What about the people?

The socially sustainable, resilient community and urban development

REPORT

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Figure 1: Christchurch. Earthquake damage. Source: Louise Thornley

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Preface

This report was conceived, researched and written at the World Resources Institute, Washington DC, USA during 2013-2014 and afterwards as a transatlantic collaboration between the authors. An article outlining the research project was published online on The City Fix blog in February 2014:
http://thecityfix.com/blog/new-approach-social-factors-urban-development-cathy-baldwin/

The report unites three major strands of cities research and policy of interest to governments, planners, designers, architects, social scientists and others – Urban Development, Social Sustainability and Community (Social) Resilience to the impacts of global warming and climate change. Its topic: planning, designing and constructing urban built environments that support the behavioural and psychological aspects of a socially sustainable, resilient community, thus promoting its core strengths to act, is a relatively unestablished strand in urban planning, design and development research, policy and practice. This initial report is intended to put our ideas and recommendations out into the public and professional domain with the aim of soliciting feedback from interested parties whilst additional publications are underway for different audiences. Author contact details can be found on the Acknowledgements page.

The report should be read as the full story of the research project, and a complete guide to the subject. The first half presents a theoretical framework that demonstrates how urban planning, design and construction can support socially sustainable, resilient behaviours and psychological responses through urban form and public participation. The second half applies this framework to practical case studies from "real world" urban development projects from around the globe to identify their effects on communities. A set of recommendations through which the framework can be applied in practice using a four stage "socially-aware planning process" is offered at the end. These can be read as a stand-alone guide for urban development stakeholders seeking implementation advice, rather than the conceptual background of this project. For those with specific interests, please refer to the following:

Theoretical framework on urban social sustainability: sections 3. and 4.
Theoretical framework on urban community resilience: section 5.
The four stages of a socially-aware planning process for urban development stakeholders: section 7.1.
Qualitative case studies on socially sustainable built environment initiatives: section 6. and 7.
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Executive summary

With a steady global increase in urban stressors, and the effects of global warming and climate change such as adverse weather events and natural disasters, urban communities worldwide need to grow stronger rapidly. Strong networks and social cohesion mean that communities and the individuals that constitute them are better able to cooperate and take actions to support each other. People who feel invested in the place where they live may be more likely to care for it, and be motivated to take action when it is affected by a negative environment event. These acts are in addition to the services and support provided by formal authorities. This report explores the relationship between urban built environments and "pro-community" behaviours and psychological responses: positive acts and states of mind beneficial to communities and their constituent individuals. Its context is both urban development projects and frameworks (13) and natural disaster contexts (4) in 12 countries in the global north and south. Its core argument is that built environments planned, designed, built, located, and managed with social interaction in mind can support pro-community behaviours which contribute to communities' daily social sustainability, and help strengthen their resilience to unplanned environmental adversities.

Social sustainability is concerned with communities' health, well-being and quality of life, and their capacity to function effectively in future. Community resilience is about communities developing the adaptive capacity to cope during, and adapt after natural disasters. At the local neighbourhood level, both ideas are underpinned by social capital and social cohesion, (sometimes) positive social and psychosocial processes where residents are drawn to cooperate in networks, get along in spite of differences, and think and feel positively about or fondly of the people among whom they reside, and the places where they live. Most pro-community behaviours and states of mind can trace a relationship to social capital or social cohesion as a composite theoretical dimension, or an outcome in the social and psychological sciences. Therefore daily social sustainability and intermittent community resilience sit on a single continuum, linked together by connected and shared pro-community behaviours and states of mind.

The report takes up the term "socially-aware planning" to describe the intention to influence pro-community behaviours and create positive social impacts via a development plan, with the resulting product being a "socially-planned built environment". It analyses how in public and private sector, and community co-created building and development projects with explicit socially-aware planning goals for the construction/regeneration of housing, public space and transport stops, urban form and public participation influenced existing and potential residents' pro-community behaviours. These analyses are presented as qualitative case studies from the following cities and regions: Delhi (India) – public usage of public open spaces; Cape Town (South Africa) – upgrading of unsafe walkways and public spaces in an informal settlement, and redesign of the city's Central railway station; Belfast (Northern Ireland, UK) – a planned private-developer housing complex; southern England (UK) – private-developer housing communities; Portland, Oregon (USA) – volunteer renovation of public squares; Manchester (England, UK) – volunteer renovation of a small public green space; Christchurch (New Zealand) – planned upgrade of the city's Bus Xchange; Yala (Thailand) – new city parks and green spaces, and Buenos Aires (Argentina) – a public campaign to maintain a supportive historic neighbourhood environment. Seven theoretical pro-community behaviours and states of mind were tested on eight of the case studies (the Buenos Aires and Thailand cases did not contain sufficient behavioural data but are included as useful illustrative examples) and confirmed, and five new ones were uncovered. The authors draw on literature from both urban planning and the social and psychological sciences in an attempt to combine approaches that are often divorced from each other, but through their synthesis, offer new insights. Case studies are offered on policy frameworks from Vancouver, Canada, Adelaide, Australia, and a multi-city example from UNESCO. An example from Paraguay shows how social capital and cohesion help a community to collectively maintain their infrastructure.

The report then examines five case studies exploring the relationships between the built environment/social infrastructure, and existing or lacking social organisational strategies grounded in pro-community behaviours that hindered or promoted behavioural resilience during and after disasters in cities. Some of the socially sustainable pro-community behaviours and other similar ones enabled urban residents to cope with, and adapt to, adverse impacts on their communities/ built structures. Case studies are offered from the following cities and regions: two concerning coping during/after flooding: Surat (India), and Jakarta (Indonesia); coping after Hurricane Katrina: New Orleans, Louisiana (USA); and after earthquakes: Christchurch (New Zealand). Six theoretical pro-community behaviours and states of mind were tested and confirmed (and one physical one), and eight new ones were uncovered.

These analyses revealed eight shared pro-community behavioural and psychological dimensions of a community that is both socially sustainable and resilient. These are: connections and affective attachments to the neighbourhood and community (pride in, sense of, or attachment to place/community; sense of belonging); social interactions with neighbours/in the neighbourhood; feelings of safety and security, and active monitoring; residential stability; pro-active participation in collective group/civic activities and affairs; social cohesion; social solidarity/community spirit; happiness and well-being,

and voice and influence, and civic empowerment. All the pro-community behaviours and states of mind tested and uncovered in the report are open to planner and designer manipulation.

The urban development projects reviewed enhanced social sustainability through influencing pro-community behaviours by: incorporating clear social objectives into planning; adopting multiple strategies for social research – to understand the local interpretation of the urban landscape, and produce evidence of communities' social needs, resources and "strengths" (the specific local dimensions of "resources"), employing democratic and inclusive community participation and engagement with professional stakeholders; matching these data with sensitive planning and design decisions; allowing communities to co-design, implement and participate in managing projects, especially their own spaces and infrastructure, thereby growing social bonds, collective capacity and other social resources with positive social, health and well-being effects; creating off-shoot community and economic development opportunities; and conducting ongoing monitoring and evaluation using various methods to include communities, ensure social objectives are honoured, and generate learning to better inform future plans.

In the community resilience cases, poor quality and vulnerably-located built structures, poverty, weak networks and lack of cohesion within heterogeneous slum settlements, and lack of participation/influence in formal resilience planning inhibited behavioural resilience in slums. The informal and formal built environment was partially responsible for the development of social capital and cohesion in residential communities, resources which were then drawn upon in micro-level coping and adaptation strategies employed to manage the effects of disasters. Built environments were used flexibly to support community gatherings. Participating in urban planning and collective maintenance of an urban environment with higher income, long-term residents prior to an adversity improved participation and resilience afterwards. Separating people's key social networks from their usual built environments and accommodating them in problematic temporary structures produced negative social and health effects.

Insights from analysis of the case studies suggested that development stakeholders should adopt four stages of a socially-aware planning process that incorporates principles from a Social or Health impact assessment (SIA and HIA) resulting in built environments planned with social awareness. The four-stage process begins from a scheme's earliest conception, then follows the entire development. Stage 1 is *Scheme Conception and Real Estate Pre-Development*, moving on to Stage 2 of *Research and Community Engagement*. The social and cultural data, in addition to more traditional economic and financial data, explicitly inform the *Design and Implementation* decisions of Stage 3, and then Stage 4 of *Monitoring and Evaluation*, closing the loop and providing information for future construction as well as improvements. The report closes with a set of recommendations encompassing ideas, tools and methods to guide urban development stakeholders wanting to construct or regenerate built environments that support pro-community behaviours using the "socially-aware planning" approach. The recommendations emphasise the importance of equity, diversity, and community involvement and co-design.

Figure 2: Yala Garden City. Source: Health Impact Assessment Division, Department of Health, Thailand

Acknowledgements

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Glossary of terms and definitions

Contextual and core concepts	
Urban development	This term is used in different ways in different communities. From Collins Dictionary: the development or improvement of an urban area by building; an urban area that has been developed and improved by building. A more academic definition: Urban development is the social, cultural, economic and physical development of cities, as well as the underlying causes of these processes. (Dept of Sociology and Human Geography, University of Oslo, 2011). Our definition: the process by which cities develop physically, economically, socially, and culturally, as well as the result and a place in which such development occurs.
Built environment	Human created and constructed space where people live and interact (our definition).
Community	Groups or networks of people who share a common sense of belonging based on shared connections such as geographic proximity, interests, socio-demographic characteristics, experiences, emotional links or other common purposes. Communities may be based on face-to-face interactions or virtual or mental connections that bind them; they can emerge informally or be formally organised. The term 'community' is also used to describe: organised networks, policy discourses, or group identities (our definition).
Social organisation	The ways in which people organise themselves in a society or community to live together and meet their social needs; it includes arrangements for forming and conducting relationships, the roles people play, the rules and codes of conduct, and the goals and outcomes of those relationships that result in key social activities and the functionality of the society or community (our definition).
Social sustainability	Social sustainability is about people's quality of life, now and in the future. It describes the extent to which a neighbourhood supports individual and collective wellbeing. Social sustainability combines design of the physical environment with a focus on how the people who live in and use a space relate to each other and function as a community (Woodcraft 2012: 35).
Community resilience	Community resilience is the existence, development, and engagement of community resources by community members to thrive in an environment characterised by change, uncertainty, unpredictability, and surprise. Members of resilient communities intentionally develop personal and collective capacity that they engage to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future (Magis, 2010:402).
Adaptive capacity	'The capability of a particular system to effectively cope with shocks' (Martin-Breen and Marty Anderies, 2011: 14).
Economic sustainability	The maintenance of economic capital (Goodland, 1995).
Environmental sustainability (sometimes also referred to as physical sustainability, or natural resource sustainability)	Protecting natural resources, often referred to as natural capital, over the long run, and our ability to access them responsibly to support present and future generations. Resilience refers to the ability to bounce back (EPA, n.d., citing the US National Environmental Policy Act of 1969).

Social capital and social cohesion	
Social capital	The behavioural norms, trust, and reciprocity that help people to form social networks for the purpose of collective cooperation and mutual benefits (based on the work of Bordieu, 1980; Coleman, 1988a and b and 1990; Portes, 1998; Putnam, 1993 and 2000).
Cognitive social capital	Cognitive (mental) attributes that people share such as behavioural norms, trust, reciprocity, values, attitudes, and beliefs (Coutts et al. 2007; Uphoff, 2000; Grootaert and van Bastelaer, 2001).
Structural social capital	The ways that people organise themselves together on a social level through structures such as social networks, patterns of civic engagement, and established roles (Grootaert and van Bastelaer, 2001; Uphoff, 2000; Coutts et al., 2007).
Bonding social capital	Social capital between people who share characteristics in common such as family members, neighbours, close friends and colleagues (homogeneous social groups) (Grootaert and van Bastelaer, 2001; Coutts et al., 2007).
Bridging social capital	Social capital between groups of people who have very different characteristics from each other, such as age, gender, ethnicity, socio-economic status, religion, disability, language (heterogeneous social groups) (Grootaert and van Bastelaer, 2001; Coutts et al., 2007).
Horizontal social capital	Social capital that links people who have equal or near equal status in a hierarchy (Grootaert and van Bastelaer, 2001; Coutts et al., 2007).
Vertical (or Linking) social capital	Social capital linking groups of people to powerful institutions, or linking them to people with different levels of status, resources or power (Coutts et al., 2007; OECD, 2001).
Social cohesion	When people from the same community or society get along, trust each other, and live peacefully together with or without social or ethnic differences. This is supported by economic equality and inclusion, democracy, people having their basic needs met, and social solidarity (our definition based on the work of Berger-Schmitt, 2000; Forrest and Kearns, 2001; Ferroni, Mateo and Payne, 2008; Jenson, 2010).
Concepts describing life standards	
Human capital	The skills, knowledge, capacity to work, and good health that together enable people to pursue different livelihood strategies and achieve their livelihood outcomes. At a household level, human capital is a factor of the amount and quantity of labour available. This varies according to household size, skill level, education, leadership potential, health status etc. Human capital is necessary to be able to make use of the other four types of livelihood assets (DFID, 2001).
Quality of life	A term used widely in different contexts, and highly subjective and self-defined, with both positive and negative elements. In general, it refers to well-being of an individual (our definition).
Well-being	Well-being relates to the state of being or doing well in life, being happy, healthy, or prosperous (The OED Website, 2010), as a broad and encompassing concept 'that takes into consideration the whole person. Beyond specific physical and/or psychological symptoms related to health, well-being should include context-free measures of life experiences' (e.g., life satisfaction, happiness) (Danna and Griffin, 1999: 364).

Behavourial and mental well-being concepts	
Behaviour	Individual and group human actions
Psychological response	All forms of mental response to human experiences
Pro-community behaviours	'A broad category of acts that are beneficial to the community at large as well as to other community residents.' (Oishi et al., 2007: 831)
Psychosocial	'Pertaining to the influence of social factors on an individual's mind or behaviour and to the interrelation of behavioural and social factors.' (Oxford English Dictionary cited in Martikainen, Bartley, & Lahelma, 2002: 1091)
Social Support	'Resources provided by other persons' (Cohen and Syme, 1985) and 'information leading the subject to believe he is cared for and loved, is esteemed and valued and belongs to a social network of communication and mutual obligation.' (Cobb, 1976)
Concepts describing the workings of society and community	
Social infrastructure	The total of organisations, services, and social relationships that facilitate coexistence in fairness (neighbourhoods, groups, networks, and families) and participation in society (Engbersen and Sprinkhuizen 1997). A distinction is made between formal infrastructure which refers to those services and arrangements available in a neighbourhood or town that stimulate the social climate (a sports club or community centre), and the informal infrastructure which refers to social networks that exist in a specific neighbourhood. (Konig, 2002: 79)
Social equity	'Equal opportunity, in a safe and healthy environment'. (United States President's Council on Sustainable Development, 1996)
Social integration	'The ability of different groups in society to live together in productive and cooperative harmony and to accommodate differences within a framework of common interest to the benefit of all. Social integration implies justice for the individual and harmony among different social groups and countries. It means integration of disadvantaged and vulnerable groups by making all institutions of society more accessible to them.' (Vanclay et al., 2015)
Social inclusion	The process and outcome of improving the terms for individuals and groups to take part in society (World Bank, 2013).
Social exclusion	A process and outcome where individuals and groups are excluded from actively participating in, and benefiting from, society's activities and opportunities (our definition).
Social order	'The conditions under which individuals and groups are prepared to co-operate with one another to reach common goals.' (Wrong, 1994)
Social attributes and occurrences	
Social resources	Attributes within the social environment (e.g. social capital, social cohesion, social connectedness, social equity, social inclusion etc) that social groups (e.g. communities, ethnic groups etc) can engage with or draw upon to their individual and collective advantage (our definition).
Social strengths	The locally specific social conditions, organisational forms, relationships, psychosocial attachments and identifications, cognitive features, collective abilities, and other social capital and cohesion-related attributes that people can draw upon to achieve social objectives and benefits (our definition).
Social process	An intangible social occurrence taking place in a society or community where people interact and engage with external factors that result in social outcomes either in isolated or ongoing fashion. For example, the formation and negotiation of social capital or increase or decrease in social cohesion. Most social processes include the formation (and maintenance, or not) of individual and group relationships, what people accomplish within them, and changes to such patterns of social activity (our definition; cf. Gillin and Gillin, 1954).
Social change processes	Categories of social change processes include demographic, economic, geographic institutional and legal, emancipatory and empowerment, sociocultural and others. These are set in motion by projects or policies and take place independently of the social context, leading to social impacts. (Adapted from Vanclay, 2002: 193)

Social impacts	Social consequences to human populations of public or private actions which change the ways in which people live, work, play, relate to one another, organise to meet their needs and cope as members of society. Social impacts must be experienced or felt. (Adapted from Vanclay, 2002: 190)
Cultural impacts	Changes to the behavioural norms, values and beliefs of people that guide and rationalise their cognition of themselves and their society. (Adapted from Vanclay, 2002: 190)
Health impacts	A health impact can be positive or negative. A positive health impact is an effect which contributes to good health or to improving health. A negative health impact has the opposite effect, causing or contributing to ill health. (Adapted from: WHO website, Health Impact Assessment, Glossary of Terms used, http://www.who.int/hia/about/glos/en/)
Social outcomes	The longer-term results of a change process, e.g. social change, urban development etc (our definition).
Social benefits	When a project activity or process contributes an effect (social benefit) that improves the existing baseline social conditions through identifying needs and proposing actions to help address them. (Adapted from Rowan and Streather, 2012: 219)
Psychosocial orientations and attachments to place and community	
Orientations	
Place orientation	A generalised 'personal orientation to place' (Hummons, 1992: 262) which rests on 'awareness of one's location in the environment' and psychological familiarity. (cf. La Grow, 2010)
Sense of place	An individual's personal connection to and sensory experience of a built or biophysical place as understood through the meanings given to its characteristics. It encompasses personal positive, neutral or negative regard for it, developed psychologically through prolonged or repeated exposure to the place. (cf. Hummon, 1992: 262; Trentelman, 2006: 201; Williams and Kitchen, 2012: 258)
Sense of community	An individual's personal feeling of being recognised and included in a community as based on their experience of membership (cf. Hyde and Chavis, 2007, p. 179) and component factors identified by the individual.
Social solidarity and community spirit	A feeling of unity and togetherness , and a tendency to act together with other members of a social group (e.g. a community, ethic group etc) in its collective interest (our definition).
Attachments	
Place attachment	The environmental settings to which people are "emotionally and culturally attached" (Low and Altman, 1992: 5) to varying degrees (Williams and Vaske, 2003: 832) in a positive sense. Attachments to places are developed through interaction with them or experience of them regularly and over time, or through story-telling about and memory of them. (Trentelman, 2009: 200)
Community attachment	A measure of an individuals' emotional attachment to their community and indicator of their rootedness within it (Trentelman, 2006: 201), arising from interactions and connections with fellow community members (Kasarda and Janowitz 1974, 328). It generally contributes to positive individual well-being through the benefits of social connection and social support and information provision by extensive networks (Lee and Blanchard, 2011: 25; 28).
Sense of belonging	An individual's "naturalised emotional attachment" (Yuval-Davis, 2006: 197; 199) to a group of people, organisation, biophysical or socio-cultural environment, formed psychologically through social interaction with and within groups, organisations and environments (cf. Haggerty et al., 1992: 173). People are more likely to become conscious of to whom, what and where they belong when their belonging is questioned or threatened.

Relevant forms of Impact Assessments	
Social impact assessment (SIA)	Includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programmes, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment. (Vanclay et al., 2015)
Health impact assessment (HIA)	A combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, programme or project on both the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects (Quigley et al., 2006).

Figure 3:   Caballito, Buenos Aires. Source: Lucia Caistor-Arendar

1   Introduction

Context and rationale for the report

This report unites three major strands of cities research and policy of interest to governments, planners, designers, architects, social scientists and others: Urban Development, Social Sustainability and Community (Social) Resilience to the impacts of global warming and climate change.[1] It explores the influence of urban planning, design and the development of urban built environments on residents'/users' *pro-community behaviours* (including psychological states of mind) in 12 countries worldwide, particularly through urban form and public participation. The psychological term "pro-community behaviours" is defined as: 'a broad category of acts that are beneficial to the community at large as well as to other community residents.'[2] Urban social networks of residents or "communities" need to develop their capacity for pro-community action more urgently than ever due to global warming and climate change, potentially the most critical problem facing human civilisation. Pro-community behaviours and psychological responses are at the root of the daily social sustainability of communities in "normal" times, and their resilience to the negative impacts of unplanned adverse environmental events and natural disasters. The urban sector can contribute to the development of capacity for pro-community behaviours by creating built environments that encourage and support them. We use the term "socially-aware planning"[3] to describe the intention to influence such behaviours and create positive social impacts via the development process, with the resulting product being a "socially-planned built environment".

Built environments planned with social awareness are imperative at the current time. The 3.5 billion people living in the world's urban centres[4] face numerous pressures and challenges. Urban residents make up more than half the earth's population[5] with 4.9 billion – about 60% of total global population – expected to live in cities by 2030.[6] Astoundingly, 60% of the area expected to be urban by 2030 – predominantly in Asia and Africa – has not been constructed yet.[7] Rapid urbanisation due to economic growth and population expansion puts pressure on available land, urban infrastructure, and green space worldwide. It is occurring faster than governments or markets can provide safely-located, adequate housing or public infrastructure for growing populations.[8] Longstanding and new tensions such as crime, violence, and disease, also threaten sustainable human habitations.[9] The increasing frequency of climate change effects such as unpredictable rainfall patterns, sea-level rise, wider and less predictable temperature extremes, and more frequent and variable extreme weather events[10] also puts city-dwellers, their communities and physical environments under increased pressure. This is especially true in low to middle income countries,[11] and those with large numbers of people in poverty who often live in the most vulnerable locations and structures.[12] Sub-standard housing and infrastructure sometimes pose risks to social capital and social cohesion. These social resources underpin the social sustainability and resilience of the social organisation of urban communities – how people think, behave and organise themselves collectively – and the unique social strengths and capacities of individual communities: the attributes which shape their collective capacity to respond resiliently to the effects of climate change and/or natural disasters (e.g. seismic). People worldwide need to maximise their capacity to cope with, and adapt to, these pressures.

Social capital describes the networks, norms, reciprocity and trust that form the "glue" of human communities. Social cohesion is the ability of different socio-demographic groups to live peacefully together across differences. Both concepts encompass pro-community behaviours and psychological responses as either their composite dimensions or their outcomes. These behaviours can increase communities' collective capacity, health, well-being and quality of life during routine life[13] ("social sustainability"). Simultaneously, these social resources contribute to community members' ability to cope with,

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1   These terms are used interchangeably in the literature, see discussion in section 5.3. We use the term 'community resilience' with our focus on neighbourhood communities.

2   Oishi et al. (2007: 831)

3   The authors are aware of the lack of capacity for "socially-aware planning" in both the government and design professions, which demands a blend of social policy, social science and planning skills. Training and continuing education programmes as well as revisions of curricula in universities could help address these gaps.

4   Thwaites (2015).

5   United Nations: http://www.unfpa.org/urbanization
     WHO: http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/

6   NCE (2014: 60); United Nations (2005)

7   Thwaites (2015)

8   United Nations, Dept of Economic and Social Affairs, Population Division (2014)

9   Barata-Salgeuiro and Erkip (2014); Lanzafame and Quartesan (2009); World Bank (2013:145); King and Rathi (2010: 7)

10   The World Bank (2010)

11   IPCC (2014)

12   UN-HABITAT (2010)

13   Berkman (2000); Ferlander (2007)

adapt to, and "bounce back" [14] from unplanned negative environmental events by taking care of each other and their built environments in a transformative way, to ensure henceforth a healthy and sustainable continuing existence ("community resilience"). Socially-planned built environments can nudge people towards adopting pro-community behaviours in routine life and during/after crises, to realise these goals.

It is well established that the physical form and infrastructure of urban built environments and the social organisation of people are intimately connected. Built environments planned, designed, located, constructed and operated with social interaction in mind can positively influence levels of social capital and cohesion in urban networks through the relationships, social activities and cultural life that they support. Built environment structures used by millions of people – in particular housing, public areas such as squares and parks, and transport stops – are the most likely contenders for influencing pro-community behaviours, and their longer-term outcomes (referred to in this report as "pro-community outcomes"). We focus on these three types of structures throughout. Town squares and plazas, along with public parks, sometimes located adjacent to religious or municipal institutions, have provided such spaces historically. Other non-built environment factors – such as 'individual predisposition, income, family situation, health, crime, culture'[15] – influence levels of social interaction. However, cities provide the backdrop for the interactions of diverse masses.

When residents and users of urban areas exhibit pro-community behaviours associated with social capital and cohesion, there can be positive effects for both individuals and communities. In turn, social capital and cohesion can influence a variety of longer-term macro and micro-level outcomes in economic development, education, job seeking, democracy, governance, health, well-being, personal security, and climate change resilience.

Whilst the potential structural and economic implications of swift urbanisation, and climate science, are mainstream policy discussions, [16] the social behavioural dimensions of urban social sustainability and resilience are not.[17] These issues appear "softer" yet harder to achieve, but they can be woven into urban planning, sustainability and resilience policies and strategies via socially-aware planning. Sustainability and resilience – two high profile, buzz word concepts – are twins in efforts to prolong the resources and existence of cities for future generations, and their social components must be united in urban development research and policy. Without sustainable urban communities, there will be no human capital to create physically, economically and environmentally sustainable and resilient cities over time, by the very definition of sustainability.

Structure of the report

This study is an example of "blue sky" conceptual thinking applied to a practical global problem. Its conceptual aim is to place the social sustainability of neighbourhood networks and their regular built environments on a continuum with their resilience to environmental adversities. The practical aim is to identify a set of pro-community behaviours open to planner and designer manipulation, and recommendations for the implementation of "socially-planned built environments". The report uses qualitative case studies to scrutinise how urban communities interact with the built environment at micro-level that quantitative approaches can overlook. It considers behaviours and psychological responses at the collective, or aggregated individual levels. The case studies offer a preliminary evidence base for those aiming to use metrics to monitor the social dimensions of urban social sustainability and resilience over time by showing dynamic development and behavioural contexts from which timely and relevant indicators may be devised.

