



# Research Strategy 2012-2014

Never Stand Still

Faculty of Built Environment

Healthy Built Environments Program



THE HEALTHY BUILT ENVIRONMENTS PROGRAM

## **What is the Healthy Built Environments Program?**

The Healthy Built Environments Program is an innovative collaboration that brings the built environment and health together. The Program is situated in the City Futures Research Centre, Faculty of the Built Environment at the University of NSW (UNSW). Core funding of \$1.5 million for the Program comes from NSW Health (2009-2014).

As Australia faces increasing health costs from rising rates of obesity, diabetes and other lifestyle diseases, health workers are seeking to influence the design of cities to make them more supportive of healthy ways of living. Recent research has demonstrated links between modern epidemics and the way of life in cities. Car-dominated transport, reduced opportunities for exercise, increased fast food availability and lack of social connection are all implicated. Increasingly the health sector is focusing on prevention and to be effective, health professionals need to work in collaboration with other professional groups, especially those from the built environment.

The Healthy Built Environments Program is contributing to revitalising the relationship between the built environment and health professions so that together we can create built environments that support people being healthy in their everyday lives.

The Healthy Built Environments Program vision is that built environments will be planned, designed, developed and managed to promote and protect health for all people.

## **Healthy Built Environments Program Personnel**

The Healthy Built Environments Program is led by Director Associate Professor Susan Thompson (urban planning) with strategic input from Professor Tony Capon (public health). A Senior Research Officer supports the Director and all activities of the HBEP. At various times research assistants contribute to the Program's work, as do postgraduate and undergraduate students at UNSW.

A consortium of partners from built environment and health disciplines across the public and private sectors contributes to the work of the Healthy Built Environments Program. The Consortium Partners bring a multitude of skills in research, management and education, together with a breadth of knowledge across the built environment and health disciplines.

## **Healthy Built Environments Program Contact**

Further information on the Healthy Built Environments Program can be obtained by visiting the Program's website: <http://www.be.unsw.edu.au/programmes/healthy-built-environments-program/about> or contacting the Healthy Built Environments Program by email: [hbep@unsw.edu.au](mailto:hbep@unsw.edu.au)

## Background to the Research Strategy

### 1. Introduction

The Healthy Built Environments Program aims to support the development in NSW of current and future communities in which the built environment promotes good health for all. This is being achieved through the Healthy Built Environments Program's three identified core strategies:

- Research
- Education and Workforce Development
- Leadership and Advocacy.

The Healthy Built Environments Program's Research Strategy 2012-2014 integrates work undertaken within the Program's 'Research' core strategy. The Research Strategy is informed by several key projects undertaken by the Healthy Built Environments Program in 2010-2011. The Research Strategy has also benefited from input from the HBEP's Advisory Board and Consortium Partners. Members of the Advisory Board and Consortium Partners of the Healthy Built Environments Program play a significant role in advancing healthy built environments in NSW. Details of these stakeholders can be viewed on the HBEP's web site.

**Diagram One – Informing the Research Strategy**



## 2. Objectives

The Research Strategy has been devised to provide direction for policy relevant research in the cross-disciplinary field of healthy built environments. Specifically, it is based on the following objectives:

- To identify current gaps in policy relevant research on healthy built environments.
- To prioritise research projects that will build the evidence base for policy to implement healthy built environments in NSW.
- To utilise synergies amongst HBEP stakeholders to enhance the identification of research opportunities to undertake priority projects.

## 3. Target Audience

Professionals, including policy makers, practitioners and researchers, working in the area of healthy built environments, and the promotion of healthy built environments.

## 4. Rationale

The built environment has an important role to play in supporting human health as part of everyday living. While this is increasingly recognised in a burgeoning inter-disciplinary body of research, for policy makers there is ongoing difficulty in defining the most effective and practical built environment interventions that support human health. We need research evidence to support the development of healthy built environment policy that underpins cost effective practice.

***The key message is that there is a strong relationship between people's health and the built environment and that this relationship is complex and contextual.***

## 5. Context

The Research Strategy is informed by several key projects undertaken by the Healthy Built Environments Program in 2010. These pieces of work have all included some investigation into the current research gaps in the evidence to support policy development for the creation and support of healthy built environments in NSW. These projects are as follows:

- ✂ The **HBEP Literature Review** (Kent, Thompson and Jalaludin, 2011) – specifically, its focus on the three domains of the built environment that support health and well-being as part of everyday life.
  - The built environment and getting people active

The built environment can increase opportunities for, and reduce barriers to physical activity. The varying needs of different population groups, the purpose of the activity (transportation or leisure), and the characteristics of the built environment (such as residential and commercial densities, land use mix, connectivity and accessibility) must be considered in understanding how the environment can best support physical activity.

