5.2 The Built Environment and Connecting and Strengthening Communities


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5.2.1 The Benefits of Connecting and Strengthening Communities

When people feel commitment and care towards a group, they have a sense of community (Butterworth 2000). This is also associated with feelings of social connection and belonging. A sense of community and belonging within the places where people live, work and travel, is an influential determinant of mental and physical health (Hawe and Shiell 2000; Baum and Ziersch 2003; Ogunseitan 2005; Warr et al. 2007; Poortinga et al. 2007; Cohen et al. 2008; Echeverría et al. 2008; Beard et al. 2009; Dahl and Malmberg-Heimonen 2010). Belonging fosters perceptions of security, confidence and comfort which can encourage people to be 'out and about', physically active in their neighbourhood, as well as socially connected to others (McNeill et al. 2006; Michael 2006; Wood et al. 2010). Being 'out and about' also opens up opportunities for incidental interactions – the day to day meeting and greeting of people who live, work and travel in the same spaces during the same times. Incidental interaction augments connection and caring, increases perceptions of safety and decreases feelings of loneliness and isolation, all of which have proven links to positive mental health (Beard et al. 2009; Maas et al. 2009a; Maas et al. 2009b; Odgers et al. 2009; Berry and Welsh 2010; Yang and Matthews 2010).

The relationships between good health and a sense of community, social interaction and community empowerment, are well studied and accepted. The following section draws on the work of researchers such as Hawe and Shiell (2000), Cattell (2001), Wakefield and Poland (2005), Araya et al. (2006), McNeill et al. (2006), Prezza and Pacilli (2007), Ziersch et al. (2009), Nogueira (2009) and Berry and Welsh (2010), all of whom acknowledge the health benefits of connected and strong communities. The Review encompasses other literature examining the details of *how* the built environment can be developed and managed to support these community related health determinants.

5.2.2 How Can the Built Environment Connect and Strengthen Communities?

The built environment can foster a sense of community through enabling day to day interaction with people, nature and other environments. This interaction occurs on streets and in public spaces that are safe, accessible to all, responsive to local cultural context, as well as aesthetically pleasing.

Beyond its influence on actual urban structure, the built environment can facilitate orderly social interaction through removing ambiguity in expectations and educating communities about behavioural norms. This is particularly important in new and unfamiliar environments, such as newly established community gardens and shared pathways. Education can be as simple as proper placement of signage making explicit expected behaviour in shared public spaces.

Participation in the shaping of the built environment can also support psychological health by fostering feelings of empowerment and belonging. The way the built environment is governed can cultivate this participation.

Finally, opportunities to promote community connectedness should not be perceived as limited to the neighbourhood of residence, nor its walkable catchment. The importance to health of belonging and commitment to people and place applies well beyond to the work environment, commercial centres, recreational facilities and spaces of mobility such as roads and footpaths, and whilst travelling on public transport. Fostering a sense of belonging, caring and commitment, for example, among commuting cyclists or public transport users, increases the perception of safety of these activities.

5.2.3 Key Studies

In categorising the references, 224 were identified as relating to Connecting and Strengthening Communities. These inform the key themes in Section 5.2.4. Of these references, those listed below were considered to be key studies. Each reference is included in the Annotated Bibliography in Appendix 3.

Abraham et al. 2010
Bartolomei et al. 2003
Barton 2009
Berry 2007
Butterworth 2000
Cohen et al. 2008
Evans 2009b
Kingsley et al. 2009
Lavin et al. 2006
Mehta 2007
Poortinga et al. 2007
Pretty et al. 2007
Prezza and Pacilli 2007
Renalds et al. 2010
Semenza and Krishnasamy 2007
Sugiyama et al. 2008
Sustainable Development Commission 2008
Thompson et al. 2007
Tzoulas et al. 2007

5.2.4 Major Themes in This Domain

This Section explores research on how the built environment can be developed and managed to promote strong and connected communities.

There is no set formula for 'community'

Key Message: Community is complicated. This relates to demographic, cultural, ability, socio-economic and other attributes. What works to promote community in one locality, within a particular group or at one time, will not necessarily translate to another.

Literature discussing the role of the built environment in developing communities and promoting social interaction often highlights the contextual nature of these health determinants. What works to promote community in one locality or within a particular social group will not necessarily work elsewhere. Any attempt to examine, or even build community, needs to consider the 'subtleties of diversity' (Evans 2009b, p. 199). These subtleties apply across place and time. Social interactions, and the way built environments can facilitate them, will vary as neighbourhoods develop and change. For example, it is easier to facilitate social interaction and cohesion in contexts of relative homogeneity and stability (Bridge 2006; Chaskin and Joseph 2010). Interactions in neighbourhoods will also vary throughout the seasons (Hess 2008) and from morning to night (Kim et al. 2007).

Engaging young people in positive neighbourhood opportunities is worth special consideration as they have the potential to either bridge or exacerbate social divisions (Chaskin and Joseph 2010). The elderly also interact with environments and each other in different ways (Patterson and Chapman 2004) as do people from varying socio-economic groups (Burke et al. 2009), ethnicities (Tinsley et al. 2002; Sugiyama and Ward Thompson 2008) and genders (Burke et al. 2009).

Adding to the complexity of planning and building for community is that many contemporary urban dwellers are comfortable thinking about local community in essentially functional ways. There is no longer social or popular pressure to seek and maintain community connections – often membership to community relies on convenience. In this sense, local relationships are still enjoyed but are largely casual and flexible (Crang 2000; Paay and Kjeldskov 2008; Chaskin and Joseph 2010; Williams and Pocock 2010).

Finally, there is literature that questions the role of the built environment in shaping social capital and interaction. To measure the extent to which perceptions of social capital are contextual, Araya et al. (2006) compared results of factor analysis on individual questionnaire responses with results from analysis at household and postcode scales. They found little correlation between neighbourhood and individual factors and concluded that there is a stronger individual determination of social capital rather than a contextual or neighbourhood effect.

Nevertheless, the vast majority of literature concurs that there is a relationship between the built environment, social interaction and social capital. Echoing research on the built environment and physical activity, the consensus is that the relationship is complicated and difficult to define.

Interaction in Open Spaces – contact with nature as well as community

Key Message: Green and open spaces facilitate contact with nature, as well as contact with community.

