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CONTENTS

EDITORS' NOTE

This issue of JRAP includes five papers, on very varied areas of research. These papers address subject matters related to heritage conservation, streetscapes and infrastructure development, social capital and barrier free urban environment. The first paper included in this issue was presented in the Sixth Seminar of Urban and Regional Planning, 2011, and the second paper included in this issue was presented in the Tenth Seminar of Urban and Regional Planning, 2015. Both of these seminars were organised by the Department of Architecture and Planning, NED University of Engineering and Technology.

The first paper by Emeritus Professor Brian Goodey questions the idea of conserving built form of historical importance and debates that at times other ingredients in an urban space are of greater importance and are valued by communities. These ingredients play a socially, culturally and politically significant role in the everyday lives of people and have collective memories associated with them. The paper also draws attention towards changing urban landscapes and the role of technology and its impact on the way cities are perceived today. The second paper also looks at urban transformation but in relationship to urban infrastructure development. This paper is set in the context of Addis Abeba (Ethiopia) and presents the research findings of the impact of a large scale and formal approach of installing high-speed trains, LRT's or expand highways and ring roads, to stimulate urban growth, reviewing aspects of proximity, accessibility and permeability.

The third and fourth papers are set in the context of Lahore, Pakistan. The third paper is a factual documentation of the current condition of the masonry walls of Shish Mahal, Lahore and proposes some remedial measures and conservation strategies to preserve the brick work preventing it from further damage and deterioration. The fourth paper discusses the concept of social capital and investigates the reason behind its decrease in modern neighbourhoods, basing the research on two localities of Lahore. The premise of this paper revolves around the understanding that certain types of urban plans encourage social ties and community connections, whereas others do not.

The last paper included in this issue reviews the built environment in Karachi for its responsiveness to accessibility for people with disabilities and limited abilities. This paper undertakes a case based approach, identifying the shortfall in the design of healthcare and educational facilities in Karachi for making them barrier free, and proposes some design strategies to make the designs user friendly.

This issue of JRAP has a book review of 'Karachi from the Prism of Urban Design' authored by Noman Ahmed, Asiya Sadiq, Masooma M. Shakir and Suneela Ahmed.

Editorial Board

RECONCILING THE LIVING LANDSCAPE WITH OUR LIVING CULTURE[•]

Brian Goodey*

ABSTRACT

Conservation townscape ideas and understandings move with generations and innovations (Fallowwell et.al, 2010). As new generations respond to an electronic and globalised world, daily life and public policy seem to respond to events, often leaving the settings to take care of themselves. Often the only environmental response is to ensure basic facilities, or to enhance for the benefit of an essentially tourist market. The historic context of many decisions is having a hard time. One is not to compliment oneself on a job well done, nor does society often understand what one is doing. It is seen as a desirable commodity for those who can afford it, a significant factor in Western planning perhaps, but modest when faced with community protest for basic facilities. It is somewhat of a luxury, and it is treated as such.

Culturally and politically one relies on the shared meanings and understandings behind current public life, and therefore on the landscape, both the green landscape and built settings provide a mental context for one's actions. So when London is mentioned a particular image of London comes to mind. That image might be a complex overlay of television images, personal visits, narrations from relatives, or political events. They all come together and everyone has a different image. The next decision about London, will be based on a combination of those images.

The big question remains as to how, and to what degree, should these contexts be conserved, maintained and promoted in contemporary cultural life? The argument in this paper is around the fact that these past remnants are not just for the package holiday visitor, but their presentation serves as an essential, visible text to remind citizens of the origin of their current beliefs and aspirations. They are markers of where one has been.

Urban squares, buildings, and routes, and the arrangement of rural land provide the textbook for what is to be retained, retrieved or rejected in the future, they are part of personal encyclopedias. They are often more eloquent and universal in their language than the modern polemic, and ways must be found for re-incorporating them into the thought process of a contemporary population. It is 'thinking differently' by the current generations, as well as the generations that are to follow, that is both interesting as well as very disturbing. Electronic media should be used to learn about place, but it also means that a lot of older ideas need to be re-evaluated with a big task at hand for teachers. The challenge for those who choose to conserve and understand such places is how to integrate them with the current ways of knowing.

Keywords: Heritage, Urban Meanings, Culture, Landscape

PERSONAL HERITAGE

Everybody has a personal heritage. Somebody who has never been to school has a personal heritage, and so does a professor with many degrees. One is not better than the other, as they are based on human experiences and not on exams. A rose garden in front of a house can be part of some ones personal heritage and have many memories associated to it.

Buildings are not the only places to start with this idea of townscape heritage, it is perhaps the stories that are most important. This can be demonstrated by a small example. An American colleague, Henry Sanoff, asked a group of his students to conduct surveys in a small town in North Carolina with regard to how that town should spend a certain sum of money that was available for building conservation. They identified two potential buildings to be conserved. One was an historic courthouse, which naturally had all sorts of

official understandings around it, the other building was a 1930's Roosevelt period high school. The town was asked which of the two buildings they wanted to conserve. Quite naturally, it was the high school, not a particularly brilliant piece of architecture, but everybody from the town had been there; almost everybody had had a positive experience and saw its significance in the lives of their children. The high school was part of a living community, the courthouse, which the experts on architectural conservation might have gone for, unfortunately housed the town jail, the court, the sheriff's department, and the tax department. Four negative strikes against that building. This had nothing really to do with the architecture, but a lot to do with how people experienced that place.

Similarly, a bus stop near an all boys school, where the boys got to meet girls and have a chit chat, had many memories attached to it. If it were replaced by a housing scheme memories would have been lost.

HERITAGE OF URBAN MEANINGS

Everyone has a particular baggage of personal heritage. A grandmother's house in the town will have a special meaning especially it if is a completely unexceptional house (Figure 1) in terms of its architectureal significance, with no special cause for interest other than its name such as called Tekrit, after a grandfather who was killed in Tekrit in Iraq in the First World War. This house might be the only house in England that has an Iraqi town name on it. But it is still there, which is more than can be said for the grave in Iraq.

The development of designations for officially identified quarters, zones, or other areas has often served to remove the complexity of urban meanings, superimposing an academic or official convenience. A paper on Manchester (While and Short, 2011: 5) notes that 'the cultural built heritage for most localities is intensely hybrid… in that, the inherited built environment is always the product of successive waves of development, redevelopment, modification, and change. In other words, some places (or parts of those places) may be more coherent than others in terms of aspects of extant cultural built heritage, but even places that are recognized (or branded) as historic are invariably assemblages of urban interventions over time…. local planning frameworks, and especially place marketing strategies, tend to present 'heritage' in terms of reasonably coherent spatial identities.'

This aspect of heritage has led to a moulding of certain areas for certain periods, forgetting their diversities and that they always change. There are always new interventions, and we have to learn to expect and to accept these.

While and Short (2011), were writing about Manchester, a city not internationally renowned for its heritage. Subject to bombing by the IRA, it had to rebuild large areas, and certain modern movement buildings were then accepted as part of the heritage prior to that destruction.

In the past few years there has been an engagement with a longitudinal study of townscape initiatives in Britain (Shipley and Reeve, 2010, Goodey et.al., 2004 and 2007). These were Heritage Lottery Fund designations, and the longest succession of projects have been run on a group of towns, a sample of sixteen schemes from ninety initiated over thirteen years.

The key question then becomes - is all really worth it? Conservation, local education, and other social and economic factors, work together to add value to a place in the long term. This is quite difficult information to get at and the very parameters that make the research effective tend to obliterate the more personal and idiosyncratic of memories.

Figure-1: 'Tekrit' my grandmothers's house in Chelmsford, U. K.

For instance if one can study the diversity of buildings and their existing urban meanings one should start with an anomalous conserved structure, a bridge in Mostar, Bosnia that links two communities which has been rebuilt by the Turkish government after wartime damage (Goodey and Desimpelaer, 2003). Bridges are of much more interest to the community at large than are buildings, as bridges always link things, and in this case communities (Figure 2). In Britain peoples' favorite building are towers or bridges. These are feats of engineering and may be more attractive than buildings because one can see their workings and purpose at a glance. Buildings almost always have an inside that needs to be explored, which most people do not have the time to do, as they just pass by them.

The Athens Acropolis (Figure 3) for example, is a global phenomenon. One of the enduring features of the townscape is the towering hilltop monument. In Karachi too, there are small and large monuments that are turning points in the traffic system. They are markers, continuing evidence of Lynch's pioneer urban analysis (Lynch, 1984).

It is appropriate to consider the settings rather than the buildings because, for most people, it is the space between the buildings that they use rather than the buildings themselves as they traverse and experience the city (Wood,1995). For example, when one goes to a concert, a political rally, or any other open-air event, one doesn't normally stand there looking at the buildings, but participates in the activity that is going on in the contained space. It is the setting that becomes the primary element of that space. As long as the setting is familiar, and one knows that one can be there, it is what happens up front that is more important than the backdrop.

In some spaces the building are hardly a concern, as in the open-air market in Malaysia (Figure 4). It is essentially the activity that is the conservable object. The activity needs to be maintained in order to give vitality to the market space.

Corners within the cityscape are important as well. They act as turning points, modest intrusions in the eye, but landmarks for navigability of a city, allowing one to steer the way through. In some countries, including England, a small street corner could vanish overnight, without anybody thinking how it was used in navigation, or what significance it held for the townsfolk.

Steps are also a primary cityscape feature, they are available to anybody. Sometimes, the building might not be as important a feature of the urban setting as are the steps that lead up to it. This is especially the case with large, monumental stairways that open up to public squares.

Figure-3: 1970's tourist view of the ill-informed visit to the Acropolis, Athens.

Figure-2: The Bridge at Mostar, under reconsturction after being severed during the Bosnian conflict.

Figure-4: Local market in Malaysia.

Thus, thinking of public spaces around the building and their conservation is as important as conserving a building or sometimes more important for many people than the buildings themselves.

FADED MEANINGS

People today say things are changing very rapidly, much faster than people can accommodate. Those of a younger generation might, perhaps, say they want things to change even faster. This is because of age, and how much one can carry in their mind. One has to realize that one carries a vast filing cabinet in one's head, which is continually bursting with papers falling out. Some people still have space left in the filing cabinets, so they want more experience, more change, and more learning.

Culturally one might empty out the heads. At times radical changes are made to the way the built environment is used. Lynch's (1961) work emphasizes on local landmarks, but a number of meanings are in decline. Going around Karachi, one can see how the Colonial-era meanings are fading fast as generations who were alive during that period pass. But, perhaps more recent meanings are fading as well, especially functional meanings.

If one is asked in a street in Oxford the way to a particular place, one would probably direct with reference to a church on the street corner, or a local pub. Today attendance at churches is declining so rapidly that in England, and about a dozen other European countries, within the next generation, there is likely to a massive crisis as to the funding and upkeep of churches. Locally the established parish church retains the community values, much in the same way that a mosque does. There is real tension, as people would like to retain the church spire, but they are really unwilling to consider the process of thinking why it is there. Pubs, public houses, were the social focus of British urban life down to the 1950's and 1960's. But because of a range of legislation in terms of smoking (pubs are primarily non-smoking areas) and alcohol prices (more people now drink at home), pubs are in rapid decline. This is a real problem – if two of the main landmark features that are used to navigate towns are under threat, what is the new language of navigation?

Cathedrals will always stay, but imagine the cost of maintaining a huge medieval cathedral by a religion that is not well-financed. One solution might be to move churches to museums - small Welsh church, originally located in a hilly valley, was moved into a museum in Southern Wales.

Many more people will be able to see it but one cannot possibly move around all the churches that are becoming obsolete or falling into neglect.

It is just not about fading meanings, but lost meanings. For example, a church in a London commuter village contains a 1000 AD, pre-Norman, font where a few children are still baptized. If any of the residents have looked at it in close detail, unique design that represents Noah and his boat will be seen. It is an amazingly modern piece of design (Figure 5) but unless one has read quite a detailed guidebook on it, one will not be able to fully appreciate its beauty and its meaning. A church nearby has a contemporary report by a clergyman on the effects of the Plague of the 14th century written on its wall. Most of the village died in the Plague, and he wanted to report that. Churches contain a fantastic amount of physically accessible history, and yet, even if one has the financial means to conserve them, there is a massive gap between their physical and cultural accessibility.

Possibly, as Conn (2010: 163) notes, the gap is between the past and present cultures:

'Museums, archives, cemeteries. festivals, anniversaries, treaties, depositions, monuments, sanctuaries, fraternal order – these are the boundary stones of another age, illusions of eternity. It is the nostalgic dimension of these devotional institutions that make them seem beleaguered and cold – they mark the rituals of a society without ritual; integral particularities in a society that levels particularity ; signs of distinction and of group membership in a society that tends to recognize individuals only as identical and equal.'

Figure-5: Anglo-Saxon English church font for baptism, still in use in Hertfordshire. The simple marine images are both ancient and modern.

ATTACHMENT TO THE GRAPHIC

When it comes to cuisine, very different local styles of food have also been replaced. For there is also an accessible cultural heritage of food. Foods are also changing very rapidly. For instance 'Pie and Mash' shop (Figure 6) in London now has very few shops remaining that actually sell eels, though it used to be the standard working class fare for East London. Pubs are diminishing as well, and their names no longer resonate with a declining local, but increasing tourist clientele. For example, a pub named "The Essex Serpent" in Covent Garden (Figure 7) is no longer visited by workers from the closed fruit market. Its name does not present the same meaning or charm to its new audience. The Essex Serpent was a 15th century myth that most users of the pub today would not have a clue about. Some pubs that are being reestablished are actually using history. A pub in Manchester has depicted on its nameplate former modes of transportation, such as a horse drawn carriage, a double-decker bus, and a tram (Figure 8).

There is an immense teaching and education task that needs to be undertaken, together as students and teachers, have got to do it for the benefit of the community. One has to move in a way in which people understand cities (Goodey, 2006). The understanding of townscape varies from country to country. Townscape, in China for instance specifically, is not the buildings in general, but the neon signs. One navigates using neon signs, and the character of the street is made up by the typical colors of its neon signs. It is very much the façade, but the building façade is essentially eliminated. One has to think seriously about what a whole succession of experiences with regard to mass media, movies,

Figure-7: The 'Essex Serpent' in Garden.

Figure-6: Pie ad Mash shop in modern shopping centre, Poplar, London; a relic of popular working class fast foods.
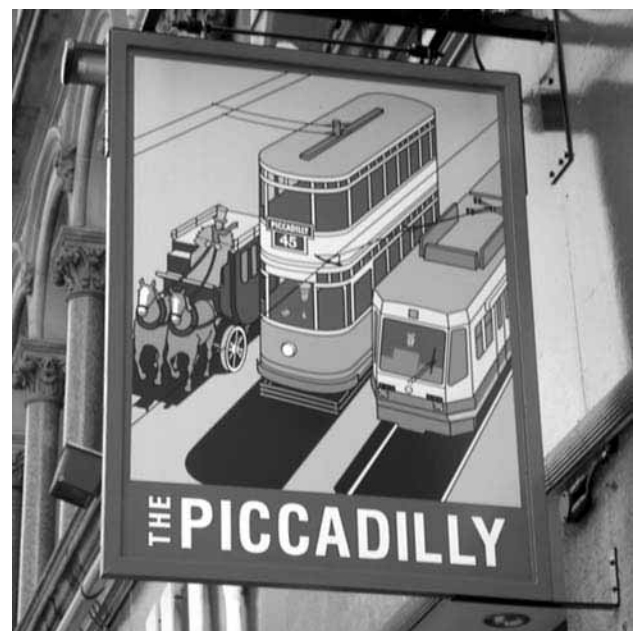

Figure-8: The Piccadilly' pub in Piccadilly, Manchester: recreates the history of 20th century transport.

television, the mobile phone, and the computer, have done to the way one learns about and responds to an urban place (Zukin,2010). The role of media in shaping places becomes important. No longer does one learn from long, dusty, books which explain the details of architecture, but from images repeated in a variety of places. It is very selective. The townscape of graphic messages, of visible waves of information, was identified by American architect Venturi, et. al. (1977) in his student study visit that generated "Learning from Las Vegas". In the book Venturi drew on the desert gambling centre's strip to identify the townscape of billboards and signs.

Architects and urban designers are not amused but the age has arrived where most people are tapping into the way Venturi described urban learning. People tend to be moving by vehicles rather than on foot, and they look for the large messages, because large and simply framed messages are continually repeated in the media. So it is time to have a look at Venturi, and at what Venturi's critics have written about him. People have to accept that different townscapes include different forms of signage, graphic displays and monuments.

There have almost always been graphics in the town. Street names are very interesting - noticeable graphic feature is town signs, these are becoming increasingly common in Britain. Town signs announce the uniqueness of place, in the United States, one can find murals at significant public spaces within towns that summarize the local hitory for the townsfolk (Figure 9). This is done in the hope that people who haven't read the history in books would pick it up from such murals on large public walls. Another aspect of public

graphics, is the occasional graffiti artist, whose job is to promote and provoke people. But the question is, is graffiti vandalism? It is certainly not in Britain now, especially with the significance of the artist Banksy (Figure 10). The new language of graffiti, street art, and art for the environment is becoming very much part of the townscape. One ought to consider how and what is added to it, how it is conserved, and how it helps make places. Some cultures are very useful in that regard. Mexico has used the mural as a basic teaching and educational device since the 1930's, to pave the way for spreading urban awareness. The French are more subtle in this regard, a blank wall in Montpellier was painted over as a mural depicting a building façade, with arches, and windows that reflected figures and images of the townscape

Figure-10: Graffiti artist 'Banksy's' critique of the banking system, painted in Exmouth, Clerkenwell, North London.

Figure-9: Contemporary wall painting presenting the history of a town in Arkansas, U. S. A.

Figure-11: Public art used to animate a restored blank façade, Montpellier France.