We first review the concepts of social capital and social cohesion. We then establish urban social sustainability as a worthwhile endeavour underpinned by these concepts via: 1) policy-making, with case studies from Paraguay, Canada, and Australia, and a multi-city perspective from UNESCO; and 2) the influence of neighbourhood-level urban planning, design, form and space on pro-community outcomes during periods of calm and environmental calamity. We use two pre-existing parallel theoretical frameworks by unconnected research teams: 1) "sustainability of community"[18] and 2) "fundamentals of neighbourhood resilience"[19] that we adapted slightly to identify the behavioural and psychological dimensions of 1) social sustainability, and 2) community resilience. We show the relationship of each dimension to social capital and social cohesion.

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14   Holling (1996)
15   Kelly (2012: 9)
16   The environmental, economic, physical and governance dimensions of sustainability and resilience are addressed by international organisations and programmes, various levels of government, NGOs, and academics at varying geographical scales. See, for example, United Nations Climate Summit (2014); the Rockefeller Foundation's 100 Resilient Cities Programmeme, the C40 Cities Climate Leadership Group, and the World Resources Institute.
17   See Holden (2012).
18   Bramley and Power (2009) and Dempsey et al. (2009). These papers, co-authored by the same teams, covered these dimensions between them.
19   Zautra, Hall and Murray (2010)

We applied the "sustainability of community" frameworks to 8 of the case studies of public and private sector, and community co-led building and/or regeneration projects in India (1), UK (3), South Africa (2), New Zealand (1), and USA (1). They address housing, public space and transport stops. Each had explicit socially-aware planning goals, and urban form and public participation influenced existing and/or potential residents' pro-community behaviours. These were, or may potentially be influenced by and during the envisioning, planning and design of these built places, and the implementation, monitoring and evaluation of the development process. Collectively, the findings from these case studies point to a four-stage "socially-aware planning process". Each case demonstrates approaches, tools and methods that urban practitioners can implement to create socially-planned built environments that influence pro-community behaviours. Five case studies from India (2), Indonesia (1), USA (1) and New Zealand (1) were then compiled and analysed with the "fundamentals of neighbourhood resilience" framework to demonstrate how under conditions of environmental calamity, these same and other similar behaviours enabled urban residents to cope with, and adapt to adverse impacts on their communities/ built structures more or less well.

Drawing from our analyses, we offer a combined set of socially sustainable, resilient pro-community behaviours that urban development stakeholders should seek to influence. The study concludes with a preliminary action agenda of recommendations to adopt in policies, plans, programmmes and projects for sustainability and resilience, emphasising processes and inclusion. This report exemplifies what social science and community development perspectives can offer, and illustrates innovative work occurring around the world. While this work is not exhaustive or representative, it provides important insights for urban development.

Figure 4: Imperial Wharf, London. Source: Berkeley Group

2   Spirit of the report and methodology

This study was approached from a bottom-up anthropological perspective (but did not employ ethnographic methods) where we sought to examine the micro-level context of urban development. However it is not an anthropological study, but applies a multi-disciplinary theoretical framework to a practical urban problem, drawing from sociology, anthropology, social and environmental psychology, public policy, urban planning and design, geography, environmental studies, and public health. We argue for an idealistic, broad social science starting point for the neglected behavioural side of sustainability and resilience. Therefore this report should be read as an example of "blue sky" thinking and new ideas, how things should be rather than necessarily how they are right now, within the limits of formal planning regimes. It may be categorised as a form of applied (practical) social science and urban policy research.

We acknowledge the highly political nature of development and the power disparities and inequities between its stakeholders: city authorities, land owners, private and public sector builders, NGOs, communities and individuals. We recognise the limits of the public's power to be involved and influence development in their interests, especially in low to middle income countries. Within these limits, we also champion the importance of creative organic, often informal, development, and more formal community-led or co-led developments. Additionally, this report underemphasises the broader policy environment which is of utmost importance but is not our focus here.[20] However, whilst we promote the actions that people can take for themselves, our priority here is persuading all development stakeholders to consider social issues through the evidence we present – whatever their sectoral background. Therefore some cases are more top-heavy or developer-led or controlled than others. However, our recommendations section at the end of the study emphasises inclusion and processes, building on insights from the cases presented.

We began by establishing that the "social sustainability" concept has been adopted by supra-national organisations,[21] in regional and city policy frameworks,[22] and within the planning and construction sector at neighbourhood level,[23] with the concept more frequently applied to urban development in higher-income countries.[24] We reviewed the literature on social capital and social cohesion, social sustainability and social/community resilience to construct our theoretical framework. We then collated case study materials. We examined innovative plans and projects from any country that enabled us to collate significant projected and actual[25] built environment-influenced pro-community behaviours to demonstrate their global significance, and cases which show the link between built environments and social behaviour under environmental duress.

Case study content was taken from secondary academic studies and organisations' project documentation as located through reviews, approaching organisations, and internet research conducted by interns.[26] Selection criteria for the only few available sources containing behavioural information were descriptive data demonstrating the intricate and dynamic interactions and relationships between built environments, human behaviour and / or environmental crises, and creative ideas for recommendations. Whilst all studies contain qualitative data, four social sustainability cases[27] (but no resilience cases) included some behavioural metrics. However, we prioritised identifying, *not* quantifying, the exhibition of behaviours, and ideas for socially-aware planning. Additionally, most sources did not include much background detail on city development and regulatory perspectives. We had no involvement in any cases.

We sought "social sustainability" case studies covering every continent and the global north/south. In practice, there were few documented examples from the south although the issues are pertinent[28] with most rapid urbanisation expected in low and middle-income countries, and far more "resilience" examples of the interaction of the built environment and communities experiencing disasters from this region. This imbalance reflects where the majority of climate changed-related impacts fall[29], and the nature of the scholarship in different areas, highlighting the need for a bi-directional exchange of practical ideas between north/south as well as across different academic communities.

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20   See for example, UN HABITAT, World Cities Report, 2016, for an excellent review of these issues at a global level.
21   Woodcraft (2012); Stren and Polese (2000)
22   Woodcraft (2012); Berkeley Group (2014)
23   Woodcraft (2012); Berkeley Group (2014)
24   Woodcraft (2012)
25   Two of the "social sustainability" case studies: 1) Belfast housing and 2) Christchurch's Bus Xchange, were unrealised plans due to 1) financial turmoil and 2) earthquakes. Both plans drew upon extensive social research with potential tenant and user communities. These data were used to predict behavioural responses using CB's experience in working on predictive social and health impact assessments. The social data elicited from both involved communities included strong ideas for socially-aware planning, also put forward by the anthropologists conducting social research with communities in the Belfast neighbourhoods around the planned housing complex.
26   See Acknowledgements page.
27   Portland, Manchester, southern England, Delhi.
28   Karuppannan and Sivam (2011)
29   IPCC (2014)

We analysed the sources using our own questions:

a) Does this case illustrate an example of social sustainability, community resilience or both?

b) Is this case a major case study or a passing example to illustrate a point?

c) In this case, how does the urban planning process or design of the built environment impact on dimensions of social capital, social cohesion and pro-community behaviours?

d) What behavioural and psychological insights does this case provide?

e) What key points does this case raise about the planning and design process?

f) What are the lessons of the case?

g) What does it tell us about why this story is important now – the global circumstances that merit its inclusion in this study?

h) What makes this story so compelling – why is it different from other possibilities?

We also analysed them using the two pre-existing and published frameworks by unconnected research teams: 1) 'sustainability of community': based on a literature review on urban social sustainability that defined theoretical dimensions that urban form could influence[30]; and 2) 'fundamentals of neighbourhood resilience': which reviewed 22 health and community development studies to generate theoretical dimensions of "resilient processes". We used the findings of our literature review of social capital and social cohesion to determine how each dimension was related to these concepts – as a sub-components or outcome.

All dimensions were grounded in the actions and/or psychological states of people living in neighbourhoods, or social processes encompassing both, apart from the physical "formal and informal places for civic gathering" dimension in framework 2.[31] We emphasised the behavioural/psychological division as social capital theory divides the concept into structural (behavioural formations: networks) and cognitive (norms, trust) forms, which may/may not interact to produce further outcomes, e.g. sense of belonging. Likewise, referencing dimensions from framework 1, an affective concept[32] such as "pride in and attachment to the neighbourhood" may/may not motivate a person to "participate in collective or civic activities".[33] Development should promote states of mind that lead to positive action, and behaviours that produce a pro-community state of mind may lead to great pro-activity. We observed which theoretical dimensions applied in real projects, new ones that occurred in the case studies as influenced by the built environment/development, and all those that overlapped between the sustainability and resilience cases.

We reconstructed the central built environment/behavioural narratives in our own words for every case. We contacted and obtained case-study feedback from all but five of the original authors[34], through non-response or missing contact details. The policy recommendations were created through analysis of the "lessons" identified from cases using our experience in urban development research and practice.

There were several methodological challenges in producing this report. Whilst we recognise the dynamic nature of the featured "communities", many of the data sources did not provide broad contextual data on their inner workings as they were written from an urban development perspective rather than a social science one. The complex interaction of behavioural factors with non-behavioural factors such as economics, poverty, power, social and spatial inequities, and other social groups within the same cities were mostly not highlighted in the source materials. As a result, our case studies may appear simplistic, but they meet our clear intention of highlighting the interactions between built structures, social organisation and associated pro-community behaviours, and environmental adversities. We recognise these as limitations in the context of the few available studies that address urban development, behavioural and psychological responses. Indeed, we view this report as an attempt to begin to forge a dialogue amongst these fields.

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30   This review covered the British context, and our research tested how these dimensions were applicable in other contexts.

31   We limited ourselves to applying the dimensions in these frameworks, and not other possible dimensions of social sustainability or resilience. This is because the social sustainability dimensions were strictly linked to the influence of the built environment, and the resilience dimensions were located within the neighbourhood, the spatial context of our study.

32   Psychological functioning comprises of different mechanisms: cognitive, affective, deliberative and so on. See Ferrer and Klein (2015)

33   The many ways in which the "sustainability of community" dimensions can influence each other are covered in Dempsey et al. (2009).

34   Cases from Delhi (1), Cape Town (1), Surat (2) – which an India expert from WRI checked, and Yala (1).

3   Social sustainability in routine daily life

3.1   What is social sustainability?

Current global pressures mean that urban policy-makers and practitioners must learn how to incorporate the social dimension of sustainable development - social sustainability - into projects, policies and strategies, so that city residents may withstand such pressures. These development stakeholders need to understand what social sustainability is, how it relates to the planning, placement, design, construction and operation of city places, and ultimately, to human behaviour. We start with this first question – what is social sustainability?

Social sustainability is an ideal that can be defined as the: 'viability, health and functioning of 'society' itself as a collective entity'[35], or at local level, a 'community'. Its 'viability, health and functioning' depends on how people relate to, and behave towards each other, communicate, and collectively organise themselves. Societies can exist at national or local level, with national societies being the largest scale at which people organise the way they live together. Societies contain many institutions and systems where people interact and conduct relationships that help them to meet their needs. These include state agencies and institutions, places of employment, education, civic and civil institutions and organisations, religions, and cultures.

Within a national society and on a smaller scale of human organisation, regions, cities and neighbourhoods contain populations. This report is focused on the local face-to-face scale of social interaction, primarily within neighbourhoods, and the networks or communities who live there.[36] Some communities are defined by spatial proximity – such as within the city, neighbourhood or street – and relationships between local residents. Others come about through shared characteristics, e.g. ethnicity, kinship, religion, and culture, or interests, e.g. politics or employment, or circumstances, e.g. shared experience of a disaster.[37] People may identify with and consider they belong to many communities, or indeed none.

The Western sociological origins of 'community' have been highly influential in traditional understandings of the socio-residential community[38]: where local residence is synonymous with belonging to a social network or supportive social group. In practice, local networks may be strong or weak[39], and may or may not emerge as social communities, with shared goals/purpose as well as common interests. Moreover, communities themselves can be inherently hierarchical, with self-nominated leaders having inadequate transparency and accountability, and power unevenly distributed between leaders and members. Network or community members or leaders may not always act for the "common good".[40] Communities are dynamic, and their character and composition are subject to change. In some societies, neighbourhood networks may be thought of in another way, and under another name. But to the extent that city residents share some common experience of the daily life in the neighbourhood where they live, they may identify with the idea of a social community or in the very least, a local network. It is difficult to separate social activity from its physical location.[41]

Members of local networks may be family or neighbours living in close proximity, members of a religious community or other social grouping. The important point for our argument is that they are located nearby and offer network membership: the building block of social capital. Historic social theories of communities[42] linked them with collective identities, whilst urban planning discourses have taken it for granted that neighbourhoods have place-based identities that somehow represent both their characteristics and actual residents.

In modern times some communities are not dependent on geographic location such as online communities or nostalgic 'communities-in-the-mind'.[43] In cities where social life can be anonymous and dispersed, people interact in different networks – 'personal communities'[44] – that are not necessarily centred on the socio-residential community.[45] However, the source of resilience to the impacts of climate change and environmental shocks lies deep within place-based, local networks, and people's everyday behaviours and psychological responses. Resilience requires benevolent social activities driven by "positive" pro-community behaviours among locally proximate people within these co-reacting, overlapping spatial and

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35   Dempsey et al. (2009: 290)
36   We acknowledge that the physical, economic and social environments of spatially and administratively-defined neighbourhoods are shaped and negotiated in terms of their relationship to the wider city and its administration. However we are focused on local scale social interaction.
37   cf. McAslan (2010: 6)
38   Tönnies (1887)
39   Coutts et al. (2007)
40   See section 3.4 for an example of the malevolent effects of social capital/cohesion.
41   Blackman (2006)
42   Baldwin (2012)
43   Pahl (2005: 633)
44   Pahl (2005); Morgan (2005)
45   Baldwin (2012)

social entities of neighbourhood and community. It is these aspects that we would like to see supported to enable city dwellers to cope and adapt. Power and resource distributions, leaders and social dynamics fluctuate and change, but the built environment can contribute to a total enabling environment for the development of social capital, cohesion and pro-community behaviours.

3.2   Social sustainability in policy and research

This section considers how researchers and policy-makers have thought about social sustainability. In policy and research on social sustainability, a question arises: which aspects of social organisation should be sustained? For whom? And who makes that choice? Policy-makers and academics have failed to arrive at a single answer or definition of social sustainability.[46] A broad view holds that 'economic, social and cultural conditions, efforts and values are deemed to be resources that also need to be preserved for future generations'.[47]

In international development, major institutions have identified some of these resources. The UK's Department for International Development (DfID) prioritised social equity and minimising social exclusion,[48] whilst finding that social sustainability 'should incorporate normative implications of sustainability such as gender equity, social justice and quality of life'.[49] At the World Bank, social sustainability was thought to comprise 'equity, social mobility, social cohesion, participation, empowerment, cultural identity and institutional development'[50]. In developed regions, the idea of social sustainability has largely been operationalised through national social welfare policies[51], social policy and community development.[52] We address social sustainability in the context of urban development in section 4.

Our literature review of policy and research in global academia revealed that ideas of social sustainability – aside from the aspects related to urban form – contain the following common items, shown in Table 1.

Table 1:   Common items making up "social sustainability"

Item	Author/s
Meeting of basic and non-basic needs for quality of life	McKenzie (2004: 12); Littig and Griessler (2005: 71); Konig (2005: 70); Bramley et al. (2009); Bramley and Power (2009); Woodcraft (2012: 35)
Equity, equality and inclusion-related measures to facilitate social and economic justice	McKenzie (2004: 23); Konig (2005: 70); Karuppannan and Sivam (2011: 851); Dempsey et al. (2009); Murphy (2012: 19)
Opportunities for participation in democracy – especially community governance	McKenzie (2004: 13); Karuppannan and Sivam, (2011: 851); Dempsey et al. (2009: 295); Woodcraft (2012: 35); Murphy (2012: 19)
Social capital, social integration and social cohesion	Konig, (2002); Bramley et al. (2009); Bramley and Power (2009); Dempsey et al. (2009: 293-295); Polese and Stren (2000: 15-16); McKenzie (2004: 12); Karuppannan and Sivam (2011:851); Murphy (2012: 19)
Identity and attachments to place and community	Bramley et al. (2009); Bramley and Power (2009); Dempsey et al. (2011)
Happiness and well-being	Littig and Griessler (2005); Colantonio (2008: 8)
Conditions that preserve social sustainability for future generations	Chambers and Conway (1992:14-17), discussed in Konig (2002: 69); McKenzie (2004: 12); Dubois (2005: 7)

Other work has identified common themes across the many academic interpretations of social sustainability: 'philosophical and political ideas of human rights, well-being, equality and social justice, to related ideas of community social capital and empowerment'.[53] The term is ambiguous and contested, and will remain so as a result of its political nature.

46   Dempsey et al. (2009: 290); Woodcraft (2012: 30)
47   Littig and Greissler (2005: 67)
48   DFID (1999: 1.4)
49   Konig (2002: 69)
50   Serageldin (1996: 3)
51   Murphy (2012: 26)
52   For example: Europe - Konig (2002); Canada - Cooper (2006); Holden (2012); Australia - McKenzie (2004); Northern hemisphere – Murphy (2012: 16).
53   Woodcraft (2011: 31)

However, in both policy and research, there is a general consensus around three concepts that underpin it: social capital, human capital, and well-being.[54] Social capital is central to our argument, whilst human capital is an important resource for ensuring that cities are sustainable and resilient. Well-being is a pro-community outcome that socially sustainable urban communities should be able to achieve.

Whatever social resources societies and communities have to contribute to their 'viability, health and functioning', social sustainability is not a static social condition, an end goal that can be met and abandoned. Rather social sustainability is a dynamic ideal, and a process[55] surrounding the fluctuating strength and effectiveness of its constituent resources. People can work towards strengthening these resources. When all of these are said to be strong and effective, a society or community may be more social sustainabile. The social resources that should be sustained in each nation, society or community are dependent on context (including political priorities), social values and culture.[56]

3.3   Social capital

This section reviews the concept of social capital. The level of positive social capital and social cohesion in a neighbourhood can influence the effectiveness of local structures of social organisation, and the strength of a network or community's social resources.[57] Social capital is a social science concept that is contested, variously defined and dynamic. It explains the benefits that people can accrue when interacting and working together in social networks.[58] Networks are formed when people share common cognitive attributes, such as norms and trust that help them to organise and prioritise their relationships with others.

Figure 5:   Surat. Source: Robin King

Social capital breaks down into two forms: cognitive (mental) and structural.[59] The cognitive form describes 'the mental processes and perceptions'[60] derived from cognitive attributes: behavioural norms, expectation of reciprocal acts, trust, values, attitudes, and beliefs that people share with others – family members, friends, neighbours and colleagues – that influence cooperative behaviours such as forming networks. Behavioural norms tell people how to behave in acceptable ways in networks that they interact in, so that they maintain trust with others, and can expect mutual reciprocal acts of help/support. The structural form of social capital is the networks themselves – such as informal neighbourhood networks or the semi-formal networks at civic associations.[61] Social structures – which can include dense networks, patterns of civic engagement, and established roles[62] – are the scaffolding for our social relationships. Networks come about through social (or virtual) interaction and connections leading to repeated participation in a networked group of people, therefore networks evolve from behavioural acts.

The cognitive form of social capital does not make much sense without the structural form. Behavioural norms and trust are also shaped by factors such as 'personal characteristics, institutional or geographic contexts'.[63] The basic idea of social capital is that its two forms work together, and are complementary, but it is not guaranteed. Strong cognitive bonds may exist outside a 'formal structural arrangement' - for example, participating in a civic association may not mean that members develop such bonds, especially if membership is not voluntary.[64]

The cognitive/structural distinction is important to bear in mind when separating out key aspects of how social capital works, e.g. 1) the place or situation where it occurs such as a neighbourhood; 2) the people participating in networks; 3) their shared norms or trust that facilitate such group interactions and collaborations; and 4) the advantages they hope to or can gain from participation (and hence any party providing these benefits).[65] Social capital is treated in this report as an

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54   Colantonio, and Dixon (2010); Dempsey at al. (2009); Weingaertner and Moberg (2011); Murphy (2012); Magee et al. (2012), quoted in Woodcraft (2012: 31)
55   Sachs (1999: 32-33); McKenzie (2004: 22); Dempsey et al. (2011: 292)
56   Karuppannan and Sivam (2011: 850)
57   cf. Forrest and Kearns (2001: 2130; 2137)
58   Based on the work of Bordieu (1980); Coleman (1988); Portes (1998); Putnam (1993) and (2000)
59   Grootaert and van Bastelaer (2001: 5); Coutts et al. (2007: 5)
60   Sherrieb et al. (2010: 243)
61   Putnam (1993; 2000)
62   Coutts et al. (2007: 6); Grootaert and van Bastelaer (2001: 5)
63   Coutts et al. (2007: 14)
64   Grootaert and van Bastelaer (2001: 6)
65   cf Portes (1998: 6)

outcome of group activity rather than a property of individuals, although it can be both.[66] However, people and households create social capital as members of networks.[67]

There are known negative effects and outcomes of social capital and cohesion, such as the control and constraints exercised through the expectation of mutual obligations in tight-knit networks, e.g. the mafia.[68] However we focus on the positive aspects that can be harnessed to benefit communities under stress. In policy, social capital is usually treated as something to develop for the "good" of a community. For a neighbourhood group of residents collaborating on an urban project, the benefits or outcomes of social capital will span a wide range. Table 2 shows example benefits for urban development, and their uses.

Table 2:   Benefits and outcomes of social capital, and their uses in urban development

Benefit / outcome	Example uses for benefit
Information sharing, and collective action and decision-making	Collective benefit - poor communities can tackle poverty, resolve disputes, source new opportunities
Cash loans, labour in kind, completion of a building project	Urban infrastructure and development that the community have a stake in
Better relations among diverse residents of a neighbourhood (social cohesion)	Improved feelings of safety, stronger collective ability to work together
Attachments or personal identification to/with a place or community	Psychosocial attachments motivate positive pro-community behaviours
Norms of reciprocity leading to emotional support	Emotional support leads to better health and well-being
Enhanced feelings of safety	Improves social cohesion
Enhanced feelings of empowerment	Improves public participation in civic activities

Social capital has been linked to positive macro and micro-level outcomes: economic growth and development,[69] democracy,[70] better quality governance,[71] less crime,[72] health,[73] subjective well-being or life satisfaction,[74] educational achievement,[75] finding jobs,[76] child welfare,[77] and coping with climate change.[78]

There are also several distinct forms of social capital. *Bonding social capital* is the formation of strong bonds between members of groups who share common characteristics, such as family members, neighbours, close friends and colleagues. Bonds help people to negotiate norms that dictate acceptable social behaviours, elicit mutual help, and protect vulnerable individuals.[79] *Bridging social capital* occurs between groups who differ strongly from each other – by socio-demographic characteristics such as socio-economic status, ethnicity and occupation. It creates weak ties between people based on formal or informal social interaction.[80]

Poorer people, for example, may have intense *bonding social capital* based on shared experience. They may, however, lack the *bridging social capital* needed to make external connections that help them to leverage upwards, and escape poverty or improve neighbourhood conditions through collective action.[81] *Horizontal social capital* refers to connections between people and groups of equal or near equal status in a hierarchy. *Vertical (linking) social capital* links groups of people to other groups or institutions with more power, resources or status.[82]

66   Ferlander (2007: 117)
67   Woolcock and Narayan (2000: 231)
68   Portes (1998: 15); Woolcock and Narayan (2000: 231); Forrest and Kearns (2001: 2141)
69   Portes (1998: 19); Grootaert and van Bastelaer (2001: iii)
70   Putnam (1993)
71   Putnam (1993 and 2000)
72   Portes (1998: 19); OECD (2001: 54)
73   Putnam (2000: 326); OCED (2001: 52)
74   OECD (2001: 55); Helliwell and Putnam (2004: 1444)
75   Coleman (1988a)
76   Barbieri, Russell and Paugam (1999)
77   Putnam (2000)
78   Adger (2003)
79   See Coutts et al. (2007: 1)
80   Coutts et al. (2007: 1-2)
81   Woolcock and Narayan (2000: 227)
82   Coutts et al. (2007: 6)

3.4 Social cohesion

This section reviews the concept of social cohesion. Social cohesion is a broader academic and policy concept that is closely related to social capital. It describes the extent to which people from the same community or society get along, trust each other, and live peacefully together with or without social, ethnic and other demographic differences. [83] A lack of cohesion may result in more tense and conflictual interactions. Social cohesion at neighbourhood level is underpinned by some factors or pre-conditions that promote harmonious behaviour, whereas a lack of cohesion is excaberbated by pre-conditions resulting in more conflictual behaviour among people who live in physical proximity to each other. Causal factors are both social and economic. Table 3 describes the factors contributing to social cohesion, and how their absence may hinder cohesion.

Figure 6:   Yala Garden City. Source: Health Impact Assessment Division, Department of Health, Thailand

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83   For example, Cantle (2001); OECD (2001); Council of Europe (2004)

Table 3: Factors underpinning social cohesion

Social factors needed for social cohesion	What a lack of cohesion would look like without these social factors	Economic factors needed for social cohesion	What a lack of cohesion would look like without these economic factors
Shared morality and common purpose – common values and a civic culture (including participation in democracy and legal rights)	Disparate moral values, lack of civic and political participation and collaboration	Meeting of basic needs, including welfare needs through sufficient economic activity and/or social safety net (Council of Europe, 2001: 5)	Human beings unable to function
Social control and social order (as transmitted through behavioural norms whilst interacting in networks)	Social disorder and conflict	Perceived fairness in access to economic opportunity	Social/political disorder resulting from many feeling the system is unfair
Level of social interaction within families and communities (social capital)	Low levels of social interaction between and within communities	Socio-economic equity and inclusion.	Extreme socio-economic inequality
Place and community attachment and identity (formed through interacting in networks)	Low levels of place and community attachment		

Source: Adapted from Forrest and Kearns (2001: 2128-2129)

Figure 7:   Knowle Village, Hampshire. Source: Berkeley Group

Local relationships may be socially cohesive if underpinned by some of these factors. For example, when people act according to the accepted norms of the neighbourhood, and share an attachment to, and identify with the community and neighbourhood, they may develop bonds with other residents. We recognise that norms may be constraining for some and a source of conformity that people may seek to escape. Norms are also dynamic and can change. However, what we are describing here is an ideal-type theory that provides a basis for understanding cohesion. Conversely, when there are greater income disparities between neighbours, these may create a basis for tension and conflict. At policy level, people are more likely to feel responsibility for, and be willing to contribute to their community and society[84] when their basic needs for work, welfare etc are met.