The presence of green, natural settings can facilitate physical activity (see for example Booth et al. 2000; Humpel et al. 2004; Frank et al. 2004; Ellaway et al. 2005; McNeill et al. 2006; Mobley et al. 2006; Pikora et al. 2006; Roemmich et al. 2006; Bauman and Bull 2007; Neuvonen et al. 2007; Sugiyama and Ward Thompson 2007; Wendel-Vos et al. 2007; Bell et al. 2008; Black and Macinko 2008; Kemperman and Timmermans 2009; Sallis and Glanz 2009 and Galvez et al. 2010). The benefits of natural, green and open spaces extend well beyond the provision of trails for walking and fields for playing (Beer et al. 2003; van den Berg et al. 2007; Hartig 2008). Rooted in the biophilia hypothesis (popularised by Wilson and Kelling 1984), research suggests that there is an instinctive bond between human beings and other living systems. Removal of this bond by 'building out' natural elements (including plants, animals and even the weather) is fundamentally detrimental to health.

A comprehensive review of the relationship between nature and health was undertaken by Grinde and Patil (2009). This appraisal of 50 articles examined the health benefits associated with mere visual contact with nature (i.e. without actually being physically active or immersed in nature) to conclude that an environment devoid of nature has a negative effect on health and quality of life. Focusing on mental well-being, Townsend and Weerasuriya (2010) amassed a huge body of literature in their comprehensive review which also demonstrates the many direct benefits of green spaces and nature for health.

In an Australian context, Sugiyama et al. (2008) collected survey data from 1,895 residents of Adelaide to explore relationships between mental and physical health and perceived greenness in the environment. Among their detailed conclusions, they found a significant relationship between greenness and mental health, however recreational walking and social coherence only accounted for part of this association. They hypothesise that there are restorative effects of natural environments that may explain the connection.

In an analysis of survey results from 11,238 Danes, Schipperijn et al. (2010), found the main reason for use of green space was to enjoy the weather and get fresh air – not necessarily to engage in physical activity. Similarly, research by Frick et al. (2007) revealed a preference for low stimulus natural areas to promote relaxation and escape, rather than organised physical activity. Open spaces cluttered with equipment or highly manicured gardens were not favoured. This finding emerged from interviews with 325 residents of Zurich, Switzerland about preferences for open space. Another paper presents a review of 120 related research articles on contact with nature. In the piece, Abraham et al. (2010) summarise commonly cited health benefits of contact with nature. These include the promotion of mental well-being through attention restoration, stress reduction, and social engagement and participation. In the Netherlands, Maas et al. (2009a) explored the hypothesis that green space improves health simply due to the way it can foster increased social contact. They measured variables of social contact and health in 10,089 residents and calculated the percentage of 'green space' within one and three kilometres from each individual's address. After adjusting for socio-economic and demographic characteristics, they found an inverse relationship between green space in people's living environment and feelings of loneliness. Less green space was associated with a perceived shortage of social support. Cohen et al. (2008) analysed data from the Los Angeles Family and Neighborhood Study (LAFANS) together with geographical data from Los Angeles County to specify which social and environmental features were associated with personal reports of collective efficacy, including the presence of parks. The study found that parks were independently and positively associated with collective efficacy. It was concluded that parks set the stage for neighbourhood social interactions, thus serving as a foundation for underlying health and well-being. This finding was echoed by Sugiyama and Ward-Thompson (2007) who found that parks were integral to interaction in an elderly cohort of UK residents.

There is evidence that contact with nature is particularly important in highly urbanised environments (Beer et al. 2003; Neilsen and Hansen, 2007; Hartig 2008; Maller et al., 2010). Small scale encounters with nature and people within natural settings are equally as significant to health as access to large areas of natural open space. Maller et al. (2010) conducted interviews with key informants in 12

primary schools in Melbourne to examine ways to enhance the frequency of such chance encounters with nature for children. Learning activities such as tending gardens with vegetables, flowers, and native plants, practising habitat conservation, regeneration and monitoring, as well as caring for animals, were all observed by interviewees as benefiting child health and well-being, particularly mental health (Maller et al. 2010). Wake (2007) outlines ways to encourage the involvement of children in natural spaces, including gardens. Johnson (2007) further examines the importance of facilitating children's incidental interaction with nature through environmental learning activities.

Maller et al. (2010) investigated links between inner city high-rise living, access to nature, and health and well-being in Australia. They conducted 30 in-depth interviews in developments within ten kilometres of Sydney and Melbourne. Both cities have maintained strategic planning provisions to consolidate residential areas (Victorian Department of Infrastructure 2002; NSW Department of Planning 2005). As a result, urban green space, including seemingly trivial spaces such as common gardens and facades featuring plantings, will be increasingly important to alleviate the stresses often associated with higher density living, including noise and lack of privacy. Interviewees in the Maller study preferred natural scenery such as trees, parks, or bodies of water. They expressed that simply having a view of natural elements induced feelings of relaxation and resulted in self-reported awareness of enhanced well-being. Some residents had access to rooftop gardens which were described as important in providing a range of nutritional, physical, social, and psychological benefits. Not the least was an opportunity to better accommodate companion animals – a consistently cited catalyst to social capital and mental and physical health (as reviewed by Cutt et al. 2007). This finding was further supported by Gidlöf-Gunnarsson and Öhrström (2007). These researchers used questionnaires to assess the role of nature in providing opportunities for escape, rest and relaxation for 500 people living in both noise affected and noise unaffected high density developments in Sweden. It was concluded that easy access to nearby green areas can offer relief from long term noise annoyances and reduce the prevalence of stress related psychological symptoms. Guite et al. (2006) measured the impact of various physical and social factors in the built environment on the mental health of 2,696 adults in higher density areas in London, UK. They also found that the perceived ability to escape to green spaces away from noise and over-crowding was significantly linked to mental well-being.

Further studies on the psychological and other health benefits of human interaction with nature include Pretty et al. (2007) and Korpela and Ylén (2007).

Sample Policy

'The specific aims of this policy are:

- to protect bushland for its scenic values, and to retain the unique visual identity of the landscape…
- to maintain bushland in locations which are readily accessible to the community…
- to promote the management of bushland in a manner which protects and enhances the quality of the bushland and facilitates public enjoyment of the bushland compatible with its conservation.'

