

This paper brings together research that I was involved in the SUE –MOT (sustainable urban environments; metrics models and toolkits) **funded by the EPSRC (completed in 2010) and my work in Sri Lanka on a pioneering project to relocate Canal Bank dwellers that was awarded to me as winner of an open competition conducted by the Sri Lanka Institute of Architects. The project was completed in 1998.**

This paper compares the two approaches; Top down and Bottom up approaches to learn to design better for social sustainability. It was written last year with a view to submitting to a journal. However, in my view, it needs to be strengthened with some evidence and therefore did not submit it. I think that the feedback survey mentioned in the last paragraph would need to be conducted and should be included in this paper before submitting to a journal.

Learning to design for social sustainability through the synthesis of two approaches

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Introduction

Although there is consensus that urban form could contribute to social sustainability, how socially sustainable development may be delivered is not well understood and lack in comprehensive studies. It is unclear whether social impacts of urban development are to be addressed as: (1) a precondition or outcome of environmental and economic sustainability (Assefa 2007); (2) as social outcomes such as equity, poverty reduction and livelihood, or softer issues such as well being and happiness (Galloway 2005); or (3) as relations between people taking into account the formal and informal rules which govern the behaviour of organisations and individuals (Ashcroft 2009). Therefore, clearer directions to deliver physical infrastructure geared for social sustainability is still being explored.

Against such a background, this paper synthesises two approaches which explored how the design of urban neighbourhoods could contribute to social sustainability. The first arose from the SUE-MOT (sustainable urban environments: metrics, models and toolkits) project and identified the physical attributes of neighbourhood that may contribute to social capital through a comparison of the academic and practice-based literatures. The second piece of research was a ‘Learning through action’ real-life neighbourhood project for a marginalised community in Sri Lanka, designed with the primary objective of contributing to social sustainability with explorative ideas and design strategies. These top-down and bottom-up approaches to the same problem provide an interesting learning opportunity that contributes to the knowledge base of how urban form may address social sustainability.

This paper will first discuss the findings of the part of the sue-mot project which aimed to operationalise the notion of social capital from a state-of-the-art review. This exercise identified attributes of neighbourhoods by the synthesis of social capital theory, published empirical research on social capital and the built environment and review of urban design guidance through the lens of social capital. The paper will then discuss the approach of the Learning through Action project to conceive, design and deliver a master plan for social sustainability with a strong emphasis to design for social capital. In the absence of theoretical knowledge which even after ten years of its completion is still emerging, this project interpreted

social capital and its relationship to sustainable development through logical interpretation informed by insight and empathy. The discussion that follows brings together the lessons learnt through the theoretical and practical approaches on how to deliver for social sustainability.

Findings from of the comparative literature review

Just as environmental and economic sustainability envisages to improve, protect and mitigate negative consequences of development that may deplete natural, financial and manufactured capitals, social sustainability too envisages to build upon, cultivate and preserve social and human capitals and to mitigate any negative consequences on this important asset, and therefore to deliver development for this objective. Human capital is considered here an attribute of individuals defined by one's skills, qualifications and knowledge while social capital refers to an asset generated by being part of a 'community', such as formal and informal social networks, group membership, trust, reciprocity and civic engagement.

The problem in delivering physical development to achieve this end lies in the difficulties encountered in operationalising the idea. Theory suggests that the structure of social capital is specific to its context and determined by a range of factors, including history and culture, social structure, economic inequalities, social class, ethnicity, and urban design (figure 1). Social capital of a group is manifested in its social relations, formal and informal networks, group membership, trust, reciprocity, civic engagement and the like. However, little is known of the nature of the interactions between the determinants, resultant structures and manifestations of social capital.



Figure1: The links between determinants, structural elements and consequences or manifestations are currently not well understood and generally grossly oversimplified.

