009; Ewing and Cervero 2010). The lack of longitudinal research required to prove time precedence is also identified as another missing element of causal proof (see for example Faulkner et al. 2009; Handy et al. 2009; Reynolds et al. 2009; Feng et al. 2010; Heinen et al. 2010 and Renalds et al. 2010). This inability of the research agenda to date to establish true

causality is a 'weakness' perhaps not of the research itself but of the seemingly unpredictable way people relate to their environments. Juxtaposed to the call for causality is research accepting that the randomised controlled trials often underpinning causal proof are impractical for studies on the built environment and health simply because it is impossible to randomly assign exposure to built environment modifications (Brownson et al. 2006; Bauman and Bull 2007). This scholarship suggests that the constant focus on causality is a weakness of the research agenda in itself. Further, attention would be better directed towards the establishment of a more practical standard of proof acceptable in the absence of causality (Gebel et al. 2005; Ogilvie et al. 2006; Cavill et al. 2008; Story et al. 2009). This standard would need to incorporate the results of qualitative, as well as quantitative, research.

The question about evidence cuts to a core division between the health and urban planning traditions. Traditionally, the nature of evidence planners use to develop policy is different from that used by public health officials. Australian urban planning's early to mid-20th Century focus on greenbelt cities, for example, was based on an historical appreciation of the health benefits of open space for overcrowded and dirty cities (Cullingworth and Nadin 2006). Schemes such as Sydney's County of Cumberland Plan and Perth's Endowment Lands project reflect this appreciation. Basing policy change on an 'appreciation', rather than hard evidence, poses a problem for a public health based intervention.

### **Mixing Policies and Disciplines**

Research on the links between health and the built environment often concludes with the acknowledgement that structural modifications to the built environment need to be part of a policy mix if they are to be successful. For example, Ewing and Cervero's (2010) 'elasticity' theory gives quantifiable justification that active transport behaviour is unresponsive to small scale built environment modifications but responsive to an integrated range of built environment modifications, educational programs, incentives and restrictions. Theoretically, this conceptualisation reflects the increasingly ecological orientation of the health promotion field (McLeroy et al. 1988; Stokols 1996; Cerin et al. 2009; Langille and Rodgers 2010). To change practices, however, an ecological approach requires consistent and meaningful interdisciplinary collaboration. This necessitates seeking new, potentially more comprehensive ways of understanding the impacts of policy development, amendment and implementation. It also demands that both researchers and practitioners from the built environment and health recognise that their accepted wisdoms and assumptions are not necessarily shared, nor understood, beyond their own disciplinary boundaries. Successful healthy built environment partnerships rest on deliberative interdisciplinary engagement. At its heart is an eagerness to listen and learn about the other. This extends from disciplinary culture to ways of collecting and measuring data, reporting results and the subsequent translation into policy.

The complexity of health prevention in modern society demands interdisciplinary working. However, perhaps the biggest challenge facing planning for healthy built environments is the ongoing need to appeal to economic and political agendas, including the timeframes laid down by the electoral cycle. The economic imperative was highlighted in our research with health and built environment policy makers who identified cost-benefit analysis tools as critical in enabling better advocacy for the provision of built environment interventions to improve health (HBEP 2011). Nevertheless, it is not an easy task to provide the 'proof' to justify action. The need for healthy built environments to recognise context problematises the provision of such proof. Ongoing success in this area requires the adoption of a long term perspective in assessing possible health, social and economic outcomes.

## **CONCLUSION**

There is a strong relationship between people's health and the built environment. This relationship is complex and contextual and translating this framework into action requires the development of genuinely interdisciplinary working relationships. These relationships must be based on mutual understanding and respect. Our paper has detailed the development of an innovative, inter-disciplinary working collaboration that has brought urban planning and health together. The experiences of the HBEP have taught us that there are very real differences in the research and practical traditions unique to professionals working in this area. While these disparities are not insurmountable, they do indicate that this is a discipline area that is in its infancy. The HBEP is proud to be playing a part in the development of the discipline in Australia, contributing to the creation of built environments that promote the health and well-being of all communities.

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