'SEPP 19 Bushland in Urban Areas'. Clause 2(2) (NSW).

Sample Evidence

'In the high-rise developments studied, residents were found to prefer natural scenery such as trees, parks, or bodies of water, rather than images of the built form, noting that the views of nature evoked feelings of relaxation and resulted in self-perceptions of higher well-being.'

Maller et al. 2010 p. 555.

Interaction in Other Spaces

Key Message: Casual encounters with community can occur anywhere. Providing welcoming and safe common areas around apartment blocks or facilities for comfortable waiting at public transport stops, for example, can encourage the incidental interactions which become building blocks of community.

There is literature exploring the importance of 'third places'– places that provide for informal and unorganised social interaction. They can be public, such as a children's playground or park bench, or private, such as a pub, cafe or shopping mall. They can be large, such as a town square or train station, or small, such as a stairwell or common entry to a building. Third places are distinguished from other areas where social interaction might occur in that there is no sense of having to perform a 'role' – third places are therefore not specifically at 'home', 'work' or 'school'.

Williams and Pocock (2010) argue that third places are important fertile grounds for encouraging connected networks of community. The more opportunities available, the greater the chance of developing tangible, lasting and caring connections. Echoing this Review's discussion on the complexity of community, Williams and Pocock (2010) emphasise that third places are socially and generationally subjective. For example, teenagers will require different places for opportunistic interaction than the elderly.

In an interesting evaluation of data from 40 in-depth interviews conducted in Adelaide, Baum and Palmer (2002) suggest strategies to encourage lively third places to enhance contact between people in deprived socio-economic areas. More radical recommendations include a subsidy scheme to support the viability of local shops and cafes, as well as local parks with employed facilitators to encourage community development.

Provision of a third place does not, by itself, guarantee a remedy to strengthen a weak community. Ganapati (2008) explored the impact of privately owned third places – an increasingly common arrangement where regulatory concessions can be granted to developers to provide spaces such as town squares, pedestrian malls or pocket parks. Third places are often deeply political and contentious. Rules and regulations, as well as design, can be used to both intentionally and unintentionally exclude some users. The exclusion of homeless persons from parks by designing benches so that they are impossible to sleep on is one such example (Davis 1990). Planning for public spaces therefore needs to go well beyond allocating space to considering design and long term management.

Regarding design, Zhang and Lawson (2009) surveyed activities in informal public and common spaces outside three high-density residential communities in Brisbane. They conclude that such spaces are important in facilitating day to day meeting and greeting and recommend that places should be useful and have a welcoming design. This can be as simple as promoting common entries and inviting stairwells.

Rear laneways, a key element of new urbanist design, also act as a third place for interaction. Laneways facilitate off-street car parking, allow houses to have front doors and verandahs not dominated by driveways and garages, as well as front gardens that address public streets. The laneway importantly allows more pedestrian-oriented and sociable streets and can, in itself, act as a place for casual social interaction. In a survey of four San Diego neighbourhoods with alleys, Ford (2001), for example, found residents used these spaces for many purposes, including informal socialising with neighbours. More recently, Hess (2008) found that alleys in new urbanist developments create a secondary shared space that both supports causal interaction yet competes with space in the formal street. Hess uncovered more interaction at the rear of properties than in the front and concludes that street presentation is subsequently neglected. In this sense, the provision of rear laneways can impact on the ability for new urbanist developments to provide Jane Jacob's 'eyes on the street' required for safety, as well as social interaction. Hess concludes that patterns of resident use of the front and back of their properties, and their impact on the sociability of neighbours, is complex.

Sample Policy

'Create pleasing places to be:

- Landscape open spaces and other public places (e.g. squares and malls) to provide pleasant places for people to sit, meet and talk…
- Provide natural shade or structured shelter within activity centres and open spaces to promote sitting, meeting and talking…'

National Heart Foundation of Australia (Victorian Division) 2004 p. 15.

Sample Evidence

'Access to convivial neighbourhoods not only encourages more walking, but also encourages interactions between neighbours, thereby increasing sense of community, which in turn may beneficially influence positive mental and physical health in local residents.'

Giles-Corti 2006b p. 2.

Interaction in Community Gardens and Farms

Key Message: Community gardens are forums for incidental and organised interaction. They are spaces for people to establish and maintain contact with community and contact with nature.

In a comprehensive study of the community garden movement in the UK, Holland (2004) used quantitative (surveys) and qualitative (in-depth interviews) methods to conclude that while some gardens played a strategic role in food production, all gardens were 'based in a sense of community, with participation and involvement being particularly strong features' (Holland 2004, p. 1). Wakefield et al. (2007) researched the health impacts of community gardens in Toronto, Canada. Using a combination of participant observation, focus groups and in-depth interviews, their study concludes that gardens encourage physical and psychological health. They attribute the latter to contact with nature as well as a general sense of community inherent to the opportunity to garden together.

The research also highlights many of the challenges faced in establishing community gardens in urban settings, including general lack of understanding, from both decision-makers and community members, of the benefits of community gardens. Bartolomei et al. (2003) examined the social and health-promoting role of a community garden scheme in a high-rise public housing estate in Sydney. The findings of this study confirm the contributory role of community gardens in strengthening social interaction. The scheme was associated with increased opportunities for local residents to socialise and develop vital cross-cultural ties in a very diverse environment. The authors note: 'there were many stories of how participating in the Gardens has helped to diminish cultural boundaries and negative racial stereotypes' (Bartolomei et al. 2003, p. 5). Kingsley et al. (2009) also studied community gardens in Australia. This Melbourne based research describes gardens as places of refuge and social support, where knowledge is shared. These conclusions are generally echoed by other studies finding that the benefits of community gardens extend well beyond physical activity and access to healthy food (Hynes and Howe 2004; Wakefield et al. 2007; Thompson et al. 2007; Macias 2008; Teig et al. 2009).

Sample Policy

'Community gardens are encouraged within city parks and on city-owned property. As part of the master plan process for new parks, the city shall consider implementing new community gardens based on input from residents.'

City of Santa Rosa (Santa Rosa, USA) 2009 p. 6-16

Sample Evidence

'Community gardens can play a significant role in enhancing the physical, emotional and spiritual well-being necessary to build healthy and socially sustainable communities.'

Thompson et al. 2007 p. 1034.

