

Incorporating Social Sustainability Themes in the Built Environment

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Abstract: According to the United Nations 2005 World Summit, social sustainability (SS) is one of the three equal pillars of sustainability. However, in practice, sustainable development usually inclines towards one of the pillars, mostly the environmental pillar followed by the economic pillar and least of all, the social pillar. While environmental and economic arguments are often well-defined and measurable, SS is defined differently in various disciplines and the abstraction and complexity of the theory of SS has hindered its translation into policy and practice. A socially sustainable community is one where the needs of its members are satisfied in the present and for generations to come. Consequently, SS themes can be seen as satisfiers of human needs. SS concerns individuals, communities and whole societies which do not live in a vacuum but within built environments. Previous studies accentuate the mutual effects between people and their surroundings. Thus, it is significant to investigate the role of the built environment – architectural and urban projects- in shaping communities. There is growing acknowledgment that addressing SS in the built environment is an important issue but it has not been adequately investigated. There is extensive knowledge on the challenges and methods of pursuing environmental and economic sustainability but there is much to be learnt about how the built environment –and the process of producing the built environment- can contribute to the SS of the community. Hence, this study aimed at identifying themes/satisfiers for pursuing SS through the processes and outcomes of the built environment. The study methodology depended on three phases. First, the literature was reviewed for the concept of SS, its general definitions, its relation to the Fundamental Human Needs (FHNs), the general themes of SS and the literature on social needs that can be attained through the built environment. Second, a comparative analysis was done for the identified themes in relation to the FHNs in order to discover which needs have been adequately addressed and which require more attention. Third, the themes identified by all the reviewed researchers were then merged and a reference list of SS themes/satisfiers was compiled. The list included: Creation; Democracy and Participation; Education and Skills; Equity; Identity; Leisure; Social Capital; Wellbeing; Work and Income. Recommendations include the need to explore the themes in the local context to check validity and suitability in order to incorporate social sustainability in all stages of architectural and urban projects.

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1. Introduction

One of the most popular interpretations of sustainability was proposed by the UN at the 2005 World Summit, when it noted that sustainability required the reconciliation of environmental, social equity and economic demands - the "three pillars" of sustainability (United Nations, 2005). The UN assembly believed that the three pillars were "interdependent and mutually reinforcing". In reality, sustainable development usually inclines towards the environmental pillar followed by the economic pillar and least of all, the social pillar (Global Reporting Initiative, 2000; OECD, 2001; Barron et al., 2002). One reason for this imbalance is that environmental and economic arguments often tend to be more persuasive due to their quantitative nature (Littig &

Grießler, 2005). Other reasons that SS has not been considered as an equally core target for sustainable development projects is the difficulty of defining its objectives, operation and indicators. The abstraction and complexity of the theory has hindered its translation into policy and practice (Colantonio, 2009).

Although SS has not been equally considered, its importance is not in dispute. The SS of a community should not be left to chance; it must be planned for using a premeditated infrastructure. Laws, policies, processes and the built environment should be designed with the purpose of facilitating and achieving SS. SS should become a goal for everyone: governments, service providers, community groups and the private and voluntary sectors.

Architecture and urban planning as the most important producers of the built environment, have responded to the call for sustainability. Sustainable architecture is “*a revised conceptualization of architecture in response to a myriad of contemporary concerns about the effects of human activity*” (Williamson et al., 2003). This applies to the discipline itself (education, planning, design and construction processes) as well as the product of the discipline (the built environment). Although there is extensive knowledge on the challenges and methods of pursuing environmental and economic sustainability in the field of architecture and urban planning, there is still much to be learnt about how the built environment can help create a socially sustainable community.

Every new project in the field of the built environment, whether it is a single facility or an urban development, holds challenges and opportunities to the SS of the involved community. Putting SS in focus entails adopting a holistic approach that considers every concerned person and the social consequences of every decision. Therefore, this study aimed at identifying themes for pursuing SS through the processes and outcomes of the built environment with the purpose of providing the people involved in building new projects with a foundation upon which to add their innovations accordingly.

2. Methodology

The study methodology depended on three phases. First, the literature was reviewed for the concept of SS, its general definitions, its relation to the Fundamental Human Needs (FHNs), the general themes of SS as well as the literature on social needs that can be attained through the built environment. Second, a comparative analysis of the identified themes in relation to the FHNs was undertaken in order to discover which needs have been adequately addressed and which require more attention. Third, the themes identified by all the reviewed researchers were then merged and a reference list of SS themes/satisfiers was compiled, to be pursued through architectural and urban projects.

3. Literature review

The literature review is divided into three sections. The first section includes a review of the concept of SS, its general definitions and its relation to the Fundamental Human Needs (FHNs). The second section reviews the general themes of SS. The third section reviews the literature on social needs that can be attained through the built environment in order to find out the role of the built environment and consequently, of architectural and urban projects in establishing socially sustainable communities.