- The built environment and strengthening and connecting communities

Communities can be strengthened and connected by facilitating interaction in public spaces including gardens, town squares, parks and lively streetscapes. Such spaces have to be safe, inviting and meaningful for the communities that they serve.

- The built environment and access to healthy foods

Through zoning and land use regulation, the built environment can support healthy eating. Interventions include community gardens and fresh food markets, as well as protecting food production systems and controlling marketing and advertising infrastructure, and food retail outlets.

The three domains address the principal risk factors for contemporary chronic disease – physical inactivity, obesity and social isolation. The HBEP Literature Review identifies research gaps in each of these three domains. This is the starting point for development of the Research Strategy.

- ✂ The **Stakeholder Research Project** – this identifies major policy relevant research gaps from the perspectives of key healthy built environment organisations.
- ✂ The **Area Health Service Listening Tour** – while the central focus of this work was to identify capacity building needs in the NSW health workforce, participants in the study did identify research needs for policy development, which have informed the Research Strategy.

The reports of the ***Stakeholder Research Project*** and the ***Area Health Service Listening Tour*** are both available for download on the Healthy Built Environments web site.

Input to the Research Strategy has also been obtained from the Healthy Built Environment Program's Advisory Board and Consortium Partners.

## The Research Strategy

The Research Strategy has been structured according to the results of the Literature Review and Stakeholder Research projects. The table below outlines this structure which identifies the key research gaps to support healthy built environments policy development.

Literature-driven Research Priorities		Stakeholder-driven Research Priorities	
<b>Focus Area</b>	<b>Opportunity for Future Research</b>	<b>Focus Area</b>	<b>Opportunity for Future Research</b>
All domains including physical inactivity	Research on ways to work together	Evidence Informing Policy	Consensus on starting point for information gathering
	Evidence required to justify policy change		Practical guidelines and indices (walkability, liveability)
	Opportunities to monitor interventions		Information sharing and dissemination
Obesity	Detailed, contextual research on the impact of healthy food accessibility on health in the Australian context	Research Gaps	Research methods to measure the health outcomes of built environment interventions
	The impact of lost urban agricultural land		Quantification of financial costs and health benefits for communities of public investments in infrastructure and programs
	The co-location of food advertising and food outlets		Measures that weigh the positive or negative health impacts of built environment design factors
Social Isolation	Social capital and residential self selection	Facilitating Research	Specific health and built environment research initiatives
	Interaction through active transport		Research in and between all government portfolios
	The relationship between participation, empowerment and social capital in healthy built environments		Purposeful engagement by governments, universities, industry and other related organisations
			Leveraging funding for healthy built environments from the <i>Low Carbon Living</i> CRC

## Literature-driven Research Priorities

The HBEP Literature Review (Kent et al. 2011) identifies research gaps in three domains as detailed below.

### **1. *Physical Inactivity***

#### **OPPORTUNITIES FOR FUTURE RESEARCH INCLUDE:**

##### **Pursue Research on Ways to Work Together**

Major opportunities exist to develop the interdisciplinary nature of healthy built environment research. The focus should be on research to improve our understanding of how the current knowledge of the relationship between health and the built environment can best be implemented. Detailed strategies for promoting interdisciplinary collaboration are listed in Story et al. (2009).

##### **Explore the Nature of Evidence Required to Justify Policy Change**

A part of interdisciplinary collaboration is exploring the varying standards of evidence used by different disciplines to justify and provoke change. Cavill et al. (2008) use decision making in transport planning as an example, highlighting that ‘...transport policy decisions are taken every day and sometimes on approaches that often lack transparency and scientific rigour’ (Cavill et al. 2008 p. 298).

Governance of the built environment is contested - economic, political and popular agendas must be pieced together alongside scientific evidence to effect change. Evidence requirements need to be articulated and understood between disciplines. Once this has occurred, better ways to present the evidence can be explored. Cost benefit analysis, environmental and social impact assessment and demand analysis are just some of the research tools that could be used to demonstrate the benefits of modifying the built environment to get people active. These different standards of proof can be pursued outside of evidence of true causality.