Social cohesion occurs when the quality of interactions and communications in family and community networks in a place, as influenced by these pre-conditions, is high.[85] Cohesion is therefore a possible outcome (and source) of a community having social capital[86] (e.g. strong networks/positive interactions) and social capital can be 'the practical tool to achieve social cohesion'[87] (e.g. harmonious relationships). A strong indicator of high levels of social cohesion in a neighbourhood is said to be the extent to which a wide array of people will get together to promote or defend a community interest.[88] Such community participation can subsequently contribute to positive well-being, thereby cohesion may indirectly influence well-being.[89] As with the ideal of social sustainability, a network of socially cohesive residents is not a goal which can be achieved and discarded[90] or a characteristic of individuals, but an ideal situation that must constantly be striven for.[91] We define social cohesion as follows:

> Social cohesion happens when people from the same community or society get along, trust each other, and live peacefully together with or without social or ethnic differences. This is supported by economic equality and inclusion, democracy, people having their basic needs met, and social solidarity between people.

Our emphasis is on social cohesion at local neighbourhood level.[92] However, it has been discussed and addressed at international level in research and policy;[93] and national level, especially through national policy frameworks.[94]

Social capital and cohesion, their component parts and outcomes should be regarded as social resources of neighbourhood networks that can be invested in to strengthen people's capacity to tackle problems collectively. Below we offer a case study from the village of Santa Ana in Paraguay: a community with ample social capital and cohesion, who have successfully collectively maintained their infrastructure. It suggests that good relations can motivate people to care for and take care of the place where they live. Social science concepts from our analysis are shown in square brackets in the text.

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84   Ferroni, Mateo and Payne (2008: 4)
85   Kearns and Forrest (2000: 999)
86   Berger-Schmitt (2000); Ferroni, Mateo and Payne (2008: 4); Ferlander (2007: 115)
87   Zetter et al. (2006: 22)
88   cf. Forrest and Kearns (2001: 2134)
89   Forrest and Kearns (2001: 2130)
90   Jenson (2010: 7)
91   (2010: 15)
92   Forrest and Kearns (2001)
93   For example, EU (1992); OECD (1997), United Nations Economic Commission for Latin America and the Caribbean (ECLAC) in Jenson (2010); Council of Europe (2004); World Bank and Inter-American Development Bank - Ferroni, Mateo and Payne (2008)
94   For example, in France, Canada, New Zealand, Denmark, Australia – see Ferroni, Mateo and Payne (2008) and Jenson (2010)

3.5 Social capital and social cohesion in action in Paraguay

Residents of the village of Santa Ana, Paraguay, are a homogenous group [*population characteristic*] with a strong sense of civic duty [*cognitive social capital*] and trusted local leaders [*cognitive* (trust) and *structural* (leadership role) *social capital*]. These factors combined have resulted in strong overall social capital, which contributes to exceptional social cohesion, and have enabled the community to take responsibility for the collective maintenance of its infrastructure. Although the government constructed roads, electricity lines and water supply, residents contribute by maintaining these, along with bridges, when repairs are required. (Source: World Bank, 2013: 148)

Horizontal social capital among the population, and vertical social capital between the population, its leadership, and the government – for providing infrastructure and allowing collective maintenance are both present here. The social relationships in the village and the initially poor infrastructure may have motivated the civic sense of duty. The key active behaviours and cognitive components on display are: a) belief in the common good [*cognitive*] and b) trust in leadership [*cognitive*] and c) collective action – participation in maintenance of infrastructure [*active behaviour*].

Although not representative of most communities due to its homogeneity, this unusual case from Latin America shows how social capital and social cohesion contribute to positive outcomes when behavioural and cognitive components are connected to a community's infrastructure. Within formal strategies, city governments and planners can support communities to have some control over their infrastructure in ways that both harness and reinforce social capital and cohesion, preferably when collective maintenance provides meaningful opportunities for self-employment for individuals.

4   Social sustainability and urban development

4.1   Linking social sustainability with urban development

This section considers how ideas of social sustainability have been translated into city frameworks, and been incorporated into urban design, and its influence on pro-community behaviours. By 2012, it was reported that in the preceding decade, governments, public agencies, policy-makers, NGOs and corporations involved in urban planning policy and practice, had become interested in applying the concept in the discourse on urban development, regeneration and housing in developed and developing regions.[95] Powerful global institutions, such as the World Bank, the United Nations Environment Programme, European Investment Bank and European Bank for Reconstruction and Development developed programmes, policies and research addressing social sustainability in its own right.[96] However, in our experience of discussions in the planning sector, these issues are often seen as "softer" yet harder to achieve. Operationalising social sustainability is an inherently political process. Examining how requires a closer look at who selects the dimensions operationalised, how such selections are justified, and the consequences for the physical structure of cities, and social activities taking place. Operationalisation can occur at policy or planning and design level, although there are often less than transparent processes that can make analysis of decision-making difficult.

Figure 8:   Yala Garden City. Source: Health Impact Assessment Division, Department of Health, Thailand

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95   Karuppannan and Sivam (2011): Woodcraft (2012: 29)
96   Woodcraft (2012: 30)

4.2 City policies on social sustainability

In some cities and regions, policies have been devised that have, at times, incorporated social sustainability objectives and desired outcomes that aimed to deliver broad benefits.[97]

4.2.1 Vancouver, Canada

The Canadian city of Vancouver first adopted principles for environmental, economic, and social sustainability in 2002 (Cooper, 2006: iii). It then became the first city in the world to devise a social sustainability policy framework (Colantonio, 2008: 15). Its goals were:

1. meeting residents' basic needs - including 'housing, healthcare, food, jobs, income, and safety';

2. allowing residents to 'develop their personal capacity and fully participate in, contribute to, and benefit from all aspects of community';

3. that 'communities have a capacity to foster and support social inclusion on all dimensions and the positive development of all residents.' (Cooper, 2006: iii)

The second and third goals are pursuant through social resources: the individual's capacity to use their human capital for their and their community's well-being, and the social capital of the community.

The framework stressed the ability of a socially sustainable community to 'maintain and build on its own resources and have the resiliency to prevent and/or address problems in the future.' (Cooper, 2006: 2)

4.2.2 UNESCO

UNESCO's MOST (Management of Social Transformations) programme compiled a series of 10 large case studies in cities, and the social policies that determine social sustainability. The goal of achieving inclusive cities was attempted through a focus on city policies tackling governance; social and cultural policy; social infrastructure and public services; urban land and housing; urban transport and accessibility; and employment, economic revitalisation, and the building of inclusive public spaces. (Stren and Polese, 2000)

4.2.3 Adelaide, Australia

In 2005, Adelaide City Council, Australia, signed a partnership agreement with the State Government of South Australia to make Adelaide socially sustainable. The policy's vision of a socially sustainable city was one that was 'equitable, diverse, connected, and democratic and provides a good quality of life'. Social sustainability was said to occur: 'when the formal and informal processes, systems, structures and relationships actively support the capacity of current and future generations to create vibrant, healthy and livable cities.' The spotlight on 'structures and relationships' takes its framing from social capital. A policy framework was devised for the implementation of 'well-coordinated planning processes and implementation in the key areas of governance, housing, social inclusion and human services'. (Adelaide City Council, 2005)

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97   See for example, Bramley et al. (2009); Bramley and Power (2009); Karuppannan and Sivam (2011); Dempsey et al. (2011); Weingaertner and Moberg (2011); Woodcraft (2012).

4.3   Urban planning, design and social sustainability

Policy frameworks that are supportive of urban social sustainability are key to legitimising concerns for it. However, within neighbourhoods at micro-level, the physical attributes of a city – urban form and design features, social infrastructure, and public spaces – can influence pro-community behaviours, as aspects of social capital and cohesion: social resources. For example, in the city of Guangzhou, China, the British design firm, Arup, reported on a scheme which aimed to encourage migrant workers to interact in public squares that were specifically re-designed to encourage socialising.[98] The scheme is not evaluated in their documentation. But as the project suggests, 'cities can and do help set the signals for engagement and interaction'.[99] Too much social engineering may backfire, but a balanced approach to socially-informed building development, "socially-aware planning", can send signals for pro-community behaviours.

Socially-aware planning involves social objectives being incorporated into building or regeneration schemes with intentional positive impacts. Participatory or co-design approaches to development encourage essential community participation in the planning and design process,[100] potentially creating or strengthening social capital and cohesion. Ideally, this approach sees collaboration between social scientists, planners, designers, and other physical environment specialists, along with "normal" citizens, and integrates social science concepts and community concerns into the planning process. This requires openness to collaboration, and it is likely that training and capacity-building processes, both formal and less so, will need to prepare the ground and prepare practitioners for this challenging blend of social science, social policy, and design and planning skills and approaches. Section 6 offers 10 case studies from urban development projects and studies that show socially-aware planning in practice. It is not a simple endeavour and depends on political will, and supportive policy and planning frameworks, as well as effective multi-stakeholder cooperation, and ideally professional skills that blend social science and policy with design and planning.

4.4   Socially-aware planning in urban design

Jane Jacobs and William Hollingsworth Whyte were early advocates of design that integrates social groups and creates an active street life through 'varied and functional streetscapes'.[101] Their views were incorporated into New Urbanism, a design movement whereby the built environment should prompt neighbourhood residents to interact, the fundamental premise of social capital, helping them to develop a psychosocial sense of community.[102]   Jan Gehl, in his books as well as his practice, has similarly focused on the importance of public space, and cities that are lively, safe, sustainable, and healthy.[103] Some of these same elements emerge in Transit-Oriented-Development (TOD) approaches, originally expounded by Peter Calthorpe (1993) and further expanded by Robert Cervero (1998) in work with his colleagues and students (for example, Suzuki, Cervero, and Iuchi, 2013).[104] The design principles of New Urbanism are encapsulated in Table 4.

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98   da Silva and Morera (2014:8)
99   Kelly (2012: 11)
100   Sanoff (2012)
101   Carpenter (2013a); Jacobs (1961); W. H. Whyte (1980)
102   Talen (1999: 1361)
103   Gehl (2006); and Gehl (2010)
104   Cervero (1998); Suzuki, Cervero, and Iuchi (2013)

Table 4:   The design principles of New Urbanism

Aspect of the neighbourhood	Design principles	Social goal
Architecture and site design	Shrinkage of private space; houses close to street; small parking lots and short distances from the street; porches face street; individuality in house design	Encouraging residents to leave their houses and interact in the public sphere
Density and scale	Small-scale, well-defined neighbourhoods with clear boundaries and a clear centre; increased residential density	Resident interaction leading to sense of community and neighbourliness
Streets	Viewed as public spaces; designed to encourage street life and increase in pedestrian activity; located in safe places	Pedestrian activity leading to feelings of safety, stronger community bonds and sense of place
Public space	Appropriate design and placement of public spaces such as parks and civic centres	Chance encounters between people, which strengthen community bonds; public spaces to be regarded as symbols of civic pride and sense of place, promoting community
Mixed land uses	A mixture of housing types; places of residence close to places to work, shop and recreate	Encourages lingering and repetitive chance encounters; facilitates social interaction of people of different incomes, races or ages; more walking and less driving; assists social integration, community bonds and sense of community

Adapted from: Talen (1999: 1363-4)

Whilst goal or dimension-oriented policy frameworks offer a vision for cities, development or regeneration at the neighbourhood level can impact on dynamic community social resources through reactive face-to-face interactions in local places and spaces. New Urbanist approaches are not the only ones building on these concepts, but represent a major influence on designed projects in many places around the world. Moreover, as noted above, while there are subtle differences, in broad measure, the people-oriented approaches mentioned earlier are consistent in their attention to detail in providing a designed built environment that is supportive of community bonds and interaction. However, in addition to designed developments, we also see organic growth and evolution of neighbourhoods incorporating some of these design aspects, often in informal settlements, and these should not be overlooked despite their distance from formal planned approaches.[105] We also must acknowledge that the design emphasis of these approaches has often led to insufficient attention to equity, although currents are rumbling to remedy such inattention, at least in terms of the TOD area.[106] These principles improve social sustainability in all contexts, although there is often room for continued improvement.

The UK social enterprise, *Social Life* (see case study in 7.3.2), coined the following definition of social sustainability that conjures up this union between the "physical" and "social", leading to quality of life and well-being. Underlined is the part which is underpinned by social capital and cohesion.

> "Social sustainability is about people's quality of life, now and in the future. It describes the extent to which a neighbourhood supports individual and collective well-being. Social sustainability combines design of the physical environment with a <u>focus on how the people who live in and use a space relate to each other and function as a community</u>. It is enhanced by development which provides the right infrastructure to support a strong social and cultural life, opportunities for people to get involved, and scope for the place and the community to evolve."
>
> Bacon, et al. (2012: 9); Woodcraft (2012: 35)

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105   Hernandez-Garcia (2013); Mitlin and Thompson (1995); and Appadurai (2001)
106   See King, et.al. (2017); ITDP (2016)

In addition, quality of life and well-being have been addressed in a report by the Australian think tank, the Grattan Institute. Their report *Social Cities*[107] assembled a body of evidence attesting to the positive effects of urban "social connections" between people – supported by effective design – on mental and physical health.

4.5 Social sustainability and urban community behaviours

UK-based urban planning researchers found that the dimensions of social sustainability best promoted by urban form are indeed increased social capital and cohesion, and socio-economic equity and inclusion.[108] They devised a conceptual framework based on these concepts, and broken into two stands:[109] 'social equity' and 'sustainability of community'. The 'social equity' strand focuses on 'access to services, facilities, and opportunities'.[110] The 'sustainability of community' strand concentrates on the 'continued viability, health and functioning' of 'community', the initial definition of social sustainability cited in section 3.1.[111] This second strand is underpinned by social capital and cohesion. It itemises the 'collective aspects of social life' that are important at neighbourhood level with proven links to urban form.[112] Whilst acknowledging the dependent relationship between these dual strands, and the importance of social equity – particularly in terms of people's access to "good" neighbourhoods and facilities, and for cohesion, we focus on the 'sustainability of community' strand.

This strand is operationalised in the framework through measurable dimensions grounded in pro-community behaviours that are positive for, and contribute to social sustainability, a more supportive social environment, and improved quality of life for individuals and communities. Putting it in its context of social sustainability, we refer to our adaptation of this "sustainability of community" framework as the "socially sustainable community framework". Itemised dimensions are shown in Table 5, alongside our analysis of their relationships to social capital and cohesion based on the literature cited in section 3.3.

Figure 9:   Manchester. Renovated urban space. Source: Jamie Anderson

107   Kelly (2012)
108   Bramley and Power (2009: 32)
109   Bramley et al. (2009: 2126)
110   Bramley and Power (2009: 32)
111   Dempsey et al. (2009: 290)
112   Dempsey et al. (2009: 294)

Table 5:   The socially sustainable community framework[113]

Dimension	Behavioural or psychological response	Relationships to social capital / social cohesion
Pride in and attachment to neighbourhood	Psychological	Place and community attachments: outcome of social capital
Social interaction within the neighbourhood	Individual interacting at group-level (group behaviour)	Component of social capital and social cohesion
Safety/security (versus risk of crime, antisocial behaviour)	Perception of safety: psychological	Indirect outcome of social capital via social support, social interaction, trust; driver for social cohesion
Perceived quality of local environment	Psychological	Relationships and attachments to place, related to sense of community: outcome of social capital
Satisfaction with the home	Psychological	Attachments to place and community: outcome of social capital
Stability (versus residential turnover)	Individual behaviour and community-level demographic change (or effects of migration)	Supports social capital and social cohesion; contributes to their emergence
Participation in collective group / civic activities	Individual behaviour	Outcome of social capital

The items in this table are outcomes of an individual's experience of, and response to urban residence. The many ways in which one item can influence another are covered in depth elsewhere.[114] We offer a summary explanation.

Living in a neighbourhood is the starting point for these behaviours and psychological responses. Social interaction is the basis for relationships between residents, and the emergence of social capital and cohesion. It is also the basis for social support provided by local network members – a crucial aspect of community resilience (discussed in section 5.1). Social support influences feelings of safety and well-being.[115] Positive social interaction can also increase trust and reduce fears for safety on the streets – improving social cohesion. Individuals who are more socially isolated, and do not participate may be less trusting and more fearful. Isolation may occur through choice or lack of choice, e.g. stigmatisation of people who experienced prejudice, physical immobility, lack of transport (or ability to pay for it) etc. Those who feel socially excluded may be less likely to develop pride in or an attachment to their neighbourhood or community, or identify with either.[116] Social interaction with fellow dwellers and psychological satisfaction with one's home and a local environment can be at the heart of developing attachments. These signify enjoyment of life in a neighbourhood and give the individual a psychological sense of security. Any reduction in the quality of interactions or the attractiveness, functionality and congeniality of a physical location may lessen attachments, identifications and safety.[117]

Social support, attachments to a community and place, feelings of safety and the experience of cohesive relationships can influence the decision to stay in a place long-term. Equally, long-term residence can support social capital and cohesion, enhance safety, and reinforce attachments to places and communities.[118] Stability of community or low residential turnover has been linked to its sustainability, although it is not a given outcome.[119] Long-term residence has been linked to a sense of belonging to a community and identifying with a place. These psychosocial attachments have been linked to pro-community behaviours[120] such as participation in civic activities.

Participation in community and civic activities – a key outcome of social capital – brings people together in a potentially

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113   Adapted from Dempsey et al. (2009). The second and third columns are our analysis. This review covered the British context, and our research tested how these dimensions were applicable in other countries.
114   See Dempsey et al. (2009)
115   (2009: 295)
116   (2009: 294)
117   cf. (2009: 296)
118   (2009: 296); Oishi et al. (2007: 831)
119   (2009: 296)
120   Oishi et al. (2007: 832)

integrative context. It further reinforces attachments and the tendency to identify with a community[121] and its physical location. Conversely, having such attachments can promote willingness to participate in a community.[122] Participation should ideally include the individual having a say in how their area is developed. There are many reasons why people may not choose to participate – such as having social connections and interests elsewhere – which does not make their behaviour necessarily unsustainable. However participation contributes to social sustainability.[123]

We contend that built environment developments should promote these behaviours and psychological responses to contribute to social sustainability, bringing a "human" perspective to urban planning and design. The framework has been applied to urban development research in India.[124] The behavioural and psychological dimensions are later compared to the dimensions of a similar framework[125] for neighbourhood resilience, from which we also identified associated behaviours and psychological responses.

121   (2009: 295)
122   Kearns and Forrest (2000: 1001)
123   (2009: 295)
124   Karuppannan and Sivam (2011: 851)
125   Proposed by Zautra, Hall and Murray (2010: 143)

5 Community resilience and environmental adversities

5.1 From socially sustainable communities to socially resilient communities

Many urban areas are populated by diverse individuals in criss-crossing networks, some of which may harbour social capital. Cohesive relationships within and between these networks are essential for successful collective cooperation. Social capital can also provide for more effective and quicker conflict resolution than more formal systems, allowing people and neighbourhoods to move beyond differences. New Urbanists and others have highlighted the features of urban form that may support the development of networks, but other variables that can also encourage or diminish social relationships – such as personal predisposition, conflict, crime and poverty should also be addressed. A built environment that supports pro-community behaviours is conducive to community resilience to environmental adversities. We now discuss what is meant by community resilience.

5.2 What is community resilience?

> It appears that resilience is replacing sustainability in everyday discourse in much the same way as the environment has been subsumed in the hegemonic imperatives of climate change. Yet, it is not quite clear what resilience means, beyond the simple assumption that it is good to be resilient.
>
> (Davoudi, 2012: 299)

This section reviews the concept of community resilience. The notion of resilience comes from physics and describes the action of a spring.[126] Resilience as an aspect of an ecological system was first proposed by Hollinger (1973). 'Community resilience' is an idea that has emanated from two different academic fields: socio-ecological systems theory (when a system is able to absorb shocks, sustain, renew and transform itself afterwards), and personal psychology and mental health (an individual's ability to recover from trauma).[127] Combined in a community-level perspective, community resilience (sometimes also known as social resilience),[128] has been neatly defined as follows:

'Community resilience is the existence, development, and engagement of community resources by community members to thrive in an environment characterised by change, uncertainty, unpredictability, and surprise. Members of resilient communities intentionally develop personal and collective capacity that they engage to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future.'[129]

There are many definitions and different disciplinary approaches to researching community resilience within academia.[130] This definition was selected on the strength of its match with our focus on social capital and its outcomes as resources for urban communities. Theories of community and social resilience have been targeted at people's ability to cope with environmental change[131] and natural disasters[132] among other types of crisis (e.g. terrorism and economic collapse). Our position on resilience is that everyday social sustainability sits on a continuum with resilience. Both centre on the shared and similar social resources that communities develop, and then harness quickly to respond to specific events. Resilience is therefore dynamic, resource-based, with fluctuating levels within communities.

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126   CARRI (2013: 2)
127   Magis (2010: 404)
128   Adger (2000)
129   Magis (2010: 402)
130   Cox and Perry (2011: 395)
131   Adger (2000)
132   McAslan (2010:1)

5.3   Adaptive capacity

A community's background circumstances play some role in their 'adaptive capacity' for resilience. 'Adaptive capacity' means 'the capability of a particular system to effectively cope with shocks'.[133] A community is a form of human system, so the people in the community need to have the capacity to cope and respond effectively. Some communities are more vulnerable than others:[134] for example, poor people living on riverbanks, floodplains, mountainsides or informal land prone to landslides or with little access to resources for recovery or political influence; people living alone without close family nearby, minorities; or those most vulnerable to poor health and well-being. Adaptive capacity also has some place- and culture-specific characteristics.[135]

Overall resilience also depends on a community's combined ability to work towards a shared objective and influence resilience[136], the self-efficacy and agency of individuals and groups – their ability to take action - and the socio-demographic characteristics of the community.[137] Increased exposure to unpredictable calamities may catalyse and develop communities' adaptive capacity to cope,[138] but this is not always the case for communities with daily hardships. An effective community response may develop adaptive capacity, but may depend on having social resources to begin with. Community resilience works best in place-based communities although geographically dispersed networks may also be effective.[139] Resilience factors at individual, household, and community levels are interrelated and affect each other in non-linear ways.[140]

5.4   Community resources and social capital

Communities cope best when their members have strong resources to help them develop adaptive capacity. Within the process of developing social capital, community members exhibit pro-community behaviours and/or psychological responses that are locally and culturally-specific. Social process-based outcomes such as cohesion are also important.[141] Social theories[142] broadly agree that 'the capitals' – social, natural, human, cultural, built, financial, and political capital[143] – constitute the critical resources that can strengthen a community's resilience. Opinions diverge on which specific components are most useful, as these vary between communities.[144] One set that has been identified are: 'People-place connections, values and beliefs, knowledge and learning, social networks, collaborative government, economic diversification and innovative economy, community infrastructure and support services, leadership and positive outlook; the built and natural environment, lifestyles, livelihoods'.[145] As stated, we focus on social capital-related behaviours and psychological responses, as social strengths. Other dimensions of community resilience are covered elsewhere.[146]

Adaptive capacity includes the capacity to develop and maintain social capital.[147] Different social strengths are highlighted as important in resilience theories, such as social networks, communications, social support, inclusion and sense of belonging, as well as leadership[148], outlook on life including readiness to accept change, and learning.[149] One paper focuses on three social elements: social support, social participation, and community bonds.[150] Other work highlights social cohesion as the basis for the will and motivation for people to act resiliently together in the interests of their community.[151] Another list itemises relevant social science concepts: social capital, networks, sense of place, social identity, power.[152]

The importance of these concepts is recognised but under-operationalised in the international planning sector. Michael Berkowitz, president of the USA-based Rockefeller Foundation's 100 Resilient Cities network was asked in an interview to pinpoint the essence of the 'social and human infrastructure' of resilience. He stated that: 'social cohesion and social

133   Martin-Breen and Marty Anderies (2011: 14)
134   Davis et al (2005); Magis (2010: 405)
135   Adger (2003: 400)
136   Berkes and Ross (2012: 6)
137   Berkes and Ross (2012:16)
138   Davis et al. (2005); Magis (2010: 405)
139   Almedom (2004); Maida (2007); Berks and Ross (2012: 11)
140   Berks at al (2003); Berkes and Ross (2012:15)
141   cf. Berkes and Ross (2012: 10)
142   Adger (2000: 349 and 2003: 395); McAslan (2010); Zautra, Hall and Murray (2010: 132); Magis (2010: 405)
143   See for example, DfID (1999), and Magis (2010)
144   Berkes and Ross (2012: 13)
145   Berkes and Ross (2013: 11; 13-14); see Zautra, Hall and Murray (2009: 138); McAslan, (2010: 11)
146   For example, see Oxfam (2010); World Bank (2011); World Resources Institute (2011)
147   Norris et al. (2008), discussed in Cox and Perry (2011: 396)
148   Also: McAslan (2010: 13)
149   Berkes and Ross, 2012: 11
150   Norris (2008)
151   McAslan (2010: 11); see also Chen, Liu and Chan (2006)
152   Berkes and Ross (2012:17)

networks are often the key difference between more resilient and less resilient cities'.[153] Trust among people in social networks and their ability to mobilise to work together and support each other collectively must be developed.

Yet resilience-building is a process, not an outcome.[154] 'The capitals' – including social capital – and a community's unique strengths can increase/decrease in relation to the amount of 'investment' in them.[155] When they are mobilised and strengthened, they perform better, are more effective in times of crisis, and assist in the development of new resources.[156] The more resources a community has to draw on and the more it strives to increase them, the greater its resilience will be.[157] City-level Resilience Strategies should monitor changes in the social capital-derived strengths that contribute to resilience for any downturns that may impact on adaptive capacity and quality of life.[158] Urban and community development must help a community to conserve and reinforce its social strengths.