3.1. Social Sustainability and Fundamental Human Needs

In order to pursue SS it must be first defined as distinct from environmental or economic sustainability. Once it is defined, it will be easier to translate into policy and practice, and subsequently assessed in sustainable development projects. By reviewing the literature on SS concepts, it appears that most conceptions are not grounded in theory but rather shaped by subjective perception of practicality and political agendas. Analytical, normative and political aspects of SS are frequently confused. SS concepts come under different titles such as social standards, institutional sustainability or democratic rights (Littig & Grießler, 2005). Researchers hold differing opinions on the interpretation of SS. They are at odds on whether SS is a state or a process (McKenzie, 2004). Some have no reference to the role of the physical environment, while others provide a special focus on urban development. Some define it as distinct from environmental and economic sustainability, while others entwine it with economic rights. Some specific objectives of SS (social justice, human dignity, participation) are mentioned in some definitions, while other definitions leave it up to the community in focus to define its own objectives (Colantonio, 2009).

However, it is possible to break down SS into its basic meaning to get a clearer understanding of what it is about. Since sustainability is the capacity to endure, then SS is the capacity of a community's social system to endure. In this light, a general definition of SS is described as: *the capacity of a community's social system to endure and prosper, continuously expanding to improve the quality of life for its members.*

The social system described in the definition of SS will not endure unless the needs of most of its members are satisfied, and future generations remain satisfied. Although the needs of different communities may seem to differ, however, the theory of FHNs developed by Manfred Max-Neef (2006) states that human needs are constant in all cultures and throughout time. The FHNs are: Subsistence, Protection, Affection, Understanding, Participation, Leisure, Creation, Identity and Freedom. He hypothesized that these needs are not hierarchal and cannot be substituted for one another. What differs according to time and culture is the method -*satisfier*- by which these needs are satisfied (Max Neef & Ekins, 2006). Max Neef classified the *satisfiers* for each FHN into the existential needs of Being (attributes, personal or collective), Having (institutions, norms, mechanisms, laws...etc), Doing (actions, personal or collective) and Interacting (locations and social environments). For example, regarding the need for Understanding, possible satisfiers are receptiveness, curiosity and astonishment

(Being); literature, teachers and educational policies (Having); investigation, study and experiment (Doing); schools, universities and family (Interacting).

Satisfiers may include, but are not limited to, forms of organization, social and political structures, social practices, values and norms, spaces, policies and processes, and tangible and intangible assets (Max Neef & Ekins, 2006). The choice of *satisfiers* is one aspect that defines the culture of a community. In this sense, in order for a community to be socially sustainable, the members of the community should identify their chosen satisfiers of FHNs in a democratic participatory bottom-up process. Although these satisfiers differ according to time and culture, it is possible to form an idea about common satisfiers from a review of the themes of SS identified by researchers. The next section will review some of the most prominent research on SS themes.

3.2 Social Sustainability Themes

Researchers have investigated SS and have compiled lists of themes that they believed are fundamental to pursuing SS. Nine of the most prominent studies on this topic are summarized below:

- *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*, 1992, by Robert Chambers and Gordon Conway, on behalf of the Institute of Development Studies, a leading global charity aiming to improve people's lives through research, teaching and communication on accelerating global development. Chambers realized that conventional development did not produce the desired effects and that humankind was additionally facing an enormous population pressure, so he developed the idea of "Sustainable Livelihoods" with the intention of enhancing the efficiency of development.

- *Social Sustainability and Whole Development: Exploring the Dimensions of Sustainable Development*, 1999, by Ignacy Sachs, a socio-economist specialized in development at the École des Hautes Études en Sciences Sociales, Paris. He served as UNESCO adviser for the preparation of the World Summit on Social Development. Sachs realized that the economic discourse was dominant in most international organization's approach to sustainable development. His concern with SS was a reaction to this realization. His research highlighted the values of equity and democracy.

- *Pathways towards a sustainable future*, 2001, by the Hans-Boeckler-Foundation, an agency of the German Federation of Trades Unions, with special responsibility for questions of labor codetermination, research and education. This paper is a study by the German-based "Work & Environment Interdisciplinary Project" sponsored by the Hans-Böckler Foundation. The paper identifies a set of five

SS criteria – will be discussed later – which can be applied in assessing policy scenarios.

- *Assessing Social Sustainability: The Social Dimension of Sustainability in a Socio-Economic Scenario*, 2001, by Ines Omann and Joachim H. Spangenberg, on behalf of the Sustainable Europe Research Institute (SERI), a Pan-European think tank exploring sustainable development options for European societies. The authors argue that SS focuses on personal assets (education, skills, experience...etc) and institutional mechanisms (democracy, participation and equity).