Source: Cladridge, <http://www.gnudung.com/improvedconceptualisation.html>

The Sue-mot project sought a practical definition of social capital, drawn from the literature. This was the "intangible assets that develop between groups of individuals such as the goodwill, bond and trust arising from shared commonalities, such as values, outlook on life, attitudes, behaviours, relationships and networks that becomes a resource to serve their common goals and needs". Arising from this definition we questioned if intangible assets such as goodwill, bond and trust arise from shared commonalities as mentioned above, and whether urban development could support and promote them. Whilst it is argued that urban design can impact on social capital through affording opportunities for social interaction (Aldridge) there is little discussion of which features of urban design would facilitate such shared values, behaviours, networks and relationships. However, if people can be retained in an area for the longer term and if opportunity for face to face interaction is provided, a sense of belonging can be fostered, norms and membership reinforced. Such a sense of belonging can be expected to grow with increased

reminiscence developed by residing in a place in the longer term and can contribute to trust and reciprocity (Cladrige). The sue-mot project reviewed selected urban design guidance and published research through this lens and identified twelve physical attributes. These attributes could be translated into development criteria, depending on the locality and emerging issues for a particular place, and have to be interpreted by designers according to local needs.

1 Identified Design attributes contributing to Social Capital

Theme	Attributes
Connectivity	<p>Move Streets should be considered as 'communal' spaces other than being routes for the movement of vehicles. Streets should be well integrated with existing routes, (permeable with short, direct connections), legible, attractive (with recognisable landmarks and intersections) and safe to use (overlooked by a range of activities). Such streets, are known to encourage walking and cycling, thereby allowing communities to easily integrate locally and with the larger area. Research has recognised that such 'walkable' streets have contributed to higher levels of social capital.</p> <p>Local facilities Opportunity to be involved in one's community facilitates collective action, helps to maintain ties and networks, and develops trust defined as social capital. Formal opportunities could be activities in community centres and halls, or recreation. Informal opportunities such as through schools being in walkable distances, local shopping and shared streets that allows people to 'bump' into one another are important too because 'community' in today's context can be rooted in mundane and everyday interactions in localised settings.</p> <p>Mixed use: Mixed use can contribute to the economy by providing employment for local people by offering opportunities to live near to the workplace. Research suggests that while facilitating social inclusion by attracting a wider population in age and ethnicity, and offering employment opportunity, mixed use streets encouraged social exchange, building social capital and contributes to reduce feeling of isolation and depression in communities.</p>
Safety	<p>Ownership When designed with sensitivity to the needs of the users and</p>

	rshi	with good integration between buildings and external spaces,
	p	places encourage social interaction and helps to create a sense of ownership. Such well used places with a sense of ownership provide fewer opportunities for crime. How such 'ownership' may be encouraged differs according to local needs and character of place.
	Natu	It is known that people feel 'safe' in areas with good
	ral	visibility and effective lighting, where they can be seen and
	Surv	heard by other people. For example, lining the perimeter
	eill	blocks with doors and windows of buildings that face the
	ance	streets, define 'active frontages'. Continuing active
	:	frontages round the urban blocks, minimised exposed blank
		facades, allow for natural surveillance of the place.
	foot	Footpaths should lead people directly to where people want to
	path	go and be barrier free to be well used. Appropriate
	s	landscaping and widths of footpaths, avoiding extremely
		narrow widths ensuring good visibility along the route, add
		to the perception of safe neighbourhoods. It is important to
		consider how footpaths relate to the surrounding buildings in
		order to ensure safety of users such to avoid passing through
		rear of buildings.
Charact	Cont	People's understanding of community relates to certain
er	ext:	encounters with local network of friends, family and
		neighbours that fosters a sense of belonging and an identity
		with place. As such, when someone 'belongs' to a group or
		neighbourhood, the person becomes a recognisable member of
		the community and its culture. It has been recognised that
		there is a unit larger than the individual home and smaller
		than the district, which people identify themselves with,
		contributing to create a sense of belonging. Therefore,
		attention to spatial features that creates a distinctiveness
		in an area should be considered including landscape, building
		traditions and materials, patterns of local life, and other
		factors that make one place different from another.
	Pers	The importance to fix a personal stamp one's dwelling and
	onal	surroundings while conforming to the larger norms of the
	isat	community has been recognised to establish a sense of
	ion	identity and belonging in a community.
	Publ	'Well designed' public open space has been recognised as an
	ic	important asset for communities because they facilitate
	spac	social interaction of varied natures. For such forms of
	e:	interaction public space should accommodate a range of
		activities, defined in relation to the activities and
		surrounding spaces and can become places for 'staying,
		eating, meeting or events, go through or past spaces, or a
		combination of all these things
Adaptab	Life	People should be able to move in the same area throughout the
ility	cycl	life cycle when needs change. A range of housing types to
	e	suit people's needs across life span are known ingredients of
	need	sustainable urban neighbourhoods. This may often involves the
	s	resolution of conflicting needs due to the diversity of
		people that are expected to occupy. Therefore the resolution
		of these needs need to be localised to the context.
	Mixe	Neighbourhoods could help increase social inclusion by
	d	providing a mix of housing types for differences in
	tenu	affordability thus contributing to bridging social capital,