5.5 Environmental adversity and the resilient urban community

This section explains why and how people turn to their immediate contacts and depend upon supportive built environments after a disaster. Urban communities in cities around the globe are already impacted by climate change and know they face increased risk in the future. The C40, a network of megacities around the world collaborating to address climate change, reports that 76% of city respondents to its survey believe that climate change could threaten businesses in their cities.[159] They are becoming increasingly subjected to unpredictable rainfall patterns, sea level rise, and wider and less predictable temperature extremes.[160] Such events damage the physical and social infrastructure, restrict or prevent access to essential economic and environmental resources, and disrupt the lives of and displace many people resulting in significant social, health and well-being impacts. When a negative environmental event – high temperatures, a storm, cyclone, typhoon or hurricane, flood, earthquake and so on – inflicts damage on, and disrupts routines in an urban community, people turn first to their social networks of relatives, family and neighbours for support.[161] A multi-country study of poor people – *Voices of the Poor* – conducted by the World Bank revealed that 'across locales, respondents consider kin, family, and community-based and religious organisations among the most effective support systems'.[162]

Displaced people turn immediately to available urban spaces to meet their accommodation and organisational needs in a flexible way. Residents of the Chilean city of Concepción and its Metropolitan Area were hit by a colossal earthquake on 27th February 2010, followed by four tsunami waves which lashed the nearby coast. People rapidly sought safety and established temporary encampments and community meeting-places in the area's network of 'squares, parks, vacant lots and undeveloped spaces'.[163]

This and another example crystallises the connection between social capital and urban form and space during environmental crises. In 1995, a heatwave struck Chicago, USA, killing 739 people, including many elderly.[164] Those neighbourhoods where people fared better had in common a physical environment that was conducive to networks, and established relationships within neighbourhoods networks. A Latino community living in crowded apartments and densely packed streets knew their neighbours. The availability of shops, stores, restaurants and community organisations brought people into contact with neighbours and friends, with whom they participated in block parties and church groups. They knocked on neighbours' doors to check up on their well-being.[165] For some, neighbourhood social capital meant the difference between life and death.

Those living within close physical proximity are the nearest at hand to help with caring for affected people, re-establishing community organisation and motivating community spirit, stabilising and repairing physical damage, and other resilient actions. People's ability to work together – drawing on their existing social capital and cohesive relationships – becomes all the more important. A socially sustainable community may also be a resilient community.[166]

153   Goodyear (2014)
154   Berkes and Ross (2012:11)
155   Magis (2010: 410)
156   Magis (2010:406)
157   Magis (2010: 406)
158   Zautra, Hall and Murray (2010: 143)
159   AECOM for CDP/Bloomberg Philanthropies, and C40 Cities (2014)
160   The World Bank (2010)
161   Bidwell and Dell (2011: 4); Klinenberg (2013: 4)
162   World Bank (2013: 154)
163   Allan et al. (2013: 250)
164   World Bank (2013: 139)
165   Klinenberg (2013: 4)
166   Zautra, Hall and Murray (2010: 132); McAslan (2010: 7-8)

5.6 Creating community resilience through community development

This section outlines formal approaches to developing community social resources for resilience. Analysts and policy-makers recommend capacity-strengthening community development initiatives during times of calm and after a crisis[167], which can improve diverse communities' routine lives, create 'adaptive capacity' and highlight 'agency' in preparation for acting resiliently during crises. Both the UK and USA governments, for example, have recognised that resilience depends on 'effective collective action and local organisation *before* a crisis develops'.[168] The community development approach to increasing adaptive capacity identifies some key principles, laid out in the box: 5.6.1 below.

5.6.1 Key community development principles for increasing adaptive capacity

- A focus on a community's resources not deficits (Zautra, Hall and Murray, 2010: 138)

- Emphasising the community's own knowledge of itself to help identify its strengths, and strategise capacity-building interventions (Magis, 2010:405)

- Social learning and capacity-building opportunities are important for building community strengths and relationships (Goldstein, 2009; Berkes and Ross, 2012: 13; 17)

- Participatory projects – such as improving a neighbourhood - that give people collective tasks that help them to build on their self-organising capacities, to bond as a community, and create cohesion and a sense of community are a useful tool for building resilience (Berkes and Ross, 2012:16)

- Capacity-building projects should recognise that resilience can be exclusionary when decisions are made over whose resilience to strengthen and whose not to (cf. Davoudi, 2012: 306). Initiatives should ensure inclusivity of all individuals and social groups.

5.7 Community resilience and urban community behaviours

This section introduces a framework on resilient community behaviours. Resilience theories have linked social capital, cohesion and community resilience. But what are the pro-community behaviours that individuals need to enact to contribute to a community's resilience? A review of 22 academic papers from the health and community development literature prepared by a USA-based research team identified the dimensions making up the 'fundamentals of neighbourhood resilience'[169]. We refer to our slight adaptation of this framework as the "resilient neighbourhood community framework." Other work offers less comprehensive lists.[170] In Table 6, we identify how these dimensions relate to social capital and cohesion, as either component, outcome, or as closely related to the dimensions of social sustainability, based on our literature reviews of these concepts.

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167   Thornley et al. (2013: 34)
168   Bach et al. (2010)
169   Zautra, Hall and Murray (2010: 143). It is not clear whether any of the papers they reviewed were taken from non-USA contexts, but we test these dimensions on projects from other countries..
170   See for example, McAslan (2010)

Table 6:   The resilient neighbourhood community framework

Dimensions of a resilient neighbourhood community	Behaviour or psychological response	Relationship to social capital, social cohesion, social sustainability
Neighbours that trust one another	Psychological	Cognitive social capital
Neighbours that interact on a regular basis	Active behaviour	Desired outcome of social capital; aspect of social cohesion, social sustainability
Residents who own their own houses and stay for a while [or rental tenants or informal settlement dwellers that reside in an area for the long-term][171]	Individual and community-level behaviour (economic and social behaviours)	Social sustainability
Residents with a sense of community	Psychological	Desirable outcome of social capital, closely related to social sustainability
Social cohesion	Social process with behavioural and psychological dimensions	Desirable outcome of social capital, closely related to social sustainability
Residents who work together for the common good and are involved in community events	Active behaviour	Social cohesion; desirable outcome of / closely related to social capital
Formal and informal places for civic gathering	Physical dimension	Desirable feature of the built environment in New Urbanism

Four dimensions are shared between the two frameworks, "socially sustainable community" and "resilient neighbourhood community", illuminating the overlap between the social resources required. These are outlined in Table 7.

Table 7:   Shared dimensions of socially sustainable, resilient communities

Socially sustainable community	Resilient neighbourhood community
Pride and attachment to the neighbourhood	Sense of community (also an affective feeling of local belonging)
Social interaction within the neighbourhood	Neighbours that interact on a regular basis
Stability versus residential turnover	Residents who own their own houses and stay for a while [or rental tenants or informal settlement dwellers that reside in an area for the long-term]
Participation in collective group /civic activities	Residents who work together for the common good and are involved in community events

These two frameworks are applied in sections 6, 7 and 8 to our case studies to investigate how applicable they are in real urban development projects.

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171   The sentence in square brackets is our addition. We recognise that although home ownership is seen as desirable in the British context from which this framework emerged, length of residence is really the important variable internationally where other residential arrangements occur. For example, in some countries in Continental Europe, long-term rental tenancies are the norm.

Figure 10: The ReStart Container Mall, Christchurch (replacing a major shopping mall with shipping container shops after earthquakes). Source: Louise Thornley

6 Creating built environments that influence pro-community behaviours

6.1 How does the built environment influence people?

Sections 6 and 7 explore the pro-community behaviours (dimensions) from the "socially sustainable community" framework[172] that real development projects can influence, and any new dimensions found in these projects. Ten case studies are presented in total. Some case studies: Delhi (1), Cape Town (1), Belfast (1), southern England (1), Portland (1) and Manchester (1) are split up, and parts of them are discussed under four different stages of the socially-aware planning process (introduced in section 7.1) where they were considered to provide useful examples of more than one stage. Section 6 showcases the basic influence of the built environment on pro-community behaviours in two case studies. The first, from Buenos Aires, Argentina, explores how a community contested developer plans in order to maintain their social strengths. The second, from Delhi, India, itemises aspects of urban form that influence pro-community behaviours with broader consequences.

6.1.1 Case study: Housing expansion in Buenos Aires, Argentina

Figure 11: Caballito, Buenos Aires. Historic Home. Source: Lucia Caistor-Arendar

Caballito is a middle-class neighbourhood (*barrio*) in central Buenos Aires, Argentina.[173] Its streets feature elegant one or two-storey houses reminiscent of old European architecture that were built around the turn of the twentieth century. Constructed on narrow plots of land in rows along blocks (*cuadras*), street layouts were created that influenced pro-community outcomes: residents came to know their neighbours [*active behaviour*], and felt safe [*psychological response*]. These properties were built on the city's grid system, in walking distance of amenities and connected to the city centre. Sadly some have been demolished following intense demands for land resulting from economic boom, and the accompanying easing of planning regulations since 2005 for investment-led development.

Typically, developers buy undervalued plots accommodating these homes, demolish them, and construct luxury residential towers for affluent incomers. The towers are usually between 10 and 30 storeys high, and include private parking, sports and other facilities. They are set back without open or active ground floors providing life, activity, and eyes on the street. New residents are cut off from spontaneous social encounters with neighbours from the older dwellings. The self-contained towers provide no reason for residents to seek social connections outside the home. The row houses were usually built butting right up against the street, and became physically joined over time as more families bought adjacent plots and built homes, which created more apparent physical connections than those in the apartment buildings.

Some longer-term inhabitants of Caballito experienced feelings of insecurity due to the appearance of these isolationist and highly securitised residences, and the fact that incomers from a different socio-economic group were intentionally segregating themselves from the wider community. These are both negative social impacts threatening to weaken social capital and cohesion among existing networks of residents. The changed physical environment prompted insecurity [*psychological response*], and the enactment of defiant pro-community behaviours [*behavioural response*]. Residents drew upon their existing social relationships to mobilise themselves collectively to campaign. They formed groups such as Proto Comuna Caballito, SOS Caballito, and joined city-wide groups like Basta de Demoler! (Stop the Demolitions!).

The residents campaigned successfully against the easing of regulations. It was argued that the neighbourhood's infrastructure was overstretched due to densification. This can be a chicken and egg situation where infrastructure can be provided in advance of, or in response to a growing population. However, in Caballito, its overextended capacity was proved by a negative audit of the availability of water infrastructure such as sewers, that the local government were forced to commission. The campaign resulted in a new law – 2722 – being passed by the Legislation of Urban Development. It restricted the height of future towers in three zones in Caballito, rendering their construction economically impractical for developers. The campaign brought existing residents even closer together, enhancing their bonds, agency/capacity to act, and hence, social capital.

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172   Caistor (2013)
173   Caistor (2013)
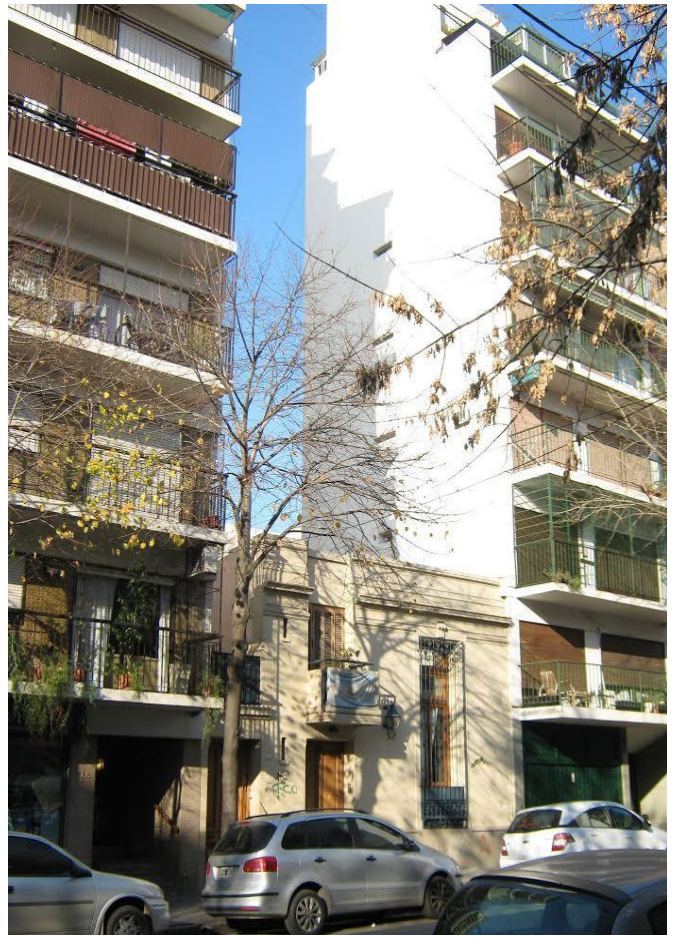
Figure 12: Caballito, Buenos Aires. Source: Lucia Caistor-Arendar

6.1.2 Case study: Public open spaces in Delhi, India

Ideas of social sustainability are also of interest in developing countries. Indian researchers[174] have explored these issues in Delhi, India, applying the 'sustainability of community' framework.[175] They mixed qualitative with quantitative methods (see section 7.6.2) to explore the influence of neighbourhood urban form, particularly public open spaces, on residents' social interactions and participation in neighbourhood activities in two suburbs, Dwarka sub-city and Sukdev Vihar. The Delhi Development Authority constructed all the buildings in the same period in both for residents with similar socio-economic demographic profiles but used varying design form. Three sites (1-3) were explored, two (1-2) in Dwarka sub-city, and one (3) in Sukdev Vihar via resident interviews.

Sites 1 and 3 had apartments in high-rise (1) or four-storey blocks (3), with dwelling units set around the public realm or semi-public open space, or (1) located near to better, more diverse, and well-located public spaces. Site 2 had more four-storey row housing blocks containing individual units facing paved roads and near to linear semi-public open spaces.

At sites 1 and 3, mixed land use and easily accessible semi-public and public open spaces positively impacted upon social integration/inclusion, people's relationships with neighbours, and their feelings of safety. The close proximity of dwelling units and nearby buildings led to residents' knowing each other by name and becoming friends. Lively streets and well-situated public spaces contributed to safety and security in the whole area. The well-utilised physical spaces created social places where people participated in formal and informal social gatherings. All these effects raised residents' satisfaction with the neighbourhood, and influenced pride and attachments to the place.

At site 2, the row housing and linear semi-public open spaces negatively impacted on the frequency and quality of residents' interaction with neighbours. People did not perceive the open spaces to be well-located or encourage informal or formal interaction, and also blamed the neighbourhood's design. Fewer people participated in social gatherings. Overall, they were less satisfied with the neighbourhood than people living at sites 1 and 3. Fewer individuals felt pride and expressed attachments to place. The street-facing buildings did generate feelings of safety however, and adults walked and children played there due to the lack of proper open spaces.

Table 8 shows the researchers' findings: specific aspects of urban form influenced pro-community behaviours. These can have direct effects on individuals' psychosocial health and well-being, and on positive community-level social processes, such as the formation of social capital or cohesion, or occurrence of social inclusion, which contribute to social sustainability. We analysed these in the in the 3rd and 4th columns of Table 8.

(a) Cluster housing   **(b) Row housing**

Figure 13: Delhi. Housing types in Dwarka sub-city. Source: Alpana Sivam

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174   Karupannan and Sivam (2011)
175   Created by Bramley and Power (2009); Dempsey et al. (2009)

Table 8: Influence of urban form on pro-community outcomes and social processes

Aspects of urban form	Influence on pro-community behaviours	Individual and community level 'social process' outcomes	Nature of impact
Mixed land use and mixed housing developments	• Promotes interaction across socio-economic and age groups • Promotes visibility of diverse social groups	1. Social inclusion / integration 2. Builds bridging social capital	1. Social process 2. Social process
Public open spaces	• Promotes periodic interaction and social relationships – with neighbours and area residents – leading to formation of social ties	1. Builds social capital and cohesion 2. Promotes psychosocial sense of place and community 3. Promotes satisfaction with neighbourhood 4. Enhances well-being	1. Social process 2. Individual & group level psychosocial response 3. Psychological response 4. Positive effect on mental and physical health
Semi-public open spaces	• Promotes regular interaction and social relationships – with neighbours – leading to formation of social ties	1. Builds social capital and cohesion 2. Promotes psychosocial sense of place and community 3. Promotes satisfaction with neighbourhood 4. Enhances well-being	1. Social process 2. Individual and group level psychosocial response 3. Psychological response 4. Positive effect on mental and physical health
Cluster housing	• Close proximity of dwellings and windows promotes social interaction	1. Builds social capital and cohesion 2. Promote psychosocial sense of place and community	1. Individual and group level psychosocial response
Row housing	• Restricts social interaction to next door neighbours	1. Limits development of social capital, psychosocial sense of place and community, satisfaction with neighbourhood; adverse effects on well-being	1. Individual and group level psychosocial response

(Adapted from Karupannan and Sivam, 2011)

This case also illuminated the role of cultural norms in mediating the impacts of aspects of urban form that promote social sustainability in each context. In these Delhi neighbourhoods, it was culturally acceptable for people to greet each other in public, thus this norm played a role in facilitating human contact. In some cities in Northern Europe, it is less of a common cultural norm to greet neighbours, even if they live close by, and have a visible presence in the public realm. Norms can be changed, sometimes by designs but are sometimes too deeply ingrained for a rapid shift. The social impacts of physical features are also context-specific. In Delhi, homes joined together in rows were not conducive to neighbourly relations whereas in Caballito, Buenos Aires, this aspect of urban form had the opposite effect.

7 Built environments that influence socially sustainable behaviours

7.1 The four stages of socially-aware planning for an urban development

Section 7 looks at the marriage of physical and social factors in a "socially-planned urban development process" through 8 more urban projects. These case studies navigate us through the process of developing and implementing a built environment scheme, and offer examples of approaches, methods and tools that can be employed over four stages to meet social objectives and create immediate[176] positive social impacts. Stage 1 includes well-established development stages where financial and legal concerns prevail, that typically do not include "social" aspects. We only discuss cases at Stage 1 that show how social objectives are conceptualised into schemes. We are aware that the stages as presented here are quite different from those typically presented in urban development. Much of what real estate and urban development specialists typically do is included in Stage 1.[177] However, we believe that looking at the entire life cycle of the project, from conception to use, is essential to understanding the social dynamics beyond just the design of a project.

The pro-community behaviours that each project influenced are summarised in section 7.6. The stages, and the steps and actions that we recommend should be taken, are summarised in Table 9.

Figure 14: Villa Crespo. Buenos Aires. Neighbours interacting. Source: Lucia Caistor-Arendar

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176   These case studies did not provide the data to analyse medium or longer-term social outcomes.
177   For further details on more traditional approaches, see the annotated bibliography in Kohlhepp (2012), which presents the typical stages as characterised in major real estate textbooks, and suggests a further detailing and characterisation.

Table 9:   The four stages of urban development for social sustainability

Stage of an urban development	Actions recommended for urban development teams
Stage 1: Scheme Conception; Land Acquisition, Finance, Consistency with Broader Land Use, and Predevelopment (often broadly referred to as Real Estate Predevelopment)	Defining a vision – practical, financial, and social – for a development. To emphasise social sustainability, the social vision and social objectives to enhance communities' social resources and strengths as well as traditional analysis of needs, opportunities, and potential solutions through plans/ designs should be emphasised. However, it is the second part of this stage – the traditional real estate pre-development process, itself a multi stage process – that generally gets the most attention.
Stage 2: Research and Community Participation	Using appropriate strategies and methods to: 1) uncover the social and cultural context and community dynamics to inform sensitive planning decisions; 2) explore the needs, social resources and strengths of a community with their participation to produce relevant designs.
Stage 3: Design Decisions and Implementation	Using social and cultural information to inform design decisions about the characteristics of buildings or public spaces: placement, layout, form and aesthetics; ensuring social input in implementation, along with more traditional inputs and analysis
Stage 4: Monitoring and Evaluation	Monitoring and assessing social input and social impacts, along with more traditional inputs and analysis

This process incorporates principles from a Social or Health impact assessment (SIA and HIA)[178] such as community involvement, matching data on community needs and strengths with project benefits, and monitoring and evaluation. Differentially, our process begins from a scheme's earliest conception,[179] and follows the entire development. We stress depth of investigation at Stage 2, and that social and cultural data explicitly informs design decisions at Stage 3.

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178   Vanclay (2002); Cave (2015)
179   This is not always the case with HIAs and SIAs, which have been known to start "too late in the project planning process", Vanclay et al. (2015)

7.2   Stage 1: Scheme conception: incorporating social objectives

Built environment developments can be conceptualised and planned to identify and meet the social needs, and enhance the social resources and strengths of residents and users, as well as benefiting developers, and the local economy. Visions and plans for schemes can factor in building and strengthening the pro-community behavioural and psychological dimensions of social sustainability through the influences of space and place. The projects discussed in this section meet some of these aims.

7.2.1   Volatile urban contexts: Cape Town, South Africa, and Belfast, Northern Ireland, UK

Cities with a volatile social history of division and poverty, or more peaceful and prosperous cities both benefit from urban settlements that integrate diverse resident groups, are safe, and promote community social resources, strengths, and well-being. We first highlight building and regeneration projects in Cape Town, South Africa and Belfast, Northern Ireland (UK) that have initially conceptualised these objectives into their plans. Both have been blighted by chequered histories of painful division and segregation – South Africa's enforced racial Apartheid, and Northern Ireland's long-standing sectarian conflict. The example of a UK housing developer, operating in southern England, shows that once stable societal conditions exist, and basic safety, cohesion, and economic opportunities are established, standards for quality of life, well-being and social sustainability can be raised.

Apartheid-era spatial planning segregated whites from non-whites in Cape Town's centre and peripheries. Its central railway station[180] symbolised injustice. Built in 1966, it combined two separate stations – one for white and one for non-white commuters. City residents would pass in spatial proximity to each other without ever meeting. Segregated suburbs meant that post-Apartheid city planners needed to consider the spatial reintegration of residential areas. The country's high rates of violence and crime resulted in gated communities threatening to compound contemporary segregation. Poor Black communities remain on the geographic and economic periphery in places such as Khayelitsha, a partially informal township in Western Cape.[181] Two schemes planned to tackle the spatial and economic marginalisation of poor Black Africans, and build safer, more cohesive communities.

Central Railway Station, Cape Town, South Africa

The 2010 World Cup provided the City of Cape Town with a deadline for renovating apartheid-era architecture to reflect its new democratic ideals. The City appointed Khalied Jacobs, a partner at Cape Town's Jakupa Architects in collaboration with Makeka Design Lab, to redesign the central station's features to support the inclusion of the city's poorest and most working-class residents. This was a bid to reclaim the space. A public space on the roof allowed informal vendors to sell produce and services to commuters. Resting areas with grass and trees outside the station allowed people to gather, sleep and even beg. The station is located near to informal settlements – offering low income people a central place to congregate - and has become like a city square. Plans exist to overhaul five more railway stations, and create public squares to promote inclusion. Social inclusion is closely linked to social sustainability and a desired outcome of social capital.

Violence Prevention through Urban Upgrading, (VPUU) Khayelitsha, Cape Town, South Africa

Khayelitsha has been subject to renovation through the City of Cape Town's Violence Prevention through Urban Upgrading Programme (VPUU). Densely populated – with 200,000 families occupying 6 square km, 90.5% of its inhabitants are low-income Black Africans. They lived in matchbox-style houses with access to basic infrastructure. Before the scheme, the urban environment was decrepit with undignified public space, a lack of street lighting, informal roads and pavements etc, and there were frequent crimes such as murders, rapes, robberies, and domestic violence against women and children. The VPUU sought to help the community to make the township vibrant, safer and more attractive; community life more peaceful, harmonious and of better quality; and also environmentally, economically and socially sustainable.

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180   Fataar and Petzer (2014)
181   All VPUU material adapted from: VPUU website: http://www.vpuu.org.za/index2.php and OCED (unknown).

Figure 15: Belfast murals. Source: Will Norman

In Belfast, the urban landscape has come to symbolise divisions in a more organic way.[182] Many decades of sectarian violence between Protestants and Catholics have resulted in a culturally territorialised urban landscape. City spaces, aspects of urban form, and travel routes are adopted as the territory or symbol of either side, or as neutral. High walls topped with wire mesh (so-called 'peace walls') separate some neighbourhoods. Murals painted on buildings, flags, memorials, buildings, and street furniture all mark invisible territorial barriers or borders. Maps, streets and their names, painted curb stones, graffitied slogans, and buildings are all symbolic, and walking and driving routes are characterised as belonging to one side or the other.

Figure 16: Northern Ireland street markings (Derry). Source: extramuralactivity.com

Urban developers have high potential to encroach on significant markers unaware, and contribute to tensions. There are however ways of using the neutral spaces to attempt integration, offering the potential for social cohesion. A positive approach was taken by a private developer who wished to build a new mixed housing complex on a former industrial site for younger tenants, with fewer years of exposure to the sectarian horrors. From the outset, the objective was integration for Protestants and Catholics living there, using the facilities, and passing through the site to access the city centre.

7.2.2 Peaceful urban context: southern England, UK

Another example shows how building developments in more peaceful, prosperous and cohesive cities are conceived of to promote social capital and cohesion directly. The Berkeley Group, a private UK housing developer, builds new 'housing communities' (housing estates) where residents live in close proximity. The developer wished to improve their understanding of the relationship between physical and social factors as they did not know if its previous settlements had enhanced residents' social strengths or thrived long-term. Berkeley wished to build homes that promoted quality of life, well-being and hence social sustainability, and simply make living in them more enjoyable. They set out to marry the physical form and social infrastructure of developments with residents' social needs.

7.2.3 Social objectives

Social objectives were woven into each scheme's vision and aims. These are:

1. Redressing the spatial marginalisation and promoting social and economic inclusion of the poor (*Cape Town Railway Station, Cape Town, South Africa*)

2. Making a poor township vibrant, safer and more attractive; community life more peaceful, harmonious and of better quality; and ultimately environmentally, economically and socially sustainable (*VPUU in Khayelitsha, Cape Town, South Africa*)

3. Integrating Catholics and Protestants divided by sectarian conflict (*Housing Complex, Belfast, Northern Ireland*)

4. Improving residents' quality of life, well-being and social sustainability (*The Berkeley Group, southern England, UK*)

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182   Source: Pharoah, Normand, and Hale (2007)

7.3 Stage 2: Research and community participation

Careful scoping research is needed to understand the social and cultural context, and the existing community dynamics into which a development will be inserted once a social vision and objectives for a scheme have been defined. Context and dynamics will impact on the way that developers approach a community, as in Belfast. A community's existing social resources, strengths, and needs (and weaknesses) must be mapped using the expertise of social scientists to meet social sustainability (and resilience) objectives. Community members' local knowledge and experience should be harnessed through their participation to democratise decision-making about designs that affect them,[183] to empower them, and to inform better designs for commercial advantage. Our case studies offer different ways of working with researchers and communities, and methods of gathering this information.