(Figure 11). Similarly, a mural on a large blank wall in California, called the "Arizona Coast" (Figure12), depicted what would happen in case a large earthquake gobbled up the whole of California. Now, one could pass on the same message through newspaper headlines, one can do it with pundits on television, but if one sees a large mural daily that depicted this scene graphically, it would start giving thoughts about where one stands, or shake.

So, public art can be a very useful communicative tool, and has also been used symbolically in many cultures to maintain and support existing political systems. For instance, there are still statues of Lenin in Ukraine. In Britain, the cultural heroes are looked upon and needless to say they are not politicians, but usually footballers. It is interesting to see how football is emerging in the streets as more than merely a game, in the form of celebrity statues and team messages posted around towns (Figure 13).

The Angel of the North, a tall landscape sculpture in Newcastle, has made its place on the list of the top ten most known buildings in Britain in just ten years. It is large, it demonstrates the vitality of Northeast England, it uses modern engineering materials, and it makes a statement about the city today.

The whole array of urban graphics and official, and informal, public art help differentiate place and assist memory and navigation. They are often more accessible than the professionally and fine art defined building subjects of conservation effort.

EVENTS

Events in the city are important too. It seems that if one can manage to involve the local community in commemorating itself, or help in creating new memories, or manage to draw people into public spaces, one achieves a key aspect of urban design. Events can often aggravate or accelerate hidden meanings in society and can relieve tension from a society. In England, there is Morris Dancing – men in white trousers and funny hats dancing around the streets with sticks and bell, or with more threatening outfits (Figure 14). This has quite deep undertones of fear and superstition. The Day of the Dead in Mexico commemorates deceased souls and spirits. The whole country visits graveyards, thinks of the family, and pays homage to the dead. But in essence, it relives the tension of fear, concern, and regret, and is marked as a marvelously jubilant day. Townscapes, this way, serve as places or settings for events – markets remain some of the most free of such place makers (Calabi, 2004).

Figure-12: 1960's Los Angeles end of block painting showing the 'Arizona Coast' with the implication that with an earthquake the whole of California could be submerged.

Figure-13: Statue of Nat Lofthouse, much respected player with Newcastle United. Located in central Newcastle the statue is dressed in scarves with a Newcastle win.

Figure-14: Border Morris dancing team in the streets of Warwick. Border Morris uses blacked-faces as a reminder of the mystery of the Morris Dance.

Sometimes, events take over these places completely, sometimes moving streetscape with a rich layer of highly decorated vehicles with scenes and dreams of wished-for places (Van Oppen, 1992)

WHAT GETS SAVED AND WHY?

Originally, conservation was developed by elites who sought to save the evidence of their dominance in a society. Greiff (1974) notes the early importance of the 'Daughters of the American Revolution' in establishing the significance of 18th century buildings in American society – a form of 'ancestor worship.'

But today, what gets saved, and why? Why is it decided to save certain elements or settings? One rule that applies is rarity – when people start saying that there aren't many more of a certain object left around, other people would come forward and try to save one or two for the future, but it does mean that an awful lot would go away in the meanwhile.

Along with rarity comes the fact that something may be very common throughout the country but not in a particular region. So if a region has one or two of that object, it automatically becomes a novelty – a matter of local uniqueness. The third reason is the ability to reconcile with prevailing economic utility of a building or a site – this is extremely important as one has got to go with the flow in many cases. The flow in Karachi certainly talks of new, large buildings. Integrating conservation financially and culturally with the development process is a key achievement. The people who are mainly interested in making money need to be taken into confidence in order to save cultural heritage. It takes a lot of work, but it is one of those areas that really needs to be worked on. What does get saved occasionally are odd buildings which are preserved by developers.

Another way of conserving and getting things saved is that the owner realizes the status that can be achieved by conservation, this is a matter of public education. In many old houses, people are selling off their woodwork and vintage décor as it is more significant to have a modern house without such rustic elements. If, however, a prominent cricketer in Pakistan has an old house that he preserves, or there are photographs in a style magazine of something like that, the status to be achieved by doing the right thing is enhanced. In many cases, that is a process that has nothing to do with conservation as such, but more with public relations, by which one can get people to support conservation

attempts. Conservationists have to learn a few more tricks than mere architectural knowledge to save buildings (and there are a lot of tricks to learn).

There are shifts in shared public memory. Events occur that suddenly make places important. When military bases close down, for example, as they are in Britain, they contain the lives of many people. Some might want to retain the physical structure of the base, even if it changes its function, rather than demolish the building completely. As another example, a building in Worcester that was used for selling hops was recently converted to a courtyard market rather than being pulled down.

There are certainly enthusiasts of the modern movement, but many who wish to conserve older buildings are not too interested in conserving modern buildings. A sculpture park in Britain which contained artwork by some of Britain's best known sculptors was recently removed to make space for a new supermarket, as the town needed new shops (Figure 15). This is a case of something that does not get saved because it is not old enough, or does not have the right image. That occurs very often, and one should question why that is happening.

Figure-15: The Water Gardens at Harlow New Town, Essex, prior to demolition for a new shopping centre. Designed by Frederick Gibberd, the Water Gardens included work by Frink and other sculptors the wrong place at the wrong time!

Rarity, as mentioned before, is also a major feature. For instance pottery kilns in Staffordshire are now being saved. There was a time when they dotted the horizon by the hundreds, (Figure 16) and it was not until a very few of them were left that people started conserving them. In Birmingham in 1968, the whole town was filled with back-to-back houses. Houses that essentially share three walls as it was the cheapest way of building construction during the 19th century. These were in very poor condition, and whole areas within these building compounds were vacant (Figure 17). Only after massive demolition did the charitable National Trust discover a small, city centre group, and now presents them as a tourist remnant of the 19th century.

Ideas about what needs to be conserved keep changing. There was one particular building in Birmingham, a skyscraper office tower, a good landmark, and people knew it very well. There was a plan, since completed, to renew the city's 'Bullring' area, and this building was threatened (Figure 18). However, despite the completion of the new Bullring, it has been retained by Urban Splash Developers for residential use.

Why, one wonders, this sudden change in action? The building received popular support in the newspapers, forcing the developers to conserve rather than demolish the building. Still, it was just like any other modern building – how did it suddenly become loved? One, it was a landmark. Two, a pub at the base level of this building was bombed by the

Figure-17: Back-to-back houses, N. Birmingham, 1970's: nobody could claim that such environments deserved saving .... But then along comes the National Trust.

Figure-18: The Rotunda, Birmingham, 1970's. Key feature of a 1960's planning scheme, saved by local memories and now redeveloped.

IRA in the early 1970's, killing a hundred people, but the building stayed up. The support of Birmingham for this building integrates a memorialization of people with the fact that Birmingham survived. It is the same mentality that survived in the war.

CONCLUSION

Townscape qualities are only recognized by specialist, affluent, and informed groups. They may actually be local as well, which is even better. But essentially, it is a specialist activity. To sustain the professional belief in conservation of townscapes, one needs to recast the publications and media appearances, and even start producing apps. One

Figure-16: The pot kiln environment of the Potteries from the 1960's; most of the pottery manufacture has now moved abroad.

needs to get the information and ideas into popular language, where people are likely to use them. One needs to develop international evidence that townscape investment benefits all in the development process, and at all scales. Turning a historic building into a cultural center seems like a good thing to do. But ten years later will money still be shoveled into it, is it always on the edge, because it was never going to be profitable – in any terms, not just commercially? One must accept that Lynch's idea – pedestrians navigating the city using landmarks, edges, nodes, districts, and routes – does not hold up very accurately in today's fast changing urban scenario. It might have been applicable in the 1960's when his book first came out, but Lynch himself realized ten years later that people experienced cities using wheeled modes of transport more than they did through pedestrianization. It is quite okay, if one has a historic part of the city where one can go have a pleasant walk, or grab a cup of tea, and spend an evening on foot, but it is important to realize that most people today simply do not enjoy cities in that way. Pre-calibrated GPS guides and other modern navigational aids tend to nullify individual townscape expression. People are not going to look at and read buildings when they have a navigation system installed in their cars, and constantly check it to see where they are headed to.

One must find ways of linking to current patterns of experience and design buildings, signs, and electronic prompts according to these. Over concentration on building form and detail has been to the impact of colour (Seo, 2010) and the casual accumulation of sound and smell scapes. Fortunately, at the moment, there are people looking at tiles, and how tiles can be used electronically to give information on buildings. A number of experiments are being conducted throughout the world on how buildings can give information to the passerby. This is where we get to the interesting bit about electronic waves, cities communicating with their

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STREETSCAPE TERRITORIES AND THE CASE OF ADDIS ABEBA•

Kris Scheerlinck*

ABSTRACT

Urban transformation is directly related to the planning, design and use of a series of urban infrastructures, from streets to highways, from pedestrian, bicycle, bus or train lines and their connecting transport hubs to rivers, canals or harbor facilities. They play an essential role in the transformation of the urban fabric. Recent societal changes, especially in developing countries, demanding higher mobility and urban interaction, influence the used planning and design strategies to transform or extend urbanized areas by planning or renewing these infrastructures. However, its relationship to the surrounding urban fabric, more specifically the collective spaces it constitutes at the level of the streetscape, is not always an initial or integral part of providing these infrastructures. In many cases, the urban fabric is wrapped around or fragmented by these infrastructural projects, causing scale contrasts and struggle to integrate within, generating processes of misappropriation or misuse. Especially in developing contexts, new infrastructures are often planned and built in a fast way, rarely considering the qualities of the existing urban fabric.

During the last decades, research on planning and design models related to the building or integrating of urban infrastructures has been developed and tested via specialised disciplinary approaches to produce insights on the relationship urban infrastructures have with the surrounding urban fabric (Secchi, 2013; Hasan, et. al. 2010; Shannon and Smets, 2009; De Maulder, 2008; Hillier, 1996;). However, additional in-depth research is needed to achieve critical insights on the relationship of infrastructures and their direct environments, starting from their constituent streetscapes - considering the level of the street that defines the perception and use by the inhabitants at an intermediate scale.

This paper focuses on an ongoing research project in Addis Abeba (Ethiopia), where different visions and models of urban growth are at stake (Figure 1). The recent increase of (foreign) investment in major infrastructures, changes the city's streetscapes drastically. This large scale and formal approach of installing high speed trains, Light Rail Transit's (LRT) or expanded highways and ring roads, to stimulate urban growth, contrasts with the daily routines of the proper citizens that move around by walking or by means of mini buses, both adding to the informal qualities of the city's streetscapes. Within this multi-centred capital, the location of built and planned housing projects, commercial centres, administrative or commercial high rises is studied in relation to the present infrastructural axes and questions models of proximity, accessibility and permeability.

Keywords: Streetscapes, High Speed Trains, LRT, Addis Abeba, Infrastructure

Figure-1: Streetscapes and Infrastructure in Addis Abeba.

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INFRASTRUCTURE AND URBAN FABRIC

During the last decades, research on planning and design models related to the building or integrating of urban infrastructures have been developed and tested via specialised disciplinary fields. From traditional morphological research, analysing urban growth schemes in a historical framework (De Sola-Morales, 1997) to studying syntax integration values (Hillier, 1996). Both approaches allow to provide insights to the socio-morphological dynamics of space production. Mobility or transportation studies, mostly based on criteria of efficiency, capacity or performance (De Meulder, 2008) combine research methods focusing on how to densify the existing built environment (Ray et. al., 1999) or intensify its program, both linked to infrastructural interventions (Shannon and Smets, 2009). Other study fields focus on centrality or multi-centrality and the urban or peri-urban condition of areas in transformation seeking to guarantee maximum connectivity. Linked to these research approaches, new planning models have been studied to update zoning or land use planning (Khan, Moulaert, et. al., 2013), relying on strategic plans with a highly structural dimension laid out in time and a strong focus on participation. Environmental issues have gained importance due to the scientifically proven advance of global warming and its effects on urban growth or transformation (Khan, Quynh, et. al. 2013; Hasan, et. al., 2010). An increasing consciousness of the impact of urbanisation and need for sustainable waste-management (Hodson and Marvin, 2010) changes the agenda of planning or renewing infrastructures on a global scale. This environmental concern is undoubtedly related to discourses of how to read, interpret and plan the urban landscape, from conceptual to more pragmatic approaches to revalorize open landscapes. At alternating scales, the level of formalisation -that is the explicit or implicit delimitation of use of space- is studied (Lefebvre, 1996; Harvey, 2003) as available space is reducing and mobility requirements increase. Finally, the planning and design of urban infrastructure embodies models of social inclusion of exclusion (Smith, 1992; Sennett, 2013), due to the resulting change of accessibility and living standards for the inhabitants.

Despite the un-doubtable necessity of the above mentioned existing research approaches on the relation between infrastructures and the urban fabric, there is an increasing need to explore and unfold research approaches that start from an in situ condition, exploring mobility issues and the impact of infrastructure on the urban fabric in an immediate sense, operating at the level of the street. The case developed in this paper describes an ongoing research project, part of the Streetscape Territories Project, about Addis Abeba,

Ethiopia. The following heads describe the framework for the on-site analysis.

STREETSCAPE TERRITORIES FRAMEWORK FOR ON-SITE ANALYSIS

Streetscape Territories is the name given to an international research project (KU Leuven, Department of Architecture) that focuses on the transformation of the urban fabric and considers its streetscapes the protagonists. The research deals with the way architectural artifacts, open space, the property structure and its inherent accessibility and permeability configure streetscapes and how their inhabitants can give meaning to them.

This project focuses on models of proximity within a street, neighborhood or region and starts from the assumption that urban space, from the domestic scale till the scale of the city, can be understood as a discontinuous collective space (De Solà-Morales, 1992; Avermaete and Teerds, 2007; Scheerlinck, 2011, 2012, 2013), containing different levels of shared use that are defined by multiple physical, cultural or territorial boundaries (Habraken, 1998). How do people and buildings relate to each other and how does it contribute to the local identity of the built and social environment?

The intermediate scale (Bijlsma and Groenland, 2008), that is the scale between the architectural intervention and the urbanistic plan, defines the research domain. Within this research project, collective spaces that are characterized by an "between/among" space condition are read, mapped or designed: systems of streets, squares, gardens, parks, but also patios, porches, enclaves, covered or portico spaces, courtyards and all other interstitial areas are subject of research. The research consists out of systematic and comparative analysis of existing neighborhoods, streetscapes, public spaces, urban landscapes or complex buildings in different locations, based on research by design. It includes multiple approaches from different disciplinary fields and considers research and design simultaneous and integrated processes of developing urban projects. The overarching aim of the research approach is to provide new research methods and insights to facilitate a critical and productive discussion on the transformation of the contemporary urban fabric, manifested through its multiple streetscapes.

The Streetscape Territories research projects are based on the following principles, that together constitute the framework for analysis.

The project focuses on the territorial organisation of

streetscapes explored in different contexts, studied as part of different cultures and defined by different social networks. It starts with the assumption that streetscape is subject of constant negotiation and part of scenario of uncertainty at different levels. Uncertainty is very important dimension in planning a design processs (Teerds, et. al., 2011) as we have no control on every single aspect of that process. Many elements remain unpredictable, unstable or even unkown in a political, environmental, social or economical way because of the multi-layered character of urban projects there is a certain complexity and non-linear process that often seems to overtake the overall urban development. For this reason, multiplicity, ambivalence and the undefinedness of a project are always the starting point of the Streetscape Territories projects. The research and design approaches are defined by five main concepts, described in the following part of the paper.

Depth

According to Habraken (1998), the built environment, defined by territorial organisation, is founded on the principle of inclusion within other territories. The author relates this very principle to the transition between private and public spaces. Imagining different accessibility patterns within this theoretical model of inclusion, that is, different ways of entering those territorial scenarios, Habraken defines in a clear way the concept of territorial depth. "Territorial depth is measured by the number of boundary crossings (…) needed to move from the outer space to the innermost territory" (Habraken, 1998:137). However, territorial depth is not a static parameter within a time framework, after the intervention of various urban agents, depth can increase or decrease, according to the specific characteristics and dynamics of the built environment (Figure 2).

Hillier and Hanson (1984) also refer to depth and describe how architecture structures the systems of space we inhabit and how those systems are related with a social life movement, encounter of social relations or avoidance are part of architectural social vocabulary. Apart from theoretical models that deal with space without a social context or studies of society without a spatial context, they propose a new model to understand the built environment, starting from applied disciplines. First, this means that a social context of spatial patterning is studied with a simultaneous analysis of a spatial context of social patterning. Second, they suggest a new method of analysis of spatial patterns: one that concentrates on the relation between local morphologic relations and global patterns. This includes a theory of pattern types and a description of a method of

analysis. Above all, they believe in the non-hierarchical, abstract notions of spatial relations between buildings or other elements, defining the environment. They point out that syntactic generators of space are shape-free the study of space as a system is not about shape. Besides that, they dedicate a limited role to "distances" or "location" and focus on simultaneously existing relationships that are ever-changing. In other words, they are interested in rethinking the concept of proximity at an urban scale.