Interaction on Streets and in the Neighbourhood

Key Message: Both regional scale urban structure and micro scale building design influence incidental interaction on streets and in neighbourhoods.

Research suggests that sprawling suburbs not only restrict opportunities for physical activity and access to healthy food, but also undermine social capital. This is generally attributed to the increased distances between uses, overt reliance on private car travel and typically 'closed' residential urban form. The hypothesis is that these factors reduce opportunities for interaction and result in feelings of disconnectedness and isolation. The research outcomes on the impact of sprawl on social capital and interaction is, however, mixed.

Correlating a county sprawl index with the results of a national survey assessing community capital, Nguyen (2010) found that some elements of social capital were actually strengthened in lower density, typically 'sprawling' suburban areas. This study measured community capital using the variables of 'diversity of friendship', 'informal social interaction', 'organised group interaction', 'number of group involvements', 'faith-based social capital', 'social trust' and 'giving and volunteering'. The research discovered that more compact, higher density areas displayed particularly low scores for social interaction, faith-based social capital, and giving and volunteering. This finding follows our Review's discussion on the relationship between physical activity and density. Increasing density alone will not necessarily bring about intended consequences for healthy built environments. Establishment of community groups and programs, as well as provision of places and spaces for informal interaction, are just as important in higher density areas as they are in suburban neighbourhoods to develop social capital and promote social interaction.

The link between traditional neighbourhood design (versus suburban 'sprawl') and social capital has been further explored in the UK. Speller and Twigger-Ross (2009) recently published the qualitative component of longitudinal research on changes to an established mining community resulting from forced relocation. The previous community street layout was relatively consolidated, consisting of five straight rows of terrace houses. The new village was less dense and built in a curvilinear design. Initial results indicate that the reduced visual access to others resulting from the new design had the effect of diminishing sensory connectedness and restricting traditional information flows. This eventually led to unwanted isolation, deterioration in collective identity and weakened social support among long time residents.

Lund (2003), who used survey data from eight new urbanist neighbourhoods in California, also found empirical support for the idea that neighbourhoods with consolidated grid-like streets, nearby access to shopping, and good pedestrian environments, exhibit increased casual social interaction compared to more suburban cul-de-sac designs. Cozens and Hillier (2008) undertook a detailed examination of street layouts and their impact on social interaction in European and Australian contexts. They specifically compared interaction on grid-like streets with dendritic street networks. They found that while some research shows social interaction is higher in communities with grid-like street layouts, other studies dispute this finding (for example, du Toit et al. 2007). Echoing much of the research in this area to date, they conclude that any 'one-size-fits-all' approach to the design of street layouts to encourage social interaction is 'myopic and simplistic' (Cozens and Hillier 2008, p. 51). The study calls for a more 'holistic approach to understanding the localised and contextual dimension to suburban street layouts and how they may affect human behaviour' (Cozens and Hillier 2008, p. 51).

There has been Australian based research on the sense of community established within Master Planned Communities (MPC) (Gwyther 2005; McGuirk and Dowling 2009; Williams and Pocock 2010). MPCs are usually geographically bounded, large-scale, private housing developments incorporating varying levels of infrastructure. They are not necessarily physically 'gated' although they are characterised by uniform housing design and a formal point of entry (McGuirk and Dowling 2009; Williams and Pocock 2010). It should be noted that MPCs can display an array of densities and street layouts – they are not necessarily synonymous with suburban sprawl or 'unhealthy' built

environments. Nevertheless, their impact on community development has been criticised (Ganapati 2008). MPCs have become a popular form of housing in American and Australian cities struggling to meet escalating housing demand. Various authors have explored the temporal link between the rise in the MPC and an apparent erosion of community. Williams and Pocock (2010) conducted 14 focus groups with residents of two newly established MPCs in Melbourne and Adelaide. They report that a sense of community is, in part, established in MPCs by the superficial familiarity facilitated by uniformity, centralised facilities and recreation areas. These things engendered feelings of trust, safety and 'togetherness' within the estate. The research also indicates that the effectiveness of built environment attributes in community building is very much augmented by community groups and events. These include mothers' clubs, church groups and progress associations.

Returning to the ubiquitous issue of density, Hipp and Perrin (2009) examined the importance of actual physical distance between dwellings in creating neighbourhood ties. They used a new urbanist development in the USA as a case study. Propinquity, or 'closeness' is also related to the discussion of density in Section 5.1 which concluded that there is no 'proper' density for a healthy built environment. Rather, it is the effects of distance and access mediated by densities which impact upon the built environment's ability to affect health. Similar principles apply to density and social interaction, with Hipp and Perrin (2009) concluding that increasing the physical distance between dwellings alone reduces the likelihood of social ties forming. This is juxtaposed to the research of Bramley et al. (2009) whose analysis of social connections in five UK cities found that scores of 'social sustainability' were lower in high density places. Perhaps sounding a warning bell for the psychological impact of high density areas, in a large review of European housing and health status for the World Health Organisation (WHO), Braubach (2007) found significant relationships between noise exposure and depression.

Overall, the research suggests that there is a threshold to be found between high and low densities for the formation of social networks and social interaction generally. People need to retreat to their private space but they also require opportunities to randomly interact – whether they occur in shared driveways, corridors or at the mail box. Other studies assess the impact of density and propinquity on psychological states such as stress, anxiety and depression. This work includes Weich et al. (2002), Evans (2003), Sturm and Cohen (2004), Warr et al. (2007) and Burke et al. (2009).

Given the inevitability of higher density urban areas in our growing suburbs, it is worth considering whether density can be treated in some way to encourage interaction. Using surveys, observations and environmental measurements, MacDonald (2010) undertook a detailed study of the development of new high density residential neighbourhoods in the city of Vancouver. The research concluded that lining the ground floor of high rise apartment buildings with townhouses that have street entries can contribute a sense of liveability, providing life and visual interest on the street. Although the ground floor 'townhouse' type dwellings constituted just two percent of total dwellings constructed in the neighbourhoods, they dominated the 'feel' of each neighbourhood. This was because they constituted much of what was immediately seen from the street. Conversely, the upper floors of apartments add the density that makes neighbourhood amenities such as local retail, parks and community centres, possible. MacDonald provides detailed observations about the way the street level dwellings are constructed. Dwellings with secondary interior entries (for example, from a car parking area) do not contribute as much to a sense of street life, nor do front gardens too small to host an outdoor table and chairs. It is therefore not just a matter of lining the streets of high density areas with ground level accessible townhouses, but a complex mix of design variables which contribute to lively and safe streets. Indeed, MacDonald lists important design characteristics for ground floor direct entry units in high density developments:

> 'The entry door should be raised at least four to six steps above street level, so that people passing by cannot see too far into the unit, and residents feel less compulsion to screen off the front terrace.
>
> The public–private transition space at unit entries should include a garden and a terrace, because this increases

the range of activities unit occupants might engage in, and also increases opportunities for personalization. A minimum terrace width of 6 feet is desirable, as this provides enough space to comfortably accommodate a table and chairs.