7.3.1 Mapping the cultural meanings of urban space: Belfast, Northern Ireland, UK

The physical environment cannot be understood simply by looking at it. Mapping the social and cultural meanings of city spaces and the memories they provoke in fragile urban contexts helps to locate and shape the design of buildings and public spaces in a sensitive manner. The Belfast developer hired anthropologists to research local meanings by engaging both Catholics and Protestants, thus safeguarding its plans. It was important that the developer grasped the sometimes tense and uneasy social dynamics between residents, and understood the limits of mixing in the so-called neutral spaces.[184] Social research methods were used over just 4 weeks in 2007 to generate ethnographic data. These included: meeting the design team, a workshop with community leaders to elicit local information, focus groups with residents under and over 35, participant observation of how they and their families spent their time, a household survey of new developments and a youth engagement exercise. The data resulted in a graphic report that sketched out how the urban environment impacted on individuals on a daily basis, and informed design decisions. A short and inexpensive research phase conducted by two people offered the potential to create powerful social impacts. This strategy is useful for single site developments where an in-depth knowledge of the surrounding social or cultural landscape is required.

Figure 17: Belfast. Source: Will Norman

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183   King (1983); Fagence (1977); Sanoff (2010)
184   Residents of existing 'mixed' or 'neutral' areas may not share a community or social life with others from across the sectarian divide, rather simply just live alongside each other without violence.

The public can be consulted and social objectives aligned with desired social impact by using a dedicated assessment framework. This can be scaled up through replication on other comparable developments. In 2012, social scientists created a *Social Sustainability Framework* for UK housebuilder, The Berkeley Group, to measure the level of social sustainability in their 'housing communities',[185] and meet their other objectives of 'improving residents' quality of life, well-being' (see section 7.2.2). It was piloted on four developments in London and Hampshire, and is now applied to all their schemes.[186]

Thirteen indicators were created to measure three key dimensions: 'Social and Cultural Life', 'Voice and Influence' and 'Amenities and Infrastructure'. They are shown in the pie chart, Figure 18, below.
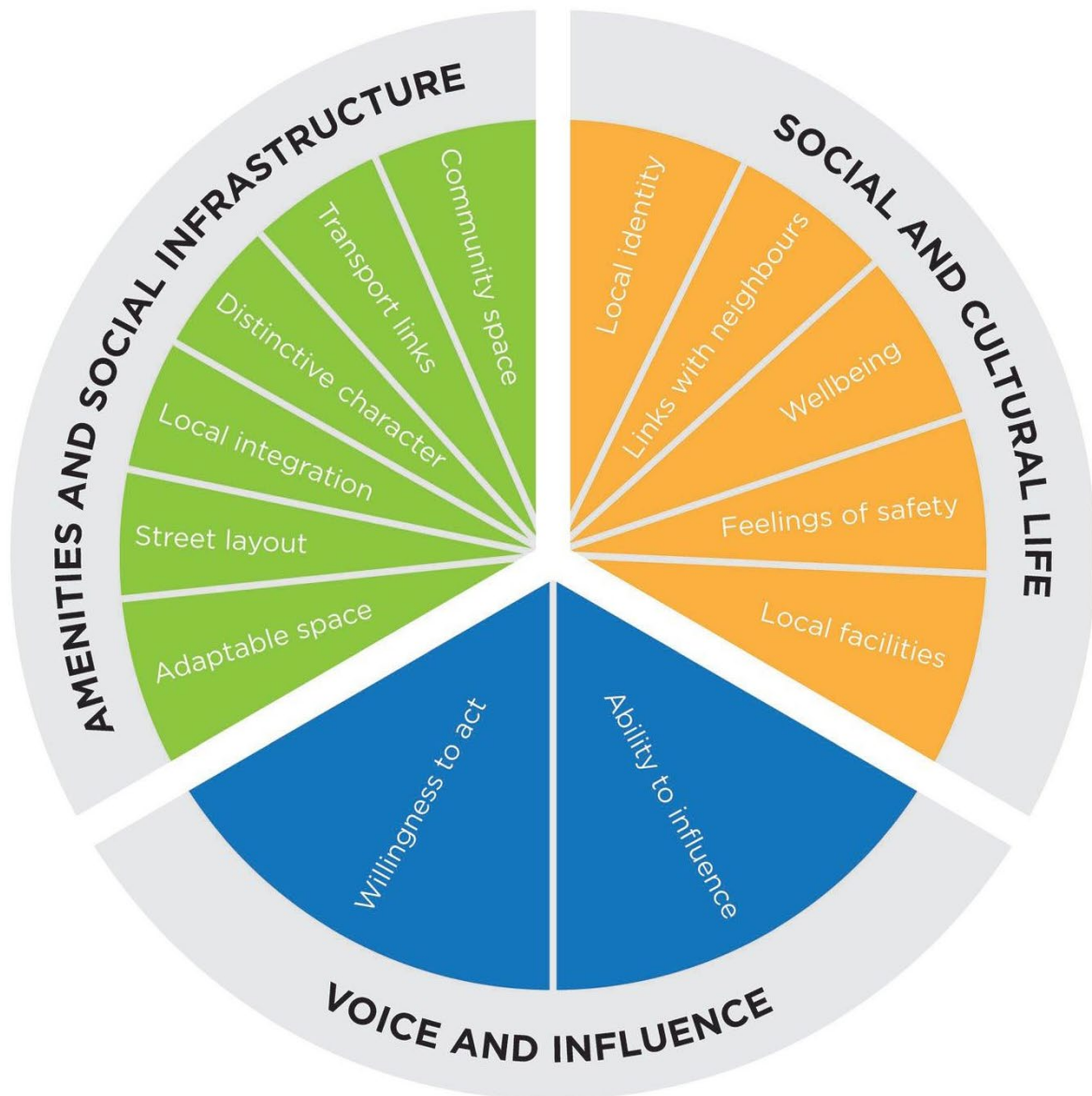
Figure 18: The Berkeley Group's indicators of social sustainability

There is significant overlap between these indicators and key dimensions of social capital, cohesion, social sustainability and community resilience, and the various broad urbanist approaches mentioned earlier (in section 4.4), as shown in Table 10. A similar framework could be created to measure a community's resilience.

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185   Woodcraft (2012)

186   Berkeley Group uses the toolkit on all schemes and has committed to undertake a formal assessment pre-planning on all developments of more than 100 homes. Source: Berkeley Group website: http://www.berkeleygroup.co.uk/sustainability/social-sustainability/creating-successful-places

Table 10: Overlap between Berkeley Group's indicators and social science concepts

Indicator	Social science concept that the indicator relates to
Social and cultural life	
Local identity	Social cohesion; desirable outcome of social capital
Links with neighbours	Social sustainability; community resilience
Well-being	Desirable outcome of social capital, social cohesion, social sustainability, community resilience
Feelings of safety	Social sustainability
Local facilities	Community resilience
Voice and influence	
Ability to influence	Desirable outcome of social capital
Willingness to act	Social sustainability; community resilience
Amenities and infrastructure	
Adaptable space	Research on uses of urban space post-disaster
Street layout	Principles of New Urbanism; TOD
Local integration	Principles of New Urbanism; TOD
Distinctive character	Principles of New Urbanism; TOD
Transport links	Principles of TOD
Community links	Principles of New Urbanism; TOD; Gehl on quality public spaces

The indicators were informed by questions from national data sets, industry standards assessment frameworks, and original questions that were locally relevant in the four developments. Residents at each site, 593 in total, were asked these questions in face-to-face interviews, and design professionals delivered a site survey for the 'Amenities and Infrastructure' dimension. Contextual interviews with key property management, community and local government stakeholders aided the interpretation of data. The site survey was benchmarked against industry standards and the residents' survey against national datasets for comparable places within the UK. Responses to each indicator were ranked and colour-coded: Positive (Red), Satisfactory (Yellow) and Green (Negative) to make the results easy to interpret. The developer could check that they were meeting their objectives through the ranking of each indicator. Although the pilots were conducted retrospectively, the lessons learned are applied to all new schemes.

7.3.3 Community social resource or asset mapping

Community social resources in this context are social capital, cohesion and other related concepts such as social equity: intangible social process-based assets at work in the social environment. Social strengths are the specific dimensions of these concepts which are locally strong, for example, open networks, collective decision-making, and sense of community. A community has "needs" which may be absent strengths, e.g. more cohesive relationships, or ineffective dimensions or "weaknesses", such as tense relationships. Social resource or asset mapping techniques should be used to analyse the resources and strengths that can be built up, and needs and weaknesses that need addressing. A simple approach is participatory workshops where residents are prompted to identify and write down these dimensions on sticky notes pinned to a board, as guided by maps or other area prompts. There is a focus on what works well rather than deficits, and then envisaging what could be even better in future. There are various methods for acquiring and strategising these two streams of information.[187] A more structured approach is found in the World Bank's Social Capital Assessment Tool (SCAT),[188] which uses different data collection methods to measure a community's social capital resources. These include structured group interviews, and household interviews which explore indicators of cognitive and structural social capital.

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187   See, for example, Emery, Fey, Flora (2006).
188   Krishna and Shrader (1999)

7.3.4 Co-design: Cape Town, South Africa

Co-design is the most democratic approach to uncovering a community's social needs from a physical development, their existing social resources and strengths, and devising design solutions. Design practitioners, government officials, civil society representatives and neighbourhood organisations work cooperatively with communities to identify and meet their needs, involving them in design, and/or construction. Co-design projects are an effective way of building social capital and strengthening collective capacity (essential for *adaptive capacity* and resilience), by drawing in networks of neighbours or co-residents. Communities can benefit from improved well-being and economic development in the longer-term.

Cape Town's VPUU programme contains co-design methodologies. The programme includes extensive community involvement in the planning, implementation and management of urban renovations intended to design out crime. It helps the community to develop a sense of pride and ownership over their neighbourhoods. A feeling of ownership increases the likelihood that a person will invest time in their neighbourhood, and take care of it. It is a precursor for them attending to damaged infrastructure, and boosting their community's resilience after an environmental adversity.

The programme has a unique, multi-step methodology for fostering collaboration. A Baseline Survey[189] is carried out via a participatory Rapid Urban Appraisal methodology where the community participate in focus groups. The survey analyses violence and crime-related problems, community needs, potentials, and people's social organisational patterns in 'Safe Nodes', land spaces designated for treatment. Interactive, participatory workshops and public meetings, and the election of individuals to Reference Groups with professional stakeholders, draw the community into the planning, design, and implementation stages of VPUU. Local needs are thus addressed through dialogic mechanisms.

Figure 19: Khayelitsha, Cape Town. Stalls beside Khayelitsha Metrorail station. Source: http://bit.ly/2jcl20S

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189   VPUU Website, 'Baseline Survey Short Description', available at: http://www.vpuu.org.za/_files/pages/Baseline_Survey_Short_description.pdf

7.3.5 Conducting psychological and social research alongside co-design: Portland (Oregon), USA and Manchester, England, UK

Social and psychological scientists can participate in an urban programme, and use sociological and psychological concepts to frame and evaluate whether community needs are met, to acquire the strongest evidence of the impacts of participation. They can measure social resources before and after a scheme's completion, and also monitor and evaluate inputs and impacts (as discussed in section 7.6). Two projects with comparative methodologies, underpinned by psychological assessments, were run in Portland, Oregon, USA in 2003,[190] and Manchester, UK, in 2011-2012.[191]

Residents of three Portland neighbourhoods were recruited to restore three public squares in areas where residents lacked a sense of community and of place. The social objectives were improving their social capital and mental well-being. An existing social strength was willingness to participate.

A programme of steps was followed: 1) the community members were involved in group activities to analyse existing levels of social capital, and build upon it; 2) collaborative workshops were held with design professionals to build bridging social capital, and produce designs; 3) City Repair, a local NGO, facilitated stakeholder cooperation and programme implementation; 4) stakeholders helped the community to construct their designs; 5) psychologists helped community members input into the design of a survey tool to evaluate their mental well-being, social capital and community capacity [*adaptive capacity*] before and after the project. Students surveyed 265 residents all living in a two-block radius of each site, taking just under a month before the development, and 6 weeks afterwards.

The newly renovated squares were reported as being more attractive by the researchers. They featured improvements such as a mural, interactive art, trellises, planters, and ecological installations including a lawn chessboard, cob benches, and a light clay sauna. The researchers concluded that through community empowerment, participation and collective action, survey findings showed improvements in mental well-being, sense of community, community capacity, and an overall increase in social capital.

Figure 20: Portland (Oregon). Source: Jan Semenza

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190   Semenza, March, and Bontempo (2006)
191   Anderson et al. (2016)

In Manchester, UK, community members recruited from forums and a Manchester City Council local resident database attended workshops where they were asked by urban designers to evaluate the shortcomings of parks and squares. Once more, an existing strength was willingness to participate. These volunteers proposed improvements to a small public space, sheltered by buildings, which they subsequently laboured to implement themselves. These included public art, free high-speed WiFi service, shade-tolerant planting, an inner-city lawn vegetation management, recycled seating, painting and general cleaning.

Before the regeneration, researchers identified three behaviours known to promote subjective well-being and physical health from a list of the five most important. [192] One of these is 'connecting with other people, whether familiar or strangers (e.g. talking and listening)'. To study whether the regenerated space encouraged more social connections than before refurbishment, a researcher observed people's behaviour when using it,[193] and a similar, untouched space, both before and after the treatment. Observations were carried out on 22,956 people, over two three-week periods during two consecutive summers, and coded in real time using a pre-defined check-list. The researcher sat on the edge of the space like a regular user, and recorded data into a digital tablet as if writing e-mails or surfing the internet. People connected near the outdoor exhibition space, picnic benches, walls, railings, bicycle racks and public art, thus demonstrating the behavioural influence of specific urban design characteristics.

Following the design intervention, there was a 394% increase in the number of people who used the treatment space to 'connect', and no significant increase in the non-treated space during the same period. This cost-effective intervention empowered the volunteers by giving them decision-making powers, and enhanced their collective capacity [*adaptive capacity*], and also social connections among public space users. Forming social connections occurs through friendly interactions, a key dimension of our analytical frameworks.
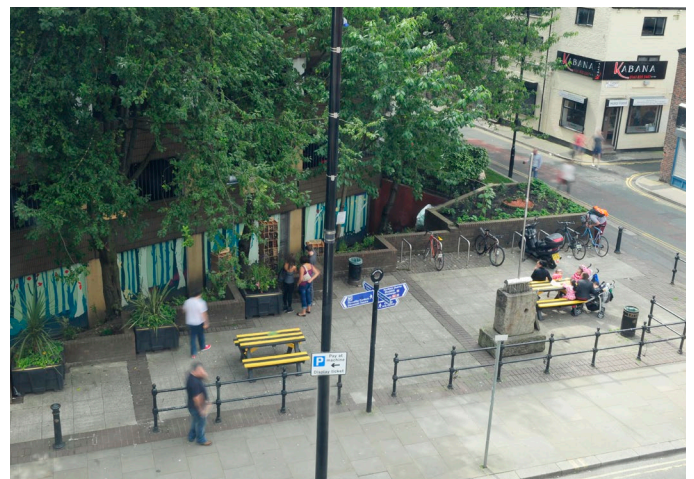
Figure 21: Manchester. Participatory urban design intervention. Source: Jamie Anderson

192   The five most important actions people can take to improve their well-being were derived from the evidence gathered in the Foresight Project on Mental Capital and Well-being, published by the UK Government's Office for Science in 2008. These five behaviours were identified in: Aked et al. (2008).

193   A socio-demographic survey was also delivered in person prior to the intervention that recorded the profile of users at both spaces. Most users were from Manchester and North West England. Anderson et al. (2016: 3).

7.4 Stage 3: Design Decisions and Implementation

7.4.1 Design Decisions: Belfast, Northern Ireland, UK, and Christchurch, New Zealand

Design choices for the characteristics of buildings or public spaces – their placement, layout, form and aesthetics – should be underpinned by information gathered at Stage 2 on local social and cultural context, a community's dynamics, resources, strengths and social needs (weaknesses). Two examples show this progression from the Research and Community Participation stage to Design Decisions.[194]

Case study 1) Belfast, Northern Ireland, UK

The anthropologists, who mapped the cultural meanings of city spaces in Belfast, produced ethnographic data showing how the direction of approach to a building could reveal sectarian identity as Protestant or Catholic. This was because walking routes passed in and out of or through claimed territory. In a city where tensions can quickly spark, people sometimes avoided routes that unmasked their affiliations for fear of retribution and violence. The researchers recommended locating the entrances of the planned complex in neutral space to avoid this problem. Design decisions have social and cultural implications that all developers should acknowledge, and thus take action to make sensitive choices

Case study 2) Christchurch, New Zealand

Marginalised people must have a voice in the community participation process, as in Health Impact Assessments (HIA) in New Zealand. Before the terrible earthquakes of 2010 and 2011, Christchurch City Council decided to expand and upgrade the city's Bus Xchange. An HIA was carried out by public health professionals at scheme conception stage. Māori people, indigenous New Zealanders, shared their ideas on its design at several monthly community consultations called *Hui* (social assembly or gathering) with a view to creating positive social and health impacts. They proposed indigenous designs, native plants and a water feature to promote spiritual well-being. Recommendations also included seating to catalyse social interaction, and public activity space for artists and musicians. Their main stipulation was that the project was respectful of the Canterbury region's Māori (*Waitaha*) heritage. This marginalised segment of the population successfully brought fresh, culturally-located design ideas to the plans.

(Adapted from: Christchurch: Ria, Angela (2009) Christchurch Transport Interchange: Health Impact Assessment 2007/08 – 2008/09. Hui Facilitation and Māori Work Stream Report Writing.)

Projected impacts of these features would be the social and health impacts of pleasant aesthetics and natural features; local residents' / users' positive regard for the place [a *component of a sense of place*]; increased attachment to the improved urban environment; and a potential increase in the community's sense of responsibility for their urban surroundings.

Design decisions can have positive social impacts, such as supporting social cohesion. Community participation in design can give marginalised people, as well as the community in its entirety, a voice.

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194   These two case studies on Belfast housing and Christchurch's Bus Xchange, were unrealised plans due to 1) financial turmoil and 2) earthquakes. Both plans drew upon extensive social research with potential tenant and user communities. These data were used to predict behavioural responses using CB's experience in working on predictive social and health impact assessments. The social data elicited from both involved communities included strong ideas for socially-aware planning, also put forward by the anthropologists conducting social research with communities in the Belfast neighbourhoods around the planned housing complex.

Communities also benefit from having a role in implementing projects, as in our examples from Portland and Manchester. These communities increased their social resources. Volunteering in the renovation of public spaces can inspire attachments to the area and community or other psychosocial connections. In these two cases, it strengthened collective decision-making and capacity to act, thus empowering people both individually and collectively. It increased the number of social connections made in public spaces, and improved participants' well-being.

Projects such as Cape Town's VPUU programme, which marry beneficial social objectives with actions that can be taken by community participants to strengthen their social resources and create economic and other opportunities, serve the dual purpose of achieving social development and producing a superior built environment. One of six design features implemented in the Khayelitsha neighbourhood of Harare was safer pedestrian passageways with paved walkways and street lighting. These provided 'safe routes' linking major entry and exit points through dense informal settlements. Well-lit spaces for gathering and informal trading were located alongside the main pedestrian routes. At the intersections were 'Active Boxes', small two- or three-storey buildings containing a meeting room, caretaker's flat and a room for facility guardians. These were occupied round the clock providing surveillance. Hundreds of local volunteers were trained to operate unarmed neighbourhood patrols to deter crime under the Neighbourhood Watch Project. Safety on the streets has improved, feelings of safety being a psychological dimension of social sustainability. The scheme's overall success was directly quantifiable. The overall crime rate dropped by 20%, and the murder rate by 39%. This was the highest drop in a low-income community in the whole of Cape Town.[195]

In another of the scheme's initiatives, women attended trauma counselling and bonded so closely that the whole neighbourhood went on to design positive public art to heal trauma, and convey pride in VPUU-funded amenities. Public amenities built included a football pitch, playground, youth centre and stalls for traders near the metro. A waste dump, formerly the scene of many murders, was turned into a park reported to be "beautiful" and "safe". Many residents were employed in the management of amenities, and participated in the scheme's monitoring and evaluation process (see section 7.5).

The VPUU has strengthened collective capacity, social cohesion and bonds – emotional connections which can underpin a sense of community among residents, who can contribute to reducing crime and improving safety, increasing their well-being, and acquiring economic (trading) and employment opportunities.

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195   James (2012)

7.5 Stage 4: Monitoring and Evaluation

7.5.1 Portland (Oregon), USA, Manchester, England, UK, and Yala, Thailand

A study strand within a project – as in Portland and Manchester – can allow a researcher to observe social inputs and evaluate whether defined social objectives are being met during implementation, building, and on completion. In both projects, researchers identified a social objective and a desired social impact. For example, in Portland: [*social objective*] encouraging collective action leading to [*social impact*] improved social capital and mental well-being. The study methodology of both projects encompassed data collection before and after the urban interventions to assess levels of social capital, which meant the successful assessment of the scheme's immediate impacts.

Ongoing monitoring must be an integral part of ensuring that plans are acted upon so that social objectives are operationalised. Post-completion evaluation is crucial for understanding social impacts and better informing future plans. The rationale behind Social and Health Impact Assessments (SIAs and HIAs), which are sometimes carried out on built environment developments, is useful. Both aim to anticipate the social and health impacts on communities in advance. Positive impacts can then be intentionally maximised.

Although often prospective, HIAs can be conducted before, during or after a development. In 2004 in the city of Yala in Thailand, the Ministry of Health conducted an HIA to assess the health and social impacts of the initial phase of The Garden City Project,[196] a scheme to build parks, gardens and green spaces for public benefit. Street vendors and residents were observed and interviewed in the new green areas. Researchers found increased socialisation with friends and newcomers and greater opportunities for income generation, informing a set of recommendations to further improve the project and residents' lives.
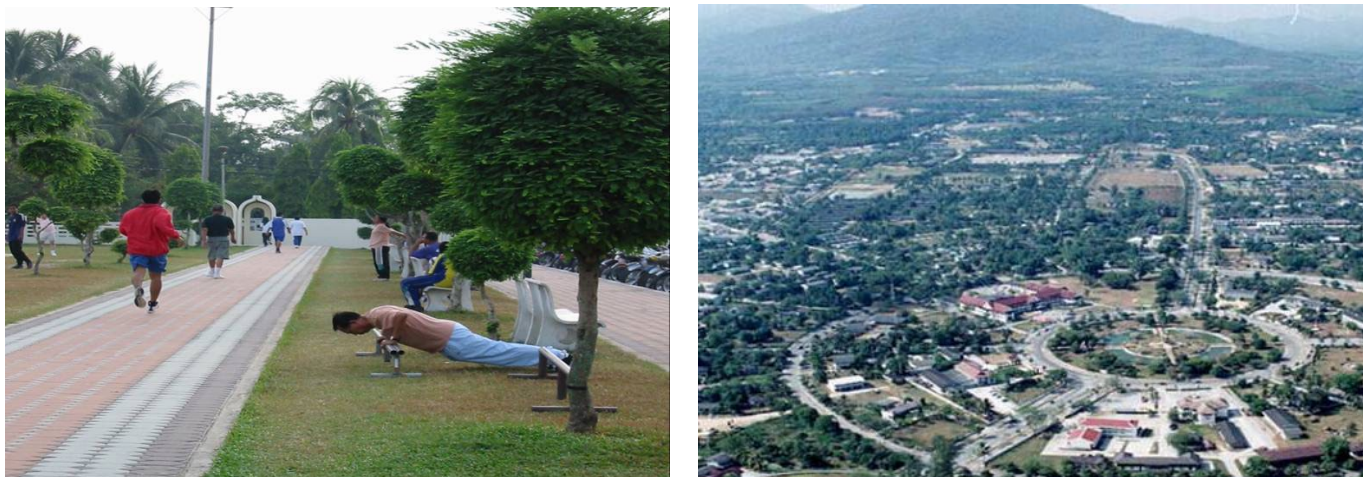
Figure 22: Yala Garden City. Source: Health Impact Assessment Division, Department of Health, Thailand

Given the various pressures many projects face political, financial and budgetary, and time constraints - the social aspects of urban development can become a low priority during the implementation phase. Social observers, with the support of a project's backers, can be well placed to carry out ongoing monitoring during implementation and building, and post-completion evaluation. They can remind the planning and design teams to honour their commitment to have a development project meet its objectives concerning social sustainability.

Three of the projects examined in this report had effective monitoring and evaluation methodologies. Each offers different benefits.

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196   Department of Health, Thailand (2004)

7.5.2 Robust data blending subjective and objective views: Delhi, India

The Indian team who explored the relationship between public open space and social interaction and neighbourhood relations in Delhi in section 6.1.2 used a robust methodology. It blended qualitative with quantitative methods to amalgamate subjective (residents') and objective (observers') perspectives on the social impacts of these spaces. The urban layout was analysed from an expert urban planning point of view to isolate the aspects that may influence behaviours and psychological responses. An observational study was conducted to record who used the spaces, when and for what purposes. Finally, 300 residents were interviewed for their opinions on the open spaces and affected behaviours. This approach could be usefully applied as an evaluation tool where renovation of an existing development is planned. Its strength is the combination of data conveying subjective views of how the spaces are experienced, and objective views recording overall trends in usage, raising the precision of the exact impacts identified.

7.5.3 Community empowerment: Cape Town, South Africa

In Cape Town's VPUU (see sections 7.3.4 and 7.3.5), social impacts are monitored and evaluated by residents, who collectively conduct a weekly Household Survey to look at results. This has revealed frequent feelings of pride and safety in the new and renovated public spaces, which are well-lit and vibrant. There is a monthly planning meeting between professionals and the community for strategic decision-making, endorsement of new plans, and performance evaluation. In the neighbourhood of Harare, these meetings regularly attract 120 people. 'Having a say' helps them trust the authorities and projects, and builds their sense of co-ownership. This increases the likelihood of care of their neighbourhood during calm periods and crises alike. Such initiatives draw residents into the heart of the scheme, giving them feelings of investment, inspiration and empowerment, building collective capacity. These methods are productive in participatory or co-design and development projects where the community is treated as a key partner in the mix of stakeholders.

7.5.4 Longitudinal monitoring and evaluation: southern England, UK

In 2014, the UK's Berkeley Group converted its *Social Sustainability Framework* (see also section 7.2.2 and 7.3.2) into a toolkit[197] to encourage other developers and local government planners to apply the Group's social sustainability principles to new housing developments. The toolkit encouraged developers to consider how prospective tenants or residents, local stakeholders and others would respond to the 13 criteria in the original assessment framework (discussed in section 7.3.2) at different stages of the development. In addition, it suggested good practice examples that developers could take – in the fields of pre-development research steps, and parameters for design, location and choice of facilities – to operationalise the 13 criteria. These could be factored into a plan to positively influence community behaviours and psychological responses. If we take Criteria 2: Links with Neighbours, it was matched with the following recommended actions:

Links with neighbours

- This is about creating a place where people know their neighbours and trust each other.