	re	if differences may not allow for bonding. Close analysis of local housing markets, and integration of mixed tenure neighbourhoods with other services in the area, such as schools, shopping, health and leisure that cater for lifestyle differences, contribute to inclusive places to grow.
Life styl	e	Facilities should also be provided for differences in lifestyles. For example if neighbourhoods accommodate different densities accommodating housing for couples, singles and families, the differences in lifestyles between the groups would demand a variety of services and facilities to sustain them. Public space with flexibility to accommodate events such as markets, festivals contribute to the diversity and adaptability of a place.

Learning through action: Facilitating Social capital through design

The Centre for housing and environment; Learning through action (CHELTA) of the Sri Lanka Institute of Architects (SLIA) called for a competition in 1998 to design a master plan, detail one neighbourhood of twenty five houses and foresee the completion of the neighbourhood, when shanty dwellers residing along the banks of the canal in Colombo 6 had to be relocated to a new site in Mirihana, Nugegoda to allow for restoration of the canal. This competition was called for in a context of known failures to address the housing needs of the low and middle income. Experiments had moved through several directions known as ‘core houses’, ‘type plans’, ‘self help aided’, ‘maximal support and minimal intervention’, ending with the role of designers being contemplated as ‘enablers’; an interpretation of the Pattern Language of Christopher Alexander ().

The site was a reclaimed marsh between two hillocks in Mirihana, Nugegoda. The main feature was the several waterways running through the site carrying water to the Diyawanna oya (figure 2). The immediate surroundings consisted of lower -middle income housing, with upper middle income housing closer to the main road. The project had to be delivered within a very restricted budget being a charitable venture funded by the Rotary Club.

Figure 2: The site

The primary objective of the competition was to ‘focus on the creation of a sustainable neighbourhood’ (design brief CHELTA) which were detailed as follows by CHELTA (Centre for Housing and Environment; Learning Through Action).

- o The creation of a good and harmonious community may be contributed to substantially by a 'well planned' physical setting".
- o That such 'planning' should consist of, determining the ideal sociological mix for the community, identifying the psychological sociological profiles for individual families and designing individual house units to fit them, and defining the preferred patterns of community activity and to deploy public/ common spaces accordingly.
- o That a good fit between user needs and built environment may best be obtained through maximising the intervention of the socially conscious architect who would also propose a financial strategy of rental and /or system of transferring ownership to the householder and propose a system of upkeep and maintenance for the neighbourhood.
- o That the provision of any kind of housing and therefore of neighbourhoods should be looked at as an ongoing learning process, the strategy for which should therefore include a built in system for obtaining/ facilitating feedback information on the success or otherwise of the design and sociological assumptions that have been made.

Although CHELTA did not use the phrase 'Social capital', the stipulated objectives, as highlighted above, aimed to learn through action, how the notion of community may be enhanced through the appropriate contribution of the physical environment. The master plan and neighbourhood design discussed in this paper is the winner of this competition which aimed to understand and realise socially sustainable design as an outcome of needs, aspirations, shared values, and relations between people.