- *Indicators for Socially Sustainable Development*, 2002, by the Department for International Development (DFID), a government department that leads the UK's work to end extreme poverty around the world. The paper identifies four key themes within socially sustainable development and investigates the availability of socially sustainable development indicators for measuring progress along these themes. It offers suggestions on how best current practice might be taken forward and concludes by presenting some policy implications

- *Sustainability Appraisal: A Social Perspective*, 2004, by James Baines and Bronwyn Morgan, of Taylor Baines & Associates, New Zealand. It is a firm founded in 1989 as an independent research provider and consulting firm, working mainly in the areas of: Social & natural resource research assessment, policy & management and Participatory processes in strategic planning and evaluation. The report described aspects of social sustainability and gave a preliminary indication of analytical tools and procedures for practical integration.

- *Social Sustainability: Towards Some Definitions*, 2004, by Stephen McKenzie, a research associate at the University of South Australia Business School. This paper is within the common research agenda of 'sustainable societies' at the Hawke Research Institute, Australia's largest social science and humanities institute. This paper charts the emergence of SS as a concept and attempts to provide a framework for future discussions of SS as distinct from environmental or economic sustainability. The author provides a definition of SS and ten features that are indicators of the condition of SS. He argues that steps taken towards the establishment and implementation of these features are aspects of the process of SS.

- *Social Sustainability: An Exploratory Analysis of its Definition, Assessment Methods, Metrics and Tools*, 2007, by Andrea Colantonio, an urban geographer and economist who specialises in the investigation of the complex linkages between urban growth, economic development, sustainability

and the geographies of development in both developing and developed countries. This paper is one of a series of working papers which forms part of a wider research programme examining how the 'social dimension' of development must be considered alongside economic and environmental dimensions within a Triple Bottom Line Approach to sustainability. This paper examined the approaches and methodologies to define, assess and implement social sustainability. The author identified thirty eight thematic areas of social sustainability, arguing that SS stems from improvements in these thematic areas.

- *WACOSS Model of Social Sustainability*, 2008, by the Western Australian Council of Social Service (WACOSS), a not-for-profit, member based organisation in the social service sector. WACOSS developed the model based on five principles to serve as a framework for the Government in considering its commitment to social sustainability in the State Budget and to provide a foundation on which the community sector can engage with both Federal and State Governments across the broad range of reforms currently underway.

Although the reviewed researchers of SS did not explicitly base their work on the theory of FHNs, a correlation in their studies can be observed: that the beneficiary is ultimately the human being. Therefore, the themes of SS identified by researchers can be seen as satisfiers for FHNs.

3.3 Social Themes in the Built Environment

There is no single responsible authority that can independently deliver socially sustainable communities. SS cannot be guaranteed through the design of the built environment alone, nor solely through policies, processes and structures. However, the built environment as a setting for living and interacting can either facilitate or hinder SS in a community in view of the fact that environments have the power to enhance the wellbeing of individuals and their communities (Srinivasan et al., 2003; Institute of Health, 2010; Frank et al., 2012;). Moreover, the process and outcome of the built environment holds numerous potential benefits for a community. New architectural and urban projects provide job opportunities and prospects for new skills training for local professionals, businesses and labor. Design processes that adopt meaningful community participation empower community members to become stakeholders and to pursue larger long-term goals. These processes provide opportunities for communication and collaboration between different groups in the community, and opportunities for community members to discover their own values, heritage, culture, and social context. In this way, the planning and design process provides one method to ensure that the wealth of information latent in the

community is revealed, enhanced, and maintained over time (American Planning Association, 2013).

Therefore, it is crucial to assure that the goal is twofold: to integrate SS themes within the planning, design and construction processes, as well as to produce built environments that contribute to the positive social experiences of their users during the operation stage. Every decision made by project teams has a social impact. Therefore, this part includes a review of some of the most significant contributors in this field either individuals, organizations or programs, in order to reach a coherent and inclusive vision of the role of the built environment in promoting social sustainability.

In his book *Designing Places for People*, C.M. Deasy (1985) emphasized that architects should be well informed in the field of human needs and behavior to be able to create buildings that truly satisfy their users' needs. He studied previous theories on human needs such as Maslow's Hierarchy of Needs and from them, he identified a subset of eight interrelated motivating factors that can be affected by the built environment. Deasy explained that these factors are interrelated and are difficult to separate. However, some are likely to be more important in certain settings than others. He first provided an overview about how design can affect each of these factors then he analyzed them more deeply in different settings such as housing, offices, congregational spaces, commercial spaces, hospitals and educational facilities. The eight human motivating factors that can be addressed through interventions in the built environment as identified by Deasy are:

Communications: considering settings with suitable ambient conditions for effective personal communications.

Cue Searching: setting up cues to understand what is going on to ensure personal safety and assist wayfinding.

Friendship Formation: considering proximity and contact, which are two factors that greatly affect friendship formation between people, when designing settings that encourage human interaction.