##### **Pursue Opportunities to Monitor Interventions**

A contemporary focus on ‘how’ to change built environments for health should not replace empirical research. Opportunistic monitoring of relevant interventions should be undertaken, particularly to analyse the impact of interventions over time (Gebel et al. 2005; Story et al. 2009). Several major Australian studies are underway – see Kent et al. 2011 p. 60.

Ways to identify opportunistic monitoring of interventions and establish surveillance systems for change present practical research opportunities. Some authors recommend maintenance of an information repository for current research (Davison et al. 2008; Story et al. 2009). This repository could be on-line and act as a reporting platform that will make ‘lessons learned’ available as quickly as possible. This search for answers needs to go well beyond post project analyses and/or post occupancy evaluations. A method to improve awareness of proposed modifications to the built environment to encourage physical activity needs to be established. In Australia this will mean a mechanism for researchers to be in contact with



local strategic planners and consent authorities so that when opportunities arise for intervention monitoring they are not missed.

## **2. Obesity**

### **OPPORTUNITIES FOR FUTURE RESEARCH INCLUDE:**

#### **Detailed, Contextual Research on the Impact of Healthy Food Accessibility on Health in Australia**

Research is required on all aspects of the built environment's impact on healthy food exposure in Australia. See the HBEP Literature Review (Kent et al. 2011) for the different aspects. While a number of large scale studies have been undertaken assessing availability of unhealthy food, their results need to be further explored through detailed quantitative and qualitative analysis. Development of a body of culturally sensitive research undertaken in different cities and towns will allow more reliable generalisations to underpin policy.

An example of one such study is Coveney and O'Dwyer (2009). They used qualitative methods in their contextual analysis of food accessibility in Adelaide, Australia. They explored the concept of food deserts and the difficulties imposed by distance from home to shops for those without car access in a low density suburban environment. The study provides genuine insights into the practical implications of living within a non-walkable distance of a reasonable supermarket and not having access to private transport. Difficulties, such as catching a bus laden with shopping bags, or crossing a busy road to the supermarket with children in tow, make the implications of sprawling suburbs on healthy food availability very real. The main conclusion is that food access problems do not present as 'food deserts' defined elsewhere. In Adelaide there are not vast tracts of urban areas lacking the services of a supermarket or fruit and vegetable store as has been reported in the USA and UK. In many Australian cities, the lack of private transport can severely limit access to places selling healthy foods. It is therefore not that reasonably priced healthy food is unavailable to purchase in shops; rather the distances between these shops are too great to be accessed without a car. And while not part of Coveney and O'Dwyer's study, their work raises serious implications for people with mobility impairments gaining access to healthy food. Given the increasing realities of climate change and the recognised benefits of non-car reliance for health, the way the study looks at food access through the lens of car reliance is also pertinent. In addition, the recommendations for healthy built environments encouraging utilitarian physical activity, such as accessibility and mixed uses providing smaller distances between destinations, apply to healthy built environment strategies aimed at increasing access to healthy food.

Contextualised studies should incorporate analysis of smaller scale retail environments. Juxtaposed to large scale quantification of fast-food accessibility, detailed research is required on the kind of food choices available at all outlets. This research should include neighbourhood coffee shops, restaurants, supermarkets, convenience and corner stores, as well as take away food shops and fast-food outlets. To undertake this kind of detailed analysis, further collaboration with health professionals is required to better understand and develop standardised measures of what is an unhealthy food environment.

#### **The Impact of Lost Urban Agricultural Land**

Further research is required on the impact of residential and other development on the urban fringe of Australian cities in relation to food supply and subsequent health. Food chains for fresh produce are relatively informal. Research is only just beginning to quantify the amount of fresh food produced in urban market gardens. This work needs to be drawn into the study



of healthy built environments in the context of healthy food access, particularly across the socio-economic spectrum.

### **The Co-Location of Food Advertising and Food Outlets**

Australian research is required on the impact of outdoor food advertising in relation to food choices for both children and adults. Investigations could include innovative collaborations with advertising and marketing professionals to better understand the way outdoor advertising is used to influence consumer behaviour. This research should focus on the way the built environment can influence the co-location of outdoor food advertising and food retail outlets in Australia. There is an opportunity to study the impact of such co-location, as well as monitor the success of attempts to limit outdoor advertising.