The unit should have multiple levels, so that the bedrooms are not on the street, and residents feel less compulsion to screen off the transitional space.

The front door should be designed to look like a front door, in terms of its orientation, style and detailing, and the terrace should be designed to look like a front terrace instead of a back yard. Otherwise, there can be a sense of confusion on the part of the passer-by as to whether one is looking at a publicly presented 'face' or voyeuristically looking into a private realm' (MacDonald 2010 p. 36).

Another element of the built environment associated with social interaction, feelings of connection and stress, is neighbourhood 'upkeep'. The extent to which the built environment is cared for and maintained can act as a physical indicator to underlying social disorder or fragmentation. This idea was first discussed in detail by Wilson and Kelling in their influential 'Broken Windows' thesis (1984). The theory is that the built environment plays host to signals of societal breakdown, such as derelict buildings, graffiti, vandalism, rubbish, conflict, public drinking, drug use and other forms of evident criminality (Warr et al. 2007). Further, this breakdown negatively impacts connection to place (Semenza 2003).

Closely linked to our Review's discussion of crime and social interaction below, the Broken Windows theory has been repeatedly supported by research, including work in Australia (Ziersch et al. 2007). In an effort to explore the relationship between social capital and aspects of the built environment, Wood et al. (2008), for example, collected data from 335 residents of three suburbs in metropolitan Perth. They concluded that a high level of neighbourhood upkeep was associated with greater social capital and feelings of safety. In a review of studies linking urban environments characterised by physical and social 'incivilities' with poor mental health; Berry (2007) discussed the cumulative and lasting impact of derelict buildings, litter, excessive traffic and general over-crowding. Examining the changing role of form and function of rural Australia, Fraser et al. (2005) used survey data to assess the impact of residents experiencing rural decline on their mental health. The researchers found a positive association between decline and poor mental health status. It was acknowledged however, that decline is accompanied by stressors other than decay of the physical built environment. In New York, Hembree et al. (2005) used multilevel analyses to assess the relationships between the neighbourhood's built environment and the likelihood of death by drug overdose. They concluded that signs of deterioration of the built environment were significantly associated with an increased likelihood of fatal accidental drug overdose. They propose that disinvestment in social resources and differences in vulnerability to the adverse consequences of drug use in different neighbourhoods may explain the observed associations.

There is research suggesting that streets designed for walking and cycling will also promote social interaction. This relates to the fact that both utilitarian and recreational walking and cycling increase the chance of incidental interaction. This relationship has been the subject of various studies (Lund 2002; Brown et al. 2007) and others are providing further evidence. Richard et al. (2009), for example, found regular walking to be a strong predictor of social participation by the elderly living in Montreal, Canada. Mehta (2007) used structured and semi-structured observations of environmental quality of US commercial streets to examine the influence on social interaction. It was concluded that there is popular demand for commercial streets as social spaces for strolling and meeting, rather than simply channels of movement. Seating provided by businesses and public authorities, places to meet in the foyer of buildings, along with street furniture in town centres, were found to be particularly important in creating social and convivial streets. Businesses that serve as community places, for example privately owned squares and malls accessible to the public, were also important, as was the presence of wide footpaths. Interestingly, personalised street fronts were cited as contributing to social activities on neighbourhood commercial streets. This

could be as simple as allowing vendors to sell fresh flowers from outside their shop front or relaxing planning controls designed to promote an overtly uniform street presentation for commercial development.

Highlighting the complexity of the link between walkable streets and social and psychological aspects of health, du Toit et al. (2007) used data from an Australian sample (n = 2,194) to explore the proposition that more walkable neighbourhoods encourage local social interaction, a sense of community, informal social control and social cohesion. They concluded that the relationship was weak and that sociability in general is influenced by more than urban form. This conclusion resonates with this Review's earlier discussion on the genuine lack of a 'set formula' for community and associated health benefits.

Sample Policy

'Optimise the visibility, functionality and safety of building entrances by:

- orienting entrances towards the public street
- providing clear lines of sight between entrances, foyers and the street
- providing direct entry to ground level apartments from the street rather than through a common foyer.'

Residential Flat Design Code (2002) Part 2 Site Design, Site Amenity p. 56 (Department of Planning, NSW).

Sample Evidence

'People admire New York City's brownstones...and San Francisco's cheek-by-jowl Victorians, but are prone to say that...similar buildings cannot be built today. Vancouver's new neighbourhoods say it is possible to achieve the human-scale qualities of street facing townhouses with new building types. Planners have taken urban design theory and turned it into reality, and they have done it working with large developers.'

MacDonald 2010 p. 38.

Safety

Key Message: While sense of community and social interaction are key determinants of health, a large body of research suggests that people will not interact within, or feel part of, a community that they perceive to be unsafe.[4]

The broader link between safety and overweight was recently explored by Duncan et al. (2009) who correlated self reported BMI of 1,140 students in Boston, USA with survey data on perceptions of neighbourhood safety. Although the study did not progress to address why perceived safety was so strongly linked to poor health, in their fully adjusted model, statistically significant associations between feeling unsafe in one's own neighbourhood and overweight status were found.