Group Membership: supporting people's tendency to form small groups of two or three individuals via creating places to accommodate them.

Personal Safety: promoting physical and psychological safety in built environments.

Personal Space: providing appropriate intimate, personal, social and public distances among people.

Personal Status: communicating the status of the building owner (or user) to the visitor through allocation of floor space, window locations, furnishings and other amenities.

Territoriality: distinguishing individual (and group) space and possessions in a clear way to prevent

conflict. Encouragement of territoriality is sometimes used as a strategy by designers to enhance security and feelings of pride and identity.

There are also several organizations that investigate the implementation of SS in urban planning; The Young Foundation is one of the most significant contributors. It is a non-profit, non-governmental think tank based in London that specializes in social innovation. In their report, *Design for Social Sustainability*, they identified six objectives as important foundations for social and cultural life (Woodcraft et al., 2011). These objectives are:

Diversity: tolerance, respect and engagement with people from different cultures, background and beliefs.

Equity: opportunities for all people to be socially included and have similar life opportunities.

Identity: a sense of community identity and belonging.

Leisure: opportunities for cultural, leisure, community, sport and other activities.

Security: low levels of crime and anti-social behavior with visible, effective and community-friendly policing.

Social interaction: friendly, co-operative and helpful behavior in neighborhoods.

In a report titled *Social Equity in the Built Environment* published in October 2013, the United States Green Building Council (USGBC) acknowledged that its green building certification program: Leadership in Energy and Environmental Design (LEED) had not clearly defined social metrics in its rating system (Rosenberg & Todd, 2013). Accordingly, it published this paper in order to explore how building projects can address social equity. The paper identified three kinds of stakeholders that should be considered when addressing social equity in building projects. These stakeholders are: people directly involved in the project such as the project team, contractors, workers, etc; the local population surrounding the project; and people involved in or impacted by production or disposal of materials used in the project, or its by-products. The paper proposed a preliminary framework for addressing social equity in the built environment which identified three primary areas to be covered:

Community/ quality of life: comprises accessibility, affordability, equality, and quality of life and community engagement.

Economy: concerns support for local workers and businesses, especially those with a focus on green products and services. It also concerns fair wages, benefits and education.

Individual health and well-being: includes consideration for the health of on-site and off-site

construction workers, building occupants and surrounding community.

The Social Economic Environmental Design program (SEED) provides a common standard to guide, evaluate and measure the social, economic and environmental impact of design projects. SEED's mission is to advance the right of every person to live in a socially, economically and environmentally healthy community (SEED, 2014). Based on their belief that involving the local community is a highly effective way to sustain the health and longevity of a place or a community, they guide professionals to work alongside locals who know their community and its needs best. The SEED guiding principles are:

Empowerment: advocating with those who have a limited voice in public life.

Democracy and Inclusion: building structures for inclusion that engage stakeholders and allow communities to make decisions.

Equality: promoting social equality through discourse that reflects a range of values and social identities.

Identity: generating ideas that grow from the local community and build local capacity.

Conservation: designing to help conserve resources and minimize waste.

The Living Building Challenge is a green building certification program for building at all scales. It aims to provide a framework for design, construction and the relationship between people and all aspects of the built environment (Living Building Challenge, 2014). The program evaluates projects in seven performance areas or 'Petals' including an Equity Petal and a Beauty Petal. The intent of the Equity Petal is to correlate the impacts of design and development to its ability to foster a true sense of community. The Equity Petal has three imperatives:

Democracy and Social Justice: ensuring accessibility to all members of the public regardless of background, age and socioeconomic class - including the homeless - with reasonable steps taken to ensure that all people can benefit from the project's creation.

Human Scale and Humane Places: providing design guidelines that aim to create human-scaled places to promote culture and interaction.

Rights to Nature: promoting access to fresh air, sunlight and natural waterways for any member of society or adjacent developments.

On the other hand, the intent of the Beauty Petal is to recognize the role of beauty in elevating spirits. In this Petal, the imperatives are based merely on genuine efforts without projecting aesthetic values on others. The purpose is to understand people's objectives and know what effort was made to enrich people's lives with each square meter of construction on each project. The Beauty Petal has two imperatives:

Beauty and Spirit: considering design features intended solely for human delight and the celebration of culture, spirit and place appropriate to its function.

Inspiration and Education: providing educational materials about the operation and performance of the project to the public to share successful solutions and to motivate others to make change. Non-sensitive areas of the project must be open to the public at least one day per year to facilitate direct contact with the Living Building Challenge.

Project for Public Spaces (PPS) is a nonprofit planning, design and educational organization founded in 1975 and dedicated to assisting people in creating and sustaining successful public spaces that build stronger communities. They have completed projects in over 3000 communities in 43 countries and all US states including campuses, civic centers, parks, markets and multi-use facilities. They have developed several tools to help communities evaluate places. Based on their experience, PPS identified four key criteria of successful public spaces (PPS, 2013):

Access and Linkages: the place can be reached easily and all areas within the place are easily accessed.