### **3. Social Isolation**

#### **OPPORTUNITIES FOR FUTURE RESEARCH INCLUDE:**

The recommendations for future research outlined in '1. Physical Inactivity' also apply to this research focus area. Determining the way the built environment can connect and strengthen communities will require interdisciplinary collaboration, opportunistic monitoring of community projects and modifications, as well as an open discussion on the evidentiary requirements to support change. Of note is that interdisciplinary collaboration in this domain will require input from a different set of professionals, including ecologists and community psychologists (Berry 2007).

### **Social Capital and Residential Self Selection**

The relationships between social cohesion, interaction, safety, crime and health are often attenuated by socio-economic and demographic factors. There are few attempts to unravel the complexities of this relationship. Do people actively seek opportunities for casual interaction in their neighbourhood when choosing a place to live? Do more sociable people choose dwellings overlooking parks or other communal spaces? The confounding variable of self selection is rarely mentioned in the literature in relation to social interaction.

### **Interaction through Active Transport**

The interactive opportunities afforded by active transport have been relatively under-researched. Given the predicted shift to active transport modes (including public transport useage) there are opportunities to encourage and examine the interactions and communities that emerge as a result. Interactions occurring between these modes can also be sources of conflict, for example, between pedestrians and cyclists on shared paths or between commuters scrambling for the last seat on a crowded bus. The built environment can contribute to resolving these conflicts through better provision of infrastructure, together with educational programs.

### **The Relationship between Participation, Empowerment and Social Capital in Healthy Built Environments**

Rooted in traditional human geography discourse is research warning against overemphasising the local and the value of local knowledge. Such cautions include taking care to source groups that are truly representative of 'the local'. While farmers' markets, for example, have been cited as forums for community interaction, there is also evidence that such markets can contribute to social stratification (Macias 2008). Future research needs to

examine ways to engage communities in the context of healthy built environments without excluding individuals or groups.

## **Stakeholder-driven Research Priorities**

This section outlines the findings from interviews about stakeholders<sup>1</sup> understandings of research, their research use and needs and whether they perceive any gaps in the current research needed to inform policy making. These findings have been summarised into three sections.

### **1. Evidence Informing Policy**

Once the research has been completed and analysed, translating the findings into evidence to inform policy and practice is an important challenge.

#### **OPPORTUNITIES FOR FUTURE RESEARCH INCLUDE:**

##### **Better Understanding of Information Sources and Access Strategies**

In the stakeholder study, participants reported viewing healthy built environments related research and evidence development as important for informing future policy. It is also critical for filling perceived gaps in the existing evidence base. For both health and built environment stakeholders, the internet is generally the first place to begin gathering information. Academic journals and library catalogues are also used, as are professional and organisational newsletters. Consultations with colleagues are another information access strategy. In some instances, where the financial capacity is available, external contractors are employed to identify evidence for policy.

Clearly evidence originates in many places. It would be useful to better understand this process in order to reveal the most effective information sources and access strategies, particularly identifying differences across disciplinary boundaries. The development of systematic processes may encourage more focused policy relevant research, thereby disseminating knowledge in a timely fashion and encouraging more effective and targeted policy development (Ward et.al. 2009).

##### **Develop Practical Guidelines and Indices**

Participants in the stakeholder research also told of their knowledge about practical guidelines that focus on health and the built environment. The 'Healthy Urban Development Checklist' (NSW Health 2009) was cited as a comprehensive tool to assist health professionals to better engage in the urban planning process. Other tools highlighted were walkability and liveability indices, and active living recommendations from organisations such as the Heart Foundation. The existence of further relevant guidelines needs to be researched so that health professionals are aware of the latest and most appropriate guidelines and indices for their work.

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<sup>1</sup> The Stakeholder Research project was undertaken by Mr Evan Freeman (NSW Health Public Health Trainee) during 2010 – 2011. The report incorporates the views of key stakeholder groups in the healthy built environments field.

## **Information Sharing and Dissemination**

The processes used to facilitate information sharing and research dissemination require specific attention in the practicalities of applying the knowledge for policy and practice (Tucs and Dempster 2007).

### **2. Research Gaps**

This relates to participants' knowledge about current research gaps in the available evidence base to inform policy. Stakeholders opined that research is necessary for advancing the knowledge of professionals in both health and the built environment.