According to the authors, buildings define empty volumes of space in between, which can be seen as ordering space. They mention that buildings seem to be physical artefacts, but that this illusionary transformation of space through objects means ordering relations between people. In other words, this constitutes a system of social relations. Hillier (1996) continues the analysis of space syntax and tries to define the concept of relations: "(...) relations, especially spatial relations are very puzzling entities. (...) We must accept that (...) the relation, like the term it relates, is not dependent on thoughts, but belongs to the independent world which thought apprehends, but does not create." This independent world is full of complex relational schemes, between areas, buildings, users, voids and program defined configurations. A configuration is "a set of relationships among things all of which interdepend in an overall structure of some kind (...) if we define spatial relations as existing when there is any type of link -say adjacency or permeability- between two spaces, then configuration exists when relations between two spaces are changed according to how we relate one or both to at least one other space" (Hillier, 1996: 33)

Collective Space

Processes of spatial specialisation and socio-functional segregation go together with increasing thematisation and extreme systematisation of the built environment, understood as live configurations (Habraken, 1998). These configurations are defined by way the public realm is related to private spheres. Nevertheless, the traditional dichotomy of public versus private space looses strength as new models of space use and production arise. The recent mentioned spatial
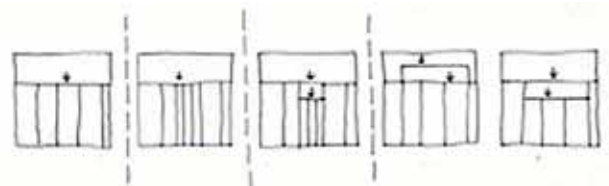

Figure-2: Increase in Territorial Depth, principle schematic diagrams. Source: (Diagram made after fig. 12.8: Habraken, 1998: 215)

phenomena ask for a new understanding that is no more based on a division between private or public space but deals with collective use of space. In a way, Manuel de Solà-Morales questioned two aspects of the traditional definition of public space that it should be publicly owned to have a collective dimension, and that it should be freely accessible by everyone. The author argues: "It is a fact that the city is the very place where the private domain can be, and often is, a social domain- just as much as or indeed even more than the public domain.(...) private buildings as public elements, radiating social meaning and value that extend beyond the actual buildings embody their urban character" (De Solà-Morales, 1992: 3-8). Avermaete et. al. (2007) while making a comparative study on "Architectural Positions on the Public Sphere", quote: "(...) to de Solà-Morales, both these attributes were becoming obsolete, and he argued that even in the most traditional European cities, much public life was developing elsewhere." The very nature of the property, that is who owns the piece of land or the building, becomes less important than the way we use space. They continue saying that, as a response, Manuel de Solà-Morales suggested extending the notion of public space to encompass new spaces such as "parking lots, shopping malls, vacation centres and cinema complexes." He called these collective spaces and argued that architects should seek broader responsibility for their design. They should not concede their design to commercial logic and developer standards, but rather seek to transform them into challenging new fields of architectural investigation. De Solà-Morales described this task as "the urbanisation of the collective territory." The author continues: "the civic, architectural, urban and morphological richness of a contemporary city resides in the collective spaces that are not strictly public or private, but both simultaneously. These are public spaces that are used for private activities, or private spaces that allow for collective use, and they include the whole spectrum in between. Moreover, in the past decades the design of these collective spaces seems to have become an important modus operandi to intervene in the contemporary city. At the intersection between an architectural and an urban scale, architects and urban planners design projects that, through their character and hybridisation of privacy and publicity, contribute to the civic, typological and morphological richness of the city" (De Solà-Morales, 1992: 3-8) (Figure 3).

The author suggests interconnecting private, enclosed spaces, to upgrade and turn them into parts of collective realm to include the particular into the sphere of the influence of the public. In order to do this, formal as well as informal processes of making collective spaces need to be monitored.

Proximity

The concept of depth and its correspondent models of proximity and accessibility are undoubtedly related to the use of space in a more exposed or intimate way, in a more collectively or individually used way. As mentioned before, depth was originally defined as the amount of boundary crossings needed to move from the outer space to the innermost territory. Outer space can often be related to public realm while the innermost territory often refers to private use of space. However, one might need to study these theoretical connotations: the configurational understanding of depth as a complex system of relations, requires a profound study on what is understood as public and private and what are the relations in between: this refers to models of proximity. Proximity depends on individual or collective spacing mechanisms that define a certain model of space production and space organisation. Territorial depth as an access configuration, can possess different recipes of proximity: each configuration is defined by a set of distances at different scales.

In "Territory without a model" Manuel de Solà-Morales describes a different meaning of places, unlike the traditional "genius loci" concept: "the expected sensation of voids and the indifference of its constructions" (De Solà Morales, 1997:21). He refers to the rising importance of periphery that is no more based on tactics of repetition and differences but on a system of relative distances. As the dialogue between the building and the urban surrounding system became an individual one, distances loose their absolute value, they seem to belong to a more complex urban matrix. The author argues that the distance between areas or autonomous packages defines the very law that constructs peripheries, the notion of distance obtained an abstract dimension. However, the importance of this concept gets even more obvious by looking at it at the scale of the urban project: the daily experiences are now defined by sets of

Figure-3: Collective Spaces in Addis Abeba.
Source: Still from video by Mentens and Parachini, 2014

minimal or maximum distances (Figure 4). Important became the distance between properties, between properties and natural resources, between properties and infrastructures, between properties and high employment areas. Instead of defining density, one ended up defining sets of rules of relative distances, that in suburban conditions might be different as in downtown areas. In a way, one defines and measures time and distance, comparing systematically with other configurations.

Spatial Delimitation

The next concept refers to spatial delimitation, an aspect that during the next decade will increasingly define the discours on urban projects. This is becoming more important not only responding to issues of safety and security but at the same time to the different ways of upgrading the social status, of differentiating yourself from your neighbour. The more one can afford to separate oneself from public life, the higher the social status becomes? Spatial mechanisms, and the increasing interest in spatial explicit boundary delimitations (fences, walls…) relate to a new territorial balance mentioned by Madanipour (2003) and Sennett (2013)

Figure-4: Proximity: pedestrian bridge near station area.
Source: Pictures by De Cooman (2013) and student group

some time ago. On a global scale, and specifically in developing contexts, one can easily detect the increasing use of extreme fencing tactics, of spacing mechanisms with disproportional physical distances. There seems to be a growing obsession about applying preplanned territorial transitions in urban projects, avoiding spontaneous overlap scenarios and restricting gaps or margins in the planning of depth configurations, as uncertainty in the interpretation of space is avoided (Figure 5).

Openness and functional indetermination

The last concept refers to openness, spatial tolerance, the needed discussion about the level of functional determination in urban projects. Lately, it seems as if projects or neighborhoods can no more be developed based on their spatial qualities and relations with the surrounding urban context but depend increasingly on programming spaces, as they often guarantee the financial backbone for development. Marot (2006) and Van Daele (2014) also mention this when reviewing contemporary urban or landscape projects. The overprogramming, exclusive focus on functional issues or even the description of ideal use or behaviour in urban space (Sorkin, 2007) leads to a simplification of urbanity and disable possible interpretations of a multiple nature, needed to construct a socially sustainable environment (Figure 6).

THE CASE OF ADDIS ABEBA

The previously described concepts were used to conduct a research project on the case of Addis Abeba, the capital of Ethiopia and of the African Union. This city experiences an exponential growth of population due to the internal growth

Figure-5: Spatial delimitation: all-round fencing in Addis Abeba.
Source: Pictures by De Cooman (2013) and student group

Figure-6: Functional indetermination and emergence of leisure activities in Addis Abeba's streetscapes.
Source: Pictures by Ken De Cooman and student group

but mostly as a result of a flight from the rural areas to the city, in most cases to the capital. Here, signs of urbanisation are omnipresent as the city is being dictated by various large scale infrastructures, responding to its almost uncontrollable growth. Global investments and mixed financial partnerships do not only invest in the city by means of real estate developments like shopping malls, residential gated communities and large scale offices and hotels, they also increase the pressure on connectivity and mobility within the city. These new large scale developments demand the construction of new highways, ringroads, LRT lines, train lines and stations, often imposed onto a fragile built environment, still characterised by strong informal processes of space production. Formal large scale infrastructures seem to contrast with more vernacular surroundings or housing typologies (the *"kebeles"* for example) and cut through them in a radical way. For the last ten years, the city government has been focusing on adding these infrastructures, designed in an often disproportionate way, defining a rather harsh relationship with the urban fabric. Studying and understanding the very balance (or conflict) between formal and informal transformation processes, related to the insertion of new infrastructure into the existing urban fabric, is the main goal of the ongoing Streetscape Territories research project. This research project consists a remote approach, combined with on-site analysis in different moments (two times six weeks research stays project by six Master students and six month remote analysis by the Streetscape Territories research team). Besides the initial thematical mapping of the existing and planned infrastructures, in situ reconnaissance was done, with collaboration of EiABC university and local planning office. The initial mapping and analysis (Figure 7) about the planned highways, ringroads, LRT and train lines, based on information provided by the official planning offices, illustrate

Figure-7: Initial Mapping of Centrality and Large Scale Infrastructures in Addis Abeba.

the used vision and strategy to "complete" a metropolitan system, adressing a notion of centrality. The city is being reconnected and developed with the area around Churchill Road as its centre of gravity, providing it fast connections to other infrastructures like the airport or commercial developments. This means the construction of major roundabouts, allowing the foreign investment in the construction of the LRT lines, remodelation of the central station area located at the southern part of Churchill Road etc. Nevertheless, the following on-site analysis, demonstrated a different reality.

"The way in which you perceive a city is closely related to how you move within it. And in the contemporary city, transportation has became the language able to establish hierarchies, rhythms and new possibilities in the urban space".

So, as 19th century European intellectuals learned Italian in order to read Dante, and as English architecture critic Reyner Banham learned to drive in order to read Los Angeles, to read Addis Abeba we learned to use what today is the (more-or-less) fastest, cheapest and most popular form of public transport in Addis Abeba, the minibus.

The minibuses connect different sub-centers all around the city, following the main streets (roughly the ones with asphalt). The resulting network is extending all over Addis Abeba, from the Entoto Mountain Range in the north to the extreme south, and from the west to the recent eastern expansion, with a web of lines structured around these different centers, without a single major gravity point.

The minibuses aren't therefore just the best way to experience the totality of the city, but actually their organization also reflects one of the most inherent characteristic of Addis Abeba: the absence of a main center (Mentens and Parachini, 2014) (Figure 8).

Indeed, the current structure of the metropolitan system is not characterised by a centre, but rather by a field of intermittent areas, changing in intensity during time (Figure 9). Not only is there no real centre, it is even hard to define the city as multicentral, as the functioning of the city defined by clusters of intense activity like for example the Merkarto Market Area seems to change during the day or the week.

As a consequence, mobility systems are emergently adapted to that, as people move around by minibuses that adapt their routes and schedules according to the daily needs. Looking back at the historic urban growth of the city, one can actually trace this time-dependent multicentrality in the foundation of the city, as the multiple military camps of the main warlords, located on several hills in the area defined the growth of the city during the last two centuries. Nevertheless, this specific kind of multicentrality, strongly related to an informal space production, seems to be questioned, avoided or even neglected by the municipal or metropolitan government that tries to impose a more traditional hierarchy of one main centre on the city's lay-out, reinforced by new transport infrastuctures. The construction of the new LRT line, of new ringroads and highways or new train stations is indeed planned to re-orient the growth of the metropolis. The attention goes to developing large scale projects (shopping malls, hotel complexes, administrative centres etc) that allow the city to ignore its existing urban fabric, mostly defined by informal processes of space production. It also means the involvement of foreign
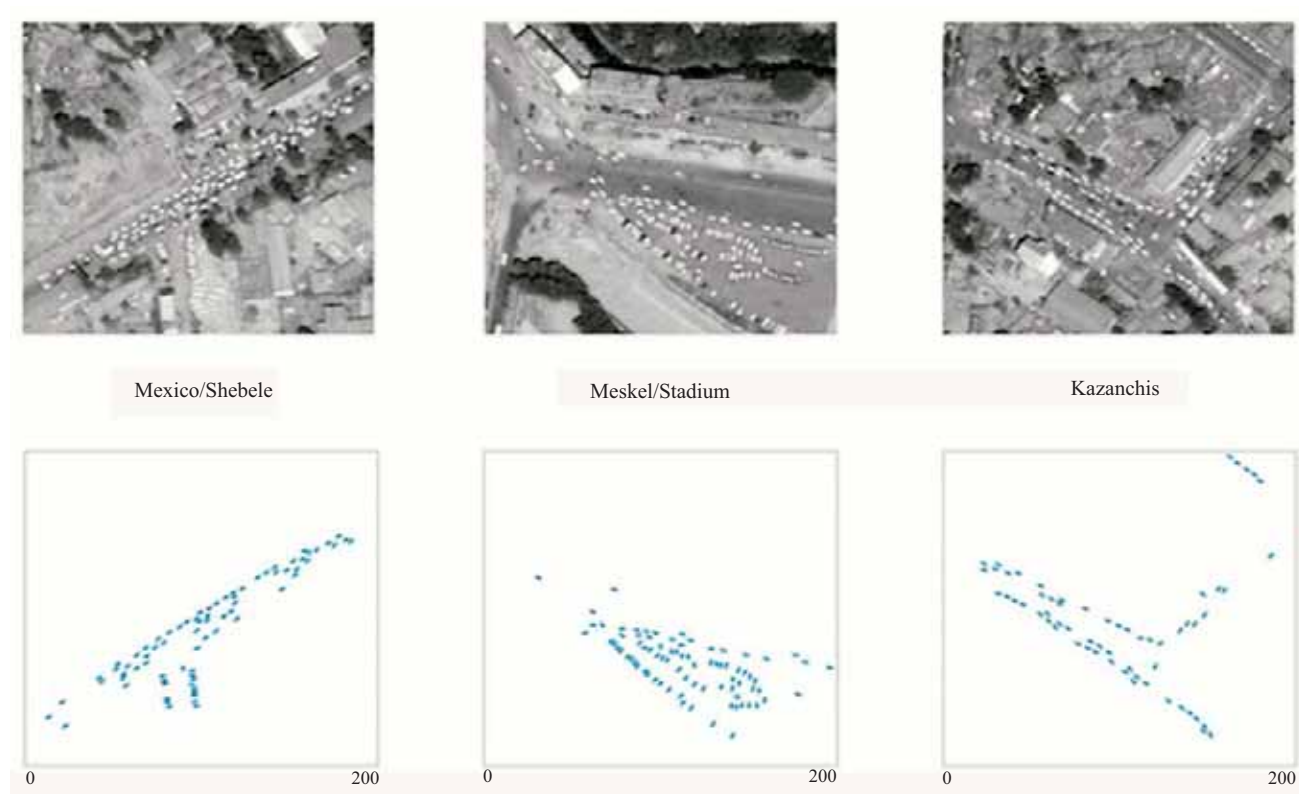

Mexico/Shebele   Meskel/Stadium   Kazanchis

Figure-8: Photographic mapping of minibus itineraries in Addis Abeba and arial maping of the location of the minibuses in various centres in the city.
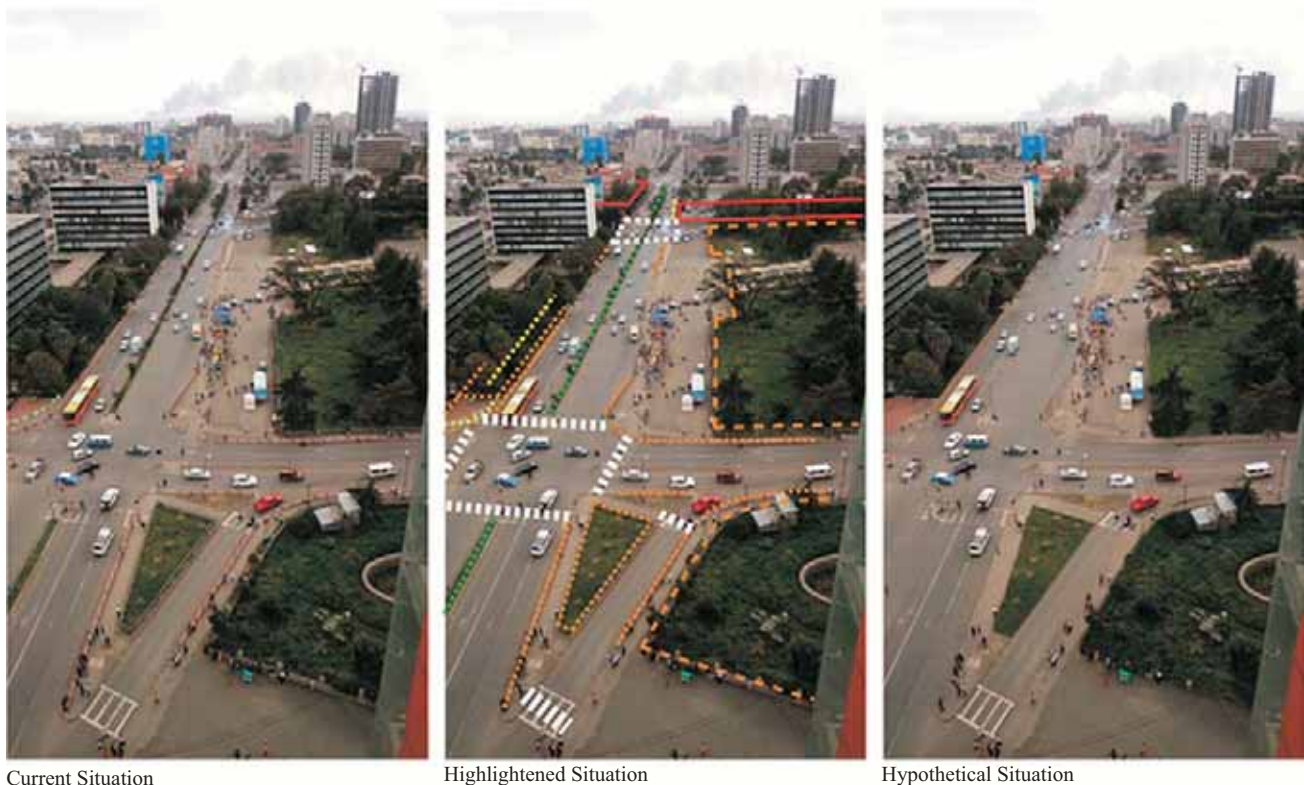Source: Lander Mentens and Matteo Parachini

Current Situation   Highlightened Situation   Hypothetical Situation

Figure-9: Analysis of explicit boundary delimitation and graphic simulation of absence of fences, walls etc. around Churchill Road.

(mostly Chinese) investors to finance the operations. The result of these interventions is a highly fragmented and specialised urban fabric, where high-tech LRT lines literally cut through areas defined by "*kebeles"*, where large scale roundabouts contrast with a small scale residential areas defined by informal economies, where disproportioned avenues avoid any integration in the existing urban landscape. The large scale infrastructure investements seem to attract corporate driven (foreign) developments, while they ignore the relationship with the Grand Housing Programme that was set up to provide a home to the fastly growing population, as the LRT lines do not match the location of these large scale projects.