A substantial body of research similarly explores the link between safety from crime and traffic with physical activity as a health determinant. These links have already been discussed in Section 5.1. In brief, some recent studies include: Mendes De Leon (2009) linking walking in older adults and perceived neighbourhood safety; Jones et al. (2009) exploring links between access to green space, physical activity and perceived safety in lower socio-economic neighbourhoods; Cradock et al. (2009) examining the role of safety and neighbourhood cohesion with physical activity in youths; Wood et al. (2008) exploring feelings of personal safety and their impact on walking in Perth, Australia; Roman and Chalfin (2008) investigating fear of crime and its impact on walking by Washington D.C., USA; McDonald (2008a) assessing objectively measured crime and walking in adults in the Bay Area, California, USA; Metcalf et al. (2004), Boarnet et al. (2005) and McDonald (2008b) highlighting the importance of safety to parents of primary school children in their decision to walk. Doyle et al. (2006) and Loukaitou-Sideris and Eck (2007) examine the relationship between safety and physical activity generally.

Research exploring the link between feeling safe and secure within a neighbourhood with health generally – for example, the impact that feeling unsafe might have on interaction in the neighbourhood – has also been conducted. Further, research on the way the built

[4] Research suggests that perceptions of neighbourhood characteristics are just as instrumental in shaping behaviour as any objective measure of built form (Wood et al. 2010). This is particularly relevant to perceptions of safety from crime (Ellaway et al. 2005) and traffic (Winters et al. 2010). Reference to 'safety' in this Review should be interpreted as both perceived and objective safety unless otherwise specified.

environment can be modified to support safety, has been undertaken.

Burdette and Hill (2008) explored the link between neighbourhood disorder and obesity in Texas, USA. They confirmed that the association of neighbourhood disorder with increased risk of obesity is entirely mediated by psychological distress and poor self-rated overall diet quality. Irregular exercise only partially influenced the relationship. This suggests that there is a link, outside of physical activity, between the built environment's ability to keep people safe and subsequent health outcomes.

Highlighting the power of perception, Hynes and Howe (2004) found that community gardens and other natural and open public spaces are most common in localities where threat from crime is perceived as low. Studying teenagers in Italy, Prezza and Pacilli (2007) found that consistent use of public places for play in childhood resulted in less intense fear of crime and a better perception of community empowerment in adolescence. Examining the impact of fear of crime on mobility, Evans (2009a) concluded that fear of crime, rather than actual criminal activity, limits engagement with the transport system and opportunities for wider social inclusion (Evans 2009a). Fear of crime has also been used as a political excuse to justify gated communities or meagre provision of open space (Ganapati 2008). Permentier et al. (2007) found a strong link between a neighbourhood's reputation for crime, disorder and dislocation with the likelihood of interaction and community engagement. Designing spaces to prevent criminal activity is therefore just as important for its role in allaying public fears and potential political inaction, as well as reducing actual crime levels (Foster and Giles-Corti 2008).

If the relationship between safety and health is so strong, what is it about the built environment that makes people feel safe? Crime Prevention Through Environmental Design (CPTED) has emerged within the last 30 years as the umbrella term for environmental interventions aimed at reducing crime and fear of crime. CPTED is defined by Crowe (2000 p.1) as 'the proper design and effective use of the built environment [which] can lead to a reduction in the fear of crime and the incidence of crime, and to an improvement in the quality of life'. CPTED is based on four key strategies of 'territoriality' (encouraging a sense of ownership), 'natural surveillance' (encouraging eyes on the street), 'activity support' (encouraging use over vacancy) and 'access control' (balancing surveillance and use with privacy).

Saville (2009) provides a comprehensive review of the rise in popularity of CPTED in built environment planning. This work moves beyond the traditional recommendations of CPTED to promote 'safe growth' – a new style of planning for crime prevention. Safe growth promotes community involvement with outside experts in the planning process for safe places. Saville's case study research from Toronto, Canada, assessed implementation of community participation in crime prevention planning over a nine year period. The primary conclusion was that crime reduction and increases in community participation have continued as a result of strong community involvement, together with infrastructural change to the neighbourhood. The importance of involving communities in built environment decision making is further discussed below under 'Participation and Empowerment'.

Sample Policy

'…orientate buildings:

- to allow surveillance from the street to the building, from the building to the street, and between buildings,
- to allow surveillance of the spaces around the building, and
- so that access points are in clearly visible locations.'

Rockdale City Council NSW 2002 p. 18.

Sample Evidence

'The study includes 83,736 Dutch citizens who were interviewed about their feelings of social safety. The percentage of green space in the living environment of each respondent was calculated, and data analysed by use of a three-level latent variable model...The analyses suggest that more green space in people's living environment is associated with enhanced feelings of social safety - except in very strongly urban areas, where enclosed green spaces are associated with reduced feelings of social safety.'

Maas et al. 2009a p. 1763.

Mobility and Interaction

Key Message: Travel modes influence opportunities for casual interaction, together with accessibility to form and maintain social ties. Travel modes can be a source of stress.

While active transport presents opportunities for causal interaction not afforded by the private car, it also potentially reduces accessibility to family and friends.

Closely tied to the idea of streets as interaction spaces is the impact of mobility on our ability to interact and form social ties.

While automobile use is more often cited as the enemy of healthy built environments, cars can facilitate maintenance of social connections. This is particularly so in contemporary suburbs characterised by low density with long distances between uses, families and friends (Greenaway et al. 2008). However, this positive aspect of car dependency may well be erased by the notorious connection between sprawl and long commute times. In localities where people travel further for social and leisure activities, there is also the expectation of travelling further for other trips, such as the daily commute (Zhang 2005). Besser et al. (2008) explored the hypothesis that declining trends in social capital among Americans could be due, in part, to long commute times. Using data from the US National Household Travel Survey, the study produced a ratio of socially-oriented-trips to work-oriented-trips, comparing the data against individual commute times. They concluded that a longer commute time (greater than 20 minutes) was significantly associated with no socially-oriented trips. If anything, this research highlights the finite nature of time available in each day. As discussed in Section 5.1, time spent in the relatively private and individualised space of the car (Freund and Martin 2007) often compromises time available for other activities, such as physical activity. The study by Besser et al. (2008) indicates this principle also applies to social interaction.

Also of relevance to mobility and social interaction is research assessing the health impacts of living in close proximity to traffic. Song et al. (2007) combined GIS data with US census statistics to examine the relationship between traffic density, stress and depression. They concluded that perceived traffic stress was associated with higher rates of self reported depression. Furthermore, they found that neighbourhoods with greater vehicular volumes serve to reinforce the negative impacts of perceived traffic stress. This was regardless of whether vehicular volume was actually experienced through the act of car driving. These results indicate that people living in close proximity to traffic find high traffic volumes to be stressful even if they engage in less intrusive, more sustainable transport modes.