#### **OPPORTUNITIES FOR FUTURE RESEARCH INCLUDE:**

##### **Develop Research Methods to Measure the Health Outcomes of Built Environment Interventions**

While there was consensus throughout interviews of the inextricable links between health and the built environment, this was tempered by concern that many of the causal links remain unclear. This is due, in part, to the large number of confounding variables existing in measuring health outcomes of built environment interventions/treatments. The development of new and appropriate research methods to deal with this is seen as an important step in better understanding the causal links. One participant recommended that major healthy built environment developments include researching the effectiveness of the development. This research needs to be instituted in the early stages of the proposal.

The limitations of studies that have timelines that are too short for the type of health outcome being measured were highlighted. Of particular interest is the possibility of inputting 'healthy built environment' measures into existing longitudinal studies to generate more reliable data.

##### **Quantification of Financial Costs and Health Benefits for Communities of Public Investments in Infrastructure and Programs**

Clarifying and quantifying the links between the built environment and health is considered a future research priority. There is also a growing emphasis on identifying and implementing methods such as cost benefit analysis and evaluations to justify policy and practice. It is also clear that identifying appropriate research with longer periods of follow-up is necessary for generating evidence. Cost benefit analysis is widely recognised as a powerful tool to influence governments and organisations to invest in healthy built environments.

##### **Measures that Weigh the Positive or Negative Health Impacts of Built Environment Design Factors**

Understanding the causal links between health and the built environment is important for guiding both policy and practice in both sectors. The technical measurement of both health and built environment variables also requires valid, reliable indicators. In particular these need to monitor the effects of policy and planning decisions. Instruments such as geographic information systems (GIS) that enable researchers to map and measure built environment variables, including population density, land use mix, and access to recreational facilities should all be considered in study designs (Frumkin et al. 2004).

**Final Note:** Although the need for innovative research and policy development was recognised, participants also identified risks of failure if new policy was not accompanied by behaviour change programs.

### **3. Facilitating Research**

#### **OPPORTUNITIES FOR FUTURE RESEARCH INCLUDE:**

##### **Develop Specific Health and Built Environment Research Initiatives**

Opportunities were identified to facilitate research from both public and private sector stakeholders, including the funding of research through a variety of means. Examples encompassed contributions by organisations to develop health and built environment research centres, targeted scholarships, research and policy positions, and research grants.

##### **Encourage Research In and Between all Government Portfolios**

Built environment stakeholders highlighted the importance of encouraging research in and between all government portfolios to prevent each group working in isolation.

##### **Develop Purposeful Engagement by Governments, Universities, Industry and Other Related Organisations**

The sustainability and progression of research require purposive engagement by governments, universities, industry and other related organisations. This again highlights the importance of partnerships.

#### **Other Considerations**

##### **1. Funding Mechanisms**

It is recognised that many of the organisations in the healthy built environment field have limited resources and capacity to undertake actions that are additional to their core activities. Hence, the identification of potential funding opportunities, and building capacity in their ability to attract and manage such funding, is essential in ensuring healthy built environment research can be effectively undertaken.

The Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) are the major Federal Government funders in this field. The Australian Housing and Urban Research Institute (AHURI) also offers grants for a diverse range of urban-focused research projects. Of particular interest should be the grant programs which encourage collaboration amongst multi-sector healthy built environment organisations to ensure practical and relevant research outcomes. An example of this type of project is provided in the box below.

*Example of a collaborative research project:*

**Australian Research Council Linkage Grant: Planning and Building Healthy Communities (LP100100804)**

This project examines how urban environments support health. Tracking residents' behaviours over a long time, the study fills a gap in current knowledge about how urban environments manage and promote good health (a national research priority area). It will identify the design features, social interventions and locational qualities in selected sites which positively benefit human health. The research will describe the likely health outcomes for future Australians living in areas with similar characteristics. It will also strengthen multidisciplinary approaches and policy development in this area by bringing together a team from urban planning, development and health. The University of New South Wales leads this project, and the partner organisations are Landcom, NSW Health

## **2. Link to NSW Health's Healthy Urban Development Checklist**

The NSW Health *Healthy Urban Development Checklist (HUDC): A Guide for Health Services when commenting on Development Policies, Plans and Proposals*, is the result of collaboration amongst peak health and planning bodies in NSW. Based on the evidence available at the time of its publication in late 2009, it is widely considered to be the most comprehensive guide available for practitioners today.