Comfort and Image: the place is comfortable and has a pleasant image.

Sociability: it is a sociable place: one where people socialize.

Uses and Activities: people are engaged in activities there.

Despite the difference in terminologies used by the aforementioned organizations and programs, a recurrence in themes and ideas is noticed. Most research is directed at addressing the needs of the end users of the built environment, except the research

carried out by the USGBC, which noted the importance of considering the needs of people involved in the design and construction processes, the local population surrounding the project: and people impacted directly or indirectly by the production or disposal of building materials and resources.

4. Findings and Discussion

The focus of this study was to find SS themes – satisfiers of FHNs – for all the stakeholders involved or affected by the built environment in focus, whether architectural or urban projects and throughout the processes of planning, designing, and building the final product.

To do so, first, a comparative analysis for the identified themes in relation to the FHNs was conducted in order to discover which needs have been adequately addressed and which require more attention. Second, the themes identified by all the reviewed researchers were then merged and a reference list of SS themes/satisfiers was compiled.

To start the analysis, the FHNs were placed along the horizontal axis and the themes identified by the different researchers – who handled SS either generally or with relation to the built environment – were placed along the vertical axis. Each theme was analyzed according to the definition provided by its author, to identify which fundamental needs it satisfied or stimulated. In some cases, the author did not provide a definition. In this case, a definition provided by one of the other reviewed researchers was used, or one provided by a respectable organization or authority (Table 1). Subsequently the number of times the FHN was addressed throughout the reviewed SS themes was calculated and presented in (Figure 1).

Table 1: Comparative Analysis of SS Themes Against The FHNs.

Author	Themes	Fundamental Human Needs								
		Subsistence	Protection	Affection	Understanding	Participation	Leisure	Creation	Identity	Freedom
(Chambers & Conway, 1992)	Equity		X			X			X	X
	Livelihood	X	X			X		X	X	X
	Safety nets		X							
(Sachs, 1999)	Democracy		X	X	X	X			X	X
	Employment	X	X			X		X	X	X
	Equitable income distribution	X	X	X					X	X
	Equitable access to resources and social services		X	X					X	X
	Equity		X	X		X			X	X
	Human rights	X	X	X	X	X	X	X	X	X
(Hans-Boeckler-Foundation (Ed.), 2001)	Social homogeneity		X	X	X	X			X	
	Basic needs	X								
	Enabling of social innovation	X	X	X	X	X	X	X	X	X
	Equal opportunities to participate in a democratic society		X	X	X	X			X	X

	Fair distribution of burdens between generations		X	X				X	X	
	Paid and voluntary work	X	X			X		X	X	
	Social security		X							
(Omann & Spangenberg, 2002)	Consumption	X	X		X		X			
	Democracy		X	X	X	X		X	X	
	Education		X			X		X	X	
	Employment	X	X			X		X	X	
	Equity		X	X		X		X	X	
	Experience				X					
	Income	X	X		X		X		X	
	Participation				X		X			
	Skills				X					
(DFID, 2002)	Participation			X		X				
	Security		X							
	Social justice		X					X	X	
	Solidarity		X	X		X		X		
(Baines & Morgan, 2004)	Basic needs	X								
	Cultural and community diversity			X	X	X		X	X	
	Empowerment and participation			X		X				
	Equity		X	X		X		X	X	
	Needs of future generations		X					X	X	
	Overcoming personal disability		X			X		X	X	
	Social capital		X	X		X		X		
(McKenzie, 2004)	Diversity and cultural integration			X	X	X		X	X	
	Equity between generations		X	X				X	X	
	Equity of access to key services		X	X		X		X	X	
	Participation			X		X				
	Mechanisms for a community to collectively identify its strengths and needs				X	X				
	Mechanisms for a community to fulfil its own needs	X	X	X	X	X	X	X	X	
	Mechanisms for political advocacy to meet needs that cannot be met by community action.	X	X	X	X	X	X	X	X	
	Sense of community ownership			X				X		
	System for transmitting awareness of social sustainability from one generation to the next				X					
	Sense of community responsibility for maintaining that system of transmission							X		
(Colantonio, 2007)	Access to resources		X		X			X	X	
	Capacity Building	X			X					
	Community needs				X					
	Conflicts mitigation		X							
	Cultural promotion			X	X			X	X	
	Economic security	X	X							
	Education		X			X		X	X	
	Elderly and aging		X	X		X		X	X	
	Employment	X	X			X		X	X	
	Enabling knowledge management (including access to E-knowledge)				X					
	Environmental Health	X								
	Freedom			X					X	
	Gender equity		X	X		X		X	X	
	Happiness			X						
	Health	X								
	Housing (quality and tenure mix)	X	X	X			X		X	X
	Identity of the community/civic pride			X					X	
	Image transformation and neighbourhood perceptions								X	
Inclusive design		X	X		X			X	X	