The on-site analysis of the relationship between infrastructure and the urban fabric, through systematic observation of different transport hubs in the city, and elaborating a thematic photographic, video and graphical mapping, however showed another characteristic of the Ethiopian capital: signs of resilience. Unlike the noncontextual or disproportionate design of the urban transport systems, these urban hubs seem to be redefined and optimised by informal processes. Their adjacent open spaces are massively appropriated by informal

economies, that again trigger the adaptation of the more informal transport modes, like the mini buses. This phenomenon is common in developing contexts but in the case of Addis Abeba, the contrast between the glossy developments and the resilient informal system seems to be more articulated.

CONCLUSION

This ongoing research did provide some initial conclusions:

- The historic multicentrality in the city is reinforced by informal growth and related daily routines of the inhabitants

- Emergent informal transport systems confirm this multicentrality

- Proximity is not an organising principal: transport networks are laid out to trigger new developments, not embrace existing configuration of living, work and recreation areas within the city

- New infrastrucuture projects, mostly as a product of foreign investment, do impose a strong centrality within the city, generating many local conflicts and highlighting contrasts between formal and informal space production

- These mentioned spatial contrasts generate again processes of emergent productivity

- One can detect a strong collective structure based on territorial organisation, use and program, not based on form

- The all-round explicit delimitation of space (fencing) is in strong contrast with emergent uses of space, especially for the new infrastrcuture projects that are planned in a top down way, causing a loss of complexity with territorial configurations

- One can detect an increasing explicit programming of space and an increasing planned segregation and specialisation that is not occuring spontaneously but intentionally programmed as such

Addis Abeba's streetscapes show an interesting relation between the newly planned infrastructures, responding to the rapid urban growth, and the surrounding urban fabric. It seems like formal and informal procceses of space production generate a chain of reinventing urban centralities and by this, show a high level of resilience at the level of the city as well as at the level of the transforming neighbourhoods. In this way the city is able to absorb the multiple needs for change. These forming dynamics however, need to be carefully monitored, and in most cases balanced in a more carefull manner, to maintain the richness of the urban fabric, guaranteeing a socially sustainable city for all.

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MASONRY WALLS ANALYSIS FROM SHISH MAHAL IN LAHORE-PAKISTAN

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ABSTRACT

Lahore Fort is situated in the north-west corner of the Walled City of Lahore. Shish Mahal within the Lahore Fort was built in 1631-1632 by the then Mughal Emperor Shah Jahan. The restoration works were done recently for the ceiling of Shish Mahal including the fixing of the roof, glass work and re-plaster. The side rooms and main courtyard were also restored. Nothing, however was properly proposed and implemented for masonry walls of Shish Mahal on which it is standing. Patches of bricks and plaster have deteriorated from walls due to effect of weather conditions.

The main part of Lahore Fort was made of burnt bricks with lime mortar which has deterioration over time due to various reasons. The brick work in Lahore Fort and its special monument Shish Mahal are badly distressed. This research has been done to underscore the reasons behind decay of masonry walls of Shish Mahal and propose some remedial solutions for them.

Keywords: Dampness, Deterioration, Erosion, Mortar, Masonry Walls, Shish Mahal, Lahore.

INTRODUCTION

The present condition of Shish Mahal, the surrounding rooms, corridors, courtyard and pavilions are in good condition due to continuous repairs throughout the years. Major and minor cracks are visible in the side rooms, but the condition of masonry walls is in decay.

Major steps were taken by Archaeological Survey of India for the restoration and preservation of damaged structure of the Shish Mahal in 1904-05. The remedial works were successfully done for saving the ceiling of Shish Mahal with all its mirror work (Khan, 1997). The ceiling of main verandah of Shish Mahal has been repaired many times,

that is in 1904, 1905, 1922, 1963-64 and more recently in 2012. The false ceiling has also remained under observation of the Department of Archaeology (Rauf, 2006).

In 1991-92 serious cracks were observed in the ceiling and on the recommendations of experts the conservation of ceiling of Shish Mahal was carried out from 2003-2005 (Dawn, 2006). Most of the restoration was done for the ceiling of Shish Mahal, including roof, glass work, plaster of side rooms, *Naulakha* pavilion and its main courtyard.

The masonry walls of Shish Mahal remained unnoticed till recently. Shish Mahal has two basements which are visible from outside towards north-west sides. The current poor condition of its walls can easily be seen in Figure 1 and Figure 2. The patches of bricks have been deteriorated from walls and plaster and mortar is removed due to various reasons, but mainly because of weather conditions.

The condition of the walls is better inside the basements but the exterior walls are in poor condition due to direct impact of the weather. Vegetation, bird holes and dampness can be seen in the walls. This condition is getting serious day by day and the dampness increases during rainy season.

MATERIALS AND METHODS

The methodology formulated for this study is based on site surveys of Shish Mahal in Lahore Fort. The study focused on the condition of masonry walls and materials used in Shish Mahal. Site visits were conducted to study and examine the causes of decay of masonry walls. A number of photographs of deteriorated walls were taken. This was an explorative study based on literature review, site survey and interviews with the concerned authorities responsible for its restoration. Analytical study of the literature was undertaken to develop the chronology of conservation and restoration elements. The field surveys were conducted to collect information, to further explore the condition of the structure

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and to document the present condition of the Shish Mahal and the level of deterioration.

During the site visit to Shish Mahal following damages to the masonry walls were observed: bricks deteriorated from walls (Figures 1, 2), removed plaster, effect of water/rains causing dampness (Figure 3), erosion of mortar (Figure 4), plantation and holes in walls (Figure 5). The reasons for this deterioration were weather conditions, poor maintenance, bad repairs, poor drainage and general neglect.

CAUSES OF DETERIORATION OF MASONRY WALLS OF SHISH MAHAL

Deterioration of the Shish Mahal is not only because of poor construction or neglect, but other reasons like water

Figure-1: Deteriorated bricks.

Figure-2: Deteriorated patches of bricks.

Figure-3: Dampness on brick wall.

Figure-4: Erosion of mortar from brick wall.

Figure-5: Fungal stain and plantation.

penetration through small holes, openings in the bricks, mortar joints and dampness also cause the foundation to become vulnerable to deterioration.

The brick deteriorates due to harmful vegetation which accumulates on brick surface through structural movements and such movements may be because of settlement of the foundation through decades. The decay is also because of environmental pollution, encroachments, additions and alteration, drainage, water supply, poor maintenance, lack of monitoring and management, lack of awareness, causes related to nature of ground, causes related to material and techniques used in original construction, poor conservation in an unplanned manner, frost, soluble salts, efflorescence, vegetation, neglect and ignorance. The causes of deterioration of load bearing masonry walls are detailed here:

Natural Causes

Natural causes having prolonged action are:

• Gravity: extra dead loads added to the structure during Sikh and British period (Koch, 1991)

• Age: with the passage of time every structure has to decay, heavy rain falls and floods add to this process of decay

• Humidity: it causes dampness in masonry structures, climatic effects like extreme thermal variations and severe wind storms add to the humidity factors

• Fire caused by lightning, as Shish Mahal was badly affected by lightning in 1904 (Cumming, 1939)

• Earthquakes: The masonry structures have been the most vulnerable during earthquakes. Masonry has adequate compressive strength and is designed for vertical loads. Masonry structure behaves well as long as vertical loads are concerned, but is not strong against lateral inertial loads during earthquake. As a result shear and flexural stresses develop in the masonry walls (Arya, et. al, 2014). The strength of masonry in this condition depends upon the bond between masonry and mortar, which is quite poor in the case of Shish Mahal. This masonry joint is also poor when lime mortar is used. Shear failure in the form of diagonal cracks are observed due to this. In many places in Lahore Fort, cracks have developed in masonry due to earthquake forces.

Throughout history, all above mentioned factors have had destructive effects on the Lahore Fort and thereby on Shish Mahal (Goverment of Pakistan, 1986).

Dampness

Unwanted water or moisture was found to be present in the building structures. The dampness created serious damages in structures which were close to water bodies. Dampness not only damaged the building structure but also its finishes and contents. The main cause of dampness was water which entered through different routes. Water generally entered through walls exposed to prevailing rain or moist wind (Figure 3).

Due to gravity water penetrated through capillaries or cracked bricks and mortar joints. In Shish Mahal the dampness on the walls was due to direct exposure to weather conditions. This dampness was due to direct rains and defective drainage system.

Erosion of mortar from masonry joints

The function of mortar is to bind the bricks; it provides adhesion between the bricks. Mortar has eroded from the masonry walls of Shish Mahal (Figure 4).

The bricks have also been deteriorated due to erosion of mortar. The reason for this erosion is water penetration leading to the concentration of moisture, dampness, plants growing on the walls and presence of salt crystallization.

Fungal stain and plantation

Fungus has occurred due to presence of water or high moisture content in masonry walls. Plantation is seen on masonry walls of Shish Mahal (Figure 5). Fungus flourishes in damp environmental conditions having high humidity and lack of ventilation (Lourenco, et. al., 2006). Fungus also flourishes in water disposal areas of walls of Shish Mahal. The plantation is also due to seeds present in the fecal dropping of birds, specially pigeons. The mortar joints and holes in walls provide shelter and a suitable ground for any seeds to grow. The roots go deep into the walls causing deterioration, cracks and water penetration.

Defective plaster rendering

Defective plaster rendering was observed at many places in the Fort as well as on the walls of Shish Mahal. Due to hot climate these defects of rendering were caused by evaporation, air pollution, condensation, thermal stresses, dehydration and biological attacks arising from penetration of rain. The other causes may be growth of plants, presence of animals, insects and traffic vibration. The plaster rendering has cracked due to shrinkage or movement in substrate itself. Figure 6 shows defective plaster rendering of Shish Mahal.

Improper materials for restoration works

The use of improper materials has always been another cause of deterioration of historical buildings. The material used for restoration should be according to the materials used originally by the Mughals. There should be proper workmanship behind preparation of construction materials. Due to financial problems and shortage of time hasty restoration works were seen at Shish Mahal.

Poor Conservation

Proper planned restoration has never been done for the walls of Shish Mahal. Repairs have been done from time to time but not in an effective manner. Restoration is not something which can be done by any technician or lover of antiquity, but should be undertaken only by experienced and qualified experts. This always demands supervision by competent authorities and is the work of skilled craftsmen. Poor conservation was one of the main reasons for deterioration of masonry walls. The use of wrong material and incompetence of staff has made the situation worse (Figure7).

Neglect

General neglect was another cause of deterioration of the bricks of masonry walls of Shish Mahal. A number of issues like economic, political, social and lack of awareness were the underlying causes of neglect (Figure 8). Neglect might be due to an individual, a community, an agency or the state itself.

There may be conscious or unconscious reasons for neglect. In the third world countries economic priorities are major factors that determine conservation policies. Unawareness results in weakening of structures and allows other causes of decay to take over like dust, dirt, growth of vegetation and dampness.

Poor drainage

The drainage system is an important element of any structure. Proper drainage system saves the structure from dampness and other side effects due to accumulation of water. Poor drainage is another main cause of deterioration of bricks at Shish Mahal. In the rainy season water collects along the walls of the Shish Mahal which results in the growth of unwanted plantation. Another thing noticed is the garbage collection along the walls of the Fort, due to which water is collected and causes dampness (Figure 9).

Figure-6: Defective plaster rendering of Shish Mahal

Figure-7: Poor conservation of Shish Mahal

Figure-8: Neglect of wall of Shish Mahal

Figure-9: Garbage along water disposal

Figure-10: Destruction due to pigeons

Pigeons

Pigeons also create problems in building structures especially in city centers. They occupy loose roof coverings and block gutter pipes with feathers, causing water penetration and consequent decay. Pigeons are also responsible for bringing seed through germination and eventually causing unwanted plantation (Figure 10).

PROPOSED MEASURES AND RECOMMENDATIONS FOR MASONRY WALLS OF SHISH MAHAL

The essence of this research shows that adequate conservation with appropriate materials originally used by the Mughals is very important. Conservation, restoration and repair works must be done by skilled staffs including architects, engineers and craftsmen, who are aware of the importance of these historical monuments.

The research also shows that main causes of deterioration of brick walls of Shish Mahal are general neglect, bad repair, faulty restoration, dampness through walls and poor drainage system. An appropriate conservation plan for its brick walls is discussed below:

Masonry walls (basement walls) of Shish Mahal

An appropriate and long term conservation plan is needed for the conservation of masonry walls of Shish Mahal. These could be tackled through indigenous resources without raising financial issues. Remedial works required for these conditions are:

• Existing surface and bricks should be cleaned properly.

• All the removed brick patches should be re-fixed with lime mortar.

• Bricks should have the same size and strength as used originally used by Mughals. (Brick sizes detail used by Mughals is given in Table 1, strength in Table 2 and chemical analysis in Table 3).

• Preparation of the bricks is very important and should be carefully monitored. The presence of salts in the bricks reduces the strength and ultimately life of the structure. Hence, the choice of the raw material and process of burning are very important in manufacturing. The extraction of salts makes a brick more stable against natural and man-made causes of deterioration.

• Strength of lime mortar should be equal to the strength of bricks for equal distribution of stresses. Mortar of high strength causes unequal distribution of stress and causes deterioration, which is an example of bad repair and faulty restoration.

• After the bricks have been fixed the walls need to be plastered with original *kankar* lime plaster, which was originally used by the Mughals.

Table 3 shows traces of chlorides in the bricks made during Jahangir Period and the strength of these bricks is relatively low. It concludes that salts, sulphates and chlorides reduce the strength of bricks. To avoid this selection of raw material the manufacturing process is very important. Table 2 shows that strength of bricks used in the Mughal Period . The bricks used for conservation of masonry walls of Shish Mahal should have the same strength as used in Shah Jahan period to save the historical structure from further deterioration.

Table-1: Size of bricks used in walls of Shish Mahal.

S. No.	Size	Picture
1	Length=175 mm	
2	Width=140 mm	
3	Thickness=25 mm	

Table-2: Strength of bricks used in Lahore Fort (Arshad, 2003).

S. No.	Structure	Average Strength (Mpa)
1	Akbar Period	66
2	Jahangir Period	54
3	Shah Jahan Period	86

Table-3: Chemical analysis of bricks used in Lahore Fort (Arshad, 2003).

S. No.	Structure	Total Dissolved Solids %age	Sulphates %age	Chlorider %age
1	Akbar Period	0.03	Nil	Nil
2	Jahangir Period	0.05	Nil	Traces
3	Shah Jahan Period	0.03	Nil	Nil

Kankar Lime Plaster

Lime plaster used for the plastering of the masonry walls must have the following contents:

- Lime: Calcium hydroxide, traditionally called slaked lime, is an essential part of the chemical formula. It is a colorless crystal or white powder. It has many names including hydrated lime, builders' lime, slack lime, Cal or pickling lime (Rodriguez-Navarro, 2005)

- *Kankar*: Smallest particles of crush found in river beds and formed after dissolving with moving water. These are hardest particles, which should be used in powder form after grinding.

- Fiber of jute: It stops cracks from happening. It is very fine fiber and hardly visible.

- *Gur* (Raw Sugar): To bind all the materials.

- Yoghurt: Should be used to add smoothness to the aggregate.

- *Daal mash* (white lentil): Should be used to add smoothness to the aggregate.

HOW TO CONTROL CAUSES OF DETERIORATION OF BRICK WALLS:

Dampness

The brick joints should be filled with lime mortar. Gutters and down pipes should be rechecked for leaks and cracks. Their joints should be sealed. Blockage in pipes should be released. Raised plinth protection must be provided to avoid penetration of water. Any kind of water body should be kept away from historic buildings. There should be proper ventilation and the existing ventilation in the walls should not be blocked. The Mughal lime plaster with all ingredients should be used. Disposal of rain water on brick walls should be avoided.

Erosion of Mortar

If proper materials are used for mortar and lime plaster with skilled hands, then erosion could be avoided.

Fungal Stain and Plantation

The fungus problem can easily be controlled if moisture and dampness is controlled. There should be no room in the walls for growth of seed which comes through birds. The walls should be examined time to time for growth of any vegetation.

Bad Repair Works

To avoid bad repair works skilled staff should be appointed who knows the worth of historical antiquities. Material used should also be according to the desired standards.

Pigeons

Spaces could be created for pigeons or other birds in nearby vicinity. Measures should be taken to keep the birds away from historic monuments.

Human Interventions

There should be proper security arrangements to avoid wear and tear by general visitors. There should be sign boards for visitors to create awareness for the historic monuments and visitors should be penalized for not respecting the monument.

CONCLUSIONS

Lahore Fort has always been an important monument of Pakistan. The above study concludes the present condition of the masonry walls of Shish Mahal. The condition of the masonry walls is a wakeup call for the Walled City of Lahore Authority to take appropriate measures for its conservation. Detailed remedial solutions are discussed in this paper which should be implemented. Furthermore, systematic documentation of deteriorated bricks is required along with surveys of the present condition of the monument. There is also a need to deploy a permanent restoration team for masonry walls of Shish Mahal. Shish Mahal and all structures in Lahore Fort need to be further explored for various other aspects of damage to save them from further deterioration, so that the future generations can enjoy them.

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MEASURING SOCIAL CAPITAL IN PLANNED AND UNPLANNED NEIGHBORHOODS OF LAHORE: A CASE STUDY OF JOHAR TOWN AND SINGHPURA

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ABSTRACT

Social capital is an asset and is defined as the social networks and interactions that inspire trust and reciprocity among citizens necessary for the community development. The fundamental premise is that some neighborhood designs enable or encourage social ties or community connections, whereas others do not. Two case studies were selected, namely Singhpura (traditional settlement) and Johar Town (modern settlement) to measure the social capital in Lahore. Questionnaire was designed to conduct surveys at household level to measure social capital. Surveys were conducted among 154 respondents belonging to both areas. Statistical analysis of the data collected was done using the SPSS software.