The HUDC attempts to explore the complex dimensions of healthy built environments through the identification of ten major themes. These themes can also guide focused research efforts in the future.

The themes are:

1. Healthy food (e.g. there are few studies that link urban form to healthy eating)
2. Physical activity
3. Housing
4. Transport and physical connectivity
5. Quality employment
6. Community safety and security
7. Public open space
8. Social infrastructure
9. Social cohesion and social connectivity
10. Environment and health

## **3. What is Currently Happening in Healthy Built Environment Research?**

It is important to identify current and proposed healthy built environment research to make the most of possible research synergies and avoid duplication of research activities. Although healthy built environments is an emerging field there are already several organisations working in this area, either as a principal research focus or as one of a number of foci.

### Australian Universities

- University of Melbourne – The McCaughey VicHealth Centre for the Promotion of Mental Health and Community Wellbeing
- University of Western Australia – Centre for the Built Environment and Health
- University of Sydney - Centre for Obesity, Diabetes and Cardiovascular Diseases

### Research Organisations

- Australian Housing and Urban Research Institute
- Australian Institute of Health and Welfare

### Health Organisations

- NSW Heart Foundation

### Government Organisations in NSW

- NSW Health
- NSW Transport
- NSW Planning and Infrastructure
- NSW Premier's Council for Active Living

### Professional Organisations

- Planning Institute of Australia
- Public Health Institute of Australia

## ***4. Research Projects as Part of the UNSW led Collaborating Research Centre (CRC) for Low Carbon Living***

In late 2011 UNSW was awarded significant funding to establish a CRC entitled Low Carbon Living. The HBEP played a significant role in this successful seven year CRC bid. The CRC is a major initiative with possibilities to leverage funding for healthy built environment related projects. This is particularly related to (but not limited to) the co-benefits framework – that is, the co-benefits for human *AND* environmental health from action on climate change. The CRC funding provides the HBEP with a big opportunity for future research projects.

## ***5. Prioritisation of Research Projects***

A key question for the HBEP Research Strategy is the prioritisation of research projects – what are the most urgent healthy built environment research gaps for NSW Health and other aligned stakeholder agencies? The development of a research project prioritisation will be ongoing and informed by the Healthy Built Environments Program's Advisory Board and Consortium Partners. Key issues to consider in determining priorities include:

- Identification of the research gap priorities by NSW Health in relation to the development of policies in healthy built environments.
- Input from the NSW Health and Medical Research Strategic Review
- What are the research priorities for non health stakeholders keen to progress healthy built environments in NSW? How do these align with the priorities of NSW Health and the HBEP Research Strategy?
- What funding opportunities are available for research in healthy built environments from traditional academic sources such as the Australian Research Council (ARC), National Health and Medical Research Council (NHMRC) and the Australian Housing and Urban Research Institute (AHURI)?
- What funding opportunities are available for research in healthy built environments from other sources, especially NGO health agencies such as the National Heart Foundation and the Cancer Council?
- What funding opportunities are available from stakeholders willing to co-invest in research projects?

## **Monitoring**

Initially, the progress of the HBEP's Research Strategy 2012-2014 will be monitored in consultation with the Healthy Built Environments Program's Advisory Board and Consortium Partners. Monitoring will involve targeting research funding opportunities to undertake investigations that address the gaps in knowledge identified by the Research Strategy. Other monitoring criteria will be developed.

## **Where to From Here?**

The HBEP Research Strategy 2012-2014 identifies current gaps in knowledge on healthy built environments. The next step is to work with the NSW Ministry of Health to develop an implementation plan for the Research Strategy. This document will propose key research questions emanating from the Research Strategy 2012-2014 in relation to healthy built environments that NSW Health wants to answer. It will identify specific research projects, including priorities and possible funding sources for these projects. The implementation plan will flag possible partnerships for policy relevant research. In addition, it will provide a snapshot of current research underway and/or recently completed in the NSW Local Health Districts, as well as work being undertaken by the Healthy Built Environments Program and its partners. It will be an action oriented document endorsed by both the NSW Ministry of Health and the Healthy Built Environments Program.



## References

The references used in the Research Strategy 2012-2014 are from the Healthy Built Environments Program's Literature Review and the Stakeholder Research Report. They are also listed below.

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