	Informal activities/economy	X	X			X		X	X	X
	Infrastructures	X	X	X	X	X	X	X	X	
	Integration of newcomers (especially foreign in-migrants) and residents		X			X			X	X
	Justice and equality		X	X		X			X	X
	Leadership			X	X					
	Leisure and sport facilities						X			
	Less able people		X	X		X			X	X
	Participation and empowerment			X		X				
	Partnership and collaboration			X		X				
	Population change				X					
	Poverty eradication	X	X			X		X	X	X
	Quality of Life									
	Security and Crime		X							
	Skills development				X					
	Social diversity and multiculturalism			X	X	X			X	X
	Spatial/environmental inequalities	X	X	X	X		X	X	X	X
	Transport									X
	Trust, voluntary organizations and local networks (also known as Social Capital)		X	X		X			X	
	Well being	X								
(WACOSS, 2008)	Democracy and governance		X	X	X	X			X	X
	Diversity			X	X	X			X	X
	Equity		X	X		X			X	X
	Interconnectedness		X	X		X			X	X
	Quality of life	X	X		X				X	X
(Deasy, 1985)	Communications			X	X	X				
	Cue Searching	X			X					
	Friendship Formation			X		X				
	Group Membership			X		X				
	Personal Safety	X								
	Personal Space	X	X	X		X				
	Personal Status								X	
Territoriality	X	X						X		
(Woodcraft et al., 2011)	Diversity			X					X	
	Equity		X	X		X			X	X
	Identity			X					X	
	Leisure						X			
	Security		X							
	Social interaction			X		X				
(Rosenberg & Todd, 2013)	Accessibility		X			X			X	X
	Affordability		X			X			X	X
	Community engagement			X	X	X			X	
	Economy	X	X							X
	Equality		X	X		X			X	X
	Individual health and well-being	X	X		X					
	Quality of life	X	X		X				X	X
(PPS, 2013)	Access and linkages		X			X			X	X
	Comfort and image	X	X						X	
	Sociability			X		X				
	Uses and activities				X	X	X	X		
(SEED, 2014)	Conserve resources and minimize waste		X							
	Generate local ideas and build local capacity				X	X			X	
	Inclusive decision processes		X	X		X			X	X
	Social equality		X	X		X			X	X
	Support less able groups		X			X			X	X

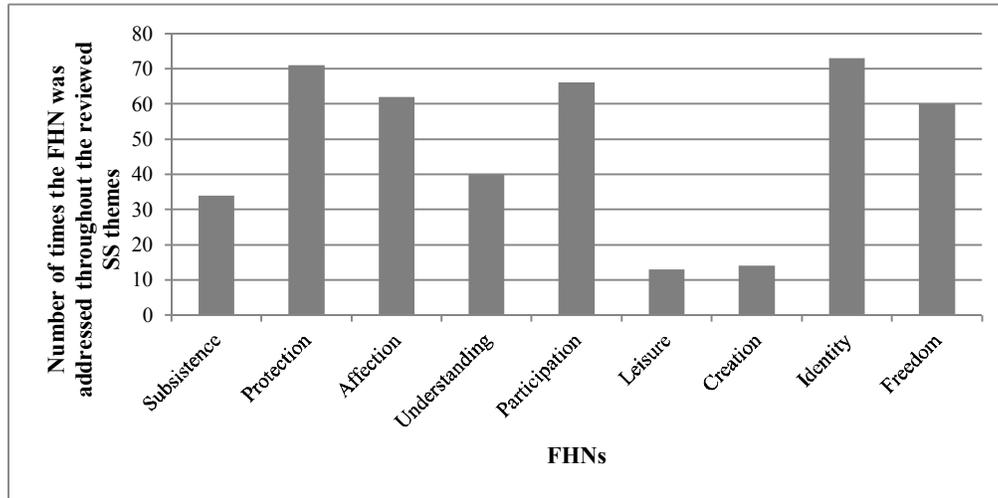


Figure 1: SS Themes as Satisfiers for FHNs

From this analysis and bar chart, findings could be drawn as follows:

- The needs of Identity, Protection, and Participation were the needs most often addressed by the reviewed researchers (in this particular order).

- The needs of Leisure and Creation were the least frequently addressed. Referring to Max Neef's argument; that all human needs are of equal importance and cannot be substituted (**Max Neef & Ekins, 2006**), it is essential to find more satisfiers for the needs of Leisure and Creation.

- Some themes stand out as synergic satisfiers for many needs at the same time. For example, Human Rights are considered an important tool that if genuinely adopted can help actualize many FHNs. Equity is a prominent and recurrent theme that is a synergic satisfier for Protection, Participation, Identity and Freedom. Social capital is an important synergic satisfier especially since it stimulates satisfaction of the need for Affection that is overlooked by many researchers. Education and Employment are strong satisfiers that address many FHNs at the same time.