To achieve the above objectives of the CHELTA competition, an insight and in depth understanding of the social structure, livelihoods, needs and aspirations of this community were necessary especially in a situation of having no record of relevant statistics or other appraisals. Therefore such insight was solely dependent on mingling with the community as an observer, talking to them informally taking advantage of the fact that this community (would be residents and those who were already settled in part) was eager to communicate. The community leaders were the first to spot a 'intruder' and find out who was doing what in their community but also help out if it was for a good cause. The other stakeholders such as Rotary club who funded the project, Land reclamation board, MP for the area, and SLIA, all of whom had their own objectives to achieve, who were also interviewed.

The next step was to formulate objectives for the master plan and for one neighbourhood. These objectives reflect the priorities that were identified as a result of the insight and empathy with the community and in the belief that the physical environment could contribute to the social sustainability of this community, by taking a longer term view of how to sustain them.

1 Objectives of the CHELTA project

Objectives	Related
	SUE-MOT
	attribut
	es
Oppo Strengthen the existing livelihoods and generate opportunity	Life
rtun for new livelihoods.	style
itie Strengthening of existing livelihoods	needs
s Most of the middle aged female folk are employed as daily	Mixed
for domestic aids in the middle income community in the vicinity.	use
Empl This has to be facilitated. A day care centre may be an	Mixed
oyme essentiality.	tenure
nt The male folk have no regular form of income. Pavement	Movement
hawkers, tradesman at 'pola', three wheeler drivers,	structur
labourers, small time carpenters, betting commission	e
collectors are some of which. Their occupations ranged from	Personal

	<p>betting centre agents, pavement hawkers, domestic aids, garment makers from 'cut pieces' of cloth, three wheeler taxi drivers, small time carpenters and the like. These occupations have to be facilitated.</p> <p>Generation of new livelihood</p> <p>The waterways which run through the site should be made use of to generate livelihoods for the large numbers of employed youth in this community. Aqua culture- should be promoted along these water ways. A vocational training centre should provide the know how for this purpose.</p> <p>Plots have to be provided for horticulture (to plant roses, anthurium, indoor plants) which could be a livelihood for the young females who are compelled to stay at home to care for young children.</p> <p>Entrepreneurs who would wish to reside in shop houses for activities such as tea boutiques, sewing of garments from cut pieces, bicycle repairs should be facilitated in the neighbourhoods.</p> <p>The activities proposed such as the shops in the commercial centre, should be run by the entrepreneurs in the community. The vocational training centre, the pre-school, health cum community centre should also be encouraged to employ people from the community where possible.</p>	<p>isation</p> <p>Local facilities</p>
Socio-Cultural	<p>The social structure primarily is one of interdependence on each other for its sustenance. Thus the master plan should sustain this community structure. Activities and spaces which strengthen this by which the whole community is linked together are therefore necessary.</p> <p>Socio-cultural bonds/relationships existing in the community need to be identified and their continuance ensured and the design should facilitate new formations.</p> <p>Objectives for the Master plan</p> <p>Ensure facilities and activities which binds the community together such as community cum health centre, pre-school, a commercial centre, a vocational training centre, playground etc</p> <p>Allow gradual transition from public community spaces/ activities to semi public community activities ending in more intimate neighbourhoods</p> <p>As people tend to interact and be interdependent on neighbours who are in closer proximity it is desirable to provide several 'neighbourhoods' as clusters which are linked to the main activity centre. .</p> <p>Territorial definitions of each neighbourhood should be identifiable in the larger network.</p> <p>Objectives for the detailed neighbourhood</p> <p>A 'good neighbourhood' would identify the sub cultures or social groups whose interaction with each other would sustain the neighbourhood (interdependent groups).</p> <p>The identified groups are as follows.</p> <p>Entrepreneurs - who would be engaged in small scale self employment in the home itself as Tea boutiques, Sewing garments from 'cut pieces', Betting centre agents, Cycle repairs, Making plastic sign boards, Tinkering</p> <p>Leaders - whose services would be essential to carryout the</p>	<p>Context</p> <p>Public space, Local facilities</p> <p>Ownership</p> <p>Movement structure</p> <p>Mixed use</p> <p>Life style needs</p>