Sample Policy

'Impact of road noise or vibration on non-road development:

If the development is for the purposes of a building for residential use, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded:

(a) in any bedroom in the building—35 dB(A) at any time between 10 pm and 7 am,

(b) anywhere else in the building (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time.'

State Environmental Planning Policy (Infrastructure) 2007, clause 102 (NSW).

Sample Evidence

'For participants in this study, social and recreational travel meant doing things significant to them: maintaining important relationships, accessing amenities and participating in their communities, sporting and entertainment activities... They fostered social connection between family and friends and provided opportunities for physical activity, behaviors essential to health and well-being… Although alternatives could be found for some of the less important trips, in most cases participants struggled to identify different (non car based) ways of achieving the purpose of their trips.'

Greenaway et al. 2008 p. 507, 510.

Orderly Interaction Through Education

Key Message: The built environment can promote orderly social interaction by removing ambiguity in expectations and educating communities about behavioural norms. This is particularly important in environments that may be new and unfamiliar, such as recently established community gardens and shared pathways.

For many people in Australian cities, healthy built environments are unfamiliar. Opportunities for physical activity on walkable streets and shared pathways, and in newly established gardens, innovative outdoor town centres and safe and attractive parks, are novel opportunities. Consolidated residential areas and mixed use neighbourhoods are also unfamiliar living spaces for many and the built environment has a role to play in educating communities about appropriate etiquette in these spaces. This can occur through placement of signage, facilitation of educational campaigns, and the provision of legible design (Gatersleben and Appleton 2007). When people know how to behave in a space the chance for friction between users is minimised and opportunities for positive, natural interaction enhanced. Newly established cycleways and shared paths provide an example of healthy built environments designed for interaction that have become spaces of tension between different types of cyclists, and between cyclists and pedestrians (Daley et al. 2007; Lo 2009; O'Connor and Brown 2010). Interestingly, similar environments are used daily without friction in countries such as Denmark and Germany. Pucher et al. (2010) suggest this ease of use is related to a strong cycling culture where behavioural expectations have been reinforced through several generations.

In relation to open spaces, Crawford et al. (2008a) examined the link between neighbourhood SES and features of public open spaces. The study found that while there were no differences across neighbourhoods in the number of playgrounds or the number of recreation facilities provided, open space in the highest socio-economic neighbourhoods had more signage regarding dog access and activity restrictions.

Sample Policy

'Potential conflicts between path users can be reduced through:

- Management – centre lines and signage encourage safe path use behaviour, such as keeping to the left.'

Department of Infrastructure, Planning and Natural Resources (NSW) 2004 p. 55

Sample Evidence

'Participants noted that most of the viable places to ride in inner Sydney were shared environments, which created tensions as cyclists, motorists and pedestrians struggled to harmoniously occupy narrow and limited infrastructure.'

Daley et al. 2007 p. 48

Participation and Empowerment

Key Message: Participation in shaping the built environment supports interaction and psychological health by encouraging a sense of empowerment and custodianship. The way the built environment is governed can foster this participation.

Participation in the built environment fosters a sense of stewardship and empowerment. This is linked to community interaction (Baum et al. 2000; Shutkin 2001; Brand 2003) and mental and physical health (Baum et al. 2006).

Semenza et al. (2007) assessed the health impact of an attempt to promote community participation in urban renewal by engaging residents in the construction of attractive urban places in three neighbourhoods in Portland, USA. Involvement was facilitated by the approval of community-designed street murals, public benches, planter boxes and information kiosks with bulletin boards in public spaces. Residents within a two-block radius of the three sites were systematically sampled and interviewed before and after the intervention. Multivariate results revealed improvements in mental health, increased sense of community, and an overall expansion of social capital. Brand (2003) examined the consensus

building processes used in nine Minnesota housing development projects finding that community involvement in the development process is critical to establishing social capital. They conclude with seven strategies for designing consensus building programs in the context of urban renewal.

Goltsman et al. (2009) highlight the link between environmental stewardship in children and health. They propose that children should be encouraged through learning and play to engage with their environment - both natural and built. They discuss a range of ways that this can be facilitated. They advocate using neighbourhood parks and open spaces for children's vegetable gardens or outdoor learning areas, rather than filling these spaces with 'manicured park lawns and manufactured play equipment' (Goltsman et al. 2009, p. 90). Their paper provides guiding principles and performance requirements for developing outdoor environments that engage children. Actual resources to build these environments are listed. These guidelines complement others outlined by Wake (2007) and Rayner and Laidlaw (2007) in an Australian context.

A sense of community ownership and engagement can be integral to both the development and maintenance of healthy built environment projects. Baum et al. (2006), for example, examined the factors enabling the continuation of the 'Healthy Cities Noarlunga' program over 18 years (1987-2005). They concluded that the initiative being accorded value by the community, facilitated by genuine community engagement, was a major factor emerging in sustaining the initiative.

Producing one's food is also an empowering experience. This can occur through urban agriculture, including community gardens (DuPuis and Goodman 2005). Using in-depth, key informant interviews to study the impacts of a community farm in Ontario, Canada, Sumner et al. (2010) highlight the important role the community farm plays in enabling connections of the gardeners to both community and the local food production process.

Sample Policy

'Involve your community in planning activities

- Engage community members early in the planning process to accommodate their ideas about their local area.
- Liaise with young people and children when planning new development areas or urban renewal projects.'

National Heart Foundation of Australia (Victorian Division) 2004 p. 22.

Sample Evidence

'Community organizing and public engagement resulted in the painting of a large street mural and the construction of several interactive art structures... participants created unique ecological constructions, including a cob [clay] kiosk, cob benches, a street mural, a lawn chessboard, a light clay sauna, and a walking labyrinth... Social capital displayed a statistically significant increase after the intervention. At all three sites, there was a consistent decline between the first and the second survey in the estimated marginal mean for the depression scale.'

Semenza et al. 2007 p. 13 and 15.