In the final step, related themes were merged based on the previous comparative analysis and findings. Thus, seven major satisfiers were identified: Democracy and Participation; Education and Skills; Equity; Identity and Pride; Social Capital; Wellbeing; and Work and Income. Since the needs of neither Leisure nor Creation were adequately addressed by these researchers, they were added in their abstract form to a summarized reference list of SS themes/satisfiers that can be pursued through architectural and urban projects. It is comprised of: Creation; Democracy; Education and Skills; Equity; Identity; Leisure; Social Capital; Wellbeing; and

Work and Income. Below is a definition of each of the themes:

Creation: concerns providing opportunities for community members to satisfy their need for creation. This could be by promoting imagination, boldness, inventiveness and curiosity (Being); developing abilities, skills, and techniques (Having); providing opportunities for inventing, building and designing (Doing); and providing spaces for expression.

Democracy and Participation: is about creating community engagement and giving people voice and influence over decisions that affect their own lives. It includes embracing diversity and the empowerment and integration of all community groups.

Education and Skills: concerns providing the community in focus with opportunities for acquiring knowledge and skills. Included approaches are promoting cultural awareness, capacity building, and learning the skill of conflict mitigation. Education is especially important since it provides a system for transmitting awareness of social sustainability from one generation to the next.

Equity: is actively interrupting privilege in order to lessen oppression. All processes, policies and the built environment should be inclusive and non-discriminatory regardless of race, ethnicity, culture, income, physical ability and age.

Identity and Pride: involves developing a sense of community ownership and pride. It includes generating local ideas and building local capacity in addition to developing mechanisms for the community to collectively identify its own strengths and needs and to fulfill them.

Leisure: concerns providing opportunities for community members to satisfy their need for Leisure. This could be by promoting imagination, tranquility

and spontaneity (Being); planning games and parties (Having); promoting opportunities for relaxing and have fun (Doing); and providing landscapes, intimate spaces and places to be alone.

Social Capital: is concerned with increasing the resources available to people through their interpersonal connections and promoting interaction and affection. It includes promoting solidarity, interconnectedness, friendship formation, group membership, and social interaction. Social Capital is built when people are linked more strongly to their local community and to larger societal resources. It may be built by strengthening bonds that link community members or by bridging divisions between them.

Wellbeing: is associated with the physical and psychological health of people. It includes satisfying the basic needs (habitation, food, clothing, mobility, information) of people, safety and security, comfort, and improving quality of life.

Work and Income: regards providing work (whether paid or voluntary) and income (whether formal or informal).

5. Conclusion and Recommendations

Human and societal needs cannot be sufficiently met by solely providing an ecologically and economically stable environment, and hence the importance of SS. The SS of a community should not be left to chance; it must be planned for using a premeditated infrastructure. Laws, policies, processes and the built environment should be designed with the purpose of facilitating and achieving SS. Although the importance of SS is not in dispute, the same cannot be said for its main objectives, strategies, and indicators in all fields and disciplines. This fact has come to the attention of many researchers leading to an emerging body of research on the subject.

This study is thoroughly associated with FHNs and societal needs and how they can be satisfied; thus, reviewing the literature relevant to this area in general and concerning the built environment in particular has been conducted. The themes identified in the review were investigated in relation to the FHNs to discover which needs have been adequately addressed and which require more attention. Accordingly, the study concluded by proposing a summarized reference list of SS themes/satisfiers that can be pursued through architectural and urban projects. The list included: Creation; Democracy; Education and Skills; Equity; Identity; Leisure; Social Capital; Wellbeing; and Work and Income.

This research suggests the need to:

- Explore the themes in the local context to check validity and suitability and, if found suitable, to

investigate these themes in all stages of architectural and urban projects. They may need to be supplemented to reflect local priorities and views.

- Find/develop satisfiers for the FHNs of Leisure and Creation.

- Explore the possible strategies and tactics in each of these themes to assist in building facilities and developments that participate in achieving socially sustainable communities.

- Develop assessment tools and metrics for measuring the contribution of architectural and urban projects in pursuing SS.

- Finally, the laws, policies and codes that regulate projects in the field of the built environment should adopt a holistic approach that considers every concerned person and the social consequences of every decision.