It was concluded that over the past few years, social capital in the neighborhoods of Lahore and different areas of Pakistan has decreased to a great extent. The design of neighborhoods promotes dependency on the private vehicles. Walkability decreases in planned areas but it is still available in unplanned old developed areas because of mixed land uses. Due to high level of walkability in these areas, social interaction is high as compared to planned areas and high income societies, where people have no value of social interaction and are busy in their personal work. In developed countries due to high social capital people participate in community level development projects, but in the case of Pakistan due to low level of social capital there is no concept of participatory development.

It has been recommended here that new developments should follow the traditional urban forms where traditional neighborhood developments should be based on new urbanism principles, which encourage the use of undulating

and straight streets that maximize pedestrian connectivity. These new developments should be a mix of compatible land uses and should work to incorporate elements such as architectural details and street furniture, encouraging human interaction on an urban scale.

Keywords: Social Capital, Neighborhood, Traditional, Lahore.

INTRODUCTION

Social capital is little understood, very difficult to measure and not easy to rigorously define. Putnam (2000) defines it as "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Baron, et. al., 2000: 121). In the case of Pakistan, mostly people are not willing to participate in any development project due to lack of trust and coordination amongst each other. Mostly people prefer personal interest over community benefits. They have the concept that it is the responsibility of the government to provide all basic facilities. In the literature review the following points were concluded with reference to social capital and planning activities (Haq, 2010; Harper, 2002; Coleman, 1988):

• Any society bears a high financial and social cost for crime and other anti-social behavior. These costs are incurred by society in preventing crime, providing justice, infrastructure, repairing criminal damage, supporting victims, and dealing with offenders. High crime rates can also diminish social resources as lack of community trust, confidence and freedom, and an overall climate of fear may overwhelm or replace the spirit of cooperation and participation in community life.

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- People do not find time for meetings and participation in local activities.

- People lack the ability of working together, because of lack of trust and ability to work in groups.

- People are unable to carry out any development projects at the community level.

- Community members have a weak structure relationship as they don't know about their neighbors. They are not in contact with each other.

- People mostly use their private vehicles. Dependency on vehicles is increasing thus, people find no chance of interacting with others.

- People stay in poverty because they don't have social networks.

- There is less contact with family and friends.

- Suburbs of the city also reduce social capital. Some factors of suburbs, like heavy vehicular movement and planning patterns, reduce social interaction.

- Sometimes the planning of communities plays an important role to create sense of safety. If the planning is not good then people resist going outdoors as they feel insecure.

The basic objective outlined for this study is to find out how planning can enhance social capital within a community and identify factors for declining social capital. This study also highlights the contribution of the physical environment that helps promote social capital in addition to the identification of neighborhood design which enhances social capital.

MATERIALS AND METHODS

An integrated research methodology was developed for measuring the social capital and its impact on planning after studying different social capital measuring techniques used globally (Coleman, 1994, 1988; Pretty and Ward, 2001; Scheffert, 2009). The questionnaire survey was conducted for collecting the information from the residents of selected case study areas (planned and unplanned areas) as described below.

Case Studies

Lahore is the capital city of the province of Punjab, the second largest metropolitan area in Pakistan and 16th most populous city in the world. It is an important historical center in South Asia. With a rich history dating back over a millennium, Lahore is a main cultural center of the Punjab region and is the largest Punjabi city. One of the most densely populated cities in the world, Lahore remains an economic, political, transportation, entertainment and educational hub of Pakistan. To measure the social capital in Lahore, neighborhoods were subjectively categorized into two ideal types by the researcher before conducting the survey. One is a planned neighborhood and the other was an unplanned neighborhood. The neighborhoods selected and surveyed included the following.

Johar Town

Johar Town is a wealthy neighborhood of Lahore (Figures1, 2). It is named after Mohammad Ali Johar, one of the leaders of the Pakistan Movement. In 1981 the land was acquired by Lahore Development Authority (LDA) in order to plan a scheme by the name of MA Johar Town which is situated in the south west of Lahore. The scheme was launched in the year 1986. It consists of two phases; Johar Town phase 1 and Phase 2. Johar Town phase 1 is taken as a case study area for this research. It is a planned neighborhood with most of the people living here belonging to high income group and dependent on cars.

Singhpura

Singhpura is one of the oldest neighborhoods of Lahore located along G. T. Road near University of Engineering and Technology, and it is located at the north eastern side of Lahore (Figures 3, 4). It is an unplanned area and one of the oldest neighborhoods of Lahore. Most of the people living here belong to low and middle income groups. Residents living in this neighborhood mostly walk to parks, local schools and workplace. In Singhpura there is high connectivity of streets and most of the streets have corner shops so all the residents easily walk to the shops for the purchase of daily goods.

Selection of sample size

The total sample size was calculated by applying the sample size formula on the total number of households of Johar Town and Singhpura. The total sample size was then proportionally distributed in the case study areas on the basis of population of the particular areas. A total number of 154 questionnaires were filled from the case study areas; 104 from Johar Town and 50 from Singhpura (Table-1).

Figure-1: Location map of Johar Town.
.Source: www.googlemaps.com accessed 27/3/2015

Figure-3: Location map of Singhpura.
.Source: www.googlemaps.com accessed 27/3/2015

Figure-2: Land Use Map of Johar Town.
Source: www.googlemap.com accessed 27/3/2015.

Figure-4: Land Use Map of Singhpura.

Table-1: Area wise distribution of sample size.

Case Study	Johar Town	Singhpura	Total
No. of Households	8463	4100	12563
Expected Error (e)	0.011	0.016	0.08
Sample Size	4231.5	2050	154.3305
Proportional Sample Size	103.964	50.367	154.331

Questionnaire Survey

Questions were formulated to accommodate all the factors of social capital like trust, social interaction, community participation, walkability and other parameters through which level of social capital within a community can be measured. The questionnaire was designed to measure social capital using both close and open ended questions in planned and unplanned areas. After the questionnaires were filled by respondents an analysis was undertaken.

Data Collection and Interpretation

The comparative data analysis technique using Microsoft Excel and SPSS were used to interpret the collected data.

Conclusions and Recommendations

All the data gathered through the conducted primary surveys was analysed and the conclusion and recommendations were established on the basis of results formulated.

RESULTS AND DISCUSSIONS

The social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions. Research in this field already showed that social cohesion is critical for societies to prosper economically and for development to be sustainable. Social capital is not meant just for the sum of the institutions which underpin a society. It is the binding agent that reinforces the society's interaction and holds it together for common future. Communities with higher levels of social capital benefit from better quality of life. More specifically the case studies generated the following results:

Socio-economic Data

The questionnaire included questions about how long the residents had been living in the neighborhoods. Most of the respondents living in Singhpura replied that they were living there for about 30 to 40 years, while 90% of the residents in Johar Town replied that they had been living there for about 1-10 years (Figure 5).

Income level

This chart indicates that the majority of the population in Johar Town had an income between the range of Pak Rupees 51,000 to 75,000 per month. But the majority of the population in Singhpura had an income level between Pak Rupees 25,000 to 50,000 per month. This showed that Johar Town residents had high income levels as compared to residents of Singhpura (Figure 6).
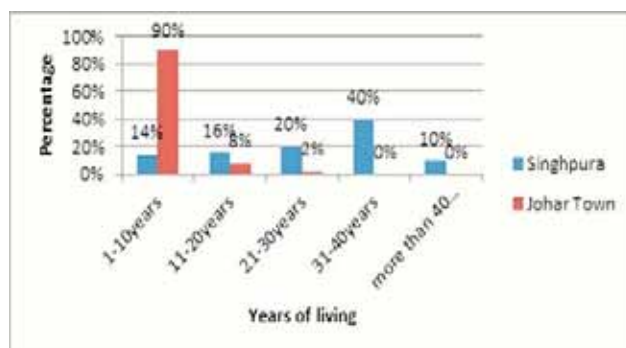

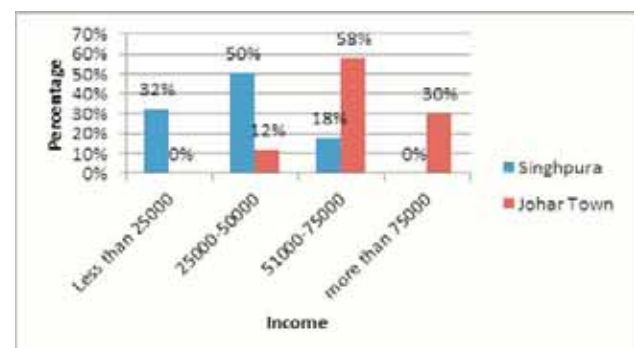***Figure-5:*** Years of living in neighborhood.

Figure-6: Income of head of household.

Occupation of Head of Household

These statistics showed that 42% of the people in Singhpura had their businesses, like grocery shops and 24% people had government jobs. But in the case of Johar Town, 48% people had high level government jobs. The difference in the type of occupation of the head of the household impacted on the presence of social capital in each neighborhood (Figure 7).

Transportation

Average distance from the house to the school and the mode of transport used

These statistics show that the distance from the house to the school in Singhpura is less than 1 km. 84% people said they have schools near their homes. Therefore, they mostly used bikes or walked on foot for going to school. 14% of the people used motor cycles and 58% people went to school on foot (Figure 8). But in Johar Town 48% people said that they travelled between 1-3km from their houses to the schools and 32% people travelled 4-6km to reach the school. These people used their personal vehicles for travelling to schools and colleges. 54% people used their cars for going to their schools and colleges (Figure 9).

Average distance from the house to the work place and mode of transport used for getting to the work place

These statistics show that in Singhpura mostly people travelled an average distance of 4-6 kms to reach their workplace but in Johar Town 40% of the respondents said they travelled 4-6kms to reach their workplace and sometimes more than 9kms, so they mostly used their personal vehicles like cars. In Singhpura some people travelled less than 1km to get to their workplaces so they went by foot or on their bikes (Figures 10 and 11).
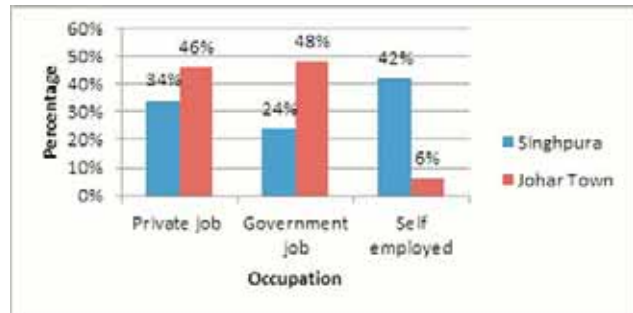
Figure-7: Occupation of head of household.
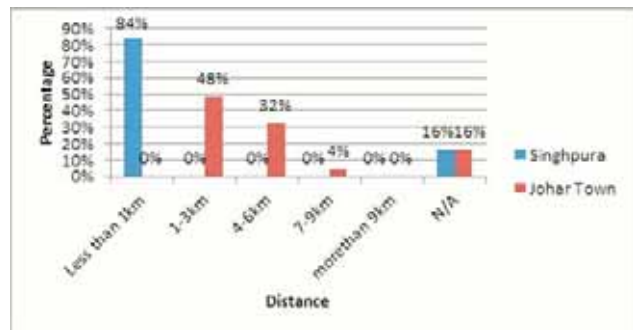
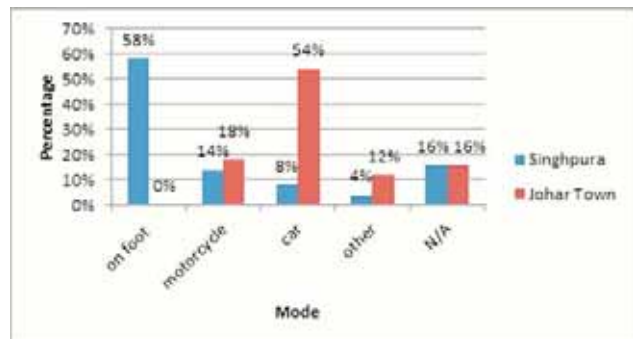**Figure-8:** Average distance from house to school.

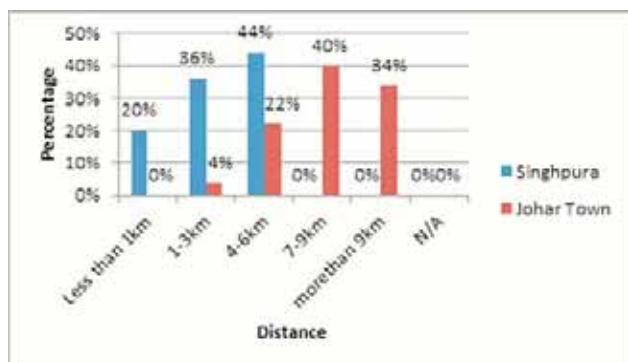**Figure-9:** Mode of transport used for going to school.

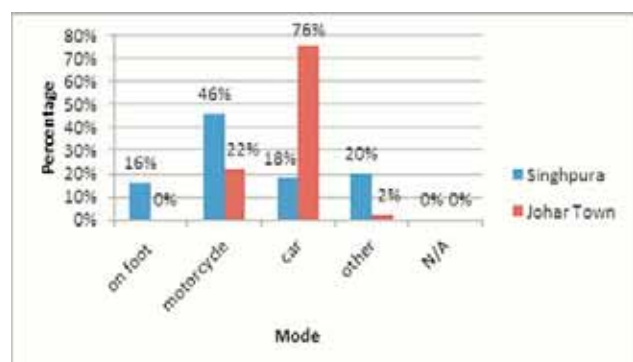**Figure-10:** Average distance from house to workplace.

Figure-11: Mode of transport used for getting to workplace.

Average distance from the house to the main market and mode of transport used for accessing the market

The main market is a place where residents do grocery shopping. If the market is located at a far distance it can create problems for residents and people will be dependent on personal vehicles for getting to the markets. The statistics that related to location of main market showed that residents of Singhpura had main markets near to their homes. 70% of the people said that they had markets located at a distance of less than 1 km. In Johar Town, majority of the people had main markets at a distance of 4-6kms and only 18% of the respondents had markets located at less than 1km (Figures 12 and 13). This meant that residents in Singhpura used other sources of transport like auto rickshaws for getting to the market or went on foot, but in the case of Johar Town, people were mostly car dependent and went to the main markets in cars or on bikes.

Average distance from the house to the general shops and mode of transport used for general shopping

The statistics for location of general shops indicated that in Singhpura all residents had grocery shops located at a distance of less than 1km and went to those shops on foot. In Johar Town, 56% of the shops were located at a distance of less than 1km and 42% were located at a distance of 1-3kms. Due to this season, some residents of Johar Town used their personal vehicles for getting to general grocery shops as well (Figures 14 and 15).

Recreaction Facilities

Average distance from the house to the place of recreation and mode of transport used

The statistics of average distance between house and recreational areas revealed that in Singhpura 100% of the
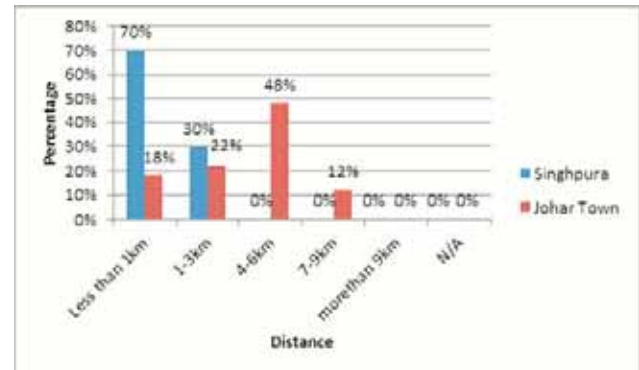

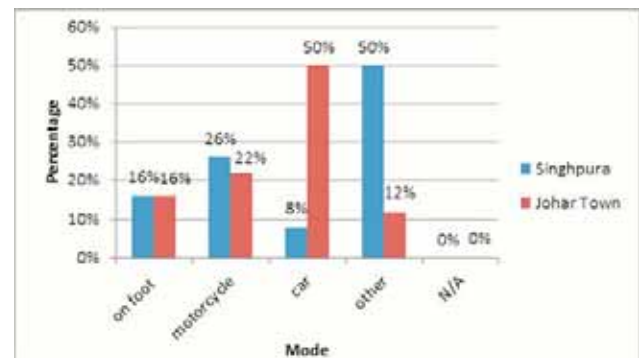**Figure-12:** Average distance from the house to the main market.

Figure-13: Mode of transport used for going to the main market.
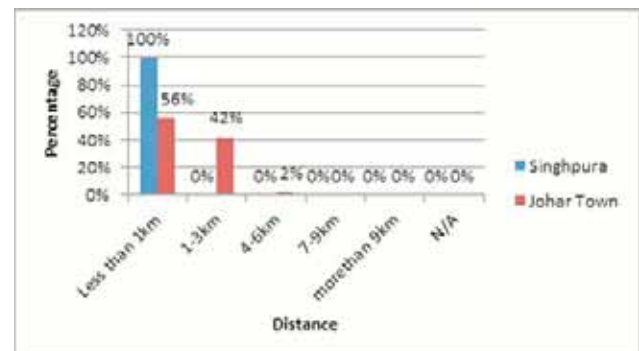

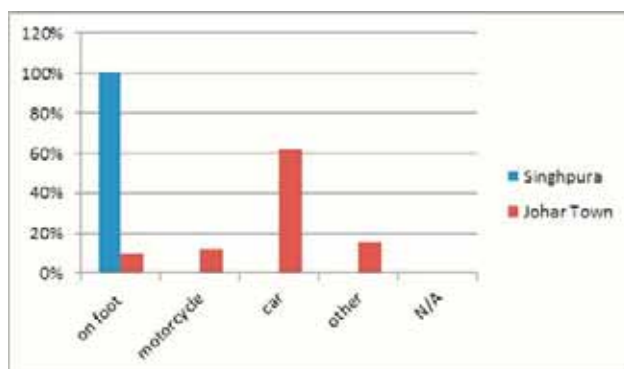**Figure-14:** Average distance from the house to the general grocery shops.