- If you can encourage social interaction and social networks locally, this is strongly linked with lower crime rates and higher life satisfaction.

- Start by asking what would help people get on here: what would prompt people to stop and talk to their neighbours? Could you borrow things or ask for help?

- Design streets and squares so that they can be used as social and play spaces, not just a thoroughfare; think about the design and use of street furniture and benches, for example.

- Invest in neighbourhood projects which both new and existing residents will use, like a sports or social club, or a way for people to connect online.

Source: http://www.berkeleygroup.co.uk/media/pdf/l/h/berkeley-social- sustainability-toolkit.pdf

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The toolkit could be applied before, during and up to two years after a development as a method of evaluating its long-term impacts. Table 11 illustrates when and why the toolkit should be applied and the methods used.

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197   Berkeley Group (2014)

Table 11: Applying Berkeley Group's toolkit

Project stage	When and why apply it?	Methodology
Pre-development	During the design process as part of a planning application; alongside an Environmental Impact Assessment (EIA) as part of community engagement strategy	• Workshops test plans against the 13 criteria • Tweaking the plan to include prioritised criteria
Mid-stage	Any time after first phase is complete – allows the developer to see how early tenants feel, how design and governance could evolve, and how it compares to data on similar housing communities	• Site survey delivered by design professional • Comparative analysis using social data • Contextual stakeholder interviews • A final report
After completion	An evaluation 18 months to 2 years after residents have moved in – their lived experiences can be compared to similar places; data is supplied on performance of new community	• Site survey delivered by design professional • Comparative analysis using social data • Contextual stakeholder interviews • A final report

Adapted from Berkeley Group (2014: 18-19)

Finally, Berkeley offered the benefits of the toolkit:

- For planners, these criteria will help you make informed judgements about the quality of applications and what is required from new housing to create a strong community.

- It will help you convince the community and councillors [*local government officials*] that new proposals will genuinely add value to the local area and coherently address all the issues that affect people's quality of life.

- Above all, it will help create places we are all proud of and where people want to live.

Berkeley Group (2014: 2)

This approach is beneficial for the long-term monitoring and evaluation of schemes, and for application to multiple sites. The Berkeley Group used this kit on all of its schemes, having committed to undertaking a formal assessment of pre-planning on all developments of more than 100 homes. This toolkit has some parallels with the rationale for a Social Impact Assessment (SIA), although SIAs scope for a wider range of potential impacts.

Figure 23: Empire Square, London. Source: Berkeley Group

7.6 Behavioural and psychological effects or responses to projects

Our international examples have illustrated different approaches, tools and methods within four stages of a socially-planned urban development process that urban development teams can adopt, and their influence on pro-community outcomes. Table 12 itemises the pro-community behavioural and psychological responses that we identified within the available data from each project, and the overall actual or projected[198] social impacts of these pro-community outcomes and the project itself.

Table 12: Pro-community outcomes from projects reviewed for social sustainability

Project	Pro-community behavioural and psychological responses (projected or actual)	Overall social and well-being impact of pro-community behaviours and project itself (projected or actual)
Public Open Space, Delhi, India	*Actual outcomes:* *Behaviour:* • Visibility of social groups • Mixing of social groups • Increased social interaction • Increased social connection and social networks • Participation in community activities *Psychological:* • Pride in neighbourhood • Sense of community • Place attachment • Feelings of safety • Satisfaction with neighbourhood	*Actual outcomes:* • Improved urban environment • Increased social capital – particularly bridging social capital • Social integration/inclusion • Increased well-being
VPUU, Cape Town, South Africa	*Actual outcomes:* *Behaviour:* • Volunteering and participation in civic activities • Collective action *Psychological:* • Sense of pride and ownership • Community bonds • Feelings of safety • Awareness of community needs *Social process with behavioural and psychological dimensions* • Improved social cohesion	*Actual outcomes:* • Improved urban environment and better living conditions • Increased social capital • Lower crime rates • Safer urban environment • Increased employment opportunities • Civic empowerment
Central Railway Station, Cape Town, South Africa	*Projected outcomes:* *Behaviour:* • Visibility of poor people in city centre public realm • Social mixing • Incidental social contact	*Projected outcomes:* • Improved urban environment • Increased trading opportunities for the poor • Increased bridging social capital • Social cohesion
Mixed housing complex, Belfast, Northern Ireland, UK	*Not applicable as no community follow-up*	*Intended impacts:* • Increased social cohesion • Improved feelings of safety

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198   Projected outcomes are based on CB's professional knowledge and experience in social and health impact assessments.

Social Sustainability Framework, UK	*Actual outcomes: headline findings from the four pilot tests*	*Projected outcomes:*
	Behaviour:	• More socially sustainable housing
	• Social contact with neighbours	• Increased social capital
	• Long-term residence *(plan to stay in the community)*	• Improved feelings of safety
		• Increased well-being
	Psychological:	
	• Sense of belonging	
	• Feelings of safety *(at 3 out of 4 developments)*	
	• Feelings of happiness and levels of well-being	
Public Squares, Portland, Oregon, USA	*Actual outcomes:*	*Actual outcomes:*
	Behaviour:	• Improved urban environment
	• Community participation	• Increased collective capacity
	• Collective action	• Increased social capital
		• Increased mental well-being
	Psychological:	
	• Place attachment	
	• Sense of community	
	• Empowerment	
Public space, Manchester, UK	*Actual outcomes:*	*Actual outcomes:*
	Behaviour:	• Improved urban environment
	• Community participation in civic activities	• Increased collective capacity
	• Collection action	• Increased social capital
	• Collection decision-making	• Increased mental and physical well-being
	• Social interaction and connections	• Increased community empowerment
Bus Xchange, Christchurch, New Zealand	*Projected outcomes:*	*Projected outcomes:*
	Behaviour:	• Improved transport hub
	• Social contact	• Increased social capital
	• Artistic activity	• Increased mental well-being
	Psychological:	
	• Sense of pleasure and calm	
	• Sense of place	
	• Place attachment	
	• Sense of responsibility for urban surroundings	

Table 13 compares the dimensions in the "socially sustainable community framework" with the actual pro-community behaviours that arose from the projects reviewed. In many cases, specific local variants on these dimensions were observed, that fit under the same broader conceptual category. This table is based on available data and scholarly projection. [199]

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199   Woodcraft (author and social science lead of the Berkeley Group Social Sustainability project) considered that although the pilot trials of the "Social Sustainability Framework" resulted in pro-community behaviours, overriding outcomes were as yet "projected" rather than "actual."

Table 13: Dimensions of a socially sustainable community compared with dimensions analysed in projects

Dimensions of a socially sustainable community	Behaviours and psychological responses identified in responses to the built environment and participation in development projects
Pride in and attachment to neighbourhood	• Pride in urban environment • Sense of community • Sense of place • Place attachment • Sense of belonging
Social interaction within the neighbourhood	• Incidental social contact • Social interaction and connections • Social contact with neighbours
Safety/security (versus risk of crime, antisocial behaviour)	• Feelings of safety
Perceived quality of local environment	• No exact data but implied in several projects (e.g. Delhi, Portland, VPUU)
Satisfaction with the home	• Satisfaction with the neighbourhood
Stability (versus residential turnover)	• Long-term residence (plan to stay in the community)
Participation in collective group / civic activities.	• Volunteering • Participation in civic and community activities and community affairs • Collective action • Artistic activity – if undertaken by community members

Five other categories of responses were identified that indicate additional behavioural and psychological dimensions of social sustainability. These are categorised in Table 14.

Table 14: Additional dimensions of social sustainability

Additional dimensions of social sustainability	Behavioural and psychological components of new dimensions
Happiness and well-being	• Sense of pleasure and calm • Feelings of happiness • Levels of well-being
Social connection	• Community bonds
Social cohesion, integration and inclusion	• Visibility of social groups • Mixing of social groups • Good levels of social cohesion
Social solidarity and community spirit	• Awareness of community needs • Sense of ownership of urban environment • Sense of responsibility for urban surroundings
Voice, influence and civic empowerment	• Collection decision-making • Empowerment

The built environment and socially-planned urban development has a proven capacity to influence pro-community behaviours that are dimensions or outcomes of, or are closely related to social capital and social cohesion.

Figure 24: Knowle Village, Hampshire. Source: Berkeley Group

8 Socially sustainable communities can also be resilient communities

8.1 Introduction

Section 8 highlights the importance of a socially-planned built environment and public participation in urban development with maximum influence on community social resources for urban locations vulnerable to climate changed-related and other natural disasters. We offer five case studies located in four cities that show how relationships between the built environment/social infrastructure, and existing or lacking social organisational strategies grounded in pro-community behaviours hindered or promoted behavioural resilience during/after negative environmental events. The cases depict communities in developing and developed nations with both sufficient and insufficient socio-economic resources and urban infrastructure to begin with. We draw on the "resilient neighbourhood community framework" to identify the social resources, and behaviours and psychological responses required for resilience.

8.2 Behaviours and psychological responses during environmental adversities

8.2.1 Case study: Poor social cohesion among flood-prone informal settlement dwellers in Surat, India

We show the impact of poor social cohesion on a poor community who live in a zone subject to flooding. It is based on the view conveyed in *Surat City Resilience Strategy* (SCRS).[200] Other references are indicated in footnotes. Surat is a coastal port city in India situated on the banks of the Tapi River. Its Ukai Dam provides irrigation, power and flood defences, but its overflows and those from other tidal creeks running through the city cause periodic floods. Surat is expected to experience more extreme weather events and increased flooding as a result of climate change. Anticipated effects are rising temperatures, increased precipitation and rainfall, sea level rise, changing disease patterns, and increasing energy demand.[201]

Rural migrants from within the state of Gujarat (Saurashtra, its arid Northern reaches), and other states (especially Maharashtra, Uttar Pradesh and Orissa) comprised about 55% of Surat's ever growing 4.5 million inhabitants in 2011. Migrants represent many cultures and ways of life, and speak different languages. They have resided in Surat for less than two decades and were drawn to the city at an unprecedented rate, by its expanding industrial economy, and opportunities to work in, for example, textiles and diamond cutting and polishing. The poorest migrant workers lived in slums and informal settlements, owing to low incomes and a housing shortage, making up 80% of all slum households. From 2001 to 2006 the number of slums grew from 307 to 406.

These settlements were situated on vacant lands, often along flood plains and on low-lying land, along tidal creeks, river banks or drainage lines.[202] Their dwellings were constantly at risk of flooding, and required evacuation during intermittent flood events. Surat Municipal Corporation (SMC) produced a "vulnerability and capacity" index within the city's climate vulnerability assessment.[203] Low-income residents in settlements located closest to the river were found to be the most vulnerable to flooding, alongside middle and upper socio-economic groups residing on the first and second floors in peripheral areas.

Although overall community spirit is said to be strong in Surat, "known for its strength to convert its adversity into advantage"[204], regionally diverse slum inhabitants experienced a "fragmented social landscape".[205] City stakeholders[206] foresaw that it would worsen with time. The SCRS measured "social capacity" within its capacity index in terms of networks and cohesion. These were found to be generally poor among slum and lower socio-economic groups, although stronger among Gujaratis working in the diamond industries. They were familiar with the regional way of life and closer to their home networks than textile workers from more distant states such as Orissa and Uttar Pradesh.

In 2011, it was observed that population growth and in-migration were changing the social dynamics with 'emerging social and cultural differences "reportedly" reducing social cohesion.'[207] This implied that there may have been strong bonding social capital among, but weak bridging capital between, regional groups. Possible reasons among recent arrivals included

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200 This was produced by the Asian Cities Climate Change Resilience Network (ACCCRN) initiative with the input of Surat Municipal Corporation and other stakeholders. All Surat material adapted from: *Surat City Resilience Strategy* (2011) unless otherwise indicated in footnotes. There were a limited number of resources available and few discussing social issues.

201 These are overall effects summarised in SCRS (2011: 2). A wide range of prediction data at city and regional levels is included.

202 Govind and Verchick (2015)

203 Vulnerability to floods was assessed by examining damage from floods, depth of inundation and duration of inundation faced by the households.

204 Achal and Padhya (2014)

205 SCRS (2011: 20)

206 Stakeholders involved in the creation of SCRS (2011: 9) include: 'city stakeholders, urban researchers, practitioners and citizens of Surat city.'

207 SCRS (2011: 34)

the newness of networks, unestablished positions in these, and differences hindering the development of cross-regional networks. Poor migrants with little job security often returned to their home towns or moved to other cities. [208] Although no durations for length of residence in the city were given, short stays would affect the stability and depth of networks. A health study also identified heterogeneity and poor social cohesion among migrants, who were "male predominant, poorly literate, busy in non-skilled jobs, with a main goal of earning and survival and living under uncertainty."[209] Meeting these needs and combating known problems, such as landlord exploitation, may have necessitated immediate cooperation with regional connections because of inherent loyalties and mutuality, limiting time to invest more widely.

Social fragmentation and lack of cohesion negatively affect building resilience [*lack of bridging social capital and social cohesion*]. Also rural migrants have low levels of education and skills [*human capital*] and a limited stake or time to be involved in the city's wider development, thus the SMC perceived raising awareness about flood risks and climate change among this population sector as difficult. The health study found that migrants viewed the city as a workplace, and "hardly imagine contributing to the climate change and health resilience."[210] This is not surprising given the realities of the labour and services markets, and highlights the magnitude of the challenge.

SMC also experienced challenges in housing the migrant population, which were growing faster than the city's capacity to accommodate them. Building on flood plains had to be avoided but there was a shortage of suitable housing. Since 2015, SMC has stopped giving permission to build here.[211] There was also a lack of information on services available in the informal settlements. Some were relocated, and 22,000 new permanent houses built for these dwellers, with more under construction. One problem was that when people were relocated to safer townships a few kilometres away from the urban heart – and their livelihood opportunities, social networks, and access to city services, many simply moved back to the slums illegally, re-increasing their vulnerability of experiencing the adverse effects of floods.[212] They thus were driven by short-term survival requirements, viewing resilience as a longer-term luxury. SMC recognised the importance of drawing the migrants and lower socio-economic groups into the conversation about planning for resilience, and advocated finding ways to increase their social capital and capacities to 'build resilience through better coordination and mutual support'.[213]

8.2.2 Case study: Good social capital before and after an urban environmental disaster: Surat, India, and Jakarta, Indonesia

There can be a huge difference in response to environmental adversities between communities with good levels of social of capital and cohesion and those without, such as Surat's impoverished migrants.[214] We discuss Surat's middle-classes, and then the *kampung* dwellers of the city of Jakarta, Indonesia.

Figure 25: Surat. Source: Robin King

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208   Short-length of residence is the opposite of the residential stability dimension of social sustainability and neighbourhood resilience.
209   Ghanekar, A, Desai, V, Desai, H, Kumar Rathi, S, Acharya, A, Khatri, K (2014: 3)
210   Ghanekar, A, Desai, V, Desai, H, Kumar Rathi, S, Acharya, A, Khatri, K (2014: 3)
211   Chatterjee (2015)
212   Govind and Verchick (2015)
213   SCRS (2011: 38)
214   This should not be perceived as negatively judgmental about people in poverty in Surat, merely about their capacity to develop longer-term positive behaviours given the short-term survival challenges they face.

8.2.3 Surat, India

People who have lived in Surat for generations are colloquially known as 'Surtis' and represent culturally diverse backgrounds.[215] Social networks, cohesion and mutual support were found to be strong among most communities from Gujarat. "Social capacity" was measured most highly among middle and upper socio-economic groups. People with sufficient income who were not struggling to meet their basic needs may have had more time to devote to wider community issues, and perhaps had more to gain from developing networks. Longer residence meant stronger social networks and more developed relationships. The Surtis' social resources resulted in a high level of civic commitment, and pro-community behaviours, especially among older residents, who felt strongly connected to the city. They participated in urban development as part of their routine life. Pride and a sense of belonging were said to be evident from the "sacrifices" they had made in the interests of the community and improving its quality of life, such as bearing a higher cost for the delivery of better services. They supported the city's cleanliness, solid waste management and water supply schemes.[216]

Their social resources during periods of calm – especially cohesion and interest in the collective good – translated into resilient, pro-community behaviours of helping the community following crises. These have included a plague (1996), floods (2002, 2006) which in 2006 inundated 75% of the city, and bomb attacks (2008). After such crises, civil society organisations collaborated with SMC and industrial organisations. Surtis made sacrifices, for example, people gave up land for road widening and decongestion after the plague. According to one blog, after the 2006 floods they acquired 40 mechanical diggers, and several hundred people cleared the streets themselves, operating the diggers 24 hours a day in teams. Life returned to normal in just three weeks.[217] Surtis also accepted changes in the rule levels of Ukai Dam after these floods. They cooperated with the SMC in discussing issues, and looking at ways of reducing risks and vulnerabilities.

The Surtis behave in both socially sustainable and resilient ways, caring for their urban environment and community. Although fostering social cohesion is more of a challenge among a socio-demographically diverse population, it is possible, and can be an asset for urban development. However, it does require that city leaders in both private and public realms acknowledge the different challenges and time horizons faced by different groups, especially poorer migrants.

Analysis

- The participation of diverse people, who represent a variety of perspectives and interests in urban planning, can identify a greater range of needs, possible inputs, impacts and longer-term outcomes.

- Cities that cater to a wider variety of perspectives and interests may attract wider investment.

- Diverse perspectives, interests, skills and values can mean more resources and strengths to draw upon during adversities, as section 8.3.4 on a New Zealand case shows. Such diversity, however, can also create additional challenges that must be addressed.

Figure 26: Surat. Source: Robin King

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215   All content taken from SCRS (2011) unless otherwise specified.
216   It should be noted that these better off Surtis had access to services that the slum dwellers discussed in the previous example did not, thus improving the conditions under which pro-community behaviours can develop and flourish.
217   Flora (2012)

8.2.4 Jakarta, Indonesia

Some low-income people living in Jakarta, Indonesia's capital city, have strong social capital and social cohesion and cope effectively with environmental adversities, in contrast to those even less fortunate in Surat. They live in the city's *kampungs* (informal settlements).[218] Their story tells how the informal physical environment partly shapes the pre-conditions for social capital.

Jarkarta is a harbour city with extensive low-lying areas susceptible to excessive flooding. The causes include heavy rainfall, high tides, and increased water run-off from voluminous groundwater tapping as part of redevelopment in upstream areas. Floods are set to increase due to greater urbanisation, and a natural astronomical cycle inducing sea level rise. The potential adverse effects of climate change are not even factored for.

Kampung residents are not always the poorest. *Kampungs* are settlements on state-owned land and land not traded on formal markets so that inhabitants, who lack the legal land titles, can be evicted at any time. Densely-populated, they contain low-quality housing: two-storey houses built close together and for the poorest, makeshift wooden houses on stilts in the river and river bed. Two *kampungs* in the neighbourhoods of Tomang and Manggarai are discussed. Both usually experience smaller floods during the rainy season and larger ones approximately every five years, such as a catastrophic flood in 2007.

Kampung residents are ethnically, culturally and religiously diverse, and comprise poor regional migrants and low-income formal sector workers and government-worker professionals. The slightly higher income inhabitants experience the advantages of close proximity to employment, healthcare and education, reduced transport and living costs, and time saved in the inner city *kampungs*.

The *kampungs*' spatial arrangements, and community and neighbourhood-level organisations, have contributed to good social capital and cohesion. Tomang's *kampung* is physically isolated from other residential areas. Manggarai's *kampung* overlaps with the administrative borders of the formal neighbourhood association. These boundaries reinforce people's sense of community. Houses in both are overbuilt and attached to each other, locating families and neighbours close together. People mingle on the small paths in front of their homes. Tomang's *kampung* lacks open spaces, so people meet on the path by the dam or at informal shops, restaurants and mobile carts. People can meet and talk in Manggarai *kampung*'s public spaces, coffee shops, and a small park (which can host public meetings). Intense social ties are built in these places, particularly between neighbours, who exchange news and information

Residents lack formal authority and municipal assistance, so their shared experience of socio-economic hardship and a continually insecure situation promotes a sense of community.[219] *Kampungs* are, however, integrated into the formal administrative system through the work of formal organisations known as RW/RTs, which also enhance the feeling of community. At neighbourhood level, *Rukun Tetangga* (RTs), and community level, *Rukun Warga* (RWs) organise and regulate the *kampung* communities. They run collective action schemes that manage the physical environment, maintain safety, and care for residents, for example, *kerja bakti* – a weekly communal activity to clean up the neighbourhood, whether the canal, garbage or public toilets, and *ronda* – a neighbourhood security system requiring voluntary participation. Residents often help neighbours meet costs for difficult events such as death and problems of old age. These organisations also connect them to various formal structures of government and support services [*vertical/linking social capital*].

Strong, trusted and effective voluntary leaders appointed from within the community, enforced integration of newcomer rural migrants, and sanctions against non-participants, such as exclusion from the neighbourhood or fees payable to a fund, ensure that social order and agency are successful. Consequently inhabitants feeling connected to each other, and develop cohesive relationships with neighbours.

Effective social capital and social cohesion have created communities which are self-organised, self-regulating and self-reliant [*adaptive capacity*]. These strengths sustain residents during daily life, so they can then enact resilient pro-community behaviours when the floods come. Residents know what causes flooding. They view the floods as temporary and not disruptive of ordinary life, returning home once the water has drained away.

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218   All Jakarta material adapted from Wilhelm (2011a) and Wilhelm, M (2011b).
219   This case shows social unity within shared circumstances of poverty and adversity, and may not be particularly typical of low-income informal settlements.

Analysis

Social capital-linked actions include:

- Friends and relatives in upstream areas text or phone, or municipal employees at flood gates communicate, to warn about floods several hours ahead. This compensates for an ineffective formal warning system.

- When warnings are received, residents move their valuables to the second floor of their homes. This strategy results from experience and resilience.

- The RW system evacuates people trapped in their homes and coordinates relief activities, kitchens, and supplies.

- It helps the community pool its resources so that all have adequate food and water.

- People have a security system to prevent looting.

- Trusted community leaders coordinate the community's flood management activities. They also help organise coping activities that promote the collective interest and present a united front.

- *Kerja bakti* is operationalised in Manggarai to clean up homes and the neighbourhood.

- The RW also utilizes networks established with external organisations

Poverty does not preclude a community from developing good social capital and cohesion. Hardship can force the development of social resources and improve adaptive capacity. However, this is not a solution in itself. A city government must adequately house its citizens, rather than leaving a population who are 'surviving', in a permanent state of insecurity. Given their social resources, any subsequent effort to re-house them must consider the following:

- Research must be conducted to understand the spatial and organisational features of a dwelling area that produce social networks and coping strategies among low-income people. These may help them generate a livelihood and produce the social ties and organisational forms needed to cope with hardship as a community.

- The outcome of relocating such communities is unpredictable. Sometimes socio-economic patterns and spatial proximity have produced circumstantial communities among heterogeneous people that may not otherwise have existed. Such communities may prove ephemeral when shared circumstances and location are removed. Alternatively a known problem in Jakarta is that sometimes relocated communities are re-housed in accommodation that breaks down their networks and coping strategies. When they lack spatial and organisational opportunities to maintain these, and face socio-economic difficulties in the new location, they sometimes return to the original one to recapture these life supports.[220] Relocation plans must be preceded by in-depth research to anticipate the factors that may break up or keep communities together, and the support they need access to in new dwellings.

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220   Source: Aisa Tobing, Senior Advisor to the Government, City of Jakarta. Keynote speech given at the MIT Sustainability Summit 2014.
       http://sustainabilitysummit.mit.edu/programme/#the-collaborative-city.

**Figure 27: Top: Kampung Manggarai. Bottom: Kampung Jati Pulo (another neighbourhood), Jakarta.
Source: Mario Wilhelm**

8.2.5 Case study: Recreating social capital in transitional housing after Hurricane Katrina on the Gulf Coast, USA

An American case illustrates the sensitive intertwinement between a city's physical structure and a community's social organisation, and the full force of social impacts when these are separated after an environmental adversity.

During routine life, urban form can influence positive social contact, behaviours and psychosocial attachments and other responses. Networks of neighbours [*structural social capital*] can support each other by taking actions [*collective capacity/ efficacy*]. Attachments to the local area and community can encourage people to take responsibility for, and care for others [*social support > desirable outcome of social capital*] and their urban infrastructure [*solidarity / community spirit as features of social cohesion*]. When deadly weather events strike – such as Hurricane Katrina, which hit the Gulf Coast of the USA in Louisiana and Mississippi on 29th August 2005 – housing can be destroyed. In Mississippi, one million people were displaced and there was $80 billion in property damage. When people are displaced from their urban environment, social resources among neighbours can be negatively impacted with detrimental social and health impacts. Disaster and conflict exacerbate existing fractures along social lines, causing conflict and disruption on a community level.[221]

Residents of the city of New Orleans, Louisiana, many of whom had never left their neighbourhoods before, were given three forms of transitional housing.[222] Accommodation was underwritten by the Federal Emergency Management Agency (FEMA) or supported by private religious organisations (e.g. Lutheran Ministries) or NGOs. The accommodation strategy paid little regard to the preservation of communities' social resources. There was no understanding that these must be preserved by transferring networks of residents into temporary housing solutions that keep them intact. We explored how far this was successful in the three housing types.

Tent camps: People were not assigned by neighbourhood networks to these short-term options, but their layout supported some social resources. Community spaces were centrally located and tent entrances faced each other, supporting casual social contact and social monitoring, hence safety. Facilities like showers were centrally located and services were nearby. Children had safe spaces for play. A degree of supportive community life was retained that enabled social capital and collective efficacy [*adaptive capacity*].

Cruise ships: Families of four living near ports, rather than neighbourhood groups, were accommodated on board. Each had two cabins and individual bathrooms. Meals, kitchens, educational and medical facilities, and medical staff plus state support agency representatives were available. Social spaces for gatherings and organised activities were provided which meant that neighbourhood acquaintances may have found each other, reducing the stress of displaced communities. However, families conflicted in the close proximity of the small spaces, requiring intervention by security personnel, resulting in high stress levels.