5.2.5 Strengths and Weaknesses in the Research

While studies on the impact of built environments on physical activity are further advanced than those of the built environment and strengthening community, the gaps identified in both research areas are similar. Common weaknesses include the lack of standardised measures of built environment and health variables, the need for more robust proof through longitudinal investigations, and elimination of confounding variables such as the impact of residential self selection. Studies also require better interdisciplinary collaboration and more detailed explorations on the synergistic impacts of multiple variables at different geographical scales. In addition to these commonly articulated weaknesses, the following more specific gaps have been identified as relevant to research on the Built Environment and Connecting and Strengthening Communities.

Bridging the Gap Between the Built Environment, Connected Communities and Health

Research exists on the way the built environment facilitates social connection and contact with nature, attachment to place and community empowerment. Similarly, there are studies on the way social connection, contact with nature, feelings of attachment and empowerment positively influence health. There is less research, however, bringing these two relationships together to assess the impact of the built environment on interaction, attachment and empowerment and its subsequent effect on health outcomes. Bridging this gap requires further collaboration between built environment and health research with fields as diverse as sociology, human geography, psychology and anthropology. These disciplines need to be actively drawn into healthy built environment work to include specific health outcomes in their explorations of the influence of the environment.

Using Research to Date on Physical Activity

The strength of research on the built environment and physical activity provides avenues for assessing the impact of built form on social interaction, empowerment and attachment. Despite this, the research to date rarely explores or theorises synergies between built environments for physical activity and social interaction. Opportunistic interventions assessing the built environment's impact on health should include assessment of social interaction, feelings of involvement and empowerment, and attachment to place as health related variables.

The Natural Link in an Australian Context

There is a lack of systematic research demonstrating evidence that the natural environment increases levels of social interaction (Sustainable Development Commission 2008). This is particularly important in an Australian context where our natural environments (such as tracts of bushland and beaches) provide different challenges to enhancing social interaction when compared with the natural spaces experienced in Europe and North America.

Further research is needed to establish health responses to natural, semi-natural or artificial habitats. The health benefits from contact with nature need to be better explored at the population level (Tzoulas et al. 2007). Future studies should examine variations in landscape needs in different social groups, minority communities and different places (Poortinga et al. 2007). To better understand user needs, more participative designed studies and interventions are required (Abraham et al. 2010).

The Importance of Education in New Environments

The health benefits of educational programs and infrastructure, including directional and explanatory signage, are generally monitored and evaluated by their impact on participation rates. In addition to encouraging participation in healthy behaviour, educational programs and infrastructure can also develop understandings beneficial to health which can exist without participation. For example, a council authorised sign explaining the use of grass verges in an urban street for a community garden has the ability to defuse anxiety amongst those with opposing opinions on appropriate uses for the street verges. This benefit exists outside of participation and its measurement would be missed if the success of the infrastructural provision was evaluated based only on

participation. Monitoring and evaluation of educational programs should include an analysis of the impact on those community members who are not necessarily drawn to participate in the actual project, but nonetheless feel more comfortable in, and attached to their locality as a result of the awareness gained by the educational program.

5.2.6 HBEP Recommendations for Future Research

The recommendations for future research outlined in Section 5.1.6 also apply to this research agenda. 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.

5.2.7 Policy Implications

- Planning policies based on new urban design, including increases in densities and mixing of uses, will generally encourage social interaction. These interactions will not occur, however, unless adequate provision is made to protect individual privacy. Such policies should be accompanied by other community building programs, including the establishment of community groups, staging of community events and even the support of fledging local retailing to ensure its viability.
- Policies to maintain green and open spaces should embrace increased physical activity, social connectivity and improved mental wellbeing as desired outcomes. With continuing growth of urban populations, policies need to target the acquisition of land for greenspace and improve the quality of existing greenspace networks beyond their traditional role as recreational areas.
- Community gardens should be supported by dedicated personnel and appropriate funding. Pursuing partnerships with other agencies

such as neighbourhood schools, TAFE colleges, botanical gardens, gardening clubs, recycling and sustainability groups, and local councils, can be a way to engage community based knowledge, as well as support.

- Policies to involve communities in crime prevention programs and policies based on existing CPTED guidelines need to be pursued. Crime prevention policies must be coordinated with other healthy built environment policies.
- Planning of environments that are new and unfamiliar should include provisions for educational programs and infrastructure. Policies to retrofit existing public spaces and environments with appropriate, creative and consistent signage detailing behavioural expectations should be pursued.
- Public participation provisions in existing built environment policy and legislation should be regularly reviewed to ensure they make use of contemporary technology and are suitable for today's communities. Policies for public participation in governance of the built environment should be adaptable to encourage inclusivity through participation from all community members. The involvement of children in the planning of green and open spaces should be particularly encouraged.

5.2.8 Summary of Key Messages

There is No Set Formula for 'Community'

Community is complicated. This relates to demographic, cultural, ability, socio-economic and other attributes. What works to promote community in one locality, or within a particular group, or at one time, will not necessarily translate to another.

Interaction in Open Spaces – contact with nature as well as community

An integral impact of the built environment and interaction is the location and treatment of green and open spaces, facilitating contact with nature as well as contact with community.

Interaction in Other Spaces

Casual encounters with community can occur anywhere. Providing welcoming and safe common areas around apartment blocks or facilities for comfortable waiting at public transport stops, for example, can encourage the incidental interactions which become building blocks of community.

Interaction in Community Gardens and Farms

Community gardens are forums for incidental and organised interaction. They are spaces for people to establish and maintain contact with community and contact with nature.

Interaction on Streets and in the Neighbourhood

Both regional scale urban structure and micro scale building design can influence incidental interaction on streets and in neighbourhoods.

Safety

While sense of community and social interaction are determinants of health, a large body of research suggests that people will not interact within, or feel part of a community that they perceive to be unsafe.

Mobility and Interaction

Travel modes affect opportunities for casual interaction, the ability to form and maintain of social ties, as well as being the source of stress associated with traffic and noise. While active transport presents opportunities for causal interaction not afforded by the private car, it also potentially reduces accessibility to family and friends.

Orderly Interaction through Education

The built environment can promote orderly social interaction by removing ambiguity in expectations and educating communities about behavioural norms. This is particularly important in new and unfamiliar environments, such as community gardens and shared pathways.

Participation and Empowerment

Participation in shaping the built environment supports interaction and psychological health directly by encouraging a sense of empowerment and custodianship. Governance of the built environment can foster this participation.


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