Figure-15: Mode of transport used for going to general grocery shops.
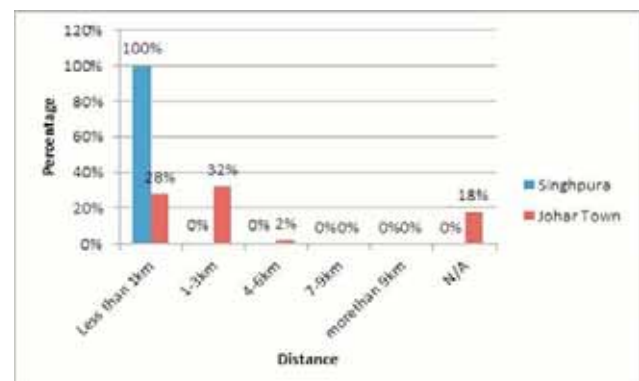

Figure-16: Average distance from the house to the park.

residents had recreational places, like parks at a distance of less than 1km and they could easily walk to these places. In Johar Town, parks and recreational places were located at a distance of 1-3 kms. Therefore, majority of the respondents used their personal vehicles to visit parks, while 32% of the respondents found these places to be at a walkable distance (Figures 16 and 17).

Average distance to bus stops and mode of transport used

The statistics related to the distance between houses and bus stops indicated that Singhpura residents had a bus stop at a distance of 1-3kms from their homes therefore majority of them found bus stops accessible on foot. In Johar Town, majority of the residents did (72%) not use public transport and only 28% said bus stops were located at a distance of less than 1km. Residents who used public transport in Johar Town accessed the bus stop via personal vehicles or on rickshaws (Figures 18 and 19).

Average distance, transport mode used and frequency of visiting cinema

The statistics related to the average distance to the cinema revealed that in Singhpura none of the respondents went to cinemas. But in the case of Johar Town, because people
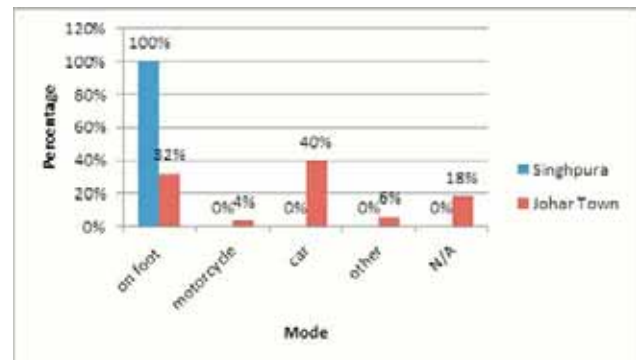

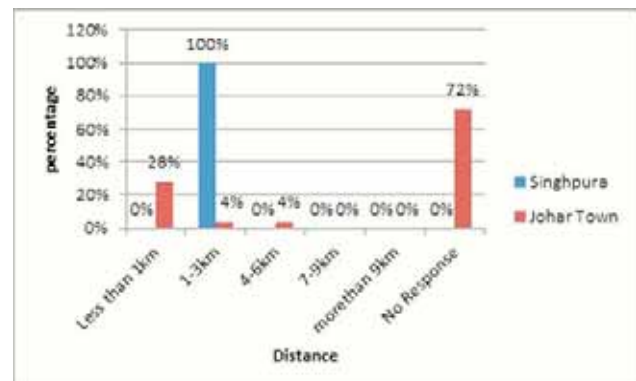*Figure-17:* Mode of transport used for getting to the park.

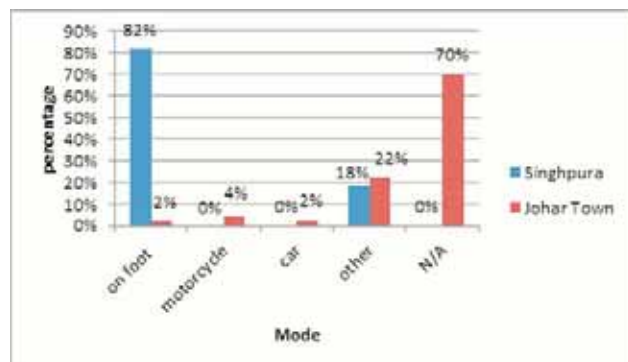*Figure-18:* Average distance from the house to the bus stops.

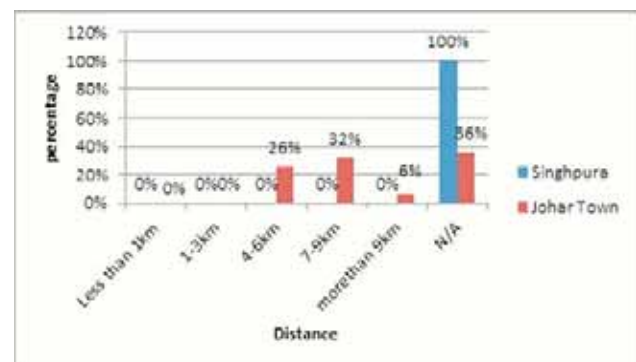*Figure-19:* Mode of transport used for getting to the bus stops.

Figure-20: Average distance between houses and cinemas.
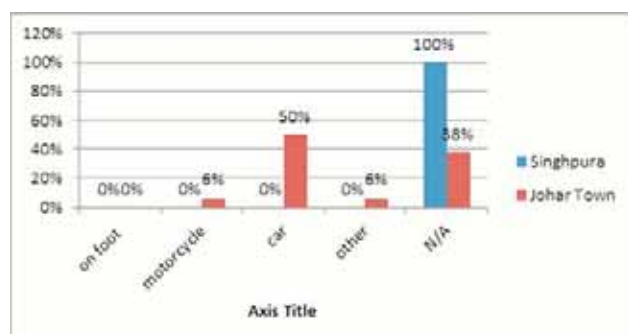

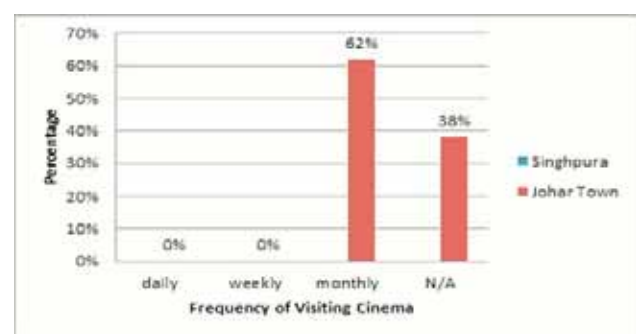*Figure-21:* Mode of transport used for getting to the cinemas.

Figure-22: Frequency of people visiting the cinemas.

belonged to high income group, frequenting the cinema was a norm. 26% of the respondents of Johar Town had cinemas located within 4-6km from the house, 32% had cinemas located within 7-9km, while 6% had cinemas located within 9km. The respondents used private vehicles to access the cinemas and went to the movies on a monthly basis (Figures 20, 21 and 22).

Average distance, mode of transport used and frequency of visiting stadium and gymnasiums

The statistics related to residents visiting stadium and gymnasiums indicated that in Singhpura residents did not use these facilities because of unaffordability. There was no

provision of a stadium or a gymnasium in Singhpura. In Johar Town, 24% of the respondents frequented the stadium or gymnasium located at a distance of 4-6 km, which they accessed by private vehicles (Figures 23, 24 and 25).

Average distance, mode of transport used and the frequency of people visiting the sports club

The analysis showed that there was no sports club present in Singhpura, while in Johar Town 6% of the respondents visited the sports club located within 1-3km of their home. 24% of the respondents said that a sports club is located within 4-6km of their house, while 2% said that the distance
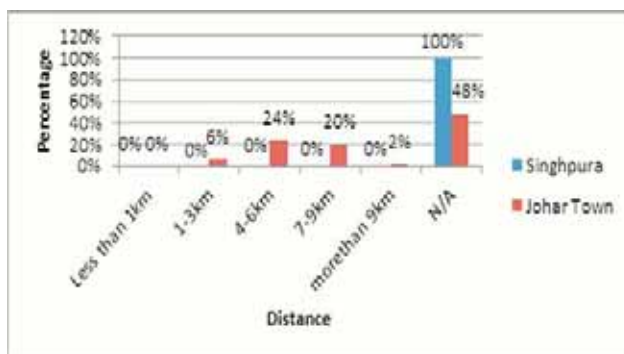

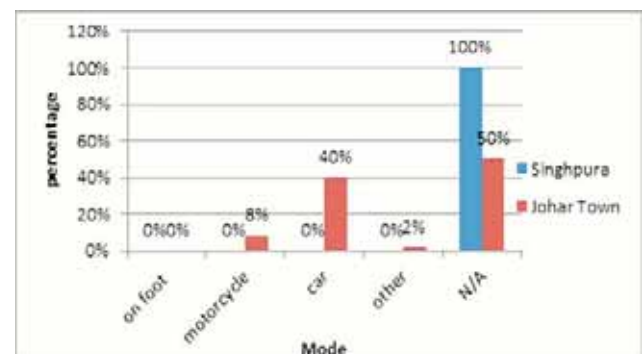***Figure-23:*** Average distance from the house to the stadium or gymnasium.

Figure-24: Mode of transport used for accessing stadium or a gymnasium.
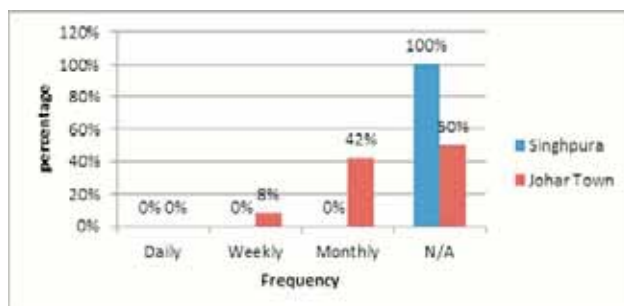

Figure-25: Frequency of visiting the stadium or a gymnasium.
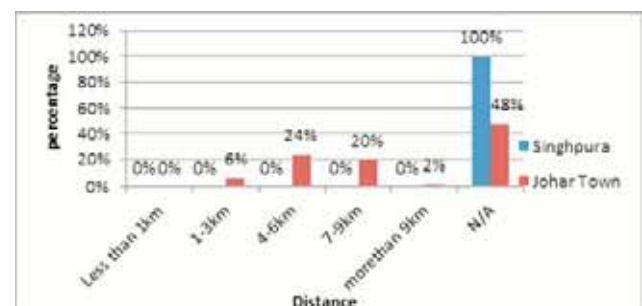

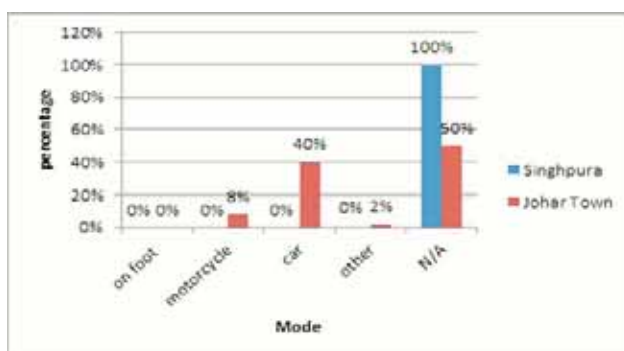***Figure-26:*** Average distance from the house to the sports club.

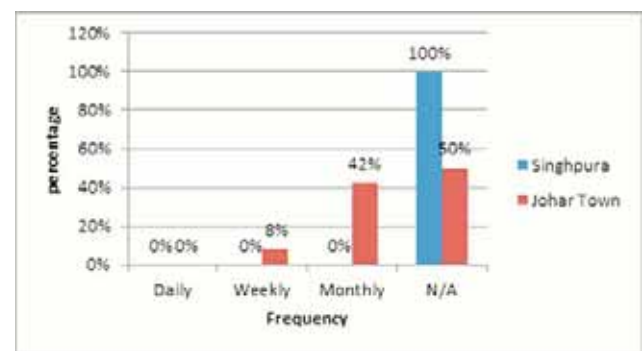***Figure-27:*** Mode of transport used for visiting the sports club.

Figure-28: Frequency of visiting the sports club.

to the sports club was more than 9km from their house. Majority of the people who visited the sports club used their personal vehicles and majority of the respondents said that the frequency of visiting sports club was monthly (Figures 26, 27 and 28).

Transport Ownership

The statistics of transport ownership indicated that in Singhpura majority of the respondents had their own motorbikes. People also used bicycles for commuting in Singhpura but the percentage was only 4%. Respondents of Johar Town had a large ownership of cars with almost 80% of the people in Johar Town having their own cars. In Singhpura car ownership was only 18% (Figure 29).

Frequency of contact with friends and neighbours

A study of the connection between neighbours showed that the people were generally interested in social ties. The statistics related to the frequency of contact with friends and neighbours indicated that in Singhpura people interacted with friends and neighbours on a daily basis. Every day they met each other and spent some time. In Johar Town, only 10% of the people met with the neighbours on a daily basis and majority of them said they interacted with neighbours and friends on a monthly basis (Figure 30).

Place of interaction with neighbours

In Singhpura majority of the residents interacted with each other on the streets (96%). In Johar Town majority of the residents met in parks (Figure 31).

Place for community meetings

These statistics indicated that 34% of the people in Singhpura met for community meetings in the mosque. In the case of Johar Town, 56% of the people did not participate in community meetings but few of them had community

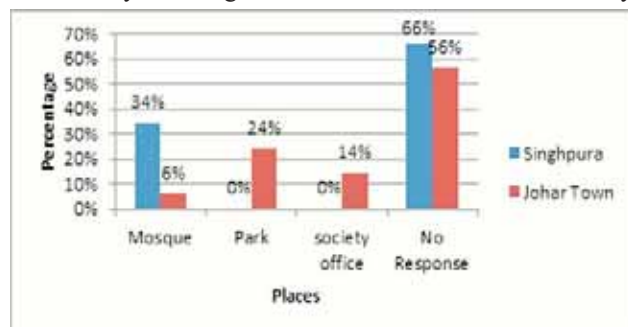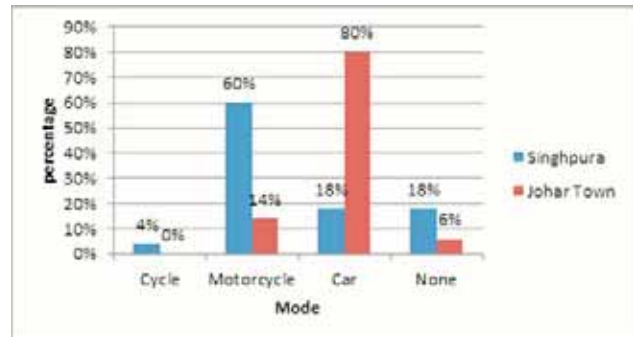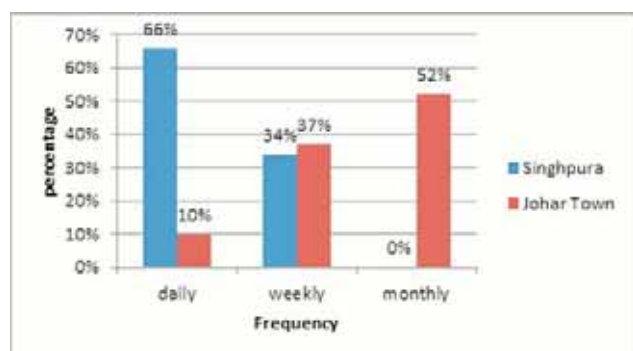*Figure-29:* Transport ownership in the two neighborhoods.

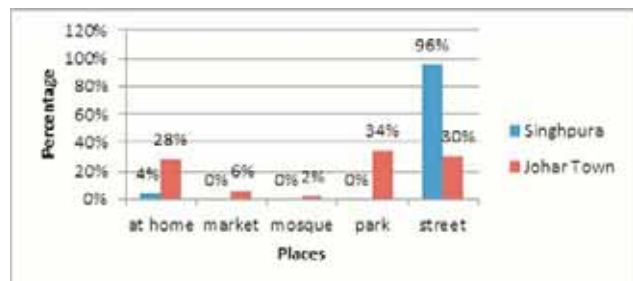*Figure-30:* Frequency of contact with friends and neighbours.
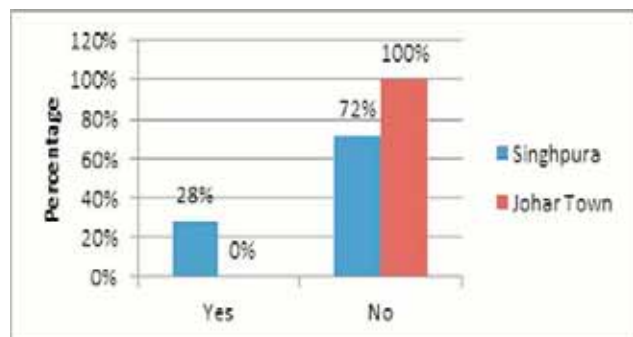

Figure-31: Place of interaction with neighbours.

Figure-32: Place for community meetings.

Figure-33: Community led development project.

meetings in the park or in the society office (Figure 32).

Community Participation

Community level development project

In response to this question 28% of the respondents from Singhpura said that communiy led development projects existed in Singhpura and 100% respondents from Johar Town said there had been no community level development project in the past (Figure 33).

Involvement in community led development project

Most of the respondents did not participate in any community led development projects in both Singhpura and Johar Town. Only 28% of the respondents in Singhpura were affiliated with some form of community development project (Figure 34).

Input in community led development project

The people who were involved in the community led development projects, 20% people in Singhpura responded that their input was monetary, while 6% said that they provided coordination in the project. As there was no community led development project in Johar Town so this question was not applicable on the residents of this area (Figure 35).