Trailers: Some families were lodged in cramped trailers on their collapsed home sites or in trailer parks as a transitional option. The spatial layout of their placement in such parks was detrimental to social capital and health. They were located far from town centres and tent camps. Trailer fronts faced the street between rows of trailers. The door of one faced the side of another, and no windows faced the street. There were no communal spaces or walkways due to lack of pre-planning and hurried construction. There was no social monitoring, poor security, and poor access to goods, services, and transport. Elderly and vulnerable people suffered without access to community and health support, and many problems were recorded. People tried to leave these parks as quickly as possible.

The lack of human visibility and spatial opportunities to bond with others, and obtain social support, would have increased feelings of isolation and displacement, and negatively impacted on well-being. The cramped conditions increased the chances of conflict. The lack of social monitoring would have lessened feelings of safety and decreased social cohesion.

Social ties and community bonds [*cognitive social capital*] are important features of well-functioning communities, and can cushion the effects of natural disasters on physical and mental health and well-being. The stress of losing a home and a community after a disaster is two-fold, and may exacerbate pre-existing vulnerabilities in individuals, increase the risk of negative social and health impacts, and impede recovery and resilience. The physical form of cities and human behaviour and psychological response are intertwined, particularly urban form's ability to support sustainable communities. Therefore, the housing and psychosocial needs of communities must be jointly addressed after a disaster.

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221   Erikson (1978)
222   All Gulf Coast material adapted from: Spokane, Mori and Martinez (2012).

The observational team of a psychologist, architect and mental health clinician, who analysed the social impacts of the temporary accommodation, made some recommendations for future disaster planning:

- Accommodation needs, the location of current residents, and social capital resources should be mapped as part of disaster preparedness and community resilience strategies.

- Collaborative urban design – with its community capacity building and empowerment qualities – using iterative design 'charettes' charting suitable temporary housing and rebuild plans should be routine practice in disaster-prone zones. They can match the community's social and health needs with the physical form, and be implemented post-disaster (or if necessary, rapidly prepared) by a team of planners, social, psychological, and health specialists.

- Temporary and transitional housing should be allocated so as to keep neighbours and cultural groups together.

- Social spaces must be provided amid post-disaster accommodation to promote social contact, bonds/shared experiences and support.

- Small cottages, made from hurricane-resistant materials, can be constructed and placed on former housing sites to maintain pre-existing social networks and social resources, or arranged in courtyards to promote social interaction and monitoring.

- 'Incremental housing' – where a core structure is constructed from readily available materials and additional rooms can be built as financial resources allow – can be built on existing sites to maintain social networks and social resources.

Figure 28: Katrina Cottages. Source: Arnold Spokane

8.2.6 Case study: How socially sustainable communities are more resilient communities after earthquakes in Christchurch, New Zealand

We finally explore the impacts of the series of devastating earthquakes in the city of Christchurch, and region of Canterbury, New Zealand, on the built environment and four[223] diverse communities. Major quakes occurred in September and December 2010, and February, June and December of 2011. They were unusually intense creating colossal damage to urban and suburban communities. The February earthquake peak ground accelerations (which describe an earthquake's intensity) were among the highest ever recorded worldwide.

This story supplies a city-level overview of how resilient these different communities were, rather than examining just one population group or neighbourhood. It compares the urban infrastructure, social capital and cohesion before these horrific catastrophes – therefore their urban social sustainability - then immediately after, and up to 15-17 months afterwards. We see the difference that having socially-planned community facilities and spaces, and strong relationships, networks, and organisational abilities before seismic destruction makes to communities in its aftermath, as compared to a lack of these.

We acknowledge that other factors affect resilience. Socio-economic hardship and deprivation weakened residents' ability to be resilient. However, groups experiencing low socio-economic status, ethnic diversity or minority or marginalised ethnicity still had strengths linked to pre-existing social cohesion. Pre-existing institutional support for poorer people and social cohesion are important precursors of community resilience. New Zealand is a Westernised nation with an indigenous population, the Māori people. Māori cultural values underpinned a highly effective earthquake response by *Ngai Tahu* (the largest tribe in the South Island, where Christchurch is located), demonstrating that minority or marginalised people's worldviews can be rich resources for urban planning and disaster response strategies.

Research seeking to understand the factors assisting and restricting community resilience was conducted by a group of health organisations - Canterbury District Health Board (Community and Public Health), Mental Health Foundation, University of Otago, and Quigley and Watts Ltd (a consulting company).[224] The research comprised a literature review, document analysis and qualitative fieldwork undertaken from May to July of 2012, some 15-17 months after the earthquake of February 2011. The data are based on the perceptions of residents ("ordinary citizens") and community leaders interviewed 15-17 months after, rather than health and well-being measures collected before, during and after. Profiles of the four communities are given in Table 15.

Figure 29: Christchurch. Earthquake. Source: totallycoolpix.com

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223   Six communities were surveyed by researchers, but four are relevant to this paper: settled residential communities, as compared to one community workplace and networks of refugees and migrants.
224   All Christchurch, NZ, material adapted from: Thornley et al. (2013).

Table 15: Four Christchurch communities

Name of community	Profile	Impacts of earthquakes
Lyttelton	• Port town 12 miles from Christchurch – separated by hills • Population: 3000 • 84.8% NZ European + a prominent Māori community • Mixed occupational profile	• Buildings on main street destroyed e.g. historic churches • Supermarket, pubs, restaurants, meeting venues – unusable • 2 deaths • Residents left unsure if properties safe for rebuild for a long time due to potential rock fall
Shirley* *Research focused on a social housing neighbourhood	• Suburb 5km from centre • Population: 7000 • Above average ethnic diversity, e.g. Māori and Pacific Islanders • Low income • Many single or sole parent households • Public housing	• Damaged roads, land, property, power, water, wastewater • Liquefaction and dust • Transport problems, lack of shops and medical services • Displacement, disruption, hardship
Inner city east	• Near central business district • Population: about 3500 • Deprived: low incomes, less home ownership • Affordable housing for low-incomes • Above average ethnic diversity, e.g. fewer NZ European, more Māori, Pacific and Asian residents	• Damaged land, property, power, water, wastewater • Silt from liquefaction • 2 deaths and some injuries • Displacement of residents
Marae (Māori meeting houses/cultural community centres)	• Located in rural and urban areas, focus on *Rēhua marae* in suburb and 3 rural *marae* • Paid and volunteer leaders and workers • Community hubs for extended families (*whānau*), individuals with kinship, tribal or other links • Accommodation for some residents • Facilitate celebration of Māori culture, the Māori language (*Te Reo Māori*) and tribal (*iwi*) obligations	• Minor damage at *Rēhua marae* and several rural *marae*; severe damage at one rural *marae* – to buildings, homes, meeting house, accommodation • Largest tribe (*iwi*) on NZ's south island – the *Ngāi Tahu* – used *Rēhua marae* as a hub for earthquake response for Māori and non-Māori in Christchurch • One rural *marae* provided support to the other *marae*

We profile the built environment and community infrastructure, social capital and social cohesion, and community participation in urban planning in the four communities before, immediately after, and 15-17 months after the quakes.
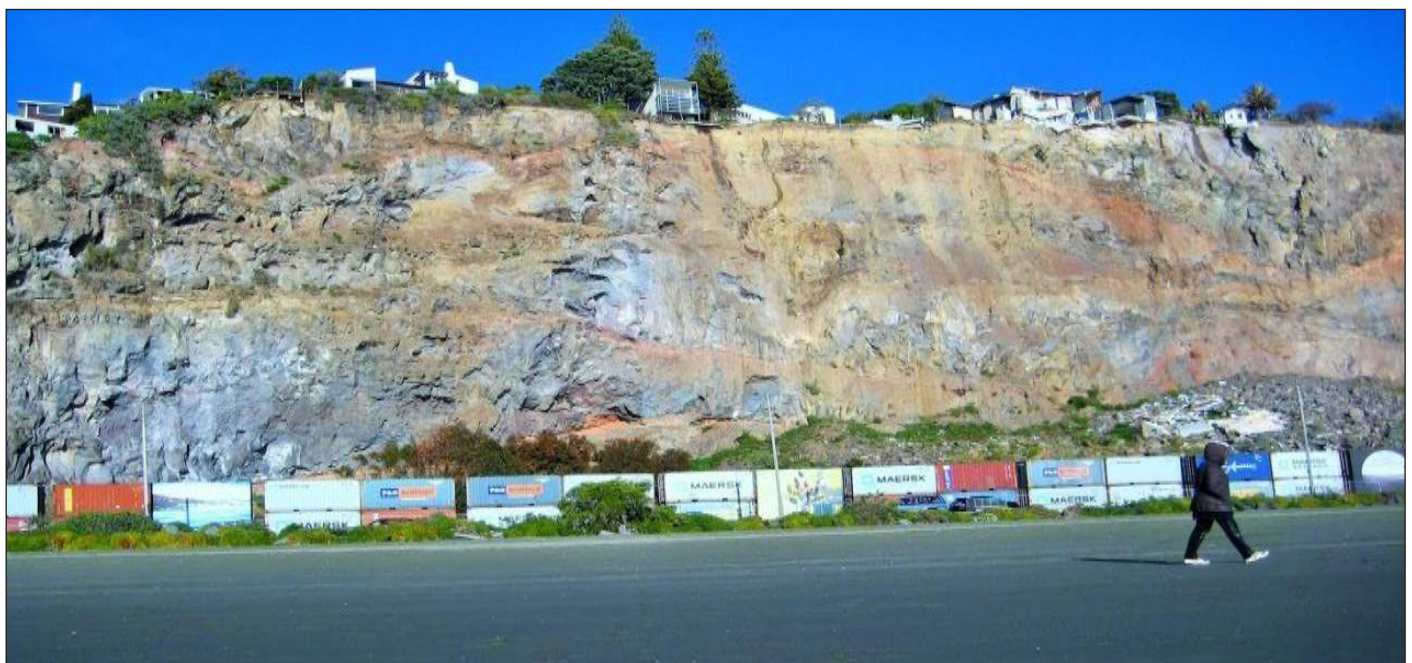

Figure 30: Sumner Beach, Christchurch. Shipping containers used to prevent further rock fall after the earthquakes. Source: Louise Thornley

1) Built environment and community infrastructure

> Community infrastructure consists of venues and spaces for community life, and organisational structures that create social networks or link residents to networks and community leadership, and the support that these can engender.

Headline findings:

- Physical venues and spaces – community halls, shops, libraries, parks, cafes, pubs – and walkable communities that provided incidental and organised social contact, contributed to strong social capital before the earthquakes. The loss of venues afterwards reduced social interaction, affecting social connections and resilience.

- The flexible use of buildings and spaces was crucial to setting up help centres and alternative venues for community meetings, social events, and public performances when the usual facilities were damaged. Communities need physical focal points. Highlights of improvised uses of the built environment were:

    - A parking lot used as a temporary public square for meetings, recreational events and festivities (Lyttelton)

    - *Gap Filler* – a scheme where vacant sites were used to create temporary spaces for people to offer collective projects, e.g. colourful art and recycled park benches covering an old site (Inner City East)

- The loss of fondly regarded historic buildings – ordinarily fuelling attachments to place and collective community identities – had negative psychological effects. Creative uses of the denigrated built environment can provide some relief.

- Pre-existing, strong community-level organisations with links forged to residents before the earthquakes were already poised to support them afterwards, directly impacting resilience. Trusted leaders knew their communities' needs and acted accordingly. Communities without such robust structures fared worse afterwards.

Figure 31: Christchurch. Temporary social space with piano. Source: Louise Thornley

Table 16: Built environment and community infrastructure

Name of community	Before the earthquakes	Immediately after	In the medium term (up to 15-17 months after)
Lyttelton	• Geographic isolation and small scale bounded the community • Incidental social contact on main street • 18 meeting venues • 28 community organisations with strong leadership	*Positives*: • Community venues used as help centres • Leaders and volunteers pro-active in helping community • Music festival hosted on street	*Positives*: • Community organisations helped • Spaces appropriated for community events when normal venues closed *Negatives*: • Loss of amenities reduced incidental social contact • Loss of historic buildings impacted collective community identity
Shirley	• 5 community venues, churches used for events • Few community organisations – 1 per every 3250 residents	*Positives*: • A community organisation with motivated leader and non-local volunteers staffed help centres and support networks • Māori wardens knocked on doors *Negatives:* • Loss of churches, shopping centre and community centre reduced incidental social contact and community capacity • Residents contended that information about available help failed to reach some residents	*Negatives*: • Low attendance at events organised by community organisation • Low participation in discussions about the future
Inner City East	• 3 community venues – providing neighbourhood support and access to networking • 16 community organisations • 10 residents groups	*Positives:* • Community organisation used arts centre as help centre providing support • Organised community celebrations, commemorations and newsletter *Negatives:* • Loss of housing, churches, social infrastructure reducing incidental social contact	*Positives:* • Continuation of support provided by community events to facilitate meetings, events, home visits, networks and communications via various media • Existing venues, organisations and leadership were assets *Negatives:* • Hampered by lack of funds, exhausted staff
***Marae* / *Ngāi Tahu* (the largest *iwi* / tribe)**	• Well-developed tribal organisation with strong leadership and venues (*marae*) • Provided support - cultural, spiritual, social • Hosted large groups and equipped to respond to emergency • Established support programmes for Māori with government and local organisations	*Positives:* • Under auspices of the tribal council overseeing the *iwi's* activities (*Te Rūnanga o Ngai Tahu*), Māori groups and individuals at *Rēhua marae* provided practical, medical, and spiritual support, supplies, shelter, and care to Christchurch's Māori and non-Māori residents • Māori wardens knocked on doors	*Positives/Neutral:* • *Marae* and its community continued to provide support, e.g. feeding people at own expense

Good levels of social capital and cohesion in communities underpin their social sustainability. Related cultural concepts such as the Māori values of *manaakitanga* (caring and hospitality), *kotahitanga* (the *iwi* acting in one accord to support the people of Christchurch, regardless of race, culture or ethnic identification), *whanaungatanga* (a sense of family connection) and *korero* (the opportunity to talk) have a similar emphasis.

Headline findings:

- Good social capital and cohesion in communities, or care-oriented cultural values, before the earthquakes directly impacted on the amount of community-level (not individual-level) support[225] that people provided afterwards. People in communities that lacked social capital (e.g. Shirley) beforehand were less pro-active and resilient at community-level afterwards.

- The following pre-existing social capital-linked factors influenced levels of resilient pro-community behaviours after the earthquake across all four communities:

  - Good communications with neighbours

  - Participation in community and civic events

  - Social solidarity / community spirit (awareness of the need to act for the good of the community)

  - Having shared values (e.g. the Māori) or social strengths that created pride, bonds, and attachments to place or community, e.g. a collective identity based on historic factors or good social cohesion amid ethnic diversity.

- Formal and informal community-level support improved the well-being of both givers and receivers through positive psychological impacts (providing reassurance, reducing fear and isolation, providing a sense of belonging and purpose). Some psychological impacts were also negative as some people expressed feeling burnt out. The provision of support created a post-earthquake culture of innovation and action, thus amplifying community resilience.

- The experience of working together at the community level enhanced community resilience for future adversities.

Figure 32: Christchurch. Earthquake damage.
Source: Louise Thornley

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225   Practical support included checking on people's well-being, feeding and housing displaced people, allowing public access to water from private wells, distributing food and water to neighbours, and undertaking practical tasks, clearing silt, taking elderly people shopping and repairing property. Emotional support included being together, spontaneous gatherings and backyards and on street corners in the months afterwards, meeting, talking, sharing tea and alcohol, prayer.

Table 17: Social capital and cohesion

Name of community	Before the earthquakes	Immediately after the earthquakes	In the medium term (up to 15-17 months after)
Lyttelton	• People knew neighbours • Strong solidarity/ community spirit • Community initiative, volunteering and participation in civic activities • Community-level town identity	*Positives:* • Neighbours socialised, providing support • Residents volunteered in relief effort • Residents organised and participated in community events *Neutral:* • Residents questioned legitimacy of community leaders	*Positives:* • Collapsed social divides • Improved community bonds • Enhanced sense of pride in community • Social support • Improved confidence in collective abilities *Negatives:* • Displaced residents suffered from distance from social networks
Shirley	• Deprivation-linked low levels of well-being • Neighbours didn't know each other or communicate • Lack of connections • Lack of trust • Few long-term residents with leadership skills and community values	*Positives:* • Neighbours, friends, families provided support • A few (but not many) long-term residents helped with community- level mobilisation *Negatives:* • Some residents stayed home out of fear • Lack of volunteers	*Positives/neutral:* • Social support primarily at individual level, which increased friendliness, caring, reduced social divides, re-ordered priorities *Negatives:* • Little collective community action or events • Displaced people leaving reduced sense of community across social divides
Inner City East	• Strong networks • Sense of community • Ethnic diversity - source of strength and part of place-linked community identity	*Positives:* • Residents and neighbours provided support • Residents volunteered in relief effort • Residents attended community events and meetings *Negatives:* • Some people, e.g. Māori, didn't ask for help	*Positives:* • Support, social contact, attendance at social events and community building continued • Support increased, relationships strengthened, social cohesion improved, priorities changed • Area's diversity was a source of strength – varied knowledge to draw upon • Pride enhanced in diversity, community's character and social connections • Stronger sense of community and social connections • Existing sense of place kept some residents in area *Negatives:* • Loss of displaced residents reduced trust, increased social problems (caused partially by deprivation) and divisions, reduced sense of community

Marae / **Ngāi Tahu** (the largest *iwi* / tribe)	• Māori have powerful cultural values for providing support: • *Manaakitanga* – obliges caring and hospitality for all regardless of ethnicity or tribal difference • *Kotahitanga* – uniting to support people regardless of race, culture or ethnic identification • *Whanaungatanga* – a sense of family connection developing from kinship rights and obligations – extended to close reciprocal relationships • the strengths of *Tipuna* (ancestors), *whakapapa* (ancestry) and local history of area • *Karakia* – prayer, and *korero* – the opportunity to talk	*Positives:* • Māori provided support to each other and wider community • These people felt cared for • Māori participated in group activities, improving support and spiritual well-being, including non-Māori in activities *Negatives:* • Some Māori felt unable to ask for help – affecting their ability to provide support	*Positives:* • Māori accommodated displaced family members • the strengths of *tipuna* (ancestors), *whakapapa* (ancestry) and local history of area bolstered commitments to stay in or return to home areas • Providing support reduced isolation, collapsed social and ethnic divides, supported psychological well-being of givers and receivers, strengthened neighbourly connections, increased social contact. • Improved community bonds and connections • Enhanced ability to cope *Negatives:* • Some volunteers left exhausted and psychologically affected

We can compare the behaviours and psychological responses that made the four communities more or less socially sustainable before the earthquakes, and those which helped them to respond more or less resiliently afterwards, as in Table 18.

Table 18: Behaviours and psychological responses that made four communities socially sustainable and resilient

Socially sustainable behaviours and psychological responses	Resilient behaviours and psychological responses
Behaviours: • Communication and relationships with neighbours • Providing neighbours with support • Strong social networks • Volunteering • Participating in civic organisations • Long length of residence *Behaviour/psychological response:* • Self-reliance	*Behaviours:* • Socialising with neighbours • Supporting neighbours • Strong social networks • Volunteering • Participation in community events • Pro-active trusted community leadership who know community well • Community building activities • Social cohesion
Psychological responses: • Social solidarity/community spirit • Pro-community supportive values • Trust in community leadership • Shared place-linked or collective community identity • Sense of pride in the community • Sense of/attachment to place and community	*Psychological responses:* • Positive attitude to diversity • Sense of pride in the community • Sense of/attachment to place and community

Community participation in shaping the built environment can mobilise and empower people through collective action and decision-making. It can increase community bonds and attachments, collective capacity and agency [*adaptive capacity*], and simultaneously create places that meet the communities' needs and reinforce their social strengths.

Headline findings:

- Communities' experiences of participating in urban planning and/or interacting with the authorities before the earthquakes could affect their level of participation in planning the rebuild afterwards. Participation depends on a community feeling respected, listened to, and having a belief that it will achieve results. Prior negative experiences limited or hindered participation (e.g. in Shirley).

- People who pro-actively volunteered and participated in civic events before the earthquakes were more likely to participate in urban planning afterwards.

- Community involvement in decision-making and action improved well-being and resilience by giving people a sense of control and determination. Conversely, bureaucratic barriers to collective action negatively impacted well-being and resilience by creating a sense of powerlessness despite pre-existing community infrastructure and social connections.

- Authorities' failure to incorporate communities' views into redevelopment plans weakened communities' trust in the authorities.

Figure 33: Christchurch. 185 Empty Chairs art installation representing lives lost. Source: Louise Thornley

Table 19: Community participation

Name of community	Before the earthquakes	Immediately after	In the medium term (up to 15-17 months after)
Lyttelton	• Tradition of volunteering, self-reliance and community action - no information on participation in urban planning	*Positives:* • A week after earthquake in February 2011, residents discussed future of town with community leaders	*Positives:* • 7 weeks after, 400 people attended community meeting organised by local agency to air views for report with recommendations *Negatives:* • Frustration that local board had no power to influence outcome, just report their views • Frustration at red tape hampering community action, and lack of timely communication from authorities
Shirley	• Residents felt overlooked and powerless in dealings with authorities	*Positives/neutral:* • Engaged with authorities on limited basis over essential needs e.g. for public toilets *Negatives:* • Felt voices were ignored before and after the earthquakes	*Negatives:* • Residents unresponsive at participating in plans for urban regeneration – failed to respond to billboard and text campaigns • Authority>community dialogue failed
Inner City East	• Active community and voluntary life – no information on participation in urban planning	• No information	*Positives:* • Residents attended a community meeting • Discussed issues, needs and response to earthquake to plan initiatives and input into a City Council Draft Master plan
Marae / Ngāi Tahu (the largest *iwi* / tribe)	• No information available	• No information available	• No information available

Concluding comment

This case supports our argument that a socially sustainable community can also be a resilient one when it has ample social resources and strengths. The built environment and community participation in urban development, can positively influence and increase these.

9   Behaviours and psychological responses in resilience case studies

To conclude our case study analyses, Table 20 compares the behavioural and psychological dimensions from the "resilient neighbourhood community framework" [226] with the pro-community behaviours and psychological responses that helped residents of Surat, Jakarta, New Orleans and Christchurch to be socially sustainable before floods, a hurricane and an earthquake, *and* respond resiliently during and after them. Surat's informal settlement inhabitants are not included as the data did not link any pro-community behaviours to their flood response, although bonding social capital probably existed among regional groups. Socio-economic/income factors are omitted as these factors are often, but not always, a barrier to resilience. It is not possible to separate the social strengths displayed before/during/after the adversities out of these few case studies. The social strengths exhibited in communities before each crisis would most likely have existed during and afterwards, and contributed to pro-community outcomes observed at those stages too. Other behaviours and psychological responses were particularly noticeable after the events. Therefore socially sustainable strengths are also treated as resilient social strengths in this table. It is illustrative rather than exhaustive.

Figure 34: Children play in flood waters after torrential rains in Kampung Melayu, Jakarta. Source: http://bit.ly/2INkAX7

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226   Adapted from Zautra, Hall and Murray (2010).

Table 20: Overall resilient community behaviours and psychological responses

Fundamentals of neighbourhood resilience	Behaviours and psychological responses that contributed to community resilience before/during/after adversities
Neighbours that trust one another	*Psychological responses:* Implied but not mentioned in Surat, Jakarta and Christchurch
Neighbours that interact on a regular basis	*Behaviours:* • Casual social contact (New Orleans) • Socialising with neighbours (Jakarta, Christchurch) • Strong social networks (Surat, Jakarta, Christchurch) • Good communications with neighbours/exchanging news and information with neighbours (Jakarta) • Increased friendliness (Christchurch)
Residents who own their own houses and stay for a while [or rental tenants or informal settlement dwellers that reside in an area for the long-term]	*Behaviours:* • Long length of residence (Surat) • Rapid integration of short-term migrants (Jakarta) • Long length of residence (Christchurch) • Remaining in or returning to local area due to ancestral connections and history (Māori, Christchurch)
Residents with a sense of community* *And other psychosocial orientations and attachments towards places and communities	*Psychological responses:* • Sense of /attachment to place and community (Jakarta, Christchurch)
Social cohesion	*Social process encompassing behaviour and psychological responses:* • Social cohesion (Surat, Jakarta, Christchurch) *Psychological responses:* • Positive attitude to population diversity (Surat, Christchurch) • Wide-ranging knowledge of diverse people helpful to response (Christchurch)
Residents who work together for the common good and are involved in community events + **Voice and influence** (indicator from The Berkeley Group's Social Sustainability Framework)**, and civic empowerment*** *These two categories are amalgamated here as working together for the common good can lead to voice and influence, and civic empowerment	*Behaviours:* • Community mobilisation (Jakarta, Christchurch) • Volunteering (Christchurch) • Participation in community meetings and events (Christchurch) • Community building activities (Christchurch) • Making sacrifices to improve urban infrastructure (Surat) • Participation in urban planning / regeneration (Surat, Christchurch) • Engaging with authorities (Surat) • Cleaning and maintaining neighbourhood infrastructure, facilities and environment (Jakarta)
Formal and informal places for civic gathering* *Including flexible use of spaces and alternative spaces	• Community venues and spaces (Surat, New Orleans, Christchurch) • Social facilities on board cruise ships (New Orleans)

10 Report findings and conclusion

10.1 What behavioural and psychological dimensions should developers promote through built environment constructions?

Table 21 outlines the dimensions of socially sustainable communities by identifying the dimensions from Dempsey et al's "socially sustainable community" framework which overlapped with dimensions from Zaura, Hall and Murray's "resilient neighbourhood community framework" that applied in our case studies (Baldwin and King). Three new additional dimensions were also identified. Although the two pre-existing frameworks in Tables 5 and 6 were derived from academic literature,[227] our empirical investigation demonstrated they are applicable in real life developments, and environmental disaster situations. Below are the shared dimensions of social sustainability and resilience that city policy-makers, planners and designers should seek to influence through plans, designs, and inclusive, democratic community participation. If further case studies were generated from other projects not considered in this report, they might reveal additional dimensions. However, our list provides a comprehensive yet not exhaustive starting point.