References

1. American Planning Association. (2013). How Arts and Cultural Strategies Create, Reinforce, and Enhance Sense of Place. Retrieved April 11, 2014, from American Planning Association (APA): <http://www.planning.org/research/arts/briefingpapers/character.htm>
2. Baines, J., & Morgan, B. (2004). Sustainability Appraisal: A Social Perspective. In (. Dalal-Clayton B And Sadler B, Sustainability Appraisal. A Review Of International Experience And Practice, First Draft of Work in Progress (p. chapter 5). London: International Institute for Environment and Development.
3. Barron, L., & Gauntlet, E. (2002). Housing and Sustainable Communities Indicators Project. Adelaide: Sustaining our Communities' International Local Agenda 21 Conference.
4. Bramley, G., Dempsey, N., & Brown, C. (2006). What is 'Social Sustainability' and How do our Existing Urban Forms Perform in Nurturing it? London: Paper presented at the 'Sustainable Communities and Green Futures' Conference, Bartlett School of Planning, University College London.
5. Chambers, R., & Conway, G. R. (1992). Sustainable Rural Livelihoods: Practical Concepts for the 21st Century, Discussion Paper 296. Brighton, UK: Institute of Development Studies (IDS).
6. Colantonio, A. (2007). Social Sustainability: An Exploratory Analysis of its Definition, Assessment Methods, Metrics and Tools. OISD (EIB) Working Paper 2007/01.
7. Colantonio, A. (2009). Social Sustainability: Linking Research to Policy and Practice. Brussels: OISD.
8. Deasy, C. (1985). Designing Places For People. NY: Watson-Guptill .
9. DFID. (2002). Indicators for socially sustainable development. Department for International Development.

10. Frank, L., Kavage, S., & Devlin, A. (2012). Health and the Built Environment: A Review. The Canadian Medical Association.
11. Global Reporting Initiative. (2000). Sustainability reporting guidelines. Amsterdam: Global Reporting Initiative.
12. Hans-Boeckler-Foundation (Ed.). (2001). Pathways towards a sustainable future, . Setzkasten, Dusseldorf.: Hans-Boeckler-Foundation (Ed.).
13. Institute of Health. (2010). Wise Ways: How The Built Environment Affects Our Wellbeing. Retrieved 03 04, 2014, from Update magazine, issue 15: http://www2.warwick.ac.uk/fac/cross_fac/healthatwarwick/publications/update/update_15.pdf
14. Littig, B., & Griebl, E. (2005). Social sustainability: A Catchword Between Political Pragmatism and Social Theory. *Int. J. of Sustainable Development*.
15. Living Building Challenge. (2014). Equity. Retrieved 03 13, 2014, from Living Building Challenge: <http://living-future.org/living-building-challenge/tools-support/understanding-challenge/petals-imperatives/>
16. Max Neef, M., & Ekins, P. (2006). *Real Life Economics*. Routledge.
17. McKenzie, S. (2004). *Social Sustainability: Towards Some Definitions*. Magill, South Australia: Hawke Research Institute, University of South Australia.
18. OECD. (2001). *Analytic Report on Sustainable Development*. Paris: OECD.
19. Omann, I., & Spangenberg, J. (2002). *Assessing Social Sustainability. The Social Dimension of Sustainability in a Socio-Economic Scenario*. Sousse, Tunisia: 247th Biennial Conference of the International Society for Ecological Economics.
20. PPS. (2013, 10 7). What Makes a Successful Place? Retrieved from Project for Public Spaces: <http://www.pps.org/reference/grplacefeat/>
21. Rosenberg, H. J., & Todd, J. A. (2013). *Social Equity in the Built Environment: An Initial Framework and Project Examples*. Green Building Information Gateway.
22. Sachs, I. (1999). *Social Sustainability and Whole Development: Exploring The Dimensions of Sustainable Development*. In: B. Egon and J. Thomas, Editors, *Sustainability And The Social Sciences: A Cross-Disciplinary Approach to Integrating Environmental Considerations into Theoretical Reorientation*, Zed Books, London.
23. SEED. (2014). Learn More. Retrieved 03 13, 2014, from Social Economic Environmental Design: <http://www.seed-network.org/learn/>
24. Srinivasan, S., O'Fallon, L. R., & Dearry, A. (2003). *Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health*. American Journal of Public Health.
25. UNDESA. (n.d.). *Poverty Eradication*. (United Nations Department of Economic and Social Affairs, Division for Sustainable Development) Retrieved 03 25, 2014, from Sustainable Development Knowledge Platform: <http://sustainabledevelopment.un.org/index.php?menu=233>
26. United Nations. (1987, 12 11). *1987 UN Brundtland Commission Report*. Retrieved 09 10, 2012, from United Nations: <http://www.un.org/documents/ga/res/42/ares42-187.htm>
27. United Nations. (2005). *World Summit Outcome*. NY: United Nations.
28. WACOSS. (2008). *WACOSS Model of Social Sustainability*. West Perth: Western Australian Council of Social Service (WACOSS).
29. Williamson, T., Radford, A., & Bennetts, H. (2003). *Understanding Sustainable Architecture*. London: Spon Press.
30. Woodcraft, S., Hackett, T., & Caistor-Arendar, L. (2011). *Design For Social Sustainability: A framework for creating thriving new communities*. London: The Young Foundation,.

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