Arrangements of festival

76% residents of Singhpura answered in the affirmative to this question and in Johar Town 14% responded in the
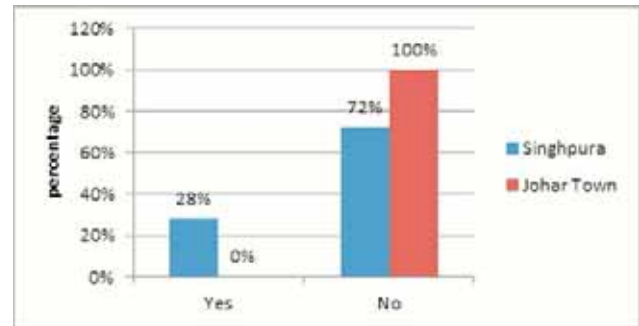

Figure-34: Involvement in community led development project.
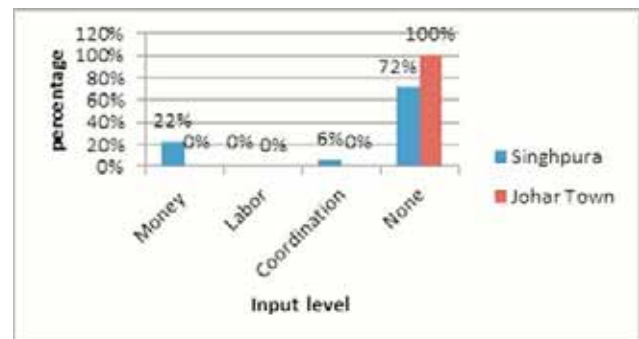
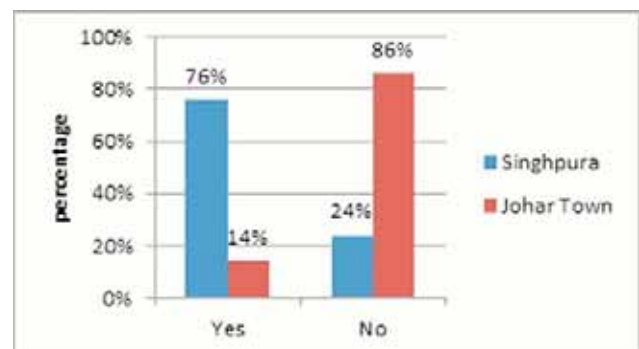

Figure-35: Input in community led development project.
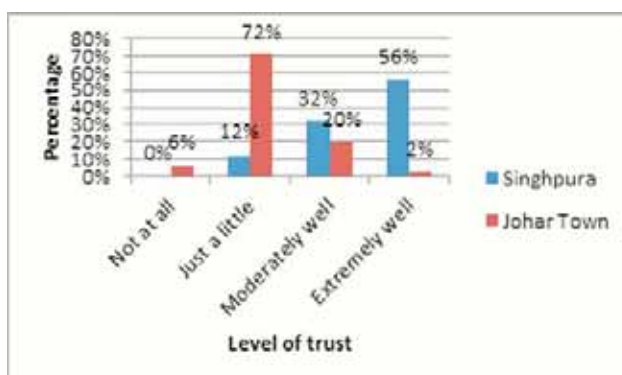

Figure-36: Community level festivals.

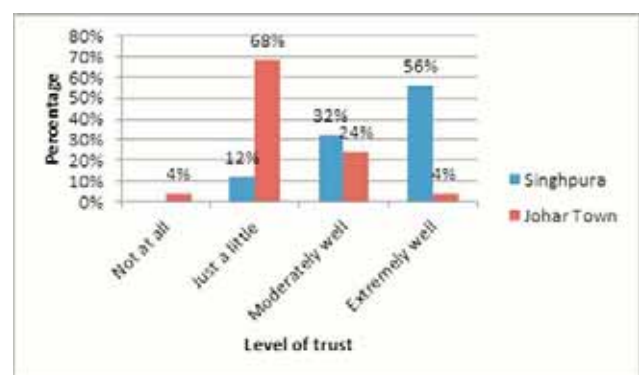**Figure-37:** Level of affiliation amongst neighbours.

Figure-38: Level of trust amongst neighbours.

affirmative (Figure 36).

Level of trust within the society

Contact with neighbours

In order to find out the familiarity amongst neighbours in planned and unplanned areas a question was asked about familiarity with neighbours. The analysis showed that in Singhpura 12% of the people barely know their neighbours, 32% knew their neighbours moderately well, while 56% knew their neighbours extremely well. While in Johar Town 6% of the people knew their neighbours well, 72% knew their neighbours barely and 20% knew their neighbours moderately well (Figure 37).

Trust on neighbours

In order to identify what the residents of planned and unplanned areas felt about the level of trust between neighbours a question was asked. 12% of the respondents from Singhpura said that they had low level of trust, 32% said that trust level was moderate, while 56% said that they fully trusted their neighbours. 4% respondents from Johar Town said that they had no trust on the neighbours, while 68% said they had low levels of trust, 28% had moderate trust levels and only 4% of the respondents highly trusted their neighbours (Figure 38).

Change in the level of trust on neighbours

After asking the question about the level of trust between neighbours, a question regarding the change in the level of trust in previous few years was asked. 56% residents of Singhpura said that the level of trust had increased in the previous years, while no one responded that the level of trust had decreased. 44% of the responds said that the level of trust stayed about the same. 22% residents of Johar Town responded that the trust level had increased in the previous years, while 58% said that the trust level had decreased and 20% said it had remained the same in the previous years (Figure 39).

Crime rate in the area

When asked about the crime rate and security conditions in the neighborhoods, most of people residing in Singhpura responded that they had low crime rate in the area, while only 10% said that they had high crime rate. While 68% residents of Johar Town said that they had high level of crime in the area and 32% said that they had low level of
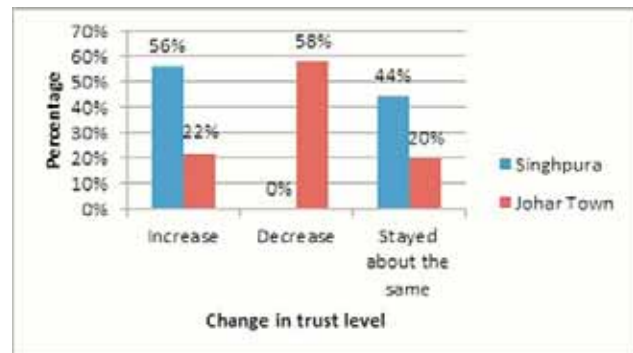
Figure-39: Change in level of trust.
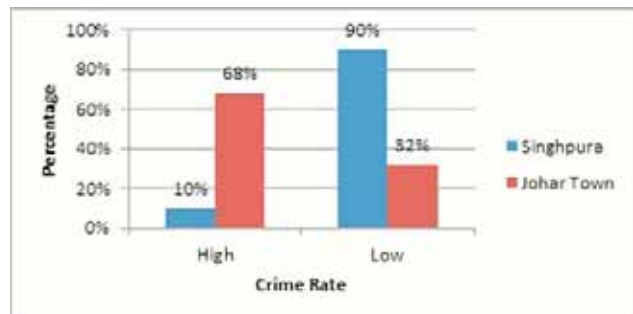
Figure-40: Crime rate in area.

crime (Figure 40).

ANALYSIS AND DISCUSSION

From the analysis of the survey it was identified that in Johar Town the majority of the residents belonged to high income group, while majority of the residents of Singhpura belonged to low or medium income groups. In Johar Town the majority of the people were engaged in government jobs, but in Singpura majority of the people were self-employed and owned shops or other local business. In Johar Town land uses were totally segregated and average distance from the house to the school, place of occupation and the markets was very high, thus the residents were totally dependent on cars to commute. Due to high dependency on cars residents of Johar Town got very rare chance of interacting with neighbours. As Singhpura is a mixed land use settlement with an organic layout, the daily need facilities were located at walking distance and car ownership was low. The residents either walked or used public transport to reach their destinations, which provided intense chances of interaction amongst residents.

Johar Town is a newly developed area with majority of the residents having shifted to the area in the past 1-10 years. Thus, familiarity with the neighbours was minimal and the level of close bonding was not there. In comparison, residents

of Singhpura, which is an old locality, had been living there for a long time, knew each other well and had high level of trust amongst them. In Singhpura, people interacted with friends and neighbours on a daily basis. But in Johar Town, people met once a month. That has been identified as one of the reason for decreasing social capital in planned areas. Places for daily meeting in Singhpura were mosques and streets where people interacted with each other easily. But in the case of Johar Town, people met each other in a park or at home only once a month.

Generally, people belonging to high income groups have low level of social capital because they are involved in their business activities and have no time for participation in development projects. In Singhpura, people were willing to participate in such projects. In Singhpura, people arranged community festivals and also attended these festivals. But in Johar Town, as people were busy in their personal lives, they did not give time to such activities. In Singhpura, as people met daily with their neighbours so they knew them well. In Singhpura, the crime rate was low because people knew each other well and had a strong relationship with others. But in Johar Town, there was less interaction among neighbours and streets were empty because people prefered to live in their homes. This was one of the reasons for increase in the crime rate and decrease in social capital.

Social capital is measured with factors like walkability, social interaction and networks, community participation and level of trust (Lin, et. al., 1999; Scheffert, 2009; Svendsen, 2010). Walkability is the most important factor which shows living trend of communities (Shannon, 2013). But this factor is decreasing in neighborhoods of Lahore. Neighborhoods are being designed which promote dependency on personal vehicles. This is a major issue with high income communities where people mostly use personal vehicles like cars for travel. In old developed areas, which are usually unplanned areas of Pakistan, all the facilities are available within walking distance. People easily walk to get things of daily use. Dependency of high income communities on vehicles decreases the walkability factor and ultimately becomes one of the reasons for the decrease in social capital. Social interaction helps to create a sense of community (Unger and Wandersman, 1985; Leyden, 2003; UN Habitat, 2014). If people of a community have high interaction amongst them, a sense of community and family develops and other members and new residents feel welcomed into the neighborhoods. Well defined networks also create ways for interaction with people of a community. Mostly people who live in unplanned areas have a high level of walkability and get a chance to interact with their friends and neighbours daily. This helps them to understand and support each other. These people have strong bonding and bridging ties amongst them. They all have same social norms and values. But in planned areas, social interaction seems to be decreased. People in these neighborhoods are more involved in their personal activities and social interaction decreases in these communities and so does the social capital.

Trust is the prime most factor that helps a community to succeed (Nelson, et. al., 2003; Stephenson, 2004; Lisa, 2012). The trust level between people increases with number of meetings. In neighborhoods of Lahore trust amongst people is decreasing gradually. People are losing trust on each other and other governmental agencies. In unplanned areas where connectivity of streets is high and people prefer walking to reach their destinations, some level of trust is still there. Due to high level of walkability they get the chance of meeting neighbours daily and get the chance to know what is going on in their life. They share incidents with each other which increases trust amongst people and it also increases the probability that the neighbours will help each other if they are in need. In planned areas of high income residents people prefer to stay indoors due to increased security concerns. This decreases the level of trust amongst people which in turn decreases the social capital.

Community participation is that component of social capital which is concerned with people's interest in the development of a community and the country at large (Talen, 1999; UN Habitat, 2014). If people participate in development projects, the economy level of the country increases and this improves the living condition of people. In unplanned areas people are more willing to participate in development projects as compared to planned schemes. Because of participation in development projects, people get a sense of ownership in the projects and try to maintain them in future. In developed countries due to high social capital people participate in community development projects, but in the case of Pakistan due to low level of social capital people are not involved in any development related activity and there is no concept of participatory development. Those who do not take part in development of projects of community have no sense of ownership of the projects and do not care about these facilities. Thus the decrease of interaction among people results in decrease of social capital.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this research some recommendations can be put forward with regards to new urban development. These developments should be done in a manner where

developments are based on new urbanism principles which encourage the use of undulating and straight streets that maximize pedestrian connectivity, are a mix of compatible uses and work to incorporate elements such as architectural detail and street furniture that encourage human interaction. Pattern of land use should be based on such design where people can meet each other like providing for parks, open spaces and community halls. Areas and streets should be safe for traveling, as this will encourage meeting neighbours and friends without fear. Neighborhoods should be car independent where people can move freely. Developers should arrange and provide spaces for community festivals and events, which attract people and also enhance community interaction.

Each neighborhood should have a mix of land uses and densities that provide options to live, learn, work and play. Intensive land uses connected and focused around alternative transportation modes should be developed. Citizens should be able to access daily shopping and recreational needs in their neighborhoods easily, regardless of choice of mode.

Urban neighborhoods can be designed to be self-sufficient in terms of reducing the need to travel by encouraging walking and by providing opportunities for work and recreation closer to home. Streets should be designed for pedestrian and cyclist safety. When people are encouraged to use streets rather than being dependent on cars, a sense of ownership of resources is developed and people become socially connected with neighborhoods and get a chance to interact with neighbours. This ultimately will result in generation of social capital and in turn the development to become sustainable.

Each neighborhood should offer high quality of public spaces, with a variety and mix of leisure and recreational opportunities. Open spaces should be connected and integrated. Public spaces should be accessible and suitable to a range of ages and abilities. Active and passive spaces should be provided to congregate, socialize, and for recreation to encourage people to be physically active and spend time outdoors.

Each neighborhood should be designed to promote citizens health and well-being and increase overall neighborhood safety and social interaction. Gated community should be promoted for purpose of safety. Clear boundaries of neighborhood should be demarcated to enhance functional and social interaction, sense of community and identity within the boundaries.

For enhancing of social capital, a concept of social mix should be created by mixing social classes, combining house types and tenures. Neighborhoods should provide a mixture of buildings in terms of unit sizes and housing types. Housing options should be provided within neighborhoods, appealing to a range of incomes, family types and opportunities. There should be a better balance of demand for community services and facilities and opportunities for life time communities should be provided.

Conclusively, urban development process should follow the principle of public participation because this increases a sense of community and creates the potential for a continuous quality of interaction. Public participation also helps designers to become conscious of the desires of potential users, allowing them to create a satisfying environment designed to accommodate resident needs. Developers should also consider

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ARCHITECTURE A SOCIAL RESPONSIBILITY REFORMING URBAN SURROUNDINGS A BARRIER FREE RESPONSIVE ENVIRONMENT ENABLING LIMITED ABILITY: CASES FROM KARACHI, PAKISTAN

*Siwat Afzal**

ABSTRACT

The built environment is a complex outcome of a society's geo-political and socio-economic development. An important consideration is the status of existing facilitation systems for population with disabilities in a developing country. International researches indicate that about one-tenth of the global population can be categorized in this human slab. Multiple predicaments such as climate change, induced disasters, violence, conflict, terror strikes, urban and regional hazards are constantly adding more people in this category. A review and basic observation of the built environment in Pakistan, including larger cities such as Karachi, reveal that the existing profile of various building types are grossly unsuitable to accommodate the users with frail and limited abilities. Common facilitation elements such as ramps, support balustrades, guiding rails, exclusive toilets, appropriate aisles and corridors, ventilation and daylight assistance mechanisms and other necessary ingredients are scantily found in these buildings. This shortcoming exists in many of the designed buildings and spaces for healthcare, education, social welfare, commercial centers, housing schemes, etc. The practice of accepting construction with a deficit built environment remains insensitive to people with disabilities and a major disrepute to architects, engineers, all professional saviors of the building industry and environment.

This paper explores the current status of response preparedness and intervention in the domain of Karachi's surroundings. Drawing from the existing literature, the paper adopts a case based approach to identify the various dimensions of built environment to establish their suitability for accommodating the specific requirements for population with limited abilities. Case studies of hospitals and educational facilities have been taken from Karachi. The pivotal role of local architects and urban planners has been appraised in this scenario. The paper concludes with design advise derived from the research analysis.

INTRODUCTION

Pakistan's built environment is still undeveloped with respect to facilitation of systems for populations with disabilities. Until recently the number of disabled persons was comprehended ambiguously that they are in minority. Disability is not easy to detect nor is measured widely, as its under reported by the population specially in females (World Bank, 2011). The people with disabilities comprise of a very populate social sector in every age group and different ethnic and religious cluster. It is observed that the society tends to ignore them, believing them incapable of participating in the community or avoiding them as reminders of existing weakness (Mobinuddin, 2008). There are people with disabilities not having equal access to health care, education, and employment opportunities. They do not receive the disability-related services according to their need and gravely experience exclusion from everyday life. Internationally people with disabilities and their requirements are increasingly understood as a human rights issue. There are however evidences for persons with disabilities experiencing worse economic outcomes due to social and physical barriers as compared to persons without disabilities (World Bank, 2011).

The Government of Pakistan compiled its last census in 1998 and is criticized for its insufficient projected data on various forums, specially where the increasing population of people with disability remains miscalculated. Awareness and scientific information on accessibility issues are also lacking. Gravity of such facts lead to a frail policy for design implementation in buildings and urban environment, effecting the performance of people with disability, making them suffer socially and economically.

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RESEARCH METHODOLOGY

An explanatory approach is used in this research paper. Some key questions explored are:

- How accessible is Karachi's built environment in health care and educational buildings for people with disabilities?

- How imperative is the role of professionals towards reforming or ensuring accessible building regulations?

Initially, a desk review of national and international literature on the subject was undertaken. Common repositories of information available on electronic media were reviewed. Some key informant interviews and discussions with NGO's like Ministry of Social Welfare and Special Education, Hani Welfare, Estanara Associates, Awareness Pakistan were undertaken. These were introductory meetings (one each with the named organization). The discussion revolved around general review of the research to understand the accessibility environment and the role of law enforcing agencies for facilitation.

Secondly, seven qualitative interviews were conducted of officers from different government agencies. Some of the professionals inducted for these interviews included Engineer from the Karachi Master Plan Department, Senior Director Karachi Municipal Corporation; Director Terminal Planning; and Engineer from the Department of Road Safety Transportation. These professionals discussed the various implementation of accessibility laws in the context of Karachi, pedestrian crossing facilities and road safety projects.

Four semi structured interviews were also held with faculty from the Department of Architecture and Planning, NED University. One of the interviewee was a faculty member with a disability. She spoke at length about her accessibility issues and the experience of living in Karachi with a disability. Discussions were also organised with final year students of the Department of Architecture and Planning around the research topic.