Table 21: Dimensions of a socially sustainable resilient community

Social sustainability	Community resilience
Pride in and attachment to neighbourhood Dempsey et al. Baldwin and King	**Residents with a sense of, attachment to, pride in the place / community** Zautra, Hall and Murray Baldwin and King
Social interaction within the neighbourhood Dempsey et al. Baldwin and King	**Neighbours that interact on a regular basis** Zautra, Hall and Murray Baldwin and King
Safety/security (versus risk of crime, antisocial behaviour) Dempsey et al. Baldwin and King	**Safety, security and monitoring** Zautra, Hall and Murray Baldwin and King
Stability (versus residential turnover) Dempsey et al. Baldwin and King	**Residents who own their own houses and stay for a while** [or rental tenants or informal settlement dwellers that reside in an area for the long-term] Zautra, Hall and Murray Baldwin and King
Participation in collective group/civic activities Dempsey et al. Baldwin and King	**Residents who work together for the common good and are involved in community events** Zautra, Hall and Murray Baldwin and King
Social cohesion Baldwin and King	**Social cohesion** Baldwin and King Zautra, Hall and Murray
Social solidarity/community spirit Baldwin and King	**Social solidarity/community spirit** Baldwin and King
Happiness and well-being Baldwin and King	**Well-being** Baldwin and King
Voice, influence and civic empowerment Baldwin and King	**Voice and influence** Baldwin and King

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227   Dempsey et al's (2009) framework was based on theoretical and practitioner perspectives.

Table 22 shows the additional dimensions of community resilience that were evident in our case studies.

Table 22: Additional dimensions of community resilience evident in our examples

Additional dimensions of community resilience evident in our examples	
Sociable placement of neighbourhoods and facilities, layout of streets	• Physical design of neighbourhood that promotes incidental neighbourly social contact (Jakarta) • Centrally located amenities in tent camps (New Orleans) • Spaces for children's play in tent camps (New Orleans) • Main street, Lyttelton, conducive to incidental social contact (Christchurch)
Social solidarity/ community spirit	*Psychological responses:* • Social solidarity/community spirit (Surat) • Civic commitment (Surat) • Sense of responsibility for the community (Surat) • Pro-community supportive values (Māori, Christchurch) • Community bonds (Christchurch) • Strengthening connections with neighbours (Christchurch)
Strong community organisations, well-connected to the community	• Neighbourhood and community-level organisations providing regular and relief support (Jakarta, Christchurch)
Strong and trusted community leadership	*Behaviour/psychological response:* • Pro-active trusted leadership who knew community well (Jakarta, Christchurch)
Sense of pride in the place / community	*Psychological responses:* • Sense of pride in the community (Surat, Christchurch)
Sense of belonging	*Psychological response:* • Sense of belonging (Surat)
Social support	*Behaviours:* • Social support (Surat) • Financial and practical support (Jakarta) • Emotional, spiritual, social, medical and practical support (Christchurch)
Social order	• Compulsory participation in neighbourhood, enforced sanctions (Jakarta)
Social safety/monitoring	• Tent camps arranged with tent fronts facing others (New Orleans)
Identity	*Psychological responses:* • Place-linked or collective community identity (Surat, Christchurch)
Social integration	*Social processes:* • Rapid integration of new migrants (Jakarta) • Collapsing social divides (Christchurch)
Collective efficacy, agency, confidence in collective abilities	*Behaviours and psychological responses:* • Jakarta, Christchurch
Re-ordered priorities	*Psychological responses:* • Christchurch
Well-being	• Positive physical and mental health before the earthquakes contributed to resilience, and was enhanced by pro-community behaviours afterwards (Christchurch)

Further dimensions of community resilience that the urban development of and the built environment can also directly influence are in Table 23.

Table 23: Additional dimensions of community resilience supported by the built environment

Dimension of community resilience	How the built environment can support / positively influence it
Physical dimensions	
Flexible use of spaces and alternative spaces	Socially-planned physical attribute
Sociable placement of neighbourhoods and facilities, layout of streets	Socially-planned physical attribute
Social dimensions	
Identity	Built and biophysical environments are key reference points for personal identities
Social integration	Via the visibility and mixing of social groups in public spaces
Collective efficacy, agency, confidence in collective abilities	Cultivated through community participation in urban planning and collective care of infrastructure

Figure 35: Portland (Oregon). Source: Jan Semenza

10.2 Conclusion

- This report has followed a simple proposition: *in all societies around the world, our public built environments – public spaces, housing and transport stops – should be planned and designed to promote behaviours and psychological responses that are good for communities, as associated with social capital and cohesion ("pro-community behaviours"). These help communities maintain their quality of life and well-being in routine daily life, and strengthen their resilience to adversity during extraordinary environmental events caused by climate change and other natural disasters.* These two goals are inextricably linked by the common social resources that communities need to achieve both, and should not be addressed separately.

- We sketched out a socially-aware planning process whereby: social objectives are incorporated into a building plan, design, and construction through targeted contextual research, community participation, the use of research data to support culturally and socially appropriate design decisions, and study and assessment methodologies are used to monitor and evaluate both the promised social inputs and achieved social impacts.

- Pro-community behaviours help to sustain communities: through the ways that networks operate, people conduct relationships, organise themselves and take action, as motivated and mediated by psychological strengths such as bonds, pride, sense of responsibility, sense of/attachment to place and community etc. There are established links between social capital and cohesion, health and well-being, which improve quality of life, and daily social sustainability.[228] Similarly, to prepare for, survive, recover from and adapt after environmental adversities ("resilience"), urban communities need to maintain and develop their social capital and social cohesion, and associated pro-community outcomes. Adaptive capacity relies on members' abilities to band together and achieve shared objectives. People need the capacity, but also the self-efficacy and agency to be propelled into action. Resilience is both a practical and well-being issue for individuals and communities.

- Urban form and social infrastructure have a critical influence on a community's sustainability and resilience. The built environment contributes to an enabling total environment for the development of social capital and social cohesion. When designed with social goals, its users are more likely to develop strong social resources, connect with places and spaces, and use them flexibly when their form is changed by an adversity. Resilience includes transformative qualities such as reconfiguring a physical place to serve current community needs. A place is only as effective as the way people use it.

- Places, spaces and amenities that have positive social and health effects are more likely to retain residents willing to invest in them both socially and financially and stay long-term, raising quality of life. Investment in socially-aware planning from the start takes longer, but creates buy-in and support that saves on the heavier cost of a failing development that does not meet local needs or have a positive social influence. Social sustainability is important because without strong networked, cohesive communities, the human capital required to build, run and maintain sustainable, resilient cities will wither. The health and well-being of populations contributes to strong economies and societies, and better human capacity to work with contemporary urban and environmental challenges. As well as human benefits, there are also economic and commercial benefits. A more resilient community that can help look after itself and its city after unplanned adversities makes the initial investment in socially-aware planning cost-effective, in respect of rebuilding costs in locations vulnerable to climate change-related impacts and natural disasters. This planning will help create the conditions under which organic solutions will emerge, and make our communities, and the investments within them, more vibrant, resilient, and longer-lasting.

- Ours is not a complex argument but a powerful one in a climate where the social dimension of sustainability and resilience remains sorely neglected, and a topic that appears to befuddle policy and planning officers lacking expertise in behavioural and psychological social matter, and intangible social processes. We have sought to de-mystify these concepts and lay out a practical process that can be followed in any country. Section 11 offers a concrete set of recommendations that can be implemented, drawing on the approaches, tools and methods shown in this report. We urge the policy, planning and development sectors to help communities worldwide respond to urgent urban and environmental challenges by implementing socially-aware planning and design for sustainability and resilience.

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228   Ferlander (2007); Berkman (2000)

11 Recommendations: planning and designing for the socially sustainable, resilient community

The big picture

Rapid urbanisation due to economic growth and population expansion puts pressure on available land, urban infrastructure, and green space, and is occurring faster than governments or the market can provide safely-located, adequate housing or public infrastructure for their growing populations. Climate change can place additional environmental stress on urban infrastructure and populations. This is especially true in developing countries, and those with large numbers of people in poverty who tend to live in the most vulnerable locations and structures. Sustainable approaches to urban development, such as New Urbanism or TOD, therefore provide an urban design approach that responds to these tensions. However, they alone will not suffice. While implementation of plans and high quality construction is crucial, the human dimension of attention to social sustainability and resilience is also essential.

Sub-standard housing and infrastructure pose risks to the social sustainability of communities, and the collective social capacity of a neighbourhood to cope with natural disasters and/or climate change, hence its resilience. A well-built physical environment and infrastructure, designed with social interaction in mind, can increase the social sustainability and resilience of communities.

Recommendations

Stage 1: Scheme Conception and Real Estate Pre-Development

Applicable everywhere

Social sustainability and community resilience are important – perhaps even more important in developing as well as developed countries.

Case example:	**Recommendation:**
Our cases cover all continents: North and South America, Africa, Europe, Asia and Australasia.	Developers in all countries should incorporate the social dimension of planning and design for sustainability and resilience into urban development and construction.

Integration

Expert and technological approaches to urban planning can overlook the dynamic growth in a city and fail to consider unpredictable demographic and micro-level community trends and dynamics, and how the built environment can support these. Residents' and users' strategies for social organisation and life management should be explored during scheme conception, and respected in plans and designs. Designs should enhance social resources and special local strengths such as networks, safety and community bonds. These are important for quality of life, health and well-being in all countries and cities, but especially in social environments where there is a history of division, tension, crime and violence, or areas that are subject to climate change impacts and/or frequent natural disasters.

Case example:
Communities in Buenos Aires, Delhi, Cape Town, Portland and Manchester took part in civic and social activities that involved engaging with built environment spaces in ways that fostered connections in "normal" times. Communities in Jakarta, Surat and Christchurch employed micro-level social strategies to support each other, and manage and renew their physical environments after disasters.

Recommendation:
City governments and developers should integrate and jointly address physical and social sustainability and resilience through planning and design by devising and implementing clear social objectives.

Respectful of change impacts

Developments can cause unintended impacts to the existing social environment, health and well-being of a community. For example, the relocation of a population may adversely affect key social networks as well as livelihood possibilities

Case example:
The residents of Caballito, Buenos Aires, contested the building of isolationist tower blocks that had adverse impacts on neighbourly relations in their tight-knit community. Poor people living in the informal settlements of Surat and Jakarta who were moved to alternative accommodation had a tendency to return if they found life harder.

Recommendation:
Developments should take the impact of changes to the existing social fabric into account from the start and devise schemes that address social needs and provide social benefits.

Stage 2: Research and Community Participation

Research

Planners and designers should collaborate with social scientists to examine and understand a neighbourhood's social environment, its complexity, diversity, and dynamics, and the physical, economic, and political context, so as to act with sensitivity when planning and building a development project. The physical environment can have different social and cultural meanings for residents and users, especially in places with a complex and divisive urban history. The design or development of new or existing sites may affect these meanings.

Case example:
Social scientists analysed the symbolic urban landscape in Belfast so that developers could build progressive accommodation without exacerbating tensions through poorly-informed design. Social scientists devised an assessment framework for the Berkeley Group to measure the social sustainability of designs for new housing communities.

Recommendation:
Developers should employ social researchers to use context-appropriate research methods – both qualitative/ethnographic for depth of perspectives and quantitative for trends in perspectives – to document the local context.
- Developers should consult with local stakeholders: government sector, civil society, business owners, programme financiers – local voices with key knowledge about the local context and any social problems, such as violence and crime, that could be addressed through an urban development.
- The blend of research data, and professional and community perspectives, offers the most holistic and powerful evidence base for informing socially sustainable designs.

Community participation and input

Community participation and input in the urban development and design process, including risk analysis, can help communities and developers identify the social aspects that developments need to consider and or accommodate. This allows them to collaborate on ways of enhancing positive aspects (e.g. social mixing) and improving or minimising negative aspects (e.g. crime) through design and construction, as well giving the community a sense of ownership in improving the urban environment. This is especially important in informal settlements, where establishing pro-active neighbourhood organisations, or strengthening those that already exist, and ensuring that they are included in the development, implementation, and monitoring of plans and programmes can improve the quality of life. This occurs through the development of social bonds, social support, and increased community spirit.

Case example:
Communities in Khayelitsha, Cape Town, helped identify trends in crime and violence so that design elements were incorporated in regeneration that created opportunities for surveillance. These have drastically reduced crime rates.

Recommendation:
Community participation is an inherent and essential aspect of urban development, and should always be included in socially-planned projects. In order to prepare for effective community participation, as well as ensuring that professionals are open to receiving and incorporating inputs, capacity building may be required on both sides.

Timing of participatory studies and assessments

Studies such as Social Sustainability and Community Resilience Assessments, Health Impact Assessments (HIAs), Social Impact Assessments (SIAs), and Co-Design projects should be started soon after the idea for a scheme is conceptualised. These studies should be able to influence plans and not be delayed until after they are finalised or a development constructed.

Case example:
Berkeley Group apply their social sustainability framework in the pre-development phase during the design process as part of planning applications.

Recommendation:
Developers should insist on early research and participatory studies.

Understanding existing needs, resources and strengths

All communities have specific *needs* or *weaknesses* - absent resources and strengths that developments can address. They also have *social resources* such as social capital and cohesion, and social equity. Their *social strengths* are specifically local manifestations of the dimensions of these concepts or other closely related attributes. For example, the identities of places and people may be an outcome of social capital. Ignoring or undermining a community's existing social strengths can lead to the unexpected restriction or failure of a development, with negative business impacts for investors. Plans and designs for new places or the renewal of existing ones can scutinise how they can fit with or enhance, for example, a shared sense of place or attachment to a place, or individual or collective identities linked to a place.

Case example:
Cape Town's VPUU project mapped community needs and social organisational patterns within land spaces designated for renovation. Developers in Caballito, Buenos Aires, failed to consider the impacts of tall tower blocks on existing neighbourly relations and social capital in the streets where these were built. Residents hence found a way to prove that these developments were unsustainable which led to new restrictions on building.

Recommendation:
Developers should collaborate with social scientists and the community to conduct resource or "asset" mapping exercises to document and understand needs (weaknesses), resources and strengths, and match them with development possibilities.

Social capital and cohesion are vital resources

Urban development should promote the emergence or enhancement of these social resources by, for example, encouraging neighbourhood interactions and networks, and social mixing and collaboration among demographically diverse residents. Local people should be given opportunities to participate in community-level civil society and civic activities, including participatory planning, co-design, and maintenance of infrastructure which strengthen a community's governance or sense of ownership of their infrastructure. These increase their vested interest in improving, protecting and restoring their urban environment after a crisis.

Case example:
Residents of the village of Santa Ana, Paraguay, cultivated and maintained strong social capital and cohesion by collaborating on the maintenance of their infrastructure. Residents of Inner City East, Lyttleton and Māori communities in or near Christchurch had strong traditions of volunteering and civic activity before the earthquakes, which meant that substantial numbers helped their communities and used spaces innovatively afterwards.

Recommendation:
Developers should intentionally investigate ways of promoting social capital and cohesion through designs, public and local organisations' participation in the governance and ownership of infrastructure.

Knowing the community characteristics that promote social cohesion

Knowing which demographic characteristics bind some people, for example, long length of residence and income equality, may illuminate those which divide others. These characteristics may vary by location. Less competition between diverse people may result in more personal investments in a place. Stronger social capital and cohesive community relationships better equip community members to behave resiliently.

Case example:
Surat's long-term, middle-income residents were able to act collectively to support the city during ordinary life and crises, despite being regionally and ethnically diverse.

Recommendation:
Urban programmes should analyse the state of social cohesion, and target fragmented populations with urban projects that build social capital and cohesion. Intra-group participation in urban schemes can help build a common sense of purpose, social solidarity and community spirit.

Socio-demographic diversity as a source of strength

Although socio-demographic diversity is sometimes a challenge to urban social cohesion, cohesion can be a strength for socially-aware planning. Diverse people represent a variety of perspectives and interests. When they participate in development, they can identify more needs, resources, strengths, possible inputs, impacts and longer-term outcomes. Cities that cater to multiple perspectives and interests may attract wider investment. Diverse perspectives, interests, skills and values can mean more resources and strengths to draw upon during crises.

Case example:
The ethnically diverse inhabitants of Christchurch's Inner City East neighbourhood regarded their diversity and cohesion as a source of pride which motivated a collective response after the earthquakes. The Māori population had cultural values of caring and hospitality which compelled them to help all people regardless of background.

Recommendation:
Developers should embrace rather than fear socio-demographic diversity when approaching a new community, and harness multiple perspectives to their full advantage.

Principles of participatory planning and co-design

There should be shared objectives that inspire all key sector stakeholders to give their input. These objectives should be remembered throughout the programme.	**Case example:** Cape Town's VPPU aimed to design out crime and promote community and economic development, and sustainability, which inspired and motivated the community and professional stakeholders alike.
All social and cultural groups present in an area should be consulted and given opportunities to participate in the development. Minority perspectives, for example, those of indigenous people, ethnic, religious, and economic minorities should be included.	**Case example:** Māori people offered socially impactful suggestions for the proposed Bus Xchange upgrade in Christchurch.
Adopting a democratic ethos and participatory or community-led approaches to development are the most successful methods of building trust with a community.	**Case example:** Community members who participated in Cape Town's VPUU project, and the restoration of public square and spaces in Portland and Manchester were encouraged by a democratic ethos and decision-making styles.
Co-design interventions should appeal to a wide demographic through transparent, accountable processes, and community outreach and education programmes. Ideally, economic opportunities should also emerge.	**Case example:** Cape Town's VPUU embodied inclusive principles and methods, a successful feedback mechanism, and participatory and income generation options for community members.
When co-design schemes are conceived of, their organisers should aim to combine the urban development project with community development, and think of broader outcomes for communities, for example, the creation of economic opportunities as project spin-offs.	**Case example:** Portland residents who regenerated public squares improved their mental well-being and social capital through participation, strengthening their community. Cape Town's VPUU project provided stalls for traders and employment for inhabitants in managing amenities. The city's re-designed central railway station offered informal vendors the opportunity to sell produce in a dedicated roof-top space.

Recommendation:
Developers implementing participatory and co-design projects should adopt these principles.

Resource mapping for resilience

- In areas vulnerable to adverse weather events and natural disasters, urban development leaders should commission social scientists to document and analyse communities' social resources and strengths, and how these intertwine with physical resources on a routine, ongoing basis as part of City Sustainability and Resilience Strategies.

- A pre-crisis record of where people live should be created, so that supportive social groupings may be allocated post-crisis housing together. This may preserve and strengthen existing social capital, social support, and collective efficacy.

- Records should be kept up-to-date, so they can be consulted during the planning of post-crisis housing and rebuilding.

- The micro-scale social and community adaptation strategies employed by urban residents need to be documented before and after crises so that they may be enhanced by formal and macro-level strategies.

- Providing, maintaining, cultivating and restoring physical and social resources should be addressed jointly after a crisis.

- The health impacts of collapsing community structures and resources, and social solutions provided by different forms of temporary and transitional housing should both be recorded. Health impacts can be more persuasive than social ones at a policy level.

Case example:
Jakarta's *kampung* communities adopted their own micro-level collaborative strategies to cope with flooding, as enhanced by formal neighbourhood organisations. The lessons that emerged from the Gulf Coast case as regards the separation of key social support networks after a disaster shows the importance of pre-disaster records for highlighting social groupings.

Recommendation:
Urban development leaders and developers planning for social and physical resilience should adopt these principles.

Community relationships with planning and city authorities

Pre-existing mutual trust and respect between authorities and communities are important. Communities who have positive experiences of participating in development and planning before a crisis are more likely to participate in one afterwards. Participation will help a community to heal from the trauma of losing their built environment if they can contribute to re-envisaging and restoring it. This is particularly so of the sensitive restoration of buildings or city places that formed reference points for a shared sense of place or attachment to a place, or personal or group identities. The results of participatory processes and consultations should be made public as soon as possible. A lack of transparency and incorporation of public input will weaken trust in authorities.

Case example:
The "Surtis" of Surat had a positive relationship with the local authorities through "normal" and "crisis" times. Residents of Lyttleton near Christchurch had a strong civic culture and community leadership before the earthquakes, and large numbers gave immediate input into post-disaster planning. However, Shirley residents experienced a history of mistrust and negative dealings with local authorities, so engaged minimally or failed to respond afterwards.

Recommendation:
Local authorities should invite public participation in rebuilding and restoration at the earliest possible opportunity, and act transparently and reliably regarding the findings and decision-making resulting from participation.

Stage 3: Design Decisions and Implementation

Evidence-based decision making

Evidence-based design solutions can have a strong impact. The intended outcome of a design decision should be envisaged when made, and supported by evidence and advice from the community and experts.

Case example:
Cape Town's VPUU project involved experts and the community in analysing violence and crime problems, and accordingly designed walkways, public spaces and surveillance buildings that resulted in a colossal reduction in crime levels. Social scientists in Belfast used qualitative and ethnographic social research methods to collect evidence of the local interpretation of the urban landscape to inform careful design decisions.

Recommendation:
Developers should ensure design decisions have been guided by robust supporting evidence of their likely social impacts.

Design principles

Site locations and design features should be selected that may enhance existing positive social resources, and also create new ones. Design features with a positive impact in one place may not have the same impact elsewhere.

Case example:
Social scientists in Belfast recommended that developers located the entrances to a housing complex in neutral spaces in a sectarianised urban landscape to promote social cohesion between tenants. Row houses (known as terraced houses in the UK) were not a universal design solution for neighbourly communications, promoting it in Buenos Aires but not in Delhi.

Recommendation:
Planners and designers should go beyond utilitarian design to create places and infrastructure that serves residents' or users' social and cultural needs, rather than just meeting financial or engineering requirements.

Mixed neighbourhoods

Planners and designers should build mixed land-use and demographically mixed neighbourhoods with open space at neighbourhood and precinct level to promote intra-group mixing and bridging social capital between social groups, by age, ethnicity, socio-economic status and so on. Mixed income and mixed use development is more socially and environmentally sustainable, but often requires non-market financial assistance to ensure economic sustainability.

Case example:
Residents of several mixed-use neighbourhoods in Delhi, where block housing was built around or near communal spaces, interacted and cultivated neighbourly relationships in the spaces and lively streets.

Recommendation:
Developers should support mixed neighbourhoods to the best of their ability, and seek ways of sustaining such developments in the longer-term.

Housing with social infrastructure

Social spaces and infrastructure are critical to the development of social capital and cohesion in new housing developments, in addition to the placement and design of dwelling units. High density, well-structured residences with adequate spaces and facilities can support the increase of feelings of safety, and higher levels of trust.

Case example:
Berkeley Group use their Social Sustainability Assessment Framework to assess the effectiveness of new developments, which gives residents a chance to offer feedback on their experiences. This information is used to constantly re-evaluate new design features.

Recommendation:
Developers should build housing with well-integrated social infrastructure and social spaces.

Minimise relocation and upheaval

Temporary and transitional housing should be allocated in ways that keeps bonded neighbours and cultural groups together. It should be arranged so that shared social spaces are provided between the units that facilitate social contact.

Case example:
The re-location of informal settlement dwellers in Surat and Jakarta, and Gulf coast residents into temporary accommodation after a hurricane demonstrated that unless key social groupings and resources were preserved, these housing allocations could have adverse impacts.

Recommendation:
Same as previous recommendation.

Consider incremental housing

Incremental housing should be considered to provide a basic structure and allow individuals to improve incrementally or progressively as resources permit. Existing neighbourhood social structures and networks can survive and thrive if built upon existing housing sites.

Case example:
Experts who observed how communities fared in socially inadequate post-disaster housing in the Gulf Coast case made a strong case for the health and economic benefits of building on existing sites.

Recommendation:
Same as previous recommendation.

Need for community space

Communities need places and spaces for incidental social contact, and physical venues and spaces for events which bring groups of communities members together. Safety and security is improved in spaces with a lively presence of demographically diverse people, which in turn improves levels of trust in others. Social mixing between diverse groups is a starting point for economic and social equity and inclusion. After a crisis, communities must be allowed to use alternative spaces to meet their social and housing needs – otherwise the social health of the community and psychological health of individuals will suffer.

Case example:
In Delhi, block housing with internal and nearby external public spaces supported neighbourly relations through incidental and organised social contact. The Portland public squares case showed how these can be used in "normal" times, while the Christchurch case showed the need for flexible and creative uses of spaces in emergencies.

Recommendation:
Developers should ensure that all neighbourhood developments include well-located and accessible public spaces and promote multi-purpose, flexible usages.

Transport stops

Transport stops are distinctive features of urban areas and create a meeting-place and interchange for large numbers of people as well as serving as a connection point for transport services. They are city places in their own right, and the spaces around and within them are sometimes overlooked areas that can be utilised to promote improved interaction between people, as well as strengthen a place's identity and offer livelihood possibilities.

Case example:
Cape Town's central railway station was re-designed to provide spaces for the city's residents to mix and for informal trade. A pre-development consultation proposed that Christchurch's Bus Xchange included spaces for performances and socialising.

Recommendation:
Planners and designers should think beyond the utilitarian and commercial uses of transport stops and utilise the social and place-making opportunities provided by the internal and external spaces within and around them for positive social impacts. They should integrate the sociability and visibility of people, and the beneficial effects that places can have on well-being into their designs.

Equitable access

Poorer people shouldn't be located on the fringes of a city, but given equitable access to its advantages, and key spaces.

Case example:
The spaces around Cape Town's central railway station were located near to low-income settlements and were designed to allow poorer people to congregate and sell produce in them.

Recommendation:
City officials, planners and developers should ensure that affordable and accessible housing and public spaces for congregation and recreation are located within a reasonable distance of a city's key economic opportunities and amenities to democratise access.

Stage 4: Monitoring and Evaluation

Community participation in monitoring and evaluation

Community members who participate in the initial and ongoing monitoring or evaluation of schemes, particularly when they have contributed, can develop a sense of ownership and empowerment, which raises the likelihood of becoming psychologically invested in a place, and feeling motivated to take care of it. Communities affected by crises should participate in monitoring and evaluation of plans and restoration projects themselves to bring their concerns to the relevant authorities, and also experience psychological healing through witnessing and participating in the recovery process.

Case example:
Researchers in Delhi, Portland, Manchester, Yala, and the UK's Berkeley Group blended qualitative and quantitative methods to evaluate the social sustainability, health and well-being effects of housing developments and public squares and parks. Cape Town's VPUU project gave Khayelitsha residents the chance to carry out an ongoing evaluation survey themselves.

Recommendation:
Developers should ensure that communities as well as experts conduct and deliver monitoring and evaluation exercises to maximise opportunities for empowerment.

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Figure 36: Christchurch. 185 Empty Chairs art installation. Christchurch. Source: Louise Thornley

Report ends here