	functions of daily life style as pre- school teacher, health worker, 'Upasake Mahattaya' (who advises on the rituals to be performed in times of distress)	
	Other families - Some of the families liked to interact with the neighbourhood consisting of one group more compared to other families who were more reserved consisting of a another group.	
	These groupings of a 'good neighbourhood' in such sub-cultures have to be maintained, sustained by the design. Therefore the psycho-socio profiles of these groups would defer; thus the design of the house too would.	
Identity and belonging	The pattern and order of existing informal settlements should not be disturbed. Therefore, 'physical planning' of the neighbourhood should capture the 'informal' character of spatial organisation.	Movement structure
	The overall cohesiveness should be ensured with each neighbourhood identifiable as one cohesive unit which has its own territorial demarcation.	Safety Footpaths
	The way families in the neighbourhood meet each other should not be deliberate but should happen with ease during the daily routines.	Context Personalisation
	Community spaces such as play spaces for children, neighbourhood boutique, plots for horticulture, garden of individual household units would facilitate interaction of the neighbourhood.	Public space Local facilities
	Vehicular traffic should not be allowed to enter 'community' and housing plots of the neighbourhood, so that people could move with psychological ease in the neighbourhood.	Life cycle needs
	Vehicles therefore should stop at main roads. As people in the community do not own vehicles except push cycles.	Life style needs
	Consider people of all ages and abilities and create an environment that will allow access and participation by all people. Elders should be able to interact with each other and with the rest of the families in the cluster.	
	Sustainability in both building practices and materials and easy maintenance is of vital importance	

2 Strategies for the realisation of the objectives

Considerations in the Master Plan

[pic]figure 3

Figure 4

figure 5

Public and semi public activities and spaces are located along a diagonal spine from which transition into the private zones of neighbourhood takes place. This spine also acts as a 'open' visual corridor which is essential to maintain the balance between otherwise tightly built up spaces of the site (figures 3, 4,5).

The entrance area is made up of public community space where the boutiques, community centre and pre school are placed (figure5)

The waterways which runs across the site (ela) have been used as elements of utility, visual and social value as follows.

- o The roads run along the waterways binding the complex together.
- o Public community spaces are visually linked with these waterways loosening up the otherwise tight spaces.
- o Waterways are used for economic sustenance as would be described later.

The vehicular traffic stops along the main roads, and the roads within the cluster are pedestrians to allow for easy interaction in the common spaces.

To facilitate the identified objectives to strengthen the existing and generate livelihoods, the following have been done.

Middle income housing is proposed for the filled marsh at the rear of the site. Hence this community could find more employment in one middle class housing as domestic aids and labourers .

A buffer zone is necessary to divide these two communities. Therefore it is proposed that part of the acquired land by the UDA(Urban development authority) be given to this community for horticultural projects of self employment (figure6).

Provision of day care centre pre school would also allow for females too to be employed at places of work, better (figure).

The canal ('ela')should be dredged for purposes of aqua culture. It is enlarged at one end making a lake for this purpose. The vocational training centre located adjoining this lake should provide the know-how to the youth for this method of employment (figure7).

The vocational training centre also should train youth for other self- employment projects (figure7).

Plots for horticulture have been provided in each neighbourhood. Females whose presence at home are essential could be gainfully employed in such horticulture projects (figure7).

Entrepreneurs in the neighbourhood have been given facility for their enterprises.

Figure6 Figure7

Considerations in the detailed neighbourhood

Figure 8

Figure 9

From the vehicular road one diverts to the pedestrianised entrances to neighbourhoods located around the Bo-tree which symbolises transition into a more serene territory (figure 8).