At the National College of Arts, Lahore semi-structured interviews of a couple of students with vocal and hearing impairment and a resident artist with vocal impairment were undertaken. The method of data collection through interviews included close ended (yes/no) and open-ended questions and observation of facial expressions and body language.

Furthermore, building amenities of health care and education facilities were visited and studied with reference to suitability of facility for people with disability. Digital surveys were carried out for obtaining baseline information searching through government data for Pakistan. It was discovered that there is no widely accepted definition of persons with disabilities (PWDs). In two instances however Pakistan's National Policy for Special Education report has following definitions for disability:

a) "Disability means the lack of ability to perform an activity in a manner that is considered to be normal."

b) "A person with disabilities means a person who, on account of injury, disease, or congenital deformity, is handicapped in undertaking any gainful profession or employment; it includes persons who are visually impaired, hearing impairment, physically and mentally disabled." (JICA, 2002: 126).

ACCESSIBILITY ISSUES IN THE CONTEXT OF PAKISTAN

While reviewing the literature it was imperative to understand the magnitude of the problem and urban challenges that large cities are experiencing in terms of barrier free environments. Karachi's growing population of people with disabilities is forecasted at 3.1% (2.5 million people) by the year 2020 (Government of Sindh, 2012). In reality this figure is much higher calculated at 10% to 30% in advanced nations (Junaidi, 2015). Urban challenges which are causing the increase in disabled population in Pakistan range from war on terror, climatic changes causing disasters and civil unrest. For example, the earthquake of 8th October 2005 in Pakistan caused many deaths and left 75000 people disabled (World Bank, 2011).

The disasters due to climatic factors result in the economic instability of rural areas, moving the population towards developed urban cities (Alam, 2006). This population is prone to ethnic and religious violence and exposed to inanimate and animate objects, falls, transport related injuries and terror strikes which contribute to serious forms of physical impairment. Interview with a representative and another with the director of an NGO of Karachi indicated the speculation of much accelerated figures for disabled population in Karachi than the already projected ones, which becomes a major cause of economic stress and constraint to many families.

Karachi's urban expansion is a barricade for people with disability. The learning environment is not favorable towards

the location of special schools, accessibility to buildings, availability of special furniture, consideration of design standards for making educational facilities accessible for people with a disability for example, ramp's gradients, door sizes, handrails, etc. Amenities like mosques, parks, shopping centers, libraries, places of public utilities (toilets, banks, ATMs), do not consider accessibility of persons with disabilities. Laws governing building construction for a barrier free environment are slack (MWD and MSWSE, 2005). A critical appraisal of the Karachi Strategic Plan - 2020 under the sub head of special education (ECIL, 2007) indicate population of persons with disabilities as separated from the public and are not considered normal. In this document the population projection for people with disability has been overlooked. Factors relating to accessibility code, design considerations of major areas like transportation regulation, economic plan for people with disability are also missing. In interviews with faculty members of architectural institution regarding educational considerations in curriculum for accessibility design, it was expressed that the education of architects in institutions in Karachi and in Pakistan at large does not include any accessibility considerations in detail for people with disabilities, although students are encouraged in their design studios to consider the accessibility aspect while designing.

CASE STUDIES

Health Care Projects in Karachi

A general survey of government and private hospitals of Karachi was under taken and a comparative analysis was developed for accessibility factor. The external approach as

emergency and internal flow of pedestrian traffic was observed. In most cases these were designed as after thoughts sometimes after the hospital had been operational for a decade. As a general condition the accessibility and design standards of private hospitals was better than government owned hospitals.

Ziauddin Medical Hospital, Clifton

It is a hospital complex having five levels. Four of its levels have well maintained vertical transportation for its patients in each block, with wide staircases for patient attendants and staff use. The entrance and exits are in accordance to standard of accessibility, with a handrail placed at a proper height and specifications installed along ramps for attendant maneuvered wheel chairs and stretcher trolley. However, the ramp gradient is steep for independent accessibility for a person with disability or frailty. Entrance to the building and door widths are designed for easy access of large groups of people and also fulfil the requirements for people with disability, however in a few private rooms the bathrooms have a level difference where the wheel chair is inaccessible. Public areas, like the ATM facilities, have been overlooked in consideration for accessibility for people with a disability (Figures 1, 2)

South City Hospital, Clifton

This is a recently constructed four storey hospital and is an accessible and barrier free facility. The edge detail at the parking curb has been worked out in a way that makes it accessible for people using a wheelchair (Figures 3, 4). The gradients of the ramps also support wheelchair accessibility.

Figure-1: Ziauddin Hospital Clifton Karachi: Entrance Ramp does not have a hand rail.

Figure-2: Ziauddin Hospital Clifton Karachi: ATM room un-accessible to people with disabilities.

The hospital floors have a number of lift shafts appropriately spaced within the building. The balustrades, bump rail, handles height, door sizes, slopes, materials on slopes and treads sensitively consider accessibility of people with disability. Certain private room bathroom door widths are, however, not accessible for a person on a wheelchair.

Agha Khan University Medical Center, Clifton

This is a three level building vertically connected by lift and staircase. The entrance is accessible from the ground floor at a vehicular dropoff point for patients. The gradient of the ramp is very steep from the road level. It is inaccessible for elderly pedestrians and accessibility impaired people (Figure 5). The interior follows international design standards with balustrade, bump rails and door handles heights following accessibility design standards. The bathrooms are also accessible for visitors on a wheelchair.

Jinnah Post Medical Centers (JPMC)

The provision of ramps with proper gradient are visible at the new JPMC Emergency Center (Figures 6, 7), but due to security arrangements and barricades, reaching the main building from the main road is difficult. The old emergency areas still need retrofitting of ramps, hand rails, balustrades and correct size of doors to make it easily accessible and barrier free.

Figure-3: Exterior curb detail of South City Hospital in Karachi.

Figure-4: South City Hospital: Accessibility requirements are fulfilled by the exterior details.

Figure-5: AKU Clifton, Karachi.

Figure-6: Access to Jinnah Post Medical Center.

Figure-7: Jinnah Post Medical Center and Emergency Unit

Civil Hospital Karachi (CHK)

CHK is a government funded hospital in the center of the city of Karachi. Most vehicular arteries leading to the hospital emergency entrance are encroached, forming a bottle neck at the entrance and exit. In case of an emergency situation it is reported that innumerable causalities happen due to inability to reach the emergency center on time. The

Figure-8: Civil Hospital Emergency center entrance.

Civil Hospital departments which are administered by funding of different NGOs on a self-help basis, have a better environment and adequate accessibility than the departments still under government administration. The civic municipality does not play any role to remove the hawkers clogging the access to the entrance, making it inaccessible during emergency (Figure 8).

Both JPMC and CHK are centrally located hospitals in the city. The entrance to the emergency blocks are not only far from the main road but become inaccessible during emergency due to the vehicular rush and the encroachments of hawkers lined on both sides of the road leading to the emergency center block. There is a possibility of creating a separate route to the Jinnah Hospital premises for the ambulances. Similarly the same can be done for the Civil Hospital, where the main entrance at the front can be relocated and the hawkers and parking lot bottling up the entrance can be shifted to a nearby open ground.

CASE STUDY OF EDUCATIONAL INSTITUTES, KARACHI

A survey of educational facilities in Karachi unfolded the

Figures-9, 10: Entrance of a local school, showing a ramp and steps for accessibility to classrooms.

fact that there is almost no consideration for accessibility of impaired students in the design of classrooms and the schools at large. In a newly constructed educational institute an entrance ramp was part of the design, however the school building had no elevators for vertical accessibility of persons with disability. Many schools operate in small residential town houses, having major accessibility issues. Thus, if a student becomes disabled he /she is unable to continue studies due to issues of accessibility (Figures 9, 10). Only one school, that is, Karachi Grammar School (KGS) in Clifton, had proper ramps and balustrade designed at appropriate child height and toilet accessibility had been thought about, in the design for students who have mobility issues.

It is the duty of the licensing agencies for educational institutions to ensure accessibility factor while establishing agreements with school administration. As of now all the educational school facilities are operating in violation of Accessibility Code 2006 (PEPAC, 2007),according to which any upcoming educational institution should ensure a barrier free environment for all students. This rule also applies for educational institutions already operational in the city.

Visual Studies Department, University of Karachi

This facility was designed by an international consultant by the name of Ecochard. It was constructed in 1959. As a government institution it ensures 2% of admission quota for students with disability. The building was made as a barrier free accessible environment. It is a three story building with two pedestrian ramps forming a strong design feature of the building. There is another wide ramp for the cars. These ramps reach the front entrance at the first floor level. The facility is designed and accessible at both levels for people with disability. There is another ramp leading to the workshop area at the back of the building. One must mention the sensitivity of the architect and construction managers to have looked into accessibility details in times when the accessibility law for buildings had not been formed.

Indus Valley School of Art and Architecture, Karachi

This is private run educational institution and a recently constructed building. It has five storeys. The building remained verticality inaccessible for people with disability for some years, but recently an elevator has been installed and made the campus a barrier free and accessible facility for students with disability and for elderly faculty members. A standard ramp from the main gate into the front path and sloping pathways in the garden have been added. Certain areas within the building still require construction of ramps,

bridges and handrails for ease of movement for students with disability.

The art education institutions reviewed here were sensitively designed as inclusive for all. This ensured participation of persons with disability. Conclusively it can be said that although the primary and secondary private schools do not generally consider accessibility of students with a disability, colleges and university departments do give this aspect some importance and have retrofitted their campuses to welcome students with accessibility issues.

THE EMMERGING ROLE OF PROFESSIONALS

The case studies reviewed here reinforce the fact that architects and engineers in private practices are sensitive and professionally aware about accessibility standards. However, those employed with the government sector do not give this issue much importance within individual capacity. The architects, urban planners, engineers from the government sector are well aware of the universally available data and standards but the motivational factor is amiss in their performance norms, resulting in incoherent construction of public places which are not inclusive for all.

The boards and councils accrediting institutions need awareness creation at iterative bases through programs and workshops on accessible or universal design, making it an important part of the educational curriculum at technical level. The statuary bodies issuing professional practice licenses can be instrumental for enforcing adoption of Accessibility Code and Building Design Manual (PEPAC, 2007a) for implementation of details in construction to create inclusive architecture and barrier free environment.

The ministries of development, social welfare societies and building authorities must have a stronger role in establishing the accessibility standards in order to help elevate the socio economic status of the members becoming dependant on the society as a result of being disabled, as people with a disability suffer from depression and isolation.

The professionals in business educational institutions and those involved in hosting media programs for rectification of social norms must address this growing issue and disseminate thought provoking dialogue for the masses to accept and inculcate on smaller scale such attributes that enhance the living environment and make it accessible.

Urban designers and planners should recognize the importance of creating healthy towns and cities and that their role is becoming a challenging one as a result of the

massive sprawl of settlements. Since a neighborhood's infrastructure influences the life and health quality of its inhabitants, participating in community life for many people with disability requires an adequate infrastructure that is accessible and fulfils the requirements of the communities.

CONCLUSIONS AND RECOMMENDATIONS

 Educational institutions and all affiliates concerning construction industry, must yearly undertake targeted researches in view of nationally recognized definition for people with disability. Issues linked to understanding the requirement of such persons can bridge the vacuum occurring in data collection. Establishing policies and planning strategies for implementation of the Accessibility Codes (PEPAC, 2007) in conjunction with the 'Design Manual and Guidelines for Accessibility' details in student projects as well as state advertised projects, while preparing for institutional consultation, can also help develop understanding of requirement of people with disability.

Reliance on evidence based knowledge through participation of people with disability, adopting accessibility design manual and guidelines as part of the infrastructure development is also a requirement. Accessibility as an issue must be dealt with in the curriculum for engineering and architectural education through framing of policy to be part of framework. Encouraging a larger percentage of people with disabilities in the education system for architectural and engineering studies can lead to the involvement of a

force that will understand the sensitivity and need of implementing accessibility design details in projects.

Application of accessibility standards in the urban fabric should be encouraged to achieve sustainable development catering to the needs of people with disabilities. Karachi Strategic Plan 2020, needs amendments keeping the perspective of people with disabilities in planning, communication and infrastructure development to make Karachi accessible. Adequate design intervention needs to be made to make the present environment accessible and barrier free in the city and the country at large. One way of achieving this is to implement 'the Accessibility Code 2006' and Design Manual Details (PEPAC, 2007, 2007a) as retrofits on already built projects for making them barrier free.

Government bodies, NGO's, engineering and architectural councils, institutes of architects and engineers, civil society, education institutions and universities must work together towards understanding the issues people with disabilities face in the society in to order to access pubic places. They are handicapped because of the environment creating accessibility barriers. The people with disability can become independent and contribute actively to the society if the built environment is made accessible and inclusive.

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KARACHI FROM THE PRISM OF URBAN DESIGN
Noman Ahmed, Asiya Sadiq, Masooma M. Shakir, Suneela Ahmed
A publication of the Department of Architecture and Planning,
NED University of Engineering and Technology

A Review by
Farhan Anwar*, Urban Planner and Executive Director of
not-for-profit Organisation.

Karachi is a city that has been well-documented — mostly from a historical perspective or in sector-specific context such as, for example, covering matters of land management or water supply. However, for a city as large and complex as Karachi, issues in development and growth find connections and interfaces in a complicated mesh of physical, social, political and economic constructs that need to be understood in their entirety for clarity to be achieved. An effort to structure such a holistic canvas has been made in the publication 'Karachi From the Prism of Urban Design'. It is a chronological study of 50 urban design cases (human settlements, infrastructure projects, planning interventions, processes) in Karachi undertaken by the Department of Architecture and Planning at the NED University of Engineering and Technology, as part of the Asia Link Project of the European Union in which a number of European universities also collaborated. Covered are housing neighbourhoods and settlements evolving over the years, industrial estates, road networks like Sharea Faisal, beaches and coastal land, urban parks, master plans and projects dealing with water, housing, transport, etc.

The authors at the very beginning identify the features that they feel make this study unique in the context of the development discourse in Karachi. The study is placed within the academic understanding of the urban design approach that is explained as the professional discipline which encompasses scenario development around urban problems and issues. This understanding seems to underwrite the makeup and DNA of the study where an attempt has been made to focus a holistic lens on the urban planning and development process in Karachi. It is therefore, stated that "urban design can be defined as a discipline that helps the citizens, professionals and urban managers to understand the relationship among social, economic, spatial and political dynamics". In addition, the authors feel that a case study-based approach assists in conducting research in a broad manner within multiple contextual settings. The study has tried to achieve this by decade-wise listing of projects and by classifying them in terms of being state driven, community driven or market driven. In addition, the corresponding political, institutional and social events have also been listed.

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This is evident in considering case studies that cover the diverse typologies, socio-economic profiles and administrative models of growth evident in Karachi. For example, there are case studies on housing societies, settlements like the Pir Illahi Bux (PIB) Colony, high-income localities like Kehkashan, predominantly middle- class neighbourhoods such as Gulshan-i-Iqbal, etc. The phases of development are then linked with the various planning interventions witnessed in Karachi — the master planning process — to assess the direct or indirect impacts of planning with actual development. Other than these clear categorisations, what makes this an interesting read is the standardisation and structuring that provides the same framework for analysis for each case study, starting from documenting the historical and physical context and concluding by assessing the impacts on the city.

An interesting evolving pattern of growth in the city has thus been identified where it is indicated that the initial phases in the growth of Karachi were marked by a strong government mandate manifesting in the role of a welfare state and provider to the masses. Then as the writ of the state starts diminishing, such as in the 70s, the communities and the informal sector fill the vacuum — a phase in development that is then succeeded by the market-driven approach. Critical infrastructure development projects have been synced with analyses on human settlements to evaluate how they have shaped or de-shaped the city. These include the KCR, Lyari Expressway, Port Qasim, Karachi Storm Water Drainage, KPT Underpass, Mai Kolachi, etc. For example, on Lyari Expressway the analysis leads to interesting conclusions; the study states that "when the Lyari Expressway project is eventually completed, its beneficiaries will not be the local residents or even potential users but the contractors who have acquired the works, builders and developers who have grabbed cheap land along the Lyari river bed and big investors who may construct storage and warehousing facilities in the future".

However, it is felt that while analysing the impact on the city of the case study subjects, there could have been more of a connecting of the dots than has been the case. The impact analysis is in most cases inward-looking and the study could have benefitted much if this analysis could have looked into the larger footprint of the projects, processes and plans under study. For example, the case study on Khuda ki Basti ends with a listing of the programme successes when analysing impacts.

Regardless, the level of research that has gone into drafting this study is to be commended. Data on Karachi is not to be found in any central database and is scattered here and there, distributed among various entities — government, private, civil society. A good effort has been made here of assembling this data, collected from various sources, in one document — particularly the relevant maps. A lack of attention to detail, however, shows in referencing and sourcing data; graphics, images, maps, and tables are, in some cases, not properly referenced. In identifying locations Google Maps have been used quite frequently and it is felt that a more authentic, academic manner could have been utilised. Then in some cases, maps are not readable.

The study, however, retains its larger credibility throughout as the language is academic, arguments have been made with supporting facts and logical analysis and no particular bias is visible. While the study ends with recommendations and conclusions, this aspect falls short of addressing fully the vast scope of the narrative brought out in the case studies. So it is felt that the main strength of the study is in the analytical content that is expertly handled. The scope of the study is vast as it tries to capture in one document a very complicated evolutionary process in the design and development of a very complex city. The authors have, however, managed to organise the data and analyses that offer a sharp insight to a wide range of stakeholders. As has been mentioned earlier, this continued narrative that capsules Karachi's growth, connecting various aspects of development, provides readers the chance to — for example, as is stated in the study — "highlight the paradigm shifts during different political eras outlining how the shifts are related to the important events in history which brings an awareness of the interrelatedness of politics and urban development and design". This is where one feels the study has added significant value to the urban development discourse on Karachi city.

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