The houses in the neighbourhoods are clustered into 3 types, respective to the social groups identified for a neighbourhood (figure 9)

- o The plots of the 'entrepreneurs' are located closer to the vehicular roads and are central in location to enable their small scale enterprises such as a tea boutique, cycle repairs, making garments from cut pieces etc. These houses are designed as 'shop houses'. (cluster D)
- o The next social group who are the 'leaders' (pre school teacher, health worker, Upasake mahattaya) have been given more individually identifiable plots. They too are central in location within the neighbourhood as their services should be accessible to all. The houses of this social group are more individualistic in expression sympathising with the psycho- socio character of the occupant. These houses form Cluster C in the neighbourhood.
- o The third social group who are 'passengers in the bus' have been given two clusters of housing types.

Cluster B- for the reserved type of persons these houses located in the 'rear' of the neighbourhood. The house designs connects three or four houses together either in the front yard or back yard. This allows for the activities of 'interdependency' to take place with ease.

Cluster A – for the more extroverted type of persons who like to interact with the neighbours more closely. Plots for this group have direct links and access to the centre of the cluster to enhance the extroverted nature. The houses have front verandas from which two house holds could communicate with each other, while communicating with the activities of the centre as well.

The community spaces of the neighbourhood are as follows (figure 10).

- o Areas for chatting and meeting people near the shop houses
- o In and around the plots given for horticulture
- o Space given for seating, to elders near the children's play area
- o Play area for children safely located in the neighbourhood
- o Community spaces along the canal edges for those engaged in aquaculture

The cohesion of the neighbourhood as a visual entity cannot be ignored although the varieties are given. The variation of the same roof form ensures this (figure 11,12).

Each house could defer from each other having its own identity through the variety of usage in decorative grills, doors and windows and colours. The size of openings could vary too to enhance the sense of identity, The cohesion of the units would not be lost as the 'house form' is the same.

Learning from the two approaches

What are the lessons that can be drawn, from these two exercises that aimed to learn on how to design to develop a sense of community or social capital? Do these top-down and as a bottom-up approaches to address the same problem overlap and diverge at any particular points in the process? This section will review the objectives for social capital formulated for the Learning through Action approach against the identified attributes from the literature review. It will also illustrate the nature and extent of contextualisation of these generic attributes, as applicable to the regeneration of a low income community in Sri Lanka.

[pic]

Considering the context of the Learning through action project, 'opportunity for employment' had been a major consideration that the master plan had to be sensitive to. If this was included in a generic list of attributes such as in the sue-mot project, the wording would have suggested the notion to be unrelated to the sense of community, and therefore inappropriate to address the issue. However, the strategies adopted in the design of the master plan and neighbourhood to develop social capital was an consequence to this primary need in the community. To illustrate a few instances again, the central community space would not function without the nearby the shop-houses that also generated employment opportunities. These houses also made provision for the larger community of the area to visit this neighbourhood thereby increasing the chances to knit with the world beyond its precincts. The proposed training centre for aqua-culture was a response to the necessary vocational training skills to increase chances of employment, which also was another semi-public open space in the master plan. If the same problem was approached through the generic list, being sensitive to life style needs does create a strong link with the need to generate employment and could have resulted in the same answer. This suggests while the generic lists could act as catalyst to provoke thought, there need to be very careful insight and empathy to be turned into development criteria for a particular community if a master plan or neighbourhood design is to be sensitive to issues on social capital. If top down approaches are to be followed, this brings to question how such insight may be found, to understand the needs of a community in fine detail. This may direct to

engagement with the residents and other stakeholders who would open up the possibilities to inform the formulation of objectives for a master plan. The extent and nature of such engagement will need to be deep and insightful, often going beyond an analysis of statistical data of a ward but understanding the issues of concern to the community at a micro scale. While this does not mean that generic check lists for social capital cannot be generated, how far they can be specific is yet to be answered. Designing for factors such as life style needs, local facilities and mixed use as seen in this case, goes beyond a formula of providing a leisure centre, community centre, park or shops as they are interwoven and informed by how the particular community is to be sustained in the longer run.

While this is so, the contrary is also true. This exercise also suggests that urban design strategies for socio-cultural continuance would perhaps need a set of preliminary data before a design can be started. In this instance, the site was small and therefore mingling with the community and talking to them was easily possible to understand the nature of their social structure. It was also known before hand that such informal settlements did have a strong sense of interdependency. However, in the context of the UK, where it is now acknowledged that communities are largely diverse with differences in ethnicity, religions, incomes together with new forms of networking available with increased mobility and technology, understanding the community structure would need time and resources. Even if there are still arguments for the case of geographical proximity affecting the sense of belonging of a community, an in-depth understanding of these issues in the particular cases would have an effect on the decisions taken. It is because of this same diversity that public space and types of housing provided in a master plan and cannot be hypothetically expected to be used in one stereotypical way. It becomes clear that the shaping of the public and semi public spaces and houses is highly sensitive to the nature of occupiers, their needs and aspirations, and therefore the necessity to be informed by such needs of its particular users. Those who are involved in assessment know that a park in one place may not work in another, and how it may become a place for anti social behaviour for example.

However, the need for generic check lists that allows one to ensure and understand the reasons for designing for a sense of community is also revealed through this exercise. For instance, if the Learning for Action project was aware of the need for a 'movement structure', to be integrated with the larger community, the sense of isolation that this master plan has could have been better tackled, although the middle class neighbourhood would be disturbed by the thought of a low-income community being integrated with their surroundings. If the master plan was made aware of the necessity to understand the road network and link the community with the macro region, this community could have been better integrated into the transport network including opening up of possibilities of pedestrians walking to their destinations. Such an opportunity for this community to be integrated with world beyond for access to amenities and facilities could have also affected their employment.

In hindsight it is also clear that safety issues had not been dealt with in a comprehensive manner in the Learning through action project. In the context of Sri Lanka, integration between middle class neighbourhoods and low income neighbourhoods does not happen because of the associated stigma, incomparable housing forms, and crime and safety issues. Had the needs for safety been prompted into the thinking process, such integration could have been given thought with due consideration given to address the safety issue or at least the problem could have been raised with the authorities concerned. The project could have acted as a catalyst learning from lessons on social housing in the UK, for example, the idea of mixed tenure would have given food for thought into a problem that Sri Lanka does have to tackle in the longer term in planning and design considerations, that is whether enclaves of deprived communities in the urban landscape, associated with stigma and deprivation are to remain in the future of sustainable urban design. It is well known how the experiments of multi storey dwellings for low income housing became to be eye sores in and around the city. The experience in the UK suggests that there are levels of possible integration among communities of different lifestyles and incomes, and that they do not have to be isolated enclaves in the urban scape. It is time for thought.

It is clear that generic lists need not and should not be check lists. What is needed is a more transparent

descriptive guidelines that enables the decision makers to understand the repercussions of decisions on social sustainability and social capital, which are difficult to be pinned down in direct terms as environmental or economic sustainability.

This project was completed in 1998 largely as an exploratory study, to design for social capital understood through empathy and insight into the community at a time when the physical attributes of urban design were unknown. The sue-mot project aimed to identify such attributes by the synthesis of theory and practice literature, in the absence of a developed theory of social capital. Therefore, although much seems to be still dependent on the experience of practitioners, trying to bridge the gap between theory, practice and research is of utmost importance even for further empirical research on the subject to progress. In the renewed interest on the subject in recent years, it is appropriate to look at the work that had gone on before such as this aiming to tackle the problem of social sustainability and view it through lens of new learning to further the understanding.

This paper will have a sequel on assessment and measurement of social capital. It would report the results of a feed back study that investigated how the objectives and intentions of the master plan have been realised and moulded by the community during the past ten of years of occupation. Using the social capital assessment tool (SOCAT), it would measure the nature and levels of social capital, and draw conclusions on how the design attributes relates to results from SOCAT. It will then examine the results with the findings of the sue-mot project, both in relation to the theoretically identified twelve physical attributes, and the results from the case study being conducted in Braunstone, Leicestershire.